Creating integrated care pathways to improve fall risk assessment and follow-up among frail elderly in home care services

Kimia Zargari Marandi

Health Economics, Policy, and Management – Management of Healthcare Institutions

Department of health management and health economics
Institute of health and society
Faculty of Medicine
University of Oslo

Supervisors:
Professor Tron Anders Moger
Professor Terje Hagen

November 2021

Summary

Falls among the elderly are common. Approximately 50% of elderly living at home fall every year with disability and loss of healthy life years as consequences. Up to 40% of admissions to nursing homes happen in the aftermath of falls. Fall injuries are the sixth-largest factor contributing to living with disability in Norway, even more than the health loss due to cardiovascular disease. As studies show in Norway, a third of the elderly experience a fall every year, and the risk of falling increases after the age of 75.

The City of Oslo has recently implemented a care pathway for elderly patients with an increased risk of falling. The main aim of the intervention is to better integrate hospitals and primary care services so the primary care services can monitor the patients at risk and implement measures that prevent new falls. In this study, we aim to understand that how much the new care pathway increases awareness and focus on fall risk prevention in the home services. We also study whether the intervention has improved the information flow to and from the municipal care services for the elderly either at risk of falls or having had falls. For sake of this research, data collection has been conducted by means of an online survey that was sent to health care workers at home care services in 14 boroughs of Oslo. we got 221 responses from the home care services. the results indicated that almost 60% of respondents in control boroughs and 67% in intervention boroughs receive fall reports from the emergency medical services (P=0.24). However, the intervention boroughs received more fall reports from the emergency medical services during 2019 and 2020.

Only three statistically significant differences at 5% significance level were found in healthcare workers' knowledge of fall prevention interventions. The actual findings, however, were consistent in their direction, indicating that the healthcare workers in the intervention boroughs are more familiar with checklists and fall prevention follow-up. Also, the information flow from home care services to GPs seems more consistent and regular compared with information flow from the GPs to the home care services.

Forewords

My first and biggest thank you goes to my supervisor, professor Tron Anders Moger for his guidance, patience, and kindness. Without whom this master thesis would not have been possible.

I'd also like to thank Professor Terje Hagen for giving me the opportunity to work on the Fall prevention in Oslo municipality project.

I warmly thank my parents Fereshteh and Karim and lovely Helia for their endless support even from thousand miles away.

Finally, I would like to express my gratitude towards the University of Oslo for letting me peruse my dreams.

Kimia

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1 Introduction

Falls among the elderly are common. Approximately 50% of elderly living at home fall every year with disability and loss of healthy life years as consequences. Up to 40% of admissions to nursing homes happen in the aftermath of falls. (Narum & Bergland, 2011) Osteoporosis is a significant reason why the extent of the damage can often be large when the elderly fall, even if the fall is a so-called "low-energy trauma" (from one's height or less). Fracture injuries are common, and the consequences are far more serious in the elderly than in the young. Up to 75% of those who get a hip fracture, a serious fracture that almost only affects the elderly, never return to the level of function they had before the injury. (Roy, 2019) Norway, and Oslo in particular, has among the highest incidences of hip fractures in the world. (Cauley et al., 2014) In 2015, 937 people over the age of 65 were admitted to the hospital due to hip fractures in Oslo. Hip fracture is one of the costliest diagnoses in Norway. An average hip fracture was, based on figures from 2008-2011, estimated to cost approx. NOK 540,000 only during the first year. Most of these costs are related to municipal services such as home-based care, rehabilitation, and nursing homes. (Hektoen, 2014)

There are a variety of reasons why the elderly fall, and most often there are several reasons that work together. Common causes can be related to one's health such as reduced strength and balance, overmedication, reduced vision, neurological diseases such as stroke or Parkinson's disease, disturbances in heart rhythm or fluctuating blood pressure, dehydration or disturbed salt balance, reduced attention due to intoxication or dementia, pain in the legs, sleep problems, malnutrition or generally reduced general condition. (A. Lee et al., 2013) Also, there are often challenges in the living environment with stumbling blocks, stairs, poor lighting, difficulty reaching the toilet, or slippery outdoor areas. There are also differences in how well the individual can withstand falls, the most fragile can withstand very little before a fall result in serious injury. The elderly, and especially those with a high risk of falling, often have complex service needs and are followed up for several health problems by both GPs (general practitioners) and specialists as well as health care services in the primary health service. The follow-up is often characterized by silo organization where each service provider seeks to solve a problem within their area of responsibility.

Recognizing an increased risk of falling requires a way of thinking that is different, and where one thinks more holistically about the individual user's life situation and what it takes to create a better opportunity for an active life in the future. For GPs and those who make fall prevention home visits (physiotherapists, occupational therapists, nurses), it is a large field to orientate themselves in. From experience, it is easy to focus on areas you are interested in and know about. The patient then receives a somewhat random follow-up based on who you meet, which does not contribute to equal services. Healthcare professionals are also generally more concerned with solving the current problems that are presented than with preventing a possible future problem such as a later.

The City of Oslo has recently implemented a care pathway for elderly patients with an increased risk of falling. The main aim of the intervention is to better integrate hospitals and primary care services so the primary care services can monitor the patients at risk and implement measures that prevent new falls. The basic intervention implies that the local emergency center (Skadelegevakten) informs the GP and the care services in the boroughs of the patients admitted with fall injuries. This is done by an electronic 'fall notification' to all relevant service providers and by a letter to the patient's relatives. The GP invites the patient to consultation and by the means of a checklist makes a risk profile of the patient. A checklist used by the care services further gives information on risk evaluation. Together the two providers (GPs and care services) stratify the patients, make a follow-up plan and define the responsibilities for the measures developed. Although, most of the boroughs in Oslo have worked systematically with fall prevention at different levels and offered many different measures and activities since 2017 this high level of activity makes it difficult to compare the intervention boroughs with the other boroughs in Oslo. Therefore, the survey was designed to map the boroughs' fall prevention activities.

The new intervention was implemented in seven boroughs by late 2020, allowing using the remaining boroughs as a control group. The endpoint of the study is acute readmissions caused by a new fall and mortality. However, for the intervention to affect the actions of the GPs and the care services need to change. In the thesis, we aim to study that to what extent the new care pathway has increased awareness and focus on fall risk prevention in the home services. We also study whether the intervention has improved the information flow to and from the municipal care services regarding elderly at risk of falls or having had falls. In order to reach the answer to these questions, we send a survey to health care workers working in

home care services with questions regarding documentation of fall notifications, use and knowledge of checklists, information sharing between levels of care, knowledge of training programs on fall risk assessment for the healthcare workers and fall risk prevention for the patient, and followingly compare the results between the control and intervention boroughs.

2 Background

2.1 Falls among elderly

One of the major challenges all the countries in the world are facing is an aging population. The number of world's population over 60 years has been doubled in the past two decades from 12% to 22%, and it is expected that by 2050 this number increase to nearly 2 billion. This fast pace of aging causes big health challenges for all countries. (Ageing and Health, n.d.). Another important challenge in public health is the fall in the elderly, which is related to demographic change.

According to the WHO Global report on falls prevention in older age, approximately 28-35% of people aged of 65 and over fall each year, increasing to 32-42% for those over 70 years of age." (WHO Global Report on Falls Prevention in Older Age, n.d.) Obviously, as age and frailty level increase, the frequency of falls will be higher. Based on WHO global report, the elderly who live in nursing homes fall more than old people who live in the community." Approximately 30-50% of people living in long-term care institutions fall each year, and 40% of them experienced recurrent falls" (WHO Global Report on Falls Prevention in Older Age, n.d.).

According to Tinetti and Speechley, fifty percent of elderly who have a fall history have a higher chance for second and third falls and falls. Also, she motioned that the average annual incidence of falls in nursing homes is 1600 per 1000 patients, and women are more likely to fall until the age of 75 and after that age, the frequency of falls are equal in both sexes.(Tinetti & Speechley, 2010)

A study was conducted to evaluate the effect of seasons and the temperature on the hip fractures incidence among the United States white population aged over 65 and older. A total of 621,387 hip fractures cases were studied. The incidence rate of hip fracture showed a

distinctive pattern of seasonal periodicity. The rate of hip fracture was high in winter and low in summer among both sexes. (Jacobsen et al., 1991)

2.2 Mortality and burden of elderly falls in European countries

One of the important causes of mortality and morbidity is injury in both developed and developing countries. Falls in the elderly is one of the most common injuries, deteriorating their health status and quality of life. Western Europe has the highest rate of falls and fall mortality in old adults. (Haagsma et al., 2016). In 2016, in the western European region, the prevalence of injuries that lead to usage of different forms of healthcare was 12.1 million among older adults 70+ years while 7.9 million was because of falls. In 2016, 51,026 old people died because of falling.

The incidence rate of falls in the elderly varies in different countries. Greece (5,840 per 100,000) and Portugal have the lowest incidence rate of falling (8,433 per 100,000) and the highest incidence rate of falls is allocated to Belgium (19,276 per 100,000) and Finland ((21,009 per 100,000). Accordingly, Greece and Portugal have the lowest rate of mortality due to falls. Norway (142 per 100,000) and Switzerland (142 per 100,000) have the highest incidence of death in the western European region. (Haagsma et al., 2016)

2.3 Mortality and burden of elderly falls in Norway

Fall injuries is the sixth largest factor contributing to living with disability in Norway, even more than the health loss due to cardiovascular disease. (Eyvind Ohm, m.fl., 2017) Fall injuries are ranked as the 9th cause of death in Norway which the percentage of falls causing death increased about 10% from 2009 to 2019. (Institute for Health Metrics and Evaluation, 2015) Based on Norwegian Institute of Public Health report, the elderly is particularly affected by falls, often with fractures as an outcome. When hip fractures and forearm fractures occur, reduced bone mass (osteoporosis) is a common contributory factor."(Eyvind Ohm, m.fl., 2017)

Having a sedentary lifestyle in old ages leads to deterioration of balance, mobility, and strength. In addition to high frailty level, comorbidities, and some medical conditions like muscle weakness, orthostatic and hypotension will increase the chance of falling in old ages.

(Chu, 2017) (Haagsma et al., 2016). Fall injuries cause a significant loss of active and healthy years in the elderly ,and also impose high health care costs to the government as it increases the length of stay in hospital. The main reason for the extreme damage in elderly falls is osteoporosis.

A report from the Norwegian institute of public health, estimates that 240,000 – 300,000 of Norwegians have osteoporosis. The most severe consequence of osteoporosis is a hip fracture that is because of the combination of low bone mass and falls in the elderly. The frequency of hip fractures in Norway is 9000 adults every year, 25% of which are patients who are staying in nursing homes. (Haakon Eduard Meyer, 2004) (Hektoen, 2014). About 75% of the old people who get hip fractures never return to the normal level of function before the injury. (Osnes et al., 2004)

2.4 Falls related health care costs in Norway

Fall-related injuries are the main cause of morbidity in the elderly, and it leads to high healthcare usage and mortality. There are few studies on the cost consequences of falls and hip fractures in Norway, but one project running from 2008 to 2011 by the Norwegian Directorate of Health calculated the cost of hip fractures in the elderly, based on patient data from St. Olavs Hospital in Trondheim. The sample in this project was the elderly over the age of 70 living at home in Sør-Trøndelag who had surgery for hip fracture.

The results showed that after a year, about 17% of the patients died and 24% of them moved to nurse homes. Only 14% of the patients were sent home directly after the hospital. Some of them continued their treatment, rehabilitation, and training at home or at other Departments of Physics, which cost NOK 322,000 per person. About 54% of the total was hospital costs, which are covered by the state. Further, 34% was the nursing and care services costs, and cost of rehabilitation at home was the remaining 12%. Both of these are covered by the municipality.

The results also showed that 62% of the survived patients were more demanding and needed more rehabilitation after the fracture. The overall cost of this group was NOK 469,000 per person of which 45% was hospital costs, 24% personal assistance and home nursing, and 23% for rehabilitation. 24% of patients moved to nursing homes after the hospital stay that its

cost was NOK 953,000 in the first year. Falls in the elderly not only have direct costs but also includes indirect costs such as pain, fear of the second fall, reduced quality of life, and losing their independence, and the impact of these factors should also not be underestimated. (Hektoen, 2014)

2.5 Fall prevention

Falls can be defined as an unintentional event which results in the person rest on the ground or on another lower level and it can be described in three phases: the first phase is an event that put the body's centre of mass beyond its base of support and these events include both intrinsic and extrinsic factors like, environmental hazards, unstable joint and unreliable postural reflexes. The second phase is when one of the systems for maintaining upright posture, fails to correct the displacement and avoid falling. The failure is generally because of intrinsic factors, for example loss of sensory function, muscle weakness or impaired central processing. The third phase is a body's impact on the environmental surface which cause the transmission of forces to body tissues and organs. In this phase, the directions of the force and the susceptibility of tissues and organs make the fall potential to damage and cause injuries. The fourth phase is not part of falling but it involves the medical, psychological, and health care sequelae of the fall and attendant injuries. These four phases affect the intensity of the damage and injuries resulting from the fall, therefore the preventive approaches should be based on the factors of each phases.(Prevention et al., 1992)

2.5.1 Risk factors

The first step for planning prevention strategies is identifying risk factors of falling in the elderly. The most common risk factor for falls in the elderly is fear of falling syndrome. (Vieira et al., 2016) Fear of falling is a defined geriatric syndrome that may contribute to further functional decline in an already frail patient (A. Lee et al., 2013).

After experiencing the first fall, the elderly usually experience pain, hospitalization, surgery, admission to nursing homes, etc. which are not pleasant experiences. therefore, they may limit their daily physical activities which leads to functional decline, deconditioning, stiffened joints, decreased muscle strength social isolation, and low quality of life. These

changes in addition to other risk factors increase the chance of the second fall. (A. Lee et al., 2013) (Vieira et al., 2016). Also, a study showed that the chance of falling during the year after the first fall increases by 66% (Nevitt et al.,)

It is reported that the risk of falling quadruples for the first two weeks after discharging from hospital and it is due to the vulnerability of the patients and the adverse effect of the hospitalization on them. Furthermore, 29% the patients who had falls in hospital are more likely to fall at home and 35% of them will be readmitted and 5% will die in a month.(Al-Aama, 2011)

Balance impairment and gait have been identified as one of the strongest risk factors for fall in elderly in many studies.(Ambrose et al., 2013)(Prevention et al., 1992). Usually in the elderly the gait become stiffer and less coordinated with lower posture control. Also, due to aging, body orienting reflexes, muscle strength and the step length decreases, and it make the elderly disable to avoid fall in case of slipping or unexpected trip. Moreover, the elderly has difficulties to shift the weight or to take a rapid step for avoiding the fall and because of this inability, they may take many smaller unsteady steps instead of one smooth step.(Ambrose et al., 2013) furthermore a study showed that there is a relation with increasing of falls with the the severity of chronic musculoskeletal pain.(Leveille et al., 2009)

Another risk factor for falls in the elderly is impoverished vision, which makes the balance control and distance judgment difficult. Around two thirds of patients who had history of age-related macular degeneration have balance impairments which increases the risk of falling.(Radvay et al., 2006)

Cardiovascular disease can increase the chance of falling in the elderly as well. based on Gangavati's research, the older adults with uncontrolled hypertension have higher risk of falling in compare with others. (Gangavati et al., 2011) On the other hand, according to Hausdorff study, hypertension has effects on the moving performances and balance.(Hausdorff et al., 2003)

In addition to those mentioned above, other common risk factors are use of psychoactive medications, , polypharmacy, depression, dizziness, age > 80 years, female sex, low body mass index, urinary incontinence, cognitive impairment, arthritis, diabetes, undertreated pain. (A. Lee et al., 2013).

2.5.2 Fall Prevention Interventions

Based on the American and British geriatrics societies guidelines, one of the first steps for preventing falls that clinicians can take, is to ask about the history of falls. According to this guideline, all of the patients, age 65 or older should be asked annually if they have fallen or not. The patients who report falls or balance difficulties should take an in-office assessment test such as: Timed up and go test (TUG), Short physical performance battery (SPPB), Usual or preferred walking speed, Berg balance test, Tinetti balance assessment, Performance-oriented mobility assessment (POMA) or Home and environmental assessment. Identifying the balance problems and gait abnormalities by performing mentioned tests might help to detect the elderly who need more detailed assessments and management of mobility impairments. (A. Lee et al., 2013) (Vieira et al., 2016)

Afterward, based on the results of risk assessments, suitable multifactorial intervention would be conducted for preventing falls in potential patients. a multifactorial intervention can be defined as one in which intervention from two or even more categories of intervention given to patients, however the intervention are related to each patient's' risk profile .)."(Hopewell et al., 2020) . For example, a multifactorial intervention for preventing fall in the elderly may include one or all of the following interventions: exercise and physical therapy for improving balance, gait, and strength, eliminating or decreasing the dosage of psychoactive medications, managing the orthostatic hypotension, managing foot problems, changing footwear, modification home environment, educating the patient and the caregiver, vitamin D supplementation in patients with vitamin D deficiency or high risk of fall. (A. Lee et al., 2013)

Exercises and physical therapy help to strength the muscles, maintain posture, increase the joint motion and it stimulates cardiorespiratory functions which all decrease the risk of falling. Based on Fuzhong Li, exercise reduce the incidence of falls in the elderly by 13% to 40%, especially those exercises that incorporate elements of balance, gait, and strength training.(Li et al., 2016)

Another prospective study investigated whether the cataract surgery reduce the risk of falls in older adult patients with cataract. 97 patients who were scheduled for cataract surgery

were assessed for established risk factors for falls preoperatively and postoperatively. The results showed that 31 of the patients had falls in preoperative period (37%) and the rate of fall in these patients had a significant reduction after the cataract surgery.(Brannan et al., 2003)

Most of the studies showed that multifactorial interventions had positive effects on fall frequency and it may reduce the rate of falls in the elderly and it also decreases the chance of older people sustaining one or more falls and recurrent falls. (Hopewell et al., 2020; Lee & Yu, 2020)

For instance, in 2001 a clinical trial has been conducted by Yates and Dunnagan in order to evaluate the effectiveness of a low-cost, multifactor fall risk reduction program in a group of rural community-dwelling older adults. the population of this clinical trial was elderly aged 67-90 who participated in a 10 week fall reduction trial. The intervention group got fall risk education, home based exercises, nutritional counselling, and environmental hazards education. The results of the mentioned clinical trial showed that the intervention group had and significant improvements in balance and fall efficacy. Also, their nutritional behaviour has improved during the 10 weeks of the trail and so they conclude that the home-based multifactor fall risk reduction was effective in reducing some of the fall risk factors. (Yates & Dunnagan, 2001)

Another proof of multifactorial intervention effectiveness is research that was conducted by E. Tinetti and I. Baker in 1994. They studied 301 men and women aged 70 years and older who had at least one of the risk factors of falling like use of sedatives, hypotension, impairment of muscles etc. The intervention group got a multifactorial fall prevention intervention that includes adjustment of medications, behavioural education and physical exercises based on their risk factors, on the other side, the control group only got a usual health care and social visits. The results showed that 35% of the intervention group had a fall during a year of follow up while this rate in control group was 47%. The final conclusion of this research was that the multiple-risk-factor intervention strategy can reduce the risk of falling in the elderly significantly and also the number of patients who had the targeted risk factors for falling decreased in intervention group.(Tinetti et al., 2010)

2.5.3 Fall prevention interventions in Norwegian primary health care services

Prevention is the main target area for the Norwegian health authorities to prevent unnecessary discomfort for patients and decrease the number of unnecessary hospital admissions. (Omsorgsdepartementet, 2009) As studies show in Norway, a third of the elderly experience a fall every year and the risk of falling increases after the age of 75.

In 2013, the Norwegian Directorate of Health published a recommendation to support local authorities in fall prevention measures. The recommendation describes many types of measures implemented by various actors involved in fall prevention activities, something which in itself represents a challenge in terms of effective collaboration. Still, fall risk assessments and reviewing the medications are given as the most important interventions for preventing falls at home or in nursing homes. (Holte et al., 2015)

A pragmatic observational study has been conducted by Bodil Røyset and the colleges in two in two orthopaedic departments in Norway. The aim of the study was to assess the effect of fall prevention program on the rate of falls, the patient safety culture and patient-perceived safety. Two orthopedic departments in different towns in Norway participated in this study. An intervention department received a comprehensive, multifactorial fall prevention program while the control department continues as same as before. All patients who were above age of 64 years and were admitted to these departments in a 1-year period were included. Falls were registered in 114 out of 3,143 patients (3.6%) with 17,006 days in the hospital. However, results showed that there is no significant difference in rate of falls between two departments. (Røyset et al., 2019)

The author added that “An initial temporary effect during the implementation period might have been missed due to the long period between the two registrations” (Røyset et al., 2019) moreover he pointed out that registration of falls was performed retrospectively in the medical records and some of the falls which did not cause any medical consequences were not registered.

2.5.4 The role of documentation in fall prevention plans

Studies showed that a previous fall is the main risk factor for further falls, thus secondary prevention strategies have been conducted for reducing the incidence of second falls in healthcare institutions. The secondary prevention strategies are identifying and documenting high-risk patients to refer them for comprehensive assessments and follow-up. Health care workers in emergency departments and nursing homes have a vital role in preventing further falls by documenting and reporting the risk of falls.

Based on this idea, a descriptive study has been conducted at three nursing homes in a large Norwegian municipality from August 2010 to July 2011. This study aimed to describe documentation practices related to falls in nursing homes and investigate the degree to which these coincided with the nursing homes' internal documentation requirements. In the study duration, 652 individuals over 65 were admitted to nursing homes, and all falls or other injuries were documented. From this sample, 556 fall incidents have been reported while 208 (32%) of individuals had experienced a fall. This result showed that many of the residents experienced falls more than once. The results showed that just 10.6% of the falls were documented in patient records and injury report forms. Nevertheless, documenting falls and filling in the forms are the nursing homes' requirement. (Deficient Reporting of Falls in Nursing Homes, 2017) The study concluded that there is not sufficient fall injuries documentation in nursing homes, and it makes implementing secondary interventions difficult.

Another study in Australia evaluated the consistency of nurses' documentations for fall prevention tool and to investigate whether patients with high risk of falling are identified. The results of the study showed that there is a significant gap in identifying patients with high risk of falls, and patients were not informed about their risk of falling by the nurse staff. Accordingly, most of the high-risk patients were not included in fall prevention plan.(Yasan et al., 2020)

2.6 The idea for a solution: A new patient course after a fall injury

As mentioned above, identifying individuals with increased risk of falling is one of the most effective interventions for second fall prevention. The idea is to create a new patient process that has a more comprehensive range of services for the elderly at risk of falling. The

new patient process should lead to have higher number of registered fall reports, having a better interaction between the specialist health service at Oslo University Hospital (OUS) and the primary health service in Oslo municipality and increase the health care workers' knowledge of fall prevention.

The current group of patients at age of 65 or older with fall injuries are characterized by different causes of falls. The new patient process represents a service innovation with a technical solution for communication in health care network: an emergency report from the Emergency Medical Service (OUS), a digital checklist in the municipality's medical record system (Gerica) and brochure with proposed measures for the patients which involves them directly. Six boroughs in Oslo are the pilot districts in this study.

The intervention has great transfer value nationally and to some extent internationally, if the evaluation can document that the new patient course has a good effect. The fall report is digitized in the medical record system DIPS, which is currently in use in 3 of 4 health regions in Norway. This can be used by other departments that treat injuries. The checklist for home visits is also digitized as a form in Gerica, which is the medical record system for the municipal health and care services used in approximately half of the municipalities in Norway. The process that the intervention districts have gone through in organizing their services is documented and will be available to other boroughs and municipalities.

The patient process is that the emergency doctor reports the incidence of the fall to the GP and the home care services in the boroughs, so that they can accordingly implement measures for preventing new falls and fall-related injuries. To make this patient process possible and efficient, some innovative measures have been made (Figure 1).

1. Identification of the high-risk group at the Emergency Medical Service: There is already a personal injury form that is used in a new way to offer follow-up falls in patients over the age of 65. This form is required by the Norwegian Directorate of Health, but it only has been used for reporting statistics. Currently, the new process is a combination of this form and using the existing technology. A digital fall message will be sent to four relevant medical record systems which are: DIPS (specialist health service), Helsenett (message system), ProfDoc (GPs), and Gerica. Moreover, at the same time, a piece of written information about preventing new falls will be sent to the patients and their relatives.

2. Knowledge-based checklist for GPs: this checklist includes common conditions with a high risk of falls and preventive measures for fall and fracture injuries. The checklist and an epicrisis report (short medical report on what has happened) were sent together to the GP as a “fall massage”. This kind of checklist facilitates the GP's work to prioritize measures and remember everything that is needed to be checked.

3. Knowledge-based checklist for home visits: during the home visit, an interdisciplinary initial assessment is planned, and different expertise is brought in when needed. The fall message to the home care services comes with an epicrisis report through the health network (same as the GP) but the fall checklist is a digital form that is reported in Gerica and filled in during the home visit. It is important to note that the checklist is available to employees in the home care services in all boroughs, not only those which have currently adopted the intervention.

4. GPs and home care services in the intervention districts have established new routines for mutual exchange of information about their risk assessments and the distribution of responsibility for follow-up measures. To develop this, the management of the district's health and care service involved practitioners from the various services as well as representatives of the elderly. Through a horizontal and vertical collaboration, they have designed several patient courses following fall injuries adapted to different patient categories based on the districts' resources and services. The processes are documented and will be communicated to other boroughs.

Although all the boroughs have received fall reports from the Emergency Medical Service since 2017 and most of the boroughs have worked systematically with fall prevention at different levels and offer several different measures and activities but this high level of activity makes it difficult to compare the intervention boroughs with the other boroughs. So, the designed questionnaire would help to map intervention boroughs fall prevention activities.

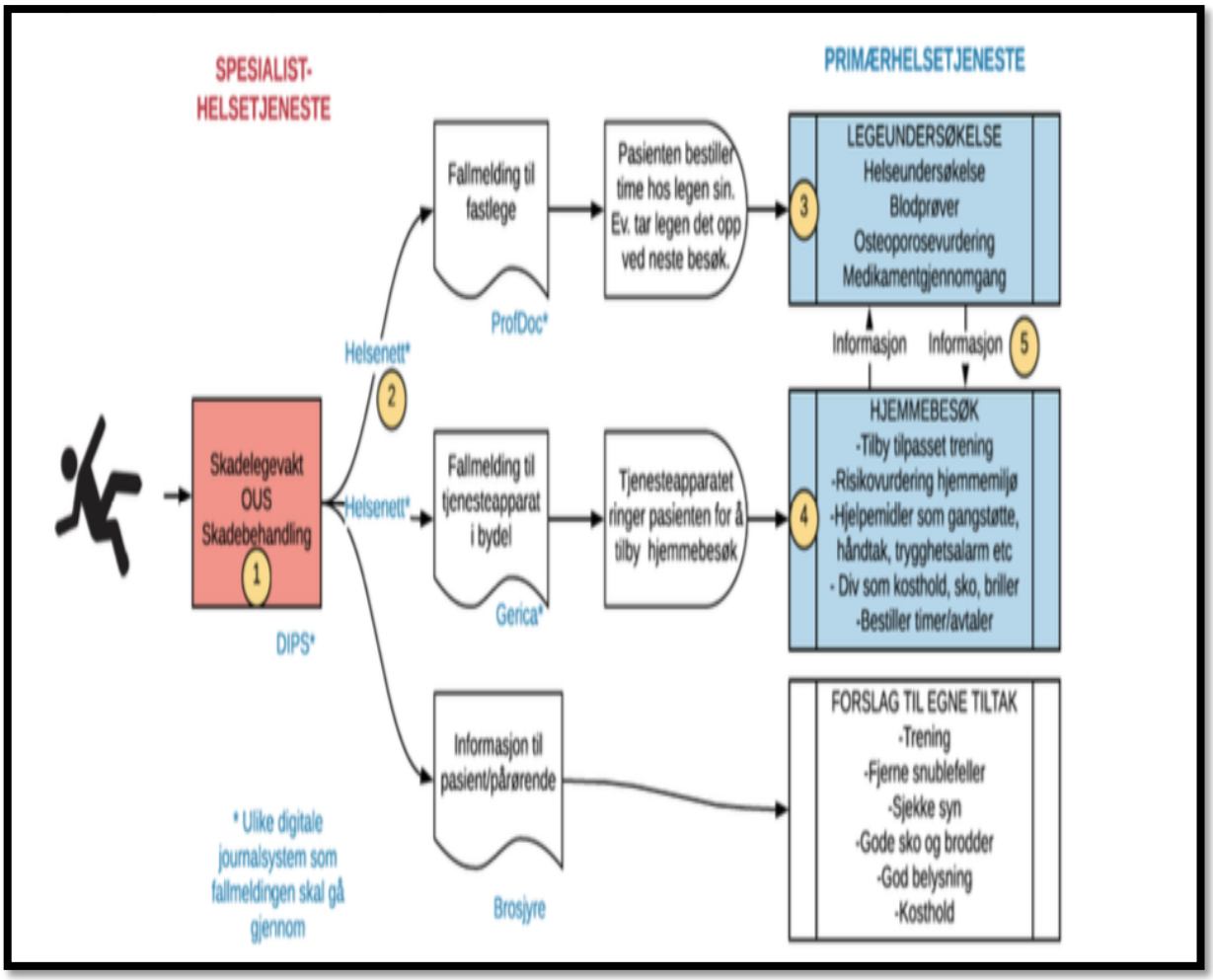

Figure 1. An innovative patient process for fall prevention in the elderly

3 Methodology

The purpose of this chapter is to introduce the principles of research and outline the methodology used to collecting and analyzing the quantitative data used to answer the research questions given in the Introduction. The study was composed of a survey which included both open ended questions and Likert scale questions.

3.1 Data collection

For the sake of this research, data collection has been conducted by means of an online survey. The questions were created by the Department of Health, municipality of Oslo, and hosted on the University of Oslo platform, nettskjema.no. The survey was approved by the data protection officer NSD, reference no. 775451. The questionnaire consists of ten categorical items, three ordinal Likert scale items and five open ended questions (Appendix 1). The Likert scale is a 5- or 7-point ordinal scale used by the respondents for rating the degree to which they agree or disagree with a provided statement. The responses can be rated in an ordinal scale but the distance between the responses is not measurable. (Sullivan & Artino, 2013)

3.1.1 Questionnaire

The first five questions were about the participant's occupational background: The borough that they are working in, occupation, position percentage, the years of working in the home care services and the years of working in home care services in the specified borough.

The next eleven questions were related to fall prevention in order to capture the knowledge of available fall prevention tools among health care workers and how often this leads to interventions for the patient. Also, the aim was to investigate how familiar the health care workers in the home services are with training offers, both for themselves in assessing the fall risk of patients, and in fall prevention programs for the patients. Moreover, question 13 was asked to emphasize on the importance of communication between the GPs and home care services.

All health care workers in both the control and intervention boroughs have access to the checklist, follow-up routines for fall prevention, training programs, fall reports. None of these tools are exclusive to the intervention mentioned in 2.6 above. However, by comparing

responses on the questions regarding the knowledge and use of these tools, we get an indication on whether the focus on fall prevention and assessment is greater in the intervention boroughs than in the control boroughs.

In addition to document possible effects of the intervention in reducing fall injuries, fractures and deaths and possible health-economic savings from this, mapping the experiences of the health care workers and finding out whether their knowledge and use of tools for fall risk prevention is also important for improving care in users at increased risk of falls. This will help to target and improve the measures taken by the intervention, and are prerequisites for spreading the intervention to other districts and municipalities in Norway.

The participants are employees who provide health services at home care centers in 14 boroughs in Oslo. The health care workers should at least have 50% of position in their occupation and at least a bachelor's degree in order to be included in the survey. As a result, the questionnaires were distributed to 1102 organizational email addresses in 14 boroughs on 17th of February 2021. By 3rd of march there were 183 respondents. A reminder was sent on 5th of march and by 17th of March 2021 that we closed the questionnaire the final sample was 221 respondents.

3.2 Data management and analysis

The sample was divided into intervention and control groups based on which had implemented the new patient centered process. The following boroughs were in the intervention group: Østensjø, Sagene, Frogner, Stovner, Grorud and Vestre Aker. although the intervention has been implemented in Nordstrand since 2017, but we did not have access to healthcare worker's email addresses in Nordstrand. Therefore, it is not included in the study.

The remainder of the boroughs were in control group: Alna, Bjerke, Gamle Oslo, Grünerløkka, Nordre Aker, St. Hanshaugen, Søndre Nordstrand, Ullern.

For the categorical background variables, the number (n) and percentage (%) are presented for the intervention and control group separately. To test for differences across the groups, chi square tests were used.

For the fall prevention variables, results are presented in two tables. The first table present results for questions with binary responses: Receiving fall reports, being familiar with

user training offers, notifying the patient's GP, receiving home visit information form the GP, having follow up routines for fall prevention and follow up checklist usefulness. For these variables, the number (n) and percentages (%) are presented for the intervention and control group separately. To test for differences across the groups, chi square tests were used.

The second table presents results for questions having discrete and Likert- scale responses: Frequency of fall reports, frequency of follow up checklist, frequency of patient's GP notifications, manager requests assessments of fall risk for patients, having received training in assessing fall risk for patients and usefulness process leads to interventions for the patient.

The mean and standard deviation was calculated in separately in the control and intervention groups. T-tests were used to study differences for the discrete variables. For the Likert questions, the Mann Whitney U Test was used to study differences between the groups. The latter was done since the responses on the Likert-scale questions were not normally distributed. The missing values are not treated as a separate category in differences between the groups. In the tables, minimum, maximum and number of missing values were also reported. All the data management and analysis have been done by STATA software version 16. A significance level of 5% was used throughout

4 Results

4.1 Background information on the respondents

We got the result from 14 boroughs of Oslo city; the greatest proportion of respondents were from Alna which were 27 respondents (12.27%) and Østensjø with 23 respondents (10.45%) and the lowest were from Bjerke with only 3 respondents (1.36%). Therefore, the sample is not representative compared to number of healthcare workers working in each borough.

For occupation the results demonstrate that the majority of respondents were nurse in both control (44.53%) and intervention groups (33.73%). Also, the results showed that 24.09% of respondents in the control group and 28.92% in the intervention group were physiotherapists. The minority of respondents were healthcare workers (Helsefagarbeider) and social educators

(Vernepleier). There was only one social educator in the intervention borough and none in the control group. About 8,7% of respondents in the control group, and 8.43% in the intervention group answered, “other occupations”. There was no significant difference between the intervention and control group on occupation, although the statistical power is limited for such a large number of categories in the response.

For the years of experience as a healthcare worker, the results show that the greatest proportion of years of experience in the control group is between three to ten years (43.07%) and in the intervention group is more than ten years (39.76%). Around 18.98% of respondents in the control group and 20.48% in the intervention group had less than 3 years of experience. There were also no significant differences in years’ experience between the intervention and control groups (p=0.55).

The results of the years of experience in a position in the borough for which the respondent is working while he or she is answering the questionnaire shows that there were 55 (40.15%) respondents with less than three years of experience in control boroughs and 27 (32.53%) in intervention boroughs. About 39.42% in control boroughs and 39.94% in intervention boroughs have working experience between three to ten years. The number of respondents with more than 10 years of experience was the same in both intervention and control boroughs. The difference between the groups in years’ experience in the borough was closer to statistical significance (p=0.16).

The final question sought to establish the percentage of the position. This question also serves as a check on the inclusion criteria, that the respondent should have at least 50% of the position to be included in the study. From 220 respondents, only one (0.73%) in control boroughs is working in less than 20% of the position. There was one respondent (0.73%) in the intervention borough with a position between twenty and fifty percent position. Around 89.78 of respondents in the control borough and 85.54% in intervention boroughs were working in more than 80% positions. Also, for the percentage of a full-time position equivalent position, there was no significant difference between the groups (p=0.55).

Table 1. Comparing the healthcare workers' occupational background in control and intervention boroughs.

Background variables		Control N	Control %	Intervention N	Intervention %	P value
Occupation						0.470
	Missing	0	0	1	1	
	physiotherapist	33	24	24	28.9	
	Occupational therapist	25	18.2	18	21.6	
	Social Educator	0	0	1	1.2	
	Nurse	61	44.5	28	33.7	
	Helsefagarbeider	6	4.3	4	4.8	
	Others	12	8.7	7	8.4	
Experience						0.554
	Missing	7	5.1	2	2.4	
	Less than 3 years	26	18.9	17	20.4	
	3-10 years	59	43.0	31	37.3	
	More than 10 years	45	32.8	33	39.7	
Borough_years						0.161
	Missing	1	0.7	0	0.00	
	Less than 3 years	55	40.1	27	32.5	
	3-10 years	54	39.4	29	34.9	
	More than 10 years	27	19.7	27	32.5	
Position						0.550
	Missing	1	0.7	1	1.2	
	Less than 20%	1	0.7	0	0.0	
	Between 20- 50%	0	0.0	1	1.2	
	Between 50 – 80%	12	8.7	10	12	
	More than 80%	123	89.7	71	85.5	

4.2 Respondents' experience and knowledge on fall prevention

About the healthcare workers knowledge of fall prevention checklist, the results showed that, even though there was no significant difference between the intervention and control groups in the knowledge and use of the checklist for fall risk assessment, fewer respondents in the intervention boroughs answered that they were unaware of it. About 4% had used the checklist but they think that it has some shortcomings. It is estimated that in 2019 and 2020, the average of follow-up checklists used for patients is 1.75 in control groups and 2.09 in intervention boroughs.

The results of questions about fall documentation showed that there is not a significant difference between intervention and control boroughs in receiving fall reports. Even though the P value of frequency of received fall reports was signifanct (p=0.02) and intervention borough received more fall reports from the emergency medical services during 2019 and 2020. The average of received fall reports in control boroughs were 6.7 while this number is 11.1 n intervention boroughs.

In order to evaluate the information sharing between levels of care, we asked the healthcare workers the rate of notifying patients' GP in case of need for the medical professional study and the results showed no significant difference between intervention and control boroughs and the rate was the same (74%) in both groups. However, the rate of receiving information from the GPs about patients who need fall prevention home visit, was not satisfactory. Only 27% respondents in control boroughs and 20% in intervention boroughs received information from GPs in home care services.

There were questions in the survey which were designed to evaluate the healthcare workers knowledge of training programs on fall risk assessment for the HCW and fall risk prevention for the patient. There was not significant difference between control and intervention boroughs but the health care workers in intervention boroughs were more familiar with training programs rather than HCW in control boroughs. Moreover, the result of our study indicates that there is signifanct difference in having follow up routines for people with a high risk of falls between intervention and control groups (P=0.01). About 81% of respondents in intervention boroughs declared that they are familiar with fall prevention follow up routines while this rate was 66% in control boroughs.

The results showed that health care workers received trainings for assessing patients at risk of fall at the same level in both control and intervention groups and no signifanct difference found between them. Also, they were asked that how often the process leads to fall prevention interventions for the patients and the results indicated no signifanct difference in intervention and control groups.

Table 2. *Comparing the mean scores on survey questions with ordinal responses in control and intervention boroughs.*

Fallprevention questions					**Control**		**intervention**	
	P-value	**Min**	**Max**	**Missing values (%)**	**Mean**	**SD**	**Mean**	**Sd**
Frequency of fall reports	0.02	0	50	122 (55)	6.7	0.8	11.1	1.9
Frequency of follow up checklist	00.01	0	40	112 (50)	1.7	0.0	2.0	0.1
Frequancy of GP notifications	0.47	0	100	149 (67)	26	3.6	30.3	4.4
Manager requestsassesmments of fall risk for paitients [2]	0.32	1	4	7 (3)	1.5	0.06	1.6	0.09
Having received training in assessing fall risk for patients1	0.63	1	3	79 (31)	1.6	0.07	1.6	0.09
Process leads to interventions for the patient3	0.17	1	4	3 (1)	2.6	0.06	2.7	0.09

Note: Grading Scales:

1= To a small or no degree ,2= To some degree, 3= To a large degree, 4= To a very high degree

2= Rarely or never, 2= Quite often, 3=Often, 4= Very often or always

3=1= Rarely or never, 2= Quite often, 3=Often, 4= Very often or always

Table 3. *Defining the number and percentages of fall prevention variables*

Fall prevention question		Control		Intervention		P value
		N	%	N	%	
Receiving fall reports						0.244
	Missing	0	0	0	0	
	Yes	81	60	55	67.99	
	No	54	40	26	32.10	
Being familiar with user training offer to patients						0.268
	Missing	2	1.48	2	2.47	
	Yes	101	74.81	67	82.72	
	No	32	23.70	12	14.81	
Notifying patient's GP						0.984
	Missing	6	4.44	4	9.49	
	Yes	100	74.07	60	74.07	
	No	29	21.48	17	20.99	
Receiving home visitinfo from GP						0.495
	Missing	3	22.2	3	3.7	
	Yes	37	27.41	17	20.99	
	No	95	70.37	61	75.31	
Follow up routines for fall prevention						0.018
	Missing	0	0	0	0	
	Yes	90	66.67	66	81.48	
	No	8	5.93	0	0	
	Don’t know	37	27.41	15	18.52	
Follow up checklist usefullnes						0.126
	Missing	3	2.22	0	0	
	Not aware of checklist	62	45.93	27	33.33	
	Aware of checklist but not used it	33	24.44	23	28.4	
	used the checklist and considers it a good tool	35	25.93	27	33.33	
	used the checklist and believes it has shortcomings	2	1.48	4	4.94	

5 Discussion and conclusion

The City of Oslo has recently implemented a care pathway for elderly patients with an increased risk of falling. The main aim of the intervention is to better integrate hospitals and primary care services so the primary care services can monitor the patients at risk and implement measures that prevent new falls. Moreover, increasing awareness on fall prevention follow up routines in the municipality and care services.

The purpose of this study is to understand whether the intervention has improved the information flow to and from municipal care services regarding the elderly at risk of first and second falls. Although the response rate was low, the results showed that among HCWs who did receive fall reports, respondents in the intervention boroughs reported receiving significantly more reports than respondents in control boroughs. Further, workers in intervention boroughs seemed more aware of follow-up routines for fall prevention and used the follow-up checklist more frequently. Still, a low proportion of the respondents seemed to have used the checklist or received visit from the GP, and the scores on manager assessment of risky patients and receiving training offers were low. Albeit with limited statistical power in the survey, there were few indications of differences between the respondents in years' experience and occupational background.

Based on Vieira et al., A. Lee et al and Al-Aama, a previous fall is the main risk factor for further falls, thus secondary prevention strategies have been conducted for reducing the incidence of second falls in healthcare institutions. The secondary prevention strategies are identifying and documenting high-risk patients to refer them for comprehensive assessments and follow-up. Health care workers in emergency departments and nursing homes have a vital role in preventing further falls by documenting and reporting the risk of falls. (Vieira et al., 2016) (A. Lee et al., 2013) (Al-Aama,2011) Therefore documenting and following up the elderly who have fallen once can prevent the second fall in a high frequency. As a response to this, a checklist has been designed to follow up patients with high risk of falling. The respondents (healthcare workers at homecare services) were asked about the frequency of using follow up checklist and the results were not fully satisfactory. Only 25.9% in control boroughs and 33.3% in intervention boroughs have used the checklist and found it as a good tool for fall prevention. Although the difference between intervention and control boroughs is not

significant but we can see that healthcare workers in intervention borough are more aware of fall prevention checklist.

Despite of the necessity of fall reports documentation, there was a report about the deficient reporting of falls in Norwegian nursing home in 2017, which showed that only 10.6 per cent of reported falls had been documented (Deficient Reporting of Falls in Nursing Homes, 2017) In addition, Røyset et al., claimed in his research that insufficient documentation of falls in two orthopedic department is one of the reasons that a multifactorial fall prevention plan didn't make significant difference in rate of fall (Røyset et al., 2019) Although we did not investigate the fall documentation directly, receiving fall reports from the emergency medical services in order to document and identify patients with high risk of falling were studied. The results of our study showed that respondents in control and intervention boroughs reported that their district received fall reports from the emergency medical services at a fairly similar rate.

Moreover, we asked the healthcare about the usefulness of follow up checklist that has been prepared to be used interdisciplinary in order to follow up people with a high risk of falling 33% of the employees didn't remember to use the checklist, 28% did not use the checklist and 33% have used and believe that it's a good tool.

According to (Yates & Dunnagan, 2001) and (Tinetti et al., 2010), education and trainings as part of a multifactorial interventions can significantly reduce the rate of falling in elderly. Based on the result of our studies about 74% of respondents in control boroughs and 82% in intervention boroughs were familiar with the fall prevention trainings that they can refer the patients toit healthcare workers in intervention boroughs are more aware of training offers.

As Laura M. Wagner mentioned, communication among the healthcare workers is a vital for having an effective fall prevention plan in a long-term care setting. (Wagner et al., 2010) However, our study evaluates the communication between the GP and the homecare services from the perspective of the home care worker only. The result of the survey indicates that the information flow from the GPs to home care services is not as frequent as from the home care services to the GPs. Furthermore, the difference between intervention and control boroughs were not significant with high p-values for these questions. The rate of notifying the patient's GP in case of need for the medical-professional study was 74% in both control and intervention districts, while 70% of respondents in control groups and 75% in intervention

groups didn't receive any home visit information from the GPs. Notifying the GP about the fall history of a patients and vice versa (GPs notifying the home care services) will improve the information flow and accordingly improves the fall documentation.

Healthcare workers in intervention boroughs also report higher frequency of received fall notifications from the emergency service and a tendency of more answering yes to the corresponding question. So, the fact that they are more aware of fall prevention and risk tools, could be because they have more users who fall in among the group of elderly they care for.

5.1 Limitations of the study

The survey captures the practice in the home care services in part during the covid-19 pandemic. Hence, this could have influenced the responses given in the survey, the respondents might have answered differently in a normal setting. The low rate of response implies a limitation in the conclusion that can be drawn from our study, and it makes it difficult to assess if the results are representative. From 1091 invitations only 227 participated in the survey. It is likely that the pandemic can have resulted in a lower response rate than usual as well. The healthcare workers were overworked and participating in a study was perhaps not a priority. Since we could not find any significant differences between control and intervention groups on many of the questions, some of this could be due to low statistical power. Furthermore, the distribution of the respondents' boroughs indicated that the sample was likely not representative with respect to the full population of employees in the home care services in Oslo. Still, a strength of this study is that we had a chance to contact health care workers directly and ask about experience and knowledge of fall prevention awareness. The limited statistical power of our study made it difficult to detect differences between some of the variables like knowledge on training programs, follow-up routines. From the given sample sizes, an approximate power calculation indicates that a difference of at least a 10-15 percentage points between the groups on yes/no questions is required to get statistically significant differences.

Moreover, this study has three Likert questions in the survey and only gives four options of choice, but the challenge is that the intervals between the values cannot be equidistant. As Jamieson, S. says in host study, it is important to presume the correct interval scale for Likert-type categories, as it will affect the significance. (Jamieson,.2004) Accordingly, it is not

possible to measure the true attitudes of respondents. Moreover, there is a possibility that the respondent will be affected by the previous question or concentrate on one response side more than the other. Also based on the studies people avoid choosing extremes on the scale even if an extreme choice would be the accurate one.

5.2 Conclusion

Only three statistically significant differences at 5% significance level were found in information flow between the emergency departments, homecare services and GPs after implementing the new patient process. The actual findings, however, were consistent in their direction, indicating that the boroughs adopting this intervention seem to have better awareness in their home care workers of the existence and use of the checklist for fall risk assessment, training programs both for patients after fall and for HCWs in doing risk assessment, follow-up routines and training referrals. Also, the information flow from home care services to GPs seem more consistent and regular compared with information flow from the GPs to the home care services.

Further research should be carried out in another period to eliminate the effect of covid pandemic and perhaps improve the response rate. It is important to have more research on the actual implementations of different fall prevention interventions in home care services. Then it would be possible to also compare the characteristics and outcomes for the patients of different interventions.

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7 Appendix 1

Fallforebygging i Oslo kommune (tjenester i hjemmet)

Spørreskjema til medarbeidere som utfører helsetjenester i hjemmet i Oslo kommune

Fallforebygging

Oslo kommune utvikler en ny tjeneste for personer som er i risiko for å falle.

Den nye tjenesten innebærer at det sendes en fallmelding fra skadelegevakten med sjekklister til fastleger og hjemmetjenestene i bydelene. Målet er å standardisere og effektivisere fallforebyggende utredning og oppfølging, og med det redusere risikoene for nye fall.

Det er ønskelig å undersøke hvordan fallforebygging skjer i bydelene. Det er derfor satt i gang en evaluering av arbeidet med fallforebygging. Den delen av evalueringen som omfattes av dette spørreskjemaet, går til et utvalg medarbeidere som utfører helsetjenester i hjemmet. Det tar 8-12 minutter å fylle ut skjemaet. Dataene som samles inn vil benyttes i evalueringen og forbedring av det fall- og bruddforebyggende pasientforløpet.

Som en del av evalueringen vil studenter ved Universitetet i Oslo (UiO) også benytte materialet i arbeidet med sine masteroppgaver.

Hvem er ansvarlig for forskningsprosjektet?

Ansvarlig for pilotprosjektet som evalueres, er Oslo kommune, Helseetaten v/Gro Idland (telefon 99032449, e- post: gro.idland@hel.oslo.kommune.no). Ansvarlig for denne delen av evalueringen er Universitetet i Oslo v/Terje P. Hagen (telefon 97564771, e-post: t.p.hagen@medisin.uio.no).

Hvorfor får du spørsmål om å delta?

Som en del av undersøkelsen er det trukket et tilfeldig utvalg ansatte fra Oslos bydeler. Informasjon om din e-postadresse er skaffet til veie av Oslo kommune ved din bydel.

Hva innebærer det for deg å delta?

Gjennom spørreundersøkelsen samler vi inn data om måten det fallforebyggende arbeidet skjer på. Innsamlingen skjer ved elektronisk spørreskjema (nettskjema). Vi registrerer enkelte opplysninger om din bakgrunn, men ikke personlige opplysninger om deg eller pasientene. Dataene som samles inn blir bare benyttet til en forskningsmessig evaluering av forsøket.

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket om deltakelse tilbake uten å oppgi noen grunn. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

UiO behandler opplysningene som samles inn konfidensielt og i samsvar med pesonvernreglementet. Dataene som samles inn blir lagret på en sikker server og blir kun

tilgjengelig for de ved UiO som arbeider på prosjektet. Oslo kommune vil kun få tilgang til resultatene fra analysene og ikke data fra enkeltpersoner.

Når UiO behandler data så blir ditt navn og dine kontaktopplysninger erstattet med en kode. Koblingen mellom navn og kode oppbevares adskilt fra selve dataene og vil bli slettet ved prosjektslutt.

1. I hvilken bydel arbeider du? Dersom du har stillinger i flere bydeler, velg den bydelen der du har høyest stillingsandel. *

o Alna

o Bjerke

o Frogner

o Gamle Oslo

o Grorud

o Grünerløkka

o Nordre Aker

o Nordstrand

o Sagene

o St. Hanshaugen

o Stovner

Søndre Nordstrand

o Ullern

o Vestre Ake

o Østensjø

2. Hvilken yrkesgruppe tilhører du?

- o Fysioterapeut
- o Ergoterapeut
- o Vernepleier
- o Sykepleier
- o Helsefagarbeider
- o Anne

3. I hvor mange år har du samlet sett arbeidet i hjemmetjenestene?

- o Mindre enn 3 år

- 3-10 år
- Mer enn 10 år

4. I hvor mange år har du arbeidet i bydelen der du nå er ansatt?

- Mindre enn 3 år
- 3 - 10 år
- Mer enn 10 år

5. Hvor stor stillingsbrøk har du? Sett ett kryss.

- Mindre enn 20 prosent stilling
- Mellom 20 og 50 prosent stilling
- Mellom 50 og 80 prosent stilling
- Mer enn 80 prosent stilling

6. Kjenner du til om bydelen i løpet av 2019 og 2020 har mottatt fallmeldinger fra Skadelegevakten?

- Ja
- Nei

6b. Hvis ja på forrige spørsmål, anslagsvis hvor mange fallmeldinger ble du samlet sett involvert i 2019 og 2020?

7. Foreligger det rutiner for oppfølging av fallmeldinger/ personer med høy fallrisiko i din bydel?

- Ja
- Nei
- Vet ikke

8. Det er utarbeidet en sjekkliste som kan benyttes tverrfaglig for oppfølging av personer med høy fallrisiko. Vi er interessert i din vurdering av nytteverdien av sjekklista.

- Jeg kan ikke huske å ha sett en sjekkliste
- Jeg har sett sjekklista, men ikke benyttet den
- Jeg har benyttet sjekklista og betrakter den som et godt virkemiddel Jeg har benyttet sjekklista og mener den har mangler

8b. Hvis du mener sjekklista har mangler, hva kan eventuelt forbedres?

9. Anslagsvis hvor mange brukere har du benyttet sjekklisten på i 2019 og 2020?

10. Hvor ofte fører kartleggingen til konkrete tiltak for bruker?

- Sjelden eller aldri

- I noen tilfeller
- Ganske ofte
- Svært ofte eller alle tilfeller

11. I hvilken grad har du fått opplæring i kartlegging av fallrisiko?

- I liten eller ingen grad I noen grad
- I høy grad
- I svært høy grad

12. Er du kjent med fallforebyggende treningstilbud som du kan henvise brukerne til?

- Ja
- Nei

13. Varsler du eller din bydel pasientens fastlege dersom det er behov for medisinsk-faglig fallutredning?

- Ja
- Nei

13b. Hvis ja på spørsmål 13, anslagsvis hvor stor prosentandel av pasienter med fallrisiko gjelder dette?

14. Mottar du som medarbeider systematisk informasjon fra pasientens fastlege om pasienter som har behov for fallforebyggende hjemmebesøk?

- Ja
- Nei

15. Hvor ofte etterspør din leder utredning av brukere som er definert med fallrisiko?

- Sjelden eller aldri
- Nokså ofte
- Ganske ofte
- Svært ofte eller alltid

16. Hva mener du kan være viktige grep som Oslo kommune kan ta for å bedre det fallforebyggende tilbudet til eldre personer?