UiT
THE ARCTIC UNIVERSITY OF NORWAY

Faculty of Health Sciences
Department of Health and Care Sciences

Ambiguity and professional accountability in physiotherapy practice

Acquired brain injury rehabilitation across health care levels

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Eirik Lind Irgens

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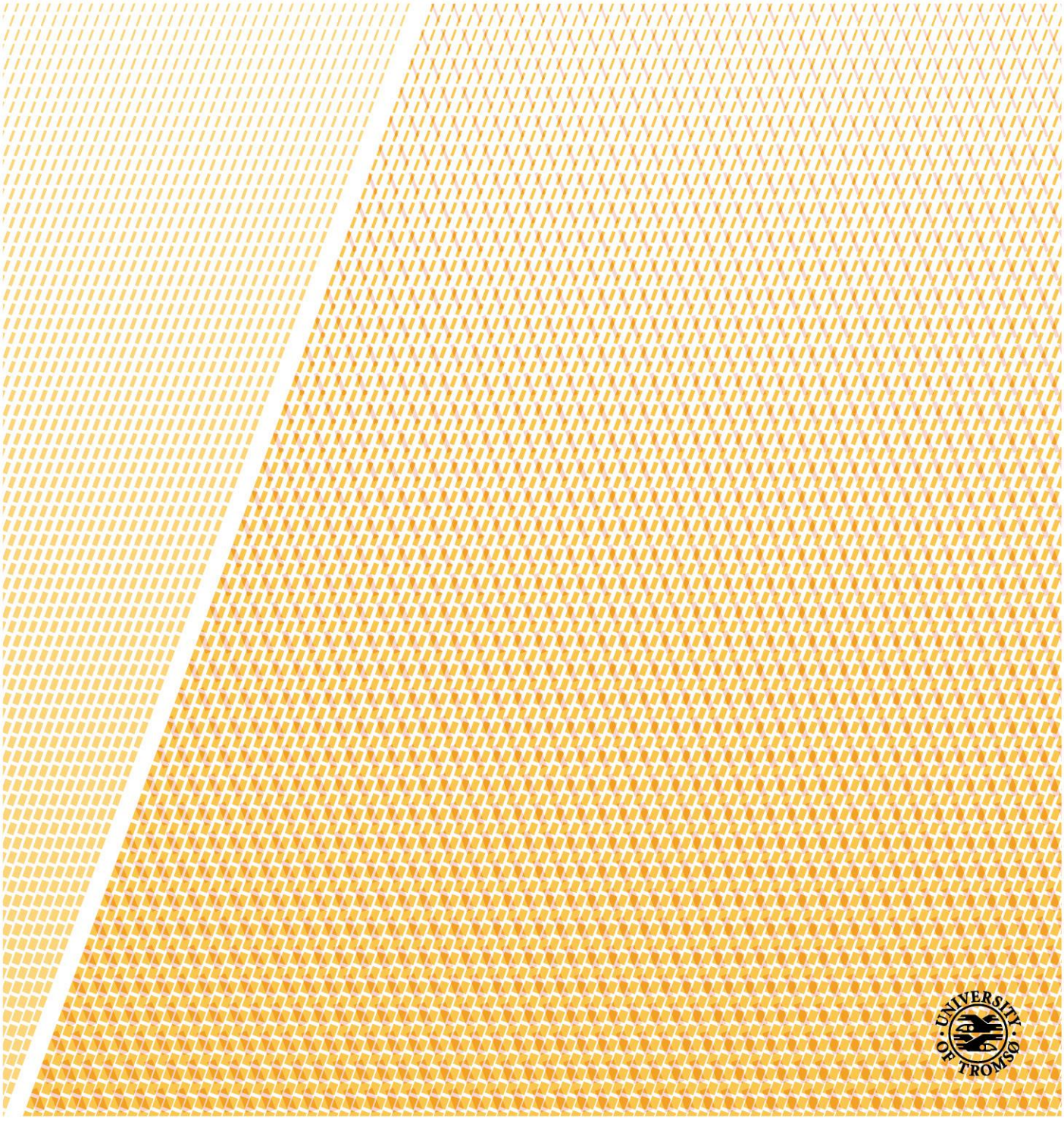

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Contents

Abstract

At the time of this study, the Norwegian health care system was in the middle of the implementation of the Coordination reform, initiated in 2012 due to insufficient coordination and an increase in health care service expenditure. Earlier hospital discharge and increased municipal responsibilities for rehabilitation following acquired brain injuries (ABI) challenge the traditional rehabilitation trajectories and the physiotherapists' efforts to enable ABI patients' recovery. The aim of the study "Ambiguity and professional accountability in physiotherapy practice – Acquired brain injury rehabilitation across health care levels" was to explore the physiotherapy practices in ABI rehabilitation trajectories by investigating how the involved physiotherapists experienced the process of transferring patients and coordinating physiotherapy services in the aftermath of the reform.

The research adopted a social constructionist approach with a qualitative design. The focus was the physiotherapists' perceptions, experiences and viewpoints regarding the redistribution of responsibilities following the coordination reform; potential practice variations in rehabilitation trajectories; and the communication of information and professional knowledge across health care levels. Interviews, field observations and collection of hospital discharge papers were conducted with specialist and primary health care physiotherapists involved in a total of 10 patients' rehabilitation trajectories following ABI. The study was conducted in northern Norway. The physiotherapists shared their experiences and opinions regarding neurological rehabilitation services in the aftermath of the Coordination reform introduced in 2012. The three articles in the thesis relate to different aspects of providing physiotherapy services for persons recovering from acquired brain injuries. The articles highlight the physiotherapists professional dilemmas related to service provision, perspectives on physiotherapy practice variations, and physiotherapists' experience and viewpoints regarding the communication and development of physiotherapy knowledge in ABI rehabilitation trajectories. The study suggests that the physiotherapists experience dilemmas and conflicting values due to changes in the organization and provision of health care services in the aftermath of the Coordination reform, and emphasize how physiotherapy practice in ABI rehabilitation trajectories reside in complex social, cultural and political realities. Collaborative physiotherapy practices in rehabilitation trajectories that span health care levels and organizational contexts offer opportunities facilitate the ABI patients' recovery, and to further develop physiotherapy knowledge and practice.

List of publications

This thesis is based on the following articles:

- Irgens, E, Henriksen N & Moe S (2016): *Acquired brain injury rehabilitation: dilemmas in neurological physiotherapy across healthcare settings.* European Journal of Physiotherapy, DOI: 10.1080/21679169.2016.1181206

- Irgens, E, Henriksen N & Moe S (2018): *Variations in physiotherapy practice in neurological rehabilitation trajectories – an explorative interview and observational study*. Physiotherapy Theory and Practice, DOI: 10.1080/09593985.2018.1480679

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Abbreviations

Abbreviations frequently in use:

ABI Acquired brain injury

ADL Activities of daily living

ART Outpatient rehabilitation services (abbreviation in Norwegian)

ESD Early Supported Discharge

PrPT Primary health care physiotherapist

SpPT Specialist health care physiotherapist

PT Physiotherapist

TBI Traumatic Brain Injury

1 Introduction

This thesis is based on a study of physiotherapists' perceptions and reflections regarding their practices in rehabilitation trajectories following acquired brain injury (ABI). Its title is "Ambiguity and professional accountability in physiotherapy practice – Acquired brain injury rehabilitation across health care levels".

Norway ranks among the highest of all OECD (the Organization for Economic Co-operation and Development) nations in public health spending per capita. The Norwegian Ministry of Health and Care Services has argued that insufficient coordination and the increase in health care service expenditure are unsustainable. More people are falling ill, the population is aging, more people need help for longer periods, more diseases are becoming treatable, and the queues in the specialist health care level are increasing. In recent decades, there has been a shift in the organization of health and care services. The implementation of the Coordination Reform in 2012 represents such a shift in the service organization and the provision of health and care for the Norwegian population. The aim of the Coordination Reform has been to ensure that each citizen can receive appropriate treatment – at the right place and right time (Norwegian Ministry of Health and Care Services, 2009b) - in response to three primary challenges:

- Patients' needs for coordinated services are not sufficiently met
- There is too little effort to limit and prevent disease
- The population demographics and the range of illnesses are changing

Several measures have been taken to meet these challenges, including economic incentives, reorganization of health and care services in terms of responsibilities, and increased emphasis on cooperation across health care levels. The Norwegian Ministry of Health and Care Services proposed a new, extended role for the municipalities that emphasized prevention, early intervention efforts, low-threshold initiatives, and interdisciplinary measures. Furthermore, the municipalities' responsibility for rehabilitation was emphasized in a National Strategy for Habilitation and Rehabilitation in 2007 (Norwegian Ministry of Health and Care Services, 2007) that stated that rehabilitation should be offered at the lowest effective level of care.

Against this backdrop of the recent efforts to reform the organization of health and care services in Norway, this study aimed to explore physiotherapy practices in rehabilitation trajectories for people recovering from acquired brain injury (ABI). ABI is a major cause of disability and mortality both in Western countries (Bender et al., 2016; Sollid et al., 2008; Sundstrøm, Sollid, Wentzel-Larsen, & Wester, 2007) and worldwide (Rutland-Brown, Langlois, Thomas, & Xi, 2006; Undén, Ingebrigtsen, & Romner, 2013), and rehabilitation following ABI requires complex interventions across health care levels. Physiotherapy services are considered important in neurological rehabilitation as part of a multidisciplinary approach that spans professions and health care levels (Baque, Sakzewski, Barber, & Boyd, 2016). The scope and complexity of ABI and the subsequent rehabilitation efforts, which often involve both the specialist and primary health care levels, require the coordination of services and collaborative practices across health care levels. Consequently, rehabilitation following ABI includes several factors addressed in the recent reforms introduced in Norway. In this context, we chose to investigate aspects of ABI rehabilitation trajectories from the perspective of physiotherapists.

We performed a qualitative interview and observational study of 19 physiotherapists involved in the rehabilitation trajectory of 10 people recovering from ABI. The point of departure was the patients' initial hospital rehabilitation. We interviewed the treating physiotherapists and performed field observations of physiotherapy treatment sessions both prior to hospital/institutional discharge and once the patient was back in his or her home community. Furthermore, we performed one follow-up interview with the community physiotherapist 3 months after the initial interview. We also collected hospital discharge papers, which validated the background information regarding the patients and the initial phase of the rehabilitation trajectory.

This thesis is organized in 9 chapters. Chapter 2 provides an overview of the background of the project by describing chosen aspects of knowledge regarding acquired brain injuries; the organization and development of health care services in Norway; rehabilitation and continuity of care; and physiotherapy and rehabilitation trajectories. Chapter 3 presents the aim of the study and the three articles. Chapter 4 outlines the theoretical framework and perspectives utilized to discuss the results of this study. Chapter 5 presents the study's methodology and methods related to recruitment procedures, data collection, data analysis as well as the ethical and methodological considerations. Chapter 6 presents a summary of the three articles,

whereas chapter 7 contains a discussion of the results of the three articles in context. Chapter 8 and 9 presents the concluding remarks and possible implications; and some possible implications for physiotherapy practice in neurological rehabilitation, respectively.

2 Background

2.1 Acquired brain injury

Patients with ABI comprise a heterogeneous group suffering from brain damage due to a variety of causes. However, one characteristic of ABI is that it often involves complex functional disabilities and requires protracted and extensive health and care services. Acquired brain injury (ABI) is a common term for sudden damage to the brain caused by either traumatic or nontraumatic injury. Congenital abnormalities, degenerative diseases, and brain injuries occurring during birth or the neonatal period are usually not included in the ABI definition. ABI includes numerous conditions, such as head trauma due to external forces, hypoxia, toxic or metabolic insult, infection, and ischemic or hemorrhagic stroke. Although stroke is often included in the ABI definition, most research seems to concentrate on either stroke populations or nonstroke ABI populations (usually TBI). Early intervention and high-intensity treatment have been shown to be beneficial for optimizing rehabilitation efforts.

Due to the heterogeneity of ABIs, which range from traumatic head injuries in young adults due to sports and traffic accidents, e.g., to strokes in the elderly population, the incidence of ABI has proven difficult to determine. Furthermore, research generally avoids extrapolating results from mixed population studies, which has proven to be challenging when relating findings to the entire ABI population. Additionally, there are large differences in the characteristics of ABI populations among countries and continents, and there is considerable variety in the methodological approaches used in epidemiological studies regarding ABI (Tagliaferri, Compagnone, Korsic, Servadei, & Kraus, 2006).

The estimated annual incidence rate of ABI in Western society has been shown to vary considerably. Several countries report on various types of ABI, such as TBI and stroke. Among Western countries, several report a stroke incidence of 100-300 (Béjot, Bailly, Durier, & Giroud, 2016; Ellekjaer & Selmer, 2007) per 100 000, and the incidence of hospital-treated TBI is reported to be 100-300 per 100 000 (Cassidy et al., 2004; Ingebrigtsen, Mortensen, & Romner, 1998; Rutland-Brown et al., 2006; Tagliaferri et al., 2006; Truelsen et al., 2006). The death rate following TBI in Europe is reported to be approximately 15 per 100 000 (Tagliaferri et al., 2006), although the incidence of TBI-related deaths was shown to vary significantly among the Nordic countries (Sundstrøm et al., 2007). The mortality rate following TBI varies considerably between developed and developing countries, among

Western countries and even among different regions within the same country (Truelsen et al., 2006). Stroke is a major cause of nontraumatic brain injuries and is the second leading cause of death worldwide. Although rates of stroke mortality in Western countries have decreased the past two centuries, the annual number of people who suffer from stroke and the overall global burdens of stroke are high and increasing (Béjot et al., 2016; Feigin et al., 2014). Furthermore, the incidence of stroke is still rising in developing countries.

2.2 Health care service developments and reformative work in Norway and Western countries

Public health and care services in Norway are regulated by acts and regulations that aim to ensure each citizen's right to receive adequate and individually tailored services. The state is responsible for all hospitals, including regional university and local hospitals, which are organized into four regional health authorities; in contrast, most other health and care services are the responsibility of local authorities. In this context, ABI rehabilitation spans health care levels and sectors. In Norway, the governmental authorities represented by the Norwegian Ministry of Health and Care Services are responsible for directing health policy and regulating resources and health professionals. Most of the Norwegian health and care services provided at both the specialist and primary health levels are free of charge or subsidized, which underscores the governmental responsibility assumed in a welfare state (Vike, 2004). In the international context, the standard of Norwegian health and care services is considered high (Norwegian Ministry of Health and Care Services, 2015a). Equal and universal access to health and care services is a leading principle in Norway and most other welfare countries in Europe and other Western societies. Nevertheless, many of these countries have identified similar challenges related to the provision of health and care services and have initiated various health care reforms to address these issues (Grimsmo & Magnussen, 2015). The fragmentation of health and care services in primary care, inadequate preventive health care efforts, and unsustainable health- and care-related costs are common challenges across Western societies (Bauld et al., 2005; Bidgood, 2013; Grimsmo & Magnussen, 2015; Steel & Cylus, 2012; Vrangbæk & Sørensen, 2013).

Reformative work within health and care services in Western societies in recent years has focused on the improvement of both service provision quality and economic rationalization.

This dual focus presents challenges related to the planning, prioritization and provision of health and care services as the health care system needs to be evaluated in terms of performance and resource expenditure as well as service quality and the safety and well-being of patients and clinicians (Croker, Sheehan, & Iedema, 2014). The introduction and implementation of the Coordination Reform in Norway emphasized improved collaboration between specialist and primary health care services to reduce the fragmentation of health care service provision across health care levels. This reformative work substantiated the trends towards earlier hospital discharge and increased responsibility for health and care services, including rehabilitation services, among municipalities. The coordination of health care services is of special importance following ABI given the complex and extensive patient needs (Norwegian Ministry of Health and Care Services, 2009b; Scottish Intercollegiate Guidelines Network (SIGN), 2013). Currently, Norwegian municipalities report difficulties with adjusting their provision of rehabilitation services to align with changes in the rehabilitation services provided at the specialist level. To date, municipalities have only increased their resources and competence to a limited degree in the face of earlier hospital discharges and increased responsibility for providing rehabilitation services (Office of the Auditor General of Norway, 2016). The Norwegian Ministry of Health and Care Services confirms a need for increased capacity, increased competence, new services and better organization of primary health and care services (Norwegian Ministry of Health and Care Services, 2015a).

2.3 Rehabilitation and continuity of care

Rehabilitation comprises a set of interventions designed to optimize functioning and reduce disability in individuals with health conditions in interaction with their environment, as defined by the World Health Organization (WHO) (2011). Until 2018, the Ministry of Health and Care Services in Norway (1999) defined rehabilitation as time-limited planned processes with clear aims and means, involving several actors who cooperate to enable users to pursue optimal functional levels and coping skills, independence and participation socially and in the community. The definition included a time aspect, goal-oriented planning, cooperation among health and care service providers and the pursuit of optimal function and coping in society. In 2018, a new definition was adopted (Norwegian Ministry of Health and Care Services, 2018) that highlighted the user perspective in planning and setting goals for rehabilitation

interventions and removed the previous time-limited perspective on rehabilitation processes to emphasize that some individuals may need life-long interventions.

In recent years, the foundation of the rehabilitation definition has been contested. Hammel (2006) argues that the rehabilitation field's focus on the reacquisition of normal bodily functions following illness and injuries is too prominent and calls for increased attention to the disability aspect. She argues that the main goal of rehabilitation services should be for patients "to live well" with impairment despite functional deficits, with an emphasis on social opportunities, privileges and status. The main goal of her argument is to contest assumptions that underlie the field of rehabilitation and to include more and complementary perspectives. Inspired by anthropological perspectives and social theories, she emphasizes the liminal phase of a person's transition between different statuses in society, the "*ambiguous state of being between states of being*" (Hammell, 2006, p. 288), and relates this to rehabilitation practices. In anthropology, the liminal phase of transition is closely related to a person's sense of self and identity as it describes rites of passage, i.e., the period between a previous and a new status in society (Turner, 1995).

Within the field of rehabilitation, the period of enablement (Whyte, 2014; Whyte & Barrett, 2012) following injury or disease can be considered a liminal phase of transition (Murphy, 1990; Murphy, Scheer, Murphy, & Mack, 1988). The rehabilitation phase following ABI may be long and often involves institutionalization and the disruption of the patient's previous social life. The anthropologist Murphy described long-term physical impairment as a state of being "*neither sick nor well, neither dead nor fully alive, neither out of society nor wholly in it*" (1990, p. 131). This liminal phase of transition often coincides with the rehabilitation period from hospitalization following brain injuries to the resumption of everyday life. Hammel (2006) calls for a stronger focus on the ambiguity that patients feel following the disruption of a way of living that they once took for granted and questions the strong emphasis on reacquisition of normal physical function rather than the social dimensions of disability and "living well" despite impairments. Furthermore, she claims that the process of reintegration and re-establishing identity and everyday life extends beyond the first phase of rehabilitation, as the consequences of disabilities first become evident after everyday life is resumed.

In recent years, the length of in-hospital rehabilitation stays has decreased (Bender et al., 2016; Rollnik & Janosch, 2010), and several studies have investigated the effects of earlier hospital discharge combined with extra support in the homecoming phase (Hankey & Langhorne, 2006; Hofstad, Gjelsvik, Næss, Eide, & Skouen, 2014; Langhorne, Bernhardt, & Kwakkel, 2011; Rasmussen et al., 2016; Siemonsma et al., 2014). In Norway, this focus has been reinforced by the implementation of recent health care reforms that introduced incentives to meet the challenges of health and care service provision (Norwegian Ministry of Health and Care Services, 2009b). Although some economic incentives have been removed, such as municipalities' co-financing of health services provided at the specialist (hospital) level (Monkerud & Tjerbo, 2016), the trend towards earlier hospital discharge has continued. Consequently, municipalities will have to continue to provide rehabilitation in the community setting via institutional, outpatient or home-based services. This situation increases the importance of both the transitional phase after the institutionalized hospital stay and the municipalities' responsibility for further rehabilitation efforts in the patients' home communities.

Feiring (2012) describes one trend health and care development in Norway as the dynamic between political-administrative and professional practices in the field of rehabilitation have become more complex: namely, administrative control is being strengthened at the same time that the voices of private and professional actors are increasingly heard. This trend is seen in the development of greater cooperation and more intermingling of governing strategies (both hierarchical and traditional), private interests and public solutions and an increase in horizontal networking (collaboration and participation in management systems across administrative levels and sectors at the interface between public and private). Such changes are supported by an article by Solvang, Hanisch and Reinhardt (2016) that advocates an extended view of rehabilitation practices that positions individuals with disabilities, professionals and governmental authorities as agents that act on the micro (individual), meso (organizational) and macro (political/jurisdictional) levels of society. From this perspective, rehabilitation practice is characterized as a cross-disciplinary field in which different actors are invested. Feiring (2012) concludes that rehabilitation has become a knowledge practice characterized by a synthesis of management strategies, professional theories, experiences and reflections, and client experiences.

2.4 Physiotherapy practices and rehabilitation trajectories

The first Norwegian physiotherapy association and education program were established in 1895 and 1897, respectively (Thornquist, 2014). Historically, physiotherapists in Norway have worked as either private practitioners who provide physiotherapy services to a limited part of the population, mainly people of working age, or in hospitals (Thornquist, 2014). The Municipal Health Care Reform of 1984 in Norway, accompanied by The Municipal Health Care Act, established municipal responsibility for providing physiotherapy services to all residents. The government introduced operating grants for private practitioners and government grants for municipally employed physiotherapists to provide better access to and distribution of physiotherapy services in the municipalities. The introduction of municipal responsibility for providing physiotherapy services and the economic incentives introduced led to an increase in the number of physiotherapists working in the municipalities. This led to better access to physiotherapy services for children and adults with disabilities and chronic diseases and has had a positive impact on the physiotherapy profession in Norway.

In a 2009 report on physiotherapy services at the primary health care level from the Ministry of Health and Care Services (2009a), private practitioners reported having special interest and competence in sports, manual therapy and orthopedics, whereas employed physiotherapists reported special interest in providing physiotherapy for children and adolescents, neurology patients and geriatric patients. This finding shows a distribution of physiotherapy services for a variety of diagnoses and groups of patients in the municipalities. However, at the beginning of the twenty-first century, the growth in full-time equivalent (FTE) physiotherapists in Norway ceased to develop despite an increasing population and an increased demand for physiotherapy services (Norwegian Ministry of Health and Care Services, 2009a; The National Statistical Institute of Norway, 2012). Issues regarding the insufficiency of physiotherapy resources have been actualized by the increased municipal responsibility for providing rehabilitation services as physiotherapy is considered an important part of rehabilitative efforts (The Norwegian Physiotherapy Association, 2012; Veerbeek et al., 2014). Furthermore, physiotherapy services in the municipalities have been characterized as generalized given the variety in diagnosis encountered in this setting (Aadal, Pallesen, Arntzen, & Moe, 2018; Kaale & Nanna, 2002); in contrast, specialist health care physiotherapists more often work in specialized hospital units, providing physiotherapy

services to defined groups of diagnoses. Consequently, the level of specialization in the physiotherapy profession is affected by workplace affiliation and responsibilities.

In rehabilitation trajectories following ABI, patients often move across health care levels for diagnosis, treatment and rehabilitation. This transitional phase has been subject to extensive research to improve coordinated care (Bodenheimer, 2008; Coleman & Boult, 2003; Laver et al., 2014; Turner, Fleming, Ownsworth, & Cornwell, 2008). Several studies have explored how patients and their partners and next of kin perceive these transitions. However, we have found few studies investigating physiotherapists' perceptions and viewpoints of rehabilitation trajectories following ABI, particularly in relation to reform initiatives. Searches were conducted in different databases, including Pedro, Cinahl, PubMed, Medline and Embase, to identify articles relevant to the main objective of this study and to investigate physiotherapists' experiences and perceptions of the rehabilitation trajectories of people with ABI. We used various terms and keywords independently or in combination when searching the databases: "Physiotherap*", "physical therap*", "experience*", "perception*", "attitude*", "view*", "rehabilitation", "brain injur*", "head injur*", "traumatic brain injur*", "acquired brain injur*", "stroke", "cerebrovascular accident*", "cva", "reform*", "change*", "improvement*". We searched for articles published from 1970 to date and found few studies that explicitly dealt with physiotherapists' experiences and perceptions regarding ABI rehabilitation trajectories. However, we also searched for articles focusing on similar aspects of ABI rehabilitation trajectories, and we read the reference lists to identify other relevant studies. While the broad scope of the literature searches made it challenging to investigate all emerging topics thoroughly, they provided an overview of previous studies related to our study aim.

In a review study on the transition from hospital to home for individuals with ABI (Turner et al., 2008), qualitative studies focused on patients and caregivers' perspectives. These studies and others highlighted that the transition from hospital to home was a stressful, emotional and challenging time that challenged the individuals' sense of personal identity, autonomy and life perspectives (Conneeley, 2003; Fraser, 1999; Nalder, Fleming, Cornwell, Shields, & Foster, 2013; Olofsson, Andersson, & Carlberg, 2005; Paterson, Kieloch, & Gmiterek, 2001; Rittman et al., 2004; Unsworth, 1996). One of the studies also included the viewpoints of the health care professionals involved and identified discrepancies between the perceptions of ABI patients' family members and those of the professionals regarding the information and

teaching provided during the transition process (Paterson et al., 2001). Furthermore, several articles on continuity and coordination of care were found; these focused on various aspects that affected patient transitions (Bodenheimer, 2008; Coleman & Boult, 2003; Moore, Wisnivesky, Williams, & McGinn, 2003) and the communication of information during patient transitions from the perspectives of various health care professionals (Callen, Alderton, & McIntosh, 2008; Kim et al., 2013; Kripalani et al., 2007; Thornquist, 2007).

3 Aims of the study

The foundation of the work presented in this thesis was the implementation of reform initiatives that aimed to improve health care services in Norway, including neurological rehabilitation following ABI (Norwegian Ministry of Health and Care Services, 2009b, 2011b). The reform expanded municipal responsibility for providing rehabilitation services following brain injuries, along with economic incentives to transfer patients from hospitals earlier. Physiotherapy services play an important part in rehabilitation efforts following ABI. The organization of health care services make up the bedrock for providing efficient and good quality physiotherapy services, and reform initiatives altering and allocating responsibilities within the health care system may affect the service provision. Our rationale for this study was to explore the physiotherapy practices in ABI rehabilitation trajectories by investigating how the involved physiotherapists experienced the process of transferring patients and coordinating physiotherapy services in the aftermath of the reform. Few studies have examined physiotherapists' experiences following reforms that involved both the specialist and primary health care level, and based on this rationale, we asked the following research questions:

1) How do physiotherapists experience and address challenges arising from the implementation of redistributed responsibilities in neurological rehabilitation following the Coordination Reform in Norway?
2) How do physiotherapists perceive physiotherapy practice variations across health care levels in neurological physiotherapy?
3) How do physiotherapists experience the way patient information is communicated across health care levels in ABI rehabilitation, and what factors do the physiotherapists consider to facilitate and impede the transfer of knowledge?

4 Theoretical framework

This section will present an account of the theoretical framework of this dissertation. First, I will describe the social constructionist perspective applied in this study. Next, I will discuss theoretical perspectives that are relevant to the analysis and discussion of the results. Theories on professionalism and accountability, practice knowledge and communities of practice provided complementary perspectives and conceptions that contributed to the interpretations and discussions in this thesis.

4.1 Social constructionist theories and interactionist perspectives

Complex processes that include both various participants and different contexts characterize the field of health care in general and neurological rehabilitation specifically. This complexity led to the application of the social constructionist perspective in this study as we acknowledge the multiple and bilateral influences of a variety of political, organizational, institutional and personal factors to individuals' descriptions, explanations and accounts of the world in which they live (Burr, 2015; Gergen, 1985; Solvang et al., 2016). Theories of institutionalization, legitimation and socialization processes provide an explanatory framework as we try to understand how individuals' subjective meanings are formed and developed in interaction with others and are influenced by the historical and cultural norms of the society in which they live (Berger & Luckmann, 1984). Habitual actions and human behaviors in specific contexts can be understood as typifications of habits that are institutionalized within a social environment. These typifications often serve as rules that are taken for granted within the society in which they occur and play an important role in defining which actions and opinions are considered normal and acceptable.

In applying this perspective, we emphasize the relevance of established habits and norms that are taken for granted within the specific social communities of practices in which they occur (Berger & Luckmann, 1984; Lock & Strong, 2010; Wenger, 2000). Furthermore, Mahoney and Thelen (2010b) emphasized the importance of the interaction between the overall political context and the institutions themselves. This interaction is important for explaining how and why institutional changes occur and emphasizing the dynamic components built into the institutions. As such, institutions often represent compromises and sometimes-contested settlements that are vulnerable to shifts and may be subject to power relations, the mobilization of resources and the interrelations among different institutions (Mahoney &

Thelen, 2010a). Social constructionism often aims to question fundamental assumptions in societies and is concerned with language, action and processes and considers the environment, culture, personal interactions, and practices in context (Young & Collin, 2004). These considerations provided relevant insights as we sought to investigate the rehabilitation processes following neurological injuries in the aftermath of reform. Although we specifically investigated the physiotherapy perspective on neurological rehabilitation services, the institutional framework and contextual variations as patients move along the rehabilitation trajectory influence individuals' opinions and perceptions. Therefore, it was important to apply a theoretical framework that accounted for factors that may influence human and social practices to increase our understanding of the physiotherapists' actions and expressed perceptions within the broader institutional and political context (Andrews, 2012; Berger & Luckmann, 1984; Gergen, 1985; Mahoney & Thelen, 2010b).

The interactionist perspective is relevant in studies of professional practice (Måseide, 2008). It emphasizes the relationship between professionals' actions and the contextual aspects that affect interactions (Måseide, 2003); that is, the actions are socially situated (Goffman, 1983). The sociology of knowledge includes a number of different scholars, and one debate that has emerged over time is regards the roles of macro and micro perspectives in sociology. Various structuralists emphasize the ability of social arenas to explain human behavior, whereas others highlight the importance of individuals' capacities for shaping their social surroundings (Lock & Strong, 2010). Although the notion of conjoining social and individual life was proposed by Berger and Luckman several years ago (1984) as they built on phenomenological insights (Alvesson & Sköldberg, 2009; Schütz & Luckmann, 1974), there has been a divide among scholars who emphasize one perspective or the other. However, within the discipline of sociology, several scholars have influenced contemporary social constructionism by bringing the social and the individual perspectives together (Lock & Strong, 2010). Burr (2015) calls for a social constructionism that is capable of bridging the gap between individual experience and social structure, inspired by interactionist perspectives that aim to transcend the dualisms of social science. Lock and Strong (2010) and Burr (2015) provide examples of the influence of interactionist perspectives by highlighting the work of Garfinkel (1967), Goffman (1971) (1986), Giddens (1976) and Davies & Harré (1990); in various ways, these authors emphasize how we construct and, through our interactions, sustain the varying contextual and cultural features of social reality. Considering the background and rationale of our study, both macro

and micro perspectives of social life were meaningful for understanding the relationships between political and organizational preconditions for providing rehabilitation services and the interaction and cooperation among professionals on the individual level.

4.2 Professionalism and accountability

Professionalism can be viewed as a set of institutions that allow the professional worker to make a living and control his or her own work. Freidson (2001) emphasizes two characteristics of professional work: the work is so specialized as to be inaccessible without the required training and experience, and the work cannot be standardized or rationalized. Although Freidson uses "skills" and "knowledge" interchangeably, he considers both terms essential to professional practice as they complement one another (Freidson, 2001). He distinguishes between formal substantive knowledge and the tacit facilitating skills of applying the knowledge to the actual case or situation. Citing Polyani (1962) and Schön (1991), he relates performative aspects to the unverbalized or unverbalizable practical dimension of knowledge. The practical dimension of health care professions involves engaging and intervening in other peoples' lives and highlights both the use of formal specialized knowledge and the execution of moral, political and legal discretion (Grimen, 2008).

Within the area of health and care services, the idea of a professional embodies a moral conviction that each patient will receive the type and amount of care that is needed (Purtilo & Doherty, 2016). At the same time, the professional will have to take into account institutional policies and practice and work within the available resources and limitations of the professional context. Given professionals' delegated jurisdictions, they are required to base their work on discretionary judgements and the individual needs of the patient. As street-level bureaucrats (Lipsky, 1980), they must advocate for and regulate public services in accordance with normative expectations regarding the quality and content of the services, the moral and just distribution of services, and the benefit of the individual patient (Molander & Terum, 2008). According to Vike (2004), these various considerations may be experienced as contradictory as professionals are supposed to provide good-quality welfare services while simultaneously distributing limited resources among those who need them the most. The dilemmas associated with executing discretionary powers as street-level bureaucrats may be

related to the discrepancy between the politically approved ambitions of the welfare state and the resources available for completing these tasks.

In recent decades, the self-regulatory mechanisms controlled by the professional fields themselves (Abbott, 1988; Freidson, 2001) have been challenged by changes in the postindustrial and knowledge societies (Noordegraaf, 2007). These challenges have been described as a weakening of professionals' authority and integrity and are largely connected to increased organizational control mechanisms linked to managerialism and new public management (Evetts, 2013; Freidson, 2001; Reed, 1996), which are characterized by an increased focus on accountability, evidence-based interventions and effectiveness. However, by reinterpreting professionalism according to the effects of societal forces on professional work (that is, relating the developments to wider social and societal trends and developments), Noordegraaf (2016) proposes a broader theoretical and analytical perspective on professional work that acknowledges that professionalism is affected by more than managerial reforms. He holds that professional work is affected by a variety of changes in society, such as the commercialization and privatization of health care systems, increasingly complex cases, increased cooperation within and across professions, demographic changes within workforces, new technologies and altered distributions of responsibilities. He describes the "new" professionalism as more dependent on connectivity in terms of connecting to other professionals, other disciplines, and "outside worlds". The role of professionals is increasingly characterized by heterogeneity within the profession and is influenced by societal tendencies within a more complicated service reality.

4.3 Practice knowledge and communities of practice

The physiotherapy profession is largely practice oriented as the body and movement are central to physiotherapy practice. Physiotherapists are often ambassadors of physical activity and make extensive use of active interventions for patients with various disabilities. This approach requires close, often bodily interaction with the patient in terms of guiding exercises and movements and providing physical and cognitive support to enable patients to regain their functional abilities. Because of its status a recognized profession in most countries worldwide, the body of knowledge regarding physiotherapy is increasing, and research on various aspects of physiotherapy practice is growing. Consequently, the physiotherapy

profession is both theoretical and practical. The theoretical and practical dimensions of the profession imply both explicit and tacit forms of knowledge. The explicit forms of knowledge are often easier to express and describe in words and writing, whereas the tacit dimensions of practice have been described to be incorporated into the performative aspects of the physiotherapy role and not possible to fully express in words (Molander, 1996; Schön, 1991). Although research plays an important part in the development of professional knowledge and practice and some of the practical dimensions of physiotherapy practice have proven more difficult to convey scientifically, Higgs et al. (2004) argues that practitioners and researchers should continue to search for new tools for investigating, describing and measuring it. In practice-oriented professions, clinical reasoning is viewed as a bridge between practice and knowledge (Higgs, Jones, Edwards, & Beeston, 2004). Clinical reasoning is the utilization of practice knowledge, research theories and experience as the basis from which professionals act in practice situations. Furthermore, the clinical reasoning process contributes to an awareness that enables practitioners to identify the limitations of their current knowledge and generate new knowledge.

Schön (1991) and Molander (1996) elaborate on aspects of practice knowledge in their emphasis on the professionals' abilities to handle situations of insecurity, instability and conflicting values. Schön argues that a technical rationality position that regards practical knowledge as the application of universal theories and principles to a unique situation is insufficient to explain the complex processes of professional practice (Dahlgren, Richardson, & Kalman, 2004; Schön, 1991). Grimen (2008) characterizes the body of professional knowledge as a complex phenomenon that includes theoretical insights, practical skills and experience. Molander and Schön emphasize the dialogical dimensions of knowledge development in practice-oriented professions. They accentuate embodied knowledge, which refers to development of expert knowledge in practice and the transfer of such knowledge through interaction in action. Molander considers the articulated and tacit dimensions to be different aspects of professional knowledge. This conceptualization helps us to understand clinical encounters and practice situations - both interactions with patients and interaction and cooperation among physiotherapists in relation to a patient - as ways of developing professional knowledge.

Eraut (2000) claims that most human learning does not occur in formal contexts, such as formally organized learning programs or events, but in nonformal learning in everyday life

situations. According to Eraut, this is also true of professional practice knowledge, although he argues that the tacit dimensions of personal knowledge and "know-how" are difficult to describe and explain explicitly. Furthermore, the context in which professionals acquire and use knowledge influences and shapes its content. The aforementioned clinical reasoning process contributes to the generation of new knowledge. While some propose learning aspects of clinical reasoning (cf. Higgs et al. (2004)) that focus largely on individuals' personal professional development, others place increased emphasis on the social dimensions of learning and professional development (e.g., Lave & Wenger (1991), Wenger-Trayner & Wenger-Trayner (2015) and Wenger (1998, 2000)). The development of professional practice knowledge can be understood in light of theories of socially situated activities (Lave & Chaiklin, 1993) and knowledge production (Wenger, 2000). The emphasis on situated practices in professional work highlights the complex and intertwined processes of learning and professional development, as knowledge acquisition requires reconceptualization as a cultural and social product. This understanding of the importance of the social and cultural context in which practices develop emphasizes both the underpinning theoretical assumptions and the sociopolitical dimensions of physiotherapy knowledge and practice (Gibson, Nixon, & Nicholls, 2010; Gibson & Teachman, 2012). Wenger (2000) proposes a theory on learning as social participation, a process of active participation in the practices of social communities, and the construction of identities in relation to these communities. By identifying how we experience life as meaningful and how we practice, participate and identify ourselves in the context of our communities, he presents a broader conceptual framework of learning theories.

Wenger argues that the concept of learning as participation is caught in the middle of social theories that give primacy to social structure and those that give primacy to action, e.g., social structure vs. situated experience. He further argues that the various traditions within social theory contribute insights regarding how we learn and how we theorize about learning. He proposes that an expanded perspective on learning, informed by the various traditions of social theory, forms a conceptual framework in which learning can be related to aspects of how we perceive and act in social life. From this perspective, professional practices are considered mini-cultures that involve the history of social learning in a specific context (e.g., organizations or work places) (Wenger-Trayner & Wenger-Trayner, 2015). The field of professional practice is considered too complex and dynamic to be a mere implementation of prescription or the simple application of research (Wenger-Trayner & Wenger-Trayner, 2015,

p. 17), and it is characterized by ongoing negotiations as changes occur. It is suggested that learning in this context focuses on potential tensions and conflicts between practices to generate new insights. This is an interesting perspective to consider when investigating collaborative practices between professionals in different social communities of practice.

5 Methodology and methods

The overall aim of this study was to derive new knowledge regarding neurological physiotherapy practice in a context characterized by alterations in organization and responsibilities following reform initiatives. We investigated physiotherapists' experiences of neurological rehabilitation trajectories for people recovering from ABIs in the context of a reforming health care system.

"*Let fully understanding nature be God's business; as humans, is to understand how we, through our institutions, create versions of truth*" – (Lock and Strong (2010) referring to Vico, 1744)

Ethnographic approaches, understood as detailed ways of witnessing human events in the context in which they occur, can be useful as an overarching approach to examine health care services and health care professionals (Savage, 2000). The ethnographic approach can incorporate a range of methods and sources of data for analysis, such as interviews, observations and other forms of field work, including a mix of qualitative and quantitative methods (Ellen, 1984). In this study, the social constructionist perspective and ethnographic framework allowed us to include several sources of data for analyzing physiotherapists' actions and perceptions within the field of neurological rehabilitation.

5.1 Recruitment and participants

This study recruited physiotherapists from both the specialist and primary health care levels, as we followed the rehabilitation trajectories of ten people recovering from ABIs from their stay in specialized in-hospital rehabilitation units to continued rehabilitation in their home communities. In four cases, the patients either returned home pending further specialist health care rehabilitation at private rehabilitation institutions or were rehospitalized due to complications. Physiotherapists and patients were initially recruited from three in-hospital rehabilitation units in northern Norway. We obtained consent from hospital authorities (Appendix 1) before the first author arranged meetings to describe the study to the specialist health care physiotherapists at each of the three rehabilitation units. Following the meetings, an informational letter regarding the study was provided to each rehabilitation unit, along with consent sheets and contact information in case of further questions (Appendix 2). As one of the in-hospital rehabilitation units was not able to provide eligible patients or physiotherapists willing to participate during the data collection period, the participants in this

study were recruited from two specialist health care rehabilitation units. We asked the physiotherapists to be attentive to patients who fulfilled the inclusion criteria of the study and at the same time to consider participating themselves. To be included in the study, the patients had to be admitted to the in-hospital rehabilitation unit following an ABI, have the ability to give fully informed consent, and be considered in need of further physiotherapy services after hospital discharge. We chose to exclude patients who were not capable of providing informed consent. We considered the possibility of seeking family consent for patients with reduced cognitive abilities; however, because the nature of the investigations involved at least two patient encounters, we decided to avoid situations in which the patients' integrity might be compromised by our presence.

We asked the physiotherapists to ensure that personnel who did not actively participate in the patients' treatment provided the patients with information regarding the study and gave the patient time to read and consider the written information (Appendix 3). The personnel collected the written consent form and returned them in a postage-paid envelope. When consent from the patient and the specialist health care physiotherapist was obtained, we pursued consent from the municipal authorities in the patients' home community (Appendix 4) and provided information to the primary health care physiotherapist who would provide further physiotherapy services and sought his/her consent to participate (Appendix 5). All municipalities and all primary health care physiotherapists who were approached gave their consent.

As we followed the rehabilitation trajectories of 10 people with acquired brain injuries, eight specialist health care physiotherapists providing rehabilitation at the specialist health care level and eleven primary health care physiotherapists from nine different municipalities participated in the study. Nine of the physiotherapists at the primary health care level were employed in municipal physiotherapy units and inpatient rehabilitation institutions, and two were self-employed at private physiotherapy clinics. The level of postgraduate training varied among the included physiotherapists. At the specialist health care level, two of the physiotherapists held a master's degree, whereas the remainder had a bachelor's degree. Four of the specialist health care physiotherapists were specialists in neurological physiotherapy with approval from the Norwegian Physiotherapy Association. Three of the specialist health care physiotherapists had worked for more than 10 years.

The primary health care physiotherapists generally had taken fewer postgraduate courses and were less likely to have neurological physiotherapy specializations, although two were specialists approved by the Norwegian Physiotherapy Association. None of the primary health care physiotherapists held master's degrees. Six of the primary health care physiotherapists had more than 10 years of working experience, and the remainder had less than 10 years of experience.

The ten patients in this study included eight men and two women ranging from 30 to 80 years of age. Three of the patients were younger than 40 years, four were younger than 60 years, and three were over 60 years of age. They were all admitted to a specialist rehabilitation unit in a hospital due to ABI, and they were transferred from either dedicated stroke units, neurological units or intensive care units. They acquired brain injuries due to cerebral infarction, cerebral hemorrhage, tumor, or encephalitis, and six of the patients underwent surgical interventions during the hospital stay. The patients' family circumstances varied; seven lived with partners, and three lived alone. Two of the patients still had parental responsibilities for underage children, five had adult children, and the remainder had no children.

5.2 Data collection

The data collection period lasted from April 2013 to January 2015. In preparation for data collection, we performed a pilot interview with one primary health care physiotherapist. This gave us the opportunity to test whether the setting and questions would facilitate participants' reflections and perceptions regarding neurological rehabilitation. The pilot participant confirmed that the situation felt comfortable and that the questions were relevant and enabled the participant to reflect and discuss professional opinions and experiences. Furthermore, the pilot interview provided us with the opportunity to adjust both the interview (Appendix 6 &7) and observational (Appendix 8) guides according to our experiences and the pilot participant's feedback.

The first author conducted the in-depth interviews of the physiotherapists and the field observations of single physiotherapy treatment sessions. For each patient's rehabilitation trajectory, we sought to perform the first interview and field observation during the last week of the patients' stay in the in-hospital rehabilitation unit. Furthermore, we collected medical discharge summaries and interdisciplinary and physiotherapy reports from the patients' hospital stay. On some occasions, the rehabilitation unit decided to extend the patients' stay following data collection, which led to delays in data collection at the primary health care level. Although the physiotherapists were encouraged to schedule the interviews after the field observation of the physiotherapy treatment session, on three occasions, the physiotherapists asked to complete the interview in advance due to tight time schedules.

For four of the rehabilitation trajectories, the patients were admitted to a second rehabilitation center that provided in-patient rehabilitation services. In these cases, we performed an additional in-depth interview of the physiotherapist and a field observation of a single physiotherapy treatment session within the last week of the patients' stay. On one occasion, the physiotherapist provided a short account of the patient's rehabilitation stay by phone as this physiotherapist had been interviewed regarding a previous patient and felt that another face-to-face interview would be less likely to provide complementary information regarding the rehabilitation efforts. Consequently, no physiotherapy treatment session was observed on this occasion.

We aimed to perform data collection in primary health care within the first two weeks after the patients had returned to their home community. We scheduled the interviews and field

observations at the convenience of the participants. On three occasions, the patients only stayed home for six to 19 days while they awaited a second rehabilitation stay at a private rehabilitation center. In these cases, we chose to delay the data collection in the patients´ home community until after the second rehabilitation stay. One of the patients was rehospitalized prior to the planned data collection due to a brain injury-related complication. Consequently, we performed interviews and field observations when the patient was discharged from the hospital and treatment was resumed.

Finally, we ended the data collection for each rehabilitation trajectory by performing a follow-up interview with the primary health care physiotherapists approximately three months after the initial interview in the patients' home community. The three-month period between the initial interview and the follow-up interview was chosen due to the time limitations of the study project.

5.2.1 Interviews

The participants were interviewed in a venue of their preference, and all participants chose a secluded room at their workplace. The participants were encouraged to provide a venue for the interviews that minimized the risk of interruption, although we were interrupted during two of the interviews. On these occasions, the participants were provided with prompts to continue on the topic discussed prior to the disruption. The interviews were semistructured, and the questions were posed in a conversational manner to facilitate rich descriptions and reflections (Brinkmann & Kvale, 2015), often related to the previously observed treatment situation. The interview lasted from 45-90 minutes and was audiotaped with a sound recorder. We used an interview guide to ensure that aspects of interest related to the research questions were addressed during the interviews. During the conversation, the participants were asked follow-up questions, or their utterances were rephrased by the interviewer for confirmation and to facilitate elaboration on the viewpoints and reflections conveyed (Brinkmann & Kvale, 2015; Polit & Beck, 2008). This allowed the participant to confirm, highlight or add nuance to his or her perceptions and opinions over the course of the conversation. When the participants discussed aspects of interest in more general terms, they were encouraged to provide examples and relate the discussion to the participating patient. The specialist and primary health care physiotherapists involved in each rehabilitation trajectory were connected to the same ABI patient. This provided an opportunity to investigate each case across time and organizational levels. Furthermore, the primary health care physiotherapists were

reinterviewed three months later regarding the course of the rehabilitation process and prospects for further functional improvements. As a result, we had the opportunity to refine and develop questions over time to adapt the interviews to emerging aspects of interest and changes in circumstances. The time between the interviews with the specialist and primary health care physiotherapists and between the first and the follow-up interview with the primary health care physiotherapist allowed for further preparations prior to the next interview. The interview and the observation the physiotherapy treatment sessions provided useful insights and made it easier to pursue themes of special interest and continue the conversation regarding issues that were not sufficiently discussed in previous interviews. Preparations for further interviews were informed and influenced by different viewpoints and themes that were emphasized during conversations, as observing the participant both within and across the rehabilitation trajectories raised different issues in the interviews. Consequently, the interviews conducted in this study provided various perspectives and nuanced descriptions regarding the research questions.

5.2.2 Observations

The study included field observations of authentic physiotherapy treatment sessions at both the specialist and primary health care levels. The first author videotaped one physiotherapy treatment session prior to discharge from the specialist rehabilitation unit and one physiotherapy treatment session after the patient's return to his or her home community. In the cases of a second institutional stay, another physiotherapy treatment session was videotaped prior to discharge from this institution. Furthermore, following each field observation, field notes were recorded to capture the observers' experiences and thoughts immediately after the observation was over. Every field observation began with the introduction of the observer, including information regarding the observation, to ensure that the participant felt comfortable (Heath, Hindmarsh, & Luff, 2010). The participants were told to conduct the treatment session as usual and not make any accommodations for the observer in terms of organizing the room or ensuring an adequate view. The participants were told that the observer would stay secluded during the session but would occasionally move to capture the content of the session. The participants were given the opportunity to ask questions prior to the video recording. As mentioned previously, the field observation preceded the interviews with the participating physiotherapists in most cases, which created a context-specific basis for the conversations to come during the interview. On the three occasions in

which the interviews were performed prior to the field observations, the relationship to the participating patient receiving treatment from the physiotherapist was clarified in advance. The physiotherapist was encouraged to relate discussions to the patients' treatment and rehabilitation process as experienced up to that point.

The observations of the physiotherapy treatment sessions lasted from 40-60 minutes. The field observations were documented with a handheld video camera with a zoom lens. This allowed the observer to move discretely in the room to obtain a better view of the patient-therapist interaction and occasionally zoom in on areas of special interest, e.g., specific handling techniques. During debriefing after the observation and video recordings were conducted, the majority of the participants stated that they paid little attention to the observer's presence, although they were initially aware of the observer. A few participants stated that they were more or less attentive to the observer's presence throughout the entire treatment session, although they stated that this awareness did not influence their choice of action during the session. Some of the participants made contact through comments or glances at the beginning of the therapy session; the observer responded politely to these before withdrawing from further interaction to avoid interrupting the patient-therapist interaction. As a result, the observer's presence had an influence on the therapy session observed, as several authors have noted (Angrosino & Rosenberg, 2011; Fangen, 2010; Heath et al., 2010). It is likely that this influence, which arose from either nervousness or curiosity, may have affected the course of the therapy session and interaction in some way. Nevertheless, as the participants did not express discomfort during therapy or the debriefing, it is unlikely that the influence was negative in terms of quality of the therapy provided.

5.2.3 Discharge summaries and reports

The discharge summaries, interdisciplinary reports and physiotherapy reports were obtained after the patients' hospital discharge. Either the participating physiotherapist or another health care professional at the specialist rehabilitation unit provided a written copy of all discharge papers that accompanied the patient upon discharge. These papers always included the discharge summary and an interdisciplinary report; occasionally, there was also an accompanying physiotherapy report. Several of the participating physiotherapists stated that they write increasingly fewer physiotherapy reports and are more likely to include all relevant written documentation in the interdisciplinary report. The discharge papers served to complement and validate information conveyed during the field observations and interviews,

such as medical history, family relations, diagnosis, interventions, the time course of the hospital admission and the course of treatment while hospitalized. Moreover, they provided a helpful overview of the ten rehabilitation trajectories for comparison.

5.3 Data analysis

Interpretation and attempts to understand and explain the results of qualitative research represent a process that begins during the interaction between the researcher and the study participants (Brinkmann & Kvale, 2015). The participants may become aware of new aspects and perspectives based on questions asked during interviews as a result of self-analysis and increased attention to situational factors during observations. Furthermore, the interview situation requires "on-line interpretation" of participants' responses and answers; that is, the researcher must adjust to the participant during the interview or observation. As such, the process of analyzing data began during the interview or observation situation itself. Moreover, we recruited participants and conducted interviews and field observations over a long period of time. Consequently, data collection and data analysis overlapped, and the preliminary analysis conducted in earlier phases of the data collection period created a foundation for aspects of special interest in subsequent interviews and field observations. This dialectical relationship between data collection and data analysis in qualitative research is considered beneficial for conducting more focused interviews and field observations (Heath et al., 2010).

The systematic and structured analysis of interview transcripts, summaries of field observations and discharge papers was conducted via a process of coding, categorizing, interpreting and representing data (Brinkmann & Kvale, 2015; Creswell, 2013). The first author analyzed the data using a four-step systematic text condensation approach (Brinkmann & Kvale, 2015; Malterud, 2012), which was complemented by the second and third authors. The research material was analyzed by applying an inductive-deductive approach, in which explanations and interpretations of the results were based on both the empirical data and the previously described theoretical preconceptions (Alvesson & Sköldberg, 2009; Blaikie, 2010; Tjora, 2017).

In the first step of the four-step analysis, the authors discussed the transcripts of the interviews and observations critically to reach congruence and ensure that relevant aspects, commonalities and discrepancies in the data material were further addressed (Malterud, 2001). The results were also presented and discussed in research group meetings, which provided both validation of the preliminary analysis and additional perspectives for further analysis. This process provided an overview of the data and led to the identification of preliminary themes associated with the research question.

The next step was to identify meaningful units related to the research question and the preliminary themes. Meaningful units are utterances, sentences and even paragraphs that seem to be related to the preliminary themes. The meaningful units were decontextualized using a labeling code that highlighted the essence of the unit and was related to the preliminary theme. This allowed further discussions and negotiations regarding commonalities and differences within and across the thematically organized code groups.

In the third step of the analytical process, the code groups were analyzed in relation to the research question and theoretical preconceptions, and interrelated code groups were merged. The summaries of the thematically organized codes were reconceptualized in the last step by writing the content of each theme in a third-person format. The results were validated against the original transcripts, and the various themes were given headings that highlighted the findings. The results section provides further examples using illustrative quotes.

Summaries of the physiotherapy treatment observations were used to different extents in the three articles. In articles 1 and 3, the observational data were used primarily to validate the interviewees' statements regarding context, surroundings and the patients' level of function. In article 2, the summaries of the physiotherapy treatment observations were included in the analysis of the interview transcripts to complement the interviewees' descriptions.

5.4 Ethical considerations

This study was approved by The Norwegian Social Science Data Service (NSD) (Appendix 9). We also consulted the Regional Medical Research Ethics Committee (REK) regarding the study, but they determined that the study did not require their approval (Appendix 10). The study was conducted according to the principles of the World Medical Association (WMA) Declaration of Helsinki (World Medical Association, 2013). All participants were informed about their rights to withdraw from the study without stating a reason. None of the participants withdrew from the study. The patients included in this study were limited to those capable of providing informed consent. The participants were assured that confidentiality would be maintained. We compiled information regarding the participants from a variety of sources: interviews, videotaped observations of physiotherapy treatment and hospital discharge papers. This process led to the collection of comprehensive information regarding both the physiotherapists and patients, and we balanced the presentation of information and stories to minimize identification without changing significant characteristics of the stories (Brinkmann & Kvale, 2015). All videos, audio files and written materials were stored on a secure, password-protected data storage device available only to the first author and deleted or depersonalized in due time according to the NSD Services instructions.

5.5 Methodological considerations

5.5.1 Reflexivity

The background and position of the investigator(s) are important aspects to consider in relation to the researchers' contributions to the construction of knowledge (Brinkmann & Kvale, 2015; Malterud, 2001). The first and third authors' background as physiotherapists with special interest in rehabilitation played an important role in establishing closeness and sensitivity during the interview and observation situations, both when preparing interview and observational guides and when conducting and analyzing the interviews and observations. The first author's experience with neurological rehabilitation was advantageous for designing and asking relevant questions during the interviews and physiotherapy treatment observations. This positioned insight (Paulgaard, 1997) helped the author to raise issues relevant to neurological physiotherapy practice and ask follow-up questions to facilitate both confirmation of and elaboration on important issues (Brinkmann & Kvale, 2015). However, sharing professional identities and experiences with the interviewees can also present a challenge to analytical distance in a study (Polit & Beck, 2008) as preconceptions and assumptions may remain unarticulated and uncontested during both the preparation and the conduct of the study (Paulgaard, 1997). The first author tried to be attentive to the effect of his physiotherapy background by engaging in the interview and observations in an open-minded manner.

However, the interviewees may have provided answers that involved implications or assumptions based on the physiotherapy background of both the interviewer and the interviewees. The second author's sociology background contributed complementary perspectives on the field of study, which enabled further discussions regarding the interpretation of the results. Thus, the variation in the authors' background and professional knowledge contributed to maintain analytical distance when preparing the interview and observation guides and during the analytical process.

The preliminary results of the study were also presented at research group meetings. The members of this research group represented several professions and methodological backgrounds and provided valuable contributions to the interpretation of the study results. This also contributed to the authors' awareness of both positive and negative experiences of the interviewees during both the remaining interviews and the overall analytical process.

5.5.2 Reliability and validity - Trustworthiness

Reliability and validity mirrors the trustworthiness and consistency of the qualitative research approach and the research findings (Brinkmann & Kvale, 2015). The reliability of qualitative research can be related to the consistency and transparency of the various steps of the research conducted. In our study, we tried to address how the interviewer asked questions by developing an interview guide, testing the interview guide prior to the study, and being aware of both the relevance of the questions asked and the way the interview was conducted. This made the first author increasingly aware of asking open-ended questions and crosschecking answers by rephrasing or providing summaries of the interviewees' answers.

We provided an account of the various steps of the study by describing the recruitment procedures, the participating physiotherapists and patients, and the processes of conducting the interviews and observations and collecting the patients' discharge summaries. Furthermore, we accounted for our preconceptions and presented the background for conducting this study, and we described the theoretical perspectives that contributed to the focus of the study and the subsequent interpretations of the study's results (Malterud, 2016). The process used to analyze the study results has been described in a stepwise manner following a systematic text condensation approach, and the use of observational data has been described. In this way, the descriptions of the research process contribute to increased transparency, enabling readers to recognize and follow the methodical considerations of the study and inviting them to assess and critique the appropriateness and logic of our interpretations (Brinkmann & Kvale, 2015; Malterud, 2001, 2012; Polit & Beck, 2008).

This study is based on a limited number of participants situated in one region in Norway. Consequently, the results and subsequent analysis and findings may not necessarily be transferable to other contexts. However, similarities across rehabilitation trajectories and health care levels in this study help to increase the credibility of the study. Furthermore, participant validation during interviews, the validation of the analysis in research group meetings, and consistency in comparison to other adjacent studies indicates that the insights gained from this study may be transferable to and recognizable in similar populations and contexts.

As mentioned previously, three of the interviews were conducted prior to observations of the relevant physiotherapy treatment sessions. The physiotherapists were encouraged to relate the

interview and discussions to the actual patients' treatment and rehabilitation process. However, the inconsistency in the order of observations and interviews on these occasions may have affected the scope and content of the interviews as the interviewer had less opportunity to relate the questions and discussions to the actual patient.

The limited length of the data collection period in our study (i.e., a follow-up interview was conducted three months after the first interview with the primary health care physiotherapist) did not allow an extensive exploration of these issues. An extended understanding of rehabilitation terminology suggests that studies on transitional care following ABIs may profit from longer data collection periods (Hammell, 2006). Our follow-up procedure implies that the opportunity to explore important aspects related to the included patients' resumption of everyday life following ABI was limited to a three-month period. The inclusion of a prolonged data collection phase in this study may have shed further light on aspects of reintegration into society and the relevance and success of the rehabilitation efforts during the transition from hospital to municipality.

In this study, we focused primarily on physiotherapy practice in the context of ABI rehabilitation trajectories. However, the importance of multidisciplinary approaches in ABI rehabilitation has been emphasized, indicating the significance of multiprofessional cooperation. Although cooperation with other health care professionals was occasionally mentioned in the interviews, empirical data regarding these aspects are scarce and consequently were not highlighted in the published articles. An increased focus on collaboration across professional boundaries might have provided additional perspectives and extended the interpretations and discussions in this study.

The fact that the research design in this study included data collection procedures to a small degree should be mentioned. In this regard, the recruited physiotherapists were not instructed to register potential participants who fulfilled the inclusion criteria, nor were they instructed to systematically report which patients who declined to participate upon request. Consequently, a thorough discussion of possible bias related to the participating ABI patients was difficult to achieve. Furthermore, one of the inclusion criteria was related to the patients' cognitive abilities. The physiotherapists were asked to consider whether the patients were able to provide fully informed consent. We decided to use this inclusion criterion both because we conducted the interviews and observations under vulnerable circumstances characterized by

transitions between contexts and because we required the patients to participate over a longer period of time as we followed the rehabilitation process from their institutionalization to their return to their home communities. As the data collection period progressed, several of the specialist health care physiotherapists reported several patients they thought would be eligible for the study except for the criterion of being able to give fully informed consent. As a result, the patient recruitment period was longer than we had predicted. Cognitive impairments are common following ABIs (Whyte, Skidmore, Aizenstein, Ricker, & Butters, 2011). Including patients who were not capable of providing fully informed consent may have provided further insight into the physiotherapists' perceptions of the rehabilitation services provided as cognitive impairments may prompt additional questions and challenges.

In the first article, we discuss the specialist health care physiotherapists' ability to predict future outcomes and recommend further action in primary health care following hospital discharge. The physiotherapists experienced challenges related to earlier hospital discharge; they felt the time available to assess the patient and evaluate necessary measures was decreased. This challenge arose partly because patients were being transferred earlier from acute care units and required longer before rehabilitation efforts could be initiated. We argue that the rehabilitation trajectories in this study contrast with the positive effects reported in early supported discharge (ESD) studies as specialist health care was involved to a small degree at the primary health care level. However, some of the informants at both health care levels mentioned outpatient rehabilitation services (ART), a specialist health care service that offers counseling and facilitates continued community rehabilitation efforts for persons with prolonged and complex rehabilitation needs (The Norwegian Directorate of Health, 2018). In response to follow-up questions, informants at both health care levels expressed uncertainty regarding the content and extent of the ART's contribution to the rehabilitation process of the current patients. For a minority of the rehabilitation trajectories under study, the physiotherapists said they were aware of the ART's presence but were uncertain of how they contributed except by participating in one meeting or another. The limited information regarding the ART's involvement in the rehabilitation trajectories made it difficult to describe and interpret the significance of their contributions. Our study's research design, research questions, and choice of informants proved less suitable for investigating these aspects of the rehabilitation process.

Recent studies in the Norwegian context analyzing the effects of the Coordination Reform conclude that the goal of improving and expanding rehabilitation services in the municipalities was not met according to expectations (Monkerud & Tjerbo, 2016). However, these studies point towards possibly unintended consequences of the introduced economic incentives in terms of increased cost sharing and earlier hospital discharge. The use of private rehabilitation institutions that provide services similar to those of the public hospital rehabilitation units increased in the aftermath of the Coordination Reform implementation. Either the Norwegian Health Economics Administration (Helfo) or public hospitals, through contractual agreements with private institutions, bore the cost of providing rehabilitation services through private institutions. Consequently, the municipalities bore less of the costs of earlier hospital discharge than expected (Monkerud & Tjerbo, 2016). Furthermore, very little expansion of the municipal rehabilitation service sector in Norwegian municipalities was detected following the Coordination Reform (Stig & Lütz, 2013). The consequences of these mechanisms may play an important role in the way the public health care sector organizes and allocates health care service provision. Although these factors were considered beyond the scope of this study, the political and organizational consequences of reform measures require further investigation and may add perspective to studies of health care professionals' perceptions of the provision of rehabilitation services.

6 Summary of the results

This thesis focuses on different aspects of physiotherapists' perceptions of the provision of rehabilitation services for people recovering from ABI. By exploring physiotherapy practices within the field of neurological rehabilitation, specifically within the context of actual patients' rehabilitation trajectories, we sought to investigate physiotherapists' perceptions and experienced challenges of the changes following the Coordination Reform, physiotherapy practice variations across health care levels, and the communication of information and physiotherapy knowledge during patients' transitions from the hospital to their home communities.

6.1 Article 1

In the first article, we explored the physiotherapists' experiences of providing physiotherapy services for people with ABI in a context characterized by reformative efforts. Interviews with physiotherapists in both specialist and primary health care services were complemented by nonparticipatory field observations of physiotherapy treatment sessions.

The physiotherapists conveyed various concerns related to the redistribution of responsibilities between specialist and primary health care, and they experienced dilemmas related to physiotherapy service provision as a result of contextual limitations and resource insufficiency within the primary health care sector. The specialist health care physiotherapists described a situation characterized by defined settings and adequate resources. However, they experienced a shift in the process of transferring patients from acute care to rehabilitation units and discharging patients from hospitals. In their opinions, earlier transitions between hospital units and health care levels resulted in lower functional abilities upon hospital discharge and less basis for providing information and recommendations during the transition from specialist to primary health care. The primary health care physiotherapists experienced the patients' low functional abilities as challenging in terms of both the organization and resource insufficiency of the physiotherapy services and the patients' need to balance rehabilitation with everyday life. Additionally, several of the specialist health care physiotherapists described low expectations regarding the intensity of future follow-up, and they sometimes found themselves adjusting the expectations of the patients and their next of kin upon hospital discharge.

We applied theoretical perspectives of professionalism and discussed how the physiotherapists' perceptions of professional dilemmas in the aftermath of reform seemed to affect their clinical reasoning and professional practice. The article discussed how the results of political governance and measures affected clinical reasoning and decision-making and described resource insufficiency in the municipalities that influenced the ability to offer intensive physiotherapy. The constraints experienced in the primary health care sector appeared to limit the implementation of reform initiatives. Discussions regarding prioritization and resource allocation in the municipal context, involving both health care professionals and municipal authorities, may facilitate the effects of reformative work. Knowledge and expectations regarding resource insufficiency in the municipal context appeared to influence the information and recommendations that were communicated during the transition from hospital to home. In the article, we also discussed how the homecoming phase involved the patients' efforts to re-establish everyday life. Based on the physiotherapists' experiences, we highlighted the importance of paying attention to patients' current situation and municipal resource insufficiencies when planning and timing hospital discharge following acquired brain injuries.

6.2 Article 2

In the second article, we aimed to describe and increase knowledge regarding the variations in physiotherapy practice for people with ABI across health care levels in northern Norway. We performed qualitative interviews with physiotherapists and field observations of physiotherapy treatments during the rehabilitation trajectories of 10 people with ABI. We performed systematic text analysis of the transcribed interviews and the summaries of the field observations. The hospital discharge papers validated the details of the rehabilitation process and patient information.

The physiotherapists in the specialist health care described the use of a more uniform intervention strategy during the physiotherapy sessions, with emphasis on quality of movement and reacquisition of function. The primary health care physiotherapists explained how the patients' contextual limitations and everyday life demands made it necessary to balance interventions targeting quality of movement with interventions that enabled patients to manage daily routines. The primary health care physiotherapists described a preference for outpatient treatment to adequately address functional recovery, and they emphasized the importance of the patients' next of kin in providing motivation for continued rehabilitation in the home community.

In this article, we applied interactional and social constructionist perspectives and discussed how variations in physiotherapy interventions and clinical reasoning may be understood in light of institutional- and culture-dependent processes. The physiotherapists at both health care levels shared common viewpoints regarding intervention strategies and the patients' reacquisition of function following ABIs. However, the traditional distribution of responsibilities and predispositions, which are affected by historical, cultural and contextual factors, may explain variations in the organization and performance of physiotherapy interventions. The contextual differences between rehabilitation in hospital units and in patients' home contexts were highlighted in terms of the need to target compensatory treatment strategies to enable the patients to manage at home. The primary health care physiotherapists often organized the interventions at outpatient clinics to address both movement quality and safety aspects. We discussed how the understanding and interpretation of these professional choices of action may be extended by adding perspectives on the social processes of habituation, typifications and institutionalization.

6.3 Article 3

In the third article, we aimed to explore the communication of information and professional knowledge during transitions between health care levels within the field of neurological physiotherapy. We performed interviews with 19 physiotherapists from specialist and primary health care who were involved in the rehabilitation trajectories of 10 people with ABIs. We transcribed the interviews verbatim and analyzed the transcripts using a four-step systematic text condensation process.

The primary health care physiotherapists in our study found the written information in hospital discharge papers useful, although they called for increased consistency regarding which parts of the written documentation were distributed to primary health care physiotherapists during the transition process. Nonetheless, they emphasized the need for both verbal communication and clinical patient-oriented collaboration to complement the written information. The importance of personal liaisons among professionals was highlighted at both health care levels as the physiotherapists sought collaboration regarding aspects that were difficult to convey in writing. Such aspects included concerns regarding the potential for recovery or uncertainty regarding the patients' cognitive abilities, as the written reports were perceived as definitive. Furthermore, the physiotherapists called for the exchange of practical knowledge regarding handling and intervention choices related to the actual patient, and they advocated for closer clinical collaboration across health care levels. The primary health care physiotherapists also sought increased bidirectional exchange of information and knowledge as the home environment and the patients' priorities in their home communities differed from those of the institutionalized hospital environment.

In this article, we related our findings to previous research results emphasizing comprehensive, good-quality written reports and the need to establish effective and reliable procedures for communication. We applied sociological perspectives regarding communities of practices and the interrelation between different social agents and societal levels in our discussion of the relevance of institutional settings and organization and the potential benefits of further development of reciprocal communication. The results indicated that close collaboration and reciprocal communication of information regarding the patient and contextual aspects may improve continuity of care related to the patients' specific rehabilitation trajectories and enhance mutual learning among physiotherapists and other health care professionals.

7 General discussion of the results

This thesis focuses on physiotherapists' perceptions and reflections regarding the provision of physiotherapy services during the rehabilitation trajectories of people recovering from ABIs in the aftermath of reform. In this section, I will discuss the various aspects in context, relate the findings to theoretical perspectives and further elaborate on the themes actualized in the articles.

The three articles explored different aspects of the physiotherapists' reflections and opinions regarding ABI rehabilitation. The point of departure was an emphasis on the transitional phase of ABI rehabilitation across health care settings in the context of reformative efforts. The reforms initiated in recent years are characterized by a dual focus; they aim for both economic rationalization and improving the quality of health and care services (Bauld et al., 2005; Bidgood, 2013; Grimsmo & Magnussen, 2015; Norwegian Ministry of Health and Care Services, 2009b; Steel & Cylus, 2012; Vrangbæk & Sørensen, 2013). This has led to challenges regarding the organization of health care services and the distribution of economic resources and responsibilities among different organizational levels of health and care services. Based on these changes and reports from various clinicians, we hypothesized that physiotherapists experience greater challenges in coordinating care for people recovering from ABIs.

7.1 Rehabilitation policies and reformative work

The results of this study point to challenges and dilemmas in the provision of physiotherapy services related to differences in context and organization between specialist and primary health care services. The physiotherapists explained that these changes were due in part to the health care reform initiatives launched in recent years. Their opinions are supported by recent evaluations of the Coordination Reform (Office of the Auditor General of Norway, 2016; The Research Council of Norway, 2016) showing that resource allocation did not seem to support the increased responsibility of the primary health care sector. According to the evaluation reports, the primary health care sector seemed minimally prepared to take over these responsibilities as increases in resources and health care service levels have been difficult to detect. Solvang, Hanisch & Reinhardt (2016) highlight the need to relate rehabilitation practice and research to different levels of society and social agents to enhance the

understanding of the rehabilitation field. The results from the first article emphasize the consequences of the governmental authorities' aim towards a shift in responsibility for providing rehabilitation services. Organizational conditions affect professionals' actions and priorities within rehabilitation trajectories. In light of sociocultural and interactionist perspectives, we have tried to acknowledge the impact of political and organizational conditions on professional practice. The use of sociocultural perspectives provided a theoretical framework for discussing how institutional frames and traditions of professional practices may be difficult to change swiftly.

The sociological interest in reformative work and governing has led to the identification of trends and paradoxes that can be partly explained by social systems and social interaction. Vabø (2014b) describes how social and constructionist perspectives contribute to explanations for delays in the implementation of reforms in various organizations. The ideas and goals of reformative work must always be interpreted in light of and within the specific setting or organization (Christensen, Egeberg, Lægreid, Roness, & Røvik, 2015; Vabø, 2014b). Consequently, changes occur in interactions between participants, who actively interpret their actions in light of various frames of reference and understandings. The implementation of the Coordination Reform in Norway, which used various means and incentives to fulfill the reform intentions, seemed to become unsynchronized among regions and health care levels.

In the initial stages of the reform's implementation, the authorities introduced economic incentives to ensure more rapid transfer of ready-to-discharge patients from hospitals to primary health care. The municipalities were instructed to establish municipal emergency services and to bear the financial responsibility for patients who were ready for discharge from specialist health care. The shift in financial responsibility for ready-for-discharge patients has been successful in terms of both earlier hospital discharge and a reduction in the number of excess hospitalization days for patients who are considered ready for discharge (Office of the Auditor General of Norway, 2016). Furthermore, the municipalities' responsibilities for providing health care and rehabilitation services increased.

A report from the Office of the Auditor General of Norway (Office of the Auditor General of Norway, 2016) and recent studies (Bruvik, Drageset, & Abrahamsen, 2017; Haukelien, Vike, & Vardheim, 2015; The Research Council of Norway, 2016) on the Coordination Reform

suggest that the municipalities have experienced challenges in accommodating the shift in responsibility for health care and rehabilitation services. Despite the reallocation of economic resources from the specialist health care level to the municipalities, the consequences of the reform seem to affect the quality of the primary health care services. The results of our study support these conclusions, as the physiotherapists argued that contextual limitations and resource insufficiency presented challenges to providing good quality services following ABI. The physiotherapists provided accounts of professional dilemmas; they found it challenging to balance professional judgements with the lack of resources they experienced after the implementation of the Coordination Reform, especially in the municipalities. As a result, the physiotherapists highlighted the political and organizational circumstances that affected physiotherapy practice.

In article 1, the informants described the limited efforts to increase resources and competence to meet the increased responsibility for providing health care services for increasingly impaired patients in the municipalities. As one of the specialist health care physiotherapists stated during the interview, the intensity of physiotherapy in the municipality is not considered enough for many of the ABI patients. This viewpoint is supported by research indicating that higher intensity task-oriented rehabilitation efforts may lead to earlier and better functional abilities following ABI (Charrette et al., 2016; Hellweg & Johannes, 2008; Scottish Intercollegiate Guidelines Network (SIGN), 2013). The tension between political governance and the jurisdiction and responsibilities of physiotherapists (Carpenter, 2010; Holdar, Wallin, & Heiwe, 2013; Smith, Higgs, & Ellis, 2007) and other health professionals (Forsner, Hansson, Brommels, Wistedt, & Forsell, 2010; Gunnarsson & Warren Stomberg, 2009; Hancock & Easen, 2006) has been the subject of previous studies and can be related to contradictory values in government and management (Vabø, 2014a). The values of government in many Western welfare countries are multiple (Hood, 1991a) and can be characterized by three partially contrasting factors: cost effectiveness; predictable and equal treatment; and flexibility to adapt to shifting and dynamic situations and contexts (Vabø, 2014a). The physiotherapists in our study indicated that these conflicting values presented challenges to discretionary judgements and actions; increased municipal responsibilities and resource limitations affected treatment intensity and prioritization between groups of patients (article 1) and led to the bureaucratization (municipal allocation offices – article 3) and privatization (communication and collaboration between private practitioners and public

services – article 3) of health care services. The physiotherapists experienced little or no involvement from the municipal authorities regarding prioritizing and planning physiotherapy services (article 1). These findings may be related to the changes in central governing strategies in health care, which have introduced new accountability arrangements over the past decades (Vabø, 2012).

Trends towards the centralization of power through control mechanisms (Fimreite, Flo, Selle, & Tranvik, 2007) and reforms affected by the ideas of a market-like public sector (new public management - NPM) (Hood, 1991b; Vabø, 2012) hold local authorities increasingly accountable to the central government. The introduction of management through objectives, standardization, more detailed reporting systems and individual rights legislation may have narrowed local authorities' scope of action and self-rule (Fimreite et al., 2007). The central government's tools of control, such as KOSTRA/IPLOS[1] measurements and the implementation of the purchaser-provider model in home care, have affected the organization of health care services in Norway (Vabø, 2011, 2012). In the purchaser-provider model, decision-making power regarding municipal care services was handed over to specialized need assessors in intermediary allocation offices and separated from the responsibility for providing services (Vabø, 2012). The citizens were entitled to care according to predetermined assessment criteria. However, the tension between the value of equal rights to services for all citizens and the tailoring of services for those with unstable and conflicting needs created dilemmas in the discretionary work of health care professionals.

In our study, some of the most populous municipalities also assigned physiotherapy services through application and delegation by assessors in the intermediary allocation offices. The physiotherapists described the allocation office representatives as active participants in the planning and coordination of rehabilitation trajectories (article 3). However, the physiotherapists were concerned about the bureaucratization of the transition process; they experienced the redistribution of written information via the allocation offices as time-consuming. Furthermore, allocation office representatives' control over the transition process

[1] KOSTRA – Local authorities' state reporting system; IPLOS – National information system for all care recipients in Norwegian municipalities

by withholding information regarding the patient's destination and further rehabilitation led to frustration and delays in the communication of information across health care levels.

The Office of the Auditor General of Norway (2016) stated that the average hospitalization length decreased by 52 % in the first four-year period of the Coordination Reform implementation. Most municipalities and a majority of hospitals claimed that patients were discharged earlier from hospitals, and 95 % of the municipalities perceived the patients as sicker upon hospital discharge since the implementation of the Coordination Reform. Furthermore, a majority of the municipalities stated that the earlier hospital discharge complicated primary health care services' ability to provide good quality health care services (Office of the Auditor General of Norway, 2016). During the same period, the number of rehospitalizations of patients was reported to increase by approximately 10 %, and both the municipalities and the hospitals highlighted the earlier hospital discharge to be possible explanations for the increase in rehospitalizations. A recent comparative study on the discharge of older patients from hospitals to a nursing home in Norway before and after the Coordination Reform (Bruvik et al., 2017) showed that the patients in the postreform period were older and had shorter survival during short-term stays in the nursing home following hospital discharge. The median age increased from 85 to 88 years, and mortality increased from 36 % to 51 % at 6 months, and from 45 % to 60 % at 12 months following hospital discharge. Although the results were generated from a small retrospective study of 363 patients (186 patients before and 177 patients after the introduction of the Coordination Reform) from a single nursing home, the authors hypothesized that the nursing homes face higher throughput and less clarified patients following the Coordination Reform. Consequently, the authors called for increased competence and staffing in nursing homes to meet treatment needs of patients following the Coordination Reform. The physiotherapists in our study expressed similar viewpoints regarding physiotherapy services in primary health care rehabilitation; they called for increased competence in and resource allocation to primary health care following the Coordination Reform.

7.2 Organization of health care services and continuity of care

A main result from articles 1 and 2 was related to the physiotherapists' experiences of contextual and organizational differences across health care levels and how these differences affected professional choices and prioritization. The dilemmas encountered were related to the selection of intervention strategies, the weighting of reacquisition versus functional compensation following brain injuries, treatment intensity, and home versus outpatient treatment settings in primary care. The contextual differences between the specialist and primary health care levels were considered important in terms of the scope, content and expectations of physiotherapy treatment. The physiotherapists expressed concerns regarding the alterations in rehabilitation pathways and the increased municipal responsibility for providing rehabilitation services at the primary health care level and indicated constraints (Nalette, 2010) in their practice.

Health organizations are complex enterprises that are expected to ensure and promote health and care while simultaneously taking into account the welfare of the employees, economic factors and the efficiency of the organization (Orvik, 2004; Orvik & Axelsson, 2012). Orvik (2012) introduces a concept of organizational health in health organizations and suggests that an emphasis on the organizational competence of health care professionals may contribute to increased reflection on and attention to tensions between the quality of patient care and the efficiency of service. Such an emphasis may strengthen health care professionals' ability to identify and act on dilemmas that arise from the diversity of value aspects they encounter in their work. The physiotherapist concerns described in article 1 illustrate how conflicting interests contribute to an increased discrepancy between political ideals and professionals' reality (Orvik, 2004). One of the primary health care physiotherapists illustrated this with the notion of pressing yet another sardine into an already full box. This discrepancy can potentially lead to moral distress (Carpenter, 2010) among the health care professionals involved as the increased responsibilities following the reform seem difficult to fulfill.

Accountability related to the discretionary work of professionals may be divided into two forms, i.e., structural mechanisms and epistemic mechanisms (Molander, 2013; Molander, Grimen, & Eriksen, 2012). Structural mechanisms aim to restrict the scope of action in discretionary work, whereas epistemic mechanisms relate to ways to improve the conditions and the quality of discretionary reasoning as the basis of professional action. Vabo & Vabø (2014) and Molander (2013) describe how the discretionary reasoning is most often regulated

by structural mechanisms, i.e., the scope of action in discretionary work is regulated and restricted. However, the structural mechanisms that intend to regulate the discretionary space of street-level bureaucrats do not necessarily ease the burden or reduce the scope of discretionary work, as the execution of the discretion in each actual case becomes increasingly more complex (Vike, 2004). The role of the municipal allocation offices (the purchaser-provider model) in the more populous municipalities, as discussed earlier, is related to the physiotherapists' experiences of bureaucratization and delays in the communication of information. Furthermore, separating the allocation of services from the provision of physiotherapy services does not seem to reduce the dilemmas physiotherapists face, as they must still make professional choices regarding treatment strategies, treatment intensity and location.

Several of the physiotherapists conveyed concerns regarding the impact of resource insufficiency (in terms of physiotherapists, distances, constraints in the patients' own homes) on their ability to provide good quality physiotherapy and regarding the possibility that patients may be reluctant and unmotivated to receive home-based interventions. Previous studies on patients' motivation for home exercises (Caeiro, Ferro, & Costa, 2013; Mayo, 2016; Mayo, Fellows, Scott, Cameron, & Wood-Dauphinee, 2009) and negative perceptions regarding the public sector moving into their private spheres (Tamm, 1999) support the challenges the physiotherapists expressed regarding providing home-based rehabilitation. In a review on various home-based stroke rehabilitation interventions, Mayo (2016) proposed the need for the early identification of motivated patients and to develop appropriate implementation strategies to provide focused interventions. She argued that rehabilitation for stroke has proven powerful and effective but requires tailored intervention approaches for the individual patient. Furthermore, a recent review on facilitators and barriers in the home setting after stroke (Marcheschi, Von Koch, Pessah-Rasmussen, & Elf, 2018) concluded that the physical environment did not receive sufficient attention in the planning of home-based rehabilitation. The review highlights the lack of information and attention to the psychosocial and emotional processes that mediate the interaction between stroke survivors and their home setting. Physiotherapists' clinical reasoning and professional judgement seem central to tailoring and selecting the most efficient intervention strategy in each case, which highlights the dilemmas associated with weighing patient considerations against available resources. These dilemmas include considerations regarding the benefits and potential barriers of the

home environment (Ekstam, Uppgard, Von Koch, & Tham, 2007; Erikson, Park, & Tham, 2010; Wottrich, von Koch, Tham, & Jensen, 2007) and the ambiguity the patients may experience during the liminal phase of transition from hospitalization to resuming everyday life in their home communities (Hammell, 2006). However, in article 2, we argued that the differences in contexts between the specialist and primary health care level can be considered frameworks that may constrain physiotherapy practices and that the frameworks are affected by socially and culturally embedded perceptions and expectations. Understanding the physiotherapists' opinions and justification of actions in light of theories of institutionalized and culture-dependent processes (Berger & Luckmann, 1984; Burr, 2015; Gibson & Teachman, 2012; Lock & Strong, 2010) may also reflect how alterations in context and organization may challenge traditional (institutionalized) rehabilitation practices and physiotherapists' frames of reference, and may contribute to understand professional choices of treatment preferences. As such, providing sufficient attention to the physical and home environment may represent a challenge to the traditional physiotherapy practice.

The introduction of standardized care pathways is another example of a structural mechanism that intends to make professional reasoning easier and secure the equal provision of health and care services. The standardized pathways describe the preferred and expected way to provide health and care services for a specific diagnosis. Such pathways may be referred to as fast-track programs, integrated fast-track rehabilitation, pathway-controlled fast-track rehabilitation, coherent care pathways, etc. Standardized pathways are being actualized within the field of neurological rehabilitation; the final implementation of standardized care pathways following stroke, the most common ABI, is planned for 2019 (The Norwegian Directorate of Health, 2017, 2019). It is likely that measures to increase municipal resources will be needed to implement the requirements of the standardized care pathways.

The need for individualized and tailored interventions and choices of action are strongly connected to the individuals' unique situation. ABI can cause severe functional disabilities and require an extensive need for interventions from various health care professionals. The use of individual care coordinators to administer and coordinate service provision was described to a small degree in the interviews. In Norway, individual care coordination has been a statutory requirement of primary health care services for several years; since 2012, specialist health care services have also been required to provide individual care coordination. In a recent study on the introduction of coherent care pathways in the Norwegian health care

system, Høyem et al. (2018) investigated policy documents that introduced coordinator responsibilities for clinical personnel in hospitals. These documents were found to place extended personal responsibility on clinical personnel to coordinate interventions and collaboration across patients' conditions and contexts. In a qualitative study of Norwegian health care providers involved in care coordination for patients with complex needs, Høyem et al. (2018) found that the health care providers strived to balance the patients' needs with the resources available and described coordination activities that stretched beyond workflow routines and standardized pathways. These findings point to ways that health care management and organizational structures enable and facilitate service coordination and cooperation among health care professionals, an area that should receive further attention in the provision of health and care services.

The standardized care pathway provides a coherent description of how timely diagnosis and treatment can be provided at the right level of the health care service system, including communication, dialogue with the patient and the next of kin, responsibilities, and defined time limits during the course of treatment. However, the standardized care pathway includes only strokes, whereas the ABI population is characterized by variations in diagnosis, treatment and rehabilitation trajectories. However, the establishment of predictable and timed interventions for stroke rehabilitation may extend to care coordination in other brain injury rehabilitation trajectories as well. One characteristic of brain injury rehabilitation is its protracted course, which often includes primary health care. The standardized care pathways following stroke focus largely on the specialist health care level, whereas transitions and especially the subsequent municipal rehabilitation are to a lesser degree considered. This situation may contribute to uncertainty and differences in the organization and content of specialist and primary health care rehabilitation, and an increased focus on the scope and content of community rehabilitation efforts seems necessary. However, studies on municipality participation in the development and implementation of clinical pathways in primary health care call diagnosis-specific pathways into question, as the specialization of services and personnel at the primary health care level may not be sustainable (Grimsmo et al., 2016, 2018; Meese & Rønhovde, 2015; Røsstad, Garåsen, Steinsbekk, Sletvold, & Grimsmo, 2013). This is partly related to the generalist role of health care professionals and services at the primary health care level, which serves patients with a variety of diagnoses. The Research Council of Norway (2016) highlights that standardized care pathways in the

municipal context will be challenging due to the comorbidities of patients who need health and care services in the municipalities. Additionally, diagnoses that are commonly encountered in hospitals will be less frequent in the primary health care context, reducing the functionality of standardized care pathways. These results point toward a more generic care pathway in primary health care to take into account the contextual differences between specialist and primary health care and the comorbidities of the patients (Grimsmo et al., 2018).

7.3 Professional development and accountability in neurological physiotherapy

The need for increased competence among physiotherapists to meet the increasingly complex patient needs encountered in the primary health care setting was emphasized in the interviews (article 3). One of the experienced primary health care physiotherapists stated during the interview that the level of expertise necessary to handle increasingly complex patients due to earlier hospital discharge was not accounted for in the current situation. In a report from 2015 (Haukelien et al., 2015), primary health care nurses presented similar viewpoints; they reported a lack of quality and competence at the primary health care level combined with increased complexity and workload following the Coordination Reform. Furthermore, governmental strategies (Norwegian Ministry of Health and Care Services, 2015a) and evaluation reports (Office of the Auditor General of Norway, 2016) of the effects and consequences of the Coordination Reform have highlighted the need for increased competence in the primary health care sector, and strategies and economic incentives to accommodate these needs were proposed by the Norwegian Ministry of Health and Care Services in 2015 (2015b). However, the results of our study also highlighted competence and professional development aspects within the physiotherapy profession itself (articles 2 and 3); treatment strategies, collaborative work, and communication of information were closely connected to the physiotherapists' clinical practice.

Rehabilitation trajectories across health care levels involve transitions between different institutions and work places and may involve several physiotherapists and other health care professionals. The communication of information during these transitions is important for securing care coordination (Bodenheimer, 2008; Cameron et al., 2016; Coleman & Boult, 2003) to the benefit of patients (Abrahamson, Jensen, Springett, & Sakel, 2017; Piccenna, Lannin, Gruen, Pattuwage, & Bragge, 2016). The physiotherapists in our study highlighted the importance of various sources of information during patient transitions (article 3); they perceived written discharge summaries, oral discussions and clinical collaboration as complementary. These exchanges allowed the physiotherapists to elaborate on and discuss information with one another, respond to immediate questions and conjectures, and initiate collaboration in clinical settings. However, the physiotherapists called for increased emphasis on clinical collaboration and emphasized the practical dimensions of physiotherapy practice. Previous studies have shown that patient-centered clinical guidance from experienced neurological physiotherapists promotes the professional development of primary health care

physiotherapists (Normann, Sorgaard, Salvesen, & Moe, 2014). This finding is supported by knowledge that professional guidance in clinical settings is beneficial to professional development in physiotherapy (French & Dowds, 2008).

In our study, most of the physiotherapists at both health care levels considered the quality of movements following brain injuries an important aspect of neurological physiotherapy (article 2), and they emphasized the potential for reacquiring function after ABI via rehabilitation efforts. However, the specialist health care physiotherapists expressed concerns regarding the early introduction of compensatory strategies when patients are transferred to the primary health care level. Several of the primary health care physiotherapists in our study shared this concern but felt constrained by the context of primary health care and providing rehabilitation in patients' homes. Lower levels of patient function upon hospital discharge than previously experienced, less suitable venues for physiotherapy treatment, and the immediate need for patients to deal with everyday life challenged the physiotherapists' ability to address quality of movement and the reacquisition of functions. In our analysis, the physiotherapists experienced dilemmas and conflicts regarding the reacquisition of function and helping patients function well at home and in their new social settings. In their opinions, the contextual differences and resource limitations at the primary health care level made it challenging to provide ideal or preferred intervention strategies that focused on reacquisition of function and quality of movements. However, insights regarding the influence of the traditions and cultures of community of practices (Wenger-Trayner & Wenger-Trayner, 2015; Wenger, 1998, 2000) may also raise questions regarding the physiotherapists' hesitancy to engage in rehabilitation efforts that utilize the patients' home environments to a larger degree.

The physiotherapists called for increased competence at the primary health care level and proposed collaboration in clinical settings to enhance the development of physiotherapy practice knowledge. Furthermore, the primary health care physiotherapists highlighted the significance of mutuality in both communication of information and the development of practice knowledge. They stated that the mutual exchange of information and knowledge could enhance the bidirectional understanding of organizational, cultural and environmental differences. These perspectives suggest a need for adjustments in the way health care professionals collaborate in rehabilitation trajectories. Acknowledging the distinct affordances and constraints in the patient's home environment may enable physiotherapists in specialist health care to optimize the interventions while the patient is still in the hospital setting and

direct the treatment strategies in accordance with the patient's home environment. However, the alteration in rehabilitation trajectories in favor of earlier transition from acute care to the rehabilitation unit and from hospital to home challenge the scope and content of the different aspects of the rehabilitation trajectory following ABI.

The disability literature emphasizes the distinction between treatment and rehabilitation: rehabilitation should be seen as a process of learning to live well with an impairment in the context of ones' environment (Hammell, 2006) rather than the provision of a cure (Reynolds, 2005). Issues related to continued rehabilitation following the initial subacute phase post-ABI are interesting in terms of both functional recovery and the resumption of everyday life activities. A recent study in Norway evaluated exercise and coaching programs that lasted as long as 24 months after stroke onset (Askim et al., 2018). Although individualized community-based coaching did not improve the maintenance of motor function compared to standard care, the study's aim and design indicate increasing research interest in possible strategies to help stroke survivors achieve a more active lifestyle. The researchers hypothesized that more personalized and multimodal approaches, earlier interventions, increased intensity and even longer follow-up periods may prove beneficial. In this regard, complementary perspectives regarding social and subjective aspects of both the rehabilitation process and the resumption of everyday life after brain injury may shed further light on personal, social and even organizational factors that are important for sustaining an active and meaningful lifestyle following ABI.

The physiotherapists' desire for the communication of information and clinical collaboration reflects the increasing complexity of rehabilitation, which spans health care levels and involves multiple health care professionals. The emphasis on collaboration, social interaction and relationship building reflects these complex and intertwined rehabilitation processes and may enhance bidirectional understanding and learning across communities of practice. Such collaboration may be one way to address the increasing social accountability expected from physiotherapists and health care workers.

8 Concluding remarks and possible implications for practice

In this study, we investigated physiotherapy practice within the field of neurological rehabilitation as we followed the rehabilitation trajectories of 10 people with ABI. We applied a sociocultural perspective that integrated the theoretical perspectives of social interaction, communication and the construction and development of professional knowledge to explore physiotherapists' perspective on rehabilitation following ABI in the aftermath of reform in Norway.

The ambiguity of the Coordination Reform in Norway, which aimed for both quality improvement and economic rationalization, has had considerable impact on the organization and provision of health care services. In light of social constructionist theories and interactionist perspectives on social communities of practice and professional development, we have argued that contemporary physiotherapy practices reside in complex and intertwined social, cultural and political realities. Our interpretations of the physiotherapists' reflections and increased attention to their role as health care professionals in this context may contribute an increased understanding of the social and political processes that affect physiotherapy practice. The conflicting values of health care governance in Norway, actualized by the implementation of the Coordination Reform in 2012, challenge physiotherapists' content and scope of action as health care professionals. Simultaneously, health care professionals are increasingly responsible for implementing and exercising politically initiated reform efforts and serving as a crossroads for the organization and management of health and care services. The need for health professionals to be socially accountable is growing (Fleet et al., 2008) and corresponds to the increasingly complex terrain in which health professionals operate. More complex, multimorbid patients, alterations in management strategies and policy guidelines, and increased collaboration across health care levels challenge the traditional practice of physiotherapists and other health professionals, including multi-professional cooperation. These organizational and clinical challenges should also be reflected in the education of health care professionals. Fleet (2008) calls for increased attention to social accountability in professional learning to enable health care professionals to understand and take into account the linkages among professionals, institutions, and government policies in professional work. However, as the organization and management of health and care services change, it will still

be crucial that the prerequisites and resources available for providing good quality rehabilitation services are in line with existing demands.

Collaborative physiotherapy practices in rehabilitation trajectories that span health care levels and organizational contexts offer unique opportunities to further develop physiotherapy knowledge and practice. Enhancing mutual learning and the bidirectional communication of knowledge between various contexts of physiotherapy practice offer opportunities to optimize and tailor physiotherapy interventions and coordinated rehabilitation efforts following ABIs. Integrating and further developing the knowledge base and practical dimensions of physiotherapy knowledge, the “know-how”, requires arenas for communication and clinical collaboration.

9 Future directions

The effects of political shifts and governing strategies have implications for all health care professionals, and it is necessary to bring attention to the mutually dependent interplay of health professionals, organizations, administrative and political bodies. Further attention should be directed towards strategies and arenas for encouraging mutual understanding and learning in the physiotherapy profession and for developing competence and practice knowledge to optimize patient care across health care levels.

Further research on rehabilitation practices must call for attention to collaborative work across professional boundaries and include the perspectives of both patients and their next of kin. One aspect of interdisciplinary collaboration, emphasized in Proposition nr. 1 (2007-2008) of the Storting: National Strategy for Habilitation and Rehabilitation 2008-2011 (Norwegian Ministry of Health and Care Services, 2007) and actualized by the fusion of the Law on Health Services and the Law on Social Services into the Law on Health and Care Services in the Municipalities (Norwegian Ministry of Health and Care Services, 2011a), is cooperation across traditionally divided services. This cooperation points to issues related to collaborative work that transcend the organization of different service areas (health, care and social services).

The extent and contents of care coordination and outpatient rehabilitation services (ART) is interesting in terms of collaborative work across health care settings and should be subject to further investigations. Furthermore, the collaboration and coordination among various health and care services depends on the social, cultural and political systems in which they are situated, and health professionals' roles as change agents in reformative work should be the subject of further investigations.

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ORIGINAL ARTICLE

Acquired brain injury rehabilitation: dilemmas in neurological physiotherapy across healthcare settings

Eirik Lind Irgens, Nils Henriksen and Siri Moe

Department of Health and Care Sciences, UiT The Arctic University of Norway, Tromsø, Norway

ABSTRACT

People with acquired brain injury (PwABI) are usually hospitalized for emergency care and often require both specialist and primary healthcare long-term follow-up. Higher intensity rehabilitation featuring early intervention is recommended. This study investigated how implementation of redistributed responsibilities in Norway affects neurological physiotherapy practice within and across healthcare levels and how physiotherapists experience and address these changes. We performed qualitative research interviews with physiotherapists, complemented by non-participatory field observations of physiotherapist treatments, during the rehabilitation of 10 PwABI from specialist to primary healthcare. We performed a content analysis of the interviews connected to perspectives on professionalism. Physiotherapy services for PwABI seem to be constrained, as reforms shift responsibilities for rehabilitative work between healthcare levels. Earlier hospital transfer, structural limitations and resource insufficiencies challenge the ability to provide good-quality and intensive physiotherapy services for PwABI, especially in primary care. Furthermore, the traditional division of responsibilities and organizational boundaries appears to limit expectations of future treatment and to influence the delivery of recommendations across healthcare levels. This study draws attention to the possible unintended consequences of reform initiatives, which should be considered during further development and efficiency improvements in rehabilitative work across healthcare levels.

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Introduction

People with acquired brain injury (PwABI) are usually hospitalized for emergency care and often require long-term follow-up from both specialist healthcare (SpHC) and primary healthcare (PrHC). Higher intensity rehabilitation featuring early intervention is recommended for optimal outcomes following acquired brain injury (ABI),[1] and treatment in a specialized unit with a multidisciplinary team is recommended before transfer to a rehabilitation unit if ongoing inpatient rehabilitation is required.[2] Hospital services should ensure the safe transfer of care upon discharge, including relevant and adequate information to PrHC services for optimal community rehabilitation. In Norway, municipal authorities administer the PrHC level, whereas the state is responsible for SpHC services, mainly offered in local, regional and national hospitals.

The environmental context of rehabilitation may be a contributory factor to different choices of treatment approach, and variety in PrHC settings allows for different opportunities and limitations regarding treatment. In Norway, recent reform initiatives and regulations attach more importance and priority to neurological rehabilitation [3–5] and transfer more responsibility for provision of rehabilitation services to municipal authorities. The Coordination Reform in Norway, approved in 2012, focuses upon improved collaboration between providers of PrHC at the municipal level and SpHC in hospitals.[6] The aims of this reformative work in Norway are to simultaneously improve service quality and reduce costs. The reformative work in Norway is inspired by, and shares similarities with healthcare reforms both in neighbouring countries such as Sweden and Denmark [7,8] and in other Western countries, e.g. England,[9] Scotland and Australia.[10] A common feature is to provide equal and universal access to healthcare services for all citizens and, furthermore, to solve the challenges of fragmentation of health services in primary care and unsustainable long-term costs.[11] Knowledge is needed regarding how these reforms affect physiotherapy services for PwABI at the PrHC level.

Professionals are delegated the authority to judge and act, according to given rules, based on discretionary reasoning.[12,13] They are often described as street-level bureaucrats,[14–16] being the final link in the chain of democratic governance. In the Norwegian context, Vike [17] has questioned whether dilemmas of gate-keeping are increasingly individualized at the professional level, and how street-level bureaucrats are potentially overburdened as treatment responsibilities are delegated within the care system. The need for individualized physiotherapy treatment calls for discretionary judgement from professionals, while laws, measures and structural boundaries limit the discretionary space. Nalette [18] advocates a scepticism of *status quo* practices in physiotherapy to modify conventional individual, organizational and societal practices for the benefit of patients. This moral aspect calls for

CONTACT Eirik Lind Irgens Eirik.l.irgens@uit.no Department of Health and Care Sciences, UiT The Arctic University of Norway, Pb 6050 Langnes, 9037 Tromsø, Norway

reflective attitudes of professionals towards practice and clinical reasoning in a changing healthcare setting. These aspects of professional practice constitute our framework for examination of physiotherapy services in neurological rehabilitation.

Studies on healthcare pathways and smooth care setting transitions are increasing in number,[19,20] and several studies have focused more specifically upon neurological rehabilitation and collaboration across healthcare settings for PwABI.[21–25] However, knowledge on physiotherapists' perceptions of service delivery to PwABI in transition from SpHC to PrHC is sparse. The aim of this study was to investigate how the implementation of redistributed responsibilities affects physiotherapy practice within and across healthcare levels and how physiotherapists experience and address changes arising from this situation.

Methods

Design and methodological approach

We selected a sociology of knowledge framework for this study as it emphasizes an interpretive approach to professional practice. The social constructionist paradigm emphasizes multiple socially constructed realities and a dialectical process between objective and subjective reality, investigating both macro- and micro-sociological aspects of social phenomena.[26–28] A constructivist and contextual perspective highlights how organizational and task-oriented changes are interpreted at the individual level and gives access to a deeper understanding of how changing demands are perceived and handled. The overall study design was sequential. The material consisted of semi-structured interviews, observational field data, field conversations and SpHC discharge papers to investigate aspects of neurological rehabilitation across healthcare settings. Individual interviews were performed to gain in-depth knowledge concerning physiotherapists' experiences and perceptions of post-reform variations in rehabilitation processes.

Study setting

The study was conducted in northern Norway, which has a dispersed population of 480,000 inhabitants, covering 113,000 km^2 (43,630 square miles). The study includes interviews with physiotherapists and video observations of physiotherapy treatment as we followed the rehabilitation process of 10 PwABI from hospital discharge to continued rehabilitation at the municipal level. The municipalities included in this study were small and medium sized, ranging between 1000 and 70,000 inhabitants.

Recruitment and participants

Physiotherapists in SpHC rehabilitation units in local and regional hospitals received information about the study and were asked to participate following hospital management approval. The specialist healthcare physiotherapists (SpPTs) were asked to identify patients who met the following inclusion criteria: admitted to in-hospital rehabilitation following ABI; considered in need of further post-discharge physiotherapy services; and able to consent. SpPTs were asked to assess potential patient participants' cognitive abilities to ensure fully informed consent prior to invitation to participate. Staff members who were not responsible for each participant patient's treatment provided verbal and written information and answered any questions. Authorities and physiotherapists in the patients' municipalities (PrPTs) were invited to participate following the patients' written consent. Four of the patients underwent a rehabilitation stay in a secondary SpHC institution, before or after arrival in their home community. Two of the patients were transferred for further inpatient municipal rehabilitation, before discharge to home. Additional data collection following the initial procedures was performed in these cases.

All 10 PwABI were transferred from acute care, in intensive care units, dedicated stroke units or neurological/neurosurgical units, for continued in-hospital rehabilitation. The included patients ranged between 30 and 80 years of age, all suffering from acute brain injury due to a variety of causes, such as stroke, encephalitis and brain surgery, and had an extensive loss of function. Length of stay in the rehabilitation unit varied from 2 to 14 weeks, depending on the severity of the disability. The patients were living in different home settings, in terms of both family circumstances and municipal characteristics. The participating physiotherapists ranged from newly qualified to highly experienced practitioners, with variable formal and informal competence in neurological physiotherapy and within different work affiliations. Further participant characteristics are outlined in Table 1.

Data collection procedures

Interviews with the treating SpPTs and field observations of authentic physiotherapy treatment sessions were performed by the first author at a time-point close to the patient's discharge from the rehabilitation unit. Two of the SpPTs were reinterviewed, as they treated more than one of the patients included in the study. Furthermore, the treating PrPTs were interviewed, and field observations of authentic treatment sessions were carried out shortly after the patients' arrival back home. Data collection ended after a final 3 month follow-up interview with the PrPT. The interviews were scheduled at the convenience of the participants in a venue of their preference, and lasted for 45–90 min. The interviewer posed open-ended questions from an interview guide related to aspects of the patient's rehabilitation process (Table 2). In total, 35 interviews and 23 field observations were recorded and transcribed successively by the first author. The results presented in this article stem mainly from interview data.

Data management and analysis

The first author performed a qualitative content analysis [29] using a systematic text condensation approach,[30] complemented by the second and third authors. Transcripts of interviews and summaries of preliminary results were critically

Table 1. Participant characteristics.

	n
Patients ($n = 10$)	
Diagnosis	
Cerebral infarction, cerebral haemorrhage, tumour, encephalitis	
Surgical interventions (craniotomy, shunt, biopsy, brain surgery)	6
Independent walking with or without aids	
Upon admittance to primary rehabilitation unit	1 (using aids)
Upon discharge from primary rehabilitation unit	4 (2 using aids)
Gender	
Male	8
Female	2
Age	
<40 years	3
40–60 years	4
>60 years	3
Social/family relations	
Living alone	3
Live-in partner	7
Parental responsibility for under-aged	2
Adult children (> 18 years)	5
Physiotherapists in specialist healthcare ($n = 8$)	
Education	
Bachelor's degree	6
Master's degree	2
Experience	
0–9 years	5
≥10 years	3
Specialization in neurology	
Post-experience neurology courses	4
Specialist in neurological physiotherapy	4
Work affiliation	
Rehabilitation unit	6
Private hospital	2
Physiotherapists in primary healthcare ($n = 12$)	
Education	
Bachelor's degree	12
Master's degree	0
Experience	
0–9 years	6
≥10 years	6
Specialization in neurology	
Post-experience neurology courses	3
Specialist in neurological physiotherapy	2
Work affiliation	
Employee	10
Self-employed	2
Municipalities ($n = 9$)	
Community population	
0–4999 inhabitants	4 municipalities
5000–20,000 inhabitants	3 municipalities
More than 20,000 inhabitants	2 municipalities

Table 2. Topic guide.

Physiotherapist's background and description of patient	Age
	Education
	Postgraduate studies and courses
	Description of practice and patient categories
	Patient and rehabilitation process
Professional practice environment	Resources
	Venues
	Time
	Treatment approach, possibilities and constraints
Collaboration	Physiotherapists
	Other health professionals
	Interaction
	Communication of information
Role in rehabilitative work	Physiotherapists' responsibilities
	Expectations of patient, next of kin, other collaborating health professionals
	Alterations in roles and work tasks
Transfer of knowledge	From whom
	What
	Missing information
	Own role in communication of information regarding the patient: physiotherapist, other health professionals, next of kin, etc.
Prioritizing of the patient	High priority
	Downgrading
	Who sets the priorities
	Other solutions
Responsibilities within different healthcare levels	Specialist healthcare
	Primary healthcare
	Changes
	Potential changes
	Level of knowledge
Further patient follow-up	What is important
	Expectations
	Possibilities
	Promotive and restrictive elements

discussed to ensure congruence and to pursue emerging themes and aspects of special interest. Rich contextual descriptions and the absence of novel findings in the last interviews indicated a purposive sample size.[30,31] The transcribed interviews were analysed by identifying meaningful units and patterns related to the objectives of this study, and codes were created through a process of condensation, as presented in Table 3. In the final process of abstraction, the codes were organized into categories and themes based upon commonalities and patterns appearing across the material as a whole,[31] as shown in Table 4.

Research team and reflexivity

Two of the researchers (ELI and SM) are experienced physiotherapists with knowledge of physiotherapy services in both healthcare levels, which may strengthen the relevance of the interpretations. The third researcher (NH) is a sociologist with shared interests in the field of study and contributed to the applied theoretical framework and rigour in the analytical process.[32]

Ethical considerations

The study followed the principles of the Declaration of Helsinki [33] and was approved by the Data Protection Official for Research, Norwegian Social Science Data Services (NSD).

Results

Two main themes emerged from the analysis: (i) rehabilitation contexts in change and (ii) challenges in the transition to municipalities. Table 5 presents an overview of the final step of the analytical process, organizing the identified categories in two themes that we elaborate on in the following sections, exemplified by quotations.

Rehabilitation contexts in change

Prioritizing and resource inequality

The informants described differences between SpHC and PrHC levels concerning both structure and available resources.

Table 3. Example of the analytical process from meaningful units to condensation and codes.

Meaningful units	Condensation	Codes
What type of rehabilitation can you expect with such small units, when the professionals are supposed to attend to a variety of tasks: elderly, children, musculoskeletal, neurology, cancer and so on?	Small units and task diversity reduce expectations for further rehabilitation	Low expectations
Well, in general, if the patients get physiotherapy three times a week the first period after discharge, we think it's very good, and the municipality has made an effort.	A good effort to offer physiotherapy three times a week	Settle for less
However, more often it's two times a week, you know, and sometimes it's one, and that's a bit scarce.	Frequency of physiotherapy interventions is often too low	Reduced service delivery
So what I'm saying is: What can we expect, considering what we know and what we're told?	Knowledge of the premises reduces expectations	Negative presumptions

Table 4. Example of the analytical process from codes to category and theme.

Codes	Category	Theme
Low expectations	Low prospects for continued municipal rehabilitation	Challenges in the transition to municipalities
Settle for less		
Reduced service delivery		
Negative presumptions		
Time pressure		
Undersized service		
Tailored recommendations		
Downscaling of expectations		
Ensure patient–carer relationship		

Most of the physiotherapists working in SpHC described a situation characterized by defined settings with adequately sized resources available. The sizing and number of different health professionals were adjusted according to the number of beds within the rehabilitation unit and were overall considered sufficient to offer qualitatively good services for admitted patients, as one of the hospital physiotherapists stated:

> We are quite well set here with regard to resources. [. . .] Here, it's possible to offer therapy with two physiotherapists, and we can offer treatment twice a day when needed . . . (SpPT2)

In the PrHC setting, the physiotherapists generally described an undersized service and a challenging environment, characterized by waiting lists, prioritizing, and lack of coherence between resources and responsibilities:

> So I have to make space for her in my already full days, and someone has to go. It's like pressing a sardine into a box, and another one pops up in the other end. (PrPT5)

In spite of the variety in population size, PrPTs' work affiliation and physiotherapy coverage among the municipalities, they all described challenges concerning prioritizing. One of the physiotherapists working in a medium-sized municipality stated the following:

> According to a national average, we are reasonably well set. But, if we had two more [physiotherapists], we would still have more than enough work for them as well . . . I feel that we have time to prioritize rehabilitation in cases with extensive needs. That is, we *find* time at the expense of others, but that's just the way it is. (PrPT0)

Most of the physiotherapists in the PrHC prioritized and planned the service either alone or between colleagues, with little or no involvement from municipal authorities. The larger municipalities used fixed criteria to prioritize patients on waiting lists, while the individual physiotherapists in most of the smaller municipalities made these judgements.

Alteration in rehabilitation pathways

Hospital physiotherapists emphasized a change in time of admittance in the rehabilitation unit as patients were now transferred earlier from acute care. The SpPTs indicated negative consequences for the overall rehabilitation process and the patients' functional levels upon arrival in the regional level rehabilitation units. One physiotherapist explained:

> We also experience a greater pressure on us, to admit patients earlier, which gives us patients in a poorer state. They are actually not receptive for rehabilitation. So they use the first period with us to become medically stable, and we have the knife on our throats because they are supposed to be discharged again soon. (SpPT2)

The SpPTs highlighted the need to assess and treat the patients thoroughly to be able to provide information and recommendations with regard to expected potential for recovery, progress and needs when transferring from SpHC to PrHC. Several PrPTs supported the SpPT's point of view and problematized the combination of less functional ability and earlier municipal rehabilitation, as the following PrPT explained:

> It's becoming more complex anyhow . . . In my opinion, it's necessary first to finalize the primary rehabilitation, to achieve a certain level of function, before they are going home. (PrPT7)

Challenges in the transition to municipalities

Home rehabilitation and everyday life

Resuming an everyday life after hospitalization was a theme that several PrPTs reflected upon in relation to the delivery of physiotherapy services. The patients were discharged earlier and with less functional ability, and the PrPTs saw this as unfavourable:

> The patients have somewhat more basic challenges now than earlier, so we simply have to start on a lower level than we used to, and . . . then there is the home situation . . . It is difficult to achieve good enough conditions to offer adequate treatment when they are in as poor condition as some of them are. (PrPT6)

Most of the working-age patients had extensive networks of family and friends at home and, according to their PrPTs, experienced trouble balancing their social life and

Table 5. Overview of categories and themes.

Themes	Rehabilitation contexts in change		Challenges in the transition to municipalities	
Categories	Prioritizing and resource inequality	Alteration in rehabilitation pathways	Home rehabilitation and everyday life	Low prospects for continued municipal rehabilitation

rehabilitative efforts. The following physiotherapists explained various aspects of balancing everyday life and rehabilitation:

> So he has become very tired. I have a feeling it's full speed from early morning till late night. We have discussed whether he should think a little rehabilitation still. He is after all still in rehabilitation ... (PrPT0)

> He is training a lot and has so for a long time, so he's not able to do much more that day. It's draining when it comes to energy and vigour, so balancing is an issue. (PrPT8)

The frequency of physiotherapist treatments varied in the municipalities. The oldest patients (>60 years) received the lowest number of treatments (three or fewer per week), but treatment of working-age patients showed the greatest variation (two to five per week). The majority of PrPTs considered three sessions per week as intensive and related low frequency treatment to lack of physiotherapist resources, long travelling distances, and the patient's participatory ability and level of function, as a physiotherapist explained:

> Usually, if I work intensively with someone, it's three times a week. Yes. And it's really enough for most of them because it is .... You have to live a little in between, you know. So, if the therapist comes *every* day, it's not so good. Then, you have to be in an institution, in *my* opinion. (PrPT6)

Low prospects for continued municipal rehabilitation

The resources in the municipalities were considered limited, and most of the SpPTs had low expectations for future follow-up. The SpPTs expressed concerns, as they perceived the professional environments as being too small at the municipal level and not able to provide sufficient treatment frequency. One physiotherapist described:

> Well, usually our patients are offered services maximum two times per week when they arrive in the community. That's not enough for many of them .... I rarely recommend five times a week because I'm aware of the limitations. (SpPT0)

Some of the most experienced physiotherapists contributed to the adjustment of the expectations of patients and their next of kin to arrange the preconditions for future treatment at the primary care level. One of the SpPTs explained:

> We try to state clearly that it's not given that they will receive the same intensity in the municipality as they receive here. [...] We are after all trying to build confidence to the service they will receive after discharge, so that the future collaboration will be good. (SpPT9)

Discussion

The main findings in this study are that both SpPTs and PrPTs articulated challenges in performing high-quality rehabilitation following the change in the transfer policy between hospital units and across service levels. According to SpPTs, hospitals transfer patients to active rehabilitation units before they are receptive to active rehabilitation, and furthermore, they are discharged to municipalities at a stage where PrPTs find it difficult to start home-based rehabilitation. Anticipation of municipal constraints influences information given upon hospital discharge, and transfer of rehabilitation responsibilities affects prioritizing for the PrPTs.

The physiotherapists in this study described challenges balancing professional judgements with the lack of resources. Limitations in service delivery combined with increased responsibility can lead to dilemmas, as the appropriate course of action cannot be achieved because of external barriers;[34] this can create tension between political governance and the professional accountability of street-level bureaucrats.[35] Recent studies show that influences of contextual factors and external circumstances such as economy, duration of stay, organization and culture affect physiotherapists' and other professionals' clinical reasoning and decision-making.[36–41] The results from our study reveal that these factors also affect the quality of rehabilitative work and the process of patient transition from SpHC to further PrHC follow-up. Shorter hospital stays result in a decreased ability to predict future outcomes and further needs in the continuation of the rehabilitation process and complicate the rehabilitative work at the municipal level.

These results contrast somewhat with the promising results from studies on early supported discharge (ESD) and home rehabilitation programmes, which show similar or better outcomes of patient treatment when the length of SpHC stay is reduced.[23,42–46] However, particular ESD studies presuppose extra SpHC effort in patient transition, performed in the PrHC setting, offering close collaboration and support in the homecoming phase.[21,22] In addition, neurological injuries in addition to stroke are included in ESD studies to a lesser degree, and several studies on stroke conclude that the positive benefits of ESD are primarily applicable to minor-to-moderately disabled stroke patients.[21,47,48] All patients included in this study were considered in need of further in-hospital rehabilitation, and none of the rehabilitation pathways involved extra SpHC effort upon discharge, as conditioned in the ESD trials. This indicates a discrepancy between the positive results of ESD in randomized controlled trials and the current circumstances in the municipalities. Thus, changes in rehabilitation pathways, to further develop the healthcare system and reap the benefits of earlier hospital discharge in accordance with recent research results, may prove disadvantageous for PwABI with extensive rehabilitation needs, if principal features of ESD such as cooperation, extra SpHC support and resources are not provided.

The PrPTs acknowledged that insufficient resources influenced the ability to offer intensive physiotherapy for PwABI. The intensity of practice and therapy is considered a key factor in meaningful training after ABI, as the effect seems to

increase as intensity increases.[44,49] The delivery of neurological rehabilitation services has been shown to vary widely across healthcare levels,[50] and the results from our study indicate both shorter stays in SpHC and a decrease in intensity of treatment when transferred to PrHC. In spite of reduced treatment intensity after hospital discharge, the PrPTs considered PwABI a prioritized group. They also expressed concerns regarding other groups in need of physiotherapy treatment in their municipality because of prioritizing PwABI, and it remains uncertain whether this constitutes a displacement of resource insufficiency. The informants portrayed a constrained practice, as described by Nalette,[18] characterized by time pressure, lower functional level at discharge, contextual limitations and downgrading of other patient categories in PrHC. The PrPTs further experienced little involvement from municipal authorities with regard to prioritizing and deciding intensity of service provision. Increased responsibilities and patients with more extensive needs may lead to professional dilemmas in terms of providing sufficient treatment in accordance with the physiotherapist's own professional judgement. Furthermore, the lack of involvement from municipal authorities may indicate a local context whereby professional and political discourse on prioritizing issues is not present or applied. Cultural and traditional divisions of responsibilities can be seen as embedded in professional practice and are often hard to change.[51] The dual focus of the reformative work seen in Western countries in recent years, emphasizing both improvements in service provision and economic rationalization, appears challenging to fulfil in a constrained PrHC setting. Increased attention to and debate concerning prioritizing and resource allocation may be necessary both to identify barriers in reform implementation and to facilitate modification of current practices.

The results emphasize how physiotherapists' knowledge of future external circumstances in a patient's rehabilitation pathway influenced the way in which information and recommendations were communicated in patient transitions. Some of the SpPTs expressed a need for a change in a patient's expectations regarding the extent of municipal physiotherapy services and tended to fit recommendations to the existing situation at the municipal level. Simultaneously, PrPTs argued that both external conditions, such as treatment facilities and travel distances, and the patient's need to balance everyday life and rehabilitation efforts complicate opportunities for intensive treatment. Rehabilitation close to home, family, friends and colleagues is considered to play an important role in motivation and goal-setting for the patients,[52] and participation in everyday life is the desired outcome of rehabilitation.[53] Nevertheless, rehabilitation is a demanding process. The patients often have reduced capacity because of the injury, and the transition between the institution and home constitutes a vulnerable phase.[54,55] The institutional rehabilitation environment allows patients to mobilize focus and energy on their physical recovery, whereas new challenges appear when they are discharged.[56] The shift from the hospital setting to continued rehabilitation in the patients' home communities also involves additional efforts to re-establish everyday life, expanding the context in which the rehabilitation takes place. This calls for attention to the timing of hospital discharge in relation to the current situation and resource incapability within PrHC settings, as a reduction in rehabilitation services may affect the PwABI's ability to reach optimal capacity and participation in everyday life.

Methodological considerations

The results from this study stem from a limited number of participants, carried out in one region of Norway. However, variability within the material regarding physiotherapists' professional experiences, patient categories and communities has generated rich data, and the similarities found indicate validity across different settings. The participants illustrate examples within a rehabilitation context, and patterns and commonalities may, according to Brinkmann and Kvale [31] and Malterud,[32] represent features relevant to similar groups through analytical generalization. Physiotherapists' professional dilemmas in relation to available resources in our study may show transferability to similar changes in hands-off processes between healthcare levels in other countries. Procedures, data management and analysis are described in detail and exemplified to ensure the further reliability and validity of the study.[31] The recruitment procedures presupposed volunteering initially and, as such, the informants from SpHC preselected to participate, possibly increasing the risk of bias.

Conclusion

As reforms shift responsibilities for rehabilitative work between healthcare levels, physiotherapy services for PwABI seem to be further constrained. Earlier hospital transfer, structural limitations and resource insufficiency challenge the ability to provide good-quality and intensive physiotherapy services for PwABI, especially in municipalities. Furthermore, the traditional division of responsibilities and organizational boundaries appear to limit expectations of future treatments and influence the delivery of recommendations and information across healthcare levels in patient transitions.

Implications for physiotherapy practice and further research

This study brings attention to possible unintended consequences of reform initiatives, which should be considered in further development and efficiency improvements in rehabilitative work across healthcare levels. The results also call for attention to the roles of the professionals as changing agents in a reorganizing healthcare service. Larger studies, performed in other demographic contexts and in different organizational circumstances, are required.

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Article 2

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REPORT

Variations in physiotherapy practice in neurological rehabilitation trajectories –an explorative interview and observational study

Eirik Lind Irgens PT, MSc, PhD student, Nils Henriksen MSc, PhD, and Siri Moe PT, MSc, PhD

Department of Health and Care Sciences, Faculty of Health Sciences, UiT The Arctic University of Norway, Tromsø, Norway

ABSTRACT

Rehabilitation following acquired brain injury requires multidisciplinary efforts, including physiotherapy, across health care levels. Recent changes in the organization of health care services in western societies have led to earlier hospital discharge and increased responsibility for rehabilitation in primary care. The aim of this study was to describe and increase knowledge on the variations in physiotherapy practice for people with acquired brain injury across health care levels in Norway. We performed qualitative interviews with physiotherapists and field observations of physiotherapy treatments for 10 rehabilitation trajectories. We also performed systematic analyses using data from field observations, interviews, and hospital discharge records related to perspectives on social practices. The institutionalized rehabilitation context in hospitals promoted a more uniform approach by physiotherapists, emphasizing quality of movement and reacquisition of function. Physiotherapists in primary health care had to balance between interventions aiming to improve quality of movement versus interventions enabling patients to identify coping strategies. The informants highlighted the relevance of contextual surroundings when patients were discharged earlier from the hospital, as these patients' level of function was perceived to be lower. Moreover, the preconditions for providing rehabilitation in primary care challenged physiotherapists to practice and use their knowledge base in novel ways.

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Introduction

Acquired brain injury (ABI) is a significant cause of disability worldwide (Scottish Intercollegiate Guidelines Network, 2013). The causes of ABI include a broad range of conditions, such as brain injuries due to trauma, hypoxia, hypoglycemia, encephalitis, and vascular incidents (e.g. stroke). Rehabilitation following ABI is characterized by heterogeneity in patients, pathologies, impairments, and rehabilitation services. Physiotherapy and task-specific and repetitive task training are considered important interventions and are components of multidisciplinary practices across professions and sectors (Baque, Sakzewski, Barber, and Boyd, 2016; Langhorne, Coupar, and Pollock, 2009; Scottish Intercollegiate Guidelines Network (SIGN), 2013). Rehabilitation often involves both intensive in-patient hospital rehabilitation and further primary health care services in the patients' home communities. The initial stages of recovery from acute injury often focus on reducing impairment and disability, whereas the focus shifts toward strategies for social reintegration when patients return to their communities (Turner-Stokes et al., 2015).

Recent changes in the organization of health care services in western societies resulted from the unsustainable long-term costs and fragmentation of health and care services (Norwegian Ministry of Health and Care Services, 2015b). The need to better address these issues has been a priority in both the Norwegian (Norwegian Ministry of Health and Care Services, 2011, 2015a) and international context (Bauld et al., 2005; Bidgood, 2013; Steel and Cylus, 2012; Vrangbæk and Sørensen, 2013). This has led to a greater focus on the provision of health and care services in municipalities (Norwegian Ministry of Health and Care Services, 2009), earlier hospital discharge, rehabilitation in the patients' home environment and eliciting the resources found among patients, their families, and social networks. However, reports on the reform efforts in Norway indicate that there are unresolved issues concerning resource insufficiency and contextual limitations in primary health care (Grimsmo, 2015; Grimsmo and Magnussen, 2015; Office of the Auditor General of Norway, 2016).

CONTACT Eirik Lind Irgens, PT, MSc Eirik.l.irgens@uit.no Department of Health and Care Sciences, Faculty of Health Sciences, UiT The Arctic University of Norway, Tromsø, 9037, Norway

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The negative effects of conflicting priorities and the limited availability of resources have been identified to affect opportunities for professional development and physiotherapy decision making (Gunn and Goding, 2009; Smith, Higgs, and Ellis, 2007). Furthermore, environmental contexts, assumptions, professional opinions, physiotherapy frames of reference, and health regulations have been shown to affect the choices made in physiotherapy practice (Higgs, Jones, Edwards, and Beeston, 2004; Jette, Grover, and Keck, 2003; Thornquist, 2001). These findings emphasize the relevance of the social environment in determining which professional practices are implemented.

This study focuses on social and cultural aspects to extend the current understanding of physiotherapy practice, as these aspects to a lesser degree are taken into account to explain practice variations. We therefore applied a social constructionist and interactionist theoretical framework as well as socio-cultural perspectives in our study (Berger and Luckmann, 1984; Burr, 2015; Järvinen and Mik-Meyer, 2005). Theories of institutionalization, legitimation, and socialization processes contribute to explanations of how individuals' subjective meanings are formed and developed through interactions with others and through the historical and cultural norms of the society in which they live (Berger and Luckmann, 1984). This perspective emphasizes the relevance of established habits and norms that are taken for granted in specific social communities of practice (Berger and Luckmann, 1984; Lock, Strong, and Røen, 2014; Wenger, 2000). This exemplification of habits is institutionalized within a social environment, as these habits are established and acknowledged as general taken-for-granted rules and norms within a society. These theories may also provide useful perspectives on professional practices in health and care services.

Health professionals practice within specific social environments (e.g. hospitals, communities, and patients' home). Furthermore, the organization of health and care services, development of health care policies, and workplace cultures lead to expectations that shape the framework in which health professionals practice (Måseide, 2008). The way we understand others' and our own behaviors are influenced by the material and social frameworks. As such, participants' social life, activities and actions are affected by the "framing" of a situation (Goffman, 1986). This emphasizes the socio-political dimension of physiotherapy practices (Gibson, Nixon, and Nicholls, 2010; Gibson and Teachman, 2012). The field of rehabilitation has recently been the subject of a displacement of responsibility for providing rehabilitation services. Therefore, there is a need to investigate how physiotherapy for neurological rehabilitation is implemented in the current context of health care in Norway. In this study, we aimed to explore the physiotherapy services in both specialist and primary care settings to describe and increase knowledge on physiotherapists' perceptions of practice in neurological rehabilitation across health care levels.

Methods

Ethical considerations

The Norwegian Social Science Data Services (NSD) and Data Protection Official for Research approved this study, which was performed in accordance with the principles of the Declaration of Helsinki (World Medical Association, 2013).

Context of the study

This study focused on the physiotherapy services provided in rehabilitation trajectories following ABI. The Norwegian health care system is separated into two governmental levels: the specialist and the primary health care system. Hospitals and contractual provision of services in private rehabilitation centers are organized within the specialist health care system, which is a responsibility of the regional health authority. The municipalities are responsible for providing the necessary primary health and care services for their inhabitants, including rehabilitation. Physiotherapy is offered in various contexts in the primary health care (i.e. inpatient community rehabilitation centers, patients' homes, and both public and private outpatient clinics). This study was performed in the three northern-most counties of Norway. The regional responsibilities of the eight hospitals in the region include 87 municipalities and a population of 480,000 inhabitants.

Recruitment and participants

This study recruited patients with ABI and physiotherapists working in both the specialist and primary health care systems (i.e. specialist health care and community physiotherapists, respectively). We followed the rehabilitation process of 10 patients recovering from ABI from their in-hospital rehabilitation to their continued rehabilitation at the municipal level. Data collection lasted from April 2013 until January 2015. Consent from the hospital authority was obtained before conducting meetings to inform the specialist health care physiotherapists in three in-hospital rehabilitation units about the study. Written information about the study was distributed at the rehabilitation units.

We asked physiotherapists who agreed to participate to identify patients admitted to the hospital rehabilitation unit who met the following inclusion criteria: admission to in-hospital rehabilitation following ABI; ability to provide fully informed consent; and need for further post-discharge physiotherapy services. We defined ABI as brain damage caused by events after birth, due to either traumatic (e.g. physical trauma) or non-traumatic brain injury (e.g. stroke, brain tumor, and infections). We asked the physiotherapists to exclude patients who were unable to provide fully informed consent to ensure voluntary participation. Upon approval from the municipal authorities, we provided the community physiotherapists information about the study and an invitation to participate. All of the invited municipal authorities and community physiotherapists consented, and none of the ten recruited patients were lost along the rehabilitation trajectory, although the data collection in one of the rehabilitation trajectories ended while the patient was still institutionalized. This was due to both the length of institutional stay and the uncertainty regarding the ability to manage in a private home setting in the future.

In four of the rehabilitation trajectories, patients were also admitted to private rehabilitation centers, in which we asked for consent and participation from both institution authorities and physiotherapists. The patients were admitted to a secondary stay in private rehabilitation centers either prior to or after returning to their home community. At the time of the first interview and observation in the municipalities, three of the patients were treated at home, two were treated in institutions, and the remaining five were treated in outpatient clinics. When the follow-up interviews were performed, one patient still received home treatment and one still required services in an institution in the municipality. The remaining eight patients attended outpatient clinics. Figure 1 presents an outline of the 10 rehabilitation trajectories. The patients, eight men and two women, were hospitalized for either cerebral infarction, cerebral hemorrhage, tumor, or encephalitis. Six underwent surgical interventions. The patients ranged from 30 up to 80 years old.

The study included eight specialist health care physiotherapists from two in-hospital rehabilitation units and two private rehabilitation centers. In all, 11 community physiotherapists in eight different municipalities participated in the study. Seven of the community physiotherapists were employed in physiotherapy units offering outpatient and home-based services, whereas two worked at in-patient rehabilitation institutions. The remaining two physiotherapists were self-employed at private physiotherapy clinics. The physiotherapists included in this study ranged from newly qualified (i.e. bachelor's degree) to highly experienced practitioners (i.e. extensive post-graduate experience/courses and specialists[1]). The level

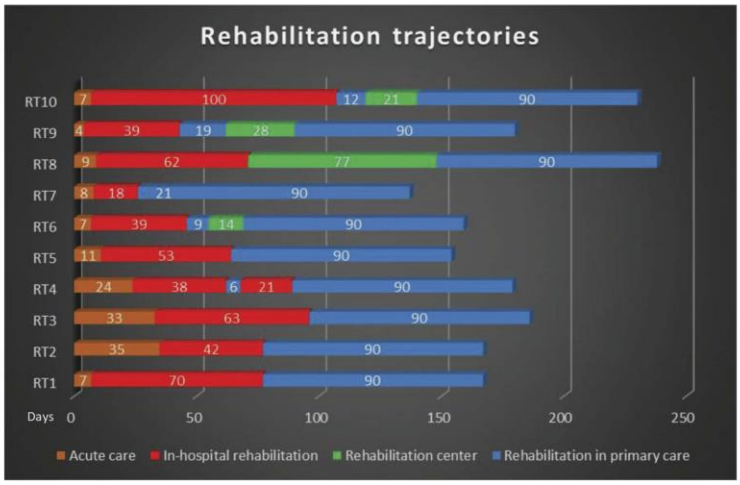

Figure 1. Outline of the rehabilitation trajectories.

[1]In Norway, a specialist in neurological physiotherapy is approved by the Norwegian Physiotherapist Association after completing an extensive post-graduate training. Currently, this requires a master's degree, supervised training and a minimum of three years of practice in the field of specialization.

Table 1. Participant characteristics.

Physiotherapists in specialist health care, n = 8			
Education	Bachelor's degree: 6	Master's degree: 2	
Experience	0–9 years: 5	10+ years: 3	
Specialization in neurology	Post-graduate neurology courses: 4	Specialist in neurological physiotherapy: 4	
Work affiliation	Rehab. unit: 6	Private rehab. center: 2	
Physiotherapists in primary health care, n = 11			
Education	Bachelor degree: 11	Master's degree: 0	
Experience	0–9 years: 5	10+ years: 6	
Specialization in neurology	Post-experience neurology courses: 3	Specialist in neurological physiotherapy: 2	
Work affiliation	Employee: 9	Self-employed: 2	
Patients, n = 10			
Diagnosis	Cerebral infarction, cerebral hemorrhage, tumor, encephalitis. Surgical interventions (craniotomy, shunt, biopsy, brain surgery) in 6 of 10 patients.		
Independent walking	Upon admittance to primary rehabilitation unit: 1 (using aids)	Upon discharge from primary rehabilitation unit: 4 (2 using aids)	Upon arrival in home community: 6 (4 using aids)
Gender	Male: 8	Female: 2	
Age	<40 years: 3	40–60 years: 4	>60 years: 3
Social/Family relations	Living alone: 3	Live-in partner: 7	Parental responsibility for under aged: 2 / Adult children (>18 years): 5

of informal and formal competence within neurological physiotherapists also varied, although there was a predominance of physiotherapists with post-graduate neurological courses and specialists at the specialist health care level. Further participant characteristics are outlined in Table 1.

Observations, interviews, and documents

The first author performed 23 field observations of single physiotherapy treatment sessions and 35 in-depth personal interviews with the treating physiotherapist. Data collection was conducted during the last week of the patients' stay at the in-hospital rehabilitation unit. Medical discharge summaries and interdisciplinary and physiotherapy reports were obtained following patient transfer from the hospital rehabilitation unit. When a second institutional stay occurred, one additional interview and video observation was performed during the last week of the stay in this institution. Furthermore, we aimed to perform the data collection in the patients' home community within the first two weeks after the patients had returned home to ensure proximity to the transition process as well as sufficient time to commence treatment. In four cases, the patients either returned home pending further specialist health care rehabilitation, or were re-hospitalized due to complications. In these cases, we collected data in the primary care setting upon the patients' last arrival in their home communities. To obtain the physiotherapists' reflections and capture eventual outcome from these treatment episodes, we performed a final follow-up interview approximately 3 months later.

Observations of physiotherapy treatment were performed prior to the interviews, although three of the interviews were conducted prior to the observation on the physiotherapists' request. We aimed to complete the interviews consecutively to facilitate discussions related to the patients' treatment session and overall rehabilitation process. Three of the specialist health care physiotherapists recruited more than one of the included patients, and they were interviewed regarding each included patient.

The field observations of treatment sessions were non-participatory and guided by a thematic observation guide (Table 2). Aspects of specific interest during the observations were related to the treatment settings, key features of the treatment provided and patients' participation, activities and response during treatment. The observer used a hand-held video camera and remained secluded in the room to avoid disruption, although occasionally changed position in the room to obtain a better view. The observations of physiotherapy treatment lasted 40–60 minutes. The participants stated during the de-briefing that they were initially aware of the observer's presence but paid less attention as the treatment session progressed.

The physiotherapists were asked to provide suitable venues for conducting the interviews, which lasted 45–90 minutes. A thematic interview guide (Table 3) was developed and tested prior to data collection. The interview guide included prompts related to the research question. The interviewer posed open-ended questions regarding background

Table 2. Thematic guide for physiotherapy treatment observations.

Observation and description of key features regarding the treatment, work methods and context.
Context
• Description of venues and surroundings
• Who was present
• Availability of equipment, and potential for movement expression
• Timeframe
Key features of the treatment session
• Various forms of activity (exercises, manual treatment, task oriented, etc.)
• Starting positions
• Time spent
• Use of hands
• Use of equipment
• Communication and interplay
◦ Verbal
◦ Non-verbal
Patient-related activities and responses
• Patterns of movement
• Potential for moving
• Observable activity/movement/response
• Changes in verbal and bodily expressions
De-briefing after observation
• How did the informants experience the situation?

Table 3. Thematic interview guide.

Physiotherapists' background and description of patient	• Age
	• Education
	• Postgraduate studies and courses
	• Description of practice and patient categories
	• Patient and rehabilitation process
Professional practice environment	• Resources
	• Venues
	• Time
	• Treatment approach, possibilities and constraints
Collaboration	• Physiotherapists
	• Other health professional
	• Interaction
	• Communication of information
Role in rehabilitative work	• Physiotherapists' responsibilities
	• Expectations of patient, next of kin, and other collaborating health professionals
	• Alterations in roles and work tasks
Transfer of knowledge	• From whom
	• What
	• Missing information
	• Own role in communication of information regarding the patient: PT, other health professionals, next of kin, etc.
Prioritization of the patient	• High priority
	• Low priority
	• Who makes priorities
	• Other solutions
Responsibilities within different health care levels	• Specialist health care responsibilities
	• Primary health care responsibilities
	• Changes in responsibilities
	• Potential for future changes
	• Level of knowledge in health care levels
Further patient follow-up	• What is important
	• Expectations
	• Possibilities
	• Promotive and restrictive elements

information on the physiotherapist and the patient, the practice environment, collaboration and interaction with other professionals, communication of information, prioritization of patients, viewpoints on health care-level responsibilities, and reflections regarding future patient follow-up. The 3-month follow-up interviews with the community physiotherapists were related to topics discussed in the first interviews. They focused on the rehabilitation process, the rehabilitation services provided, progress made, obstacles encountered, and patients' prospects of returning to everyday life. The informants provided rich descriptions of both the patients' rehabilitation trajectories and their own perceptions and professional attitudes regarding neurological physiotherapy and rehabilitation.

Analyses

The first author sequentially transcribed the interviews verbatim and summarized the content of video observations according to the observation guide. The authors then discussed the preliminary results during data collection to identify areas of interest for the remaining interviews and observations. The obtained discharge papers were used to validate details regarding medical treatment and patients' rehabilitation trajectories (e.g. diagnosis, family relationships, and time spent in different rehabilitation settings).

Data from the observations and interviews provided complementary and confirmatory information regarding the rehabilitation process and the physiotherapy services. The observations made it easier to relate the interview

questions to the treatment session and the patient's actual rehabilitation process. The observational data provided both confirmatory and complementary information related to the information and viewpoints conveyed and discussed during the interviews. The interviews provided both background information regarding the physiotherapists and patients, the physiotherapists' perceptions of the rehabilitation context, and their professional opinions regarding the patients' rehabilitation process.

The first author analyzed the material using a systematic text condensation approach (Brinkmann and Kvale, 2015; Malterud, 2012), and the analysis was supported by the second and third authors. The summaries of the observed physiotherapy treatment sessions and transcripts of the interviews were presented to the co-authors along with excerpts of the video recordings and were the subject of analysis and plenary discussions. The preliminary results were critically discussed among the authors and in research group meetings to reach consensus and to ensure that the themes and aspects of relevance were pursued (Malterud, 2001).

The analytic process involved identification of meaningful units (i.e. meaningful utterances, sentences or paragraphs, and patterns related to the study aim) (Brinkmann and Kvale, 2015). Codes were created through a process of condensation before they were sorted into sub-themes and themes based on discussions and negotiations between the authors (Malterud, 2012). Two main themes were identified from the data: 1) intervention strategy variations across and within health care levels; and 2) rehabilitation in a daily living environment. Table 4 provides an overview of the sub-themes and themes that emerged from the analysis, including an example of the process of condensation from meaningful units to codes and sub-themes. In the following results section, the main themes are presented with sub-themes. Quotations from the informants' statements were used to validate the results.

Results

Intervention strategy variations across and within health care levels

Quality of movement in neurological physiotherapy

The interviewed physiotherapists in specialist health care emphasized the quality of movement as essential for optimizing motor recovery following brain injury. The observed physiotherapy treatments shared similarities in terms of sequencing interventions: use of plinths and hands for support; emphasis on controlling movements; and normalization of movement patterns in functional activities (e.g. transferring, standing, walking, and climbing stairs). One of the specialist health care physiotherapists explained the use of hands during the observed treatment session with the patient:

> *"The fundamentals must be present in order to activate the muscles correctly, without me being there for support and to remind him. […] My hands contribute to re-establishing a connection in a way and give further confidence… Not only to facilitate but also to give them confidence to be able to get up and stand. The confidence of the patient is of first and foremost importance." (Trajectory 4)*

Several of the physiotherapists in both specialist and primary health care expressed concerns about the asymmetrical effects of using walking aids in gait rehabilitation following ABI. In particular, the specialist health care physiotherapists emphasized the quality of movement and minimization of compensatory strategies during in-hospital rehabilitation. Several mentioned that they provided recommendations to community physiotherapists to avoid or postpone the introduction of walking aids to optimize the recovery of a normal gait pattern. One of the specialist health care physiotherapists explained the treatment strategy concerning a patient as follows:

> *"I don't think you'll get anywhere with him if you focus on functional tasks alone. To give him a cane far out on his right side will only lead to increased tension and eventually falling at some point in time." (Trajectory 1)*

The majority of the interviewed physiotherapists in both health care levels shared similar professional viewpoints regarding the relation between quality of movements and optimization of recovery of function for persons with ABI. Nevertheless, several of the community physiotherapists noted challenges in maintaining focus on good quality movement in treatment. The physiotherapists said they had to focus less on the quality of movements in treatment and more on the introduction of aids to ease the patients' daily activities. *"Cheating and compensatory strategies"* (Trajectory 10), as described by one of the community physiotherapists, were considered inevitable because independence in ADL was crucial to being able to live at home. Several of the community physiotherapists also emphasized the importance of acknowledging the patients' own goals for the rehabilitation process and adjustments seemed to be necessary to motivate continued efforts post-discharge. One of the community physiotherapists explained how he chose to comply with his patient's wish to practice walking shortly after the patient

Table 4. Overview of the analytic process from quotations to themes.

Variations in physiotherapy practice in neurological rehabilitation trajectories – an explorative interview and observational study				
Themes	Rehabilitation in a daily living environment		Intervention strategy variations across and within health care levels	
Sub-themes	The significance of next of kin	Outpatient versus at home treatment	Quality of movement in neurological physiotherapy	Different settings imply different approaches

Codes	Family means more	Extended professional role
Condensation	Prefers to stay home because of children	Offering support to family members as well
Quotes	*"He wants to stay at home, that is what he wants. Well, I can understand his viewpoint, considering his children, but he does not seem to understand how important it can be in regard to … well, his own future."*	*"We have had many talks with his wife as well, as she has to be able to share her feelings with someone. She comes by once in a while, even when he's not here. It's obvious that this is a major upheaval for her as well."*

returned to his home community, even though he had described the negative consequences of these exercises in terms of overstrain and pain.

A minority of the community physiotherapists in this study expressed contrasting views on recovery strategies in neurological rehabilitation concerning movement quality. One community physiotherapist said:

> *"I don't think it's necessarily purposeful to struggle for quality to such an extent* versus *getting people up and walking in a somewhat unconventional way. At least we get them up and self-reliant. […] Some (physiotherapists) work too much towards quality with too little progress, you know." (Trajectory 6)*

This physiotherapist related the potential for recovery following ABI as being limited to a certain time span post-injury and emphasized the need to focus specifically on training functional activities and adaptive strategies during this period to optimize rehabilitation.

Different settings emphasize different approaches

The field observations of physiotherapy treatment at both health care levels showed a variety of intervention choices. All specialist health care physiotherapists began the observed physiotherapy treatment with preparatory manual techniques, several in the supine position on a plinth or in bed, including sensory stimulation, soft tissue and joint mobilization, activation of specific muscle groups in

extremities, and recruitment of central and proximal activity and stability in the supine, sitting, standing up, and standing positions. The time spent in physiotherapy mostly encompassed treatment in sitting and standing positions, whereas transferring and walking constituted the final part of most treatment sessions.

When arriving in their municipalities, patients were offered treatment in different venues (e.g. institution, home, and outpatient clinic) and with a greater variety of approaches. Furthermore, the sequencing of the observed treatment sessions in the primary health care sector varied between the participating patients, whereas the treatment sessions in specialist health care were more uniform in structure.

One of the community physiotherapists described the need to simultaneously attend to several aspects of care to help patients manage in everyday life. The physiotherapist provided examples related to current patients and described challenges such as shoulder and hand dysfunction, asymmetric gait with reduced hip stability, low endurance, respiratory insufficiency and decreased overall strength. The physiotherapist utilized a variety of approaches, as necessary, when planning the treatment:

> *"I divided the treatment focus into three, to offer him all that he needs, you know…. I'm also afraid that these patients get ataxic, you know. He's got a tremor and is a bit ataxic already, so it's very important to include some neurological rehabilitation, for example Bobath, to regain more control in his arm and hand. It's actually a mix of different types of treatment interventions that have to be applied within a single session, you see. He can't be here all day, you know."* (Trajectory 2)

This community physiotherapist further explained how limitations in the available equipment and facilities at the clinic led to compromises regarding choices and sub-optimal solutions:

> *"We recently rebuilt our gym, but we have a lot of equipment in a confined area, so it's a bit cramped and problematic when it comes to exercising with persons with stroke or low mobility issues."* (Trajectory 2)

The observed physiotherapy intervention mainly consisted of treadmill walking and balance training in addition to full-body strength exercises using plate-loaded weight machines, and this community physiotherapist reported that the exercises were supplemented by manual intervention techniques with bench exercises to mobilize the shoulder joint. Hip stability and symmetric gait were difficult to address during treadmill walking and transfers at the clinic. The patient thus practiced asymmetric gait during treatment sessions, allowing for a pelvis drop on the side opposite to the stance leg and knee hyperextension of the stance leg.

Rehabilitation in daily living environment

Outpatient versus at-home treatment

The physiotherapists who still offered home treatment at the time of the follow-up interview stated during the first interview that they preferred to offer their services at home to focus on safe transfers and self-management in the patient's home environment. Nevertheless, problems associated with limitations of the home context were described during the follow-up interview:

> *"We just have to exercise in his house according to the available possibilities I suppose. The situation is not ideal; exercises in bed, no walkway where one can be assured that he can be safe when up and standing… So we just have to do the best we can." (Trajectory 1)*

Most patients were treated in outpatient community or private clinics, and several of the community physiotherapists argued that outpatient services were both cost- and time-effective and the preferred way of offering physiotherapy services. The community physiotherapists further explained additional benefits of outpatient services for their patients in terms of social networking, getting outside of their homes and performing extra exercise during the transfer. One of the community physiotherapists described an elderly man who had suffered from a stroke and recently arrived home following specialist health care rehabilitation. The physiotherapist offered an intensive treatment follow-up with 2–3 home visits per week but preferred to treat the patient at the clinic to address proximal hip and pelvic stability to attain further gait improvement:

> *"He doesn't have a good working surface at home, so I have to find a compromise, a kitchen table or something. But I prefer to have him here (at the clinic) using adjustable plinths, so I can work with him up and standing in a safe and sound way." (Trajectory 7)*

One of the community physiotherapists described a male patient in his mid-forties who suffered a stroke and was recently discharged to his home after a private rehabilitation center stay. He was able to transfer short distances in his apartment using a cane and walked up and down stairs independently. The physiotherapist offered home rehabilitation in the beginning but chose to discontinue home treatment, as the patient, according to the physiotherapist, considered the treatment setting awkward. Furthermore, the physiotherapist felt that the equipment and flexibility in the home treatment situation were limited and stated the following during the interview:

"When all you have available is a chair and a kitchen bench, then it's difficult to do all we want to do. [. . .] It's said that it's supposed to be so beneficial to practice at home, and I suppose it is debatable. I believe it's good in some cases, but if you can manage the basics, like toileting, getting out of bed and preparing food, the next step is more challenging. Then it comes to quality, and it can be difficult to address the right muscles." (Trajectory 8)

The significance of next of kin

The home context also revealed additional factors concerning the influence of close family on the rehabilitation process and the patients' efforts to resume daily living. Patients' loss of function and continued rehabilitative needs after hospital discharge affected the life of their next of kin. Furthermore, family relationships seemed to influence the prioritization and direction of the patients' subsequent rehabilitative efforts in the home community.

Some of the patients settled for the extent of rehabilitation services offered in the municipality even when additional institutionalized rehabilitation stays were offered; this preference was perceived to reinforce the responsibilities of the municipality. One of the physiotherapists explained how a patient had declined opportunities to pursue more intensive and targeted treatment in an institution because it required leaving his family and home context again:

"He wants to stay at home, that's what he wants. Well, I can understand his viewpoint, considering his children, but he does not seem to understand how important it can be in regard to . . . well, his own future." (Trajectory 4)

Another community physiotherapist explained how the home context seemed to challenge the patient's own ability to continue rehabilitation. The community physiotherapist emphasized the significance of his spouse's motivational skills in sustaining sufficient levels of activity to support further progress in the rehabilitation process:

"I realize that the biggest challenge may be to achieve enough intensity. To motivate him enough for him to mobilize his available resources. . .. What's going to be hard, I believe, is the daily activities. I can see that he's sitting a lot, and his wife already has a handful to contend with, trying to keep him going." (Trajectory 7)

Summary of the results

The physiotherapists in this study discussed and demonstrated a variety of intervention strategies used across the different rehabilitation trajectories for patients with ABI. The field observations and interviews displayed a high degree of similarity in terms of treatment interventions in the specialist health care setting. The structure of treatment sessions progressed from preparatory exercises to functional activities, and the physiotherapists described sufficient resources in terms of venue, equipment, and additional help. Physiotherapy treatment in the primary health care setting, however, was characterized by larger variability in terms of venue, use of equipment, structuring of treatment sessions, use of treatment techniques, and balancing of recovery and compensatory intervention strategies. Furthermore, perceived challenges and barriers to home-based rehabilitation were expressed. Community physiotherapists explained their preference for outpatient treatment following ABI. Additionally, they highlighted the significance of the home context as well as the role of next of kin in continuing and planning the rehabilitation process in primary health care.

Discussion

The results of this study highlighted that the environmental context, patients' functional abilities, and physiotherapists' professional attitudes were influential in the selection of intervention strategies for rehabilitation following ABI. The majority of the informants at both health care levels conveyed positive attitudes regarding the potential for reacquisition of function following ABI. The physiotherapists in the primary health care setting experienced fewer opportunities to focus on the qualitative aspects of movement and described this restraint as challenging in terms of choice of treatment strategies. These challenges were related to the earlier hospital discharge and extended rehabilitation responsibilities at the municipality level. The patients' low functional level required a predominance of adaptive and compensatory measures, even though the patients were still in recovery.

Motor relearning has often been explained as either the reacquisition of previous motor patterns (recovery) or the adaptation and substitution of processes (compensation) (Levin, Kleim, and Wolf, 2009). Recovery and compensation strategies have been perceived to require different approaches in physiotherapy interventions (Frykberg and Vasa, 2015). Informants from both health care levels found the context of home-based and community rehabilitation to be a barrier, as they could place less emphasis on recovery of function. Furthermore, the results demonstrated the physiotherapists' emphasis on contextual factors and the patients' functional abilities in the primary health care setting. From an interactionist theoretical perspective, as outlined by Goffman (1986), the descriptions of the community context can be considered "natural" determinants that constitute a framework perceived to confine physiotherapy practice. Socially and culturally

embedded perceptions and expectations within the frames of community rehabilitation can influence the way that physiotherapists interpret situations (Wine, 2008). Accordingly, the culture and professional's perspectives within the primary health care context may predispose the physiotherapists' interpretation of the current situation. Thus, they may have perceived the increased responsibility and the patients' low functional abilities as a barrier to the habitual and traditional way of providing physiotherapy services in the primary health care context.

Several of the physiotherapists considered their patients' function to be marginal. They considered recovery of mobility important in this regard. Activities such as transferring, walking, and exercising using the treadmill, row-machine, and ergometer bike constituted a larger part of the observed and discussed physiotherapy interventions in the community setting when compared to the specialist health care rehabilitation. The increased demands for independence in ADL may have affected these choices. Nevertheless, several of the community physiotherapists expressed concerns regarding the lack of opportunity to focus on the quality of movements. Thus, most of these physiotherapists conveyed their preferences for outpatient services featuring sufficient space and equipment.

The observational and interview data in our study suggest that the potential benefit of physiotherapy interventions related to ADL in the patients' own homes did not seem to be fully pursued. These findings are consistent with results from previous research in a similar context, as the results indicated that limited emphasis was placed on training in ADL following stroke (Askim et al., 2013). The physiotherapists in our study highlighted that there were challenges in providing home rehabilitation due to situational limitations, such as limited space and lack of equipment. In their opinion, these barriers affected patient safety and the physiotherapists' work burden when the patients' functional levels were low. On the other hand, the home context appeared to limit attempts to improve quality of movement once the patients had managed basic ADL functions. As such, the physiotherapists often conveyed opinions that were not in favor of physiotherapy interventions in the home setting. These results are somewhat divergent from prior research showing many positive effects of early supported discharge (ESD) and home rehabilitation programs (Hofstad et al., 2014; Langhorne, Bernhardt, and Kwakkel, 2011; Langhorne et al., 2005; Rasmussen et al., 2015). However, some studies also support our findings. Home rehabilitation can be challenging due to the patients' lack of motivation to endorse home exercises (Caeiro, Ferro, and Costa, 2013; Mayo, 2016; Mayo et al., 2009, 2002) and negative perceptions of the public sector moving into their private space (Tamm, 1999). The community physiotherapists in our study seemed to prefer to withdraw from home-based interventions. The increased responsibility regarding rehabilitation of patients with lower functional abilities may have placed physiotherapists in a less familiar context, and the physiotherapists' frames of reference regarding neurological rehabilitation were challenged.

Some of the physiotherapists in our study explained how providing treatment in the patient's own house could be awkward and that some of the patients refused to accept a secondary institutionalized rehabilitation stay after arriving home. Previous research has indicated that following stroke, people prefer home-based interventions once they return to the community (Mayo et al., 2013; Salbach et al., 2004). However, interventions in a patient's own living room and bedroom may symbolize an invasion of areas that are usually connected to everyday and intimate routines and activities (Tamm, 1999). Therefore, this type of intervention may challenge the physiotherapists' traditional approaches, as well as the established patient-therapist relationships. In various ways, the physiotherapists often provided explanations and rationale that were not in favor of meeting the challenges that emerged in the home-based rehabilitation context. This rationale related either to the patients' desires or to their own opinions. As such, the physiotherapists' clinical reasoning and decision making may have contributed to maintaining the exemplification and institutionalization of current physiotherapy practices.

Our analysis revealed a multifaceted context of physiotherapy practice that affected clinical reasoning and the choice of intervention strategies. The application of social and interactionist perspectives may provide further nuance to the understanding of professional practice. Opinions, patterns of behavior and justification of actions can be understood in light of institutionalized and culture-dependent processes (Berger and Luckmann, 1984; Gibson and Teachman, 2012; Lock, Strong, and Røen, 2014). The results of our study convey the importance of professional viewpoints in ABI rehabilitation across health care levels. Specialist health care physiotherapists expressed their professional attitudes regarding recovery of function, quality of movement, and use of aids in neurological rehabilitation when the patients were transferred for continued rehabilitation. The hospital rehabilitation context differs from that of a community setting in terms of proximity to the patients'

home, family, friends, and ADL. The institutionalized environment in an in-hospital rehabilitation unit allows therapists and patients to optimize their focus on physical recovery (Arntzen, Hamran, and Borg, 2014). Several of the community physiotherapists in our study conveyed a similar focus on physical recovery. Adapting rehabilitation efforts to the home context and addressing patients' difficulties in managing everyday life were problematic and affected the physiotherapists' preferred treatment strategies and perceived contextual barriers. These findings can be considered to represent typified and institutionalized opinions shared within the community of physiotherapists and may contribute to understanding how social processes may influence professional clinical reasoning and decision making.

Methodological considerations

The results of this study were based on a limited number of participants from one region of Norway. Therefore, our results may highlight practices and professional attitudes in the field of neurology that are not necessarily relevant to other regions in Norway or in an international context. However, our data sample, although small, was characterized by similarities in different patient categories, rehabilitation trajectories and health care levels, indicating validity across different settings. The exclusion of patients with cognitive deficits, and no recording of patients that declined to participate may have introduced possible bias. The results of our study can contribute to reflections on the processes and challenges that health professionals face, to varying degrees, in their practice. Our study was performed at one-time point in a post-reform era. The results describe perceptions of current circumstances, although they indicate that the informants experienced alterations that seemed to influence professional practice in the aftermath of reform. The findings can contribute to a broader understanding of the factors affecting the content of rehabilitation services and professional practice.

Conclusions and implications

This study provides insight into the perceptions of variations in physiotherapy practice in different rehabilitation trajectories following ABI. Different contexts affect clinical reasoning and choice of action when providing neurological physiotherapy. Municipalities are now facing more responsibility for rehabilitation services following ABI. The physiotherapists expressed a need to reevaluate the balance between interventions that aim to improve quality of movement and interventions that enable patients to find coping strategies to manage everyday life. This study contributes to an increased understanding of the importance of physiotherapists' perceptions of socio-material factors affecting their practice, in line with research on the significance of the infrastructural context in health services improvement initiatives (Allen, 2013) and social learning theories (Wenger, 2000). The findings highlight the important distinction between the institutionalized rehabilitation context in hospitals and efforts to enable the same patient in his or her own environment. Physiotherapists and other health professionals have to adjust to existing demands, which affect the premises for offering rehabilitation services. This need to adjust strategies also introduces challenges related to the health professionals' frames of reference and the institutionalization of practices in the provision of health and care services.

Physiotherapists are expected to contribute, through inter-professional collaborations, to efforts to cooperate with patients, their next of kin, and other health professionals. Further discussion of these aspects falls outside of the scope of the present paper; however, changes in the roles of health professionals, their relationship to other health and care services, inter-professional collaboration, and cooperation with and empowering of patients and their next of kin warrant further research.

Declaration of Interest

The authors declare no conflicts of interest.

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Article 3

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ORIGINAL ARTICLE

Communicating information and professional knowledge in acquired brain injury rehabilitation trajectories – a qualitative study of physiotherapy practice

Eirik Lind Irgens[a,b], Nils Henriksen[a,b] and Siri Moe[a,b]

[a]Department of Health and Care Sciences, UiT The Arctic University of Norway, Tromsø, Norway; [b]Center for Care Research, North Norway, UiT The Arctic University of Norway, Tromsø, Norway

ABSTRACT

Purpose: The communication of information and professional knowledge is paramount during patient transitions, and conveying practice knowledge is an important part of the health professional's role. Physiotherapy interventions in both specialist and primary health care are often necessary to aid persons in rehabilitation following an acquired brain injury (ABI). The aim of this study was to investigate how physiotherapists experience the way patient information is communicated across health care levels in ABI rehabilitation.

Methods: We performed interviews with a total of 19 physiotherapists related to the rehabilitation trajectories of 10 people with acquired brain injuries. We performed a systematic text condensation analysis informed by constructionist and interactionist perspectives and theories of learning.

Results: The physiotherapists in this study considered the patients to be complex and resource intensive. Written information upon hospital discharge was necessary but not sufficient, and they emphasized the need for verbal communication and closer collaboration across health care levels and clinical settings.

Conclusions: The findings in this study indicate the need to improve routines for the communication of information and to clarify issues related to economy and responsibilities. Collaboration across health care levels require reciprocal understanding of the contextual differences in rehabilitation trajectories.

➤ IMPLICATIONS FOR REHABILITATION

- The discharge process is an important arena for continuous development of collaborative practices in the neurological rehabilitation context.
- Rehabilitation trajectories should be customized for the specific patient in a manner that is closely connected to contextual limitations and affordances.
- Communication between health care professionals in the transitional phase of rehabilitation trajectories is important to identify altered prerequisites for providing rehabilitation services in the primary care context.

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In this study, we emphasize the communication of information and professional knowledge in the rehabilitation of people with acquired brain injury (ABI). The study was part of a larger project in which we explored physiotherapists' perceptions of neurological rehabilitation across health care levels in the post-reform era in Norway. The deficits following ABI and the interventions necessary to regain functional abilities and resume work and everyday life are often complex. Physiotherapy services in both the specialist and the primary health care settings are usually necessary. Coordination and communication between services during different stages of the rehabilitation process are of paramount importance [1]. Due to health care developments and reforms in several Western welfare countries, e.g., Norway [2,3], Sweden [4], Denmark [5], and The United Kingdom [6,7], increased responsibility for rehabilitation has been transferred to the primary care level [8]. This displacement of responsibility has presented challenges to primary health care [9] and the provision of physiotherapy services in municipalities. The patients are discharged earlier from hospitals with more severe disabilities [10], whereas few efforts to increase municipal resources and competence is seen [11]. In this regard, the Norwegian government has emphasized the specialist health care levels' responsibilities to offer necessary guidance to provide sufficient quality of services in the primary health care level [12].

The different institutional settings and involvement from various health professionals suggest a collaborative practice characterized by participants situated in different cultural, social and organizational contexts [13]. One of the cornerstones of coordinated care is the communication of information as patients move across institutions and health care levels in rehabilitation trajectories, and requires efficient communication of information and transfer of knowledge [14,15]. Care coordination for people with ABI can maximize rehabilitation potential and enable patients to reach optimal independence and quality of life [16]. This includes discharge planning and communication among health professionals to ensure seamless transitions and continuity of care [17]. Coordinated care, introduced in Norway in 2003 [8], aimed to include the planning of primary health care services in clinical pathways across health care levels. In a literature review on the transitional process for people with ABI, Turner et al. [18]

CONTACT Eirik Lind Irgens Eirik.l.irgens@uit.no Department of Health and Care Sciences, UiT The Arctic University of Norway, Tromsø, Norway.

highlighted the need for both a comprehensive framework of the transition phase, and to validate and develop intervention strategies. However, few studies were found that focused on the communication between service levels in particular. The experiences of individuals with ABI has been the subject of several studies [19,20]. Less emphasis seems to be placed on the health professionals' communication in patient transitions across service levels, although the need for better integration within health services has been identified [20,21]. Furthermore, few studies have paid attention to the influence of policy and organizational contexts on effectiveness of collaborative practice between health professionals [22], and most studies of coordinated care have been driven by specialist health care, with less relevance to the challenges experienced in primary health care [23]. However, the importance of specialist health care personnel being present in the primary health care setting following hospital discharge has been emphasized [24,25].

Collaborative practice has been shown to improve health care provision, and it is important to approach people with chronic and complex health issues in a collaborative manner. The aim of this study was to investigate how physiotherapists experience the way patient information is communicated across health care levels in ABI rehabilitation. We explore aspects of a collaborative physiotherapy practice in terms of the communication of information and practice knowledge in patient transitions between health care levels. We investigate factors that impede and facilitate the quest for and the transfer of information and professional knowledge in relation to physiotherapists' perceptions of patient needs within a reformed health and care service context in Norway.

Materials and methods

Study design and context

In Norway, the health care system is organized into two separate governmental levels: the specialist and the primary health care systems. They are largely financed and produced by the central government. The specialist health care level includes public hospitals owned by the central government, and an increasing contractual third-party provision of specialized health care services in private rehabilitation centers [26]. The municipalities provide public health care services for their inhabitants. This includes physiotherapy services in community rehabilitation centers, the patients' homes, public clinics, and by subsidized private practitioners receiving municipal operating grants.

This study included interviews with treating physiotherapists as we followed the rehabilitation process of 10 people with ABI from hospital discharge to continued rehabilitation at the municipal level, as well as reviews of hospital discharge papers. We performed the study in northern Norway, a region characterized by a dispersed population and long travel distances.

The study followed the principles of the world medical association (WMA) Declaration of Helsinki [27] and was approved by the Norwegian Social Science Data Services (NSD).

Recruitment and participants

We recruited physiotherapists in both the specialist and primary health care levels who were involved in the rehabilitation trajectory of 10 people with ABI from their in-hospital rehabilitation to continued rehabilitation in their municipalities (Table 1). The data collection period lasted from April 2013 to January 2015. We informed the specialist health care physiotherapists in three rehabilitation units upon consent from the hospital authorities. The inclusion criteria for patient participation were admission to in-hospital rehabilitation following ABI; the ability to provide fully informed consent; and the need for further post-discharge physiotherapy services. The physiotherapists excluded several patients due to uncertainty regarding their ability to provide fully informed consent and some of the patients requested to participate declined, leading to a rather long phase of recruitment in this study. Once we received consent from the specialist health care physiotherapist and the patient, we provided information and an invitation to participate to the municipal authorities and the primary health care physiotherapists in the patients' home communities. All invited municipalities and primary health care physiotherapists agreed to participate, and none of the participants was lost along the rehabilitation trajectories. Four of the patients were admitted to private rehabilitation centers during the rehabilitation trajectory; in those cases, we asked for consent and participation from both the institutional authorities and the physiotherapists. In one of the rehabilitation trajectories, we chose to perform the final follow-up interview while the patient was still in institutional care as the length of the institutional stay in primary health care extended beyond the data collection period.

The study included eight specialist health care physiotherapists from two in-hospital rehabilitation units and two private rehabilitation centers. Additionally, eleven physiotherapists in eight different municipalities participated. Nine of the primary health care physiotherapists were employed in physiotherapy units and in-patient rehabilitation institutions. Two physiotherapists were private practitioners, receiving operating grants from the municipality. Several of the specialist health care physiotherapists had completed post-graduate neurological coursework and were specialists. A majority of the primary health care physiotherapists had longer work experience in comparison to the specialist health care level.

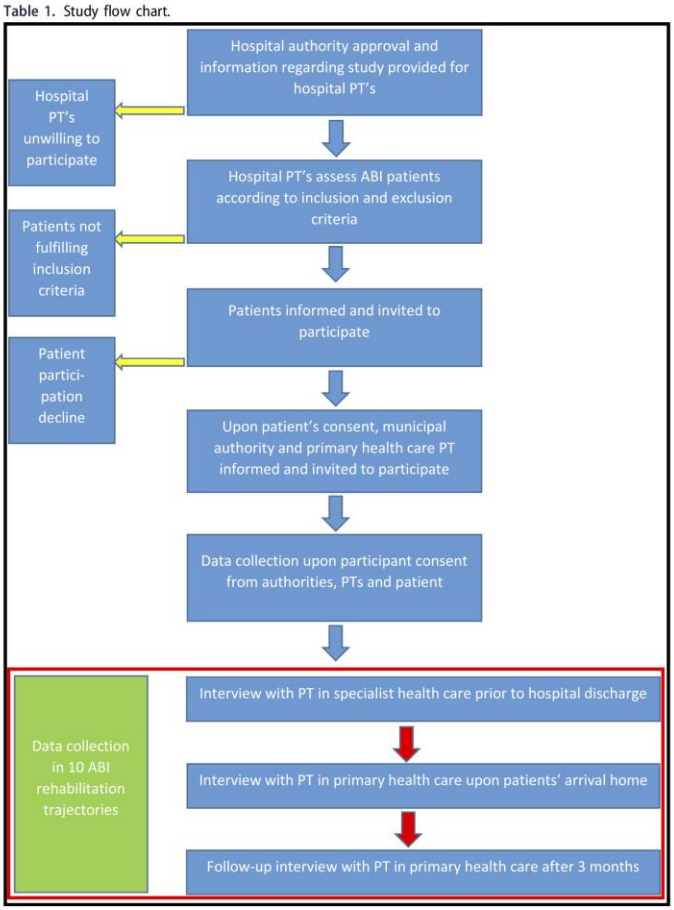
The patients who participated in this study ranged from 30 to 80 years of age. They were admitted to the hospital due to ABI, such as cerebral infarction, cerebral hemorrhage, tumor, or encephalitis. Six of the patients underwent surgical interventions during their hospital stay. Seven were married or lived with partners, whereas three were living alone. A minority of the group had parental responsibilities for under aged children.

Data collection

The first author performed 35 in-depth interviews with a total of 19 specialist and primary health care physiotherapists involved in the 10 rehabilitation trajectories. We sought to collect data within the last week of the patients' in-hospital rehabilitation stay. Furthermore, we obtained medical discharge summaries and interdisciplinary and physiotherapy reports from the hospital stay. For patients who required additional rehabilitation stays in private rehabilitation centers, we performed one additional interview during the last week of the patients' stay. Three of the specialist health care physiotherapists were involved in more than one rehabilitation trajectory, and they were interviewed regarding each included patient. Once the patients arrived at their home communities, we aimed to conduct the interview with the primary health care physiotherapists within the first two weeks after the patients commenced physiotherapy treatment. We performed a final follow-up interview with the primary health care physiotherapists approximately three months later to explore their reflections and to summarize the first phase of the patients' rehabilitation.

We scheduled data collection at the convenience of the participants, and we encouraged the physiotherapists to provide

Table 1. Study flow chart.



suitable venues to avoid disruption. The interviews lasted from 45 to 90 min. We developed an interview guide, which we tested in a pilot interview prior to the data collection. The interview guide covered prompts related to aspects of special interest regarding the research question [cf. 28,29]. The interviewer posed open-ended questions regarding the background of the physiotherapist and the patient, the rehabilitation environment, collaboration and interaction among professionals, and the communication of information and professional knowledge. Furthermore, the prioritization of patients, viewpoints on responsibilities for rehabilitation across health care levels, and reflections regarding future follow-up of the patient were discussed. In the three-month follow-up interviews, we further explored the primary health care physiotherapists' opinions and perceptions regarding the patients' rehabilitation process, the rehabilitation services provided, the patient's functional progress, any obstacles they had encountered, and the patients' prospects for further recovery. The interviewees showed interest in the topics discussed and provided rich descriptions regarding their patients' rehabilitation process and their own opinions regarding neurologic rehabilitation services.

Data analysis

The first author transcribed the interviews verbatim. The authors discussed the preliminary findings during data collection to identify aspects of special interest to pursue in the remaining interviews. Furthermore, we used the obtained discharge papers to complement and validate information regarding the rehabilitation process and participant information.

The first author analyzed the data using a systematic text-condensation approach [cf. 29,30], which was supported and complemented by the second and third authors. We applied an abductive approach in the analysis of the research material [cf. 31–33], a process by which explanations and understandings of a phenomenon are based on both the empirical data and theoretical preconceptions. Transcripts of interviews and observations were discussed critically among the authors and in research group meetings to reach congruence and to ensure that relevant themes and aspects were pursued, as described by Malterud [34]. The transcripts were analyzed by identifying meaningful units, i.e., meaningful utterances, sentences or paragraphs, and subject to a

systematic thematic cross-case analysis related to the study aim [cf. 29]. Empirical codes were created by identifying, classifying and sorting meaning units related to potential themes relevant to the study aim. This was followed by a condensation process whereby the codes were organized thematically in categories based on discussions and negotiations among the authors [cf. 30]. In the Results section, we present the three categories deduced from the data analysis, exemplified by authentic quotations; "Discharge summaries and reports – conveying a comprehensive picture", "The conversation is worth gold – in-depth information and untold thoughts", and "The significance of personal encounters – sharing practice knowledge".

Results

Discharge summaries and reports – conveying a comprehensive picture

The participating physiotherapists placed considerable emphasis on the significance of information transfer as the patient moved across health care levels. Discharge summaries, interdisciplinary reports and occasionally physiotherapy reports were prepared to facilitate coordinated patient discharge and further primary care rehabilitation. The specialist health care physiotherapists received positive feedback regarding the reports from the primary health care physiotherapists. In general, the primary health care physiotherapists found that the written reports from the specialist health care rehabilitation units were of good quality and provided examples to follow after hospital discharge compared with the written information from other hospital units. One of the primary health care physiotherapists in private practice stated:

> Then I have a nice interdisciplinary report at hand describing how they think, what they have done, what worked and did not, and providing further recommendations. It's useful for me, sitting on my little headland all alone, to get some [information], you know. *Rehabilitation trajectory 6; PT 15 years of experience, involved mainly with neurological injuries, BSc.*

Nevertheless, the primary health care physiotherapists identified a lack of consistency regarding the amount of information transferred depending on organizational affiliation. The physiotherapists in private practice experienced that they rarely received discharge summaries and interdisciplinary reports directly from the hospitals. They experienced they had to compile information from both the patient and the hospital to get a full picture of the first phase of the patient's rehabilitation. Furthermore, some primary health care physiotherapists in the most populated communities described the transfer of written information as being channeled through an intermediary allocation-office responsible for assigning health and care services within the municipality. They highlighted some challenges related to the selection of which information the allocation-office redistributed to the primary health care physiotherapists. One of the primary health care physiotherapists stated:

> Unfortunately, I rarely receive the physiotherapy report, as an example. […] But, we're able to obtain the report if we call the archive over there and ask for it. *Rehabilitation trajectory 7; PT 14 years of experience, involved mainly with neurological injuries, BSc.*

"The conversation is worth gold" – in-Depth information and untold thoughts

The majority of the specialist health care physiotherapists contacted the primary health care physiotherapists by phone to convey in-depth information not present in the written communication. One of them stated during the interview:

> I think the conversation with the physiotherapist prior to the patients' discharge is worth gold. It gives me the opportunity to transfer even more information. *Rehabilitation trajectory 1; PT 14 years of experience, involved mainly with neurological injuries, BSc, Specialist in neurological PT*[1].
>
> ([1]A specialist in neurological physiotherapy is approved by the Norwegian PT Association after completing an extensive post-graduate training. Currently, this requires a master's degree, supervised training and a minimum of three years of practice in the field of neurology).

Furthermore, several of the specialist health care physiotherapists described how concerns regarding cognitive function, e.g., memory deficits, and future ability to regain function tended to be under-communicated in formal discharge papers, as the patients were still in an early stage of the rehabilitation process. One of the primary health care physiotherapists substantiated this aspect:

> A phone call is short and to the point, and provides an easy description of the patients' challenges and resources and further, maybe some information about the patient not to be found in the discharge papers, like his motivation; how they consider the prognosis; what they really think. *Rehabilitation trajectory 6; PT 15 years of experience, involved mainly with neurological injuries, BSc.*

Both specialist and primary health care physiotherapists described the allocation-office representatives as in general active participants in meetings, planning and when delegating responsibilities within the municipality, but they also provided examples of potential limitations using intermediaries in patient transitions. One of the specialist health care physiotherapists explicated:

> Unfortunately, we were not able to establish contact until this week. Everything stopped at the allocation-office. We contacted them as early as in the beginning of July … This will result in a complaint … The allocation-office wouldn't tell us where she was going, as this was their responsibility. Further, when we continued to ask for this to initiate the process of patient transition, establish a collaboration and facilitate any secondments, we were told that this by no means was necessary. *Rehabilitation trajectory 3; PT 8 years of experience, involved mainly with neurological injuries, BSc, Specialist in neurological PT.*

The significance of personal encounters – sharing practice knowledge

The primary health care physiotherapists described knowledge gaps between specialist and primary care levels related to neurological rehabilitation, and highlighted the necessity of increasing expertise on neurological rehabilitation in primary care. One of them explicated the significance of the level of competence in community rehabilitation, as he experienced the earlier hospital discharge and consequently increased complexity in rehabilitation trajectories:

> We are supposed to follow up the challenges [of the patients] earlier in the trajectory, and to provide an extended service level. What's not accounted for is the level of expertise necessary to handle these issues. *Rehabilitation trajectory 6; PT 15 years of experience, involved mainly with neurological injuries, BSc.*

Several of the physiotherapists in both health care levels placed emphasis on the need to communicate aspects of clinical practice that was difficult to convey in writing and verbally. One of the specialist health care physiotherapists said:

> But, of course, there are obvious limitations transferring information the way we do. I would really prefer to invite them here for a day or two, to participate in treatment sessions and transfer some of our knowledge that way. *Rehabilitation trajectory 5; PT 8 years of experience, involved mainly with neurological injuries, MSc.*

In spite of extensive use of informative written reports and phone calls upon hospital discharge, several of the primary health care physiotherapists perceived the description of patients and treatment strategies challenging to utilize in the continued rehabilitation in primary care. One of them explained:

> They wrote they had her up and walking, and pinpointed it several times. However, we struggle a bit within the physiotherapy group; **How** did they do it? [...] We have really tried... But, it's like.... We don't seem to be able to do it. *Rehabilitation trajectory 3; PT 1 year of experience, involved with mixed diagnosis including neurological injuries, BSc.M/DQ*

One of the specialist health care physiotherapists explained how aspects of clinical physiotherapy practice were found challenging to verbalize:

> In regard to the patient transfer it's a pity, as we mostly have complex rehabilitation here, and not everything is easy to transfer using written reports and phone calls alone. The fact that we often work hands on makes it difficult, but we try to make the best of it. *Rehabilitation trajectory 10; PT 8 years of experience, involved mainly with neurological injuries, BSc, Specialist in neurological PT.*

Most of the physiotherapists participating in this study expressed a desire to forge closer ties across health care levels to improve transitional care and transfer of practice knowledge. Nevertheless, the specialist health care physiotherapists experienced little response when inviting primary health care physiotherapists to participate in the hospital rehabilitation prior to discharge. Furthermore, physiotherapists in both hospitals and municipalities related lack of opportunities for closer clinical collaboration to economic issues and unclear distribution of responsibilities regarding counseling and guidance.

Additionally, some of the included physiotherapists in this study expressed concerns related to the clinical relevance of information and recommendations communicated from specialist health care. The primary care context changed the prerequisites for providing rehabilitation services. One of the primary health care physiotherapists related a disagreement on treatment strategy between him and the specialist health care physiotherapist to different understandings of which means necessary to enable the patient in her home environment:

> We have to evaluate the situation when she's arriving home anyhow, and you know, we're not in the hospital any longer and we may not have the same kind of facilities. I suppose we just have to continue the treatment in her home according to the current possibilities. *Rehabilitation trajectory 1; PT 21 years of experience, involved with mixed diagnosis including neurological injuries, BSc.*

Discussion

In this study, we have identified several aspects that seem to affect the communication of information and practice knowledge among physiotherapists involved in brain injury rehabilitation in Norway. Discharge papers and phone calls contributed with extensive information, although several of the primary health care physiotherapists highlighted some challenges regarding information flow in transitional processes. The informants ascertained the importance of personal liaisons among professionals to enhance patient care in neurological rehabilitation. The complexity of ABI rehabilitation necessitated different arenas for developing communication and collaboration. The informants related several of the identified shortcomings to contextual factors affected by health care policies and organization of health care services.

Impressions, expectations and untapped potential

The multidisciplinary team in the rehabilitation institutions prepared discharge summaries upon transition to further rehabilitation at municipal level. Although informative, the informants highlighted both the variety in the extent of written documents disclosed for the physiotherapists in primary care and the fixed nature of the written content. The content and quality of medical records and discharge summaries in hospital discharge processes have been subject of interest in previous investigations [35–39], highlighting differences and potential for improvements. The primary health care physiotherapists in our study experienced the hospital discharge summaries and reports to be informative, reflecting the patients' situation. The informants in primary care related the need for comprehensive communication of information to the experienced complexity of continued ABI rehabilitation at municipal level. However, they expressed concerns regarding situations whereby they did not receive all discharge papers. Lack of written information led to inappropriate use of time to pursue relevant documentation, from either hospitals or intermediary offices in charge of redistributing information and delegating responsibilities in the more populated municipalities. The findings in this study point to the importance of developing and evaluating procedures and effectiveness in transfer of written information to optimize patient care in transitions from hospital to municipalities, consistent with results from other studies [40,41]. The physiotherapists' experiences with the allocation offices indicate a bureaucratization that may challenge efficient communication of information. Furthermore, the organization of health care services in Norway involve both public and private service providers. The different health care providers organize in various ways and operate by different principles, which may challenge efficient communication lines across health care levels and between professionals.

The physiotherapists in both health care levels described additional contact with primary health care besides discharge summaries and reports. They highlighted the value of personal liaisons, e.g., in phone calls and face-to-face meetings, as these encounters facilitated exchange of more detailed and in-depth information. They accentuated the advantages of dialog, both in terms of solving any misunderstandings and elaborating on issues they felt uncomfortable to put in writing. The importance of social interaction in information exchange in health operations has been elaborated in a study on the use of information technologies [42]. In this study, one of the findings suggested that the use of IT should be accompanied by corresponding activities of social interaction and relationship-building to promote information exchange processes. A recent study on ABI rehabilitation trajectories identified timely information transfers; joint meetings and video-conferences; and electronic patient records to be facilitators for seamless patient transitions between services [43]. Furthermore, a recent study on health care providers' experience of current care coordination highlighted the personal contact in collaborative meetings as an opportunity to support and improve the patients' transition across health care levels reported [44]. These results are in accordance with our findings, pointing to the importance of social interaction and joint meetings to complement the communication of written information in rehabilitation trajectories.

The primary health care physiotherapists emphasized the importance of dialog regarding contextual differences significant for treatment strategies and patient-therapist cooperation. The patients' reentering their home-environment and social sphere involved altered circumstances for the provision of rehabilitation services. This is consistent with research highlighting the importance of acknowledging the patients' experiences following

hospital discharge and taking their living-conditions and participation in the rehabilitation process and everyday life into consideration to provide good quality and individually tailored services [45–48]. Thus, the informants in the municipalities provided perspectives on how contextual factors regarding the patients' home situation may also influence how information and recommendations are conveyed in patient transitions. This raises questions regarding the extent of reciprocity in the communication of information across specialist and primary health care levels. Some of the primary health care physiotherapists called for increased reciprocity in the clinical collaboration and communication of information and knowledge. They proposed that the differences in context between primary and specialist health care were not sufficiently taken into account in both clinical practice and transfer of information and recommendations.

Several of informants highlighted the possibilities for joint efforts in patient encounters during the discharge processes, as this may facilitate the patients' recovery. These results are supported by a previous study on collaboration and clinical guidance among physiotherapists in neurological physiotherapy [49], focusing on aspects of practice knowledge often found difficult to convey in words [50]. Joint clinical encounters may enable professionals to increase a mutual understanding of both specific treatment interventions and extraneous factors affecting the rehabilitation trajectory. Some of the primary health care physiotherapists in our study sought for this mutuality. They considered these encounters an opportunity to face the displacement of responsibility for neurological rehabilitation currently experienced in many western welfare countries. Contextual constraints on policy (macro) and organizational (meso) level have been identified as important features to further develop collaborative health care work [22].

The discipline of sociology has focused on the relation between the individuals involved in rehabilitation and society and the institutions regulating this relation. A sociological perspective highlights the influence of both patients, next of kin, professionals and governments as agents contributing to form the practice of rehabilitation. This framework highlights an understanding that typical and normative behavior within certain communities of practice is partly the result of taken-for-granted habits and rules that are developed and institutionalized over time in specific contexts [51]. Solvang, Hanisch and Reinhardt [52] place emphasis on how the intersections of different social agents (individuals, professionals and governmental authorities) and different societal levels (micro, meso and macro) broaden the holistic perspective of rehabilitation. Acknowledging the complexity of multiple impacts on different levels, and by different agents, may contribute to expand our understanding of rehabilitation practice [52] and further development of communication and collaborative work.

The results of this study accentuate the significance of mutual exchange of information across different institutional settings, as this may contribute to further develop understandings of context specific affordances (action possibilities) and individually tailored rehabilitation trajectories. The presence of several institutional logics [53] in the provision of health care services in Norway may challenge the integration of communication lines across public and private health care providers, and may lead to variations in the extent and ways of communicating the information. The culture and workplace affordances of the specialist and primary health care level differ in many ways. Physiotherapy provided in high-intensity, multi-professional specialized rehabilitation units in hospitals allow the use of intervention strategies that are often difficult to provide in a primary health care setting. To meet the challenges of increased municipal responsibility for rehabilitation, the physiotherapists proposed close collaboration and the mutual exchange of information to enhance the bidirectional understanding of the organizational, cultural and environmental differences. This may improve the continuity of care related to the patient's specific rehabilitation trajectory and provide opportunities for mutual learning.

Methodological considerations

In this study, we investigated the way information and professional knowledge was communicated across health care levels among neurological physiotherapists. Although this study did not aim to produce generalizations, the regional context in which we investigated these practices may have influenced the perceptions and experiences that our informants conveyed. Nevertheless, the findings proved to be relevant across different health care settings and in a variety of communities within the region. Consequently, the findings and discussions outlined in this study may be recognizable and relevant to similar settings as well. An advantage of this study was the heterogeneous group of patients included, as this reflects the clinical population in ABI rehabilitation. However, we chose to exclude patients without ability to provide fully informed consent, which may be a limitation regarding relevant aspects of the rehabilitation process for persons recovering from acquired brain injuries. This also led to a longer phase of recruitment. The long recruitment period may be a potential limitation to the transferability of the results, as the clinical settings may change in the reform aftermath.

Two of the researchers are physiotherapists with experience from both health care sectors and neurological physiotherapy. This was important for the interpretation of the results [54], although the physiotherapist perspective may also be affected by taken for granted assumptions regarding physiotherapy practice. However, the third author, a sociologist with shared interests in the field of study, contributed with additional perspectives. Furthermore, the discussions of the preliminary results in research group meetings provided additional perspectives from research fellows representing a variety of professional backgrounds and theoretical insights. We argue that this increased trustworthiness and reflexive rigor in the analytical process [31].

Implications for practice

The findings of this study emphasize the importance of the discharge process for continuous development of collaborative practices in the neurological rehabilitation context. Further, applying social perspectives to physiotherapy and rehabilitation practices may extend the understanding of the influence of the political and organizational contexts in terms of collaboration and the transfer of knowledge. Increased attention to the communication of information and knowledge in neurological rehabilitation trajectories should involve different health professionals and a sensitivity towards workplace cultures. This may contribute to further improvements in the field of rehabilitation.

Issues for further research

In further research, it is necessary to include both the patients' and other health professionals' positions and perspectives regarding communication in the rehabilitation process, as their presence will influence the community of practice. Furthermore, exploring the potential of using information and communication technology to support learning and knowledge exchange may provide ways

of facilitating closer collaboration across health care levels and institutions, even in areas of dispersed populations. In addition, the results from this study warrant further research regarding how allocation offices and intermediaries impede or facilitate the transfer of information and collaborative practices across health care levels, and to explore the role of patient coordinators [44] in ABI rehabilitation trajectories.

Conclusions

The physiotherapists in this study emphasized the need to improve routines for the communication of information, to clarify issues of economy and responsibilities, and to develop reciprocal understanding of contextual differences in response to changes in health care organization and the provision of rehabilitation services in Norway.

Health professions characterized by clinical and practical patient-centered work benefit from a close collaboration across health care levels to ensure continuity of care and optimize the reciprocal communication and development of professional knowledge. This insight is relevant across professional and national boundaries as similar health care challenges and reform initiatives are present elsewhere in Western societies.

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Appendices

1. Informational letter hospital authorities
2. Informed consent physiotherapist in specialist health care
3. Informed consent patients
4. Informational letter municipal authorities
5. Informed consent physiotherapist in primary health care
6. Interview guide specialist health care
7. Interview guide primary health care
8. Observational guide
9. Approval from the Norwegian Social Science Data Services, NSD
10. Response from the Regional Committee for Medical and Health Research Ethics (REK)

Appendix 1

Forespørsel til avdeling

Forespørsel om deltakelse i forskningsprosjektet

"Behandlingskjeden fra spesialist- til kommunehelsetjenesten: Fysioterapitjenester til pasienter med nevrologiske lidelser"

Bakgrunn og hensikt
Dette er et spørsmål til deres avdeling om å delta i en forskningsstudie for å se nærmere på behandlingskjeden for personer med nevrologiske lidelser som trenger rehabilitering etter akutt funksjonstap. Studien utføres som et ledd i et doktorgradsarbeid ved Institutt for helse- og omsorgsfag ved det helsevitenskapelige fakultetet på Universitetet i Tromsø. Det er Universitetet i Tromsø som er ansvarlig for denne studien.

Studien har som målsetting å se på fysioterapitjenestens involvering og oppfølging i rehabilitering av pasienter med nevrologiske lidelser fra spesialisthelsetjenesten til kommunehelsetjenesten. Den har som mål å fremskaffe kunnskap om overføring, koordinering og oppfølging av fysioterapitjenestene som en del av det totale rehabiliteringstilbudet. Som følge av ny helselovgivning har krav og rammebetingelser for rehabilitering av nevrologiske pasienter endret seg. Studien vil vektlegge konsekvensene dette har for kunnskapsoverføring og rammebetingelser for oppfølging i det enkelte pasientforløp. Studien kan bidra til å gi kunnskap om tilrettelegging av tjenester for å gi best mulig behandlingstilbud til denne pasientgruppen.

Deres avdeling er sentral i rehabilitering av nevrologiske pasienter, og det er ønskelig å få tilgang til å forespørre fysioterapeutene i avdelingen om å delta i studien. Alle aktuelle fysioterapeuter vil få eget informasjons- og samtykkeskriv, og det er frivillig å delta i studien.

Hva innebærer studien?
For å fremskaffe denne kunnskapen er det ønskelig å gjennomføre et intervju med oppfølgende fysioterapeut for å få innsikt i hvordan overføring av kunnskap og koordinering av tjenester foregår på tvers av helsetjenestenivå. Det er også ønskelig å observere og ta opp på video fysioterapibehandling av den aktuelle pasienten før utskrivelse fra sykehuset. I forbindelse med gjennomføringen av prosjektet vil fysioterapeuten bli bedt om å hente ut epikrise, fysioterapirapport og eventuelt tverrfaglig rapport som er utarbeidet i forbindelse med behandlingen. Det kan bli aktuelt å delta som observatør på samarbeidsmøter vedrørende det aktuelle rehabiliteringsforløpet. Det forutsettes at pasienten har samtykket på eget skriv. Alle personopplysninger vil anonymiseres under bearbeidelse av materialet.

Prosjektet er tilrådd av Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste (NSD).

Mulige fordeler og ulemper
Det vil ikke være nødvendig med ekstra forberedelser eller merarbeid for fysioterapeutene i forbindelse med deltagelse i studien foruten identifisering av nevrologiske pasienter med rehabiliteringspotensiale, gjennomføring av intervju og doktorgradsstudentens tilstedeværelse under behandlingstimen. Det er ønskelig at en tredjeperson i avdelingen, som ikke har direkte behandlingsansvar for pasienten, kan påta seg oppgaven med å videreformidle informasjon om studien muntlig og skriftlig (eget informasjons- og samtykkeskriv) til den aktuelle pasienten.

Hva skjer med informasjonen fra studien?
Informasjonen som framkommer skal kun brukes slik som beskrevet i hensikten med studien. Alle opplysningene vil bli behandlet uten navn og fødselsnummer eller andre direkte gjenkjennende opplysninger. Video-opptakene vil bli oppbevart nedlåst under arbeidet med doktorgradsprosjektet, og vil bli slettet etter at prosjektet er avsluttet, innen utgangen av 2016. Filmen vil kun bli brukt som hjelp til å beskrive det som skjer i behandlingen i relasjon til den øvrige oppfølgingen, og ingen bilder eller videofilm vil bli brukt i presentasjonen av resultatene i oppgaven.

I løpet av arbeidet med oppgaven kan videoen bli vist til veilederne i doktorgradsprosjektet. Alle som er involvert i prosjektet har taushetsplikt.

Det vil ikke være mulig å identifisere deltakerne i resultatene av studien når disse publiseres.

Frivillig deltakelse
Det er frivillig å delta i studien. Deltakerne kan når som helst og uten å oppgi noen grunn trekke sitt samtykke til å delta i studien. Dersom de senere ønsker å trekke seg eller har spørsmål til studien, kan de kontakte doktorgradsstudent Eirik Lind Irgens på telefonnummer 90 89 53 32 eller på e-post eirik.l.irgens@uit.no. De kan også kontakte hovedveileder, førsteamanuensis Siri Moe ved Institutt for helse- og omsorgsfag på Universitetet i Tromsø på telefonnummer 776 45265 eller på e-post siri.moe@uit.no.

Rett til innsyn og sletting av opplysninger
Deltakerne har rett til å få innsyn i hvilke opplysninger som er registrert om dem, og har videre rett til å få korrigert eventuelle feil vi har registrert. Dersom deltakerne ønsker å trekke seg fra studien, kan de kreve å få slettet innsamlede opplysninger, med mindre opplysningene allerede er inngått i analyser eller brukt i vitenskapelige publikasjoner.

Appendix 2

Forespørsel til fysioterapeut
i spesialisthelsetjenesten

Forespørsel om deltakelse i forskningsprosjektet

"Behandlingskjeden fra spesialist- til kommunehelsetjenesten: Fysioterapitjenester til pasienter med nevrologiske lidelser"

Bakgrunn og hensikt
Dette er et spørsmål til deg om å delta i en forskningsstudie for å se nærmere på behandlingskjeden for personer med nevrologiske lidelser som trenger rehabilitering etter akutt funksjonstap. Studien utføres som et ledd i et doktorgradsarbeid ved Institutt for helse- og omsorgsfag ved det helsevitenskapelige fakultetet på Universitetet i Tromsø. Det er Universitetet i Tromsø som er ansvarlig for denne studien.

Du er valgt ut til å forespørres om å delta i studien fordi du er oppfølgende fysioterapeut for en pasient som har behov for rehabilitering etter akutt funksjonstap.

Studien har som målsetting å se på fysioterapitjenestens involvering og oppfølging i rehabilitering av pasienter med nevrologiske lidelser fra spesialisthelsetjenesten til kommunehelsetjenesten. Den har som mål å fremskaffe kunnskap om overføring, koordinering og oppfølging av fysioterapitjenestene som en del av det totale rehabiliteringstilbudet. Som følge av ny helselovgivning har krav og rammebetingelser for rehabilitering av nevrologiske pasienter endret seg. Studien vil vektlegge konsekvensene dette har for kunnskapsoverføring og rammebetingelser for oppfølging i det enkelte pasientforløp. Studien kan bidra til å gi kunnskap om tilrettelegging av tjenester for å gi best mulig behandlingstilbud til denne pasientgruppen.

Hva innebærer studien?
For å fremskaffe denne kunnskapen er det ønskelig å gjennomføre et intervju med deg for å få innsikt i hvordan overføring av kunnskap og koordinering av tjenester foregår på tvers av helsetjenestenivå. Det er også ønskelig å observere og ta opp på video fysioterapibehandling før utskrivelse fra sykehuset. Doktorgradsstudenten kommer til å bevege seg noe rundt i rommet under videobservasjonen, men vil så langt det er mulig unngå å forstyrre dere. I forbindelse med gjennomføringen av prosjektet vil du bli bedt om å hente ut epikrise, fysioterapirapport og eventuelt tverrfaglig rapport som er utarbeidet i forbindelse med behandlingen. Det kan bli aktuelt å delta som observatør på samarbeidsmøter vedrørende det aktuelle rehabiliteringsforløpet. Alle personopplysninger vil anonymiseres under bearbeidelse av materialet.

Prosjektet er tilrådd av Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste (NSD).

Mulige fordeler og ulemper
Det vil ikke være nødvendig med ekstra forberedelser eller merarbeid i forbindelse med deltagelse i studien, og det er ikke forventet at studien vil medføre noen ekstra belastning for deg, foruten gjennomføring av intervju og doktorgradsstudentens tilstedeværelse under behandlingstimen.

Hva skjer med informasjonen om deg?
Informasjonen som framkommer skal kun brukes slik som beskrevet i hensikten med studien. Alle opplysningene vil bli behandlet uten navn og fødselsnummer eller andre direkte gjenkjennende opplysninger. Video-opptakene vil bli oppbevart nedlåst under arbeidet med doktorgradsprosjektet, og vil bli slettet etter at prosjektet er avsluttet innen utgangen av 2016. Filmen vil kun bli brukt som hjelp til å beskrive det som skjer i behandlingen i relasjon til den øvrige oppfølgingen, og ingen bilder eller videofilm vil bli brukt i presentasjonen av resultatene i oppgaven.

I løpet av arbeidet med oppgaven kan videoen bli vist til veilederne i doktorgradsprosjektet. Alle som er involvert i prosjektet har taushetsplikt.

Det vil ikke være mulig å identifisere deg i resultatene av studien når disse publiseres.

Frivillig deltakelse
Det er frivillig å delta i studien. Du kan når som helst og uten å oppgi noen grunn trekke ditt samtykke til å delta i studien. Dersom du ønsker å delta, undertegner du samtykkeerklæringen nederst på siden. Om du nå sier ja til å delta, kan du senere trekke tilbake ditt samtykke uten at det påvirker din øvrige behandling. Dersom du senere ønsker å trekke deg eller har spørsmål til studien, kan du kontakte doktorgradsstudent Eirik Lind Irgens på telefonnummer 90 89 53 32 eller på e-post eirik.l.irgens@uit.no. Du kan også kontakte hovedveileder, førsteamanuensis Siri Moe ved Institutt for helse- og omsorgsfag på Universitetet i Tromsø på telefonnummer 776 45265 eller på e-post siri.moe@uit.no.

Rett til innsyn og sletting av opplysninger om deg
Hvis du sier ja til å delta i studien, har du rett til å få innsyn i hvilke opplysninger som er registrert om deg. Du har videre rett til å få korrigert eventuelle feil i de opplysningene vi har registrert. Dersom du trekker deg fra studien, kan du kreve å få slettet innsamlede opplysninger, med mindre opplysningene allerede er inngått i analyser eller brukt i vitenskapelige publikasjoner.

Samtykke til deltakelse i studien

Jeg har mottatt skriftlig informasjon og er villig til å delta i studien

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(Signert av prosjektdeltaker, dato)

Appendix 3

Forespørsel til pasient

Forespørsel om deltakelse i forskningsprosjektet

"Behandlingskjeden fra spesialist- til kommunehelsetjenesten: Fysioterapitjenester til pasienter med nevrologiske lidelser"

Bakgrunn og hensikt
Dette er et spørsmål til deg om å delta i en forskningsstudie for å se nærmere på behandlingskjeden for personer med nevrologiske lidelser som trenger rehabilitering etter akutt funksjonstap. Studien utføres som et ledd i et doktorgradsarbeid ved Institutt for helse- og omsorgsfag ved det helsevitenskapelige fakultetet på Universitetet i Tromsø. Det er Universitetet i Tromsø som er ansvarlig for denne studien.

Du er valgt ut til å forespørres om å delta i studien fordi du er innlagt på sykehus for rehabilitering etter akutt funksjonstap. Din identitet er ukjent helt til du eventuelt samtykker i å delta i denne studien ved å returnere samtykkeerklæringen.

Studien har som målsetting å se på fysioterapitjenestens involvering og oppfølging i din rehabilitering fra spesialisthelsetjenesten til kommunehelsetjenesten. Den har som mål å fremskaffe kunnskap om overføring, koordinering og oppfølging av fysioterapitjenestene som en del av det totale rehabiliteringstilbudet. Som følge av ny helselovgivning har krav og rammebetingelser for rehabilitering av nevrologiske pasienter endret seg. Studien vil vektlegge konsekvensene dette har for kunnskapsoverføring og rammebetingelser for oppfølging i det enkelte pasientforløp. Studien kan bidra til å gi kunnskap om tilrettelegging av tjenester for å gi best mulig behandlingstilbud til denne pasientgruppen.

Hva innebærer studien?
For å fremskaffe denne kunnskapen er det ønskelig å observere og ta opp på video en fysioterapibehandling på sykehus og når du er skrevet ut til hjemkommunen. Behandlingen vil ikke skille seg ut fra den som normalt gis, men doktorgradsstudenten vil være til stede i rommet for å filme fra behandlingen begynner og til den avsluttes. Doktorgradsstudenten kommer til å bevege seg noe rundt i rommet i løpet av behandlingstimen, men vil så langt det er mulig unngå å forstyrre dere. I forbindelse med gjennomføringen av prosjektet vil fysioterapeuten på sykehuset bli bedt om å hente ut epikrise, fysioterapirapport og eventuelt tverrfaglig rapport som er utarbeidet i forbindelse med behandlingen. Øvrig informasjon fra journalene vil ikke være tilgjengelig for de som gjennomfører studien. Fysioterapeutene vil bli intervjuet, og det kan bli aktuelt å delta som observatør på samarbeidsmøter vedrørende rehabiliteringsforløpet. Personopplysninger vil anonymiseres under bearbeidelse av materialet.

Prosjektet er tilrådd av Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste (NSD).

Mulige fordeler og ulemper
Det vil ikke gjennomføres ekstra undersøkelser i forbindelse med deltagelse i studien, og det er ikke forventet at studien vil medføre noen ekstra belastning for deg, foruten at doktorgradsstudenten vil være tilstede under behandlingen for å videofilme det som skjer.

Hva skjer med informasjonen om deg?
Informasjonen som registreres om deg skal kun brukes slik som beskrevet i hensikten med studien. Alle opplysningene vil bli behandlet uten navn og fødselsnummer eller andre direkte gjenkjennende opplysninger. Videoopptak og journalopplysninger vil bli oppbevart nedlåst under arbeidet med doktorgradsprosjektet, og vil bli slettet etter at prosjektet er avsluttet innen utgangen av 2016. Filmen vil kun bli brukt som hjelp til å beskrive det som skjer i behandlingen, og ingen bilder eller videofilm vil bli brukt i presentasjonen av resultatene i oppgaven.

I løpet av arbeidet med prosjektet kan videoen bli vist til veilederne i doktorgradsprosjektet. Alle som er involvert i gjennomføringen av studien har taushetsplikt.

Det vil ikke være mulig å identifisere deg i resultatene av studien når disse publiseres.

Frivillig deltakelse
Det er frivillig å delta i studien. Du kan når som helst og uten å oppgi noen grunn trekke ditt samtykke til å delta i studien. Dette vil ikke få konsekvenser for din videre behandling. Dersom du ønsker å delta, undertegner du samtykkeerklæringen nederst på siden. Om du nå sier ja til å delta, kan du senere trekke tilbake ditt samtykke uten at det påvirker din øvrige behandling. Dersom du senere ønsker å trekke deg eller har spørsmål til studien, kan du ta kontakt med doktorgradsstudent Eirik Lind Irgens på telefonnummer 90 89 53 32 eller på e-post eirik.l.irgens@uit.no. Du kan også kontakte hovedveileder, førsteamanuensis Siri Moe ved Institutt for helse- og omsorgsfag på Universitetet i Tromsø på telefonnummer 776 45265 eller på e-post siri.moe@uit.no.

Rett til innsyn og sletting av opplysninger om deg
Hvis du sier ja til å delta i studien, har du rett til å få innsyn i hvilke opplysninger som er registrert om deg. Du har videre rett til å få korrigert eventuelle feil i de opplysningene vi har registrert. Dersom du trekker deg fra studien, kan du kreve å få slettet innsamlede opplysninger, med mindre opplysningene allerede er inngått i analyser eller brukt i vitenskapelige publikasjoner.

Samtykke til deltakelse i studien

Jeg har mottatt skriftlig informasjon og er villig til å delta i studien. Videre samtykker jeg til at taushetsplikten til behandlende fysioterapeut oppheves ved bruk av intervju og innhenting av relevante journalopplysninger skrevet i forbindelse med aktuell behandling.

(Signert av prosjektdeltaker, dato)

Appendix 4

Forespørsel til enhet/avdeling

Forespørsel om deltakelse i forskningsprosjektet

"Behandlingskjeden fra spesialist- til kommunehelsetjenesten: Fysioterapitjenester til pasienter med nevrologiske lidelser"

Bakgrunn og hensikt
Dette er et spørsmål til deres enhet/avdeling om å delta i en forskningsstudie for å se nærmere på behandlingskjeden for personer med nevrologiske lidelser som trenger rehabilitering etter akutt funksjonstap. Studien utføres som et ledd i et doktorgradsarbeid ved Institutt for helse- og omsorgsfag ved det helsevitenskapelige fakultetet på Universitetet i Tromsø. Det er Universitetet i Tromsø som er ansvarlig for denne studien.

Studien har som målsetting å se på fysioterapitjenestens involvering og oppfølging i rehabilitering av pasienter med nevrologiske lidelser fra spesialisthelsetjenesten til kommunehelsetjenesten. Den har som mål å fremskaffe kunnskap om overføring, koordinering og oppfølging av fysioterapitjenestene som en del av det totale rehabiliteringstilbudet. Som følge av ny helselovgivning har krav og rammebetingelser for rehabilitering av nevrologiske pasienter endret seg. Studien vil vektlegge konsekvensene dette har for kunnskapsoverføring og rammebetingelser for oppfølging i det enkelte pasientforløp. Studien kan bidra til å gi kunnskap om tilrettelegging av tjenester for å gi best mulig behandlingstilbud til denne pasientgruppen.

Deres enhet/avdeling er sentral i rehabilitering av nevrologiske pasienter, og det er ønskelig å få tilgang til å forespørre fysioterapeutene i avdelingen om å delta i studien. Alle aktuelle fysioterapeuter vil få eget informasjons- og samtykkeskriv, og det er frivillig å delta i studien.

Hva innebærer studien?
For å fremskaffe denne kunnskapen er det ønskelig å gjennomføre et intervju med oppfølgende fysioterapeut for å få innsikt i hvordan overføring av kunnskap og koordinering av tjenester foregår på tvers av helsetjenestenivå. Det er også ønskelig å observere og ta opp på video fysioterapibehandling av den aktuelle pasienten etter utskrivelse til hjemkommunen. Det kan bli aktuelt å delta som observatør på samarbeidsmøter vedrørende det aktuelle rehabiliteringsforløpet. Pasienten og behandlende fysioterapeut i spesialisthelsetjenesten har allerede samtykket til å delta i studien i løpet av rehabiliteringsoppholdet i spesialisthelsetjenesten. Alle personopplysninger vil anonymiseres under bearbeidelse av materialet.

Prosjektet er tilrådd av Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste (NSD).

Mulige fordeler og ulemper
Det vil ikke være nødvendig med ekstra forberedelser eller merarbeid for fysioterapeutene i forbindelse med deltagelse i studien foruten gjennomføring av intervju og doktorgradsstudentens tilstedeværelse under behandlingstimen.

Hva skjer med informasjonen fra studien?
Informasjonen som framkommer skal kun brukes slik som beskrevet i hensikten med studien. Alle opplysningene vil bli behandlet uten navn og fødselsnummer eller andre direkte gjenkjennende opplysninger. Video-opptakene vil bli oppbevart nedlåst under arbeidet med doktorgradsprosjektet, og vil bli slettet etter at prosjektet er avsluttet, innen utgangen av 2016. Filmen vil kun bli brukt som hjelp til å beskrive det som skjer i behandlingen i relasjon til den øvrige oppfølgingen, og ingen bilder eller videofilm vil bli brukt i presentasjonen av resultatene i oppgaven.

I løpet av arbeidet med oppgaven kan videoen bli vist til veilederne i doktorgradsprosjektet. Alle som er involvert i prosjektet har taushetsplikt.

Det vil ikke være mulig å identifisere deltakerne i resultatene av studien når disse publiseres.

Frivillig deltakelse
Det er frivillig å delta i studien. Deltakerne kan når som helst og uten å oppgi noen grunn trekke sitt samtykke til å delta i studien. Dersom de senere ønsker å trekke seg eller har spørsmål til studien, kan de kontakte doktorgradsstudent Eirik Lind Irgens på telefonnummer 90 89 53 32 eller på e-post eirik.l.irgens@uit.no. De kan også kontakte hovedveileder, førsteamanuensis Siri Moe ved Institutt for helse- og omsorgsfag på Universitetet i Tromsø på telefonnummer 776 45265 eller på e-post siri.moe@uit.no.

Rett til innsyn og sletting av opplysninger
Deltakerne har rett til å få innsyn i hvilke opplysninger som er registrert om dem, og har videre rett til å få korrigert eventuelle feil vi har registrert. Dersom deltakerne ønsker å trekke seg fra studien, kan de kreve å få slettet innsamlede opplysninger, med mindre opplysningene allerede er inngått i analyser eller brukt i vitenskapelige publikasjoner.

Appendix 5

Forespørsel til fysioterapeut
i kommunehelsetjenesten

Forespørsel om deltakelse i forskningsprosjektet

"Behandlingskjeden fra spesialist- til kommunehelsetjenesten: Fysioterapitjenester til pasienter med nevrologiske lidelser"

Bakgrunn og hensikt
Dette er et spørsmål til deg om å delta i en forskningsstudie for å se nærmere på behandlingskjeden for personer med nevrologiske lidelser som trenger rehabilitering etter akutt funksjonstap. Studien utføres som et ledd i et doktorgradsarbeid ved Institutt for helse- og omsorgsfag ved det helsevitenskapelige fakultetet på Universitetet i Tromsø. Det er Universitetet i Tromsø som er ansvarlig for denne studien.

Du er valgt ut til å forespørres om å delta i studien fordi du er oppfølgende fysioterapeut for en pasient som har behov for rehabilitering etter akutt funksjonstap. Pasienten og behandlende fysioterapeut i spesialisthelsetjenesten har allerede samtykket til å delta i studien i løpet av sitt rehabiliteringsopphold i spesialisthelsetjenesten.

Studien har som målsetting å se på fysioterapitjenestens involvering og oppfølging i rehabilitering av pasienter med nevrologiske lidelser fra spesialisthelsetjenesten til kommunehelsetjenesten. Den har som mål å fremskaffe kunnskap om overføring, koordinering og oppfølging av fysioterapitjenestene som en del av det totale rehabiliteringstilbudet. Som følge av ny helselovgivning har krav og rammebetingelser for rehabilitering av nevrologiske pasienter endret seg. Studien vil vektlegge konsekvensene dette har for kunnskapsoverføring og rammebetingelser for oppfølging i det enkelte pasientforløp. Studien kan bidra til å gi kunnskap om tilrettelegging av tjenester for å gi best mulig behandlingstilbud til denne pasientgruppen.

Hva innebærer studien?
For å fremskaffe denne kunnskapen er det ønskelig å gjennomføre intervju med deg, fortrinnsvis like etter utskrivelse og etter ca. 3 måneder, for å få innsikt i hvordan overføring av kunnskap og koordinering av tjenester foregår på tvers av helsetjenestenivå. Det er også ønskelig å observere og ta opp på video fysioterapibehandling i hjemkommunen. Doktorgradsstudenten kommer til å bevege seg noe rundt i rommet under videobservasjonen, men vil så langt det er mulig unngå å forstyrre dere. Det kan bli aktuelt å delta som observatør på samarbeidsmøter vedrørende det aktuelle rehabiliteringsforløpet. Alle personopplysninger vil anonymiseres under bearbeidelse av materialet.

Prosjektet er tilrådd av Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste (NSD).

Mulige fordeler og ulemper
Det vil ikke være nødvendig med ekstra forberedelser eller merarbeid i forbindelse med deltagelse i studien, og det er ikke forventet at studien vil medføre noen ekstra belastning for deg, foruten gjennomføring av intervju og doktorgradsstudentens tilstedeværelse under behandlingstimen.

Hva skjer med informasjonen om deg?
Informasjonen som framkommer skal kun brukes slik som beskrevet i hensikten med studien. Alle opplysningene vil bli behandlet uten navn og fødselsnummer eller andre direkte gjenkjennende opplysninger. Video-opptakene vil bli oppbevart nedlåst under arbeidet med doktorgradsprosjektet, og vil bli slettet etter at prosjektet er avsluttet innen utgangen av 2016. Filmen vil kun bli brukt som hjelp til å beskrive det som skjer i behandlingen i relasjon til den øvrige oppfølgingen, og ingen bilder eller videofilm vil bli brukt i presentasjonen av resultatene i oppgaven.

I løpet av arbeidet med prosjektet kan videoen bli vist til veilederne i doktorgradsprosjektet. Alle som er involvert i prosjektet har taushetsplikt.

Det vil ikke være mulig å identifisere deg i resultatene av studien når disse publiseres.

Frivillig deltakelse
Det er frivillig å delta i studien. Du kan når som helst og uten å oppgi noen grunn trekke ditt samtykke til å delta i studien. Dersom du ønsker å delta, undertegner du samtykkeerklæringen nederst på siden. Om du nå sier ja til å delta, kan du senere trekke tilbake ditt samtykke uten at det påvirker din øvrige behandling. Dersom du senere ønsker å trekke deg eller har spørsmål til studien, kan du kontakte doktorgradsstudent Eirik Lind Irgens på telefonnummer 90 89 53 32 eller på e-post eirik.l.irgens@uit.no. Du kan også kontakte hovedveileder, førsteamanuensis Siri Moe ved Institutt for helse- og omsorgsfag på Universitetet i Tromsø på telefonnummer 776 45265 eller på e-post siri.moe@uit.no.

Rett til innsyn og sletting av opplysninger om deg
Hvis du sier ja til å delta i studien, har du rett til å få innsyn i hvilke opplysninger som er registrert om deg. Du har videre rett til å få korrigert eventuelle feil i de opplysningene vi har registrert. Dersom du trekker deg fra studien, kan du kreve å få slettet innsamlede opplysninger, med mindre opplysningene allerede er inngått i analyser eller brukt i vitenskapelige publikasjoner.

Samtykke til deltakelse i studien

Jeg har mottatt skriftlig informasjon og er villig til å delta i studien

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(Signert av prosjektdeltaker, dato)

Appendix 6

Intervjuguide, fysioterapeut i Spesialisthelsetjenesten

Innledende samtale om formålet med intervjuet

Tema og spørsmål i intervjuguiden relateres til den spesifikke pasienten og det konkrete behandlingsforløpet som fysioterapeuten er involvert i.

Fysioterapeutens bakgrunn	- Alder - Utdanning - Videreutdanning og kurs - Praksisprofil i egen jobb, fordeling av pasienter
Rammevilkår for fagutøvelse	- Ressurser - Lokaler - Tid - Behandlingsform/-muligheter - Hva er positivt - Hva er negativt - Hva kunne vært gjort annerledes eller bedre
Samarbeid	- Andre fysioterapeuter - Andre faggrupper - Samhandlingsarenaer - Kommunikasjonskanaler - Informasjonsflyt
Egen rolle i rehabilitering	- Fysioterapeutens oppgaver - Muligheter til å oppfylle forventninger fra pasienter, pårørende, kommunehelsetjenesten, andre faggrupper/samarbeidspartnere - Endringer i roller og ansvar
Kunnskapsoverføring	- Hvem får du informasjon fra - Hva får du informasjon om - Hva mangler av informasjon - Hva er din rolle i kunnskapsoverføring på tvers av helsetjenestenivå, til fysioterapeut, til andre fagutøvere, pårørende osv.
Prioriteringer	- Hva er høyt prioritert - Må noe prioriteres ned – hva - Hvem gjør prioriteringene - Kunne det vært gjort annerledes
Ansvar og oppgaver innen ulike helsetjenestenivå	- Hva er tillagt spesialisthelsetjenesten - Hva er tillagt kommunehelsetjenesten - Har dette endret seg - Hvilke konsekvenser har evt endringer hatt - Kunnskapsnivå
Videre oppfølging	- Hva er viktig - Forventninger til videre oppfølging - Muligheter for videre oppfølging - Fremmende og begrensende faktorer

Appendix 7

Intervjuguide, fysioterapeut i Kommunehelsetjenesten

Innledende samtale om formålet med intervjuet

Tema og spørsmål i intervjuguiden relateres til den spesifikke pasienten og det konkrete behandlingsforløpet som fysioterapeuten er involvert i.

Fysioterapeutens bakgrunn	- Alder - Utdanning - Videreutdanning og kurs - Praksisprofil i egen jobb, fordeling av pasienter
Rammevilkår for fagutøvelse	- Ressurser - Lokaler - Tid - Behandlingsform/-muligheter - Hva er positivt - Hva er negativt - Hva kunne vært gjort annerledes eller bedre
Samarbeid	- Andre fysioterapeuter - Andre faggrupper - Samhandlingsarenaer - Kommunikasjonskanaler - Informasjonsflyt
Egen rolle i rehabilitering	- Fysioterapeutens oppgaver - Muligheter til å oppfylle forventninger fra pasienter, pårørende, spesialisthelsetjenesten, andre faggrupper/samarbeidspartnere - Endringer i roller og ansvar
Kunnskapsoverføring	- Hvem får du informasjon fra - Hva får du informasjon om - Hva mangler av informasjon - Hva er din rolle i kunnskapsoverføring på tvers av helsetjenestenivå, til fysioterapeut, til andre fagutøvere, pårørende osv.
Prioriteringer	- Hva er høyt prioritert - Må noe prioriteres ned – hva - Hvem gjør prioriteringene - Kunne det vært gjort annerledes
Ansvar og oppgaver innen ulike helsetjenestenivå	- Hva er tillagt spesialisthelsetjenesten - Hva er tillagt kommunehelsetjenesten - Har dette endret seg - Hvilke konsekvenser har evt endringer hatt - Kunnskapsnivå
Videre oppfølging	- Hva er viktig - Forventninger til videre oppfølging - Muligheter for videre oppfølging - Fremmende og begrensende faktorer

Observasjonsguide

Hensikten er å observere og beskrive behandlingsforløpet i forhold til miljø, oppgave(r) og deltakere.

Kontekst
- Hvordan er utformingen av rommet - Hvem er til stede - Belysning - Kontraster - Hvordan plasseres benker, utstyr, stoler etc.
Tiltak
- Utgangsstilling til pasienten - Utgangsstilling fysioterapeut og synspedagog i forhold til pasienten - Tidsbruk - Tempo - Bruk av hender - Bruk av utstyr - Samtale og stillhet - Verbal og non-verbal instruksjon - Rolle fysioterapeut - Rolle synspedagog
Aktivitet og endringer hos pasienten
- Bruk av blikk / blikkorientering - Øye- og hodebevegelser - Vektoverføringer - Observerbar aktivitet/bevegelse - Endring i verbale uttrykk og kroppslige uttrykk

Norsk samfunnsvitenskapelig datatjeneste AS
NORWEGIAN SOCIAL SCIENCE DATA SERVICES

Harald Hårfagres gate 29
N-5007 Bergen
Norway
Tel +47-55 58 21 17
Fax +47-55 58 96 50
nsd@nsd.uib.no
www.nsd.uib.no
Org.nr 985 321 884

Eirik Lind Irgens
Institutt for helse- og omsorgsfag
Universitetet i Tromsø
MH-bygget
9037 TROMSØ

Vår dato: 26.10.2012 Vår ref:31867 / 3 / MSI Deres dato: Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 18.10.2012. All nødvendig informasjon om prosjektet forelå i sin helhet 24.10.2012. Meldingen gjelder prosjektet:

31867	*Behandlingskjeden fra spesialist til kommunehelsetjenesten: Fysioterapitjenester til pasienter med nevrologiske lidelser*
Behandlingsansvarlig	*Universitetet i Tromsø, ved institusjonens øverste leder*
Daglig ansvarlig	*Eirik Lind Irgens*

Personvernombudet har vurdert prosjektet, og finner at behandlingen av personopplysninger vil være regulert av § 7-27 i personopplysningsforskriften. Personvernombudet tilrår at prosjektet gjennomføres.

Personvernombudets tilråding forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, eventuelle kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, http://www.nsd.uib.no/personvern/forsk_stud/skjema.html. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, http://pvo.nsd.no/prosjekt.

Personvernombudet vil ved prosjektets avslutning, 31.12.2016, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Vigdis Namtvedt Kvalheim

Marte Sivertsen

Kontaktperson: Marte Sivertsen tlf: 55 58 33 48
Vedlegg: Prosjektvurdering

Personvernombudet for forskning

Prosjektvurdering - Kommentar

Prosjektnr: 31867

Formålet er å se på fysioterapitjenestens involvering og oppfølging i rehabilitering av pasienter med nevrologiske lidelser fra spesialisthelsetjenesten til kommunehelsetjenesten. Utvalget vil bestå av ca. 20 fysioterapeuter og ca. 10 pasienter.

Personvernombudet forutsetter at taushetsplikten ikke er til hinder for den behandling av opplysninger som finner sted, og at det ikke innhentes personopplysninger om pasienter/brukere uten at samtykke foreligger.

Ifølge prosjektmeldingen skal det innhentes skriftlig samtykke basert på muntlig og skriftlig informasjon om prosjektet og behandling av personopplysninger. Personvernombudet finner informasjonsskrivene tilfredsstillende utformet i henhold til personopplysningslovens vilkår.

Data samles inn gjennom intervju og videoobservasjon, samt fra journal. Det vil i prosjektet bli registrert sensitive personopplysninger om helseforhold, jf. personopplysningsloven § 2 nr. 8 c).

Personvernombudet legger til grunn at behandlingen av personopplysninger er i samsvar med Universitetet i Tromsø sine rutiner for informasjonssikkerhet. Vi anbefaler at koblingsnøkkelen lagres adskilt fra det øvrige materialet.

Ingen enkeltpersoner vil gjenkjennes i publikasjoner.

Prosjektet skal avsluttes 31.12.2016 og innsamlede opplysninger skal da anonymiseres, og lyd- og video-opptak slettes. Anonymisering innebærer at direkte personidentifiserende opplysninger som navn/koblingsnøkkel slettes, og at indirekte personidentifiserende opplysninger (sammenstilling av bakgrunnsopplysninger som f.eks. yrke, alder, kjønn) fjernes eller grovkategoriseres slik at ingen enkeltpersoner kan gjenkjennes i materialet.

Appendix 10

REK
REGIONALE KOMITEER FOR MEDISINSK OG HELSEFAGLIG FORSKNINGSETIKK

Region:	Saksbehandler:	Telefon:	Vår dato:	Vår referanse:
REK nord	Øyvind Strømseth	77620753	22.10.2012	2012/1813/REK nord
			Deres dato:	Deres referanse:
			18.10.2012	

Vår referanse må oppgis ved alle henvendelser

Siri Moe
Institutt for helse og omsorgsfag, Det helsevitenskapelige fakultet, MH bygget

Vi viser til forespørsel om framleggingsplikt for prosjektet **Behandlingstjenesten fra spesialist- til kommunehelsetjenesten. Fysioterapitjenester til pasienter med nevrologiske lidelser** av 18.10.2012.

For at et prosjekt skal være framleggingspliktig gjelder følgende:

De prosjekt som skal fremlegges for komiteen er prosjekt som dreier seg om "medisinsk og helsefaglig forskning på mennesker, humant biologisk materiale eller helseopplysninger", jf. § 2. "Medisinsk og helsefaglig forskning" er i § 4 a) definert som "virksomhet som utføres med vitenskapelig metodikk for å skaffe til veie ny kunnskap om helse og sykdom". Det er altså *formålet* med studien som avgjør om et prosjekt skal anses som fremleggelsespliktig for REK eller ikke.

Prosjektet er etter vurdering fra REK ikke egnet til å fremskaffe ny kunnskap om helse og sykdom, men fokuserer på samhandling og samarbeid innen mellom ulike helsetjenestenivå.

Prosjektet skal således ikke vurderes etter helseforskningsloven.

Vi ber om at alle henvendelser sendes inn via vår saksportal: http://helseforskning.etikkom.no eller på e-post til: post@helseforskning.etikkom.no

Vennligst oppgi vårt referansenummer i korrespondansen.

Med vennlig hilsen

May Britt Rossvoll
sekretariatsleder

Øyvind Strømseth
seniorrådgiver

Kopi til:

Besøksadresse:
MH-bygget Universitetet i Tromsø 9037 Tromsø

Telefon: 77646140
E-post: rek-nord@asp.uit.no
Web: http://helseforskning.etikkom.no/