

## **Learning to learn differently**

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Authors:

\* Trude Høgvold Olsen, UiT The Arctic University of Norway

Tone Glad, UiT The Arctic University of Norway

Cathrine Filstad, BI Norwegian Business School, The Police Academy College and UiT The Arctic University of Norway

\* Corresponding author

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### Abstract

*Purpose* – This paper investigates whether community health care nurses' formal and informal learning patterns changed in the wake of a reform that altered their work by introducing new patient groups, and explores whether conditions in the new workplaces facilitated or impeded shifts in learning patterns.

*Design/methodology/approach* – Data were collected through interviews with experienced nurses in community health care to learn whether and how they changed their learning patterns and the challenges they experienced in establishing new work practices.

*Findings* – In established learning patterns among nurses, the most experienced nurse passes on knowledge to the novices. These knowledge boundaries were challenged and created new contexts and tasks calling for more cross-disciplinary cooperation. The informants acknowledged the need for formal and informal learning activities to change their learning pattern in addressing new knowledge challenges. Structural and cultural factors in community health care impeded changes in individual and collective learning patterns.

*Research limitations/implications* – This article reports a single case study. Further study is needed of how changes in structural and contextual conditions challenge established formal and informal learning patterns.

*Practical implications* – It is crucial that managers facilitate the development of new routines, structures and cultures to support individual initiatives and necessary changes in established practice to implement a new reform.

*Originality/value* – The study's contribution to the literature primarily concerns how changes in structural conditions challenge formal and informal learning patterns and the structural and cultural conditions for these learning patterns.

Key words: learning patterns, change, learning initiatives, community of practice

Article classification: Research paper

## Introduction

Political reforms affect the organization of health care services internationally. For example, the Norwegian Coordination Reform redistributed the responsibilities of primary health care in local communities and specialist health care in hospitals (Norwegian Ministry of Health and Care Services, 2009). For nurses in community health care, this changed the patient groups for which they are responsible. Patients previously treated in hospitals are now treated in their homes or in local authority health care facilities.

Previous studies of nurses' learning opportunities at work highlight colleagues as the most important source of learning (Berings *et al.*, 2007; Berings *et al.*, 2008; Benner *et al.*, 2009) providing opportunities for cooperation and feedback (Kyndt *et al.*, 2016). Here, the novice nurse learns from, but also adapts to, established learning patterns within the community (Baert and Govaerts, 2012). Also, the expert nurse is known to pass on and share her knowledge with the less experienced nurse as knowledge within the community is available for all its members (Berings *et al.*, 2008; Benner *et al.*, 2009; Bjørk *et al.*, 2013). Since learning is situated in social practices at work and embedded in social, cultural and organizational structures at work (Lave and Wenger, 1991; Baert and Govaerts, 2012), one would expect nurses' ways of learning through practice to be resilient to change in implementing the above-mentioned reform. When the expert nurse and the novice nurses are both inexperienced vis-à-vis a new patient group, established practice comes under pressure and all nurses need to construct new ways of learning through practice. In 'legitimate peripheral participation' (Lave and Wenger, 1991), the novice nurses learn in participatory trajectories that lead to full participation in socio-cultural practices of a community. However, not all participants are novices. This calls for studies that explore how structural changes in the workplace affect all nurses' learning patterns as they change established practice.

We approach learning as socially constructed and situated in social and cultural contexts; this has been argued for by a substantial number of scholars (Lave and Wenger, 1991; Davies & Easterby-Smith, 1984; McCall, 1998; Kempster, 2009; Segal, 2011). The roots from Lave and Wenger's (1991) legitimate peripheral participation in social practices are closely related to the focus on the learning potential of movement between multiple communities of practice (CoP) (Hodge, 2014). Revisiting how we learn, as argued by Hodge (2010), highlights learners' participation and identity formation in situated work practices. A number of scholars therefore draw on the CoP to frame tertiary teachers' informal workplace learning (Hodge,

2010). In CoPs, knowing and practice are mutual know-how negotiated among the participants (Brown and Duguid, 1991; Wenger and Snyder, 2000; Newell *et al.*, 2009), where they find it easier to share knowledge with others engaged in the same CoP (Newell *et al.*, 2009). A body of nursing staff can be recognized as a CoP with its informal characteristics in practical work. What happens when the relevance of this important learning arena is lost as a consequence of a reform? Instead of less experienced nurses learning from internal expert nurses within the original CoP, all nurses need to develop the knowledge required to handle the needs of their new patients outside their CoP, across organizational boundaries and even outside the nursing profession. The new knowledge that the individual nurse needs to develop will continuously be negotiated collectively among all participants in the CoP, challenging how they learn and how to implement new knowing in practice (Gherardi, 2006). Therefore, even though some studies have identified various learning patterns (Govaerts and Baert, 2011; Baert and Govaerts, 2012), most studies of learning do not describe the need for shifts in learning patterns and how organizational factors may facilitate or impede such shifts and the creation of new learning arenas. Our study aims to supplement previous research on learning by exploring both formal and informal learning within social practices at work, where the CoP framework mainly focuses on informal collective learning. We therefore ask: How do new organizational structures affect the change of learning patterns in CoPs?

First, the literature on learning within and across CoPs is reviewed with a specific focus on how changes in organizational structures are accounted for when facilitating or impeding learning across CoPs. Second, the research contexts and methods are described. Third, the results are presented and discussed. Finally, conclusions, practical implications and suggestions for further research are offered.

### **Literature review**

Learning patterns are embedded in organizational structures, work routines and organizational cultures and represent the preferred way of formal and informal learning among colleagues (Govaerts and Baert, 2011; Baert and Govaerts, 2012). In CoPs, learning and knowing are negotiated and shared among the participants (Brown and Duguid, 1991; Wenger and Snyder, 2000; Thompson, 2005; Newell *et al.*, 2009), creating learning patterns and routines for how to participate and share knowledge. The evidence that such informal groups are critical for knowledge flow in change processes is fairly well established in the literature (Brown and Duguid, 2001; Tallman and Chacar, 2011). However, CoPs create knowledge boundaries to

other CoPs and formalized social practices. Since people find it easier to share knowledge with others engaged in the same CoP (Newell *et al.*, 2009), CoPs can pose problems by limiting or hindering knowledge flows across communities (Blackler, 1995; Brown and Duguid, 2001; Swan *et al.*, 2002). Instead, CoPs can represent learning routines that may be resistant to change (Govaerts and Baert, 2011; Baert and Govaerts, 2012). The role of formal structures and their interrelations with CoPs to ensure successful implementation of change is, however, often overlooked (Brown and Duguid, 2000, 2001; Thompson, 2005). Our contribution is not to explore how formal structures influence learning or bridge the gap between formal groups and CoPs to ensure knowledge flow in change processes. Our contribution is to gain new knowledge on how established learning patterns are both challenged and need to change, because the formal structures that previously provided these learning arenas have been lost. Accordingly, the reform implies changes in formal training procedures and changes in how employees capitalize on the informal learning opportunities in the organization.

The most frequently described learning patterns among nurses are those that require close relationships between nurses, such as noticing changes in a patient's condition and acting on these cues in an appropriate manner (Weick *et al.*, 2005). Similarly, the knowledge transfer literature suggests that strong ties between learners are effective for the transfer of highly complex knowledge, but may also inhibit the learners from searching for new knowledge (Hansen, 1999). Thus, in a change situation that requires nurses to develop new knowledge, the most frequently described learning pattern may not be the most appropriate. When the most experienced nurse does not have the required knowledge, the question is how nurses gain access to new knowledge and how they communicate it to colleagues. This is a well-known phenomenon of CoPs. CoPs are not necessarily positive, but have been treated as something entirely positive and even "rose-tinted" (Newell *et al.*, 2009; Hodge, 2014). Despite this, we find the concept of CoPs relevant as to how people learn, which is our main concern in this paper.

Learning within CoPs has its strength when knowledge resides in the community, while learning across CoPs opens up access to new knowledge (Oborn and Dawson, 2010). Accordingly, Wenger (2000) claims that crossing the boundaries of CoPs is a vital component for learning to take place. Research has identified several barriers to learning across CoPs (Carlile, 2002; Ferlie *et al.*, 2005; Tagliaventi and Mattarelli, 2006). Despite these barriers, learning does take place across CoPs in multidisciplinary contexts, but needs to be facilitated

through organizing discussions (coordination), acknowledging other perspectives (transparency), and challenging basic assumptions (negotiability) (Oborn and Dawson, 2010). Wenger (2000) suggests that concrete practices supporting this could be brokering (people introducing a practice from one CoP to another), boundary objects (artefacts), boundary interactions (taking the new knowledge back home) and cross-disciplinary projects. Carlile (2004) argues that managing knowledge across boundaries involves processes of transfer, translating and transformation of knowledge, and identifies three forms of boundaries: syntactic/information-processing (for common lexicon and sharing of explicit knowledge), semantic/interpretative (shared and common meaning) and pragmatic/political (transforming by negotiating an existing practice and overcoming conflicts of interest leading to new knowledge). The literature establishes that managing knowledge boundaries seems to depend on structural and cultural factors in the workplace without necessarily investigating when these structural and cultural conditions change, with consequences for an established learning pattern.

Learning from experience involves knowing that is embedded and situated in social practices with no clear form, whereas tacit and explicit knowledge are integrated as total knowing on how to perform (Polanyi, 1966; Tsoukas, 2011). Hence, nurses' learning patterns need to be complemented with learning arenas, including both explicit and tacit knowledge, in order to comply with new skill requirements. In a similar vein, Clarke (2005) distinguishes between opportunities to engage in learning activities and the actual learning outcomes. He suggests that procedural knowledge is a central learning outcome: 'Procedural knowledge is defined as the 'how to' knowledge necessary for decision-making, and is seen as necessary for the acquisition of skills and expertise' (Clarke, 2005, p. 189). For nurses, procedural knowledge may include knowing how to care for unfamiliar patient groups, e.g. patients discharged from hospital but still dependent on advanced medical technology or palliative care. Therefore, there is a need to focus on 'those aspects of the workplace environment that impact on the acquisition and utilization of procedural knowledge' (Clarke, 2005, p. 189) as well as understanding how these factors are influenced by changes in learning patterns.

Research has focused on conditions in the work environment that foster or inhibit learning in the workplace (Nordhaug, 1994; Clarke, 2005; Crouse *et al.*, 2011; Jeon and Kim, 2012), and discussed frameworks for assessing informal learning (Skule, 2004). Research has contributed to the understanding of learning opportunities and learning activities in nurses' workplaces (Berings *et al.*, 2008; Lundgren, 2011), possible knowledge boundaries, and how to overcome these boundaries (Wenger, 2000; Carlile, 2004; Oborn and Dawson, 2010),

learning within and across CoPs, assessing informal learning and engaging in learning (Clarke, 2005), and factors in the workplace that facilitate and inhibit learning processes (Nordhaug, 1994; Crouse *et al.*, 2011; Jeon and Kim, 2012). The literature to date, however, falls short of explaining whether and how employees utilize these learning opportunities and how organizational and structural conditions totally change their way of practising their work as nurses, and therefore challenge existing learning patterns and create possible new ones.

### **Research context and methodology**

The Norwegian health care system is publicly owned and operated. It consists of local authority primary health care and specialist health care services offered by hospitals owned by regional health trusts. The main objectives of the Coordination Reform, implemented in January 2012, were to reduce hospitalizations and to transfer tasks from hospitals to local authorities by releasing patients from hospitals earlier and continuing treatment and care in community health services, either in the patient's home or in a nursing home. This is an interesting setting to study changes in learning patterns. With new patient groups, the experienced nurse in community health care is likely to find herself in situations where she does not have the skills to operate advanced medical technology or the knowledge about complex conditions and their treatment. Novice nurses in such situations may have less face-to-face access to experienced colleagues, but they may also be experts if they recently had their practice in a hospital.

The study was carried out in a strategically selected medium-sized Norwegian local authority, which hosts a local hospital and which at the time of the study had prepared for the implementation of the reform by establishing specialized functions at nursing homes to be able to finalize the treatment of patients. The selection of informants was guided by two criteria: (1) a minimum of five years' experience as a nurse, and (2) all three aspects of local health care should be represented (home care, nursing homes, and nursing homes with specialized functions). The selection process started with email communication with an advisor in the local health and care services, in which access was granted and the selection criteria were explained. All community health care managers were asked to suggest informants that fitted the selection criteria. They suggested nine informants, all of whom agreed to be interviewed. The informants suggested a time and place for the interview that suited their schedule. The interviewees were all female, between 30 and 50 years of age, had more than five years of nursing experience in primary health care, and represented all three branches of community health care, see Table 1.

Insert Table 1 here

The project was reported to and approved by the Norwegian privacy protection commission for research. The informants were told about the objectives of the study, that participation was voluntary, that they could withdraw at any time, and that the information they provided would be treated confidentially and used in a way that was not traceable to their person or place of work. The interviews took place five months after the implementation of the Coordination Reform and were in the form of a dialogue with the second author, based on a semi-structured interview guide. The interviews lasted about 60 minutes, were tape recorded and transcribed verbatim. The interview guide had two main themes in line with the overall objectives of the study. The informants were asked to describe (1) their working day and knowledge challenges tied to the changes in the patient groups and (2) how they addressed the accompanying learning challenges. The informants provided information that covered the main themes. In addition, the semi-structured interview guide allowed the researchers to pose follow-up questions and ask for clarifications.

Data analysis started by reading the interview transcripts thoroughly and identifying common themes. Open and axial forms of coding were used to identify categories (Strauss and Corbin, 2008). The first categories were broad ('descriptions of a regular working day' and 'learning opportunities at work') and based on the interview guide. These initial categories were revised and three main categories emerged from the data: new skill requirements, learning methods used and characteristics of the workplace that challenge a change in learning patterns (structures and cultures for knowledge development and knowledge sharing). The category 'new skill requirements' included technical and procedural knowledge and illustrated how informants described the effect of the reform on their work and the required knowledge. The category 'learning methods used' illustrated the learning pattern that informants followed when attending to the new skill requirements. Informants' accounts of their traditional learning pattern and their accounts of how they searched for new knowledge outside their CoP were included in this category. 'Workplace characteristics' focused on issues that informants explained inhibited a change in learning patterns. Following a pattern-matching logic (Yin, 2003), it was explored whether the categories could explain possible differences in the changing of learning patterns and how these new patterns influenced the implementation of the reform. The quotes from the interviews provided in the next section are illustrative of the data, unless otherwise stated.



## Results

### *New skill requirements trigger learning*

The patient groups for which the interviewees were responsible had changed in line with the objectives of the Coordination Reform. The following quotes describe the nurses' experience of the patients they care for today compared to earlier:

The patients who are taken care of in their homes are sicker than before... For example, they have nutrition pumps and CVCs [central venous catheters] at home. (HB1)

The patients live at home much longer... and they come home from the hospital earlier than before. (HB2)

The patients are sicker when they're released from the hospital. They come here directly from the intensive care unit. Well, not literally, but almost... (SNH1)

The new patient groups forced the nurses to brush up on knowledge, to develop new knowledge related to the patients' treatment procedures, to acquire knowledge and skills on advanced medical technology and to observe the medical development of patients with complex diagnoses. Several of the informants reported having performed many of the new procedures before, but that it was a long time ago, and that the new situation now required them to brush up on techniques and procedures:

I did that [gave infusions] when I had my practice period at the hospital during nursing school. But of course, we need to brush up on these skills. We've also been on courses and learned how to set PVCs [peripheral venous catheters]. But we lack the skills we develop by doing it. (NH1)

Often you go on a course, which is good, but then it may be two years until you get in a situation where you need it... So it's not often that you work with the same things long enough to get the technique under your skin. (HB1)

The required knowledge is related to specific diagnoses and the use of specific medical technology such as peripheral venous catheters, central venous catheters, analgesia pumps, infusions, respirators and cough assists. Trained nurses are expected to have the necessary skills to handle this, but as the informants explained, they may have the technical knowledge but not enough practice, which challenges them in how to use their technical knowledge. As the informants described, in order to learn certain nursing skills, one needs to practise and develop a feeling for the procedures through experience. Some of these procedures have been rare in community health care but have become more common now as patients are discharged earlier from hospital. The following quote illustrates this:

Even though I'm the nurse with the longest experience here, it doesn't mean that I have the best experience in everything. Several of my colleagues have much better skills than me on analgesia

pumps for example, because they've worked with them and I haven't. I may know the basic principles, but I have to get a helping hand when I have to do it. (SNH4)

The informants' accounts of new skill requirements after the reform showed that they were aware of the new technical and procedural knowledge that the new patient groups required of them. They explained the importance of practice in developing knowledge and admitted that the most experienced nurse in the CoP may no longer be the most knowledgeable.

### *Existing learning patterns challenged*

The informants reported engaging in learning in different arenas to develop the required skills. Resources at work and their nurse colleagues represented traditional, but still important, aspects of their learning patterns. However, some informants went beyond their immediate workplace and sought knowledge at the local hospital.

The informants learned individually by searching for information and knowledge in available resources at work. We see that these resources surpass the knowledge of the most experienced nurse and include databases, research articles and handbooks of procedures.

I read some literature at home if there are patients coming in with diseases that I know little about. Now there's easy access on the computers where I can do searches. What's more, we do talk about it in the department. And we have the doctor here, so we can ask her if we're uncertain. (SNH2)

I go to the handbook of procedures. We have it on our computers. I've also used notes from nursing school. (NH1)

We check the handbook of procedures. It explains step by step what you do and how you do it. (SNH4)

Some informants explained that they participated in training sessions at the local hospital. This took place either as planned sessions once a week, or when new patients were to be discharged from hospital and transferred to community care.

When we know that patients with serious diagnoses who need special medical treatment and care are being discharged from the hospital and are coming home, we go to the hospital to go through things. (HB1)

One time we heard that we'd get a patient with a CVC and that was the first patient with a CVC we'd had in a long time. I was to go on duty on Saturday and the patient came here on Friday. I went to the hospital in my free time to refresh my skills around CVCs so that I could feel more confident when I came on duty. (SNH4)

When I see that I need new skills, I've signed up for courses at the local hospital just to refresh my skills... I've also started to go on duty at the hospital to refresh my skills. (NH1)

When the technical skills were in place, informants discussed the practice of these skills with colleagues. This helped them develop their knowledge about the technology and procedures

and illustrates that the CoP remains an important learning arena. However, the informants called for more structure, time and opportunities to reflect and discuss with their colleagues in order to share and develop new knowledge.

The idea [of training at work] is very good. However, it's almost as if it's been discontinued because of all the other tasks in the department that demand attention on a daily basis. I wish we had more time for it. (SNH2)

We could have utilized each other's skills in a better way... better knowledge sharing. (SNH2)

We could have gone through [a procedure] together so that it would be easier to understand it and so that everybody understands what we do and why... Then you get to discuss things instead of just reading it on a piece of paper. (SNH2)

They explained that they tried to share knowledge by writing down issues in a 'black book', by discussing, by working together and by telling others about what they had learnt on courses. In that way, they appeared to be creating new learning patterns across organizational boundaries. The person they shared with was someone they trusted. This can typically be identified as informal relations, because they chose themselves with whom to share knowledge.

It could be that we've become better at contacting them [in the emergency room at the hospital]. You get to know each other over time...and the threshold for asking about things is reduced. (HB1)

When you don't know something, you have to search... We'd heard about a nurse in home care [in another part of the country] who was very good at wounds. Then we had a Christmas party with them, talked to them and agreed that we shouldn't be afraid to ask each other. (NH1)

It's easier to cooperate when we know who we can ask and when we have a face and a person to contact. (SNH1)

To summarize, the informants described learning patterns that included the traditional one where the nurse CoP is important for developing nursing practice that incorporates individually developed knowledge. However, the new aspects of the learning patterns were that the nurses sought outside their CoP and across organizational boundaries in health care in order to access new knowledge.

### *Conditions influencing a shift in learning patterns*

Budget constraints and structural and cultural conditions may inhibit a shift in learning patterns. Informants reported taking individual initiatives to learn technical knowledge, but needed to reflect on this knowledge. Thus, time and space for reflection and knowledge sharing with other nurses was required. However, with tight budgets and reorganizations with the aim of cutting costs, there was no time for this in their daily practice. On the contrary, the informants explained that previous possibilities for reflecting and knowledge sharing among colleagues were even

more limited than earlier because of budget restraints. Despite this, the informants described informal knowledge-sharing activities with their colleague nurses within their own organizational unit, across local authority organizational units and in the hospital. Several informants pointed out the lack of formal arenas for sharing knowledge and that knowledge sharing takes place informally.

We have no formal arenas for sharing knowledge. However, we always share because we know that she's been on a course and we ask her to show us or tell us about it... But we share the knowledge informally. (SNH4)

I find the conditions for sharing knowledge in a formal way to be very poor. We miss being able to meet officially with a clear agenda. (HB3)

The lack of official policy in this area was accompanied by varying degrees of taking the matter into one's own hands. Several informants explained that the initiative for individual knowledge and skill acquisition and collective reflection lay in the hands of the nurses themselves, and that there were few sanctions for not bothering to take the initiative.

Our manager is responsible for professional development and she sometimes pushes us, but it's up to us to apply for resources and courses. It's up to you whether you want to participate, to keep updated. If you couldn't be bothered to keep updated, well... (HB2)

We might have managed to make it work but someone needs to take the initiative to share knowledge, and as long as nobody does that, well... (SNH1)

At some workplaces, the culture seemed to be permeated with a norm of not bragging about your knowledge and skills to co-workers:

It's not like you poke your nose into everything. That doesn't work... We're not that good at using each other's knowledge. Even though you may have loads of diplomas in your file in the HR department, your colleagues may not know what you know. ... I'm not that good at sharing knowledge and we don't have any rules saying that you have to tell others about what you've learnt on a course. (SNH1)

This varied with the place of work, because another informant explained that they shared knowledge as needed, and often in specific situations:

I feel that we're quite good at explaining things to others if there's a situation they haven't been in before... This is often done in situations with a patient, for example, that we show how to administer antibiotics by intravenous injections. (SNH2)

The data illustrates that shifts in learning patterns may be inhibited by conditions in the workplace. The informants seemed to acknowledge the relationship between the individual and the CoP in developing new practice after the reform. However, the interplay between individual and CoP may be hampered by structural arrangements and constraints as well as cultural norms of initiative and involvement.

## Discussion

The study confirms that the Coordination Reform affects requirements for knowledge and skills for nurses in community health care. The nurses acknowledged these new knowledge requirements and applied individual and collective learning methods to develop their knowledge. Their learning pattern resembled the traditional learning pattern for nurse communities. Even though the nurses took the initiative and asked experts at the local hospital, there seemed to be a relatively low level of awareness and reflection on how to meet the new learning challenges successfully. Their learning awareness appeared to be greatest when patients with specific needs were transferred from the hospital. Instead of being proactive in their own learning processes, informants were rather reactive in changing their previous way of learning in accordance with changes in practice.

Two necessary and intertwined learning processes have been identified: (1) the individual acquisition of technical knowledge, meaning explicit knowledge of medical issues, and (2) new skills for getting the new procedures ‘under their skin’, which refers to tacit knowledge (Polanyi, 1966; Tsoukas, 2011). Tacit and explicit knowledge are integrated in practical work, and being able to get the new procedures ‘under your skin’ requires experience over time. Learning explicit knowledge is mostly about acquiring individual cognitive knowledge, while learning tacit knowledge refers to learning as situated in social and cultural contexts and practices at work (Brown and Duguid, 1991; Lave and Wenger, 1991). Nevertheless, learning through practice also involves reflection, which is claimed to be the third way of learning in organizations and a way to integrate the two main perspectives (Elkjaer, 2004). Consequently, for the nurses to develop new knowledge (explicit) and knowing (tacit know-how), the reactive way of learning is problematic, as new knowledge requires proactivity and possibilities for reflection on the experiences (Boud *et al.*, 2006).

In line with Govaerts and Baert’s (2011) definition of learning patterns, the informants called for more formal learning activities, and also ways to informally learn through knowledge sharing and gaining access to colleagues as important knowledge sources. However, structural and cultural conditions in their working environments may challenge such a shift in the nurses’ learning patterns. The informants described a working environment with a lack of time, formal structures and economic resources for knowledge sharing, thus resulting in structural challenges to one’s own knowledge and skill development. Developing procedural knowledge (Clarke, 2005) takes time. This not only requires individual knowledge acquisition and learning through

experiences in practice, but also collective reflection about this knowledge and how this knowledge works when transferred to practice (Clarke, 2005; Berings *et al.*, 2008). To support such learning, the structural characteristics described by the informants seem inappropriate. Instead, transparency and possibilities to negotiate basic assumptions were very limited, and as for bridging multidisciplinary contexts (Wenger 2000; Oborn and Dawson, 2010), the findings only show examples of coordination. However, these structural conditions are not impossible to change. For instance, low budgets may lead to strict prioritizing and the establishment of formalized learning arenas for knowledge sharing, in order to encourage and improve initiatives for informal learning. It seems that a greater level of managerial involvement is critical for the enhancement of learning opportunities. The power to change these structural factors lies in the hands of managers at all levels in community health care. Managers are responsible for knowledge sharing across knowledge boundaries, and must facilitate what Carlile (2004) argues to be the management of transferring, translating and transformation of knowledge.

The managerial role has not been explicitly discussed in studies of nurses' learning opportunities and skills development (see for example Lundgren, 2011). One explanation can be traced back to professionals' responsibility for their own skills development and professional standards. The changes introduced by the Coordination Reform, however, call for managerial involvement in this process in order to facilitate such learning. Even though there is evidence of managerial support and facilitation of knowledge sharing and development in the study, the informants called for more formalized procedures.

There is a high percentage of sickness absence among community health care personnel (Norwegian Ministry of Health and Care Services, 2010). As a result, first-line managers experience a high burden of hiring temporary staff and filling up shifts. This instability may reduce the benefit of information routines and formal knowledge-sharing structures. However, a clearer structure may be beneficial in situations of instability because of the reduced dependency on the presence of certain nurses.

A cultural factor in community health care that may challenge new learning patterns is nurses' strong need for knowing and trusting the people with whom they collaborate and share knowledge. This is linked to established learning patterns, where trust is dependent on the nurses' experience and whether they are known as expert nurses. Knowledge sharing beyond these strong culturally established expert/novice nurse relationships represents new ways of learning with less culture and fewer routines. Trust is crucial for knowledge sharing. Trust in

the person's competence and benevolence is most important, which has probably been true of most expert/novice nurse relationships (Benner *et al.*, 2009). These forms of interpersonal trust are linked to the involved parties' vulnerability (Abrams *et al.*, 2003). Informal groups create these forms of trust through negotiation (Filstad, 2014a). Strong ties may not facilitate the search for new knowledge (Hansen, 1999) and even though the structural barriers are reduced by information routines and regular formal knowledge sharing, for example through short courses at the hospital, the cultural norms for knowledge sharing may remain and undermine the benefits of these structural efforts.

## Conclusion

The findings show that established learning patterns common among nurses were insufficient in handling new practices, and point to structural and cultural conditions in the nurses' working environment that may inhibit or at least slow down a change in learning patterns. The lack of formal structures for knowledge sharing both within community health care and across organizational knowledge boundaries is evident, leaving the nurses either to figure out these challenges by themselves or informally with other colleagues. The strong cultural relationship between the expert nurse and novice nurse was challenged, and reflection on how to create new strong ties in their new working environment seemed underdeveloped. The question remains as to whether nurses are able to solve these structural and cultural challenges to ensure necessary knowledge sharing across knowledge boundaries. Stronger managerial involvement is needed in order to build and facilitate the necessary knowledge for developing ties and trust across organizational boundaries to support collaboration and ensure new knowledge. However, to ensure that new knowledge is developed through knowledge sharing across professional and organizational boundaries, established practice needs to be reflected upon and discussed to ensure necessary sensemaking for successful implementation of the reform (Filstad, 2014b).

The theoretical contribution is primarily related to how changes in structural conditions challenge both formal and informal learning patterns and the structural and cultural conditions for these learning patterns. This is important, as previous literature on CoPs and knowledge sharing across knowledge boundaries has not specifically (to the authors' knowledge) focused on changing learning patterns as a result of pre-existing learning arenas being removed when new social practices are established at work. However, more research is needed, including research in different work contexts and professions to identify conditions that may challenge the effectiveness of existing learning patterns and the factors facilitating or inhibiting changes

in learning patterns. The study also suggests that managers in primary health care may underestimate the effect of their involvement in building structures around learning processes; this consequently calls for more research on managerial involvement in changing learning patterns and forms of involvement and facilitation at various management levels.

A practical implication of the study is that managers in community health care have an important role in initiating and facilitating new learning arenas involving formal and informal learning practices within and across existing knowledge boundaries. For example, coaching and mentoring initiatives across organizational boundaries and existing CoPs may be valuable in this respect. The close cooperation between community health care and hospitals, which the Coordination Reform assumes, could be developed over time, focusing on the awareness of informal relationships, the establishment of trust and the facilitation of new learning patterns that acknowledge and ensure knowledge sharing for the patient's best interest.

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*Table 1. Presentation of informants*

<b>Workplace</b>	<b>Number of informants</b>	<b>How informants are named in the presentation of data</b>
Home-based care (HB)	3	HB1, HB2, HB3
Nursing home (NH)	2	NH1, NH2
Specialized nursing home (SNH)	4	SNH1, SNH2, SNH3, SNH4