Care pathways as boundary objects between primary and secondary care; experiences from Norwegian home care services

Abstract

The need for integration of healthcare services and collaboration across organisational boundaries is highlighted as a major challenge within healthcare in many countries. Care pathways are often presented as a solution to this challenge. In this article, we study a project of developing, introducing and using a care pathway across healthcare levels focusing on older home-dwelling patients in need of home care services after hospital discharge. In so doing, we use the concept of boundary object, as described by Star and Griesemer, to explore how care pathways can act as tools for translation between specialist healthcare services and home care services. Based on interviews with participants in the project, we find that response to existing needs, local tailoring, involvement and commitment are all crucial for the care pathway to function as a boundary object in this setting. Furthermore, the care pathway, as we argue, can be used to *push* boundaries just as much as it can be used as a tool for bridging across them, thus potentially contributing to a more equal relationship between specialist healthcare services and home care services.

Keywords: boundary objects, care pathways, health service research, home care services

Introduction

The need for integration of healthcare services and collaboration across organisational boundaries is highlighted as a major challenge within healthcare in many countries. People are living longer and more patients suffer from chronic diseases, contributing to long durations of patient trajectories and many shifts back and forth between primary and secondary care (Winthereik and Vikkelsø, 2005). It

is argued that due to more specialisation and differentiation, modern healthcare is too fragmented, leaving patients to travel through different organisations that often have superficial knowledge of each other's activities (Axelsson and Axelsson, 2006; Winthereik and Vikkelsø, 2005). This means that there is a growing need for collaboration, communication and exchange of information – and what has been labelled 'integrated care.' The concept of integrated care addresses the question of how to create a 'seamless' patient-centred healthcare system with the focus on increased quality of care (Winthereik and Vikkelsø, 2005). This implies creating productive collaborative relationships (Glouberman and Mintzberg, 2001; Huzzard et al., 2010; Petrakou, 2009). Axelsson and Axelsson (2006) argue that the integration of healthcare services requires inter-organisational collaboration across different sectors. Hospitals and municipal healthcare, as well as other healthcare service providers, need to collaborate across organisational and disciplinary boundaries. In order to achieve this goal, we need a better understanding of the complex trajectories at play in the healthcare system (Allen et al., 2004).

In Norway, the introduction of the Coordination Reform in 2012 (Norwegian Ministry of Health and Care Services, 2009) is designed to address collaboration in healthcare. The main argument in the white paper is that patients' needs for coordinated services are not being sufficiently met and that there should be more cooperation and better, more efficient coordination between healthcare services. The reform implies an increased focus on the development of care pathways, emphasising that good, cohesive care pathways should become a common frame of reference for all stakeholders within the healthcare services (Norwegian Ministry of Health and Care Services, 2009: 5). Care pathways, defined as the chronological trajectory of events comprised in the patient's meeting with different parts of health and care services (Norwegian Ministry of Health and Care Services, 2009), are often presented as a solution to integration and collaboration challenges. There has been a rise in interest for care pathways during the last 10-15 years (Pinder et al., 2005), and their growing popularity can also be linked to the increased focus on documentation, procedures, audit and control (Allen, 2009a). Allen (2009a) argues that

the primary reason for the appeal of care pathways is their ability to align clinical,

management and service user interests in the healthcare quality agenda. (p.355)

However, she further notes that the concept of care pathways is vaguely defined and that tensions between different interests are thus disguised. Also, despite the strong rhetoric, where care pathways are linked to efficiency and quality improvement, the evidence of these results is inconclusive (Allen, 2009b; Allen, 2013).

In this article, we study a project of developing, introducing and using a care pathway across healthcare levels focusing on older home-dwelling patients in need of home care services after discharge from hospital. We use the concept of *boundary object* to explore and understand how the care pathway can bridge across organisational boundaries. Care pathways are often used within hospitals, in respect to specific diagnoses, while more recently care pathways regarding patients in contact with healthcare service providers across care levels are also being developed (Van Houdt et al., 2013). According to Van Houdt et al. (2013) more research is needed to study care pathways across organisational borders, as these pathways encounter specific challenges, and this article makes a contribution in this respect. Furthermore, the care pathway under study in this project is of particular interest as it came to be a general pathway for all patients instead of a specific pathway for each clinical problem, as originally intended.

Boundary objects act as tools for translation between different social worlds (Star and Griesemer, 1989). They can be, for example, physical artefacts, people, discourses and processes. Drawing on findings from the project, we argue that the development and use of boundary objects can be one way forward to improve collaboration across organisational borders within healthcare. However, these are complex, laborious and continuous processes, and we bring forward three categories in our study, crucial for the care pathway to function as a boundary object in this setting. Furthermore, we suggest some implications for future development and use of care pathways as boundary objects to facilitate collaboration across organisational boundaries.

Boundaries and boundary objects

The concept of boundary objects was introduced by Star and Griesemer (1989) in their article on the Museum of Vertebrate Zoology. Star and Griesemer investigate how different actors manage the tension between different points of view and the need for generalisable findings within a scientific community at the museum. Within this community, amateurs, scientific staff and administrative staff worked together to build a museum that is supposed to be both a zoological collection and a research centre. Star and Griesemer look into how the different points of view and visions are translated between the different groups and introduce the concept of boundary object to explain this translation process:

> Boundary objects are both adaptable to different viewpoints and robust enough to maintain identity across them. (Star and Griesemer, 1989: 387)

Boundary objects belong to several intersecting social worlds and satisfy the informational needs in each of these worlds – they are plastic enough to adapt to local needs and limitations by the different actors using them, and yet are still robust enough to maintain a common identity across the contexts in which they are used (Star and Griesemer, 1989). This means that they can act as tools to translate between different worlds. Actors in different social worlds can negotiate their differences and recognise their different points of view (Trompette and Vinck, 2009). To create and manage boundary objects is, according to Star and Griesemer (1989)

> a key process in developing and maintaining coherence across intersecting social worlds.(p.393)

Boundary objects can act as anchors or bridges, even if only temporarily.

The concept of boundary objects has gained extensive circulation and is used in several different ways within different fields, such as science and technology studies, artificial intelligence, sociology, organisation studies and management studies. Fujimura (1992) argues that the concept is suited to

investigate and explain how different actors can work together across different social worlds, meanings and points of view. Within the field of integrated care, as in other fields concerned with cooperation and collaboration across boundaries, the concept has received growing interest. For example, Allen (2009a) argues that the care pathway methodology is a boundary concept, being loose and vague enough to align different interests in the healthcare sector. She has investigated the development of a patient safety care pathway and has shown how the process to create a boundary object implied complex and laborious negotiations. Further, Yael et al. (2012) has shown how boundary objects bridge social-structural and epistemological gaps in interprofessional collaborations within healthcare. In this article, the focus is on care pathways as boundary objects across organisational boundaries more than across professional boundaries. We explore how they can be used to align primary and secondary care, and even re-negotiate the boundary between hospitals and home care services.

Wenger (2000) argues that boundaries can be positive because they connect communities of practice and offer learning possibilities. A community of practice implies a boundary, and on this boundary one is exposed to a different type of learning than on the inside of the community. The boundary offers access to unknown competence and experience, which can have a dynamic effect. Boundaries act as a source of new possibilities as well as potential difficulties (Wenger, 2000). Following this and focusing on knowledge boundaries, Carlile (2002) points to how a boundary object can act as a means by which people can learn about differences and dependencies across boundaries. At the boundary, they need to articulate what they know and what the difficulties are. Boundary objects make visible the need to exchange information (Wilson and Herndl, 2007).

Primary and secondary care represent different cultures and practices (Hellesø and Fagermoen, 2010; Author et al., 2013) – different communities of practice (Wenger, 2000). This implies that they also represent different forms of *knowledge,* or representations of knowledge and ways of articulating knowledge. These differences constitute a challenge when collaboration across

boundaries is needed. Carlile (2002) describes how the use of boundary objects acts as a means for representing, learning about and transforming knowledge. Boundary objects create a framework for understanding different disciplinary and institutional languages – a trading zone (Galison, 1997; Wilson and Herndl, 2007). According to Carlile (2002)

> a boundary object establishes a shared syntax or language for individuals to represent their knowledge. (p.451)

However, boundary objects are not neutral. Carlile (2002) identifies them as both practical and political. To us, the political dimension means that the processes involved are not necessarily conflict-free and that the different groups may have different distributions of influence and power.

Whether or not an artefact can function as a boundary object for knowledge transfer between different communities of practice depends on the *meaning* this artefact represents to the communities. It is the active work and sense-making of the different actors that make a boundary object effective (Fox, 2011). Boundary objects are arrangements that enable people from different groups to work together across different points of view and they arise from 'information needs' (Star and Griesemer, 1989; Star, 2010). Star (2010) argues that 'information and work requirements' should be included, emphasising the importance of work and locally perceived needs in the cooperating groups. Further, boundary objects are described according to several dimensions:

> …boundary objects are at once temporal, based in action, subject to reflection and local tailoring, and distributed throughout these dimensions. (Star, 2010: 603)

Since boundary objects are work arrangements responding to local needs and are temporal, these arrangements are not fixed and can, over time, move into standards and infrastructure.

Case and methods

Following the Coordination Reform, the Research Council of Norway has launched several evaluation projects that address different parts of the reform. This study is part of one of these projects. The study was approved by the Regional Committee for Medical and Health Research Ethics in Central Norway and the Ombudsman for Research and Social Science Data Service.

Norwegian healthcare is a distinct two-level system. Specialist healthcare services are owned and financed by the Ministry of Health and Care Services, and managed through four regional health authorities. Primary care is organised and financed by the local authorities (municipalities). Their responsibilities include, among others, medical services through general practitioners (GPs), out-of-hours services, maternal and child health centres, home care services and nursing homes. Home care services and nursing homes offer nursing and therapeutic procedures, medical services, rehabilitation, personal care and terminal care (Hellesø and Fagermoen, 2010; Paulsen et al., 2013; Author et al., 2013). This means that primary and secondary care represents different systems with different logics, financial models, tasks and culture, implying that collaboration and coordination across the organisational boundary between them might be challenging.

The project under study, **Pa**tient **T**rajectory for **H**ome-dwelling elders (PaTH), was initiated in 2008, anticipating the Coordination Reform and addressing the same concern for better, more coordinated healthcare services. Three hospitals and six municipalities in Central Norway were involved in the development of PaTH. Due to conflicting perspectives between the representatives from the two healthcare levels, the development process was difficult: in hospitals, attention was put on the specific clinical problem causing the present admission, whilst in the municipalities, the scope of attention was broader, including all present diseases as well as the patient's functional abilities, social situation and the patient's own preferences for follow-up (Author et al., 2013). An integrated care pathway is usually defined as

structured multidisciplinary care plans which detail essential steps in the care of patients

with a specific clinical problem. (Campbell and Hotchkiss et al., 1998: 133)

As a result of negotiations in the development process, PaTH deviated from this definition in being general and not linked to one specific clinical problem (Author et al., 2013). However, structured care plans were developed covering the discharge process and follow-up in the municipalities. Procedures and checklists were prepared for use at critical stages of the patient trajectory, such as preparing discharge from the hospital, reception in the municipality by a home care nurse, a follow-up check by the GP and repeated assessment of health, functional ability and social situation by the home care services after four weeks. Furthermore, there was a checklist on what to observe and whom to contact if the patient's health situation deteriorated, and a checklist on what kind of information to pass over to the hospital in case of new hospitalisation.

In transition situations between hospital and home and in communication between home care and GPs, the checklists were detailed on what kind of information should be transferred, when it should be transferred, and to whom the information should go. The other checklists were reminders to home care nurses and nursing assistants on what kind of information to assess at critical stages.

As a result of the development process, PaTH had, in particular, become a tool for the home care services (Author et al., 2013) and the use of PaTH at the different sites was dependent on the introduction and use in home care, implying that this is the primary focus of attention for this study. Two years after the introduction, the extent to which the integrated care programme was used varied considerably between the sites – including completely abandoning the programme at some of the sites. However, the focus of this article is not to define the care pathway as a success or a failure, but to explore how it can function as a boundary object in this setting.

Focus group interviews and individual in-depth interviews were carried out in two rounds: in 2010 and in 2011 – 2013 (Table 1). Focus group interviews are particularly suited to learn about the experiences, attitudes and views in a community where many people interact (Malterud, 2008), as

was the case in this project. Some home care managers were interviewed individually, allowing the regular staff to reflect in the group interviews without the presence of their manager, and some individual interviews were also carried out due to practical reasons.

In both rounds, the participants reflected upon the whole process of developing, introducing and using the care pathway. However, in the first round, the focus was mainly on the experiences of developing the care pathway, whereas the implementation process was the main focus in the second round.

In 2010, three focus group interviews and one individual interview were conducted involving leaders and ordinary nurses from all municipalities and ordinary nurses from the hospitals. In addition, two representatives from patient organisations took part in one of the focus groups.

In 2011– 2013, employees in all six municipalities were interviewed in 12 focus groups and two individual interviews. In addition, two individual interviews were carried out with two nurses at the administrative level at one of the participating hospitals. The interviews were carried out by the authors, the first 18 interviews by XX and the last two interviews by XX and XX. XX and XX were also co-moderators at three of the last interviews by XX.

Table 1 should appear about here.

The interviews were recorded and transcribed verbatim by one of the authors (XX) or research assistants (12 interviews). XX checked and corrected all transcripts against the audio files. The interviews were analysed applying Malterud's (2012) systematic text condensation which is inspired by Giorgi's (1985) phenomenological approach. Systematic text condensation involves systematic analysis in steps from initial overall impressions through themes and meaning units to codes and finally descriptions and concepts (Malterud, 2012). All authors studied the interviews and independently identified the main themes. In subsequent meetings between all authors, the themes

were discussed and evaluated in accordance with the aim of the study and units of meaning related to the main themes were identified.

Care pathways as boundary objects

We have identified three categories, based on the informants' expressions, crucial for the care pathway to act as a boundary object in this setting. The three categories are *response to existing needs of quality of care and cooperation*, *local tailoring*, *involvement and commitment*. Response to existing needs relates to *the idea* the care pathway represents, local tailoring concerns the care pathway as *a physical artefact*, and involvement and commitment concern *the process* of making and introducing the care pathway. The idea, the physical artefact and the process are interdependent and intertwined as important for the care pathway to act as a boundary object.

Response to existing needs of quality of care and cooperation

The idea the care pathway represents, responds to several already existing needs in municipal healthcare, as expressed by the participants in this study. This part of the healthcare service had long awaited a system for securing the quality of care and for continuing development of the service. Because of this, the pathway (as it turned out to be) was interpreted and understood as a tool that could be used to solve some existing problems. Care pathways can be seen as management technologies (Allen, 2009a) facilitating surveillance and control, thus possibly experienced only as a management tool. However, in our study, the experience of the care pathway responding to existing needs was not just expressed by managers. For example, one of the home care nurses expresses that the pathway contributes to a raise in awareness regarding their work and an increased focus on quality:

> I think it has made many more aware. And I hear that, when I ask them [co-workers] now,
> they say that it's a bit positive, but it's demanding. But they are more aware of quality.
> (Group interview with home care service, municipality 2)

This relevance to actual practice (quality of care) is seen as highly important to the informants. The active sense-making by the participants of the care pathway is a crucial part to make it act as a boundary object. According to Fox (2011), whether or not an artefact can function as a boundary object depends on the *meaning* this artefact represents to the communities of practice. The meaning attached to the care pathway, as expressed by several of the informants, is that it represents a tool for securing quality of care. In two of the sites, they even decided to use checklists in the pathway on all patients in home care and one of the home care nurses explains why:

> …we were supposed to use it for patients coming from the hospital. But now we use it for all our patients. And that was because we chose to do that ourselves, because we saw how it was useful for us. (Group interview with home care service, municipality 3)

The need for more efficient communication and better cooperation between hospitals and municipal healthcare has for a long time been another expressed need from both hospitals and municipal healthcare. The introduction of the care pathway is understood as a possible tool for this, and is thus responding to an existing need. The initial expectations of better cooperation are expressed in a group interview:

> *Informant 1 (municipality):* [I thought] that this was very exciting, that it was completely right that it was introduced and that there were a huge number of frustrations connected to the cooperation between hospital and municipality. And now maybe we could have an opportunity to go in and fix some things. That I thought was very exciting…[…]

> *Informant 2 (municipality):* …and the cooperation with the hospital. That we wanted. That we were more connected to the hospital. Could understand each other better and have a better cooperation. Because we experienced that as difficult…[…]We do not have an arena where we can meet and address things otherwise; it's completely separated.

> *Informant 3 (hospital):* Yes, I thought it was very positive. I thought, wow, so fun that we can do something in cooperation with the municipality, because I felt that the dialogue between us was so bad. (Group interview with home care service and hospital, municipality 4 and 5)

Also, the very process of developing and introducing the pathway gave participants, from both primary and secondary care, the opportunity to meet each other and get to know each other. This was regarded as highly valuable by several of the informants and some also want to have more opportunities to meet. Through these meetings, which were not always conflict-free, hospital and municipal healthcare staff learnt more about each other's competence and practices – how the social world on 'the other side' functioned. The care pathway mediates the relationship between hospitals and home care services, thus bridging the cultural gaps (Author et al., 2013). According to Carlile (2002), a boundary object can act as a means for people to learn about differences and dependencies across boundaries. The introduction of the care pathway project offered the possibility for health personnel to learn about differences and dependencies across the health sector boundary. One of the supervisors in the regional health authority expresses this in the following way:

> …there was an understanding developed, that here we have completely different points of view. Competence, it's two completely different competences we are talking about. Like, in the beginning, it was kind of 'what, don't you know that?,' right, and then to 'ok, you have a different focus'. And that was a learning experience that I…it was a development, I think, that there became a greater understanding for [the fact that] here we have different points of departure for what we are going to collaborate on. (Group interview with home care service, hospital, regional health authorities and patient organisations, municipality 1)

The informant describes how the introduction of the pathway made visible how different their practices were, and how they, through these meetings, developed an understanding of each other's point of view. Trompette and Vinck (2009) argue that in this way, boundary objects translate between different social worlds, allowing the actors to negotiate their differences and recognise

their different points of view. Another informant from the home care service expresses how the pathway can improve communication and cooperation with the hospital:

> We get more insight into how we each work and can co-operate more easily. Because telephone calls can get a bit heated. It's been like that, maybe because we don't really know how each other work. What the system is like where the patient has been. And we know that by sending information about our assessments of the patients we give the hospital a better start when they get patients from us. (Group interview with home care service and hospital, municipality 4)

Also, as several informants articulate, the care pathway systemises their knowledge. The pathway makes visible what they know and how they work, and this contributes to a greater acknowledgement of the home care service and their competence. As stated by Carlile (2002) and Wilson and Herndl (2007), a boundary object can provide a language for articulating people's knowledge and competence. Further, it can even *transform* their knowledge (Carlile, 2002). When the care pathway makes visible home care service's knowledge and competence to them, this transforms their knowledge and competence. They become aware of what they know, what they should know and how they can affect change. One of the home care managers describes some of these changes:

> I think in a way that we, at least over time, will be viewed as even more professional. Because in a way, we use our professional knowledge and make a system of it [the knowledge] and have got a tool to get there [to be more professional]. So I think we will be viewed differently, at least with time. And when we are cooperating on patients, they see that we have a huge overview. That is my experience so far, at least. And that is great fun. It's great fun to lead the type of employees that are only moving up and forward. I really think so. There the care pathway has contributed a lot. Of course it's not only the pathway, but it

may have created some spin- off effects. We are thinking a little differently. (Group interview with home care managers, municipality 1)

By creating a language for articulating the knowledge and competence in the home care service, the care pathway also contributes to the fact that health personnel at the hospitals can understand more of how the home care services work and have more trust in them. In our study, health personnel at one of the hospitals express that they are sometimes concerned when patients leave the hospital, as they are unsure of the quality of the service provided in the municipalities. With the care pathway they can see that home care services work systematically with quality of care and therefore they have more trust in their competence. In the home care service, often seen as the weak part in relation to the powerful specialist care, the care pathway can be a tool for raising acknowledgement and status. One home care manager describes how this can contribute to a more equal partnership:

And then I think that this equality regarding those we cooperate with, the specialist healthcare service, being proactive and prepared, you are more equal. We don't just sit there and receive the patient and the information from the specialist healthcare services in a passive way. We have questions, we have a system securing reliable follow-up. And that equality, that I think is important for, yes, the professional pride or whatever you want to call it. That feeling of being an equal partner in the patient trajectory. (Group interview with home care managers, municipality 2, 3, 4 and 6)

When the home care services articulate their knowledge and competence in a systematic way, becoming more equal in relation to the specialist healthcare service, this can also imply an increased professionalisation of their services.

The introduction of the care pathway project created a trading zone (Galison, 1997; Wilson and Herndl, 2007) for understanding the different cultural and institutional languages in primary and secondary care. Health personnel on both sides became aware of how the other works, each other's different social worlds, and how they still have a common goal and are interdependent and need to

work together to provide integrated care for the patient. A hospital nurse, when asked about what was important for her, when contributing in the development process, expresses this in the following way:

> …which elements that was important to include in relation to thinking holistically about the patient in need of help, I think. Not least to have respect for the home care service and the work that is done out there, and that we need to see ourselves as an entity and not 'we here' and 'you there.' But how we, focusing on the patient, can help Mrs. Hansen in the best possible way, then. If I don't think about how it works for her coming home, and have no thoughts about that, then I have not done my job, really. And then I'm very dependent on cooperation with the home care service and the resources in the municipality. (Group interview with home care service, hospital, regional health authorities and patient organisations, municipality 1)

Local tailoring

One of the characteristics of a boundary object, as stated by Star and Griesemer (1989) and Star (2010), is the notion of interpretive flexibility or local tailoring. In the case of the care pathway, we see that the possibility to adjust the pathway locally is highly important to the health personnel involved. The care pathway as physical artefact is very specific, expressed in a detailed checklist (some have these in the form of plastic cards that they carry with them at all times), but health personnel adjust locally how they work with each checklist, whether to add more questions, etc. One of the home care nurses describes how she works with the questions from the checklists, integrating them in her care for the patient:

> You do it, kind of, between the lines. Because most of those questions…I don't like calling it an interview [asking the questions from the checklist], that's quite bad, I think. But most of this [the questions] you observe, actually. […] You are supposed to, during care for the

patient, being there, supervising, observing, bringing this [the information for the checklist] back with you. (Group interview with home care services, municipality 1)

The project introducing the care pathway intended to create a standard for how the communication between primary and secondary care regarding transfer of older patients in need of home care services should be carried out, but it seems important that local interpretations and adaptations can be made. Furthermore, health personnel adjust according to the patients' needs. The home care nurses express that they uses the checklist in a pragmatic way, adjusting to the patient's situation and own need for information. At most of the sites involved, health personnel share the same approach; not all topics on the checklists are relevant to all patients and they adjust the list using their discretion. Some of these adaptations are grounded in different informational needs in small versus large municipalities – in a small village they often have a better overview of the patients' situation beforehand.

Even if health personnel at different sites adjust the pathway locally, they still commit to the idea of improving communication and collaboration regarding patients between hospitals and municipal healthcare, and to the idea of a more systematic tool for the follow-up of patients in the home care service. Thus, the *intentions* are the same, but the *specific use* varies. These local variations allow them to use the pathway in the way that is best suited to their own practice. The pathway is structured, but not to the extent that it excludes health personnel's discretion.

Involvement and commitment

In our study, health personnel highlight the importance of a leader with a clear vision, and with a constant focus and commitment to the process of introducing the pathway, in order to make the pathway work. The intervention project had a project manager, but it is the significance of the local leader at each individual site that is brought forward in particular. These leaders are home care managers with responsibility for home care within their specific, local area. The leaders themselves and ordinary nurses/nursing assistants emphasise that constant follow-up, motivation, allocation of

time and prioritising of resources are needed for the care pathway to work as intended. An important precondition is a stable organisation. In some of the sites, the introduction of the pathway stopped partly due to temporary lack of personnel or other projects being introduced at the same time.

The involvement of health personnel where they work, at the basic level, is perceived as crucial to making the care pathway function. Health personnel need to be included, to be able to make their voice heard and to participate in the process. One of the home care managers expresses this in the following way:

> …but also to signal that here people have the opportunity to influence the content, which my staff experienced as very positive, to suggest topics to us who were taking part in the process and to have an impact on the things we wanted to change. [They were able] to include the things in the checklists that we were concerned about; people thought it was inspiring to see, when the product came back, that 'here they had been heard.' (Group interview with home care service, hospital, regional health authorities and patient organisations, municipality 1)

In the development process of the pathway, health personnel were involved in a detailed manner, making suggestions for topics and questions. Many of their suggestions were included in the final product, making it recognisable and something with which they could comply. Health personnel's experiences and opinions were taken into account, thus inspiring involvement and ownership of the pathway. However, it can be challenging to create the same involvement in daily use amongst health personnel that did not participate in the development process.

In the hospitals, involvement is seen as equally important. In the interviews, one nurse describes the development process in the hospital where she works, where the decision to participate in the project was made by high-level management and then the managers at a lower level were told to find health personnel to participate in the development process. The managers at the lower level did not participate in any other way, leaving health personnel feeling alone in the process. The nurse is

addressing this problem, expressing that the development process should have involved managers of all the relevant departments at the hospital and more of the regular staff concerned with these patients on a daily basis. This lack of involvement at the right level is expressed by several informants as one of the reasons why the pathway has not always been successfully introduced into the hospitals.

The health personnel express that the care pathway is about what they work with on a daily basis – it concerns their profession and occupation, instead of, for example, economy. One of the home care nurses states:

> I also experienced this as positive. It's not…it's ok because it stimulates us professionally too. Because before there has been a very strong focus on economy. And this is something which is focusing on our profession instead and that is…I have to say that I experience this as very positive. (Group interview with home care service and hospital, municipality 2)

The content of the pathway and the process of introducing and using it concern their identity and role as healthcare workers – which is to provide good quality in healthcare. This can be an important element for their involvement in using the pathway. One of the informants expresses this in the following way:

> …so, you have to have people who are engaged and can see that this leads to quality for the patient and in a way sees that this is a way of working which is future-oriented, to put it that way, that we manage to stay ahead all the time. [Which implies] a slightly different role as a healthcare worker. (Group interview with home care managers, municipality 2, 3, 4 and 6)

Health personnel in our study express that a crucial factor for making care pathways work is commitment from all cooperating parties. There are variations across the different sites with regards to how this commitment has worked, but they agree on its importance. One of the home care managers expresses this in the following way:

I think that if you are developing a care pathway that demands cooperation between two

parties, then there should be a more visible commitment from both parties where that is

required, and people with the relevant authorisation should participate in the process.

(Group interview with home care service, hospital, regional health authorities and patient

organisations, municipality 1)

In some of the sites, problems with commitment from the hospitals were expressed. Hospitals are

large, organisational units with a distinct hierarchy, and there were problems when health personnel,

without authority to make decisions, participated in the development process or when decisions

were made at a higher level and not grounded in local practice. Looking back, one home care

manager expresses this regarding the process with the hospital:

…I think that precisely this was the clue: it was too high up in the hospital organisation. I

think they wanted the project, I think they regarded it as research and it was ok to join, but

they never got it down, right? And that is a good picture of how it was – it was at a level

where they don't do it in their daily work, it was not the people who communicate with the

municipality. (Group interview with home care service, municipality 6)

Boundary objects arise from information needs/information and work requirements – locally

perceived needs in the cooperating groups (Star, 2010). It is possible that in some of the sites, the

hospital did not have the same perceived needs for information, and that the commitment thus

faded from this group in the collaboration.

Discussion and conclusion

The healthcare system is characterised by a high degree of differentiation and specialisation, which is

also one of its strengths (Glouberman and Mintzberg, 2001). More than trying to reduce the high

level of differentiation, Glouberman and Mintzberg (2001) argue, we should work to increase the low

level of integration. This requires more coordination and cooperation. The development and use of

boundary objects is one approach to facilitate cooperation across organisational boundaries. In this article, we have investigated how a care pathway as idea, physical artefact and process can act as a boundary object between primary and secondary care. Based on the perspectives brought forward by the participants in our study, we present three categories that are crucial to make the care pathway act as a boundary object in this setting.

First, the idea the care pathway represents *responds to existing needs* of a system for securing quality of care and better communication between primary and secondary care. In our study, this was especially the case in the home care services. During the development process, the care pathway as physical artefact was even transformed from a single diagnose perspective into a more holistic perspective focusing on the patient's functional abilities, more in line with needs in home care services. Furthermore, the care pathway contributes to a rise in acknowledgement of the home care service by systemising their competence and knowledge. For some, it seems that the development, introduction and use of the pathway has made them more *proud* of being a healthcare worker. The project opened a trading zone (Galison, 1997; Wilson and Herndl, 2007) between primary and secondary care, but constant work is needed to uphold and sustain this zone.

Second, the possibility of *local tailoring* seems highly important in order for the care pathway to act as a boundary object. This implies that, even if structured, instead of forcing health personnel to comply to a standard with no room for local tailoring, the care pathway still lets them use – and *develop* – their professional competence. There is a strong rhetoric for standardisation following the development of care pathways. However, our study shows that allowing some degree of local tailoring makes the care pathway more robust as a boundary object. Allen (2009a) argues that diversity, rather than standardisation, should be the way forward when developing pathways as this allows pathways to be tailored to different purposes and contexts. Our study supports this notion. We claim that care pathways should not be treated as pre-fabricated tools that supposedly can be easily transferred from one context to another. Furthermore, it is not sufficient to introduce a

boundary object and then wait for it to do its magic. The local process of making, introducing and using care pathways is crucial for making them work as boundary objects, and continuous work is needed to sustain them.

Third, to make the care pathway act as a boundary object, *involvement and commitment* from all cooperating parties, both leaders and health personnel, is important to make the care pathway work as intended. Hospitals are reported to be less committed in some sites, which can have several explanations. As boundary objects arise from information needs (Star, 2010), it is possible that participants in some of the hospitals did not experience the same need for information as the home care service. As Paulsen et al. (2013) argue, in a collaborative chain the last actor is heavily dependent on what is done by others, but the participants before her/him are not dependent on her/him to the same degree. The home care service is often the last actor in the collaborative chain, thus having the greatest professional gain. It is crucial for them to receive relevant information concerning patients coming into their care after discharge from hospitals.

The three categories do not exist independent of each other, but are to be seen as parts of a complex interplay in making the care pathway function as a boundary object in this setting. For example, the fact that the care pathway allows local tailoring contributes to involvement and commitment. Further, involvement of healthcare personnel in the development of the care pathway contributes to commitment in further use. Response to existing needs concerns local tailoring of the care pathway and contributes to involvement and commitment.

The main contribution of our article concerns how the representations of the care pathway as idea, physical artefact and process, articulated through our three categories, are all crucial for it to work as a boundary object. The idea of quality and cooperation that the care pathway represent, the actual coordination work through the physical artefact, and the innovation process where the setting up of the network contributed to shared understandings, participation and learning, through a dynamic interplay, all establish the care pathway as boundary object. Star (2010) argues that the concept of

boundary object should not be reduced to only concern interpretive flexibility, and Fox (2011) claims that we need to know more about how boundary objects function. Our study is a response to these concerns, as it shows how boundary objects are complex and laborious arrangements. Furthermore, we argue that the care pathway can be used to *push* boundaries just as much as being a tool for bridging them, thus extending the concept of boundary object and adding to the work of Lee (2007). The pathway allows for a redistribution of power and responsibilities throughout the care chain, enabling those traditionally working on the fringes to build their visibility and acknowledgment. The care pathway as a boundary object provides the home care service with a language for articulating their knowledge and competence (Carlile, 2002; Wilson and Herndl, 2007), and even *transforms* their knowledge (Carlile, 2002). This contributes to a rise in professional self-confidence, as expressed by some of our informants, and possibly to a higher status and more trust from other parts of the healthcare system. Further research should include these perspectives, also investigating the consequences these changes can have for specialist healthcare services. Perhaps, through time, by articulating the home care services as an equally professional and competent partner, the care pathway can contribute to a more equal distribution of power within the healthcare services.

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Table 1. Participants in the interviews 2010 and 2011-2013

		Focus groups	Individual interviews	Participants
2010	Mixed primary and specialist care and patient organisation	3	1	19
2011	Management level primary care	2	0	13
2012	Management level primary care	2	2	7
	Ordinary nurses and nursing assistants primary care	6	0	26
2013	Management level primary care	1	0	6
	Ordinary nurses and nursing assistants primary care	1	0	8
	Administrative level specialist care		2	2
	Total	15	5	**81**