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Adopting a management innovation in a professional organization

The case of improvement knowledge in healthcare

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Abstract

Purpose – The purpose of this paper is to study critical practices when adopting improvement knowledge as a management innovation in a professional organization.

Design/methodology/approach – This paper is based on an action research approach, in which practitioners and researchers are seen as a part of a participative community generating actionable knowledge. Research involved gathering data over a five-year period through more than 250 interviews and 25 focus groups.

Findings – This paper identifies five critical practices for adopting a management innovation in a professional context: first, focussing on labeling and theorizing to create an organization's own vocabulary; second, focussing on the role of internal change agents; third, allowing for an evolutionary adoption process; fourth, building new professional competence through the change agents; and fifth, adopting a research-driven approach to the adoption of a management innovation.

Practical implications – For healthcare practitioners, this paper points to practices to consider when adopting improvement knowledge – for example, identifying the patient as the guiding principle and encouraging involvement and local change initiatives. For practitioners in other professionally driven organizations, this paper identifies critical practices for adopting a management innovation – for example, focussing on theorizing and labeling in order to create an organization's own vocabulary related to the professional context.

Originality/value – On a generic level, this paper contributes to the understanding of critical aspects when adopting management innovations in a professional organization. In a healthcare context, this paper points to the value of improvement knowledge for improving quality of care. Improvement

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knowledge is relatively new in healthcare, and this study provides an example of a hospital in which this management innovation helped transform the organization.
Keywords Healthcare, Action research, Improvement knowledge, Management innovation, Professional organization
Paper type Research paper

Introduction

Compared to the manufacturing sector, the service sector – particularly the healthcare sector – is widely regarded as lagging in terms of adopting new management innovations (Christensen *et al.*, 2009; Greenhalgh *et al.*, 2004; Walley, 2003). However, the call for new or even disruptive management innovations in the healthcare sector is increasing due to the many challenges faced by the healthcare sector today (Mohrman *et al.*, 2012; Christensen *et al.*, 2009). As the population ages, increasingly more patients suffer from multiple illnesses that require extensive specialist care. At the same time, new and expensive drugs and treatments are introduced at an accelerating rate. These are just a few examples of changes that challenge the whole healthcare system. Recent years have seen an increase in the demand to meet these challenges by changing the way healthcare is delivered and increasing the efficiency of the sector (Mohrman *et al.*, 2012).

Authors in the healthcare domain have called for development of new competences from knowledge domains outside the traditional medical discipline (Batalden and Stoltz, 1993; Berwick, 2008; Boaden *et al.*, 2008). In their seminal article from 1993, Batalden and Stoltz argued that traditional "professional knowledge" in healthcare must be complemented by another knowledge domain that they refer to as "improvement knowledge." They define this knowledge domain as combining knowledge of system, variation, and psychology, and theory of knowledge (see below in the theory section).

However, healthcare practitioners have not always welcomed knowledge and experiences from other sectors with open arms. This attitude forestalls organizational improvements, and one explanation for it might be the self-image among healthcare organizations that they and their processes are "different" or "unique" (Yasin *et al.*, 2002). In most cases, new practices and techniques are implemented in a piecemeal approach, rarely delivering the improved organizational performance desired (Yasin *et al.*, 2002). Although rather recent, accounts of larger-scale implementation of improvement-related techniques and practices in healthcare are provided in areas such as process management (Rohner, 2012) and Six Sigma (Lifvergren *et al.*, 2010).

One reason often cited for healthcare practitioners' occasional reluctance and suspicion toward externally derived knowledge and new managerial innovations is the strong professional tradition within healthcare (Levay and Waks, 2009). In this sense, "professionalism" refers to a tradition based on the autonomy of expert groups that decide the principles of their own work activities (Freidson, 2001). Several studies have shown that, when managerial control efforts are introduced in a professional organization, professional parties oppose the effort because they see it as a potential threat to their professional autonomy (Laughlin *et al.*, 1992; Hoque *et al.*, 2004; McGivern and Ferlie, 2007).

Healthcare professionals' suspicion of knowledge from the "outside" and their self-image of being different may sometimes be righteous. Even management scholars admit that healthcare is difficult to manage, arguing that healthcare systems are among the most complex organizational systems, and the interplay between various professional as well as administrative and political perspectives must be taken into account (Glouberman and Mintzberg, 2001).

Given the fact that the service sector – particularly the healthcare sector – is lagging in terms of adopting new management innovations (Christensen *et al.*, 2009; Greenhalgh *et al.*, 2004; Walley, 2003), and the factors presented above concerning why the healthcare sector sometimes shows reluctance to integrate externally derived knowledge into their own system, one might assume that the integration of "improvement knowledge" (Batalden and Stoltz, 1993; Berwick, 2008; Boaden *et al.*, 2008) is not a quick fix. The purpose of this paper is to study critical practices for adopting improvement knowledge as a management innovation in a professional organization. This paper addresses action research projects at a Swedish hospital and focusses on the transformation underway when integrating improvement knowledge.

Theoretical background

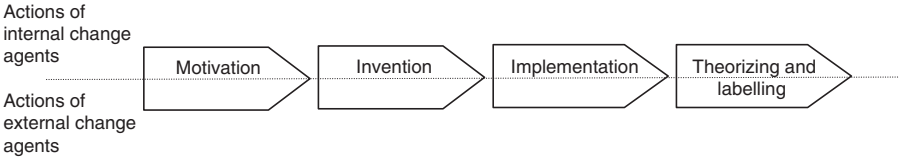
In this paper, previous research on management innovations and on improvement knowledge will be considered, and the latter focus will center more specifically on the healthcare setting.

Management innovations

A "management innovation" is the "invention and implementation of a management practice, process, structure, or technique that is new to the state of the art and is intended to further organizational goals" (Birkinshaw *et al.*, 2008, p. 825). In this paper, a management innovation is regarded as new to the state of the art if it is new to the organization in which it is adopted. The argument for including implementation in this innovation process definition is that "an invention or creation does not become an innovation until it is implemented or institutionalised" (Van de Ven, 1986, p. 604). In line with this view, Birkinshaw *et al.* (2008) elaborate on the processes through which management innovations emerge. Their model (see Figure 1) has two dimensions; the first captures the groups of individuals who, as internal and external change agents, shape the process. The second dimension is an outline of an innovation process in four main phases: motivation, invention, implementation, and theorizing and labeling.

The close connection between the management innovation and the context in which it is adopted is supported by Van de Ven (1986), who defined the process of innovation as "the development and implementation of new ideas by people who over time engage in transactions with others within an institutional context" (p. 591). Birkinshaw *et al.* (2008, p. 832) also addressed this concept by arguing that the organizational context "will have a direct impact (positive or negative) on the ability of internal change agents to pursue the core activities associated with management innovation."

Birkinshaw *et al.* (2008) view management innovations through an evolutionary perspective; this can be explained as a perspective recognizing that the management innovation is not static when adopted in an organizational context. Rather, the context of adoption is critical in studying the management innovation, because the innovation



Source: Adapted from Birkinshaw *et al.* (2008)

Figure 1.
A process framework for management innovation

is shaped in an iterative process through which both the management innovation and the context are developed and shaped (Zbaracki, 1998).

Regarding healthcare specifically, the problem today is largely organizational and not only clinical, and there is a need for new knowledge to enter the organizations – for example, in the form of a management innovation. For many years, it has been considered sufficient for healthcare organizations to be built on professional knowledge to assure quality and safety in the delivery of healthcare services. In order to provide the appropriate medical care along the entire patient pathway, there is a need for new ways of working aside from pure medical knowledge (Ruiz and Simon, 2004).

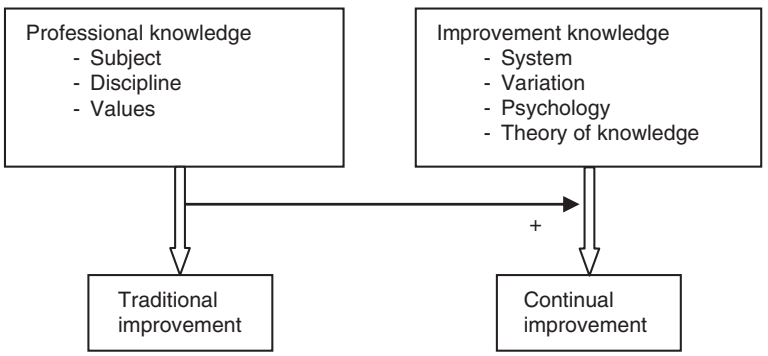
Improvement knowledge

In recent decades, researchers have acknowledged the need for additional knowledge domains within healthcare to successfully bring about and encourage improvement efforts in healthcare processes (Batalden and Stoltz, 1993; Boyer and Pronovost, 2010). Batalden and Stoltz (1993) conceptualized this need into a framework for continual improvement (Figure 2). The framework has spread globally via the Institute for Healthcare Improvement (IHI) and its global network, and has become a standard reference regarding healthcare improvement activities. The framework suggests that traditional "professional knowledge" must be combined with what the authors (Batalden and Stoltz, 1993) refer to as "improvement knowledge."

Traditional improvement within healthcare has long depended on professional knowledge, which includes knowledge of subject (i.e. anatomy, microbiology, accounting), knowledge of discipline (i.e. nursing for nurses, pediatrics for pediatricians, finance for financial officers), and the shared values within healthcare (Batalden and Stoltz, 1993). The body of "improvement knowledge" originates from Edwards Deming's system of profound knowledge and consists of four elements (Batalden and Stoltz, 1993; Deming, 1993):

(1) Knowledge of system: seeing the organization as a system of production with interdependences between people, processes, products, and services with a common purpose.

(2) Knowledge of variation: recognizing that variation is present everywhere – in products, processes, and people. It is fundamental to understand variation over time in order to recognize and use observed differences for the purpose of improvement.



Source: Adapted from Batalden and Stoltz (1993)

Figure 2. Professional knowledge and improvement knowledge

(3) Knowledge of psychology: understanding the psychology of work, what motivates people in their working lives, workplace design, and the psychology of change.

(4) Theory of knowledge: understanding how we learn as individuals and as organizations. Continual improvement relies on understanding how knowledge can be built by linking theory and action. The Plan-Do-Study-Act (PDSA) cycle is a simple example of building knowledge: testing a theory by action, measuring the effects, learning from the results, and perhaps revising the original theory.

However, there is a potential obstacle in integrating improvement knowledge with professional knowledge on an epistemological level (e.g. Berwick, 2008). As noted by Chakraborty and Tan (2012) it is critical to convince senior physicians of the value of improvement knowledge. The practice of medicine is strongly connected with the science of medicine and its epistemology, which of course is reflected in local practices. An example given by Berwick (2008) is the medical profession's quest for "evidence." However, improving the care process is mainly a social change – one that is sensitive to many different factors, such as leadership style (see also De Jong and Den Hartog, 2010), environment, implementation approach, organizational history, as well as the capacity to learn from failures (Cannon and Edmondson, 2005). In this context, efforts to improve clinical evidence are often in conflict with efforts to improve care processes.

However, the challenges facing healthcare and the need for continual improvement of care processes necessitate a transformation of the healthcare systems to allow for co-existence of these two distinct epistemologies (Davidoff, 2010). Thus, the traditional view on medical knowledge generation, dominated by randomized-controlled studies, must co-exist with a more pragmatic epistemological position (Perla *et al.*, 2013). Such a viewpoint embraces the importance of continuous improvement and learning for the development of actionable knowledge in the local context (Batalden and Davidoff, 2007) (see Figure 3).

According to Batalden and Davidoff (2007), five knowledge systems are thus involved in improvement: first, generalizable scientific evidence (most often randomized-controlled trials); second, particular context awareness, third, performance measurement; fourth, plans for change; and fifth, execution of planned changes. Subsequently, transformation efforts in healthcare systems entail an explicit focus on context and planned as well as unplanned action.

Accepting that improvement knowledge is necessary in order to transform the healthcare system, translating this knowledge into practice or "doing" poses a challenge (Adler *et al.*, 2003). This is a clear expression of the "knowing-doing gap" (Pfeffer and Sutton, 2000), known in the specific context of healthcare as the "quality chasm" (Institute of Medicine, 2001). Descriptions of such transformational efforts are rare, although some care systems have shared their experiences recently;

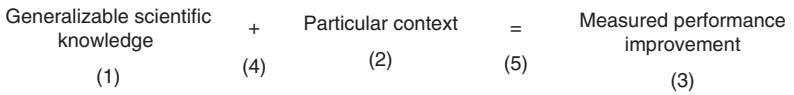


Figure 3.
The combination of different knowledge systems to produce improvement

Source: Adapted from Batalden and Davidoff (2007, p. 2)

see, for example, Andersson-Gäre and Neuhauser (2007), Berry and Seltman (2008), and Kennedy (2011).

Improvement knowledge focusses on exploring what works, for whom, when, and where, to improve quality in healthcare. Consequently, it also includes research on implementation and has a strong connection to implementation science (Greenhalgh *et al.*, 2004), another emerging research field in healthcare. While the need for this research is compelling, it has not been matched by a corresponding capacity to conduct rigorous, well-designed, and action-oriented studies in healthcare (Parry *et al.*, 2013).

Method

This paper reports on a transformation at the Skaraborg Hospital (SkaS) in Sweden – a hospital group with a long history of working with a variety of quality management initiatives. As an example, SkaS was the first hospital group in the Nordic countries to broadly apply Six Sigma as a quality improvement program in its care processes (Lifvergren *et al.*, 2010). The research project was conducted using an action research approach (Coghlan and Brannick, 2010; Reason and Bradbury, 2008) in which two academic researchers (the first and fourth author) from the Centre for Healthcare Improvement (CHI) at Chalmers University of Technology worked as external researchers together with two insider action researchers, the development director (second author) and the nursing director (third author) at SkaS, the development director and the nursing director have both been deeply involved in the transformation and integration of improvement knowledge for several years and have their roots in medicine and nursing. This paper focusses on the transformation that occurred from 2003 to 2011. The development director and the nursing director are also researchers at CHI, simultaneously engaged in action research collaboration between CHI and SkaS.

The research approach relates to the ideals of action research, also respecting notions of objectivity and distance (Greenwood and Levin, 2007). The choice of approach rests on the conviction that the individuals involved in the transformation at SkaS have access to and possess knowledge on critical steps and key mechanisms in transforming their organization. Consequently, the research needs to be conducted in its true context, not just isolated in an academic context. The aim is thus to explore "knowledge in action" (Coghlan and Brannick, 2010), an approach that is in line with the call for studying practice (Kemmis *et al.*, 2014). In the action research approach, practitioners and researchers are part of a participative community in which all members are equally important in terms of generating actionable and useful knowledge. Practitioners are considered to be co-researchers and joint iterating action-reflection loops are central to the knowledge generating process (Aagaard Nielsen and Svensson, 2006). In this particular case, the insider action researchers (the second and the third author) know the formal structures and processes of the organization and they also have close relationships with a number of co-workers at different hierarchical levels. Thus, they have had close access to what actually took place during the transformational journey. They also share a pre-understanding of many informal procedures, different cultures and conflicts, "what sits in the walls," in short – the power and political aspects of the organization. However, the insiders' pre-understanding and closeness may lead to misinterpretations of various phenomena, e.g. perceiving outcomes as more positive than they really are. To cope with this balancing act as well as to encourage continuous reflection and critical perspectives on the subject matter, data analyses as well as interpretation of data have

been conducted together with external researchers, de-coupled from the organization (the first and fourth author). The external researchers have also conducted interviews and focus groups with members of the organization on their own (also described elsewhere, see e.g. Hellström, Lifvergren and Quist, 2010). The data in this action research project was gathered during a period of five years (2005-2010). The data collection is based on semi structured interviews and focus groups. An overview of the data collection process is given in Figure 4.

The interviewees were doctors, nurses, improvement facilitators, and members of the top management team. The focus group members varied, as outlined in Figure 4, and included managers at one stage, and improvement facilitators in a later stage. Several sessions have been video recorded. Additional data was also gathered via internal documentation, such as internal newsletters, annual reports, educational material, and process documentation. One key element of the iterative data collection and analysis process has been joint reflections on the results – that is, reflecting on the interview results alongside the improvement facilitators in a focus group. As argued by Coghlan and Brannick (2010), these continuous cycles of action and reflection are central to the action research approach. Insiders and external researchers jointly conducted data analysis.

The transformation at SkaS

Table I present a summary of the transformation at SkaS based on the elements of improvement knowledge (Deming, 1993; Batalden and Stoltz, 1993) and Donabedian's (2003) structure-process-outcome (SPO) model. The SPO model is common in research related to measurements of quality and quality improvements in healthcare. The components in the model are described as follows. "Structure" is refers to the "design the conditions under which care is provided" (Donabedian, 2003, p. 46).

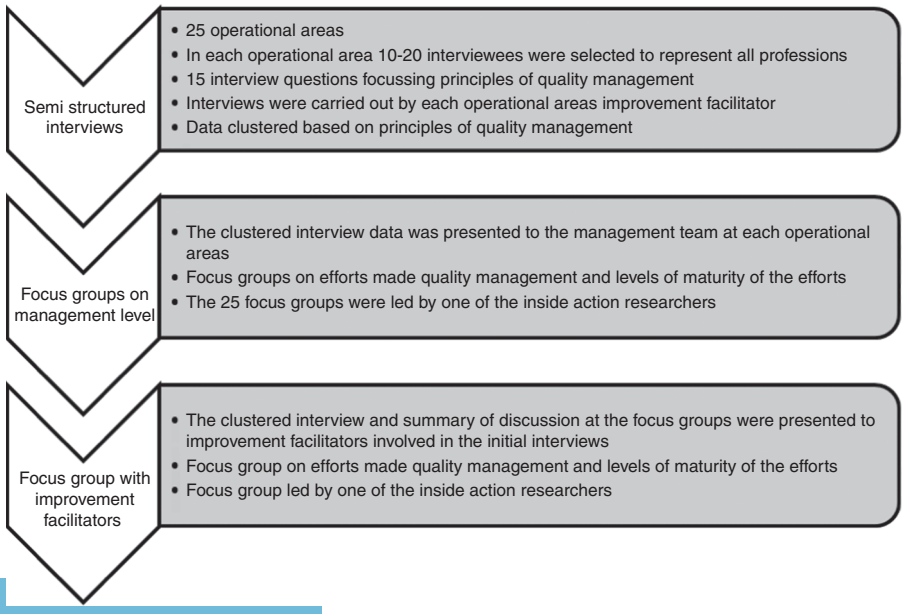


Figure 4.
The data collection process

	Knowledge of system	Knowledge of variation	Knowledge of psychology	Theory of knowledge
Structure	Management control system Balanced scorecard Shared vision and common goals Quality competence structure; Lean coaches, all "belt competences" (master black belt to white) Process management structure; appointed process owners, leaders and process groups Critical care processes identified	Process measurement system Six Sigma and Lean infrastructure	Dialogue meetings: with co-workers with unions in networks internally and externally	Permanent meeting arenas 30+ improvement facilitators 6 PhD students in improvement knowledge Acquisition of knowledge form technical university
Process	Process- and quality management plans Six Sigma and Lean approaches Dialogue meetings (reflexive dialogues) Process and project support Patient involvement in improvement work Networking between divisions	Six Sigma and Lean training Six Sigma and Lean Expertise Six Sigma and Lean projects Process monitoring with control charts	Management training Co-worker training Quality specialist training Reflexive dialogues Metaphors and own vocabulary Improvement projects on health prevention	Education in quality (school bench and workplace) Research in quality and operations management Reflexive dialogues Patient in focus
Outcome	> average in 65% of parameters in national quality registers Balanced economy Shortest lead times at the emergency wards in the region Efficient care processes in national comparisons > 95% patient satisfaction Healthcare-associated infections below national mean	75% success rate in black belt projects > 95% patient satisfaction	Shared vision and goals High employee satisfaction Ranked as no. 1 in Sweden among assistant physicians Agreement employer vs union	New carrier paths in improvement More knowledge domains introduced in the organization Fact-based decisions > 95% patient satisfaction

Table I. Elements of improvement knowledge (Batalden and Stoltz, 1993; Deming, 1993) in relation to the structure-process-outcome-model (Donabedian, 2003)

Examples include material and human resources, the presence of teaching and research, performance reviews, and so on. "Process" signifies "the activities that constitute healthcare – including diagnosis, treatment, prevention, and patient education […]" (Donabedian, 2003, p. 46). Finally, "outcomes" measure the resulting states from care processes, both technical (e.g. absence of complications) and interpersonal outcomes (e.g. patient satisfaction).

Structure

SkaS has a process management structure in place; it has designated process owners for more than 20 of the most critical care processes, the deputy hospital director is also the process manager, and there is an established process measurement system (Hellström *et al.*, 2010; Lifvergren *et al.*, 2010).

The management structure of the processes was established in 2005 and is still used today. However, prior to that, SkaS had worked with process improvement since 1999,

when the senior management team formulated a quality strategy that focused on continuous improvement of patient processes.

Focussing the strategy formulation on continuous improvements in patient processes was the result of somewhat negative experiences with earlier improvement activities. An external audit was conducted at SkaS in 1996, and some of the clinics made self-assessments in 1998 according to the Swedish quality award for healthcare (see Figure 5). Both activities were perceived as complex, far-reaching, and time-consuming. After completing the assessments, SkaS personnel had almost no energy left for making improvements. As put by a nurse at the clinic for infectious diseases:

> There is will and there is engagement. But improvement work is not prioritized due to lack of time.

So SkaS implemented the new quality strategy by holding a process education program, and inviting all employees to bring their real-life quality problems from their daily operations to the course.

The balanced scorecard (BSC) was introduced at SkaS in 2003 and led to a shift in the strategic discussion from a largely economic discourse toward an aid to organizational development in which the balance between the different perspectives (i.e. patient, process, learning/staff, and financial) generated a more holistic view of the hospital group. Thus, the overall goals from a patient's as well as a medical perspective at SkaS were given much more emphasis but there is still need of further improvement:

> With the scorecard the vision and the goals are fairly well known at the unit, but I don't think all the co-workers actually know the exact content in the scorecard (clinical manager, children's division).

The introduction of BSC also created a hospital-wide arena for dialogues that have become a critical part of managing the organization. The dialogue meetings support reflection and improvement, and SkaS has coupled BSC with a focus on organizational learning and concrete development projects in workplaces (see also Lifvergren and Docherty, 2010). A nurse at the children's division expresses her thoughts:

> We have dialogues about how to improve the processes where everyone is invited. But there are also some co-workers who don't show up. I think they choose not to participate.

In 2005, Six Sigma was piloted at the hospital when the development director attended a Six Sigma black belt course. The course required students to conduct a Six Sigma improvement project in their own organizations. The positive experiences from the pilot project led to SkaS becoming the first hospital group in the Nordic countries to

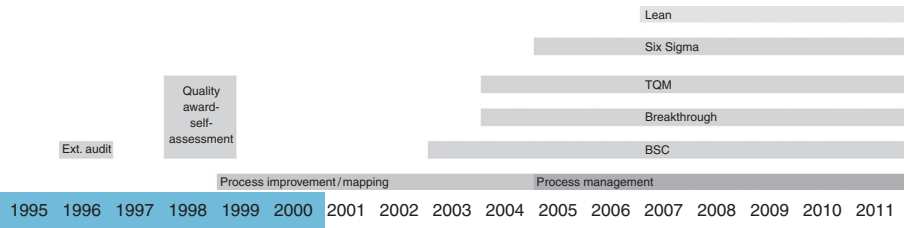


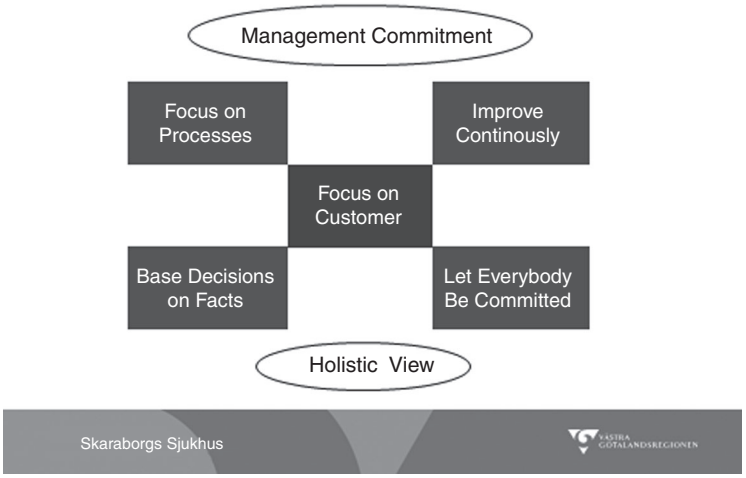
Figure 5.
The various improvement approaches used at SkaS (1996-2011)

introduce Six Sigma throughout the hospital as a means to improve care processes (see e.g. Lifvergren *et al.*, 2010). Over time, SkaS began running its own Six Sigma training and completed more than 50 black belt projects at the hospital. The most recently added improvement approach is Lean. It was introduced on a small scale in 2007, and Lean workshops were later introduced in 2008-2009. More than 40 of the 160 care units participated, resulting in numerous small-scale improvement projects involving the majority of employees at their corresponding workplaces.

The various improvement approaches at SkaS have been influenced by external forces like the IHI initiative and the popularity of Lean and Six Sigma in healthcare, but the principles underpinning all quality improvement efforts are those of quality management (see Figure 6). Although SkaS has adopted popular management concepts such as Six Sigma and Lean, it has deliberately reduced its vocabulary internally.

SkaS has had a deliberate approach of avoiding dependence on external knowledge sources, such as consultants and regional support functions. Developing internal resources to educate staff members has created new career paths and an independence from external consultants. In the past decade, a competence improvement structure has been established, and many new positions have been created. An internal improvement organization has been developed consisting of 30 full-time improvement facilitators who are connected to patient processes and key strategic processes. The Six Sigma program has generated 60 black belts, 300 green belts, and more than 3,000 white belts – competences that are all incorporated in the organization. There are also 40 Lean coaches and six part-time PhD students pursuing research in the technology management area. Today, about 1-2 percent of the hospital staff has an education of at least 30 credits pertaining to improvement knowledge.

Apart from internal competence development, expertise in new competence domains has also been recruited from outside healthcare, such as a PhD in quality management, a statistician, logisticians, and more. The integration of research and collaboration with universities has likely also increased the status of improvement work.



Source: Adapted from Bergman and Klefsjö (2003)

Figure 6.
The hospital's view on principles of improvement knowledge

Much of what is displayed in the overview of improvement approaches (Figure 5) is captured in the structure dimension. The work of improvement facilitators at SkaS have led to the simultaneous creation of management and support structures, as exemplified by the evolution of improvement facilitation into a profession, the connection of measurement systems to process improvements, and the use of BSC based on the perspectives of patient, process, learning/staff, and finance.

Process

A vital part of the strategy has been to maintain energy on the micro level (i.e. in the workplace). This aspect of the strategy is based on leadership that promotes small-scale improvement and everyone's involvement as a means to reduce complexity and encourage employee participation and individual growth. Achieving this intended outcome requires a long-term management approach and a fair amount of patience. It also requires management to give healthcare professionals a certain amount of freedom to redesign their own work:

> For several years now we have been working as teams to improve various care processes. And everyone is able to participate (nurse, cardiology clinic).

> All the unit's personnel gather in front of the improvement board twice a week. It really works (nurse, medical clinic).

> We see things to improve every day (another nurse, medical clinic).

However, some co-workers believe there is still need for improvement:

> We work with continuous improvement but we are not so structured (nurse, medical clinic).

> The improvement efforts don't always involve all the different professional groups. Some people choose to run their own race and don't follow the routines (nurse, clinic for infectious diseases).

A vital principle underpinning this approach has been maintaining focus on the patient. Putting the patient first in all improvement work has made it easier to create a shared meaning and goal that sets aside potentially conflicting special interests of professional or organizational groups. There have also recently been structured initiatives to involve patients in the quality improvement work and redesign of care processes. This has been a part of the nursing director's action research-oriented PhD studies, which include methods for involving patients in the design of improved healthcare delivery (Gustavsson, 2014). An assistant nurse at the cardiology clinic remarks:

> Customer? The patient is the only customer of interest.

> We have been going on with processes for many years at the Dermatology clinic and I think we have a good patient focus also (unit manager).

Continuous and iterative dialogue meetings at all organizational levels are also essential to keeping the organization and the development connected and in continuous development. Meeting include monthly network meetings for all improvement facilitators, process network meetings every two weeks with the top management team, and patient safety assessments (see also Lifvergren *et al.*, 2011). All of these activities stimulate a continuous dialogue and development with a follow-up element, very similar to the PDSA philosophy.

One general principle in most of the improvement work has been encouraging improvements in the workplace (i.e. at the micro level), and good initiatives have been praised and spread in the organization. The quality improvements have grown without much interference and regulation from the management level at the hospital. In most cases, the top management team has tried to support and encourage improvement efforts initiated at the workplace level:

> I think cross-professional improving projects actually work well but sometimes there is some resistance in the beginning of the projects (nurse, dermatology unit).

Outcome

The case also shows good results in various outcome dimensions. It is of course difficult to claim a distinct cause-and-effect relationship between an organizational intervention and an outcome. However, members of the organization with good insight into the work and its progress highlight several different outcomes. Thus, drawing from publically reported results in 2011 and 2012 (Swedish Association of Local Counties and Regions (SALAR), 2011, 2012), some examples include: the shortest length of stay at emergency wards in the western region; a 75-percent success rate in medium- and large-scale improvement projects in care processes, thanks to a well-organized Six Sigma structure; cost efficiency above the national average in several care processes; and above-average performance in 24 of 38 parameters in national quality registers (e.g. 28-day survival rate after myocardial infarction; proportion of stroke patients satisfied with the care delivered; etc.) and average or slightly under-average performance in the remaining 12 parameters. The hospital rate of healthcare-associated infections is below the national mean (7.1 percent mean at SkaS, 9.4 percent mean in Sweden, SALAR, 2011, 2012). The hospital-wide patient satisfaction survey shows general satisfaction; specifically, 95 percent of patients reporting being satisfied.

Other outcome dimensions mentioned by members of the organization are that SkaS is ranked highly by physicians as a workplace. The 2011 survey showed that SkaS was ranked first in Sweden among assistant physicians, and generally enjoys a high level of employee satisfaction. The integration of improvement knowledge has also created new career possibilities with its own competence development for members of the organization.

Discussion

The case studied in this paper illustrates aspects concerning adoption of management innovations in a professional organization (Freidson, 2001). Given professional organizations' general reluctance to integrate externally derived knowledge, and adhere to managerial control efforts (Laughlin *et al.*, 1992; Hoque *et al.*, 2004; McGivern and Ferlie, 2007), the professional organization can be seen as especially problematic when introducing new practices through implementation of management innovations. This paper identifies five critical practices for adopting a management innovation in a professional context.

The first practice highlights the importance for a professional organization to develop its own vocabulary capturing its own view of the management innovation. Given the professional organizations reluctance to integrate externally derived knowledge, we find it interesting that SkaS implemented a deliberate reduction of management vocabulary and implementation models from other sectors (e.g. Lean and

Six Sigma). As suggested by Birkinshaw *et al.* (2008), theorizing and labeling constitute a critical step in adopting a management innovation. This step is likely to be even more critical in a professional organization as a means of going beyond labels created by others and relate to the professional knowledge in place. SkaS has embarked on a quest to establish new organizational capabilities – capabilities that are vital for transforming the healthcare system and for creating sustainable change, constituting an approach that goes beyond acronyms and labels.

The second practice highlights the important role of the internal change agents for gaining acceptance for new knowledge and management innovations. As a professional organization, SkaS also illustrates the problematic relationship with externally derived knowledge. Therefore, the key role played by external change agents in the model of management innovation implementation presented by Birkinshaw *et al.* (2008) is absent in the SkaS case. Instead, the motivation and drive for change has been internal, implying a need to build internal capabilities. At SkaS, improvement knowledge has affected the organizational structure, for example by leading to new career paths. By establishing a new profession in the professionally driven organization, the organizational context is changed, improving "the ability of internal change agents to pursue the core activities associated with management innovation" (Birkinshaw *et al.*, 2008, p. 832).

Using Donabedian's (2003) SPO model to analyze how SkaS has worked with adopting improvement knowledge, it is apparent that the management innovation has had impacts in all three dimensions – structure, process, and outcome. This is also the case for all building blocks of improvement knowledge: knowledge of system, knowledge of variation, knowledge of psychology, and theory of knowledge (Batalden and Stoltz, 1993). Regarding what has happened in the organization, it is evident that the adoption of improvement knowledge has not been seen as an isolated use of an improvement program like Six Sigma, or of certain tools. Regarding the changes following the adoption of improvement knowledge (see Table I), much has changed in the structural dimension (Donabedian, 2003). As argued by Van de Ven (1986), an innovation process is closely linked to the context in which the innovation is applied, whereby people "over time engage in transactions with others within an institutional context" (p. 591). In the case studied in this paper, the management innovation intrinsically supports this engagement in transactions among people, by its focus on the so-called knowledge of psychology and theory of knowledge (Batalden and Stoltz, 1993).

The third practice deals with continuous dialogues, reflections, and the allowance for an evolutionary adoption process. In most of the training held at SkaS, a tight connection to the workplace and daily work has been evident. There has been reason to test and reflect upon theories, because the relevance of knowledge is judged in its application. At the hospital, efforts have been made to support these engagements through structural practices like dialogue meetings and strengthening of the improvement facilitator role. Hence, strategies have been created and re-created in relations and conversations, mostly in line with the evolutionary perspective on management innovations presented by Zbaracki (1998) and Birkinshaw *et al.* (2008). To support this continuous development, management should aim to secure meeting places for fruitful dialogues concerning improvement. Dialogue meetings and strengthening of the improvement facilitator role have likely been critical to reaching a state in which the management innovation becomes institutionalized and new ways of working can be sustained.

A fourth critical practice is the need to build new competence, which in this case was supported by creating a new profession of improvement experts. In addition to studying the innovation process, Birkinshaw *et al.* (2008) points to the influence of the individuals – external and internal – who shape the innovation process. As argued by Batalden and Stoltz (1993) the traditional "professional knowledge" in healthcare must be complemented by "improvement knowledge." Improvement knowledge is rather new in healthcare and hence requires external change agents. However, as in the case of SkaS, a critical task for the external change agents is to identify, educate, and establish internal change agents that can continuously drive improvements at the hospital. As stated earlier, SkaS adopted improvement knowledge in a research-oriented manner. This approach to developing internal change agents is based on engagement in action research projects. In these projects, external and internal change agents are jointly involved in exploring what improvement knowledge can mean at this hospital – that is, exploring "knowledge in action" (Coghlan and Brannick, 2010). These studies, intended to contribute to actionable knowledge and the local problem-solving capacity, have been applied as an integrated part of improvement knowledge.

The action research approach and its focus on joint action-reflection loops (Aagaard, Nielsen, and Svensson, 2006) have together driven improvement knowledge adoption and become part of the management innovation itself. The reflective dialogues exemplify action-reflection loops aimed at building context-specific knowledge. This effect is similar to what Birkinshaw *et al.* (2008) emphasize in their model on implementation of management innovation – namely, the problem-driven search, trial and error, and reflective experimenting.

The fifth critical practice has been the focus on research-driven approach to the adoption of a management innovation – which is appealing for an evidence-driven profession. In their papers, both Batalden and Stoltz (1993) and Boyer and Pronovost (2010) highlight the differences between professional knowledge (medicine and nursing) and improvement knowledge. Tension exists between the focus on "evidence" in the medical profession (Berwick, 2008), and the focus on change and learning from failures when working with improvements (Cannon and Edmondson, 2005). In our study, we show how these two fields can be successfully integrated by focussing on the organization's own knowledge development. It also highlights the importance of the involvement of senior physicians in the improvement work, as pointed out by Chakraborty and Tan (2012). In the future, it would be of interest to study adoption of improvement knowledge as a management innovation in other hospitals, as well as in other professional organizations, such as universities or law firms.

Conclusions

The purpose of this paper was to study critical practices when adopting improvement knowledge as a management innovation in a professional organization. In the hospital studied, improvement knowledge has been a part of a transformation based on changes in structures and processes. Considering improvement knowledge to be management innovation, the witnessed transformation demonstrates that an evolutionary perspective on innovation is needed – one in which the management innovation shapes and is shaped by the context. In the case studied in this paper, changes occurred in the organizational structure, processes, and achieved outcomes.

Through studying the hospital as a professional organization adopting improvement knowledge as a management innovation, five critical practices have been identified:

(1) it is essential for a professional organization to develop its own vocabulary capturing its view of the management innovation;

(2) to gain acceptance for a new way of working, internal change agents are critical;

(3) it is critical to allow for an evolutionary adoption process involving continuous dialogues and reflections;

(4) these agents need to build new competence, which in this case was supported by creating a new profession of improvement experts; and

(5) in an organization striving for evidence-based actions, a research-driven approach to the adoption of a management innovation has proven beneficial, because it aids in gaining acceptance for the new way of working.

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