LEAN IMPLEMENTATION IN GERIATRIC CARE IN A MUNICIPAL: A CASE STUDY FROM SWEDEN

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Purpose: The aim of this research is to examine how lean has been implemented at geriatric care in a municipal department in Sweden, focusing on the experiences and challenges of the employees, together with the strengths and weaknesses of the lean philosophy.

Design/methodology/approach: The primary method used was a case study with interviews and observations on spot, in combination with a literature study. All with the intention of defining and describing lean, its value, and how organizations generally apply lean.

Findings: All sources of information have shown that there are many advantages with lean such as better communication and a better-organized workplace. In addition, lean tools help to eliminate non-value adding activities (waste). However, implementations also bring about issues and challenges such as the difficulty of creating a long lasting lean commitment. A lack of follow-ups and the decreasing demand for lean from the executives have been the main issues within the geriatric care. The next step might be to create a common organizational culture, which is permeated with continuous improvements, focusing on value-adding activities for the residents and others stakeholders.

Originality/value: Very few studies have addressed lean implementation in geriatric care as well as in a municipal department.

Keywords: Lean, continuous improvements, management, organizational development

Paper type: Case study

INTRODUCTION

Lean has been utilized mostly in the industrial sector (Keyte and Locher, 2008). Despite that, it can even be interpreted from different perspectives, depending on which profession one is in. Throughout the years, lean methods and tools have slowly spread to the public sector. The reason why lean has not been equally attractive in other sectors, for instance in the administrative sector, is due to the fact of complications of actually seeing *how* one can implement this philosophy in a company (Breyfogle, 2007). The Toyota way of thinking has previously mainly been dominating in the manufacturing sector (Fillingham, 2007). Still, sectors such as healthcare and service have also been adapting lean to their work lately. The strategic adaptations of lean principles in healthcare have proven to be beneficial as they offer learning and growth opportunities (Ballé and Régnier, 2007).

The municipal of Borås in Sweden has recently stated to implement some Lean tools and methods. Two pilot projects of implementing lean were started in 2009 within the eldercare in the city of Borås, Sweden. The absence of common standards and goals at the different nursing homes, and a lack of continuity of improvement projects were becoming obvious.

Consequently, the management was looking for a solution to the problems and discovered lean by coincidence, but decided to implement it in the organization. Two wards were chosen at two nursing homes for the pilot projects. It was soon extended to include a third ward, and by the end of the year at least one ward at each residential unit had enrolled on a lean crash course. The step from pilot projects to standard has also been taken since an adaptation of lean was used, after the municipal district where it first was implemented.

The main purpose of this article is to examine how lean has been implemented at geriatric care in a municipal department in Sweden, focusing on the experiences and challenges of the employees, together with the strengths and weaknesses that the lean philosophy involves. This issue has been examined through interviewing key managers and employees involved in the Lean pilot project. The remainder of this paper is structured as follows: To begin with, a literature review on issues related to Lean health care is presented in Section 2. After that the research method is presented in Section 3. Thereafter, the case is presented in Section 4 and 5. After that the case is analyzed and discussed in Section 5 and 6. Finally, the research is concluded in Section 8.

LITERATURE REVIEW

Lean can be described as "a systematic approach to identifying and eliminating waste through continuous improvement, flowing the product at the pull of the customer in pursuit of perfection" (NIST, 2000). When integrated into an organization, lean is a philosophy, which detects problems that are then minimized, optimized and recorded. Basically, it maps out the organization's networks of processes, documents them and points out the *whom*, *what*, *when*, and *how* (Fillingham, 2007). It is essential to detect the value aspect of lean in order to add or create value to the product or service, and to carry it out cost-effectively (Bicheno, 2004; Keyte and Locher, 2008; Hines and Rich, 1997).

The main idea of lean is to try to create value for the customer by eliminating as much waste as possible. This approach is a long-term objective where the interaction in the company itself plays a huge roll. The bottom line is all about using the company's resources in a better way, requiring everyone to be on the same wavelength; because no one can do it all by himself, but everyone can do something (Larsson, 2008; Breyfogle, 2007).

The most essential step is to tackle the root of the problem "basic stability", examine it, and create a routine amongst the employees (Joosten et al., 2009). Check lists and standardized routines reduce the confusion between staff, encourages communication, and make the work flow with less mistakes (Chappel, 2002; Radnor and Walley, 2008; Joosten et al., 2009). Lean helps to eliminate waste in areas that has not been obvious before, with standardized procedures and routines. The positive aspects of adapting lean at nursing homes include; better communication between members of staff, a calmer working environment, and better awareness of responsibilities by mapping out to do lists for each day (Doerman, 2009; Roth, 2011). Nevertheless, implementing lean requires that everyone participates. Training is key, and an organizational culture of continuous improvements is needed as well. These conclusions are supported in literary texts such as the article Learning to Walk Before We Try to Run: Adapting Lean for the Public Sector by Radnor and Walley (2008). However, several challenges and problems have been identified in previous studies, including the staff members' unwillingness to change, the imperceptiveness of the management, the demand for increased efficiency, and a changing organizational policy (Bliss, 2008; Schiele, 2009). The management must provide support, proper training, and make a long-term commitment (Nash

and Poling, 2007; Towne, 2010). Numerous studies show that training and communication is nessasarry (Towne, 2010; Schiele, 2009; Radnor and Walley, 2008; Schiele, 2009).

One of the main concerns of lean is sustainability (Jusko, 2010). Will the employees be able to keep up with the lean thinking, and not to forget to follow up on their progress? In order to make use of the full potential of lean, the staff must believe in the success of lean and develop a commitment to it (Losonci et al., 2011, Young and McClean, 2008). By doing so, the culture of lean will flourish naturally, waste will be eliminated, value will be created and a new beginning of optimized work will commence (Doerman, 2009).

RESEARCH APPROACH

The empirical data collection has been in the form of observations and interviews with executives and employees. Open interviews with a small number of key people were started. After that, four managers who participated in the pilot projects were chosen for the introduction. This was followed by three individual interviews with two head of units and the former operations manager. Thereafter, new interviewees were chosen among the employees at two nursing homes and at four different wards. The respondents were interviewed ward-wise and the questions posed varied between the different interviews, depending on the individual wards' situations. Each question was accompanied by a specific answer with certain keywords, and the respondents were given the opportunity to either agree with the answer or openly tell their side of the story. The type of interview that was used with the staff can therefore be seen as a half structured interview, which is described as a cross between an open and a structured interview (Lantz, 2008).

CASE STUDY

In 2008, the management of the elderly care in the city of Borås was frequently discussing questions regarding *what* needed to be done to create a common ground for all members of staff, and *how* to create a common thread throughout the organization's improvement projects. The concept of lean was discovered by more coincidence and it was soon decided that the philosophy would be applied to the eldercare, leading to the development of the Brämhult model. The Deming cycle (Plan, Do, Check, and Act) was used as a foundation (Bergman and Klefsjö, 2003).

Plan

A training session for the management team was developed together with an external consultant who trained the managers. The training program included the lean game, value stream mapping and trips where the managers went out to the wards to observe the daily operations. Thus, the managers studied the process flow from their own perspectives. The purpose of the training was to get a glimpse of the value creation within the organization and also to identify the role of the employees.

Training session 1: A full day (24 hour) was inspected and instead of reviewing each staff separately, they decided to look at the whole ward's daily working process on an overall perspective.

Training session 2: It was then time to point out the difficulties and parts where improvements were needed. A desirable future scenario was created for six months ahead. The difficulties and problems were identified and analyzed, focusing on the basic concepts as flow, value and quality instead of just concentrating on the financials.

Training session 3: Post-it notes in different colors were placed along the process map of the daily activities (24 hour) with respective significance:

- **Green post-it**: Daily occurrences that work well in the organization.
- **Pink post-it**: Daily occurrences that should be inspected and then switched to green post-its.
- **Blue post-it**: Daily occurrences, for instance scheduled visits by nurses, therapists and doctors.
- **Yellow post-it**: Daily responsibilities that needed to be taken care of.

With the help of the post-it notes, the management could begin to process the course of events and eventually develop the desirable scenario, and an action plan was made. The employees started to work according to their specific directions with a maximum of three improvements at a time. Different groups were appointed depending on where the improvements were taking place. The management team checked the improvements during each workplace meeting.

Do

During the management's training sessions with the consultant, it was eventually decided that two pilot projects would be started. The management selected a number of wards at different nursing homes to be included in the pilot projects. A training session about lean and continuous improvements was held before noon. The managers had the chance to develop their own ideas later on during the afternoon.

An example of how they implemented lean in the organization was at a nursing home for the elderly suffering from dementia. They had a storage space in the hallway that contained the basic ingredients often needed and used during the daily cooking sessions. At the same time they kept a cabinet in the kitchen with different items that were not used as much as the basic ingredients. The staff at the ward decided to move the basic ingredients to the cabinet in the kitchen instead, to be able to store them in a more ergonomic way. A calculation was made and it showed that they saved up to three and a half hours per week by relocating the items to the kitchen.

Another example is from another ward where they had a food trolley with coffee, tea, fruit etc. for the visiting relatives and staff. There was never a single person who had the responsibility for refilling the beverages and snacks. On the contrary, it turned out that everyone was in charge of the trolley. This resulted in all employees walking by the food trolley several times a day to check if anything needed a refill. Not only was this a waste of time, but it also increased the stress of constantly having to check on something. By using the lean philosophy, it was possible to think outside the box and see the entirety of the organization in a more detailed approach.

Check

Regular meetings at the workplace were used for follow-ups during the pilot projects. A noticeable phenomenon was that the motivation seemed to increase when the managers were present, making these meetings very important.

The lean process unfortunately came to a halt when new district managers, who did not know what lean was, were assigned in a reorganization in Borås. Preserving the knowledge of the managers who left their old positions would have been needed to ensure a lean progress, but

that never happened. By doing so, the new managers would have had a clearer view of their tasks, and the opportunity to identify the main priorities. An important part of being a manager is to be able to coach and support the employees, follow up on progress, and create a good functional group process.

It was not until much later that managerial days were introduced, where about 90 managers from the entire district gathered for meetings. The point was to discuss the foundation of the managers' positions, their roles and contributions, and thereby making it clear what value actually meant.

Act

As the PDCA cycle is endless, the fourth step should be followed by the first step again to continuously try to improve the current situation, and thereby achieving the best results. The advantage with lean is that it can be applied daily. As the manager cannot always be present and participate in the daily working process it is important that the employees can be independent and still work towards the same goals. Time and effort have been put into these two pilot projects and training for both managers and employees. The goal was to create a standard with a thought surrounded by lean that would last continuously. It is in other words important to correct and improve the results that fell short of expectations, according to the PDCA cycle.

LEAN TOOLS AND METHODS USED

The purpose of implementing lean philosophy in the elderly care should be to try to eliminate all activities that do not benefit the patients (waste). In this case, an individual adaptation to the lean model was expected to contribute to a more qualitative work process.

There are several options to choose between when it comes to finding the right tools and alternative methods when working with lean. It is essential to implement a strategy that is tailored to the users and the staff so that the development does not create combats. The 5S was one of the tools that were selected for the eldercare. The 5S is a method used to create a standardized workplace, containing five basic steps to reduce waste (Larsson, 2008; Breyfogle, 2007):

1. **Sort** – An inventory is conducted in order to find out which processes and resources that exist within the organization. Unnecessary elements and objects that are not used daily are identified simultaneously as you thoroughly go through the operations and activities of the organization. Excess equipment is discarded or archived, so this empties up space and opens up the space available for other productive opportunities.
2. **Set in order** – In this step you organize the remaining items so that an effective layer is created. The equipment must be easily available and also marked where they should be located.
3. **Shine** – It is essential to conduct a thorough cleaning of the workplace in order to maintain the new improvements. A clean environment helps employees to stay focused and accountable. An efficient way to keep the cleaning is to introduce cleaning lists that are regularly updated.
4. **Standardize** – The workplace should be kept clean and organized, which requires continuous monitoring. This is accomplished by creating manuals, schedules or photographs to prevent proceedings from being broken down.
5. **Sustain** – Last part out of the five steps pertains to encourage and motivate staff to follow the instructions provided from the steps before. In order to be able to

successfully implement the potential of 5S, discipline and commitment in the daily work chores are required. Administrative waste should at this stage decrease while fewer mistakes occur.

The outcome of 5S will be an organized workplace with an optimized productivity. Using the 5S, one should be able to improve an organization without changing the current configuration (Larsson, 2008).

From this description of the model, it is clear that they have used the 5S within the eldercare in Borås. They have followed the instructions and checked the daily use of resources and sorted out the unnecessary items that add waste to the work process. This was done, for example, at one of the wards where items were relocated to a different storage cabinet where the usage was higher, resulting in a higher efficiency. Thus it falls into a natural change that alters the old routine and one starts to adapt to the new ergonomic way.

Gapp et al. (2008) points out that the 5S is a tool that is divided into two different parts. One part is the *way of working* that is required, and the other part is the *technique* used to achieve the requirements. This means that it is not enough to just know *what* to do, one must also know *how* to perform it. In this way it is possible to reduce both the big and small problems in the production flow. Thus it is not enough only to know what the 5S means as described earlier, one must also know *how* to locate and remove unnecessary items, *how* to limit and put aids in the necessary places, *how* to keep the workplace clean, *how* to follow up and create continuous activities, and *how* to keep this mindset alive.

The target of the Brämhult model has been to use various lean tools to improve working conditions and create a stable communication amongst staff. Once this has been achieved a relaxed environment for the residents of the nursing homes will be created. The model has been a springboard for many improvements since the implementation of lean, which include the following:
- Relocation of food supply
- Activity board
- Reporting standards
- Daily management
- Schedule adjustments
- Clothes labeling
- Washing standards
- Telephone hours

Even long term goals for the working environment have been developed, and are as follows:
- Structured meetings
- Welfare meetings
- Moving in standards
- Students and interns
- Order standards
- Arrival meetings

There are many tools in lean and it is extremely essential to select those that can improve the relationship between an organization and its customers. To be able to perform a value stream mapping and an analysis of problematic areas that provide non-value-adding elements, requires an awareness of and knowledge about what is considered to be waste within the

organization. Another factor that may interfere with the process of creating value stream maps can be the lack of knowledge. If the knowledge is incorrect, incomplete or unavailable, it is likely that the administrative support process is not sufficient (Larsson, 2008).

Value-adding processes were developed while also differentiating between activities that were not value-adding but necessary, and non-value adding activities that could be reduced and eliminated. This indicates that they have also used the value stream mapping, and understood the importance of creating value.

ANALYSIS

When the pilot projects were initiated, there was a need for a common standardization within the eldercare. There was no common thread running through the organization, and improvement projects remained being projects, with a fixed beginning and end. An implementation of lean was hoped to be able to create continuity throughout the organization and its daily operations. The management was the first group of people to do a lean course, in order to ensure that the philosophy would become rooted into the foundations of the organization, creating a top to bottom stream. The implementation required a thorough evaluation of what was actually considered value-adding. From that point, it was easier to formulate common goals and in turn create that wanted thread running throughout the eldercare.

The wards all agree on one point – lean does help a lot when it comes to solving concrete problems, such as eliminating waste and unnecessary work. By showing all the activities of the week on a big whiteboard, all the days have become more structured as everyone has a better grasp of the daily chores and tasks, reducing stress among the employees. Also, unnecessary running and walking on the wards and a constant sense of unease have been heavily reduced, with each member of the staff knowing his or her responsibilities of the day. Even the communication has improved in this way. Now that it has been made clear *who* needs to know *what*, and *when* this information is needed, everyone is clear on *how* the information should be passed forward. The results being a better working flow throughout the daily operations on the wards. So far, the wards that were involved in the pilot projects agree on the advantages of a lean implementation.

Even though the employees have been the driving forces behind the implementation, and more or less managed to change the attitudes on the respective wards, one has failed to create a new organizational culture within the eldercare. The synergy that lean could have generated has not been taken advantage of. Instead, the wards have individually been going through their lean journeys on their own and without much, if any, exchange of experiences with the other groups and wards. For this reason, it is easy to see big differences between the extent to which lean has been used and is still being used on the different wards, three years after the pilot projects started. The pilot wards were convinced about the advantages of being a part of the pilot projects though. It had the effect of unifying the staff in the quest for perfection, according to the lean philosophy. Something as simple as the management giving these wards more attention might have been a motivational factor to pursue the lean journey. A re-ignition is however needed in order to actively keep some wards' lean commitment.

The staff brought up, during several interviews, a wish of having managers that are more involved and supportive, especially during hard times when the results of the lean efforts have been difficult to spot. The support from the management has clearly decreased since the start, contradicting the initial idea, much because of some key figures being transferred to

other parts of the organization when the municipality was restructured. Unfortunately, this happened when the pilot projects were still at a relatively early and vulnerable stage. The absence of a driving and motivating management reflects in the number of wards where the work with the lean approach has come to a halt. When the demand for lean declined, the responsibilities were all shifted to the employees and demanded them to realize the goals that were initially formulated by the management. The philosophy had not yet become rooted at some wards, where it has become difficult to achieve a self-sufficient lean organization.

The general view on the wards that have failed to integrate lean into their daily work is that lean is a subproject. It has therefore become something that is not prioritized just because "other things get in the way". Like a vicious cycle, lean remains an even lower priority with the lack of demand for it from the management, and the result of this is easy to guess. However, the interviewees all agreed that lean definitely was a real eye-opener at the start, when it came to examining the own ward's daily operations. Lean is still present at the back of many employees' minds, the difficulty is to deal with the identifying of waste and issues, and dare to take the first step and make the necessary changes. Another lacking aspect on the wards that have been visited during the study is a better and clearer system of following up on the efforts and changes that have been made. Both a follow-up on the wards' lean journeys where progresses and developments are being evaluated and discussed, as well as a follow-up on the individual improvements that are made, are needed. In that way, it becomes clearer what has actually been accomplished and it proves the positive effects of lean.

It was basically impossible to talk about follow-ups during the interviews with the employees, because there simply were none anymore, in comparison to the workplace meetings held in the past during the pilot projects. The only method used by some of the wards as some kind of follow-up, was that the changes that had not been satisfactory or given the wanted outcome would sooner or later come up for discussion again. There are clear disagreements about the views on the effort that is being made on following up on the lean progress. The employees barely know of any occurrences when their progress has been considered, or when they have been given the opportunity to share their experiences with other wards. While on the other hand, the managers claim that it is done regularly, indicating that they think the reality is better than it actually is.

DISCUSSION

Firstly, it should be emphasized that the attitudes to lean differ quite a bit on the different wards that were included in this study. Similarly, there are big differences to what extent the lean philosophy has been applied to the daily work. Now the question is whether the attitude affects the extent to which lean has been used, or if the lack of visible and tangible results has made some wards bring their lean approach to a halt. It is possibly a lack of understanding for the philosophy that essentially causes these problems. It can be difficult to even see the advantages and applications of lean to eldercare, given that lean initially originated from the industry. What one strives to achieve with a lean approach is not necessarily huge improvements and changes, but small steps toward eliminating waste, and what is perceived to be non-value adding for the customers, or in this case the residents, in order to reach perfection. In other words, lean can bring about major improvements, but the means of achieving these big improvements are small and simple.

An organizational culture, which encourages continuous improvements, is needed to ensure that development is being sought after and pushed through. Revaluating the foundations of an organization is clearly a massive challenge, and definitely not something that is done over a

day. Lean is a long-term undertaking, which requires full commitment, and the heavy work must therefore begin at the top of the organizational hierarchy. Even though the lean implementation in Borås started off with the management, the employees must ultimately believe in and understand the philosophy themselves. In this case, there has only been a short and intensive crash course, carried out like a one-time occurrence. It requires fully committed managers to provide the right training and guidance when needed, if the goal is to eventually have members of staff that can regularly push through changes on their own. The employees carry the responsibility of ensuring that progress is made and keeping the lean approach alive, while the management provides the appropriate tools. The management should be able to gradually reduce its involvement while the presence remains, without deteriorating the quality of the work that is completed. Many of the key people in Borås were transferred to other parts of the organization relatively sudden, and neither the wards nor the Brämhult model, which was not yet fully developed, were ready for it. As mentioned, a lean implementation does not only demand a lot from the management. Since one strives for independent personnel that can keep the lean progress alive, it also makes great demands on each of the individual employees, and for the group dynamics among the staff on the wards to work out without disturbances. The chemistry between the employees has seemingly not been a problem on the wards that were studied and interviewed.

One of the earliest stages of the Brämhult model included the elimination of waste, i.e. what is not value-adding for the residents. The problem is that the definition of what *value* actually is differs from person to person. It is not always possible to know what each individual resident wants or needs, but to start a lean journey by profoundly discussing value and value-adding on the wards could be wise. In that way, the employees get an opportunity to examine what it is that they actually do every day, and what this leads to. The lack of regular follow-ups on the lean progress after the pilot projects have most likely caused the inspiration and motivation to work with the new approach to decline on some of the wards. It is easy to overlook the importance of what is being done when one does not see what is being achieved. A lean implementation, like any other change, requires a lot of time, commitment, and patience. In turn, it requires injections of motivation along the way and something as simple as following up on the efforts made, can easily generate this type of drive. One possibility would be to arrange gatherings where the different wards get to share their experiences and useful tips. While interviewing the staff, it was obvious that no such systematic procedure existed since it was not demanded from the management. Instead, the responsibility of keeping themselves inspired, motivated, and following up on their own work, have all been put on the employees themselves. The response of the managers was however different, as they claimed that a follow-up was a matter of routine during the workplace meetings. Also, exchanging experiences was always possible during meetings where representatives from each nursing home were present.

The badly timed restructuring of the organization in Borås clearly shows an absence of an organizational culture of continuous improvements. Lean happened to initially be thought of as the solution to this exact issue, but the situation remains the same today. Even though the driving managers have continued with the lean philosophy elsewhere after the restructuring, which of course is not bad in itself, it indicates that the managers overlooked another important aspect of lean – the holistic point of view.

What remains now is once again to formulate common goals and to create a standardized approach. As previous studies have shown, one of the positive outcomes of implementing lean includes the fact that a quality culture emerges when value-adding is the starting point.

Unfortunately, this stage has not been reached yet in Borås, but in agreement with other studies, lean has contributed to a much improved communication flow at the wards, as well as given a better grasp of the daily activities. In that sense, they have managed to achieve a better working environment. Simple but yet effective solutions are wanted, since it should not be difficult or troublesome to satisfy the residents. They are after all the reason for the existence of the eldercare.

Briefly, lean is not necessarily about big and drastic changes, but it requires the right foundation, in other words an organizational culture permeated with continuous improvements with the purpose of creating value for the residents, i.e. the customers. Keeping a holistic view is vital since each ward is a part of the chain that makes up the whole organization. A successful implementation of lean occur when driving leaders and managers regularly follow up on the work and efforts that are being made, provide support and encouragement, as well as solid and regular training. This paves the way for a culture of systematic development.

CONCLUDING REMARKS

The implementation of the lean philosophy contributed first and foremost to a better work flow at the wards. Activity boards were used to structure the days and helped to create a clearer picture of responsibilities and activities, reducing stress among the employees. For example, a food storage was moved and saved the staff an immense amount of time and running across the facilities. Lean worked as an eye-opener where the staff suddenly realized and saw much of the waste throughout the daily operations. All sources of information have shown that there are many advantages with lean such as better communication and a better-organized workplace. In addition, lean tools help to eliminate non-value adding activities (waste). However, implementations also bring about issues and challenges such as the difficulty of creating a long lasting lean commitment. A lack of follow-ups and the decreasing demand for lean from the executives have been the main issues within the geriatric care. The next step might be to create a common organizational culture, which is permeated with continuous improvements, focusing on value-adding activities for the residents and others stakeholders. By doing so, the organization will have a clear vision and philosophy, which makes it less vulnerable with time when certain key people are no longer in the organization. It is by looking back on the initial pilot projects that lessons can be learnt, and development can be achieved.

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