



UK health visiting: challenges faced during lean implementation

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Abstract

Purpose – The purpose of this paper is to present the challenges identified during a lean implementation in a health visiting service within a large primary care trust in NHS UK.

Design/methodology/approach – Following a series of lean workshops a triangulated approach to data collection was adopted in order to determine the root cause of the challenges that were faced during this lean implementation. The three methods that were selected for qualitative analysis included semi-structured interviews, document analysis and researcher participant observation.

Findings – Six key challenges were identified from the data analysis. These were: high process variability; a lack of understanding of lean; poor communication and leadership; target focused; problems defining waste; and difficulty in determining who is the customer and what do they value?

Practical implications – Although this particular lean implantation had limited success, the research has highlighted a number of challenges which would have to be addressed prior to future lean exercises. This will assist other clinical and managerial staff to prepare for the challenges that may be faced during a lean implementation, and adapt their approach to future quality improvement.

Originality/value – The barriers to lean implementation could be overcome with upfront planning, transformational leadership, excellent communication, identification and sharing of best practice and, above all, a shared vision. There is no quick and easy solution to productivity improvement, community services, as in this paper, cannot expect to select lean tools and techniques and emulate the success seen elsewhere. If they wish to deliver world-class healthcare in the face of constrained resources and greater demand, they need to adopt a long-term vision.

Keywords Health visitors, Primary care, Management effectiveness, Quality, Transformational leadership, United Kingdom, National Health Service

Paper type Research paper

1. Introduction

1.1 Background

Health visiting (HV) services form an integral part of the National Health Service (NHS) community services in the UK. The main focus of their work is health promotion and education in the whole community, but they are particularly involved with families who have children under five (Department of Health, 2007). Like other organisations in the NHS, health-visiting services are now required to improve service and reduce cost while providing safe quality care for patients.

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In recent years public spending on healthcare has increased at £3.5 billion per year (NHS Choices (NHS Authorities and Trusts in England), 2009) to £92.5 billion in 2008/2009 (Mintel, 2009). This has increased the quantity of management staff working in healthcare services from 22,173 in 1997 to 39,391 in 2005 a 77.7 per cent increase. This compares with 26.8 per cent for qualified nurses. The extent to which this increase in expenditure has resulted in concomitant improvements within the NHS is under question (Klein, 2007). The ever increasing demand for HV services brought about by the greater social, cultural, racial and geographical diversity will need to be delivered with reducing budgets (Department of Health, 2007).

An HV service operating in the NHS was selected for case study research as part of a larger research program investigating approaches to productivity and process improvement in the NHS. The managers of the service had chosen to follow the trend of hospitals in the UK and the USA (Weinstock, 2008) and transfer productivity improvement methods from other industry sectors into their organisation. This paper reports the qualitative findings of interviews and participant observations that were conducted as part of a larger 13-month case study.

1.2 “Lean thinking” in the NHS

Productivity improvement methods, including lean, date back to the early nineteenth century in the age of machine-based manufacturing. The mechanisation of industrial activity brought about a need for a deeper understanding of quality and productivity. In 1890 Frederick Taylor introduced his theory of “scientific management” which aimed to increase productivity through detailed time studies. At the same time Frank and Lillian Gilbreth used motion studies to improve efficiency combined with psychology to understand how to improve worker satisfaction. In 1910 Frank Gilbreth observed that surgeons spent more time searching for instruments than performing the operation. This advice was initially ignored but in 1930 the American Medical Association implemented a nurse to hand instruments to the surgeon (Baumgart, Neuhauser 2009).

From 1945 onwards a post-war Japan listened carefully to the western quality gurus (Taylor, Deming and Juran) and rebuilt their industry using these philosophies. The success of Toyota Motor Company was possible because of the work by Taichii Ohno who began the Toyota Production System (TPS) with a desire to create the perfect factory. He started by understanding the critical role of inventory and waste, and introduced principles such as “just in time” and “quality circles” both of which are the foundation of Toyota’s ability to produce high quality cars at low cost.

The term “Lean thinking” was introduced in 1996 (Womack and Jones, 1996). It developed from the Toyota Production System (TPS) and has now been applied in many competitive sectors including manufacturing, retail and insurance (Westwood *et al.*, 2006; Ben-Tovim *et al.*, 2008). Lean thinking is increasingly being applied to health services in the UK and overseas to improve the quality of patient care, improve safety, eliminate delays and reduce length of stay in hospitals while using no more resources (Westwood *et al.*, 2006). Lean organisations strive to reduce waste, which in turn leads to reduced costs and improved customer satisfaction (Womack *et al.*, 2005). The principles of lean aid in the formation of a more controlled environment from which to improve by standardising processes and introducing methods of work that manage the effects of variation in demand (Westwood *et al.*, 2006). Not everyone

considers lean to be the answer to all company ills. It has been reported to result in a limited creativity and innovation, worker isolation, excessive overtime and a poor quality of life for workers (Mehri, 2006). This human cost must be considered in any lean exercise since a major goal of lean is to work smarter not harder.

Lean thinking has met with great success in US hospitals. For example, Virginia Mason Medical Centre in Seattle created enough capacity through waste reduction to eliminate the need to purchase multi-million dollar additional facilities (Womack *et al.*, 2005). There are now a number of “lean thinking” examples that have occurred within UK healthcare services (Fillingham, 2007). NHS Doncaster redesigned its transient ischemic attack (TIA) pathway by introducing a rapid access one-stop TIA clinic. This has removed between 21 and 41 days from the old TIA pathway of care. Patients requiring vascular surgery are now seen within 48 hours from onset of symptoms – a process that previously took between 50 to 70 days (Tuck, 2009). The Histopathology team at Calderdale and Huddersfield NHS Trust reduced end-to-end turn around times by 43 per cent in 2006 and are now working towards sustaining the improvements by embedding lean culture through continuous improvement activity (Raja *et al.*, 2008). The majority of these studies have been in the hospital setting. This raises questions regarding the extent to which lean is (or can be) applied within primary care trusts (PCT). The aim of this paper is to discuss the challenges reported by staff from a health visiting service during a lean transformation. They wished to achieve the reported benefits of adopting lean thinking i.e. improved service with the same resource.

1.3 Case study background

The PCT studied employs approximately 2,400 staff and serves a population of around 217,000. Within the trust there are multiple locations that deliver community care, in addition to those provided by the acute hospital. The managers of the PCT wanted to increase the services “time to care” and reduce time wasted on operational and administrative duties. Lean thinking was selected based on its reported success in other healthcare organisations (Ben-Tovim *et al.*, 2008; Fillingham, 2007; Brown and Duthe, 2009). Prior to its adoption in primary care, lean had been implemented in the acute hospital trust. Lean business consultants were commissioned by the PCT to provide 25 days of support inclusive of workshops, board meetings and feasibility sessions.

The PCT established a lean thinking project team who were responsible for leading the productivity improvement. This group of staff were selected by the management team prior to the work commencing. They met at regular intervals throughout the project and were supported by the external consultants who specialised in lean implementation. The team consisted of a selection of roles within the HV service including managerial and administrative staff. Details of the project team, their job title, position and pay grade are presented in Table I in order to demonstrate the spread of skills and seniority in the team.

The project team met at lean workshops held at regular intervals throughout the 13 month period between May 2008 and June 2009. They were not assigned formal roles or responsibilities, and a lead project champion was not allocated. Throughout the project the team conducted many of the tools that accompany the lean method with the support of consultants. These included value stream mapping (VSM), stakeholder mapping (SM), time and motion studies, waste identification and waste removal. The findings of these activities are reported elsewhere (Grove *et al.*, 2010).

2. Methodology

2.1 Method and rationale

The findings from this study form part of an in depth case research investigating the specific phenomenon of productivity improvement in healthcare services. For this paper the data collection was planned through interviews, document analysis and direct observation in order to gather data from multiple sources for triangulation.

2.2 Participants

A purposeful sample of 14 participants in total was selected for the study. They were opportunity sampled through consultation between managers of the service, two researchers (AG and JM) and the external lean consultants. Participants were invited by telephone call or email, explaining the objectives of the study and introducing the researchers. Five participants were managers from several departments within the PCT. Seven were clinicians from a range of departments within the organisation and of differing seniority. Finally two administrative support workers participated. Eight participants were selected from within the project team and the remaining six were from across the whole service to ensure a more representative account of the issue. The criteria for choosing this group were: extended experience of HV service, participation or awareness of the lean thinking initiative and staff who would be impacted by the changes identified.

2.3 Research methods

2.3.1 Interview. Four in-depth feasibility interviews were conducted at the start of the study. The purpose of which was to provide an understanding of the context, to identify challenges and barriers to focus on during the interviews and to prepare a suitable set of questions for the semi-structured interviews.

For data collection and analysis ten staff from a large English PCT were interviewed over 13 months, between mid 2008 and mid 2009. Three were managers (M1 M2 M3), five were clinicians (C1 C2 C3 C4 C5) and two administrative support workers (A1 A2) see Table II. The researchers (AG and JM) recorded all the responses in field notes that were collected during the interviews. Each interview lasted between 25-45 minutes. In some cases one person was interviewed on more than one occasion. The semi-structured open-ended interview questions were devised so that they captured opinions and beliefs of the participants regarding the lean implementation. This included their expectation and experience of implementing lean thinking within their departments, their beliefs of the tools and techniques that were used and the challenges and barriers that they faced or observed during the project.

Job role	Position	Salary pay grade
1 Health visitor	Clinical	7
2 Nursery nurse	Clinical	4
3 Business development manager	Managerial	8a
4 Admin support worker	Administrative	2
5 Family support worker	Clinical	3
6 Community nurse	Clinical	5
7 Health visitor	Clinical	6

Table I.
Lean thinking project
team

Table II.
Participants and job role

Identifier	Job role	Position	Project team
C1	Community nurse	Clinical	Yes
M1	Business development manager	Managerial	Yes
C2	Nursery nurse	Clinical	Yes
A1	Family support worker	Administrative	Yes
C3	Health visitor	Clinical	Yes
C4	Health visitor	Clinical	Yes
A2	Administrative support worker (ASW)	Administrative	Yes
M2	Health visitor manager	Managerial	No
C5	Health visitor	Clinical	No
M3	Strategic lead: Health visiting	Managerial	No
X	Lead midwife	Clinical	Feasibility study only
X	Health visitor	Clinical	Feasibility study only
X	Stakeholder manager	Managerial	Feasibility study only
X	Stakeholder manager	Managerial	Feasibility study only

2.3.2 Researcher participation observation. Two independent researchers (AG and JM) observed and recorded in field notes the improvement efforts, lean tools and techniques selected and implemented, and staff activities during weekly planning meetings, service analysis sessions and improvement reviews. In total approximately 140 hours of observation material was generated. The majority of this took place during eight workshops, which lasted between six and eight hours. Planning meetings, and improvement reviews, were allocated half-day sessions.

2.3.3 Document analysis. Document analysis was conducted by reviewing key organisational reports produced by the service and government standard policies for health visiting. Data was also gathered from articles written about the organisation and web sites of the institutions studied. Additionally, statistics reports generated by staff to the service lead and PCT were reviewed. The majority of this analysis was conducted in the planning and feasibility stages of the project, which took place during the first eight weeks. Summary documents were produced collating the information gathered during each lean workshop session.

2.4 Analysis

Results of observations, document analysis and interviews were recorded as notes. In order to structure and condense the large amount of data that was produced during the study, a two-step coding process was followed. This method of analysis was selected based on its reported success in similar case study research of lean in healthcare (Jenei *et al.*, 2008). During step one the data was used to form a preliminary framework and then discussed in a series of iterative meetings between researchers. The raw data was open coded using standard codes that were selected during discussions.

Identical constructs were grouped together in order for conclusions to be drawn from all the available data. In step two, axial coding was conducted by summarising existing data groups and all available evidence to form themes. Each of the themes were considered and evaluated to clarify the existence or non-existence of the distinctions between themes, the themes were then adjusted where appropriate. The relationships between sub-themes and themes were also investigated following an iterative process similar to stage one of coding.

3. Results

The data analysis resulted in six key themes relating to the challenges and barriers faced during the implementation of lean thinking in health visiting services. These themes and their impact on the lean implementation are displayed in Table III.

4. Discussion

The introduction of productivity improvement methods developed in industry is not a new phenomenon in the field of healthcare management. Transformational efforts such as total quality management (TQM), six sigma and business process re-engineering have been implemented, but failed to translate into sustainable results in both the UK and the US healthcare systems (Bigelow and Arndt, 2000; Bahensky *et al.*, 2005; Esain *et al.*, 2008). This may have resulted from the absence of key factors to sustain improvements such as leadership, communication, engagement and empowerment (Bateman and David, 2002). Several challenges that were faced during the lean implementation in HV services have been identified during the study and are discussed in the following. These add to the understanding of why such methods lack impact and have limited sustainability in the primary health care setting.

4.1 Process variability

Primary care is complex and demand is variable and unpredictable (Shah *et al.*, 2008). However, NHS services are not necessarily more complex than the manufacturing industry. For example, car manufacturers have gone beyond mass production of vehicles and now build them “made to order” to achieve high customer satisfaction. The limiting factor which prevents patient treatment being “made to order” is the current high level of variability in work processes. This variability in the HV service was exaggerated as work was performed by many independent stakeholder organisations.

Challenge	Description of impact on implementation
<i>Theme 1</i> Process variability	A high level of process variability made value stream mapping difficult since staff were unable to converge on a common approach for specific tasks.
<i>Theme 2</i> Understanding of lean	The focus for the project was on lean tools and techniques rather than on the overall philosophy
<i>Theme 3</i> Communication and leadership	Silo working combined with flexible part-time staff and middle management control of the project led to poor communication and leadership
<i>Theme 4</i> Target focused	Centrally defined targets shift emphasis from local delivery of care to achieving national standards
<i>Theme 5</i> Defining waste	Waste is so ingrained into the service that identifying it proved difficult
<i>Theme 6</i> Who is the customer and what do they value?	Multiple customers such as the patient, government agencies and families meant that the focus was rarely on achieving patient satisfaction

Table III.
Six themes generated
from analysis

It was observed during group discussions that it was difficult to find any fixed processes within the HV service as people and their actions cannot be easily segmented. Interview C1 stated that “everybody does things the way they think it should be done” this was often based on rumour and popular belief rather than established processes. C3 believed that the “service varied immensely on a daily basis, often dependent on the patients needs”. M2 stated “services vary dependent on the diverse mix of other organisations that are ‘pulled into’ the care planning. This cannot be predicted or guaranteed because of changing circumstance or resource”. Therefore since processes were not fixed value stream mapping of various common tasks was challenging. The project team had a limited ability to identify all processes occurring and which ones delivered value.

The supply and demand relationships between the stakeholders in the HV service were also complex. According to interview C3 “requests and referrals to other organisations are often refused based on ever changing thresholds”. This limited the project team in their ability to plan and predict, which processes would be required for a redesigned service. A true lean transformation requires that all stakeholder relationships are supportive of the move towards lean. In this case many stakeholders were unaware of the lean exercise, which reduced the extent to which cross-departmental changes could be implemented.

4.2 Understanding of lean

The transition to lean requires a significant investment of time (Womack and Jones, 1996). The current Toyota Production System has been in existence since 1945; it has had many years of development to where it is now. In terms of efficiency and processes the NHS is some 30 years behind world class manufacturing organisations whose staff understood the need for change and adapted in order to remain competitive. To date this sense of urgency has not existed in healthcare (Young and McClean, 2009).

Recent focus on efficiency gains have led to a number of partial implementations of lean as healthcare managers have attempted to replicate the success of others without understanding the underlying principles of lean. There are critical determinants that need to be put in place before organisations can embark on a lean transformation (Dunn, 2009). These have been adapted into an iceberg model shown in Figure 1. At the top of the iceberg are the tools and techniques, these are easily seen and readily available, thus they are often used for a quick fix. Unfortunately a thorough lean implementation requires all of the tasks from the bottom of the iceberg to the top for success. These include the development of a shared vision and an action plan. These vital components sit below the waterline and act as a foundation to build on and therefore need to be carried out prior to the lean tools and techniques.

Poor understanding of lean principles by the project team, were a barrier to success. The staff were introduced to the top 10 per cent of the “lean iceberg” and were asked to perform tasks including value stream mapping (VSM), stakeholder mapping, waste identification and waste removal using 5S (sort, straighten, shine, standardise and sustain) without any preparatory training or organisational development. For example, observations of the VSM exercise demonstrated that staff struggled to identify key steps that delivered value to patients. Interview A1 stated that “it is not possible to map processes as each individual patient pathway and its processes are different and their needs are varied” C3 commented that “this level of simplicity rarely occurs in

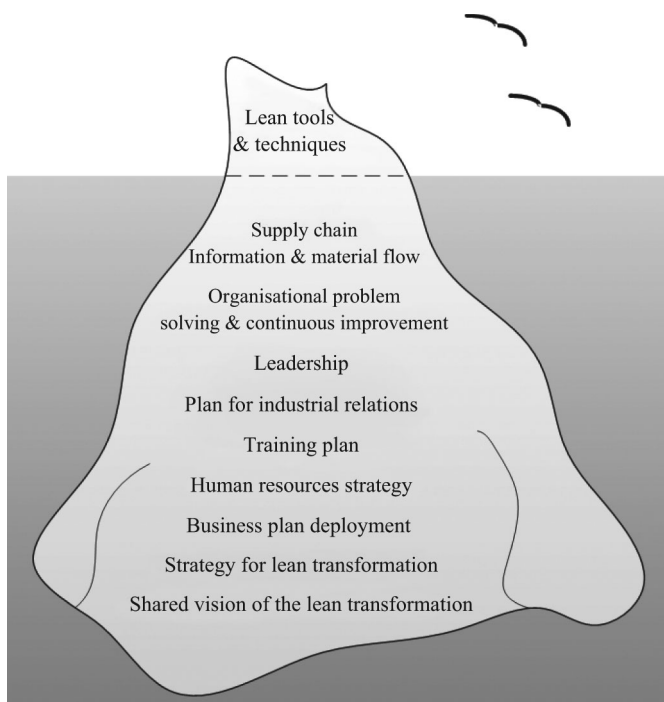


Figure 1.
The iceberg model of lean
implementation

health visiting”. During group discussion it was noted that clinicians found it difficult to separate the process steps required to achieve each action, from the actual delivery of care that is given to the patient. The processes were seen as secondary to the overall outcome. Therefore, it was not important how the patient moved from a referral being made to a visit being conducted, their main concern was that the visit occurred within a certain time frame. C5 stated that health visitors “had no time for planning and administration because patient care always comes first”. This resulted in different operations to achieve the same goal. The link between improved operations leading to benefits to patients was not obvious to the project team. The focus of the improvement was saving time and cost not what is of value to the patient.

4.3 Limited communication and leadership

Management support and commitment to provide necessary resource and training is critical for successful lean transformation. It is key to enable staff to make improvements by giving them time and space to contribute towards change (Westwood *et al.*, 2006). In order for the improvements to be sustainable staff must also be responsible for implementing solutions, with the full support of managers. Changes to services which affect organisational operations need to be coordinated centrally and led from the top with a clear strategic framework to ensure it occurs systematically throughout an organisation (Proudlove *et al.*, 2008).

A major challenge for the lean implementation was the observed lack of communication and leadership within the service. Interview M3 stated that “Working

in the community can make effective communication very difficult". In this case lean was applied within a small segment of the organisation using a middle down approach. The decisions and requests for improvement came from middle level managers but without a supporting strategic framework as to how the aims would be achieved. Ideally the vision should be set by the leaders and inform all operational plans. However, it was evident during group discussion that the project team did not have a strategic plan to follow and the aims of the lean implementation were not communicated across the service. Therefore, the improvements that were identified during exercises such as VSM were not able to be followed through.

Figure 2 demonstrates the varying lines of communication and leadership that were present in the HV service for three different centres. Centre 1 had a motivated and self managing team with well defined processes and good communication throughout the team. Centre 2 and centre 3 suffered from varying degrees of poor communication and process definition partly due to sharing part time resource. This led to high levels of staff stress and an inability to deliver care to all families equally as services were increasingly difficult to coordinate as communication decreased.

The service studied consisted of groups of clinicians, managers and administrative staff who were responsible for managing the service and their daily activities. This works when teams are composed of self disciplined people who define rules that encourage self-organisation (Highsmith, 2004). However, it requires intense collaboration and communication. During the case study it was not obvious who was responsible for leading the lean project. Interview C4 commented that "management should be providing support and build awareness of our work across the service, but this does not happen". It was observed that the lack of leadership limited the extent to which goals could be achieved and sustained.

Interviewee C2 believed that communication and leadership were further limited because "flexible and part time working reduces the ability to contact and engage with other members of staff, especially when attempting to motivate them towards change". The need to work closely and share information goes against the norm in primary care

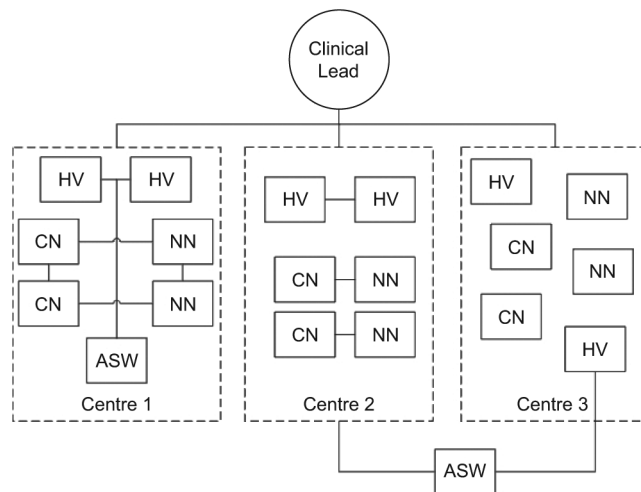


Figure 2.
Lines of communication
and leadership

where autonomous silo working is expected and accepted. All staff was not communicated to equally or regularly which meant the goals of the lean project was never explicitly stated to them, or to stakeholder organisations. To sustain improvements made in both practice and culture, primary care trusts must plan transformational change across their whole organisations not just selected parts (King, 1997), otherwise only small incremental adjustments can be achieved, as observed in this study.

4.4 Target focused

As early as 1991 targets were being called for to set measurable objectives for health gain in an attempt to reorient the NHS towards outcome (Catford, 1991). Central targets can be effective in concentrating the attention of NHS staff on specific issues provided that the incentives and punishments are sufficient. However, poorly thought out targets deliver poor or perverse outcomes (Bevan and Hood, 2006; Appleby *et al.*, 2005). Document analysis identified several statistics forms, which had to be completed by staff at regular intervals. Most of these were used for target reporting although it was clear some were a legacy of previous management activity. The staff in the project team was unaware why these forms were necessary or what happened to the data. Interview C4 stated “we have many targets to achieve but I do not understand how they help” C3 revealed that “time is so short that often I do not finish the statistics forms or use incorrect information just because I have to complete it each week”.

Observations of group discussions revealed that problems arose when management requests focused for “bottom line improvements” to key service targets such as breastfeeding, smoking and reducing “Did not attend” visits. Recently a change to payment by results system has meant that clinicians now report all contacts made during each home visit rather than just the patient. These may include the patients’ parents, siblings, friends who were present at the time and even the pets in the home. This may skew the performance statistics and exaggerate improvement.

Indeed performance monitoring that is done badly can be harmful and even destructive to the organisation (Barker *et al.*, 2004; Young and McClean, 2009) as well as detrimental to patient health (Lewis and Appleby, 2006). At the height of this government it is estimated that there were 300 targets to be met by NHS managers (Klein, 2007). Targets result in gaming, or the manipulation of data to report good outcomes while hiding real performance, as identified in this study. However, ever more sophisticated statistical methods are being introduced to prevent this. This dependence on wasteful performance checking goes against the quality teachings of Deming who advises that focusing on patient satisfaction is more likely to lead to performance improvement (Deming, 2000). Interview A2 confirmed this when stating that “the statistics and targets do not focus on the quality of the care we give to our patients”.

4.5 Defining waste

Lean thinking aims to identify waste to provide better, safer care to patients (Westwood *et al.*, 2006). Waste is any process that does not deliver value to the customer (Womack and Jones, 1996). During this study the project team defined waste as “tasks that do not add value to the patient or contribute to efficient running of the service”. Despite this agreed definition, observations of lean workshops revealed that clinical and administrative staff found it difficult to identify waste steps in the service.

Disagreements arose as to what constituted waste due to the variations in working practices. A1 stated that “everybody does things differently”. C4 commented that “we are always chasing issues and never look for the real cause of the problem so they are not resolved”. M3 revealed that “staff have become so used to issues and problems in the process that they learn how to work around them”. This increased the amount of wasted activity that was performed. As a result problems were ignored or absorbed into the service and so were not immediately obvious to the staff. The aim of the project was to reduce waste in the service, however not being able to agree on what constituted waste hindered progress.

Ideally, the NHS requires a culture where looking for waste and solving problems is the norm, not a novelty as in this case study. Lean organizations understand that removing waste can deliver efficient and quality care. Identifying and focusing on waste removal will reduce cost and improve flow (Westwood *et al.*, 2006). However, maximizing value to patients, not cost reduction must be at the heart of any improvement strategy.

4.6 Who is the customer and what do they value?

The lean philosophy is founded on the concept of value to the customer (Ben-Tovim *et al.*, Young and McClean, 2008). Defining value may be simpler to achieve in industries such as manufacturing, where the customer is easily identifiable as the next person in the process (Young and McClean, 2008). However, the complexity of the HV service makes customer identification difficult since they include the patient, government agencies, charities and families of the patient. The challenge was to identify the customer and the multiple types of value, in order to fulfil the central lean driver of value defined by the customer.

The group consensus at the start of the lean project was that the patient was the customer. C5 stated that their customer was always “the patient at the receiving end of the service”. Later the beliefs of the group altered and staff diverged from their initial customer definition. This became evident during the stakeholder mapping exercise. In total 33 potential customers of the HV service were identified including the patients, family, careers, commissioners and partner organisations. There are many people who might at the same time have a role as customer, but hold widely different views as to the value of the service (Grey, 2007; Shah *et al.*, 2008).

The multiple customers also made value stream mapping difficult, A2 stated that “we cannot please everybody; the patient should be at the heart of the service”. However, a mean of 47 per cent of ASW time was spent on waste activity, which does not add value for the patient (Grove *et al.*, 2010). The question of what process steps to take to improve the service could not be resolved until the value proposition they wanted to deliver was understood. Observations revealed that management valued efficient and cost effective services however, clinicians valued time with the patients to develop lasting relationships. From this case it was clear that there were at least two dimensions of value to be achieved, one focused on productivity of the service and another based around patient experience of care. The existence of a single value concept that can drive lean thinking in healthcare is questionable (Young and McClean, 2008).

There is some evidence that patients do better when they value the experience of care (Fremont *et al.* 2001). This need to focus on patient’s experience of services separates healthcare from industries that have successfully transitioned to lean (Fillingham, 2007). However, value of experience is a subjective concept that is subject

to change dependent on circumstance. C2 revealed that patient experience of service is often “more important to them than their overall health related outcome. Our patients valued being given advice in a clear, open and understanding manner rather than a prescription without an explanation”. Interview A1 stated that “I understand what the patients value as I see them regularly and know what they need”. However, group discussions demonstrated that there is a distinction between what a patient “wants and values” and what they actually “need” medically, psychologically and socially. This distinction adds to the complexity of defining value in the HV service. The project team had mixed viewpoints, which made it difficult to identify what was important from the patient perspective. In addition M3 stated that “patients themselves are often unclear in what they expect from the service which makes it difficult for staff”.

Healthcare organisations face increasing pressure to improve their operations and to provide evidence of the quality and efficiency of their organisations (Kujala *et al.*, 2006). This means that managers who have traditionally focused on quality of care are now forced to review their overall management practices for the sake of effectiveness (Hellstrom *et al.*, 2009). This has caused a shift in focus from patient experience and satisfaction to bottom line improvement. A lean implementation based on value for management will have widely contrasting focus to one centred on the patient.

4.7 Research limitations

This research utilized semi structured interviews to obtain an in-depth understanding of participant views of the topic. As with all interviews the participants’ responses are subjective and open to social desirability bias. Interviewer bias may also have been present as the interviewers were the authors of the paper and their characteristics could influence the responses given.

Researcher participation observation was beneficial in gaining a finer appreciation of specific phenomena. However, researchers that participate may lose their objectivity of the topic. While all attempts have been made to ensure the research remained reliable it is not possible to ascertain for certain that the same interviews and observations that were conducted for this study would produce the same results elsewhere. Finally, this project was put on hold for four months while the service underwent changes in managerial roles and responsibilities. This had a disruptive influence on the initial aims and goals of the lean exercise as it halted improvements and reduced participants’ motivation.

5. Conclusion

This case study has identified six barriers, which prevented this lean implementation from being completely successful:

- (1) A high degree of process variability existed throughout the service between members of staff who worked in both the same and different locations. For example, a regularly occurring event such as a new birth triggers a number of processes to occur. It would be expected that these would be the same across all sites but in fact they were different. This lack of standardisation made it extremely challenging to map out processes and agree on which tasks needed to be done by who and when.
- (2) There was a poor understanding of the lean philosophy and in many cases it was seen as another passing quality fad. This combined with the fact that key

stakeholders had not been informed of the exercise-taking place meant that meaningful changes were difficult to implement. Lean implementation requires a thorough understanding of the underlying principles rather than selecting lean tools developed elsewhere and applying them.

- (3) There was an overall lack of communication and leadership. HV services operate in the community and communication channels are not always clear. Teams of community workers tend to operate as self-managing autonomous groups. This can work very well but breaks down rapidly with excessive workload as a result of staff being off sick or poor planning. One of the key requirements for a lean implementation is management buy in at all levels of the organisation which wasn't evident in this study.
- (4) The organisation attempts to achieve numerous inappropriate targets, which drive perverse behaviour, particularly when they drive the organisation to focus on achieving specific numbers rather than customer value or satisfaction. Currently the focus of the organisation has been on meeting targets such as the number of mother's breastfeeding and smoking. During this study the project team realised that delivering quality care is about improving patient experience not improvement to the bottom line.
- (5) Defining waste is challenging in this environment as each individual had a different way of undertaking a particular task. Therefore what constitutes waste depends on the individual involved. Initial reviews of the value stream maps highlighted only small amounts of waste but after discussions it was apparent that the majority of processes do not add value to the patient as the customer.
- (6) There was considerable confusion about who is the customer and what do they value? The complexity of the HV service is such that there are multiple customers, e.g. the patient, government agencies, charities and families of the patient. A clear understanding of who the customer is will aid the service deliver quality care.

These barriers to successful lean implementation can be overcome with upfront planning, transformational leadership, excellent communication, identification and sharing of best practise and above all a shared vision of the aims of the exercise so that all members of staff were highly motivated to improve the service. There is no quick and easy way to become a lean organisation. Toyota has taken 50 years to get where they are using a structured approach with continuous improvement ingrained throughout the entire organisation. If community services wish to deliver world-class healthcare in the face of constrained resources and greater demand they need to adopt a long term vision for success. This will involve developing their own lean philosophy based on patient value and satisfaction not simply applying tools and techniques developed by other industries.

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