accidental lean? would a defined operations strategy help performance improvement?

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Abstract
Drawing on empirical evidence gathered from a management consultant-led change programme focused on improving performance in one key area, I examine the activities and outcomes at the Northern Teaching Hospital Trust (NTHT) reflect on the role of operations strategy in healthcare operations and how it could help improve performance.

Key Words: Operations Strategy, Lean, Service Quality

Introduction
In this paper I outline the intentions and outcome of a management consultancy intervention at a Wing of a Northern Teaching Hospital Trust (NTHT) and consider implications on immediate and longer-term performance.

NTHT had among the highest rates of Hospital Acquired Infections (HAI) in the region. The commissioning body, the Northern Strategic Health Authority (NHSA), looking to tackle the HAI problem in a practical, systematic, long-term sustainable way, was keen that ‘some form’ of social marketing was adopted since it saw patients and the public as implementers of change. To this end the NHSA commissioned management consultants to implement best practice approaches to social marketing. Once the management consultants had embarked on the fact-finding stage it emerged that the actual requirement was ‘low hanging fruit’ performance improvement in the first instance, best achieved through the tools and techniques deriving from the Toyota Production System (TPS) collectively known as Lean (Krafcik, 1988). I consider whether the use of an Operations Strategy, another manufacturing-derived approach, could help the NHS have greater success in achieving its objective of using resources to best effect to deliver improved patient care (NHS_Plan, 2000). Typically, an operations strategy provides the broader conceptualisation of service delivery and ‘value’ creating organisational knowledge and enabling planning to reconcile market requirements and resources (Slack and Lewis, 2011). The purpose of this paper is to reflect on that reconciliation, or its absence, in the NHS in conjunction with the concept of ‘patient value’, a key priority area for health policy (Currie et al., 2008) and a driver of the consulting intervention described.
Healthcare Context

Healthcare is perhaps the most personal and important service people experience. It is also a service people need but do not necessarily want (Berry and Bendapudi, 2007). Patient perceptions of safety and care are what make up the ‘patient experience’, something that transcends a purely medical perspective. Unlike other services where demand increases supply, in healthcare supply increases demand. More physicians or hospital beds in a given region translate into more medical services rendered on a per capita basis without necessarily improving the overall health status of that population group (ibid).

Service quality is an approach to achieving better health outcomes, with both quality and value determined by the beneficiary, and has become an important corporate strategy for healthcare organizations. Groonroos (2007) suggests there are two distinct components to quality, the technical aspect, or what is provided, and the functional aspect, or how the service is provided. It is the functional aspect that patients perceive and receive. Patient satisfaction therefore demands consideration of both the service concept and the customer characteristic (Anderson et al., 2008). However the sector has been slow to move beyond a supply-side approach to quality assessment, in part because few meaningful patient-oriented quality assessment instruments are available (Dagger et al., 2007).

The NHS Context Leading to the Consulting Intervention

In the NHS, quality is seen as a “prevailing purpose”. In 1997 quality became a statutory requirement, and the principles of corporate governance were applied for the first time to both quality and clinical governance (Cullen et al., 2000). At its inception in 1948 it was assumed that quality would be inherent in the service offering of the newly formed National Health Service (NHS) through the skills and ethos of the health professionals working within the system (Nicholls et al., 2000). The culture of the organisation has been historically based upon clinical excellence and the assumed leadership of clinicians. Since the introduction of the “internal market”, numerous changes have occurred, including those of staff attitudes and perceptions, culture, patient expectations, and medical technology (Burgess and Radnor, 2012; Graban and Swartz, 2012). Implicit was an acknowledgement that in order to deliver the aims of the clinical governance agenda the culture of health care organisations needed to be changed (Graban et al., 2012; Waring and Bishop, 2010).

Structural change in the NHS is framed by an increasingly prescriptive and centrally-driven set of performance measures (Currie and Suhomlinova, 2006) and makes radical change within a culture such as the NHS problematic (Esain et al., 2008). Consequently most initiatives within Trusts and within the NHS in general tend to follow the path of incremental change and improvement rather than breakthrough (Ritchie, 2002:4; Umble, 2006). A number of consulting projects have been carried out across UK hospitals, and increasingly choosing the ‘business’ tools of quality and continuous improvement such as Kaizen and Lean (Antony et al., 2007; Boaden, 2009;; Patwardhan and Patwardhan, 2008), alongside the adoption of the models of performance management (Smith, 2002). Probably the most famous example is Gerry Robinson’s televised improvement intervention at Rotherham General Hospital in 2006 (Towill, 2009). Burgess (2012) provides comprehensive coverage of similar improvement projects.
The Operational Context at NTHT

While professionals and patients may define quality in different ways, Hospital Acquired Infections (HAI), especially Methicillin-resistant Staphylococcus aureus (MRSA) have, in the UK, become synonymous in the public eye with poor quality service. The Department of Health (DoH) sets, and monitors, central targets for infection control. Service deliverers focus much effort on meeting centrally-set targets. However, DoH targets surrounding infection control have only a temporary impact and help to focus the minds of both clinical and non-clinical management for short periods of relatively intense self-examination. They are not always effectively embedded (Boaden, 2009).

To reduce HAI rates at NTHT the project impetus was process improvement in the public through social marketing techniques which would then lead to performance improvement within the Wards. At the project’s core lay the idea of ‘sustainable patient value’, ensuring that the whole focus and energy of the Trust was placed behind meeting the needs of the audiences served – hospital staff, Health Management, patients and the wider public, so that the Trust could be seen to have met its organisational quality and performance imperatives. To this end, a specialist change management consulting firm was hired to implement best practice approaches to social marketing so that patients and the public would be encouraged to behave differently.

The Management Consultancy Project at NTHT

First Steps

The management consultants began their work with a preliminary assessment of the original proposed action plan combined with fact-finding research for all stakeholder groups using surveys, focus groups and individual interviews. Internal stakeholders were Trust management, clinical management, nursing, clinical and support staff. External stakeholders were patients, relatives and visitors. Selection of participants from the groupings was random. Four 90-minute focus group sessions were held, each with 20 external stakeholder participants. Internal stakeholders consisted of seven employee groups. Group employee sessions, with a total of 60 participants, also lasted 90 minutes each. Three from each employee group were individually interviewed, giving a total of 21. Interviews lasted approximately 45 minutes.

Initial findings showed staff had an underlying commitment to care and awareness of the wider cultural and organisational issues. There was little if anything from the staff regarding patient and public responsibilities, removing social marketing from the project focus and placing the remit in quality, performance improvement and cultural change. The recurring theme was the requirement for greater clarity and consistency of leadership across the organisation. Accountability and silo working were raised as issues, both identified by Klein (2010) as areas to be addressed within the broader NHS. Encouraging people to work together in multi-disciplinary teams toward a common patient-centred goal was identified as necessary – something already practised to good effect in the Mayo Clinic (Berry, 2004).

Internal issues were greater than the NHSA-identified improvements in the behaviour of patients and the public. An internal change programme was needed to engender performance improvement and cultural change to create an improvement in overall service quality.
Engage, Energise and Embed

Given the findings, the management consultants had to devise a programme of work that would address internal performance and cultural issues so that HAI infection rates could be reduced and overall service quality improved. The Engage Phase centred on short-term process improvement initiatives for which the tools of lean were chosen. Priorities were outlined as ‘must do’, ‘should do’ and ‘could do’, and an action plan developed, attempting to define the central organising principles for the Trust to shape and express ‘the way things are done here’.

Two parallel work streams were embarked upon, emanating from the core idea of “creating a positive and consistent hospital experience” (Figure 1) for the Energise phase:

- **Evolutionary change**: to embed sustainable, patient/customer-focused change across the organisation.
- **Transformational change**: to make a quick and significant impact in the worst performing areas

![Figure 1: A Balanced Response to Embedded Improvement (Consultants at NTHT)](image)

The initiatives were developed under the overall umbrella of ‘Safe Hands’ rather than a specific change programme so that they could be embedded into everyday working practices. The Chief Executive of the Trust stated:

‘This should not be seen as just another change initiative but core to the organisations renewed focus on patient safety.’

‘Patient Safe Zones’ were created at ward level through Instant Impact Interventions initially focused on ‘Hot Spot’ areas. They were based on a combination of transformational change, lean and kaizen principles. Cross-functional teams were formed, facilitated by transformational change experts. This phase followed the RIE format typical of Lean change initiatives in the NHS which provides short bursts of improvement activity over 5 days with a cross-section of workers involved in a particular process (Burgess, 2012).
To promote and embed the overall ‘Safe Hands’ principle of patient safety and care, internal and external communications campaigns were developed. These interventions were designed to focus on the vision of ‘creating a positive and consistent hospital experience’. The ‘Safe Hands’ campaign (Figure 2) combined the RIE approach, 5S and the consultants’ proprietary phased approach tailored Lean to NTHT.

**Figure 2: The Safe Hands concept (Consultants at NTHT)**

### Project Outcome

Using existing performance management data within the Trust, evidence showed the performance of all five wards in the Wing had converged at a higher level, with an average reduction of 42% in infection rates. By 31\textsuperscript{st} January 2014 the hospital could boast of 135 HAI-free days, showing a sustainable embedded improvement. ‘Soft’ aspects of the work were also evaluated by means of a staff questionnaire. The first two wards to complete the ‘Safe Hands’ process, were significantly more satisfied with their area of work. Overall, staff noticed change and the significant impacts achieved, demonstrated in terms of relative to Control Wing and over time, (compared to three months previous). Specifically, the improvements related to layout, cleanliness, availability of equipment, and an emerging sense of teamwork. However, there was less willingness to tackle longer-term issues around culture, leadership, engagement and evolutionary change. This corresponds with the lack of accountability identified in the findings analysis as a significant issue at NTHT. It is also anecdotally representative of NHS culture as a
whole, particularly in the hierarchies that exist within and between different professions, (incorporating consultants, doctors, nurses and managers), the evolution of which is detailed in Klein (2010).

**How does the NTHT project compare with other NHS initiatives?**

Much of the research regarding performance improvement projects in the NHS using Lean provides observations and commentary on specific situations. For instance, Klein (2010) and Currie *et al.* (2008) have noted that in recent years service quality and effectiveness have become significant priorities and this has led to the naive application of external, business sector managerial policies. Radnor and Osborne (2013) observe that the tools of Lean and short-term activities are the primary focus, ignoring the over-arching cultural ethos and the centrality of the customer. Operating processes and systems have internal indicators of success, focused on the reporting of centrally-set targets. Cannon (2013) calls for less focus on managing costs, responding to rules and regulations, budgets, paperwork, eligibility criteria, and projects. He states that eradicating non-value-adding work is the only way to improve performance in the NHS, and the way to do this is to only do what matters to the user. (ie the patient). Cannon’s exhortation epitomises the ethos of Lean, and as others have stated (Millard, 2011; Radnor *et al.*, 2012), success lies in patient-centred definitions of value and waste.

Burgess (2012) evaluated Lean implementations in 143 NHS Trusts to explore the context, process and content of Lean implementation by English hospital trusts. Despite its social marketing beginnings, the NTHT project was typical of Lean projects within the NHS, concerned with the organisation of work, and with the specific tasks and responsibilities therein. Clearly, a reduction in infection rates improves quality. The 15% year-on-year improvement resulting from the NTHT project is in keeping with other performance improvement projects where tangible outcomes are noted. However, less typically, the NTHT project also evaluated cultural change and although it identified a reluctance to tackle longer-term issues, it did at least highlight the need for them to be considered.

In practice at NTHT Lean was used as a constellation of activities related to a pre-existing, target-led problem and not the wholesale organisational change ethos which true Lean is (Krafcik, 1988). It used the most prominent tools encountered elsewhere, such as RIEs, looking at micro-level improvements to raise service quality and patient experience. However, a complication for this project was that the commissioning NHSA did not identify the problem correctly. It was the management consultants, who, once engaged and embarked on investigating the situation in the 5 wards in the Wing, found that staff and the public saw internal, not external, issues were more pertinent for resolution. Staff and the public showed a greater awareness of operational issues than management. In effect this highlights problems with the prevailing organisational culture and with accountability. For this reason, this project was Lean by accident. Lean was not the primary purpose. Instead the tools of Lean provided the most suitable mechanism for resolving the immediate issues, identified in the Engage phase.

As Papadopoulos *et al.* (2011) have noted, use of Lean as a label for interventions in the NHS is widespread but the interpretation is varied. Lean should be a cultural transformation that changes how an organisation works. It requires new habits, new skills and a new attitude throughout the organisation in order to fulfil the underlying goal of improving value for the
patient (Toussaint and Berry, 2013). Yet the reality appears to be that Lean follows a line of service improvement initiatives in the NHS that brings to the fore tensions between clinicians and service leaders around the organisation and the delivery of healthcare work (Mazzocato et al., 2010). It seems Lean principles have become entangled with other reforms and the competing voices of policy-makers, managers, clinical leaders and management consultants and illustrates the desire of policymakers to reorder clinical work thought the introduction of management philosophies and techniques (Waring and Bishop, 2010). This leads to question whether more could be achieved within NHS hospitals if government preoccupation with centralised control and micro-management through targets was replaced with a template intended to reduce boundaries within and across organisations and organisational members, synchronising policy aspirations with existing power arrangements (Currie and Suhomlinova, 2006; Klein, 2010).

**Operations Strategy – a way of synchronising policy, power and boundaries?**

Control is a necessary aspect of managing an organisation since it provides information and a starting premise for decision-making. However, at the micro-level that hospitals have to respond to, it becomes a static concept. The culture of continuous improvement, which emerges from a holistic Lean implementation introduces a dynamic concept into an organisation. It requires choices to be made about the tools to use, in which order and in which emphasis (Garvin, 1992). These are difficult decisions to make, and especially so without an over-arching framework within which to place thinking. Operations Strategy encourages an organisation to focus on a holistic understanding of needs in order to fully realise potential benefits. For a hospital, the primary need would be that of the patient, yet generally the policy-setter is the priority stakeholder, a situation which has resulted in value as specified by the public user at odds with the best use of resources against a backdrop of budget cuts and efficiency targets.

Currently, there are a number of issues which make an already complex situation more difficult to unravel. Patient value and patient needs can take on a variety of forms depending on who is expressing the need – the commissioners, the clinicians, the taxpayer or the patient (Radnor et al., 2012). Costs in the healthcare sector are too high and growing too quickly, which places pressure on government budgets and threatens the availability of timely care and best treatments (Graban and Swartz, 2012). The strategies for patient care and meeting centrally-set performance targets appear to be pointing in different directions and removing an integrated care ethos (Currie and Suhomlinova, 2006). Organisations in all industries develop strategies to respond to environmental factors and competitive challenges such as these. These strategies drive operational decisions. The idiosyncratic nature of the environment in hospital settings suggests the need to develop industry-specific models which align good overall system performance and minimise dysfunction effects between strategy deployment and operational practice (Esain et al., 2008; Goldstein et al., 2002).

**Would an Operations Strategy approach make a difference?**

To deliver ‘triple bottom line’ benefits - better for patients, staff and the organisation (Johnston et al., 2012), the NHS, like all service businesses needs to have over-arching strategies in place to try and prevent non-aligned and disjointed activities and decisions. A number of approaches exist, largely discussing similar principles but espousing different thinking or activities as a purpose and way of developing this strategy. As an example, the Sandcone Model (Ferdows and
De Meyer, 1990), shown in Figure 3 is examined and its potential usefulness to the NHS reflected upon.

Ferdows and de Meyer (1990) state that excellence is built on a common set of fundamental principles which are easier to get in place starting with one particular type of activity and then pursuing other activities that expand and enrich the first set of principles. They state the sequence is important because it is the combination of organisational priorities which form the best vehicle for enhancing the appropriate foundation principles. The sequence outlined helps organisations achieve substance and not just form. This is an important point to emphasise, given the literature on Lean in healthcare in the main seems to demonstrate that seeking ‘low hanging fruit’ seems widespread while lasting cultural improvement is scant. The order of improvement is: Quality, Dependability, Speed, and then Cost.

Cost is last not because it is the least important factor but because cost improvements are an ultimate consequence of resources and management efforts invested in the improvement of quality, dependability and speed. It is relevant to note here also that speed refers not only to elapsed time of providing a particular service but also to responsiveness, which provides an organisation with flexibility – and thereby further enhanced performance.

The sand imagery is a stand-in for management effort and resources, representing the idea that an initial stable foundation is built and as you continue to pour sand you move up the path towards the development of lasting organisational capabilities, needing exponentially more effort and therefore a broader foundation as you move up through the steps. Improvements obtained in this way are more stable and likely to be more sustainable because they emerged as a result of the deeper penetration of good management practices. The advantage of this model seems to be that it encourages the development and nurturing of organisational capabilities cumulatively, which appears to imply they will be more deeply ingrained and therefore longer lasting. Through its cumulative principles it takes into account the trade-off concept, suggesting the
specific pattern of capability enhancement incorporates relevant trade-offs as the organisation moves up the pyramid.

**Conclusion**

The main contribution of this paper is the consideration of the idea that an Operations Strategy developed specifically for the NHS could lead to a continuous improvement ethos which Lean has in principle but not in practice as it is applied within the NHS. Service quality in a hospital is not just about reaching targets set by a central government department; it is about ensuring that the patient experience is consistent throughout a stay whilst nevertheless delivering a successful clinical outcome. This is probably achieved in the main throughout the NHS but the creation of an Operations Strategy would demonstrate a tangible audit trail from inception to implementation, showing patient value to all its stakeholders.

**References**


