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Title: "Healthcare operations service redesign and implementation"

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Abstract

We report on a project that is increasing the effectiveness and efficiency of healthcare provision by getting “the right patient, the right equipment, the right healthcare worker to the right place at the right time for the right treatment to be carried out in the right way.” This is being done through: i) a review of the utilisation and disposition of all logistics/transport assets and an assessment of future demand/capacity issues and patterns for healthcare services; ii) the development of models of service provision leading to radical new designs for services, aiming to provide for best value for money; iii) the pilot implementation of the resulting new operations service designs followed by roll-out across the chosen specialty areas (examples such as palliative care, mental health, phlebotomy services and aids & adaptations are suggested pilots) followed by implementation across the health trust and allied health Trusts, which are leading to predicted cost savings.

Introduction

In healthcare the need to effectively manage services is magnified by the high value placed on delivery by the recipient, the patient (Bamford & Chatziaslan, 2005). This paper reports on a project increasing the effectiveness and efficiency of healthcare provision.

In the United Kingdom (UK) Bradford and Airedale Teaching Primary Care Trust (hereafter described as the Trust) is a provider and commissioner of healthcare services to a catchment area of 500,000 people across the district. Its main funding source is from the UK Government. The Trust has a Strategic Plan to improve the participation in and quality of healthcare for those in its catchment area. Particular priorities from the plan are the timely and convenient provision of accessible care in the right setting, the

improvement of treatment outcomes and efficiency. This means that it has to find new ways of delivering healthcare, which is often more effective (and efficient in overall health economy terms) if it can be delivered locally to the patient. Thus the overall logistics of getting the treatment services to the patient (or vice-versa) can be seen to have a large and growing impact on the quality and effectiveness of the patient care provided. Use of the word “logistics” in this context is intended to convey the meaning of all forms and all uses of transport in their widest sense, recognising that some of the solutions will involve the devolution of services into close proximity to patients – essentially it is about getting “the right patient, the right equipment, the right healthcare worker to the right place at the right time for the right treatment to be carried out in the right way”.

The amount spent just on non-emergency patient transport at present is estimated to be in excess of £400,000 pa; much more is spent in ad-hoc, uncoordinated non-patient transport (e.g. of medical supplies, devices, aids and adaptations etc).

The Literature

Natarajhan (2006) claims that healthcare related issues about safety and quality are currently getting the public’s attention. In order to improve the performance of healthcare service, worldwide healthcare system can ‘adopt’ and ‘adapt’ the best practices, tools and process from other industries as long as their worth have been proved. Perrin *et al*, (2007) defined best practices as ‘doing the right things right’ and may develop through benchmarking, learning, gleaning skills from strategic alliance partners. Therefore, learn from each other and re-use information is the spirit of recognizing and sharing the best practices.

In many communities, under the influence of scarcity of transport, patients' accessibility to gain sufficient medical treatment could be reduced. As a result, the best medical service in the world would be worthless if the intended recipient can not get access to the service (Burkhardt, 2006, p32). There are many causes of transport problems, such as: a) poor coordination of transport, i.e. different facilities and authorities within a district control their vehicles separately, which leads to inefficient planning; b) lack of vehicles; c) abuse of government vehicles; d) poor maintenance and repair of vehicles (Initiative for Sub-District Support, 1997, p1).

Transport can also be a barrier to accessing healthcare services. Attending for a healthcare treatment is not always straightforward, especially when the patients have to travel. Therefore, helping patients to get access to healthcare service could be more important than the introduction of Patient Choice in the UK (Department of Health, 2007). The location of new healthcare and social care facilities has a great influence on the patient's accessibility for healthcare service. PCTs and local authorities should work together to ensure that new services are easily accessible by public transport. Existing facilities should put more effort on accessibility planning partnerships to ensure that patients can access healthcare facilities at a reasonable cost, in reasonable time and with reasonable ease (Department of Health, 2006).

The NHS confederation (2006, p6) stated there are problems with the NHS, such as: process steps are not that transparent; individual responsibilities are not clear; unnecessary work is continually produced; many processes are not linking with each other. So called 'Lean techniques' could be considered as a way to improve the situation (Lodge and Bamford, 2008), not only to reduce the non value added activities, but also to

gain more from the same and available resources. Harrison & Van (2002, p171) stated that lean thinking is a cyclical way to chase perfection by removing waste and improving value from the customer perspective. It provides advantages such as: reduced lead time, improved work routines, better teamwork, empowerment quality improvements and lower costs. There are five principles when establishing lean thinking as shown in Figure-1: a) identification of customer value; management of value system; c) developing a flow production; d) using 'pull' technique; e) perfection.

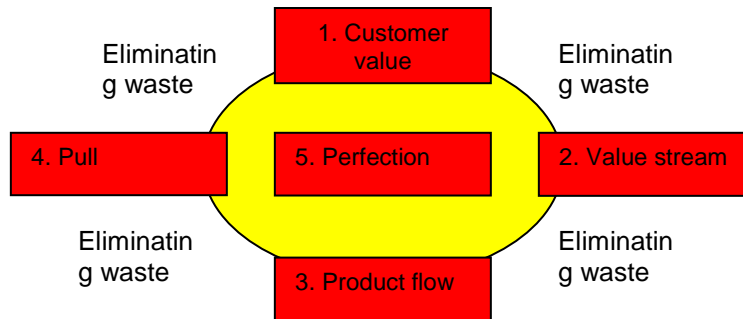


Figure-1 Principle of lean thinking (Sourced from: Womack & Jones, 2003)

The NHS confederation (2006) applied the lean thinking principle as: a) Patient perspective; b) Value stream; c) Flow; d) Pull; e) Perfection.

Since the major reform of the NHS in 1974, the main interface between the NHS and local government is the focus on social care and development of community based healthcare. It is impossible to gain effective commissioning for healthcare without a close coordination and cooperation between healthcare provider and local authorities (Hunter, 1995).

Department of Health (2004, p5) states that in order to release capacity and meeting increasing public and patient expectations, more and more PCTs are trying to

develop new and innovative ways of working in partnership with voluntary and communities sector (VCS) organizations operating as providers of service to patients. The implication is that the VCS are there primarily to support the NHS and contribute to its priorities. The UK Health Development Agency (2004b, p1) mentioned the main concern of improving public services and the wellbeing of local communities is to use available resources more flexibly across local strategic partnerships (LSP). Local authorities can pool resources and integrate services in order to enhance community wellbeing, and employ them in the entire departments. The Health Development Agency (2004a) also claimed that there are great flexibilities for the NHS to combine resources with local authorities and the charitable sector on health related issues.

Methodology

Research into business and management is subject to much rigour to ensure that a contribution of '*material and valuable has been added to the body of accumulated knowledge*' (Remenyi *et al*, 1998: 30). It is generally agreed that research is a process of enquiry and investigation which is systematic, methodical and increases knowledge (Ghauri and Gronhaug, 2002). According to Remenyi *et al* (1998), the various approaches to research can be classified under different taxonomies with the most commonly used forms of research being empirical or theoretical studies. Empirical research is the dominant paradigm in business and management with some commentators associating empirical research as a positivist view only; however, Remenyi *et al* (1998) argue that this type of research can be either positivist or phenomenological in nature. In comparing the two philosophies, positivism usually takes a reductionist approach in order

to be able to control an experiment or an investigation; whereas, a phenomenological approach is holistic allowing for more complicated situations to be examined (Remenyi *et al*, 1998).

An action research methodology was adopted. French and Bell (1990) defined it as the process of collecting research data about an ongoing system relative to some objective or need of that system; feeding these data back into the system; taking action by altering selected variables based on the data; evaluating the results. Its distinguishing feature is that it integrates something of real, practical worth into an organisation (Moore, 1983). A weakness of the adopted research methodology is its very public nature; if the project does not produce tangible real-time results, those supporting it may lose interest and bias any future initiatives. Another limitation is the single case approach, however Remenyi *et al* (1998) argue this can be enough to add to the body of knowledge, if it is comprehensive enough with a longitudinal dimension. Direct intervention (over 24 months), informal interviews (with multiple staff in various roles), participant observation and company documentation were all used.

Findings

Bradford and Airedale tPCT provides and commissions a full range of healthcare services to patients from the district, representing approximately 500,000 people. There are other large Trusts within 15 miles of Bradford (in Leeds, etc) and there is now some limited forms of competition, but the marketplace is extreme regulated. Hence the competition as such comes from other NHS Trusts in the Region. To be competitive in this market requires the efficient provision of a quality service within budgetary constraints – patient

choice of provider is increasingly made on the basis of clinical skills offered and length of waiting time as well as other “quality” measures. The National Patient Choice Survey stated that “location or transport considerations were most commonly cited (72% of patients) as an important factor when choosing a hospital” (July 2007)

The NHS approach to transport service provision has traditionally been modular and piecemeal, separating patient and non-patient services, and with regard to individual efficiencies rather than a more holistic effectiveness. Because provision is fragmented by its nature, management control is problematic to the extent that identification of the different aspects and their associated costs are not readily available. 60% of the Trusts catchment population is from an ethnic minority background, and despite major improvements there is still evidence of disadvantage in access to healthcare amongst ethnic minorities and in the socially-deprived areas. The complexity of logistics involved will require the implementation of an integrated service improvement plan involving 4 healthcare organisations – the Primary Care Trust, Acute Trusts, the Mental Health Trust as well as Ambulance Trusts (e.g. YAS)

The implications of this for the logistics of the Trust’s services are that facilities and services must be provided that are designed to meet the ever-growing demands placed on them for an increasing range of obligations, preferably increasingly locally to the patient, within stringent cost constraints. Resultant savings will be directed into the improvement of patient care and treating more patients.

Transport-related logistics service expenditure across the Trust is estimated be in excess of £400,000 pa – much of which is spent in an ad-hoc manner which is not centrally coordinated (and hence unknown and currently unknowable) and not managed

from the point of view of efficiency or effectiveness. Inflation in this area is running at 5% pa.

The project has been organised around three core areas: i) a review of the utilisation and disposition of all logistics/transport assets and an assessment of future demand/capacity issues and patterns for healthcare services; ii) the development of models of service provision leading to radical new designs for services, aiming to provide for best value for money; iii) the pilot implementation of the resulting new operations service designs followed by roll-out across the chosen specialty areas (examples such as palliative care, mental health, phlebotomy services and aids & adaptations are suggested pilots) followed by implementation across the health trust and allied health Trusts, which are leading to predicted cost savings.

Discussion and Conclusions

The project has identified a number of potential ways to not only be more cost effective and efficient, but to deliver a more patient centred approach to transport ensuring that the system is fair and accessible to all patients where possible. This is now being done through a consultative approach with all the key stakeholders in the district to ensure that, where possible, all needs can be taken into consideration.

A major component of this is the research in to and development of an 'Integrated Transport Unit' for both the health and social care community. This is being investigated in partnership with the members of the Health Community, the passenger transport executive, and transport providers. The annual financial benefits of this new way of working are projected to be:

- £150,000 through efficient staff utilisation
- £480,000 through better service planning, ‘packaging’, and renegotiation of external contracts
- £155,000 through better in house fleet utilisation

As a direct result of this, the tPCT has the ability to make additional costs savings through the removal of ad hoc and non-contracted taxi journeys and the rationalisation of existing contracts.

In addition, there are a number of other areas that have been identified for improvements. One such example is improving access to primary care facilities (Doctors, Dentists etc), which involves partnership working with key organisations in the district not only in the health care sector but across all organisations that have a role to play in the delivery of transport and its associated services, including the voluntary sector. This approach will help the tPCT meet some its core objectives such as reducing health inequalities, and fair and equal access to healthcare. Such a model will ensure that patients can access the care they need, with a resultant decline, and ultimately financial cost to the NHS, in missed appointments.

The commercial benefits of the project will be realised over the entire Health Community and primarily consist of cost savings. And from a qualitative perspective the strategic improvements will include:

- increased access to healthcare and social services
- improved ambulance response time

- a defined 'fit' with the recent government drive to provide more care in the community
- increase capacity and capability of the Health Community to exceed Governmental targets

As detailed, transport is an essential yet often forgotten element in the provision of healthcare services. The work being undertaken in Bradford and Airedale whilst not unique in its nature, demonstrates the benefits of tackling access issues in partnership to ensure effective provision is introduced. Once complete and evaluated, the project and its benefits will be shared on both a regional and national basis.

Predicted savings for the Health Community during the project period (24 months) surpass £1,072,000. This figure forms the minimum recurrent savings and far exceeds the estimated £280,000 per annum. The strategic planning and implementation initiated will be carried forward after the end of the formal project and are expected to exceed this figure annually.

What went well?

There has been a positive reaction to all of the work being done on transport within the district and all key stakeholders have bought into the various work streams being undertaken. Prior to commencement of the project, transport was an after thought in the planning and delivery of services, but now features in new business case strategies and new premises developments. Overall this not only improves patient access but ensures a more joined up and holistic approach to transport needs in the district.

What could we have done better?

Introduced some kind of national network to share all the work being done and find examples of good practice elsewhere – there are a number of key projects which would be beneficial for all trusts/organisations yet no facility to share and discuss. Publicising this project at the beginning and continually could have been a good way of engaging with others across the UK.

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