

Lean thinking strategy in surgical assessment units in English hospitals

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Abstract: Hospital wards in the National Health Service (NHS) are sometimes beset with numerous problems including long waiting times and perceived unhelpfulness of staff. Cash wastage occurs in departments that are overstaffed and swamped with paperwork. Lean thinking may be the way forward for improving working efficiency and driving change towards the enhancement of services. We propose unique models of whole-system thinking of the principal operations in surgical assessment practice, and the desired innovative care parameters with examples of nephro-urologic units. We suggest a strategic innovative approach using an eight-R approach: responsiveness, reliability, resources, respect, relationships, responsibilities, roles and reassurance. Our proposed model aims to manage the realisation of lean benefits of renal care in a disciplined and systematic manner, which is just as important for any other aspect of a hospital care business.

Key words: gap analysis, lean, mapping, nephro-urology, strategy, surgical assessment

INTRODUCTION

Hospital wards in the National Health Service (NHS) are sometimes beset with numerous problems, including long waiting times and perceived unhelpfulness of staff. Prof. P. Goddard has revealed recently that patients are starving in their beds due to nurses being overburdened; super bugs spreading because of inadequate cleaning by privatised cleaners; and sick patients being refused life-saving medications or NHS treatment if they can pay for medication themselves [1]. Indeed, the number of people succumbing to *Clostridium difficile* infection has increased by 28% in England and Wales, with 8,324 deaths reported in 2007 [2]. The deaths from Methicillin-resistant *Staphylococcus aureus* have fallen slightly from 1,652 (2006) to 1,593 (2007).

The media exacerbates the problem by imparting a negative image of hospital facilities. Cash-shortages and rising inflation have impacted the testing and consulting functionalities in hospital wards and units. Cash wastage occurs in departments that are overstaffed and swamped with paperwork. Lean thinking may be the way forward for improving working efficiency and driving change towards the enhancement of services [3]. Lean thinking in medical practices allows the opportunity to resolve inefficiencies, effect a reduction in costs, and achieve a higher turnaround using the same staff and processes, but in a more effective manner [4].

Staff members complain of shortages and complicated procedures including massive paperwork. In order to evaluate the functionality of current NHS provisions, we propose a gap analysis by analysing the current functionalities and the patient flow paradigm (Figure 1), and matched this with the

desired level of attainment (Figure 2). It was assumed that the experiences of patients related to their first appointment on the surgical ward. In many cases, we describe personal experiences of observations of processes and operations in numerous hospitals distributed in major cities in England. We suggest ways in which a strategy of lean could be implemented into the functioning of a surgical unit, with emphasis on a renal unit. We used unique models of whole-system thinking of the principal operations in surgical assessment units and the desired innovative care parameters.

Reality in surgical assessment units. The efficiency of any organisation, in the public's eye, is how it is designed at the point of entry. One is often confronted with surprises, positive and negative, which can influence one's view of the efficiency of ward operations. Rushing to meet an appointed time is often frustrated by the long queues at reception (Fig. 1). Sometimes patients forget their appointment letter which causes further delays with check-in timing. Hospital complexes can be very large and effective sign posting is essential to help patients' find their way to the correct entrance. The cleanliness of the hospital is decided by the amount of litter outside and in the entrance. Key considerations are that the staff must be kind, mannerly and courteous. However, in some cases, staff members may be overworked and dehydrated, which can be reflected in their gloomy attitudes. Patients can become frustrated by insufficient staff at the reception desk. Normally, the staff should enter the patient's details into a computerised system which should be linked via an intranet to the desktops of the sisters and consultants. It is clearly important, therefore, that the first experience of the patient with the hospital unit to which they have been assigned should be positive (Fig. 2).

The waiting areas in many hospitals need to be improved as many are overwhelmingly crowded, and usually provided with insufficient seating. Bare walls and lack of emotionally-soothing objects, such as appealing pictures, potted plants

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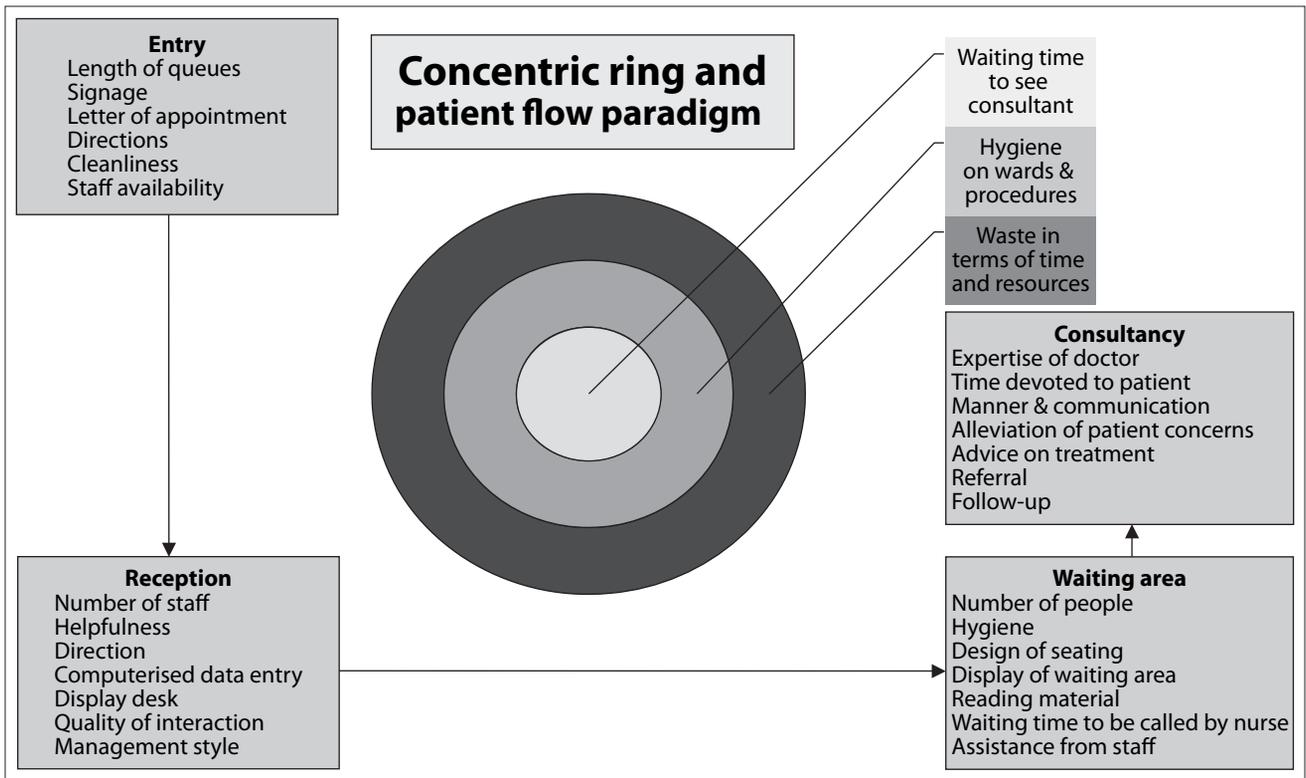


Figure 1 Concentric ring and patient flow paradigm to illustrate the experiences of patients entering a surgical ward for the first time.

and wall decorations, or pleasant music, make the wait uncomfortable and unpleasant. Seating can be very hard and lack of magazines and reading material make the waiting time boring. Often there is a distinct lack of staff and nobody will approach patients to assure them that their turn is coming, or to apologize for delays. Close inspection of the areas close

to the floor and around the legs of tables and chairs gives a negative view of hygiene and one's safety in the reception area.

Patients expect a competent doctor. It is strange, though, that exactly the same questions asked by the nurse who calls the patients in, are also asked by the doctor. Additionally, personal

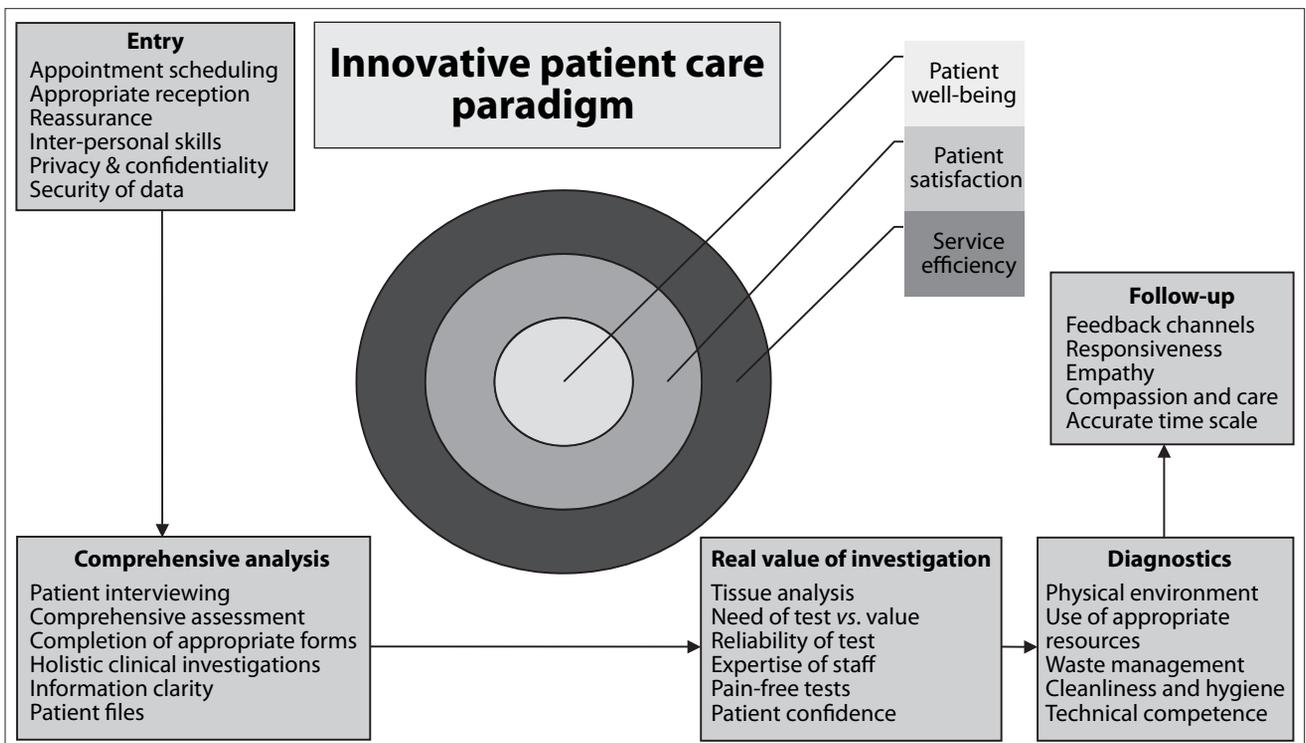


Figure 2 Desired patient flow paradigm and functional efficiency to enhance patient satisfaction when entering a surgical ward for the first time.

observations show that patients are not always asked to clean their hands with the alcohol gel provided. It is certain that performance feedback of hand hygiene reduces nosocomial methicillin-resistant *Staphylococcus aureus* (MRSA) infection rates and antibiotic use [5]. The time devoted to each patient needs to be adequate and, although it is important for the doctor to look through the patient's notes, the consultation should be quick and thorough, but not rushed. The manner and communication between doctor and patient needs to be of high quality, which helps put the patient at ease and alleviate any concerns. Treatment options need to be explored and referral or follow-up decisions made. It is possible that follow-up can be achieved successfully by telephone, as the letter-appointment booking-in patients for a follow-up session may result in the over-burdening of scarce human resources, particularly when the patient has recovered.

Innovative operations in nephro-urologic surgical assessment units. In this section we present our suggestions for improvements in the service provision in surgical assessment units. Our observations are based on nephro-urologic units.

The aim of staff at reception is to utilise resources to courteously speed-up the assistance and checking-in of patients reporting to a unit (Fig. 2). Renal patients often present with numerous symptomatology, problems, and are often in pain. The drugs they are taking may have unpleasant side effects. Certainly it is unwise to leave patient files lying around carelessly where anyone could read through them or glance at their contents. Where necessary, nursing staff should assist patients with the completion of forms, and take bodily measurements and information that is not then repeated verbatim by the examining doctor. Samples of tissue, especially blood, should be taken for holistic analysis of biological, hormonal and toxicological parameters. The problem in the NHS is that excessive amounts of blood are taken and not all routine tests are performed on the same day. Over-stocking of wards with disposable instruments has significant cost-benefit implications. However, in the case of dialysis lines, there should be an adequate supply available as the internal diameter of the line is crucial for aligning blood volume with BMI. Staff need to show that they are experts in their field, and understand that patients may express a very aggressive and unpleasant demeanour if in pain or discomfort. Some patients may also lack home support. Reassurance of patients will boost confidence and sense of ease.

An important point is unit hygiene. The British media has inflated negative problems inherit in the NHS, ranging from understaffing and over-worked staff to hygiene, with horrendous examples of MRSA and Hepatitis B/C infections contracted on wards. Technical competence is essential and phlebotomists should ensure that sample vials are labelled correctly. Spillage of samples may result in cross-contamination. Sisters must manage their staff in a supportive manner, not in an autocratic, top-down approach, and feedback and dialogue channels should be opened at all levels. An atmosphere of empathy, responsiveness, compassion and care should be facilitated. A blame culture should be avoided at all costs. In some instances, the fear of making a mistake attenuates the confidence of ward nurses and adds to workplace stress. Report and form completion must be carried out within an accurate and realistic time frame, and not rushed. Liaisons with assigned consultants, registrars and clinicians should be discussed among all medical staff in the unit. The input of

the renal dietician, clinical psychologist, social worker and school teacher (in the case of child units) should be constantly facilitated (Fig. 2).

Gap analysis and strategic innovation. We suggest a strategic innovative eight-R approach: responsiveness, reliability, resources, respect, relationships, responsibilities, roles and reassurance (Fig. 3). We recommend that there is a patient flow continuum, ensuring that there is correct clinical decision making in a timely manner that enables a speedy diagnosis and correct treatment plan. Reliability should occupy 50% of the continuum because, given the nature of renal disease, an effective service will reduce waiting times, infections, and unnecessary pain and discomfort. This will assist with quicker access to proper assessment by a multi-disciplinary clinical team. Indeed, the need for dialysis is crucial for alleviating the abnormal biochemical serum parameters and should not be delayed. Appropriate human and financial resources occupying 10% of the continuum should enhance the unit's capabilities by increasing the knowledge and awareness of management and staff on the immediacy and priority of treatment needs. Respect (5%) for the experience of the clinician and the team should be merged to foster an atmosphere of co-operation. This will then foster closer relationships in the unit (5%), enabling a more competent team with clear responsibilities (5%) which addresses the needs of the kidney patient by taking appropriate blood and urine samples, and comparing results against appropriate, up-to-date standard values. Responsibilities will extend to consultation of experts in nutrition, pharmacists and surgeons performing intravenous cannulation and stone removal procedures. The roles (5%) should be directed by a response to the immediacy of renal failure which can present at pre-renal (as a consequence of ineffective perfusion of structurally normal kidneys); renal (structural damage to glomeruli and tubules); and post-renal (as a consequence of urinary tract obstruction) [6]. The efficiency of a renal unit will also depend on the appropriate analysis of urine (dipstick, microscopy and urine electrolytes), blood (full-blood count, clotting, electrolytes, immunology, and blood cultures), electrocardiograph data; chest radiography and ultrasonography [6]. Efficient units should reassure the public (10%), which is aligned closely with reliability (50%). The gap existing between the high expectations of a patient for information, and the current knowledge and reluctance of healthcare professionals to deliver, e.g. pharmacogenetic services, emphasises the need for better education and training of healthcare professionals [7]. Responsiveness (10%) in the renal unit is associated with diagnosis, who investigates the case, the initial management and long-term management. In this regard, a commitment to a genuine renal health agenda,

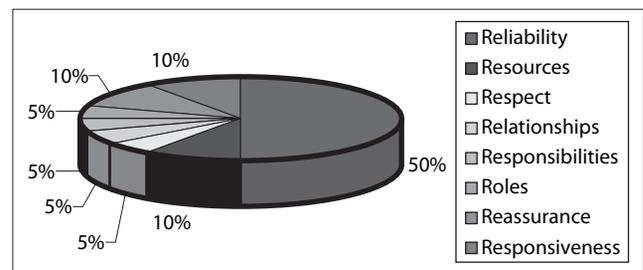


Figure 3 Eight-R strategy percentage-apportioned formulation used to bridge the gap between current and innovative state of patient care in a nephro-urology unit.

designed to improve the quality of peoples' lives, stands a better chance of gaining support for the management task than the continuing idea of a business-driven organisation [8]. These lean thinkers should be ready to act in order to participate and contribute in the renal unit without assuming any immediate personal benefit [8].

RECOMMENDATIONS

We suggest a number of ideas based on previously published work to be incorporated into a theme of strategic recommendations designed to enhance functional efficiency within a nephro-urology unit.

An efficient unit will reduce clinical risk and improve cross-saving. Renal tariffs for Payment by Results (PbR) may be used to determine the true cost of dialysis provision if choices about modalities are not to be influenced by erroneous estimates of cost. An idea of true costs of modalities will ensure as many dialysis patients as possible are accommodated within the limited funds available from the NHS [9].

Wider use of Information Technology is useful in assisting the management of renal disease. Some strategies that may be used to perform this include educational feedback; utilization of computerized decision support systems; and enhancement of the patient's journey [10]

One problem that has been highlighted in the NHS recently is the imbalance in the ethnic make up of the waiting list, the donor pool, and renal transplant recipients. Differences exist in both post-transplant outcomes and time to transplantation between patients of different ethnic origins. Waiting times are influenced by allocation schemes, and the 2006 UK National Kidney Allocation Scheme was designed to achieve greater equity of access to transplant for all patients, regardless of geography, blood group, or ethnicity [11].

Specialist training is needed to increase the number of skilled renal nurses presenting for employment attracted by the opportunity of undertaking specialist renal courses. In return, they benefit from the advanced renal programme, which enables them to deliver better quality care with increased job satisfaction [12]. Additionally, there is scope for further investigation into the working relationship of nurses and medical staff, how the administrative roles of nurses influence their ability to provide patient care, and whether the opinions expressed with regard to decision making are widespread within the nursing community [13].

Diabetes in conjunction with chronic, end-stage renal failure is a most unpleasant condition. Patients, carers and health care professionals may be confused by either too little or conflicting advice provided by the two specialist teams. Within this context, the role of the Renal Diabetes Nurse (RDN) serves to bridge the gap by ensuring effective links and communication. Currently, renal referrals are made from surrounding secondary care settings and primary care GP practices [14]. Having a counsellor as a member of the multi-professional team has made a positive contribution to the way in which people with end-stage renal failure manage their illness as part of an integrated approach to patient care [15].

CONCLUSION

Management and policy-makers need to be more proactive in their management style and implementation of priorities towards the care and support of renal patient, a journey that begins with the receipt of an appointment letter to a visit to the ward. Progress on the lean journey has been enlightening but it has not been without its challenges and dilemmas. Lean thinking principles are certainly useful for creating a means of productive and clinical efficiency, and a reduction on practice-based commissioning. We recommend the eight-R approach to bridge the gap between the current state of affairs towards a more efficient and innovative patient care paradigm. Our proposed model aims at managing the realisation of lean benefits of renal care in a disciplined and systematic manner, which is just as important for any other aspect of the hospital care business. The model will certainly enable health care professionals to visualise problems more easily and utilise counter-measures for their rapid solution.

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