

Implementing large-scale quality improvement – lessons from The Productive Ward: *Releasing time to care*TM

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ABSTRACT

Purpose: This paper is concerned with facilitating large-scale quality improvement in health care, and specifically understanding more about the known challenges associated with implementation of Lean innovations: receptivity, the complexity of adoption processes, evidence of the innovation, and embedding change. Lessons are drawn from the implementation of The Productive Ward: Releasing Time to Care™ programme in English hospitals.

Design/participants: The study which the paper draws upon was a mixed-method evaluation which aimed to capture the perceptions of three main stakeholder groups: national-level policymakers (15 semi-structured interviews), senior hospital managers (a national web-based survey of 150 staff), and healthcare practitioners (case studies within five hospitals involving 58 members of staff). The views of these stakeholder groups were analysed using a diffusion of innovations theoretical framework to examine aspects of the innovation, the organisation, the wider context and linkages.

Findings: Although The Productive Ward was widely supported, stakeholders at different levels identified varying facilitators and challenges to implementation. Key issues for all stakeholders were staff time to work on the programme and showing evidence of the impact on staff, patients and ward environments.

Implications: To support implementation policymakers should focus on expressing what can be gained locally using success stories and guidance from 'early adopters'. Service

managers, clinical educators and professional bodies can help to spread good practice and encourage professional leadership and support. Further research could help to secure support for the programme by generating evidence about the innovation, and specifically its clinical effectiveness and broader links to public expectations and experiences of healthcare.

Originality/value: This paper draws lessons from the implementation of The Productive Ward programme in England which can inform the implementation of other large-scale programmes of quality improvement in health care.

BACKGROUND

Like many other westernized countries the health service in the United Kingdom (UK) is under pressure to perform better with fewer resources. Policymakers and healthcare professionals face the challenge of increasing the efficiency and quality of services provided (Ham 2004). This paper is concerned with facilitating large-scale quality improvement in health care. Specifically, how staff working at different levels of a health system can implement innovation to improve the quality of the system they work within (Hartley 2005).

The paper draws on the insights gained by the NHS Institute's The Productive Ward: *Releasing time to care*[™] (The Productive Ward) Learning and Impact Review (undertaken February-June 2009). The Productive Ward aims to empower ward teams to identify areas for improvement by giving staff the information, skills and time they need to regain control of their ward and the care they provide. Here we examine some of the challenges and facilitators to national implementation from the perspective of three stakeholder groups: policymakers, senior managers and healthcare practitioners. These insights are discussed in relation to current theory and evidence on the challenges to implementation of Lean-inspired innovations in health care.

The diffusion of innovation literature offers a useful existing body of theory and evidence to inform the adoption and use of quality improvement initiatives by healthcare organisations. The term innovation has been defined as a set of ideas, principles and practices that may be adopted in whole or in part (Rogers 1962). Innovating organisations critically seek and adapt innovations to achieve their strategic goals (Pettigrew and Fenton 2000). There are associated terms to describe the uptake, spread

and sustained use of innovations in healthcare; however these tend to be used interchangeably and to mean different things in different contexts (Buchanan et al. 2007). The term dissemination is generally used to mean intentionally and actively spreading a message to a defined target group (Mowatt et al. 1998). While diffusion refers to the informal processes and networking that can help to spread abstract ideas and concepts, technical information and practices within a social system (Rogers 1962). Greenhalgh et al. (2005) use the innovations literature to develop a diffusion of innovations framework, comprising four broad domains of programme adoption and implementation: the innovation itself; the wider social/healthcare context; the implementing organisation; and linkages between the previous three domains.

'Lean Thinking' (Lean) is a relatively new innovation in healthcare when considered against the history of its development and use in the commercial sector (Womack et al. 1990). However, there is strong evidence of the widespread use of Lean across the healthcare sector (Young and McClean 2008, Radnor and Boaden 2008, Brandao de Souza, 2009). Lean can help organisations to refine working processes and practices by focusing on the values which drive systems (Rooney and Rooney 2005) and to maximise operational processes towards achieving such values (Crump 2008). For example, the five principles of Lean put forward by Womack and Jones (1996) focus upon identifying value from the point of view of the customer and then on making the value steps flow continuously. In manufacturing industry, Lean has been used to achieve economic and operational benefits (Taylor 2006). While in the healthcare sector Lean has helped to achieve improvements in efficiency and safety in hospitals in the United States (Savary and Crawford-Mason 2006), Australia (Bem-Tovim et al. 2007) and the United Kingdom (Jones and Mitchell 2006, Fillingham 2007).

Previous authors have developed classifications to describe Lean implementation. Hines et al (2008) express implementation as progressing through typical stages towards an organisation becoming 'Lean'. Alternatively, Pettersen (2009) argues that there is no consensus on a definition of Lean and thus organizations should make active choices and adapt the concept to suit their needs. It has been debated as to whether Lean has been implemented in a 'complete' way in the public sector or in a way that embraces the underlying philosophy (Radnor et al, 2006). In the case of healthcare Brandao de Souza (2009) develop a taxonomy of approaches to implementation from the literature, including 'manufacturing like' approaches, 'managerial and support' and 'organisational' applications. Emiliani (2008) suggests implementation can be 'fake Lean' rather than 'real Lean'. Fake Lean is where an organisation uses just the tools with an emphasis on rapid improvement rather than long-term change. Real Lean is felt to mean showing a commitment to continuous improvement using tools and methods to improve productivity; as well as showing respect for people through leadership behaviours and business practices.

In The Productive Ward Lean is developed into a programme which aims to give healthcare managers and practitioners the tools by which to make efficiency savings in the care they deliver. The Productive Ward was devised and developed by the National Health Service Institute for Innovation and Improvement (NHS Institute) in England. Members of the NHS Institute worked with industrial partners from Toyota to look at how care delivered in hospital ward settings could be streamlined. The Productive Ward programme is different to Lean *per se* because it aims to empower frontline staff to improve the quality of the care they provide. The programme consists of 13 modules and tools along with clinical facilitation, conferences, training and web-based support. Healthcare organisations following the programme are encouraged to implement three

foundation modules in the first instance, these are: Knowing How We are Doing, Well Organised Ward, and Patient Status at a Glance.

Drawing from the innovations literature, it is possible to identify four types of challenges to implementing innovations such as The Productive Ward in a healthcare system. The first of these challenges is receptivity. Staff perception is known to play an important role in receptivity to an innovation (Greenhalgh et al. 2005) and there is a need to further understand the influence of perception (Brandao de Souza 2009) and social context (Dopson et al. 2002) in the diffusion of innovation. Specific potential issues in relation to the implementation of Lean are concerns about staff resistance to commercial ideas and disinterest in working to productivity values (Young and McClean 2009).

The second challenge reported in the innovations literature is to understand the complexity of adoption processes. Previous research shows that the decision to adopt a programme such as The Productive Ward is not a one-off, all-or nothing event but a complex and adaptive process (Van de Ven et al. 1999). In their review of the field Greenhalgh et al. (2005) identify a series of critical factors in the diffusion of innovations, including: socio-political influences, the needs of the adopters, the presence and actions of external change agencies, mechanisms of spread, perceived benefits of the innovation, operational attributes of the innovation and the organizational context of adopting organisations. These factors are known to be interconnected – in a way that brings the social and technical together (Joosten et al. 2009). Previous authors have argued that it is important to gain insights into the complexity of processes and decisions (McNulty and Ferlie 2002), in organisations made up of different healthcare providers (Pettigrew et al. 1992), and the logic and structures of professionalism (Kitchener 2002).

The third challenge is generating evidence about an innovation such as The Productive Ward. In particular, the problems of attributing, documenting and interpreting the implementation costs and benefits of any specific initiative (Berwick 2003). Part of this challenge is that impact depends on local contexts for change and how the mechanisms of change are used (Ham et al. 2003).

The fourth challenge is embedding change. Buchanan et al. (2007) examine the implementation of a number of national large-scale quality improvement initiatives in the UK and identify common challenges as including: replacing old ways of working and developing appropriate policy, practice and research to support spread and sustainability. There is also the issue of how best to establish long-term responsibility for quality programs (Ham et al. 2003).

AIMS

The aim is to use the case of The Productive Ward programme to gain insights into four areas of challenges identified from the current research literature on innovations, focusing on the use of Lean Thinking in health care. These challenges can be summarized as: staff receptivity, the complexity of adoption, evidence of the innovation, and embedding change.

The aims of the national Learning and Impact Review evaluation study which this paper draws upon were:

- 1) To describe and determine how The Productive Ward evolved and spread including identifying the characteristics and key attributes of The Productive Ward that caused the 'pull' phenomenon from NHS frontline staff.

- 2) To map current uptake and initiatives under The Productive Ward programme.
- 3) To determine the extent to which The Productive Ward programme: provides staff with the information, skills and time they need to regain control and identify areas for improvement; increases the proportion of time nurses spend in direct patient care; improves experience for staff and patients; facilitates improvements in efficiency in terms of time, effort and money through for example structural changes to the use of ward spaces; and motivates nurses and other staff to implement the programme, to initiate change and the extent to which their work satisfaction is influenced by aspects of Productive Ward participation.
- 4) To determine any facilitators and inhibitors of implementation, initial success and sustainability of The Productive Ward programme.

METHODOLOGY

The Learning and Impact Review employed a mixed method research design. Part of the study was to use NHS Institute purchasing data to quantitatively estimate adoption rates nationally and these findings are discussed elsewhere (Robert et al. forthcoming). This paper makes use of the 'rich' qualitative accounts (Langley, 1999) provided by three different 'stakeholder' groups (Golden-Biddle & Locke, 1997) - policymakers, organisational managers and healthcare practitioners who had personal experience of implementing the programme. As this part of the study aimed to explore the perceptions and experiences of stakeholders we used a qualitative and inductive approach (Denzin and Lincoln 1998). We did however make use of the aforementioned diffusion of innovation framework (Greenhalgh et al. 2005) to structure the study around four broad domains of programme adoption and implementation: the innovation itself; the wider social/healthcare context; the implementing organisation; and linkages between the previous three domains.

It was necessary to use different techniques for participant sampling and data collection because of the different roles, professional practices and working patterns of the three stakeholder groups. These were as follows:

- (i) To gain an understanding of the development and strategic implementation of the programme we purposely selected 15 national and regional policymakers to interview on the basis of their leadership positions; and aiming for representation of at least five of the ten strategic health authority regions in England. Semi-structured interviews were conducted face-to-face or by telephone depending on the preference of the interviewee. Each interview lasted 15-35 minutes and covered questions on: personal role and involvement in the programme, experiences of implementation, barriers and challenges, outcomes and sustainability. These were audio recorded and transcribed for analysis.
- (ii) To target as many service managers and staff with organisational-level implementation across England as possible we developed a national online survey (using the website SurveyMonkey.com). This was advertised using email networks and the professional press and a prize of £50 gift voucher was offered as an incentive to complete the questionnaire. The survey contained questions on personal information, support/organizational context, progress with implementation, barriers and facilitators, impact and 'advice for others'. A total of 150 self-selecting organisational leads, service managers and clinical leads responded from 96 different healthcare organisations across England.
- (iii) To gain a more detailed picture of local implementation from 'ward to board' we made use of in-depth case studies (Yin 1993) of five hospitals in different regions of England. Sites were selected from an NHS Institute record of 60 implementing hospitals according to the following criteria: geographical location (five different strategic health authority regions), stage of implementation, type of support package

purchased from the NHS Institute (standard or accelerated), and willingness to participate. Within each site interviews were undertaken opportunistically with 55 staff nominated by Productive Ward leads. Further detail of the hospitals and participating staff is provided in table 2.

The analysis of the qualitative data involved reading through each interview transcript to identify key themes (Langley 1999), and categorizing issues according to the domains of the diffusion of innovation framework. The quantitative survey data were analyzed using statistics; presented as percentages in the full results (NHS Institute & NNRU 2010).

Cross case analysis (Yin 1993) of the case study hospital sites aimed to examine issues to do with organisational context such as managerial support, resourcing and leadership.

RESULTS

The results presented here emphasise the main key facilitators and challenges to implementation as they were expressed by policymakers, senior managers and healthcare practitioners. Key issues identified by the thematic analysis are summarized in table 1. Selected detailed results from the full report are presented below to expand upon these themes. To ensure organizational and individual anonymity we have identified the region of England where participants were employed but not their organization's name.

National and senior policymakers

The interviews with national and regional policymakers revealed a sense of commitment to providing support to healthcare organisations to implement this particular programme and enable long-lasting improvements to the way services are delivered. A key theme of the interviews was to find ways to communicate the potential for change to NHS organisations – who may not previously have perceived Lean techniques to be relevant

to themselves or healthcare settings. Part of the response from policymakers was to recognise that different professional communities (managerial, quality improvement specialists, and clinical staff, for example) are likely to interpret the aims and impact of a programme such as The Productive Ward in different ways. Consequently, there was a common view that policymakers needed to assist adopting hospitals to raise awareness about the potential and need for change to 'win the hearts and minds' of staff. A way of achieving this was to create a vision that conveyed the meaning of the innovation to different staff groups – in other words to 'frame the innovation' (Bevan 2009) in a way that creates an emotional connection with core professional values:

“The language of ‘Releasing time to care’, rather than cutting out waste connects with the desires of clinical staff to spend more time directly caring for patients”. (Clinical Facilitator, NHS Institute)

At the same time the language of 'productivity' speaks to the members of a hospital board and stimulates service manager's agenda of meeting efficiency and quality goals. Five respondents, who were Strategic Health Authority (SHA) regional leads, said their role had been to help to disseminate information to hospitals and to stimulate interest in the programme. All of the SHA leads had promoted the potential benefits of implementation with senior NHS leaders, explaining how the programme could assist with the transformation of services, link with existing programmes and evidence of best practice.

“My role within the SHA, it's about learning the lessons and sharing best practice, and being able to facilitate networking” (Regional lead for clinical standards)

Such top-down 'dissemination' was supported by standard written materials from the programme, for example the Executive Leaders Guide. However, a key challenge was facilitating access to suitable and sufficient training and support, simply because of the large number of hospitals taking up the programme nationally. For this group of

stakeholders it was important to roll the programme out in a planned and measured way and to link the work with other quality initiatives, yet this was an aspiration for implementation, which instead tended to be driven by the interests and enthusiasm of senior managers within hospitals.

Senior managers

A national online survey of Productive Ward organisational leads (150 service managers and clinical leads in hospitals) showed that nearly all agreed that 'The Productive Ward fits well with what we want to do in this organisation' (92.3%, 102 of 114) and that 'Releasing time to care is a cause that I strongly identify with' (96.5%, 109 of 113). While it is not surprising that this group of stakeholders were very supportive of the programme, it was generally the case that they were attracted to the programme because they perceived its potential for impact on service settings.

"It was the frustrations you have had for a long time, and stopped thinking about, because they haven't changed. Productive Ward was actually a project that was saying, 'Well let's stop, let's look at those again now, and actually spend some time trying to fix them'" (Productive Ward Facilitator, South West region)

For respondents who were senior service managers the availability of resources to provide dedicated project leadership, to help secure strong support from senior staff and to 'buy in' external support (clinical facilitation, study days and networking) were key facilitating factors. The majority of survey respondents agreed that leadership and support from senior staff in their organisation was good (68%, 69 of 107). Despite high levels of interest and engagement nationally the most significant challenge, reported by over half of these senior managers, was overcoming staffing pressures. They faced challenges of generating enthusiasm for the programme often because of lack of opportunities to engage frontline staff outside of pressurised work environments. Facilitating factors were to allocate resources for staff cover, work with the existing

enthusiasm and talent of ward managers and staff, and to provide good information about the programme.

“SHA funding for the roll-out of this programme has been invaluable. It has enabled us to have the essential resource of a full-time facilitator, employ a part time handyman and allocate a small amount of funding to each ward to use on backfilling staff and equipment” (Productive Ward Facilitator, general hospital South East Coast region)

Senior managers felt it was essential to gain the support of hospital executives, clinical directors and to collaborate with other managers working elsewhere:

“We have steering group meetings, facilitators communicate via face-to-face meetings and email and networking with other trusts and organisations to share knowledge and experience.” (PW facilitator, community hospital South East Coast region)

For the majority of these senior managers being able to show early tangible outcomes helped to secure ongoing commitment from both their managerial colleagues in the organisation and frontline healthcare practitioners. The majority (64%, 64 of 100) agreed ‘There have been measurable improvements as a direct result of The Productive Ward’. Benefits included better organised working environments, fewer patient safety incidents, and cash savings in terms of returned excess stock.

“When we started the project we had complaints from relatives, high number of falls, high incidence of errors, the nurses were worn out and demoralised, and the patients felt the domestics looked after them. Now the ward team are motivated we have not had a complaint for 7 months the number of falls has decreased.” (Matron, NHS Foundation trust East Midlands region)

There were some reports of improvements in patient flow where Productive Ward work had reduced repetition and interruptions during patient handovers. At the time of the survey (March-April 2009) most senior managers had begun to see evidence of

cumulative gains, such as increases in staff commitment to quality improvement, for their organisation that extended beyond immediate short-term benefits.

“Staff previously disinterested in service improvement are now taking the lead in changes at ward level. They are empowered to challenge and feel supported to keep going until actions are resolved” (Project manager, general hospital London region)

Other outcomes included improvements in teamwork and departmental collaboration. It was also felt to be important to promote staff achievements across the organisation and to invite executives to visit ward areas to hear about developments in the work.

Relatively fewer staff (38%, 38 of 100) felt that patient and public involvement in the programme was good, which was an issue that we pursued in our case studies and interviews with healthcare practitioners.

Healthcare practitioners

For healthcare staff working to implement the programme at ward-level the attraction was the potential to deliver better quality patient care by using their time better. Staff within all five hospital case study sites described the potential for change and perceived the programme as offering a solution to some of the day-to-day problems they were facing with the organisation and delivery of care, for example with the organisation of patient handovers and meal times. Across the five case study sites there was a general sense that The Productive Ward programme was valued as being novel and useful – even though different approaches to implementation had been chosen (see table 2). Healthcare staff described The Productive Ward as giving them a sense of permission to turn a critically reflective eye on their work practices and to make suggestions for change. The opportunity for ward teams to choose different modules to apply to their particular contexts instilled a sense of involvement and ownership of improvement activities.

As summarized in table 1, for healthcare practitioners, balancing work pressures, clinical demands and improvement efforts was a continual challenge. This group of stakeholders in particular talked about the challenge of meeting multiple organisational targets and undertaking other contemporaneous quality initiatives. Favouring the implementation of The Productive Ward was the ease of accessibility to the modules and accompanying resources. The potential for wards to self-nominate to take part (or elect not to) was also seen as being an important facilitating factor for implementation. Healthcare staff said they found the materials appealing because they made use of language, checklists, and concepts that were familiar to them. Financial resources made available through strategic health authorities, and senior executive and clinical support were also perceived as being essential to being able to make an ongoing commitment to adopt and implement the programme. Yet, even when organisations had achieved successes they found that work on the programme slowed at particular times because of staffing pressures:

“We had a brilliant first year. We flew. Everybody was 100% on board, our first two, three modules, flew, and we were doing wonderfully. And then January, all of a sudden we had a very big staff crisis... and that changed everything” (Ward Sister, South East region)

At all five case study sites, healthcare staff reported benefits to the social and work environment, but perhaps most significantly working on the programme was described by some staff as a long awaited opportunity for personal or career development. Senior managers at the case study sites explained that the programme was helping to build leadership skills at ward-level by teaching staff about Lean theory and techniques. A related challenge was to encourage staff to take ownership of Productive Ward metrics in order that they can make targeted changes and understand improvements.

“Collection of baseline data improves ward cohesion, refocuses on patient centred, safe, quality care and allows sharing of knowledge/skills/ways of working” (Lead Nurse Patient Safety & Quality, hospice South East Coast region)

Demonstrating change before and after implementation was also perceived to be important for continued financial support from the hospital board. Typically, however this was problematic because data was only collated over a relatively short period of time and it was often not possible to show longer-term trends. Our research at the case study sites indicated that potentially consistent measures could include routinely collected data such as falls incidence, infection rates and pressure sore incidence, further research is being undertaken by the NHS Institute to examine the feasibility of using measures like these to evaluate the impact of the programme.

DISCUSSION

The main limitation of the Learning and Impact Review is that the data have been gained from people and hospitals that have engaged with implementing The Productive Ward programme. Whilst this provides useful information about what supports adoption and implementation of Lean techniques, further insight could be gleaned from ‘non-adopting’ hospitals about the barriers to using such approaches. There is also more to learn about Lean implementation in community health settings. The findings do however help to provide insights into the challenges identified from the innovations literature in relation to the adoption and implementation of innovations. These are discussed below.

Receptivity issues

In the case of The Productive Ward, central resourcing and senior executive and board level backing, as well as the availability of expert support from an external change agency (the NHS Institute), were key facilitating factors for increasing the receptive

context from the point of view of all the stakeholder groups. In terms of understanding the influence of social context (Dopson et al. 2002), all three groups of stakeholders felt it was important to show progress towards meeting quality and efficiency goals.

Healthcare practitioners were generally open to working towards improved efficiency and productivity – and they recognized the need and potential for change. This contests the concern that healthcare staff are resistant to commercial ideas and productivity values (Young and McClean 2009). There was however some scepticism amongst healthcare practitioners about focusing too narrowly on productivity as a primary goal at the cost of quality services and patient experiences. Although these findings point towards the potential for large scale quality improvement brought about by direct involvement of frontline staff, there is more to be learnt about how staff engagement in a Lean-inspired programme affects staff receptivity to subsequent experiences of innovation (Brandao de Souza 2009).

The complexity of adoption

These stakeholder's experiences of The Productive Ward support Greenhalgh et al.'s (2005) observations about the complexity of the adoption processes in a system made up of different healthcare providers and professional cultures. A notable finding was the variation in perceived timescales of implementation by stakeholders at different levels of the health system. For national and regional leads, the decision to back the programme in England with a £50 million investment in 2008 (Speech by The Rt Hon Alan Johnson MP, 2008) was quickly operationalized through strategic regional leads – leading to a view amongst these stakeholders that The Productive Ward was being rapidly rolled out to the NHS. Yet from the perspective of many healthcare practitioners implementation is only in its infancy. Previous models of implementation, such as the diffusion of innovation framework (Greenhalge et al. 2005), have not generally recognized the significance of different stakeholder's perspectives of the pace and scale of

implementation. This issue of variations in perceived progress could have a bearing when defining objective benchmarks and realistic goals for the implementation of large-scale quality improvement programmes.

Evidence about the innovation

The findings also confirm the importance and challenges of generating evidence about an innovation. A key issue for all stakeholders was showing evidence of the impact of The Productive Ward on staff, patients and ward environments. Results from our research support previous accounts which indicate that The Productive Ward programme may achieve efficiencies in operational routines (Wilson 2009), better organised ward environments (Eason 2008), better use of patient data (Anthony 2008), and improve the safety (Fillingham 2007) and efficiency of care (Shepherd 2009, Torjessen 2009). However at the present time comparable data about implementation and impact is not being consistently collected or collated across the health system - leaving the question of whether The Productive Ward has 'released time to care' difficult to answer without making speculative projections (Snow and Harrison 2009). A more fundamental problem is what impact can be attributed to this particular Lean innovation - rather than to staff taking on more of a quality improvement role for example or because of other contemporaneous initiatives. At a local level there was strong agreement that impact should be measured in ways that take into consideration the complexity of care environments, how 'released time' is then being better spent, and patient's perspectives of healthcare. The extent to which this particular programme enables patient-centred improvement is another complex and far reaching question, but one which should be taken seriously in a climate of increased patient choice and public involvement in decision making. One positive step is that moves towards the use of patient experience data within healthcare settings offers opportunities to strengthen the 'patient voice' in Productive Ward work.

Embedding change

For stakeholders at all levels making change happen - getting the programme up and running - within frontline services was the priority at this early stage of implementation. In addition, policymakers and senior managers expressed concern about the challenge of embedding change, echoing Emiliani's (2008) views about implementation being 'fake Lean' where hospitals use the tools for rapid improvement rather than long-term change. Policymakers and senior managers recognised that central resourcing and regional support have helped to spread the programme but they felt that sustaining early improvements in quality requires enthusiasm from healthcare staff to embed learning into practice and wider inter-professional routines. This finding supports previous observations about the need for staff development in change competencies at all levels, not just for those in senior positions (Buchanan et al. 2007), which could help with the challenge of establishing long-term responsibility for quality programs (Ham et al. 2003).

Implications for policy, practice and research

In the case of The Productive Ward, political and professional backing was fundamentally important to creating a receptive context within the health service for this particular innovation. Framing Lean in terms of 'releasing time to care' created an emotional connection between healthcare practitioners and Productive Ward work. Dissemination of the programme focused on expressing what could be gained locally at a time of wider political and professional debate about productivity and efficiency in public services. It is important for national policymakers and senior managers therefore not to underestimate the power of local implementation stories, successes, and guidance from 'early adopters'. These have the ability to inspire other staff to see the potential benefits for them. Compiling such information in an accessible central resource, for example a national or organisation-based website, helps to address the challenge of

winning the 'heart and minds' of all staff. Whilst senior managers generally did appreciate the advantages of communicating implementation successes within their own organisations, they may need encouragement to share their own learning with other teams and organisations and to seek supportive relationships their employing organisation. In relation to Hartley's (2005) observations of innovation in public services - building such links could help to 'instil a belief' across the healthcare system that an innovation can succeed.

Within hospitals the decision to adopt The Productive Ward and to replace old ways of working can be aided by introducing new protocols, new routines and new types of information into the system - but these changes were embedded when they were developed and 'owned' by healthcare practitioners themselves. There is a clear role for clinical educators and professional bodies in spreading good practice and supporting the development of change competencies at a ward-level. One suggestion is to create links to formal accreditation schemes and professional development opportunities in higher education.

In the longer-term, further research could help to secure support for the programme by generating evidence about the innovation, and specifically its clinical effectiveness. Research could also assess the broader benefits of the programme – the impact of 'real Lean' (Emiliani 2008) - to the social and work environment through, for example, improved working relationships, communication, improved staff skills and knowledge. There is also much to learn about the broader links between innovations in health service efficiency and public expectations and experiences of healthcare, such as how to link the work with patient feedback about care they expect and have experienced.

CONCLUSIONS

The Productive Ward: Releasing time to care programme has a huge perceived value amongst those policymakers, managers and healthcare staff who have helped to implement it in English hospitals. The programme has been well received by a range of stakeholders because it frames Lean in a way that creates an emotional connection and it emphasises what can be gained at a local level – time to care. Support, in terms of central resourcing and senior executive and board level backing, as well as the availability of accessible materials and support from an external change agency (the NHS Institute), have been key facilitators in the adoption and implementation of this particular innovation. There is significant potential to gain further evidence about implementation as the programme is implemented in Scotland, Northern Ireland and Canada. This study of The Productive Ward in English hospitals shows stakeholders at different levels of the health system have experienced a range of challenges and facilitating factors to implementation. Key issues for all stakeholders were staff time to work on the programme and showing evidence of the impact on staff, patients and ward environments. Taken together this research shows that Lean initiatives are well received when they are connected with establishing lasting improvements to healthcare services that align with the professional values of staff who work within them.

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References

- Anthony S. (2008) The 'Productive Ward' comes to maternity services. *Midwives*, 6:34-5.
- Bem-Tovim D, Bassham J, Bolch D *et al.* (2007) Lean thinking across a hospital: redesigning care at the Flinders Medical Centre. *Australian Health Review*, 31:10-5.
- Berwick D. (2003) Disseminating Innovations in Health Care, *Journal of American Medical Association*, 289:1969-1975.
- Bevan, H. (2009) The six lessons for successful implementation. *Nursing Times Supp*, 105:7.
- Brandao de Souza L. (2009) Trends and approaches in lean healthcare. *Leadership in Health Services*, 22, 2: 121-139.
- Buchanan, D., Addicott, R., Fitzgerald, L., Ferlie, E., and Baeza, J. (2007) Nobody in charge: Distributed change agency in healthcare. *Human Relations*, 60(7), 1065–1090.
- Buchanan D, Fitzgerald L. and Ketley D. (2007) The sustainability and spread of organisational changes. *Modernising Healthcare*. Routledge, Oxon.
- Crump B. (2008) How can we make improvement happen? *Clinical Governance an International Journal*, 1:45-50.
- Denzin K. and Lincoln Y. (1998) *Strategies of Qualitative Enquiry*. Thousand Oaks, Sage.
- Department of Health (2003) *Delivering the NHS Plan: Expenditure Report 1 April 2003*. DH London.
- Dopson, S., Fitzgerald, L., Ferlie, E., Gabbay, J., and Locock, L. (2002) No Magic Targets! Changing Clinical Practice To Become More Evidence Based. *Health Care Management Review*, 27(3), 35-47.
- Eason S. (2008) Releasing Time to Care. *Primary Health Care*, 9:18-9.
- Emiliani, B (2008) *Real Lean; Understanding the Lean Management System* Volume 1, published by The Centre for Lean Business Management, LLC, Kensington, Connecticut.

- Fillingham D. (2007) Can lean save lives? *Leadership in Health Services*, 20:231-241.
- Golden-Biddell, K., & Locke, K. 1997. *Composing qualitative research*. Thousand Oaks, CA: Sage.
- Greenhalgh, T. (2008) Role of routines in collaborative work in healthcare organisations. *British Medical Journal* 337, a2448.
- Greenhalgh T, Robert G, Bate P, Macfarlane F and Kyriakidou O. (2005) *Diffusion of Innovations in Health Service Organisations. A systematic literature review*. Blackwell Publishing: Oxford.
- Ham, C., Kipping, R. and McLeod, H. (2003) Redesigning work processes in health care: lessons from the national health service. *The Milbank Quarterly*, 81(3), 415-39.
- Ham, C. (2004) *Health policy in Britain*. Basingstoke: Palgrave Macmillan.
- Hartley, J. (2005) Innovation in governance and public services, *Public Money and Management*, 25(1), 27–34.
- Hines P., Found P. and Harrison R. (2008) *Staying Lean: thriving, not just surviving*, Lean Enterprise Research Centre, Cardiff University, Cardiff.
- Jones D, Mitchell A. (2006) *LEAN thinking for the NHS*. NHS Confederation, London.
- Joosten T, Bongers I, Janssen R. (2009) Application of lean thinking to health care: issues and observations. *International Journal of Quality in Health Care*, 5:341-347.
- Kitchener, M. (2002) Mobilizing the logic of managerialism in professional fields: The case of academic health centre mergers. *Organisation Studies*, 23(3), 391–420.
- Langley, A. (1999) Strategies for theorizing from process data. *Academy of Management Review*, 24: 691–710.
- Lee, T. W. 1999. *Using qualitative methods in organizational research*. Thousand Oaks, CA: Sage.
- McNulty, T., and Ferlie, E. (2002) *Reengineering Healthcare: The complexities of organizational transformation*. Oxford: Oxford University Press.

- Mowatt G, Thomson M, Grimshaw J, Grant A. (1998) Implementing early warning messages on emerging health technologies. *International Journal of Technology Assessment in Health Care*. 14; 663-70.
- NHS Institute & NNRU (2010) NHS Institute for Innovation and Improvement & National Nursing Research Unit joint report, *The Productive Ward: Releasing Time to Care Impact and Learning Review*. NHS Institute: Warwick.
- NHS Institute (2009) NHS Institute for Innovation and Improvement. 'The Productive Ward: Releasing Time to Care' programme. NHS Institute: Warwick.
- Pettersen J. (2009) "Defining Lean Production: Some conceptual and practical issues" *The Total Quality Management Journal*, 21(2), pp. 127-142
- Pettigrew, A. M., and Fenton, E. (2000) *The Innovating Organization*. London: Sage.
- Pettigrew, A. M., Ferlie, E., and McKee, L. (1992) *Shaping Strategic Change. Making Change in Large Organisations*. London: Sage.
- Radnor, Z. and Boaden, R. (2008) Editorial: "Lean in the Public Services: Panacea or Paradox?" *Public Money and Management*, Vol 28, No 1, pp 3-6.
- Robert G., Morrow E., Maben J. and Griffiths P. The adoption, local implementation and assimilation into routine practice of a national quality improvement programme: The Productive Ward in England. (*Journal of Clinical Nursing*, forthcoming)
- Rogers E. (1962) *Diffusion of Innovations*. The Free Press, New York.
- Rooney S, Rooney J. (2005) Lean glossary. *Quality Progress*, 38:41-7.
- Savary L, Crawford-Mason C. (2006) *The Nun and the Bureaucrat: How They Found and Unlikely Cure for America's Sick Hospitals*. Washington, DC: CC-M Productions.
- Shepherd S. (2009) This is a phenomenon. The Productive Series, *Nursing Times Supp*, 9:4-6.
- Snow T, Harrison S. (2009) Ward efficiency scheme frees up 500,000 hours in bedside care. *Nursing Standard*, 3:5.

- Speech by The Rt Hon Alan Johnson MP (2008) Secretary of State for Health, 30th April 2008: Royal College of Nursing.
- Taylor J. (2006) Stand by your bed. *Health Service Journal*, 6029:26-7.
- Torjessen I. (2009) Productive Principles Applied in New Settings. *Nursing Times Supp*, 105:8-9.
- Van de Ven A, Polley D, Garud R, and Venkataraman S. (1999) *The innovation journey*. Oxford, England: Oxford. University Press.
- Wilson G. (2009) Implementation of releasing time to care – the productive ward. *J Nursing Management*, 5:647-654.
- Womack J, Jones D. and Roos D. (1990) *The Machine that Changed the World: The Story of Lean Production*. New York: Harper Collins Publishers.
- Yin R. (1993) Applications of case study research. *Newbury Park, CA: Sage Publishing*.
- Young, T. and McClean, S. (2008) “A critical look at Lean Thinking in healthcare”, *Quality and Safety in Health Care*; Vol.17:382-386.
- Young T, McClean S. (2009) Some challenges facing lean thinking in healthcare. *International Journal of Quality in Health Care*, 5:309-310.

Table 1: Perceived facilitators and challenges to programme implementation

Stakeholder perspectives			
	<i>National and senior policymakers (interviews)</i>	<i>Senior managers (national survey)</i>	<i>Healthcare practitioners (case studies/interviews)</i>
Key facilitators	<ul style="list-style-type: none"> • Providing regional level support to healthcare organisations • Working with provider organisations to develop a clear vision of the innovation • Providing support for planning • Providing support for networking and learning • Working with provider organisations to align the programme with organisational targets 	<ul style="list-style-type: none"> • Dedicated project leadership • Strong support from senior staff (champions/ steering groups) • External support (facilitation, study days, networking) • Enthusiasm and talent of ward managers and staff • Time for staff cover • Funding for implementation and budgets • Communication and feedback to staff and patients • Good information about the initiative 	<ul style="list-style-type: none"> • Feeling there is a need for change • Seeing PW as a simple practical solution to real problems • Valuing the initiative/NHS Institute role • Accessibility of modules and resources • Self-nomination of wards to take part • Emphasising local ownership and empowerment of ward staff • Sufficient resources and support, allocated budgets for backfill of staff time
Key challenges	<ul style="list-style-type: none"> • Challenges of winning the hearts and minds of all staff • Access to suitable and sufficient training and support • Rolling the programme out in a planned and measurable way • Keeping the programme 'live' • Linking the programme with the transformation of services, existing programmes and evidence of best practice 	<ul style="list-style-type: none"> • Staffing pressures (workload, bed pressures, turnover, sickness absence, winter pressures, insufficient bank staff) • Generating enthusiasm • Engaging non-ward based staff (matrons and medical staff) • Finding time • Finding resources / hold-ups in financing • Poor inter-departmental relationships and delays 	<ul style="list-style-type: none"> • Balancing work pressures/ clinical demands • Multiple organisational targets and quality initiatives • Staff ownership and understanding of PW metrics

Table 2: Summary of case study sites

	Hospital 1	Hospital 2	Hospital 3	Hospital 4	Hospital 5
Date of initiation	August 2007	(Mid)-2007	October 2007	March 2008	February 2008
NHSI support package	Learning Partner	Accelerated	No support package	Accelerated	Accelerated
Foundation Status	Non foundation trust	Non foundation trust	Foundation trust	Non foundation trust	Foundation trust
Internal Programme Title	"Releasing Time to Care"	Productive Ward	Productive Ward	Productive Ward	Productive Ward
Strategy	Overall organisational plan for implementation but rolled out in stages; wards undergo selection process to join	Whole-organisation implementation (one of first two whole-hospital pilots)	Phased whole hospital implementation; initially launched using previous service improvement experience rather than NHSI package; subsequent phases using package	Focused implementation with selected wards supported by dedicated Productive Ward facilitator	Planned and organised strategy for implementation
Resourcing	As an original learning partner received support from NHS Institute. Have dedicated Productive Ward team skilled in change management.	Dedicated service development team with extensive clinical experience	Key executives and staff previously experienced in improvement methodologies; in-house service improvement team, but no dedicated PW facilitators at launch; June 08 two dedicated facilitators in place	Dedicated Project Lead and facilitator, both clinically qualified; new resource which will expand as needed	Dedicated PW implementation team including service improvement and clinical specialists
Priorities/goals	Whole hospital rollout	Whole hospital transformation with new culture uniting the two merged hospitals; driving improvements in quality of care; eventual goal is total 'Productive Trust'	Full Productive Hospital; raising standards in quality of care	Spreading learning and improvements across the whole organisation. Eventual whole hospital rollout. Achieving improvements in efficiency and patient's experience; "Turnaround to transformation"	Achieving service improvement in terms of both efficiency and quality. Capturing learning so far and showing impact of change. Eventual aim: Productive Hospital; all-ward rollout to be phased over 2 year period

<p>Key features of implementation</p>	<p>Allowing staff to learn by doing, adapting Productive Ward to the contexts they are working within</p> <p>Adapting and developing metrics to their priorities, e.g. developing module-level indicators to monitor modules implemented so far</p> <p>Developing tailored leadership programme to support staff to implement the Productive Ward programme.</p> <p>Focus on staff empowerment to encourage participation and innovation; ward teams themselves, rather than their matrons, lead applications to join</p> <p>Communication and sharing of learning encouraged, both within and between ward teams; wards within particular specialisations recruited as cohorts together to facilitate shared learning; also organisation's own 'Releasing Time to Care' newsletter published</p>	<p>Networking event for each new cohort approx 4 weeks before joining; each ward to define their 'Vision' for implementation; extensive Trust-wide communications and networking opportunities for participants; ward communication review currently in progress</p> <p>Ongoing action learning sets, extensive training sessions and time out days for each cohort; now also introducing 'Leading a Module' day for registered nurses</p> <p>Regular 'ward to board' PW steering group meetings headed by Chief Executive</p> <p>All departments involved, including facilities and Estates, which has a dedicated matron focused on PW implementation</p> <p>Patient representative assigned to PW steering group</p> <p>Recognition of need to identify and resolve any implementation problems in order to promote sustainability</p>	<p>Launched programme on 3 wards without Institute support. Re-launched in Jan 2008 with NHS Institute PW programme</p> <p>Preferred title reflects practical approach characteristic of this site</p> <p>Extensive experiential learning at all levels, of necessity as PW still in development when project initiated here</p> <p>Effectiveness through recognition of value of identifying and implementing small step change; accessible and manageable by all</p> <p>Developed solutions in all areas including leadership approach, methodologies, and synergy of PW with other performance tools and initiatives; executives equally hands-on in their involvement with PW</p> <p>Pilot site for Productive Operating Theatre</p>	<p>Supporting and facilitating staff to make Productive Ward their own project</p> <p>Wards selected for participation according to NHSI guidelines</p> <p>Practical/empirical & flexible approach to development of best practise</p> <p>Full cross-functional team involvement; Chief Executive and Director of Estates involved in monthly PW Project Board meetings with staff</p> <p>Special emphasis on managing resources</p> <p>In-house DVD produced to promote PW ideals and approaches</p> <p>Also participating in Productive Theatre development.</p>	<p>Supporting and facilitating staff to make Productive Ward their own project</p> <p>Wards selected for participation by Project Manager & team</p> <p>Regular and extensive communications with teams; networking opportunities at all levels, through public 'PW/RTTC' status board, weekly ward / monthly steering group meetings etc.; constant contact with Chief Executive</p> <p>Full use of other available training programmes synergistic with and supportive of aims of PW</p> <p>Full cross-functional team involvement; involved all directorate nursing heads in Institute induction days from outset; Estates, Supplies and Catering representatives on Productive Ward team</p> <p>In-house DVD produced to promote Productive Ward ideals and approaches</p> <p>Participating in Productive Theatre development</p>
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