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Title: The Well Organised Working Environment: A Mixed Methods Study

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The Well Organised Working Environment:

A Mixed Methods Study

Abstract

Background: The English National Health Service Institute for Innovation and Improvement designed a series of programmes called The Productive Series. These are innovations designed to help healthcare staff reduce inefficiency and improve quality, and have been implemented in healthcare organisations in at least 14 different countries. This paper examines an implementation of the first module of the Productive Community Services programme called 'The Well Organised Working Environment'.

Objective: The quantitative component aims to identify the quantitative outcomes and impact of the implementation of the Well Organised Working Environment module. The qualitative component aims to describe the contexts, mechanisms and outcomes evident during the implementation, and to consider the implication of these findings for healthcare staff, commissioners and implementation teams

Design: Mixed methods explanatory sequential design

Settings: Community Healthcare Organisation in East Anglia, England

Participants: For the quantitative data, participants were 73 staff members that completed End of Module Assessments. Data from 25 services that carried out an inventory of stock items stored were also analysed. For the qualitative element, participants were 45 staff members working in the organisation during the implementation, and four members of the Productive Community Services Implementation Team.

Methods: Staff completed assessments at the end of the module implementation, and the value of items stored by clinical services was recorded. After the programme concluded, semi-structured interviews with staff and a focus group with members of the Productive Community Services implementation team were analysed using Framework Analysis employing the principles of Realist Evaluation.

Results: 62.5% respondents (n=45) to the module assessment reported an improvement in their working environment, 37.5% (n=27) reported that their working environment stayed the same or deteriorated. The reduction of the value of items stored by services ranged from £4 to £5039 across different services. Results of the qualitative analysis suggests explanations for why the programme worked in some contexts and not others, for instance due to varying levels of management support, and varying levels of resources allocated to carrying out or sustaining the improvement work.

Conclusions: Quantitative analysis of data generated during healthcare improvement initiatives can give an impression of the benefits realised, but additional qualitative analysis also provides opportunity for learning to improve future implementations. Targets set by Commissioners for innovation should focus on sustaining improvement rather demonstrating one-off benefits,

and implementation teams should not let their preconceptions of what will and what will not work prevent them from trying interventions that may benefit staff.

Contribution of the paper

What is already known about the topic?

- The Productive Ward programme claims to have generated benefits to healthcare staff and patients including the reduction in wasted time, an increase in quality and an increase in patient contact time.

- Much of the existing research on Productive Series programmes consists of anecdotal research papers, and often use participants that have had heavy involvement in the implementation.

What this paper adds:

- This paper identifies the contexts, mechanisms and outcomes of an implementation of the Productive Community Services 'Well Organised Working Environment' module

- The findings indicate that although quantitative outcomes can provide an indication of the benefits of the programme, qualitative analysis can offer further insights to help improve future implementations

- The findings suggest that commissioners need to provide targets that encourage sustained improvement rather than to demonstrate one-off benefits

Introduction

In 2007 the 'Productive Ward©' was the first of a series of programmes launched to help frontline healthcare staff improve quality and reduce inefficiencies (Wright and McSherry, 2013) in order for more time to be spent with patients; thus 'Releasing Time to Care™' (NHS Institute for Innovation and Improvement, 2012). This series of programmes is called The Productive Series and it was designed by the English National Health Service Institute for Innovation and Improvement. The Productive Series has been expanded to apply to many different healthcare contexts, including General Practice and Mental Health wards (see NHS Institute for Innovation and Improvement, 2011), and has been implemented in at least 14 countries around the world (NHS Scotland, 2013) including Ireland (White et al., 2014a), Canada (see Avis, 2012) and New Zealand (see Moore et al., 2013).

Even though the Productive Series programmes have been implemented for nearly eight years, there is little peer-reviewed research available. Wright and McSherry (2013) carried out a systematic literature review, and using their quality assessment on publications between 2005 and 2011, only found 18 articles that passed their quality standard, and could only class five of these as empirical research. They also found that the publications were biased towards reporting positive results. White et al. (2014b) carried out a bibliometric profile of literature published regarding the Productive Ward programme and found a rise and decline of literature and grey literature in the period 2006-2013, but identified some evidence that internationally, "...the initiative continues to generate publications and create interest," (White et al., 2014b, p. 2414).

Work carried out during implementations of the Productive Ward has been reported to reduce the number of falls (Harrison, 2008; Wilson, 2009) and outbreaks of infection (Foster et al., 2009; Harrison, 2008; Smith and Rudd, 2010); increase staff satisfaction (Dean, 2014; Wright et al., 2012); increase time with patients (Blakemore, 2009), increase the efficiency of admission and discharge processes (Lennard, 2014), and reduce staff sickness (Smith and Rudd, 2010). However, as indicated in Wright and McSherry (2013), these reports mainly focus on the positive results achieved and pay little or no attention to any negative aspects or lessons to be learned for future implementations. One exception is in Wright et al. (2012), who details some of the negative financial implications of working through the module, such as the cost in staff time (£236 per meeting) required for the module.

In evaluations of the Productive Ward in eight Scottish NHS boards, NHS Scotland (2008) reported examples of increased efficiency (for instance reducing a process from 172 process steps to five process steps) and an increase in direct care time with patients from 13% to 43%. They also reported one-off savings, for instance in returnable or redistributed stock items previously

held by services ranging from £700 to £3,700 (stock items might include consumable clinical items such as wound dressings or antiseptic wipes). However it has been proposed that the Productive Ward programme's impact has been difficult to quantify due to the lack of definition of measurable outcomes (NHS East of England, 2010). An evaluation of the Productive Ward programme in the East of England found that a variety of factors, including organisational engagement and good communication from ward to board, were required to maximise the impact and sustainability of the programme (NHS East of England, 2010). The most important factor contributing towards the success of the programme was identified to be the support and encouragement of clinicians by organisational senior leaders (National Nursing Research Unit and NHS Institute for Innovation and Improvement, 2010).

Davis and Adams (2012) carried out semi-structured interviews with six members of staff who had implemented the Productive Ward to explore their perceptions about the programme. They identified five major themes using thematic content analysis; Starting to implement the programme; Anxiety and defensiveness; The Importance of leadership and communication; Challenges, and Learning and personal development," (Davis and Adams, 2012, p. 354). Their analysis identified some of the negative aspects of the implementation (for instance reluctance to change, and interest in the programme waning); however perceptions of the programme were mainly positive, although the staff members interviewed had a heavy involvement in the implementation and so may have been biased towards it.

Other research has attempted to identify the characteristics of implementations that affect the programme's outcomes. White et al. (2013) carried out a literature review on research published between 2006 and 2012 and identified seven key characteristics that contributed towards the Productive Ward's successful implementation. These were, "robust and engaging communication, enabling and empowering roles, appropriate training; project planning and management; leadership; corporate/management engagement and support; and financial and human resource commitment," (White et al., 2013, p. 914). They submit that the implementation and change literature already highlights the need for many of these requirements for successful implementation. In other research into the Productive Community Services programme, a thematic analysis of interviews with 45 staff members identified several aspects that may have constrained the potential benefits of the programme, including a lack of communication, a lack of understanding of the programme, and a perceived lack of relevance of the programme (Bradley and Griffin, 2015). Their findings indicated that knowledge from the implementation and change literature was not being transferred to Productive Series implementations. This lack of knowledge transfer is a problem in addition to the difficulties of implementing and embedding change in complex adaptive systems (Begun et al., 2003) such as healthcare organisations.

This study forms part of the same research project referenced above (Bradley and Griffin, 2015 op cit.), therefore the qualitative analysis utilises the same interview data, and therefore the same sample, as found in that study (with the addition of the Implementation Team focus group data). The study took place from July 2010 to March 2012 which examined an implementation of the Productive Community Services programme in a Community Services healthcare organisation in East Anglia, England. This involved the first author performing a participant observation by working as a Research Analyst in the implementation team; the analysis of quantitative and qualitative data gathered during the implementation, and interviews and a focus group carried out over four months following the implementation. This study focuses on the implementation of the first Productive Community Services module, called the 'Well Organised Working Environment'. It aims to report the quantitative outcomes from this module, to identify the contexts, mechanisms and outcomes evident during the implementation to explain the varying experiences of staff as indicated by the quantitative analysis, and to explore the implications of these findings for healthcare staff, commissioners and implementation teams.

The Productive Community Services programme was implemented in over 50 teams in the organisation under study, and there were 38 service specialities, ranging from nursing services such as Tissue Viability and District Nursing, to therapy services such as Speech and Language, and Healthy Living services such as Smoking Cessation and Sexual Health. There are nine modules in the Productive Community services programme (see Figure 1), and six services implemented Modules 1-9, and the remaining services implemented Modules 1-6.

[SEE FIGURE 1 IN TABLES & FIGURES DOCUMENT]

There were six people in the Implementation Team; the Project Manager, who was on secondment from their role in the software support service; three Co-ordinators, two of which were seconded from their nursing roles, and one hired via an agency, one Project Support Officer who was also hired from an agency, and a Research Analyst, the first author of this report. Each service was allocated to one of the Co-ordinators. The implementation was commissioned using the Commissioning for Quality and Innovation framework (CQUIN, see NHS England, 2014), and payment was made to the organisation on the achievement of targets devised by the Commissioners and Project Manager. There were two targets that related specifically to the Well Organised Working Environment module; the first required services to implement the module, and the second was a 30% reduction in the value of stock (i.e. items stored by the services) for three of the services commissioned to implement all nine modules. There was also a target for three services completing all nine modules to increase their patient contact time by 10%. The commissioning documents did not explain how the targets were decided upon. Co-ordinators could implement the programme in whatever way they preferred, as long as the data for the commissioned targets was collected. They met with staff in person, over the telephone and via email, sometimes visiting team meetings, but mostly meeting with service managers or

their nominated staff. The Well Organised Working Environment module was to be implemented in services using clinic rooms, offices, surgeries, and in District Nurses' cars where they stored items for their patient visits.

The main concept of Well Organised Working Environment module is to make staff members' working environments more productive. Staff are encouraged to use methods of visual management (e.g. by using symbols or colour codes to communicate the status or process required), and to assess how areas are used to enable working processes to become more efficient (NHSI, 2009). This assessment can be carried out by the creation of 'spaghetti diagrams' (NHS Institute for Innovation and Improvement, 2009), where staff carry out a process in their work space while another staff member marks their movements on a floor plan. This can then be used to see whether any improvements can be made by reorganising the room layout. Processes can be timed before and after the work environment is changed to assess time savings or identify where improvement is still required. To help staff organise their workspaces, a '5S' process is employed which has been adapted from 'Lean' initiatives (e.g. Black and Miller, 2008 op cit.), which involves five stages. These are to 'Sort' the area, so that items that are not required are removed; to 'Set', ensuring everything is set in the right place; to 'Shine', to put processes in place so that equipment is ready to be used when necessary; to 'Standardise', formalising standard procedures for using the area, and to 'Sustain', to sustain the improvements made and continually look for further improvement (NHSI, 2009, p. 18). A checklist of 10 statements indicate the module's characteristics (NHSI, 2009), and these statements can be seen in Figure 2. Further details regarding the Programme Theory can be found in NHSI (2009).

With regards to how this module was implemented in the organisation under study, as part of the '5S' process and as advised by the programme authors, an inventory of stock items held (the '5S' Stock Inventory) was required to be carried out by three targeted services (Admission Avoidance, District Nursing Area F and Paediatric Speech and Language Therapy). The remaining services were also encouraged to carry this exercise out where relevant. The Implementation Team adapted the process by encouraging staff to set minimum and maximum levels of stock items to guide future orders and prevent over-ordering. Services could implement other aspects of the module such as the use of 'spaghetti diagrams' and timing processes to identify time saved, but these were not mandated by the Co-ordinators, and were only reported to be used in one service.

Method

This study adopts a mixed-methods explanatory sequential design (Creswell and Plano Clark, 2007) which involves a phase of quantitative data collection followed by a phase of qualitative data collection, so that the qualitative results offer further explanations about the quantitative data and the object of study. In the quantitative component, Likert items related to different aspects of work were used to measure the primary outcome, which was staff members' reported improvement of the

working environment since commencing the module, and secondary outcomes; which included staff members' reported improvement of their 'Working Procedures', 'Working Efficiency', 'Standard of Service', 'Team Morale' and 'Personal Morale' (see Figure 3). The other secondary outcomes were the reduction of stock value (see Table 1), and staff members' perceived level of agreement with the module's requirements (see Figure 2). These measures relate to the module, as the module advises how services should perform the '5S' Inventory Check to reduce the number of unnecessary stock items held, and the Likert items that were used in the module assessments are based on the 10-point checklist that indicate the characteristics underlying the module (NHSI, 2009, see page 12).

There was no requirement from the Commissioners of the programme to specifically measure the time released by the Well Organised Working Environment module to be reallocated to patients, as per the programme's secondary title, 'Releasing Time to Care.™'

The qualitative component aims to describe the contexts, mechanisms and outcomes from the implementation to explain how the implementation worked and did not work and in what contexts, and to consider the implication of these findings for healthcare staff, commissioners and implementation teams. The analysis of these components offers two different perspectives on the implementation; the quantitative outcomes provide information about the results and impact of the programme, and the qualitative analysis gives insight into the processes that went on during the implementation that led to those outcomes.

Participants

For the module assessments, initially respondents were to be randomly selected. However, the Co-ordinators reported that respondents often did not have enough knowledge of the module to complete the assessments. This indicated that staff not directly involved in the module work did not have sufficient knowledge to be able to evaluate it. Therefore this strategy was changed so that where possible, the manager and one member of staff from each of the 38 service specialities involved in the module completed a module assessment. The organisation's data reported that there were 849 staff in the services that implemented the Well Organised Working Environment module, and 73 staff members completed the module assessments, representing 32 different service specialities. Services that took part in the '5S' Stock Inventory exercise included the three targeted services that were commissioned to achieve 30% reduction in stock items stored, and 22 other services that completed the task and submitted data to their Co-ordinator.

For the semi-structured interviews which were led by the first author, the participants' data were also used in a thematic analysis examining the whole implementation, so further information regarding the sample can be found in Bradley and Griffin (2015). In summary, 61 participants were initially identified using purposive and snowball sampling (Ritchie et al., 2003). 32

participants recruited using purposive sampling and 10 using snowballing sampling agreed to take part, and three participants formed an opportunistic sample as their colleagues requested that they join them for the interview (n=45 in total). Purposive sampling was carried out to ensure that five main staff groups were represented, namely; senior managers (n=3), service managers/team leaders (n=13); the SystmOne software support team (n=1), administrative team members (n=11) and clinical team members (n=17). Team members were recruited only if they had submitted data (e.g. they had completed a module assessment) for at least one module. The focus group was led by the first author, and took place with four members of implementation team. Interview schedules for senior management were adapted from interviews used by National Nursing Research Unit and NHS Institute for Innovation and Improvement (2010) in their research into the Productive Ward programme. For non-senior managers, interview schedules were designed to help draw out the experience of participants implementing the programme. Interviews ranged from 5-45 minutes (19 minutes on average). Examples of interview questions can be found in Figure 5.

[SEE FIGURE 5 IN TABLES & FIGURES DOCUMENT]

Ethical considerations

The Governance Committee of the organisation under study and the University of Essex granted ethical approval for the collection of quantitative and qualitative data relating to the programme implementation. In addition, for the interviews, guidance from the Ethics Committee of the British Psychological Society (2009) informed the content of emails that were sent to recruit interviewees, and all interviewed participants consented to being interviewed. Data was stored using SafeHouse encrypted software and according to the organisation's Information Technology policy.

Data Collection

The quantitative data was generated using two main sources; the '5S' Stock Inventory and End of Module Assessments. The '5S' Stock Inventory quantitative analysis was based on the value of stock before the '5S' Stock Inventory took place, in comparison with the value of stock items or proposed maximum stock levels (if they were set) after the '5S' Stock Inventory. 'Stock' was intended to be clinical consumable items (such as dressings or needles) stored by the services. End of Module Assessments were devised on liaison between the Implementation Team and the first author. The quantitative data for the End of Module Assessments was based on responses to the 10-point checklist statements provided in the Well Organised Working Environment material (NHSI, 2009, see Figure 2), and responses regarding staff members 'Aspects of Work' (see Figure 3).

Data Analysis

For the '5S' Stock Inventory data, as a comparison between two means was being examined (the mean value before the '5S' Inventory Check and the mean value after the '5S' Inventory check), the paired-sampled t-test and the wilcoxon signed ranks test was used. The qualitative data was analysed using a form of thematic analysis called Framework Analysis (Spencer et al., 2014a), and the principles of Realist Evaluation were used to guide the thematic framework. Realist Evaluation in its fullest form is a series of investigative cycles examining the theory of an intervention, hypothesising what could work, for whom and in which contexts, making observations to test those hypotheses, and then identifying from those observations what works, for whom and in which contexts (Pawson and Tilley, 1997, cited in Kazi, 2003).

Outcomes are the consequences of a change effort , whether they be intended or unintended (Greenhalgh et al., 2009), and may be identified quantitatively or in terms of process. Mechanisms are explanations of an intervention's features that enable change to occur (Pawson, 2006). The contexts are the pre-existing conditions and relationships in the organisational system that partner with the programme's mechanisms to make success or failure of the intervention more or less likely (Pawson, 2006). Ideally the Realist Effectiveness cycle should be carried out several times within a programme's lifespan to continually test the theories over time and improve the programme itself while it is being implemented (see Greenhalgh et al., 2009 for an example of this). Similarly to Spurling et al, 2000, cited in Kazi (2003), this study just focuses on part of the Realist Effectiveness cycle, attempting to identify the contexts, mechanisms and outcomes to improve explanations for future implementations rather than making and testing improvements to the implementation itself. So this study may not be considered a 'true' Realist Evaluation per se, but uses the principles to offer some explanations behind the varying experience of users of the 'Well Organised Working Environment' innovation. Spurling et al, 2000, cited in Kazi (2003) employed Template analysis (a form of qualitative thematic analysis - see Miller (1999) and King (1998) cited in Kazi, 2003) using 'Contexts', 'Mechanisms' and 'Outcomes' (CMO) as their guiding thematic framework. This thematic analysis uses the Context-Mechanism-Outcome configuration as the guiding thematic framework using Framework Analysis, as this method enables the analyst to, "move back and forth between different levels of abstraction without losing sight of the raw data and facilitates both cross-case and within-case analyses," (Spencer et al., 2014b, p. 283).

To carry out the Framework Analysis, as guided by Spencer et al. (2014a), the first author firstly familiarised herself with the data by reading and re-reading the transcripts. The Initial thematic framework was then decided upon, using Realist Evaluation principles as similarly used by Greenhalgh et al. (2009):

1) Module – The Well Organised Working Environment module
    a. Theme – Mechanisms

    i.   Subtheme – Constraining Contexts

    ii.   Subtheme – Enabling Contexts

    iii.   Subtheme – Disappointment Outcomes

    iv.   Subtheme – Success Outcomes

In the 'Indexing and Sorting' phase, the Researcher again read through the transcripts in NVivo (version 10) and coded the segments of text according to the themes and subthemes they referred to. After another review of the extracts within each theme and subtheme, a framework matrix was created for each theme using NVivo. This consisted of data summaries being placed in a grid, with the subthemes listed down the first column, and the interviewee identifying numbers listed across the top row. The first author then looked within each subtheme to capture the detected 'elements' (i.e. different phenomena that are being captured within each subtheme), the 'Key Dimensions' of those elements, and the Category identified.

During the implementation the first author also carried out Participant Observation, while working as a Research Analyst member of the Implementation Team. Observations were made while carrying out the functions of her role within the team, or on post hoc reflection (Fox, 2000). The observations were not analysed with the interview data but provided a contextual backdrop to the analysis.

Quantitative Results

Year 1: End of Module 1 Assessment Results

Figure 2 below shows how responses were distributed with regards to the 10-point checklist in the End of Module 1 Assessment:

[SEE FIGURE 2 IN TABLES & FIGURES DOCUMENT]

Statement 7 regarding audits received the most disagreement, and some of these respondents noted that they intended to create audits but these were not in place at the time of the assessment. However the majority of responses indicated strong agreement that their services achieved the standards of the 'Well Organised Working Environment' module.

Figure 3 below shows the quantitative results regarding respondents' 'Aspects of Work'. The majority of respondents reported that they perceived the working aspects had stayed the same since working through this module, apart from the working environment (the primary outcome) where 45 respondents (63%) reported a level of improvement. This aspect was expected to receive the highest rating of improvement as this module focused particularly on the working environment.

[SEE FIGURE 3 IN TABLES & FIGURES DOCUMENT]

The '5S' Stock Inventory

The results from all the teams that submitted data for this exercise are in the table below.

[SEE TABLE 1 IN TABLES & FIGURES DOCUMENT]

Reductions ranged from £4.48 (Children's Locality Area D) to £5039.20 (Scheduled Therapy), with a mean saving of £1701.60 (SD=£1963.40). Percentage reductions ranged from 0.18% (Paediatric Occupational Therapy and Physiotherapy) to 91.22% (Adult Speech and Language therapy – this large percentage was due to their including equipment in the inventory and discarding much of it). As the data was positively skewed, a Log transformation was carried out. A paired samples t-test on the transformed data found that the stock value reduction for these services overall was statistically significant (difference = 0.176; t=4.011; p<0.01).

The three teams that were to achieve 30% reduction in stock items held were Admission Avoidance, Area F District Nursing, and Paediatric Speech and Language Therapy. The mean stock value reduction for these three teams was 40.98%. A paired-samples t-test found that this reduction was statistically significant (t=2.989; p<0.05). However the data was skewed and neither a Log, Square Root nor Reciprocal transformation could transform the data to fulfil parametric assumptions. Although some researchers argue that the use of non-parametric data in parametric tests have little bearing on the results (Howell, 2013), a non-parametric test was carried out to err on the side of caution. Wilcoxon signed ranks test demonstrated that this reduction was not statistically significant (z=-1.604; p=0.055), which was a marginal finding probably due to the sample being so small. However, as the commissioning target was a reduction in stock value of 30% and was not reliant on a statistically significant reduction, this target was achieved overall for these three services.

Qualitative Results

Framework analysis of interview text relating to the Well Organised Working Environment module identified three mechanisms for change; the '5S Sort', 'Stock Control Methods', and 'Visual/Spatial Management'. The outcomes and contexts influencing those outcomes of each mechanism will be described in turn. Figure 4 represents these findings, adapting a model used by Greenhalgh et al. (2009).

[SEE FIGURE 4 IN TABLES & FIGURES DOCUMENT]

'5S Sort' as a mechanism for change

The '5S Sort' mechanism was characterised by talk of staff removing stock and generally clearing or tidying their work environments. With regards to the implementation, disappointment outcomes were more likely to occur in contexts where the '5S Sort' process was not carried out, or was carried out but not thoroughly enough. Other constraining contexts included the logistics not being in place to remove unwanted items from services immediately, and where there was a lack of negative consequence perceived for failing the Productive Community Services standards.

Constraining contexts relating to the users of the innovation included negative attitudes towards the Implementation Team, non-compliance with the '5S Sort', and a lack of desire to change. With regards to organisational contexts, disappointment outcomes were likely to occur where there was insufficient resource to carry out the '5S Sort', insufficient resource to sustain the changes made, or where services had a lack of control over their working environments. The removal of stock was also not relevant to all services, and this was either because not much stock was held (e.g. Children's Localities teams, as also indicated in the quantitative data), or where stock could have been more useful and cost-effective to keep. This concern led to staff hiding stock rather than removing it:

> "One particular member of our staff, when something, like this, comes along, they take it on as their baby...and therefore "Oh...we must jump,"...there's no reasoning...you know you can't say "Well we can't get rid of that equipment because"... "Oh well (.) up there have said we've got to get rid of it...But, sorry, I don't get rid of the stuff I just hide it."
>
> Clinical Team Member 036

The contexts in which success outcomes were likely to be found were where staff were in the process of moving premises to a known location, staff had knowledge of electronic storage capabilities, managers and team members allocated resources to carry out the '5S Sort', and effective support was received from the Implementation Team. One team member said of her Co-ordinator:

> "She was brilliant...she'd...talk us through... the day we...cleared all the clutter...she came and...helped us do that an-and do it in a logical way so we weren't just, chucking stuff out for the sake of it...because we knew she was coming...we actually dedicated time to do it"
>
> Clinical Team Member 042

Stock Control Methods as a mechanism for change

Stock Control Methods such as the '5S' Stock Inventory and the setting of minimum and maximum stock levels were identified as a second mechanism for change during the implementation of the Well Organised Working Environment module. Contexts

that constrained this mechanism included those where a stock inventory was not relevant to service practice, where stock control was not perceived to need improvement, and where requirements for the stock inventory were misunderstood. Organisational structures were also perceived to limit how stock control could be improved, which meant that potential solutions to improving stock control were identified but not implemented:

> "...In our office we've got lots of boxes of envelopes and stuff and then in the office next door, they've got, the same...so [.] I know it's all because we come out of, different budgets...but if you could, pool that resource... that would help"
>
> Clinical Team Member 033

For the implementation at an organisational level, it was noted that a Swap Shop initiative (where unwanted items could be reallocated to other services) was only able to be co-ordinated because there was resource within the Implementation Team to do so. Contexts that were more likely to enable success outcomes were those where effective support was received by management, where staff experienced the benefits of improved stock control, and where the service already had a desire to improve stock control processes.

Visual/Spatial Management as a mechanism for change

This mechanism referred to staff members' efforts to improve efficiency using visual aids such as labelling shelves or redesigning the layout of work spaces. Contexts which constrained the success of this mechanism included those where change was not perceived to be required, where there was a lack of understanding as to how visual management could improve efficiency, where little time was spent in the working environment, and where there was a lack of control of staff from other services using the workspace. Where there was insufficient resource to carry out the visual management work or to sustain the changes made, and where the potential improvement of visual management was not perceived to have a significant positive impact, were also contexts in which the likelihood of change was constrained:

> "...I see, thirteen patients a day, half an hour each half an hour admin, that's how my day [.] pans out...where else can you, you add anything in?...by changing certain things like, by organising the cupboards...we may gain, 30 seconds in an appointment...we can't cut appointments down by 30 seconds."
>
> Clinical Team Member 020

The contexts that were likely to enable improvement through Visual/Spatial Management included those where effective support was received through management, and where staff allocated resources to work on making improvements through the use of Visual Management:

> "We allocated time to do it...we...stripped the walls of everything...And...we realised...every time I wanted a number...I had to get up and go look on there, so then we thought right what numbers...would it be useful for us to have...we got those...on the walls... So if I'm with a patient and I just need to phone their doctor or whatever the numbers are here."
>
> Clinical Team Member 019

Data from the Implementation Team focus group also identified that at least one of the Co-ordinators did not feel that staff would engage with exercises to help staff assess the layout of their rooms, and so was unlikely to use spatial management as a mechanism with her teams:

> "... where...you had to track something on the floor about, from your desk into th- the room to collect some stores, and back out again, I mean, good Lord alive...people would have went absolutely berserk if you had made them do that"
>
> Implementation Team Focus Group (Co-ordinator 'C')

An aspect that may have supported the mechanism of Visual/Spatial management was the timing of processes to identify savings made by the changes. This was not talked about by any of the interviewees, but was discussed during the focus group:

PM: You don't need to time everything...just by observing them...you know, if there was an issue with...A piece of equipment being in the wrong place

B: But...you could say to the nurse, 'Do you realise that took you 6 minutes to go get a blood pressure machine?', 'oh no wonder I never have any time in the day I do that ten times a day...

PM: Not relevant for all staff though...

B: ...I only did it a couple of times...it was...to more [.] show...this is how long it's taking you...Well let's just time it quickly and see

C: ...it depends...on the personality of the people you're delivering it to...And the personality of the people that are delivering it... that, would drive me, personally mad... that's something I...didn't really promote onto the staff to do...

B: ...we didn't really record it officially...it was kind of a one-off, just to see...What the benefit was going to be...because there wasn't the time <u>or</u> the engagement...To actually <u>do</u> exercises like that...

Implementation Team Focus Group
'B' and 'C' represent Co-ordinators, 'PM' the Project Manager

This data explains why timing processes was not used to a great extent during the implementation, as Co-ordinator C did not feel that they would be of value to staff she supported, and the Project Manager felt that measurement was not necessarily required.

Outcomes

The disappointment outcomes for the mechanisms identified during the implementation of the Well Organised Working Environment module were that unexpected costs were incurred to services (e.g. where too much stock was removed and soon had to be re-ordered) and changes were made but were not managed effectively. Working environment deteriorated or became less efficient due to the changes, little or no improvement was experienced, or improvements were made but were not sustained:

> "...we organised the office so that we had a map...strangers into the office knew where to find...gloves...dressings...unfortunately that was never maintained...because people haven't...got time to...tidy up...it just got, forgotten about...like many of the...initiatives we did under, [Productive Community Services]...at the time they worked really well but they haven't been sustained."
>
> Clinical Team Member 042

Other disappointment outcomes were that unnecessary items remained in stock even after the '5S Sort', interruptions continued, staff hid stock rather than removing it, and stock control was not improved as much as it could have been. Some staff felt that no changes had been made, that time had not been able to be saved by the improvements and reallocated to patients, and staff sickness increased, where staff had reportedly injured themselves while tidying the workspace.

The success outcomes reported were improved working experience, improved working processes, improved working environments, and time saved. Awareness of cost increased, wastage of stock was reduced, and financial benefits were reported. Processes were reviewed, teamwork improved, and staff thought more about productivity:

> "It resulted in, one big massive, de-cluttering...I was...thinking oh it's all going to creep back, but it hasn't done...now you've got a mind-set...because now the project's over...you do just have to...check yourself...make sure as a team that you're still got that same ethos...once you get into it, that actual mind-set...you're not going to, do it, any other way."
>
> Clinical Team Member 019

Discussion

The objective of this study was to report the quantitative outcomes and perceived impact of the Well Organised Working Environment implementation, and to identify the mechanisms and contexts evidenced during the implementation, while considering the implications of these for healthcare staff, implementation teams and commissioners. The quantitative analysis found that 63% of respondents to the module assessment reported that their working environment had improved, and the '5S' Stock Inventory generated savings ranging from £4 to £5039, culminating in over £42,500 (11.3% of the stock value held). There were few empirical studies to compare the saving with, but 'anecdotal' articles reported that Scottish boards and wards saved stock ranging from £700 to £3,700 (NHS Scotland, 2008), although the number of wards or boards this related to was not specified to provide a direct comparison. Smith and Rudd (2010) did not specify the stock value saved during a Well Organised Ward implementation, however they were able to report a 28% increase in time spent on direct patient care as a result by measuring the time spent with patients before and after the changes had been implemented.

Although the qualitative analysis indicated that the module work saved time in some contexts, the specific module's impact on patient contact time was not able to be reported using a quantitative outcome, as the only quantitative outcome for patient contact time required by the commissioners was based on all modules being implemented for the three targeted services. Therefore, the reduction in stock value as an outcome in isolation could be viewed as being superficial. The programme's secondary title 'Releasing Time to Care™' could not be demonstrated, as staff could not see how the '5S' Inventory Check enabled them to spend more time with patients. Linking quantitative outcomes to specific changes to demonstrate increases in patient contact time may have helped staff engage with the process more, particularly as nurses are motivated to care and help patients (Newton et al., 2009). Members of the Implementation Team felt that gathering this level of quantitative measurement

was not necessary or would not appeal to staff. This suggests that implementation teams should ensure that their preconceptions about the way that staff may respond to innovations should not prevent them from trying interventions that may be of benefit.

The accuracy of the value of stock items held by services also depended on many factors, such as the accuracy of the quantity and pricing recorded, and there was not enough time within the implementation to verify this, reducing the reliability of the figure. It could also be argued that the figure did not represent a meaningful saving, as stock was not always reallocated to other services but was discarded. In addition, the variation of reductions and the values of the stock held by some services suggests that a stock value reduction was not relevant for all services, and the 30% target reduction set by the commissioners was a significant reduction that may not have been beneficial for all services. This highlights the need for Commissioners and implementation teams to work together with services so that targets and work implemented during innovations in healthcare are relevant to staff and their services. Staff also need to feel able to express their concerns to their superiors if aspects of the innovation are not relevant to their practice, while understanding that the relevance of an improvement effort may not always be apparent before it takes place. Keeping communication and opinions open between all parties to realistically assess the innovation's relevance is vital.

The programme authors stress that the effective use of audits can help sustain good quality practice (NHSI, 2009), however only 36% (n=26) respondents agreed with the module checklist standard associated with sustaining the changes made (statement 7, see Figure 2). The intervention that had the potential to help maintain optimal stock levels was the implementation of minimum and maximum stock levels, however this was not mandated and so only the services that implemented this benefited in this way. This highlights how the implementation of the commissioners' target of reducing stock by 30% could have been improved by being more process-oriented, so that rather than focusing on reducing the percentage of stock held before and after the '5S' Stock Inventory exercise, the implementation of minimum and maximum stock levels was mandated and stock value tracked over a period of time. Commissioners of similar improvement innovations should consider how their targets encourage improved practice that is sustained rather than demonstrating one-off benefits.

The quantitative data showed that there was a lot of variation between services regarding the savings made during the '5S' Stock Inventory exercise, and some variation regarding the perceived benefits reported in the End of Module Assessment. Qualitative analysis of the interview data identified some of the factors that were likely to have contributed towards this variation, and suggest areas for focus so that future implementations can be improved. For example, a lack of resource was cited for not carrying out the '5S' work or not sustaining it, suggesting that there was little organisational slack, the resource an organisation has in addition to that needed to operate (Damanpour, 1987) to carry out the extra work entailed by the

implementation. This also highlights the challenge presented by organisations attempting to reduce waste or slack through programmes like Productive Community Services or Lean (Black and Miller, 2008 op cit.), which can also reduce the capacity for the innovation necessary to thrive (Nohria and Gulati, 1996). It was observed that the exercise was often time-consuming, and may not have been completed without a dedicated project team to support services with the task. The considerable amount of time taken was not unique to the organisation under study, as Wright et al. (2012) similarly notes that it took seven months for just their 'showcase' team to implement the same module. This suggests that managers need to be prepared to invest resources in similar innovations. They may benefit by being able to negotiate with senior leaders or their service's commissioners so that either extra resources are supplied or planned activity is temporarily reduced while staff invest time in making improvements that might increase patient contacts in future, or improve "patterns of care" (NHS England, 2014, p. 5). However when a return on investment is not always guaranteed, it is acknowledged that this is a difficult proposition to put into practice.

Limitations

The feedback using the module's 10-point checklist did not incorporate a measure at the beginning of the module so could not capture improvement, and the Aspects of Work measure was biased towards responses of improvement rather than deterioration. The 10-point checklist measure was improved in the second implementation year to capture a 'before' measure for services, but these are acknowledged as weaknesses in the study design. With regards to the qualitative element, although the second author acted as a 'critical friend' (McGrath and O'Toole, 2012), the qualitative analysis was carried out by just the first author. In addition, as this is not a complete realist evaluation, this study has not captured changes to contexts over time and was not able to identify or test specific Context-Mechanism-Outcome configurations during the implementation to make improvements along the way. For instance, although the qualitative analysis offers explanations behind the variation in the perceived impact of the implementation, it is not clear whether the services that only reported small reductions in stock value were already controlling stock efficiently, or they did not carry out the '5S' Inventory Check thoroughly. However, this study has addressed part of the realist evaluation cycle and may inform other implementations of the Well Organised Working Environment module and other similar improvement programmes to continue this cycle.

Conclusion

Quantitative analysis of an implementation of the Well Organised Working Environment found that the '5S' Stock inventory exercise reduced the stock value held by the organisation by £42,500, but that savings across services ranged from £4 to £5039. End of Module Assessment results found that for nine out of ten standards of the module, over 88% of respondents agreed that these standards were upheld in their service, and 62% of respondents reported that their working environment had improved. Using qualitative framework analysis and principles of realist evaluation, analysis of interview data with 45 staff and a focus

group with four members of the Implementation Team identified that the implementation employed three main mechanisms of change during the Well Organised Working Environment module implementation; the '5S Sort', Stock Control Methods, and Visual/Spatial Management. Factors that constrained success included staff not having enough time to carry out the work or to sustain the changes made, improvement not being perceived to be required or possible, and the assumption by implementation team members that elements of the innovation would not engage staff without this assumption being tested. Contexts that enabled success included managers and staff members allocating resources to carry out the Well Organised Working Environment module work, effective support from the Implementation Team, and staff members being willing to try the module work even though success was not guaranteed. The findings from the examination of the quantitative and qualitative analysis suggest that commissioners of innovation should set targets which encourage sustained improvement efforts over the long term rather than simple before and after measures, and any quantitative benefits demonstrated should be able to clearly linked to their cause, at least as far as possible within the complexities of healthcare. Managers in healthcare need to acknowledge the importance of their support of staff taking part in improvement initiatives, and need to be willing to invest time and resources of their services in order to create and sustain improvements. Healthcare staff need to be willing to take part in innovations even when there is no guarantee of its success, and implementation teams need to be willing to discuss or pilot aspects of innovations with staff even if they feel that they will not engage with them, before making an executive decision that they will not work.

References

Avis, K. (2012). CASIL Report - Releasing Time to Care Productive Ward & Productive Mental Health Ward Last Retrieved, 2 March 2014, from http://www.hqc.sk.ca/Portals/0/documents/casil-report-january-2012.pdf

Begun, J. W., Zimmerman, B., and Dooley, K. (2003). Health care organizations as complex adaptive systems. In S. Mick and M. Wyttenbach (Eds.), Advances in health care organization theory (pp. 253-288). San Francisco: Jossey-Bass.

Black, J. R., and Miller, D. (2008). The Toyota Way to Healthcare Excellence: Increase Efficiency and Improve Quality with Lean. Chicago, IL, USA: Health Administration Press.

Blakemore, S. (2009). How Productive Wards Can Improve Patient Care. Nursing Management, 16(5), 14.

Bradley, D., and Griffin, M. (2015). Staff perceptions of a Productive Community Services implementation: A qualitative interview study. International Journal of Nursing Studies, 52, 1052-1063. doi: http://dx.doi.org/10.1016/j.ijnurstu.2015.02.005

Creswell, J. W., and Plano Clark, V. L. (2007). Choosing a mixed methods design Designing and conducting mixed methods research (2nd ed., pp. 53-106). Los Angeles, London, New Delhi, Singapore, Washington DC: Sage.

Damanpour, F. (1987). The adoption of technological, administrative, and ancillary innovations: Impact of organizational factors. Journal of management, 13(4), 675-688.

Davis, J., and Adams, J. (2012). The 'Releasing Time to Care – the Productive Ward' programme: participants' perspectives. Journal Of Nursing Management, 20, 354-360.

Dean, E. (2014). Creating more time in the day for patient care. Nursing Management, 21(1), 9.

Ethics Committee of the British Psychological Society. (2009). Code of Ethics and Conduct: Guidance published by the Ethics Committee of the British Psychological Society Leicester: The British Psychological Society.

Foster, S., Gordon, P., and McSherry, W. (2009). Rolling out Productive Ward foundation modules across a hospital trust. Nursing times, 105(30), 28-30.

Fox, N. (2000). Data collection by observation. In A. Wilson, M. Williams and B. Hancock (Eds.), Research approaches in primary care (pp. 135-159). Oxon, UK: Radcliffe Medical Press.

Greenhalgh, T., Humphrey, C., Hughes, J., Macfarlane, F., Butler, C., and Pawson, R. (2009). How Do You Modernize a Health Service? A Realist Evaluation of Whole-Scale Transformation in London. Milbank quarterly, 87(2), 391-416.

Harrison, S. (2008). Accident and infection charts put on display to motivate ward team. Nursing Standard, 22(25), pp.9.

Howell, D. (2013). Statistical methods for psychology (8th ed.): Wadsworth.

Kazi, M. A. F. (2003). Realist Evaluation in Practice: Health and Social Work. London, Thousand Oaks, New Delhi: Sage Publications.

Lennard, C. (2014). Productive Ward initiative promotes better communication between mental health teams and ensures timely discharge for patients. Journal of psychiatric and mental health nursing, 21(1), 93-96.

McGrath, H., and O'Toole, T. (2012). Critical issues in research design in action research in an SME development context. European Journal of Training and Development, 36(5), 508-526. doi: 10.1108/03090591211232075

Moore, D., Blick, G., Leggott, J., and Bloodworth, K. (2013). Assessment of the implementation of the Productive Ward and Productive Operating Theatre programmes in New Zealand: Health Quality & Safety Commission and the Ministry of Health, New Zealand.

National Nursing Research Unit and NHS Institute for Innovation and Improvement. (2010). The Productive Ward: Releasing Time to Care™, Learning and Impact Review (pp. 1-108). Warwick: NHS Institute for Innovation and Improvement.

Newton, J. M., Kelly, C. M., Kremser, A. K., Jolly, B., and Billett, S. (2009). The motivations to nurse: an exploration of factors amongst undergraduate students, registered nurses and nurse managers. Journal Of Nursing Management, 17(3), 392-400.

NHS East of England. (2010). Releasing Time to Care: The Productive Ward Report on the Impact and Sustainability of the Programme Across Trusts in the East of England NHS (pp. 1-58). NHS East of England: Unpublished.

NHS England. (2014). Commissioning for Quality and Innovation (CQUIN): 2014/15 Guidance   Retrieved from http://www.england.nhs.uk/wp-content/uploads/2014/02/sc-cquin-guid.pdf

NHS Institute for Innovation and Improvement. (2009). Productive Community Services: Releasing Time to Care - Toolkit, Version 1. Coventry: NHS Institute for Innovation and Improvement.

NHS Institute for Innovation and Improvement. (2011). The Productive Series Last Retrieved, 20 March 2011, from http://www.institute.nhs.uk/quality_and_value/productivity_series/the_productive_series.html

NHS Institute for Innovation and Improvement. (2012). The Productive Series (An Introduction) Last Retrieved, 19 March 2012, from http://www.institute.nhs.uk/quality_and_value/productivity_series/the_productive_series.html

NHS Scotland. (2008). Releasing Time to Care Evaluation: Healthier Scotland, Scottish Government.

NHS Scotland. (2013). Releasing Time to Care: Making our Priorities Possible - Final Report Last Retrieved, 19 April 2014, from http://www.healthcareimprovementscotland.org/our_work/person-centred_care/releasing_time_to_care/rtc_final_report.aspx

NHSI. (2009). Productive Community Services: Releasing Time to Care - Well Organised Working Environment, Version 1. Coventry: NHS Institute for Innovation and Improvement

Nohria, N., and Gulati, R. (1996). Is slack good or bad for innovation? Academy of Management Journal, 39(5), 1245-1264.

Pawson, R. (2006). Evidence-based policy: A realist perspective. London, California, New Delhi: Sage publications.

Ritchie, J., Lewis, J., and Elam, G. (2003). Designing and Selecting Samples. In J. Ritchie and J. Lewis (Eds.), Qualitative research practice: A guide for social science students and researchers (pp. 77-108). London, Thousand Oaks, New Delhi: Sage Publications.

Smith, J., and Rudd, C. (2010). Implementing the productive ward management programme. Nursing Standard, 24(31), 45-48.

Spencer, L., Ritchie, J., O'Connor, W., Morrell, G., and Ormston, R. (2014a). Analysis in Practice. In J. Ritchie, J. Lewis, C. McNaughton Nicholls and R. Ormston (Eds.), Qualitative Research Practice: A Guide for Social Science Students and Researchers (2nd ed., pp. 295-346). London, California, New Delhi, Singapore: Sage.

Spencer, L., Ritchie, J., Ormston, R., O'Connor, W., and Barnard, M. (2014b). Analysis: Principles and Processes. In J. Ritchie, J. Lewis, C. McNaughton Nicholls and R. Ormston (Eds.), Qualitative Research Practice: A Guide for Social Science Students and Researchers (2nd ed., pp. 269-293). London, California, New Delhi, Singapore: Sage.

White, M., Wells, J. S., and Butterworth, T. (2014a). The impact of a large-scale Quality Improvement Programme on Work Engagement; Preliminary Results from a national cross-sectional-survey of the 'Productive Ward'. International Journal of Nursing Studies, http://dx.doi.org/10.1016/j.ijnurstu.2014.05.002. doi: http://dx.doi.org/doi:10.1016/j.ijnurstu.2014.05.002

White, M., Wells, J. S., and Butterworth, T. (2014b). The transition of a large-scale quality improvement initiative: a bibliometric analysis of the Productive Ward: Releasing Time to Care Programme. Journal of Clinical Nursing, 23(17-18), 2414-2423. doi: 10.1111/jocn.12585

White, M., Wells, J. S. G., and Butterworth, T. (2013). The Productive Ward: Releasing Time to Care™ – What we can learn from the literature for implementation. Journal Of Nursing Management, 22(7), 914-923. doi: 10.1111/jonm.12069

Wilson, G. (2009). Implementation of Releasing Time to Care - the productive ward. Journal Of Nursing Management, 17(5), 647-654.

Wright, S., Cleaver, C., and Dibblin, A. (2012). Implementing productive community services modules. British Journal of School Nursing, 7(1), 37-41.

Wright, S., and McSherry, W. (2013). A systematic literature review of Releasing Time to Care: The Productive Ward. Journal of Clinical Nursing, 22(9-10), 1361-1371.
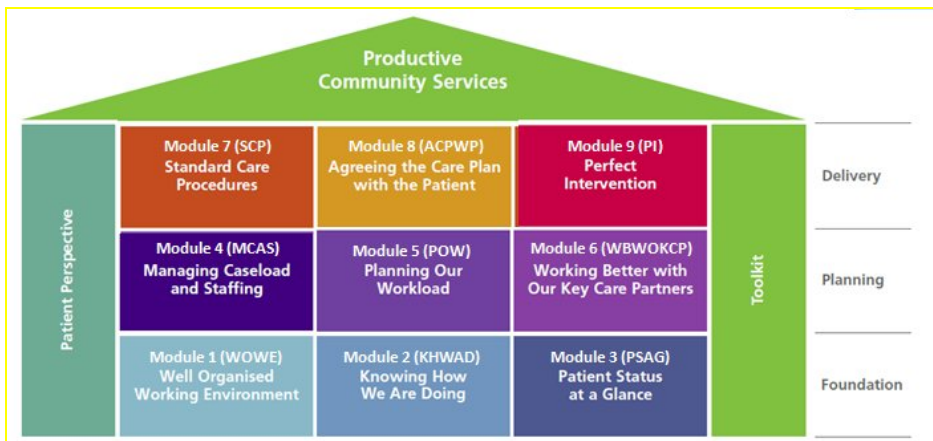
Figure 1: The Productive Community Services House (NHSI, 2009, p. 5) (module numbers and abbreviations have been added). Image used with kind permission of NHS Improving Quality
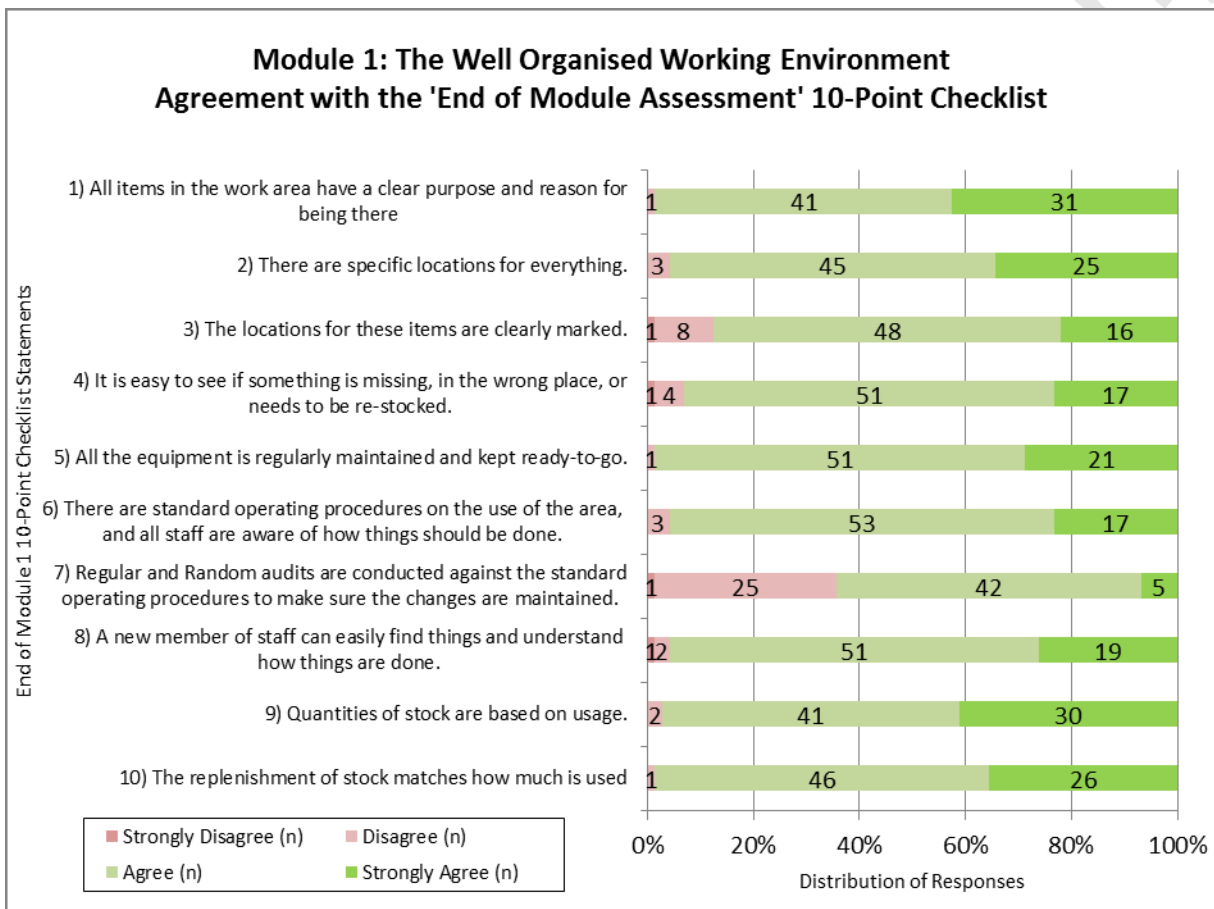

Figure 2: Year 1, Responses to the 10-Point Checklist in the End of Module 1 Assessment
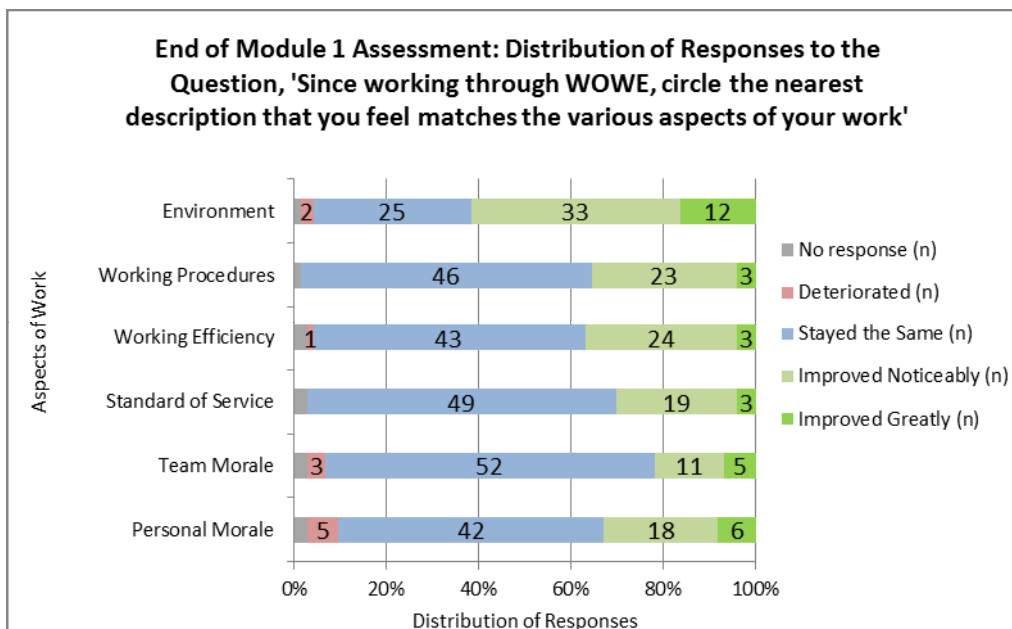
Figure 3: Year 1, Responses relating to Aspects of Work for the End of Module 1 assessment

Service	Value Before (£)	Value After (£)*	Savings (£)	Savings %
Rapid Assessment Unit (RAU)	896.59	731.02	165.57	18.47
Admission Avoidance	3,953.91	2,123.10	1,830.81	46.3
District Nursing Area F	14,897.27	7,849.57	7,047.70	47.31
Paediatric Speech and Language	13,820.00	9,181.24	4,638.76	33.57
Immunisation Team	17,831.43	13,403.30	4,428.13	24.83
Wheelchair Services	113,057.20	112,811.90	245.30	0.22
Early Years Development Service	17,433.50	12,414.50	5,019.00	28.79
Children's Locality Team; Area D	38.44	33.96	4.48	11.64
District Nursing Area G	6,463.51	4,554.13	1,909.38	29.54
Children's Community Nursing	1,345.05	772.86	572.19	42.54
Adult Speech and Language Therapy	1,929.26	169.34	1,759.92	91.22
Smoking Cessation	11,080.23	9,209.00	1,871.23	16.89
Locality Team; Area F and Area G	1,637.66	853.66	784.00	47.87
Locality Team; Area S	727.16	658.56	68.60	9.43
District Nursing Area S and T	2,778.46	2,303.17	475.29	17.11
Phlebotomy	2,340.89	1,174.90	1,165.99	49.81
Scheduled Therapy	11,352.44	6,313.24	5,039.20	44.39
Unscheduled Therapy	2,784.53	936.47	1,848.06	66.37
Tissue Viability	3,401.74	2,306.17	1,095.57	32.21
District Nursing Area D6	6,915.58	6,497.83	417.75	6.04
District Nursing Area D10	3,371.24	3,171.24	200.00	5.93
District Nursing Area E	1907.99	1709.06	198.93	10.43
Podiatry	30,182.48	28,633.16	1,549.32	2.86
Paediatric Occupational Therapy and Physio	105,290.49	105,103.49	187.00	0.18
Community Dental	1,561.88	1,543.58	18.30	1.17
Total	376,998.93	334,458.45	42,540.48	11.28
Mean	15,079.96	13,378.34	1,701.62	
Standard Deviation	29,258.25	29,454.06	1963.35	

Table 1: Stock values and savings before and after the '5S' Sort and Stock Inventory (Source: the organisation's internal progress report, 2011)

* The 'Value After' was based on either the actual value of stock items held after the removal of stock, or the value based on the maximum stock level held if maximum levels were set.
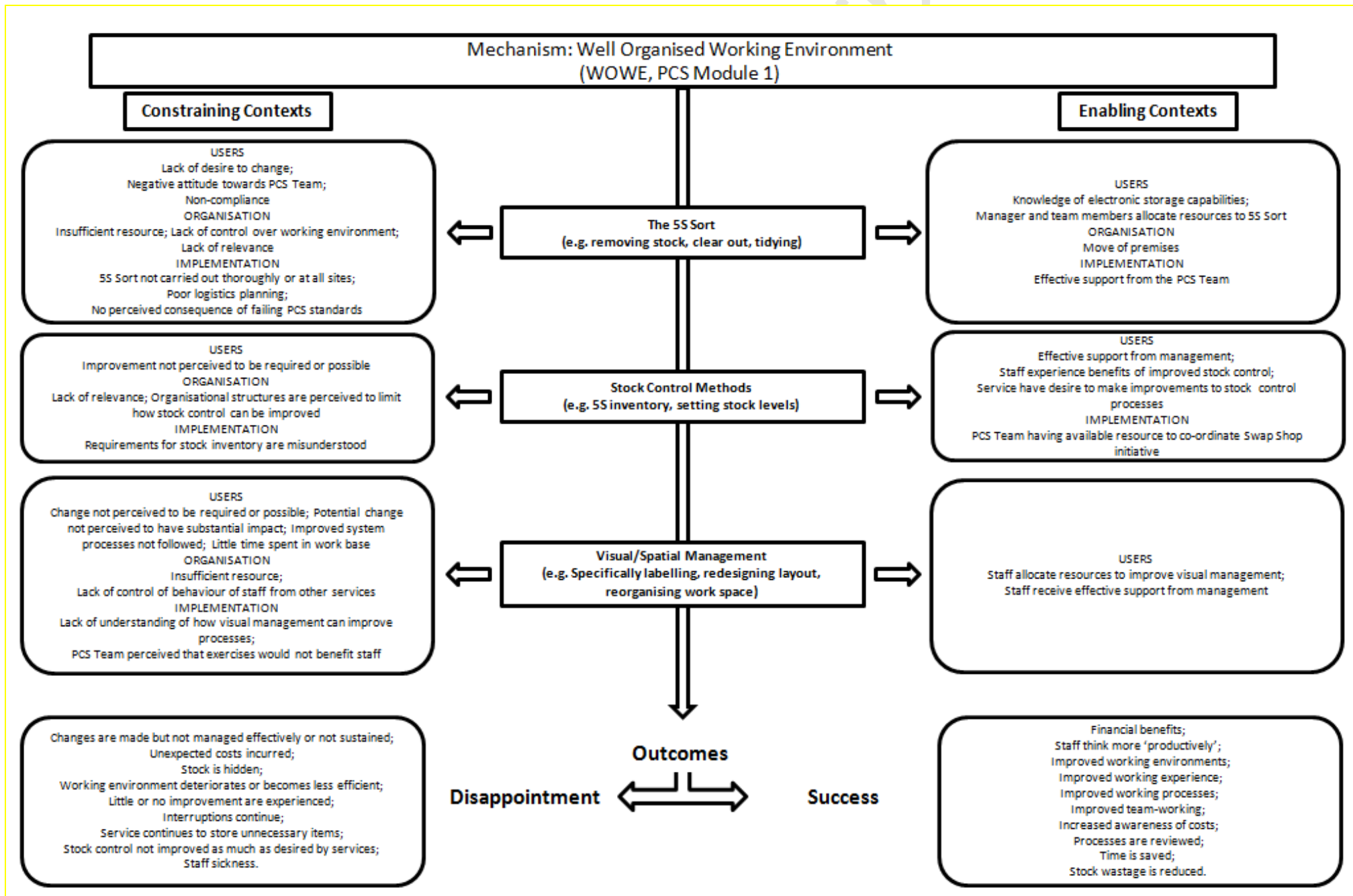
Figure 4: The Contexts, Mechanisms and Outcomes of an implementation of the Well Organised Working Environment, based on a model by Greenhalgh et al. (2009)

Example interview questions for non-Senior Managers	Example interview questions for Senior Managers (adapted from National Nursing Research Unit and NHS Institute for Innovation and Improvement, 2010, p. 95)
• Can you think of any examples of the changes that have been made as a result of the Productive Community Services programme in your service? • As a team you would have been allocated a dedicated Productive Community Services Co-ordinator. Was this useful? Would it have been possible to do the Productive Community Services work without one? • Do you feel that management (e.g. your line manager or the management above them) supported Productive Community Services? • If there were any changes, do you think these will be sustained now that the Productive Community Services programme is over?	• Can you just talk about the process of deciding to implement Productive Community Services in [the organisation]? • What prompted its implementation? • Was there any objection to its being run in [the organisation]? • What is it about The Productive Community Services that appeals to healthcare organisations? • Have you had any feedback from staff who have implemented it?

Figure 5: Examples of interview questions (Bradley and Griffin, 2015)

References (these are already showing in the main manuscript reference list)

Bradley, D., and Griffin, M. (2015). Staff perceptions of a Productive Community Services implementation: A qualitative interview study. International Journal of Nursing Studies, 52, 1052-1063. doi: http://dx.doi.org/10.1016/j.ijnurstu.2015.02.005

Greenhalgh, T., Humphrey, C., Hughes, J., Macfarlane, F., Butler, C., and Pawson, R. (2009). How Do You Modernize a Health Service? A Realist Evaluation of Whole-Scale Transformation in London. Milbank quarterly, 87(2), 391-416.

National Nursing Research Unit and NHS Institute for Innovation and Improvement. (2010). The Productive Ward: Releasing Time to Care™, Learning and Impact Review (pp. 1-108). Warwick: NHS Institute for Innovation and Improvement.

NHSI. (2009). Productive Community Services: Releasing Time to Care - Toolkit, Version 1. Coventry: NHS Institute for Innovation and Improvement.