University of Sunderland

Usage guidelines

Development of a new Balanced Evaluation Framework for Service Improvement.

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Abstract

The drive to improve services and products and to achieve "improvement" in organisations that deliver them is relentless and permeates all walks-of-life. Since the mid-1990s, both in the United States of America (USA) and in the United Kingdom (UK), there has been increasing interest in service improvement within the healthcare sector. Following its introduction, the iterative components of improvement theory (Deming, 1994) have been adapted for use in healthcare. Early improvement frameworks, for example, European Foundation Quality Management (EFQM, 1999) and Process Redesign (Hammer and Champey, 1993), developed from manufacturing which focused upon mechanistic processes more suited to industrial settings. The adaptation of such frameworks lacked evaluation because they excluded the humanistic aspect of change. This highlights the deficiency of "fit-for-purpose" evaluation frameworks that may not fully recognise the human elements of improvement. This research is an attempt to address these deficiencies through the inclusion of a more human relations oriented core component to the practice of service evaluation.

(159 words).

Keywords

Context

We initiated this study in recognition of the needs of health institutions in being able to understand more clearly how we might evaluate new change initiatives in terms of efficiency, impact and sustainability. The research started with an exploration of the literature surrounding service improvement, in order to adapt and implement existing tools and techniques. The review highlighted that most of the literature focuses on the adaptation and implementation of service improvement initiatives, while limited information is available on the evaluation stage of the process. The Institute of Healthcare Improvement (IHI) uses the Model for Improvement (MFI) as a framework to guide improvement work (Langley et al 2009 page 11).

Consequently, much of the published literature questions the sustainability and impact of service improvement at intra-organizational level (Rogers 1995; Piredit 2000), which has undoubtedly led to scepticism among healthcare professionals. Intra-organisational improvement is improvement within organisations and inter-organisational change is aimed at interventions used to raise performance across different organisations and themed groups (Conner and Scott 2005).

Growing expertise in this area led to the development of a theoretical model, which is one where the initiation, implementation and evaluation of service improvement initiatives, go hand in hand and are inextricably linked (Prochaska and Velicer, 1997).

We recognised that evaluation of improvement initiatives, at a local level, was at best ad hoc, and at worst non-existent. This is understandable, given that evaluation is often complex, but to overlook its importance can leave many of us asking the question*, has it made a difference*? This led to the focus of this research, namely:

The development of an intra-organizational evaluation framework that we can use to establish the effectiveness of a service improvement initiative.

We believe that developing strategies that work effectively within an organisation is a crucial and complementary stream of work, which is necessary if transformation of healthcare in the United Kingdom (UK) is to take place (Modernisation Agency, 2002).

Purpose

The intended outcome of this study is a Balanced Evaluation Framework (BEF), available to individuals and teams involved in initiating improvement, to aid them in achieving their goals. In this way, we can allocate resources in the most effective way and we can tailor each individual project to achieve its desired outcomes.

Method

We selected the Action Research (AR) methodology for the purpose of this research. Action Research is ideally suited to dynamic service improvement as it recognises the complexity of human and social interactions that result in change (Phelps and Hase 2002). Action Research involves a process of enquiry, intervention and evaluation, which is most appropriate when improved practices and problem solving are core concerns. It has been applied in organisation and community groups (Gbrich 1999), which as a comparator, is a similar environment to that of a large regional hospital in the North East of England. In view of the work-based nature of the problem, it was felt that an action-orientated approach was required.

The Action Research process is cyclical and comprises four main stages, which are planning, acting, observing and reflecting (Fig 1).

Figure 1: Action Research Four-Stage Spiral.

Figure 1 Action Research Four Stage Spiral McNiff et al (1996)
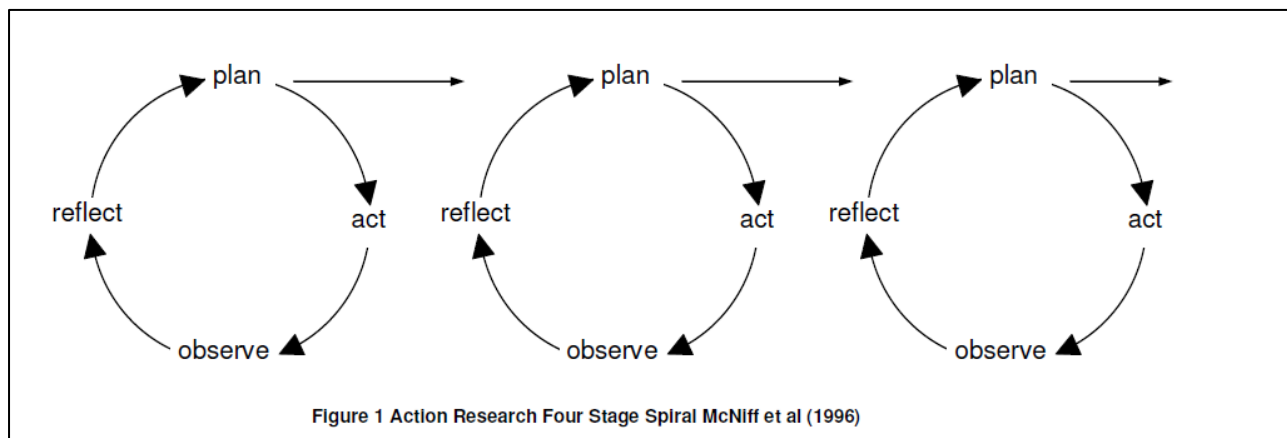
Lewin (1951) described Action Research as an iterative process, which implies that the research process is ongoing. Some describe this process is as a spiral, instead of a circle, in order to emphasise the iterative nature. Another key aspect this model is participation of the research stakeholders, which lends itself to be a more democratic research strategy in engaging people in the change process

The cyclical approach of the Action Research method allows continuous cycles of action and reflection to take place in order to capture the changes that occur naturally within the process. This involved constantly checking the changes that had taken place and understanding the presence of a particular theme, understanding its value and impact in relation to research and the organisation; therefore, providing internal validity. In terms of external validity, there is potential for others to apply the resulting outcome of this work to their health organisations, to aid measurement of improvement. A study that readily allows its findings to generalise to the population at large has high external validity.

This project included six action research iterations, each cycle resulted in a change to the next cycle, enabling learning development to move forward in understanding and analysing the practitioner participant views towards sustainable project evaluation. Our approach was to build a robust data set using data triangulation; the combination of two or more theories, data sources, methods, or investigations (Massey and Walford, 1999).

Triangulation is the application and combination of different research methods, to overcome possible bias of data collection and is considered one of the most significant strategies for strengthening the credibility of qualitative research (Lincoln & Guba, 1985; Miller & Crabtree, 1994).

The underlying assumptions of triangulation are that if multiple sources, methods, investigators, or theories provide similar findings, their credibility is strengthened. It also needs to be acknowledged that all these approaches have both strengths and weaknesses, but that using a number of methods allows a more robust set of data to be analysed. These methods need to be applied carefully within the scope of the project, balancing time and availability of the worker or insider-researcher and the participants against the depth of the theory that can be developed using these approaches, as highlighted above.

Figure 2: Data triangulation used for the study.
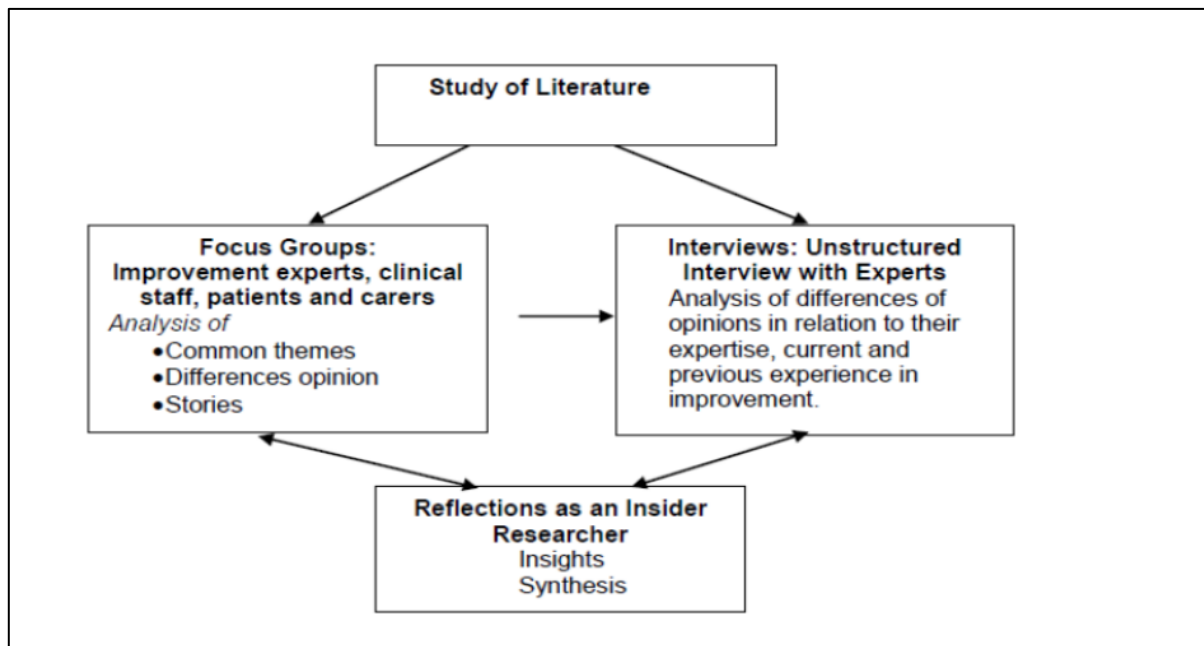
The data triangulation incorporated documentary searches from within the sponsoring organisation; three focus groups; unstructured interviews with up to 12 participants in each, and personal reflections collected in a written journal to record the insider researcher perspective (Costley et al, 2009). We illustrate the relationships of the four approaches to data capture in Fig 2 above.

Literature Review

The literature review yielded few resources, most of which are dated and concentrate on specific areas, such as public participation methods (Robert and Bate 2003), rather than evaluating the whole process of implementing an improvement initiative. This implies that the 'Evaluation', or 'Measurement of Service Improvement Initiatives' in healthcare is not yet present and mainstreamed. The resources for improvement evaluation are often scattered and subjective to the improvement under discussion, rather than a framework to support any improvement initiative.

The research revealed that the NHS had been attempting to put efforts into Measuring Performance Improvement, however, the information relating to it remains incomplete and difficult to assess. The literature review also identified the difficulties and complexities in the particular measurement of healthcare. It is not as easy as measuring improvement in a business organisation, where objective data can be more easily recorded, provided and presented. Healthcare deals with situations and activities that may be more difficult to record. They pass the subjective minds that individuals acquire and develop features with idiosyncrasies unique to the human experience. These idiosyncrasies develop from differing personal constructs, which evolve through experiences. Benner (1984) explains experience as:

> *'… results when preconceived notions and expectations are challenged, refined, or disconfirmed by the actual situation'* Benner (1984).

Each individual will have different experiences, and therefore, each person will have a unique view of each experience, leading to idiosyncrasies. It is through these experiences that expertise develops. Benner (1984) describes this in relation to the expert nurse:

> *"... who perceives the situation as a whole, uses past concrete situations as paradigms, and moves to the accurate region of the problem without wasteful consideration of a large number of options'* . *'In contrast, the proficient nurse in a novel situation must rely on conscious, deliberate, and analytic problem solving.... not all knowledge embedded in expertise can be captured in theoretical propositions, or with analytic strategies that go into the decision. However, the intentions, expectations, meanings of expert practice can be described."* (Benner 1984)

Healthcare involves several factors that are difficult to quantify, for example, understanding cost savings in relation to improvement activity. However, we should measuring improvement, nonetheless, in order to recognise change as successful.

Inevitably, the measurement of performance improvement, or service improvement initiatives, leads to quality healthcare, as well as the focus and realization of goals. This is unlike business organizations, which will normally have measurement criteria, agreed beforehand, of a more objective nature. This review has highlighted the need for a comprehensive evaluation framework for service improvement initiatives.

In summary, the findings from the literature review were as follows:

- The review yielded few resources, most of which were dated and concentrated on specific areas, such as public participation, rather than the whole systems process of implementation of an initiative.
- The implication that evaluation and measurement of service improvement initiatives are not yet present and mainstreamed.
- That some effort was being put into performance measurement, but was incomplete.
- There is recognition in the literature of the difficulty and complexities of evaluation measurement in healthcare.
- That measurement of performance, or service delivery, can lead to better understanding of quality of healthcare and potential for improvement, therefore, a need to evaluate critically and effectively.

From the literature review and the collection of primary data, we derived the following topics for detailed investigation:

1. To understand what we mean by Evaluation and Measurement.

The literature did not discuss evaluation and measurement, in relation to its link with evaluation frameworks. Indeed, this aspect was implicit, rather than explicit. Inglis and Matykiewicz (2005) describe evaluation as:

> *"Performance orientated, occurring before and during programme implementation. It focuses on understanding and learning form the processes to make sense of outcomes*."

With measurement described as:

> *"A few specific measures, linked to the programme objectives and aims, demonstrate whether the changes are making improvements."* (Modernisation Agency, 2005)

The results of the focus groups further supported this as they viewed evaluation as:

- Assessment
- Qualitative
- Subjective
- Summary

Moreover, they viewed measurement mainly as:

- Quantitative

These responses highlighted the need to ensure that we incorporate both evaluation and measurement into the evaluation framework, to capture both outcomes and outputs in relation to potential service improvement.

2. Investigate whether measurement and evaluation are interdependent or exclusive.

The results clearly highlighted that measurement and evaluation are both interdependent and exclusive. Therefore, in order to get a complete picture of the impact of an improvement initiative, we need to consider both 'hard' measures and 'softer' measures.

## 3. Determine what elements were missing from the framework and the impact on practice.

The focus group feedback demonstrated that the participants felt that they could use the framework in practice. It was felt, however, that they should develop a feedback mechanism for the framework to ensure sustainability. They also noted that a user-friendly guidance pack was a required development, to support users of the framework and its implementation.

Based on the feedback from the focus groups the framework was further refined to reflect the focus group discussions.

The more detailed and refined data enabled the production of an evaluation framework for practitioners, homogenised to the NHS environment to aid accurate demonstration of service improvement initiatives at intra-organisational level.

The project has led to the production of a BEF (Fig. 3) for use by practitioners and teams, when implementing a change initiative.

We produced a guidance document to support the framework and is available to aid implementation by talking through the steps in the cycles and posing questions to consider at each stage to ensure successful application.
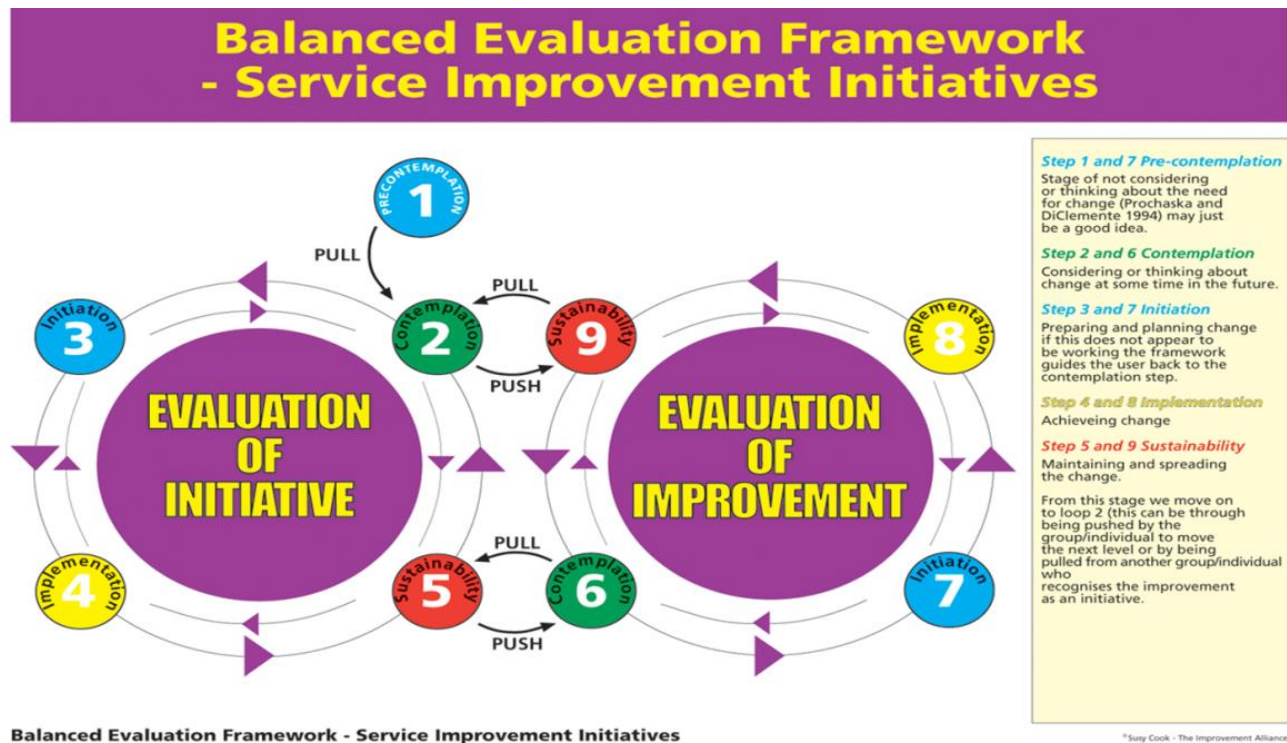
Figure 3: Balanced Evaluation Framework

The following vignette 1 describes the implementation of the BEF to a quality improvement initiative within

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Vignette: Demonstration of using Balanced Evaluation Framework (BEF) in the Implementation and identification of Improvement in a Medical Physics Department within a large acute NHS trust.

Support was requested (BEF pull strategy) from the head of medical physics, with regard to independent assistance in reviewing the skill mix and working practices of the Medical Physics Department within a large acute Trust.

Discussion took place regarding the organisational structure of the unit and how it is part of a regional unit. The HR function related to the personnel in the team, which is based at a neighbouring large Trust.

The Medical Physics department sees approximately 2500 patients per annum. Working practices within the department differ from other centres across the region, in that the staff work extended days, therefore, a 4-day week. Part-time staff work this on a pro-rata basis and have devised a rota to accommodate these hours on either a 4 or 5-week cycle. This practice is historical and has been in place for approximately 10 years. There was a perception from other units that this may be an ineffective use of staff and have an impact on productivity, which has led to some external criticism. Performance within the unit, however, is perceived as 'good'.

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a medical physics department in a large acute Trust.

Issues Highlighted:

1. There were concerns (both externally and internally) that there is inflexibility within the workforce and that productivity may be affected as a result of working patterns.
2. Annual leave can be a problem in Feb/March.
3. No time-logs are kept by staff, or monitored by managers.
4. There is a perception that little work occurs beyond 5pm, which impacts on productivity.
5. There was variance in lunch breaks (30-60mins) depending on terms and conditions.
6. There was dependence on peripatetic staff to help cover service.
7. There was concern that working practices are causing problems, in relation to clinical governance, related to minimal staff levels, Health & Safety, Quality Assurance (some duplication required for checking purposes for QA).

Desired Outcomes (Cycle 1 BEF- improvement of initiative):

1. Demonstrate whether unit is working to maximum productivity and efficiency (P&E).
2. Determine whether extended hours have a detrimental effect on P&E.
3. Modelling of staff hours to present options and identify a model which maximises P&E

Work Carried Out:

A process review was carried out, which looked at processes in the unit, staffing rotas, staff views, complaints, capacity and demand. All data was analysed, and fed back to the staff and an action plan developed.

Outcomes:

1. There was a move to flexible working, rather than an extended working day. This would allow for training to be built in and ensure staff-cover at times of sickness and annual leave. It would also allow for flexible working patterns, based on demand. Proposals were produced (push and pull strategy).

2. An electronic scheduling system was implemented, to ease the pressure of booking patients and allow ease of auditing. It was recommended that the slots be built up into 20 minutes for the morning and 30 minutes for the afternoon sessions. The Improvement Team agreed to work with a member of staff to help get this up and running, if required (push strategy).

3. A clearly identified rota was made available.

4. Annual leave calculations were addressed, to fit with Trust policy.

5. The team requested a team development day looking at the softer elements of leadership, to be led by HR and/or Improvement Alliance, to improve team dynamics and communication (pull strategy).

6. Following this review, the improvement team asked for support to redesign Urodynamic Services, using lessons learnt from the Medical Physics review demonstrating the pull strategy to Cycle 2 of BEF evaluation of improvement leading to adoption and spread.

The department was visited 6 months after implementation and systems were still in place that had been implemented through the change, and future continuous change was being planned.

Conclusions

This research has identified a gap in the existing body of knowledge, this being the evaluation of service improvement initiatives, which led to the development of a balanced evaluation framework (BEF).

The research highlighted that measurement and evaluation are often not considered in detail, when embarking upon change, but they are both important to understand the impact of a change initiative. It also emphasized that the framework needed to be user-friendly, be replicable, involve users and carers and that it needs to be embedded, top-down, in the organisation.

The Action Research approach was an effective method, as it has allowed for reflection and learning to take place and, in turn, aided the development of the framework, through iterative cycles.

We anticipate that the resultant framework will affect health policy, by first, raising the profile of service improvement within the organisation so that people become aware of the need to evaluate change initiatives. Secondly, the use of the framework will build capability within those leading improvements as they consider the implications generated by the application of the framework in practice.

Recommendations

Recommendations based on findings from this research are as follows:

- Need to embark on additional research, to test the effectiveness of the framework on the instigation of service improvement initiatives.
- Need to develop further the tools and techniques website for service improvement for the organisation, incorporating the model into the site.
- Need to spread and evaluate the impact of the framework within the organisation.
- Need to build the framework into the Service Improvement Master Classes for the organisation.

Learning Points and Next Steps

Healthcare operates in a challenging environment, where practitioners need to drive continually the improvement agenda forward, hold the gains from success and ensure that improving practice becomes the norm. Users have come to expect a service that is responsive to new knowledge and that can respond, timely, to innovations across healthcare, putting an end to unnecessary variation. The most valuable asset that healthcare has, is the knowledge of those involved in developing and delivering the services; that is what needs to be nurtured for future success.

The participants in the project have made an important contribution to the development of the evaluation framework. I am indebted to them for their open and honest contribution. All the participants engaged in discussions and were happy to discuss and debate the initial drafts of the framework, with very little, if any, previous knowledge of what I was trying to do. What stood out, for me, was the fact that all the participants were happy to be involved with the design of the framework and adopted the framework positively. All expressed enthusiasm, personal learning and the feeling of adding value to service improvement.

The integration of the Balanced Evaluation Framework into quality improvement work continues. We anticipate that through the Q Initiative, founded by the Health Foundation, others will use the framework to support individuals and teams when thinking through an improvement they are undertaking. The

authors are currently working on further integrating the framework in to improvement research through Allied Health Science Network North East and North Cumbria in conjunction with the Q initiative.

References

Lewin K. (1951) *Field Theory in Social Science: Selected Theoretical Papers*. New York: Harper Row.

Benner P. (1984) From Novice to Expert: Excellence and Power in Clinical Nursing Practice. Menlo Park: Addison Wesley Publishing.

Lincoln Y and Guba E. (1985) *Naturalistic Inquiry*. Thousand Oaks, CA: Sage.

Deming WE. (1986) *Out of The Crisis*. Boston: MIT Print.

Miller WL, Crabtree BF. (1992) *Doing Qualitative Research: Multiple Strategies*. Newbury Park, CA: Sage.

Hammer M, Champey J. (1993) *Re-engineering the Corporation: A Manifesto for Business Revolution.* London: Nicholas Brealey Publishing.

Rogers EM. (1995). *Diffusion of Innovation* (4th Edition). New York: Free Press.

Prochaska JO, Velicer WF. (1997). The Transtheoretical Model of Health Behaviour Change. *Amercian Journal of Health Promotion***. 12:** 38-48.

European Foundation of Quality Management (1999). *The EFQM Excellence Model. Brussels: European Foundation for Quality Management*. http://www.m-w.com

Gbrich C. (1999) *Qualitative Research in Health: An Introduction*. Newbury Park: Sage.

Massey A, Walford G. (1999) (eds*), Explorations in Methodology: Studies in Educational Ethnography. Vol. 2*. Stamford: JAI Press.

Modernisation Agency (2002). *Improvement Leader Guides: Series 1*. London: Ancient House Printing Group.

Bate P, Robert G. (2003) 'Where Next for Policy Evaluation? Insights from Researching National Service Modernisation'. *Policy and Politics*. **31 (2):** 249-262.

Conner M, Scott M. (2005*) Intra-Organisational Spread: A Practical Framework for Service Improvement Across Healthcare.* Chichester, UK:Kingsham Press.

Matykiewicz L, Inglis S. (2005) *Demonstrating that Improvement Makes a Difference*. in M. Conner and S. Scott, *Intra-organisational Spread: A Practical Framework for Service Improvement Across Health Care*. Chichester: Kingsham Press.

Langley GL, Moen R, Nolan KM, Nolan TW, Norman CL, Provost LP. (2009) *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance* (2nd Edition). San Francisco: Jossey-Bass Publishers.

Phelps R, Hase S. (2002) 'Complexity and action research: exploring the theoretical and methodological connections'. *Educational Action Research*, **10 (3):** 503-519*.

Authors

Starting out as a biochemist, Susy gained her Masters Medical sciences degree at the University of Birmingham where she then took up a medical research post jointly with the University of Birmingham and the Birmingham Women's Hospitals investigating Women's cancers. After moving back to the North East, she took a role at Northern Cancer Network, Newcastle working on Cancer Collaborative involving project and programme management, followed by role at Sunderland Royal Hospital as cancer manager. She then moved the Service Improvement/Organisational Development Lead within the Corporate Improvement Team at South Tees NHS Trust whose aim was to support quality and performance improvement within the organisation. Susy completed her Doctorate with Middlesex University with a specialist interest in evaluation for improvement, and then took the role of Director of the Learning Research and Innovation institute at South Tees NHS Trust that gained Institute status for through secretary of state approval. She is currently undertaking a regional role at AHSN-NENC to Senior Programme Manager for Quality improvement initiative founded by Health foundation and is a Q member. Susy is also honorary professor, Faculty of Health Sciences and Wellbeing at Sunderland University.

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Sponsor

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Statement of Originality

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