IMPLEMENTING CHANGE IN THE NHS:

EFFECTS OF CLINICAL LEADERSHIP ON PERFORMANCE IMPROVEMENT

A thesis submitted in partial fulfilment for the degree of
Doctor of Business Administration

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DEDICATION

To my mother, who taught me all I know about life and learning.

ABSTRACT

Title: Implementing change in the NHS: Effects of clinical leadership on performance improvement.

The National Health Service (NHS) is an intricate amalgam of disparate health care organisations. This research investigated critical success factors for implementing change in the complex environment of acute NHS hospitals in England.

The research is of theoretical and practical importance because it includes every acute NHS hospital in England. In doing so it informs future efforts to improve how change and clinical leadership are progressed in NHS hospitals. As a consequence, the findings provide theoretical and practical support for NHS staff in developing, leading and delivering successful change strategies for the ultimate benefit of NHS patients.

Conflicting and dichotomous views have emerged on what makes change in the NHS happen. Current views reflect the importance of a range of different concepts including leadership, culture and environment. This research draws together theoretical, ideographic and nomothetic knowledge and tests this out in a real world setting.

A biphasic emergent research strategy was adopted which incorporates both qualitative and quantitative methods founded upon a predominantly positivistic stance. The first stage used semi-structured interviews of front-line NHS staff to identify rich, descriptive data concerning the factors perceived to either help or hinder their efforts. Themes generated from this were combined with concepts derived from the literature to provide the foundation for the second stage of the research.

Every acute NHS hospital in England was engaged in a major national change programme to improve the quality of care to Accident and Emergency patients. The second phase of the research involved designing and administering a

large-scale survey questionnaire to front-line staff who were participating in this programme.

Results confirm a positive relationship between (transformational) clinical leadership and organisational performance in an NHS context. Furthermore, a two factor model of transformational leadership in an NHS context was found in which successful leaders generate and manage a vision, and empower staff to make changes happen. In addition to these research findings the novel methodological approach taken represents a contribution, refining research instrumentation in this complex area.

This empirical research makes both theoretical and practical contributions to the management of change. These contributions transcend healthcare and will be of interest to those concerned with the management of change in large complex organisations.

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There are many people that I would like to acknowledge for their support throughout the period I have spent conducting the research and writing this thesis. As there have been many who have helped me along the way I run the risk of omitting someone. If this is the case I extend apologies in advance.

1 This research would not have been possible without the support and active participation of NHS staff in the three (unnamed) hospital sites; staff from the 155 NHS acute hospitals; the participants in the Emergency Services Collaborative; those who attended the ESC learning events; the 1016 clinical leads; the ESC national team and countless other staff in the NHS Modernisation Agency and Department of Health whose views helped shape the ideas for the research. In addition the 6 National wave leads and the local programme managers in each site worked assiduously in support of this research and I believe that the high survey return rate can be attributed to their enthusiasm, energy and effort.

1 Participants in one of the focus groups included change experts of international repute and I thank them for their time and interest in the work. Participants at the numerous Henley Management College Colloquia also helped me develop the research by offering useful critique and appraisal of the work as it progressed.

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PREFACE

This research was completed over a three and a half year period from 2002 – 2005. As a manager-practitioner in the National Health Service (NHS) in England, I was interested in exploring how successful change happens in the NHS. My curiosity and interest in this highly relevant topic has remained constant throughout and beyond this research, and my thinking has developed as the research progressed.

As the business field of change is vast I was initially unsure about which aspect to focus on. I therefore designed the study to evolve through an emergent approach. I began with a broad focus on 'change' and explored different aspects of this. Whilst conducting the research, the sub-theme of leadership emerged and was validated as an important construct for making change happen in the NHS. Thus the research process was founded on an action learning approach. Though the style of this thesis is predominantly academic in nature, it is reported as a chronological learning journey which takes the reader through the stages of the research in the order that they occurred.

Although an early research strategy was planned, this changed during the life cycle of the study and a refined, emergent strategy evolved. To ensure that the highly iterative nature of the learning and the research was not lost, the thesis is written with the metaphor of a journey in mind. Whilst the format of the thesis retains a traditional structure, it is interspersed with occasional personal comments to reflect the learning as it occurred. This is designed to enable the reader to understand the development of the research in the order that it occurred and to emphasise the nature of the research as neither predetermined nor fixed from the outset. It is hoped that this makes the thesis more interesting and lively for the reader, as well as emphasising the continuous learning journey.

Karen Castille
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CHAPTER ONE

Introduction

1.1 Introduction

Since its inception in 1948 the National Health Service (NHS) has become the biggest single system of health care in the world and the largest single organisation in Europe. Managing such a vast, complex service organisation requires robust strategies to ensure that the core business processes and practices are continually improved.

The vast array of public sector organisations that comprise the NHS are in an unprecedented state of change and interaction (Waring and Wainwright 2002; Cereste, Doherty and Travers 2003). Similar to other UK public sector organisations the NHS is subject to constant re-structuring, re-organising, mergers and re-focusing as a result of changes in government and consequential policy changes. Notwithstanding this, the NHS must continue to find ways to improve for the benefit of patients and the wider public whilst operating in a dynamic, unstable environment.

With an increasing focus on private sector provision, this presents both opportunity and threat for the NHS in an increasingly competitive market where to survive and excel it must strive to realise its latent potential and learn from (and implement) its own best practices and innovations (Berwick 2000). Only then will it achieve positive organisational development and change, for the benefit of those who use and work in it.

The prime aim of the research described in this thesis was to offer improved understanding of the very complex NHS (England) and how it successfully makes changes within this highly intricate environment.

1.2 Structure of thesis

The research reported in this thesis is presented in the chronological order that it occurred. It is deliberately presented in this way to allow the reader to appreciate the evolving nature of the research, in the order in which it occurred, and to experience it as a learning journey.

Although the initial research question was concerned with what makes change happen in the NHS, this developed over time. The development of the research question, research process and methodology is presented progressively through the chapters. Thus whilst chapter two outlined initial thoughts and preliminary ideas these changed over time as a result of conducting focus groups and interviews which widened and deepened understanding of the problem. This, unusually, means that - for example - additional literature was reviewed and is reported in chapter three rather than including it with the main literature review in chapter two. An outline of each of the chapters is presented below.

The first chapter establishes the context for the research in an NHS setting to set the scene for the reader. A historical perspective is offered in terms of NHS hospital performance and some of the central change initiatives which were instituted to improve NHS performance. The research problem, as viewed at the onset of the research is presented and the initial aims are introduced.

The second chapter comprises a review and distillation of the literature in the context of the research problem and the initial questions that this presented. Relevant theory and empirical research is discussed both from a general perspective as well as one more specific to health and the NHS. This is conceptually represented as a concentric model comprising the essential constructs identified in the literature as important to the implementation of change.

Chapter three outlines the methodological approach for the research. It begins by defining and further developing the research problem and reports on how a series of qualitative interviews influenced this. The iterative development of the

research process is described. The investigation is further focused and the potential methods for conducting the research are appraised. As the research was narrowed and focused onto the more specific construct of leadership and its impact of performance additional literature reviews are included in this section.

The final methodological choice and rationale for this are described and the chapter culminates in the development of early hypotheses.

Chapter four describes the analysis and results of the quantitative aspects of the research using regression and factor analysis.

The final chapter discusses, appraises, compares and contrasts the results in light of the literature, extant theory and other empirical studies with resultant conclusions. The contributions of this research are outlined together with recommendations for further research.

1.3   NHS context and impetus for performance improvement

In 2000, the National Institute for Clinical Excellence (NICE) was set up to identify the best evidence based knowledge to guide practice within the NHS. However this organisation - and others with a similar purpose like universities and research and development organisations – is impotent in bringing about change by simply making this knowledge available, as knowledge is not self implementing.   An effective strategy, based on a strong theoretical understanding of what makes change happen and how it is implemented, is required to ensure that new or best practice is successfully implemented.

The NHS Plan (DOH 2000) identified tough improvement targets. The NHS Modernisation Agency (MA) was set up in April 2001 to support all parts of the NHS (England) in improving services for patients. The key focus of the Agency during its first year was to support the NHS to achieve NHS Plan targets (NHS Modernisation Agency 2001). This was set against a backdrop of enormous

gaps, for the majority of organisations, between what was their current performance level and the level that the NHS Plan stipulated.

An example of this was in the field of emergency care in England. The target set by the NHS plan was that by the end of 2004, all patients in Accident and Emergency (A&E) Departments would be seen, treated and discharged or admitted within 4-hours of arrival in A&E (DOH 2000). Although the four-hour A&E target was one of many set within the NHS plan it was subsequently asserted by the Prime Minister – Tony Blair – the Secretary of State for Health, Health Ministers and the Department of Health as the number one priority target for the NHS. Achievement of this target by December 2004 was affirmed as mandatory for all acute hospitals in England with an A&E department.

To illustrate the enormity of the challenge presented, in 2001 many patients who required admission to hospital were waiting over 12 hours to be admitted to a hospital bed. Furthermore, long waits were also being experienced in A&E departments for patients with less serious illness/injury. Not surprisingly, unnecessary waiting was one of the main reasons cited for patient dissatisfaction with health services in England (un-published Mori Survey, 2002). Thus, a pan-England large-scale step change was required to shift the NHS and meet the waiting-time targets. A range of interventions were devised at national level. These included a national improvement programme, rapid 'hit-squad' type intervention teams and financial incentive schemes all designed to tackle the areas where waiting times were distant from the target. Most initiatives (at that time) were initiated and run by the MA.

Following the introduction of the targets and subsequent performance improvement programmes and performance management initiatives, national data for England began to reflect improvement, in particular, against the 4-hour A&E target (see figure 1.1 below). The chart in figure 1.1 shows that initially **79.5%** of A&E attendees were admitted, transferred or discharged to a ward within 4 hours of arrival at A&E during the week ending 19th January 2003 (national data prior to this remained fairly constant at around 78%). By

September 2003 the national performance level had risen to around 90.3%, and by August 2004 it had risen to 95.9%.

The improvements seen were due to a range of factors and interventions. The most prominent and largest of these was a £35 million, national Emergency Services Collaborative (ESC) Programme which was set up during autumn 2002 and ran through to autumn 2004. The ESC was instigated and managed by the MA and included every acute hospital in England that had an A&E department. At this time I was the NHS Modernisation Agency's National Director of Emergency Care and, as such, the overall lead responsible for initiating and managing the ESC programme of work.

Figure 1.1

Total time in A&E between January and September 2003

(source: Compiled from Department of Health, national SITREP data, unpublished)
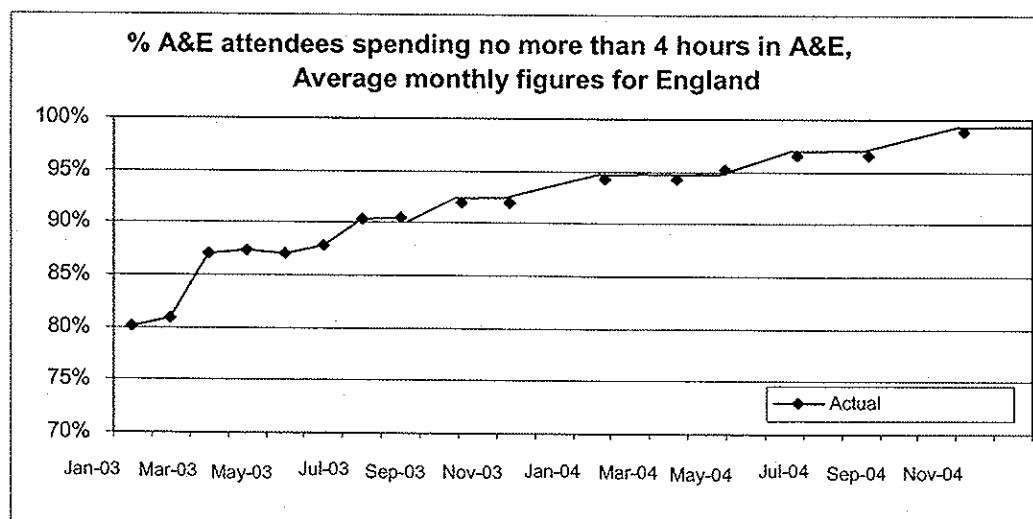
Participating organisations in the ESC were supported in identifying their local system constraints and encouraged to make changes to effect performance improvement against the target. The implemented changes made by local teams were measured, tested, and reported. The learning about improvements made by each local hospital was shared at large-scale learning events comprising multi-disciplinary teams of NHS staff.

Consistent with other MA initiatives it is important to state that although national aggregated data showed performance improvement, at a local level the degree of performance improvement was inconsistent and variable. This detail is hidden in national data shown in Figure 1.1 which shows the national average for the whole of England. From data produced locally at NHS hospital trust level and submitted to the MA and Department of Health for the national picture it was evident that whilst some sites improved dramatically others progressed more slowly, or not at all. Hence, where performance improvement was achieved there was a need to comprehend what factors helped or hindered this so that the learning could be shared with those organisations that were struggling to achieve improvement. Conversely, where improvement was sluggish or absent there was a need to understand and expose the factors that may have influenced this.

1.4   Introduction to the research problem

Collaborative methodology is an effective vehicle for encouraging the sharing and implementation of good or new practice. Despite this, some sites participating in the Emergency Services Collaborative (ESC) in England made little or no performance improvement against the asserted number one priority NHS performance target. Moreover, the difficulty of successfully implementing change is not confined to historically poor performing organisations.

Despite achieving performance improvement many of the NHS organisations in the ESC programme reported inertia and difficulties with implementing change at a local level. Despite attributing a variety of anecdotal reasons for this[1] there was no clear understanding of why introducing the changes was proving to be especially difficult. Consequently it was therefore difficult to ascertain the actions required to overcome these problems to achieve performance improvement.

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[1] This information was evident from monthly (unpublished) data reported by 155 sites from across England. It was also frequently raised as an issue of concern at monthly programme managers meetings and clinical leads' sessions held at every learning event (42 meetings per year included over 1000 clinical leads, the vast majority of whom were doctors).

Anecdotally, dealing with 'difficult people' and those who were resistant to change (clinicians being frequently cited) were commonly reported as problematic. Furthermore delegates at the ESC programme national events regularly requested to be taught how best to deal with 'difficult people' and some of the clinicians in leadership roles requested support with, and learning sessions, on how to deal with their own difficult or resistant colleagues.

Not surprisingly, these and other difficulties expressed by NHS hospital sites participating in the ESC were reflected in the literature. Bero, Grilli et al (1998), noted that despite the availability of a considerable volume of health care research and good practice, the transfer and implementation of knowledge - relating to potential ways to improve services and reduce waits and delays – remained sluggish, time-consuming and inconsistent.

In addition to the difficulties of implementing change in the NHS, the issues surrounding the dissemination of good practice and sustaining change and improvement are highly complex. It is important to acknowledge that although both dissemination and sustainability issues are legion and warrant comprehensive research attention, they were not included within the scope of this research. Instead, the research aimed to focus on the implementation of change to achieve performance improvement, and in particular, on what factors might enhance the successful implementation of change and innovation in the NHS.

This research is important because there is a need to advance the understanding of the factors associated with successful implementation of change. An improved understanding of this would support policy-making, organisational development and service improvement (Heitor, Conceicao and Gibson 1999). Thus, this research would be designed to add to the body of knowledge for the benefit of the NHS, users and staff.

Of equal importance was the need to contribute to the wider field of business and management by generating new theory on the critical success factors

responsible for the successful implementation of change, and understand how these related to improved organisational performance.

1.5   Aims of the research

The overall aim of the research was to investigate **what makes successful change happen in NHS acute hospitals in England?** This broad aim is sub-divided into two discreet but linked components, each with a distinct sub-aim.

The sub-aims are to:

1. establish critical success factors for implementing change in NHS acute hospitals in England.

2. explore one or more critical success factor(s) and the impact of this/these on NHS organisational performance.

This gave rise to two tentative phases for the research and these are described below.

1.5.1 Phase I - Defining the problem

This first phase of the research was based on the initial broad question - what makes successful change to happen in the NHS? The sub-question arising from this was concerned with the critical success factors that are responsible for helping change happen in the NHS. A number of steps were identified to help inform this and these were:

- Reviewing the relevant literature to understand the important themes and issues in extant theory and empirical research.

- Condensing emergent themes from relevant literature.

- Conducting qualitative interviews and focus groups to generate issues and themes of perceived importance that influence the implementation of change in the NHS.

- Comparing, contrasting and condensing the themes identified by the literature and the qualitative data.

- Synthesizing identified themes into a refined set of constructs that constitute putative critical success factors for implementing change in the NHS.

- Distilling and reducing identified constructs into a manageable number that can be tested in phase II.

The emerging process model designed to support the first phase is shown in figure 1.2 below.

Figure 1.2
Emerging process model
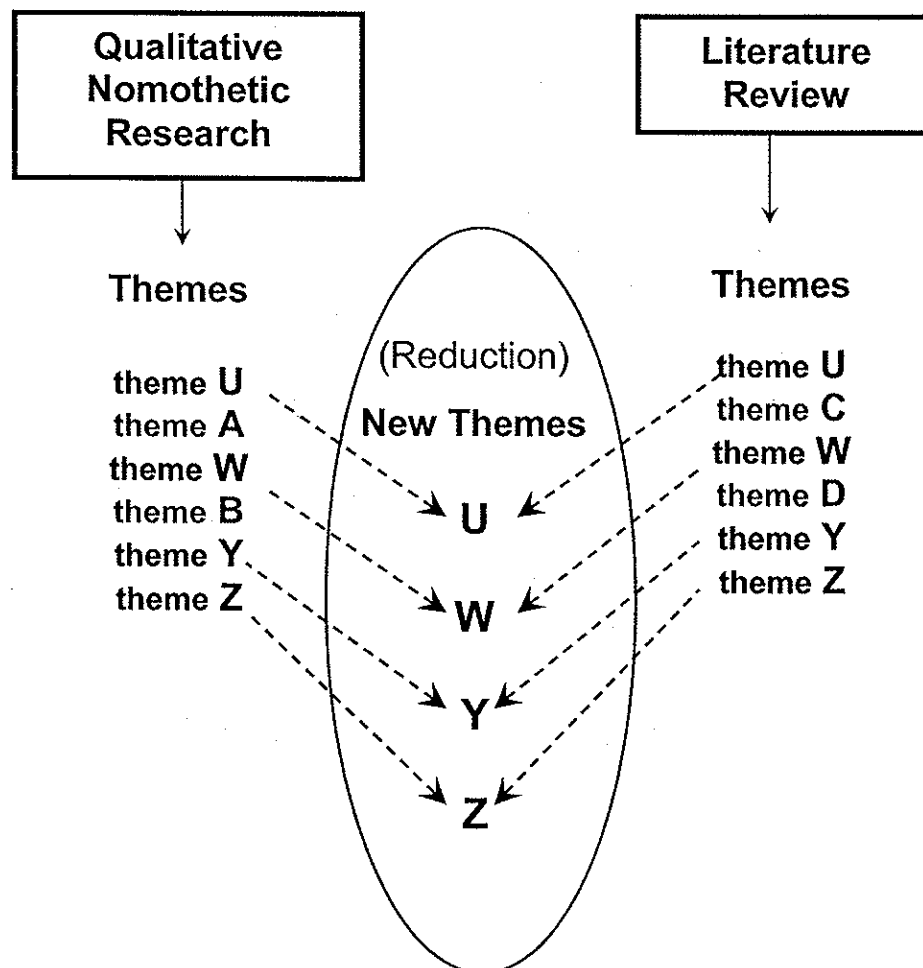
Figure 1.2 shows the early prototype emergent model developed to guide the research process. This was constructed to enable integration of extant theory with NHS practice based views without necessarily pre-determining either the research methods, or the themes (constructs) for inclusion in the research study. The themes generated by the literature constitute the right-hand side of the model. Qualitative research, yet to be designed, would be conducted to expose nomothetic concepts deemed to be important by NHS practitioners. The themes from both the literature and the qualitative research could then be compared, contrasted and reduced.

The model also represents a clear, distinct and discrete first phase of the research which is concerned with defining the research problem.

1.5.2 Phase II – Investigating the problem

The second phase of the research was concerned with testing the constructs identified in phase I as critical success factors for implementing change - and resultant performance improvement – in the NHS (England). The key steps identified to achieve this were:

- Generating hypotheses to test the identified critical success factor(s).

- Collecting and analysing data to test the stated hypotheses.

- Generating new theory on the critical success factor(s) for implementing change in the NHS and the relationship of this/these with performance.

1.6   Summary of chapter

This chapter has outlined the research context in the complex NHS (England) setting. Early suppositions were presented concerning the research problem and how this might be tackled. The identified research question was primarily concerned with **what are the critical success factors responsible for making change happen in NHS acute hospitals in England?** This was presented in the context of relevant issues such as the political imperative for

performance improvement and reported anecdotal difficulties with achieving successful implementation of change. These served to offer insight into the multifaceted environment in which the NHS operates. An early biphasic approach was postulated for the conduct of the research.

This introductory discussion provides a useful backdrop against which the literature review and subsequent methodological questions can be considered.

CHAPTER TWO

Literature Review

2.1   Introduction

This chapter comprises a review and distillation of the literature in the context of the research problem. Relevant theory and empirical research is discussed both from the field of 'change' and more specifically how this relates to health and the NHS. Different sub-categories of change are identified and the resulting literature for these is explored further. These themes are conceptually represented in a concentric model comprising the essential constructs identified in the literature as important to the implementation of change.

The chapter concludes by summarising relevant variables, relationships, definitions and recommendations from empirical research and theory.

The literature review is part of the preliminary preparation for the first phase of an empirical study that aims to explore the implementation of successful change in the National Health Service (NHS) in England.

The first phase of the study aims to explore the perceived critical success factors responsible for implementing new ways of working in order to reduce waits and delays for patients. The second phase of the research considers the impact of one of the identified critical success factors on performance improvement in the NHS. The literature for this second phase of the research is reviewed separately in chapter 3.

The literature is drawn from historical and contemporary theory, as well as empirical research relevant to implementing change and innovation. The conclusions from this review were used to inform and shape the first phase of a multilevel empirical study of implementing new ways of working in the NHS. This review constitutes the deductive stage of the study, and was used to inform

and support the design of the first phase of the research. This was complemented by an inductive – data inspired – approach (Eisenhardt 1989; Denis, Lamothe and Langley 2001); to enable the wider research to benefit from a mixed approach to enable creative insights to be gained from the data, without necessarily denying or reinventing concepts that others have used (Buchanan 2001; Denis, Lamothe and Langley 2001).

The contextual milieu for this review, and the ensuing research, was concerned with the highly complex process of implementing new practices in a health care setting - to reduce waits and delays for patients - in a politically charged, publicly funded health system. Thus, the most relevant overarching business management field is change.

Innovation is a sub-theme often associated with change (Drucker 1985; West and Farr 1990; Robbins 1996; Hellreigel, Slocum and Woodman 1998; Martins and Terblanche 2003) and hence the two concepts are closely linked. However, to look at the field of change is problematic because the subject area is vast. Therefore, to facilitate discussion and understanding, in addition to the change literature, I have considered three specific sub-categories that show the relevant and linked aspects of implementing new ways of working. These are:

- Innovation
- Knowledge management and transfer (KM&T)
- Implementation

This is conceptually represented in the concentric model overleaf (figure 2.1).

Figure 2.1

Concentric model
for implementing change
(Castille 2003)

Knowledge Management

Innovation

Strategic

Group or Organisational

Individual
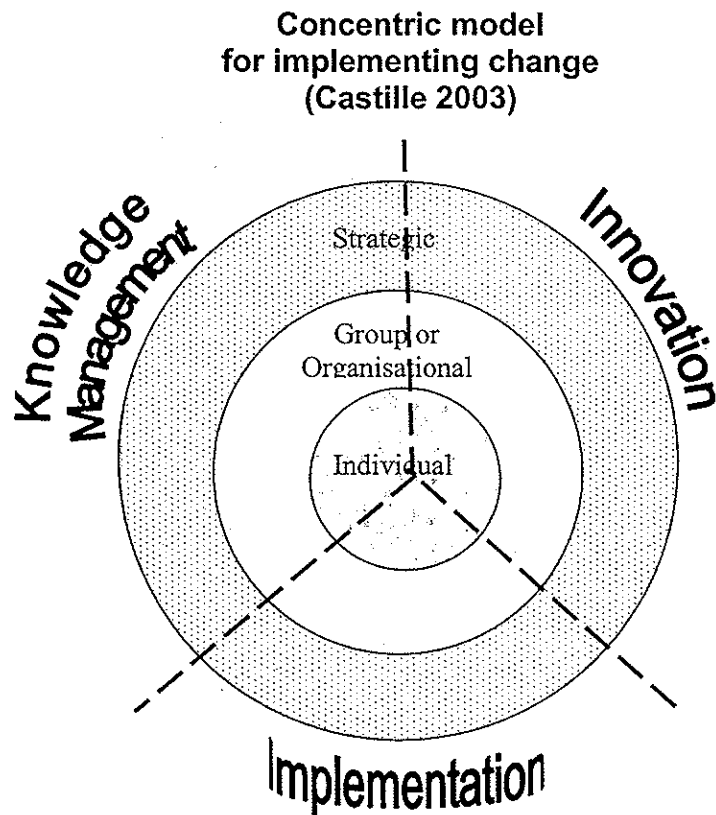
Implementation

2.2   Conceptual links and distillation of the literature

The field of **change** is extremely broad and encompasses a myriad of
phenomena and concepts. This review (and the ensuing research) focuses on
the implementation of change and innovation. Surprisingly, despite the obvious
relevance to the change literature, organisational change is not traditionally
linked with innovation (Pennings 2002). Even though the two themes overlap
and are complementary, they are usually reported separately in the literature.
Therefore relevant literature from both the field of change, and the sub-theme of
innovation, has been reviewed. It is, however, important to acknowledge that
whilst the theory and empirical literature on change is relatively well recognised,
ironically, innovation is not as established or well known.

2.2.1 Innovation

Innovation is considered a subsidiary concept of change because implementing any innovation requires and implies change (although the reverse is not necessarily true). In an organisational environment, examples of innovation include, generating and implementing new ideas for restructuring, cost savings, improving communication, introducing new technology, production processes, and new personnel plans or programmes (Kanter 1983; West and Farr 1990). Early definitions of innovation tend to be imprecise and wide-ranging encompassing the creation of ideas as well as their diffusion and implementation. This is illustrated by an early definition:

> *'the development and implementation of new ideas by people who over time engage in transactions with others within an institutional context'*

(Van de Ven 1986) p32.

More recent definitions focus on implementing new ideas:

> *'the intentional introduction and application within a role, group or organisation of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group, organisation or wider society.'*

West, and Farr, 1990 cited in (Martins and Terblanche 2003): p67.

Hence innovation is regarded as something new that leads to change. However, change cannot always be regarded as innovation as change does not always involve new ideas, or does not always lead to improvement in an organisation (West and Farr 1990; CIMA Study Text 1996). Furthermore, only change that is intentionally implemented can be classed as innovation (Price 1997).

Empirical research and theory often discuss the concept of innovation through a further subset of categories - diffusion (of new ideas, products or processes),

adoption (national, organisational or individual), innovativeness (of individuals or organisations) (Pennings 2002), and type (Cooper 1998). Discussion of type - as in radical/incremental, product/process, administrative/technical – is included in this review because of reported disparity between different types and the potential impact of these differences on the research.

2.2.2 Knowledge management and transfer

In depth knowledge and detailed understanding of the literature on **knowledge management and transfer** (KM&T) is germane to research that aims to transfer successful change(s) from one organisation (or department) to another. This review incorporates relevant current literature on what is known about the relatively new topic area of knowledge management. Of particular relevance is the application of this to health care organisations where there is a need to transfer and implement new knowledge or evidence-based practice. This is important in heath care because despite a considerable volume of literature on health care research and good practice (Bero, Grilli, Grimshaw, Harvey, Oxman and Thomson 1998), the transfer and subsequent implementation of knowledge, relating to potential ways to improve services, is often sluggish, time-consuming and inconsistent. Some of this information is captured in the change literature whilst other reported studies are located under the sub-heading of knowledge management.

Although the concept of adoption (of innovation or change) is an important aspect of the implementation process, this concept is beyond the scope of this research. Instead, the focus of the work is concerned with how change happens, and what factors assist or hinder its implementation. Thus the research scope begins after the adoption process has already happened. However, some of the literature transcends and links the themes of adoption and implementation and therefore, where there is relevant overlap of their characteristics and interrelated properties, adoption is discussed.

2.2.3 Implementation

Implementation is a sub-theme of change but is also prevalent in the innovation and knowledge management literature. It is also particularly

ubiquitous to project management research where attempts have been made to better understand how projects can be successfully implemented. Consequently, project management literature has also been included in the review.

Despite being shown as separate segments of the model (Figure 2.1), the three relevant identified sub-themes of change (innovation, knowledge management and transfer and implementation) are not always discussed as specific, discrete entities in the literature. Instead, they are frequently juxtaposed and interchanged. This is therefore reflected in the discussion throughout this review.

Finally the literature considers the different aspects of change either at different **levels of analysis,** or from different perspectives. This is both reflected in the model and inherent throughout this review. Of particular importance is the fact that the literature considers three main levels, i.e., strategic, group/organisational and individual (Lewis and Sebold 1993; Ravichandran 1999; Pennings 2002) and therefore the discussion incorporates, but does not segregate, literature from all these perspectives.

A further potential consideration is whether an identified change (or innovation) is either exogenous or endogenous in origin. However, the origin of the change presents few problems in relating to the unit of analysis (Pennings 2002) and therefore this aspect has not been incorporated.

2.2.4 Summary of conceptual links

The overarching field of change is complex and vast. For the purpose of this review and to facilitate understanding, the theme of change has been divided into the sub-themes of, innovation, knowledge management and transfer, and implementation. When considered from different perspectives, it is possible to further distil the discussion to include other related aspects. Using the 'individual' level as an example, roles like change agents, leaders, stakeholders, or behaviours and characteristics including resistance, loyalty, receptivity, scepticism, cynics, adopter and laggards are introduced. This review includes

this level of detail where it is deemed appropriate and edifying to the overall topic of implementing innovation or change in the NHS in England.

As the main focus is the NHS, empirical research from the field of health care is cited. But, to add richness, understanding and a wider perspective, relevant evidence from other fields, and a variety of disciplines, constitutes a large part of this review.

2.3   Change

2.3.1   Literature - overview
Theoretical and empirical literature relating to organisational change is prolific in quantity, as well as diverse and wide-ranging in the sub-topic areas proffered. The number of sub-topics that are directly linked to change is legion - for example, the concepts of leadership and culture have become topics in their own right. Furthermore, and from a theoretical perspective, the literature is equally wide ranging with many sub-theories, for example chaos and complexity theory (Bechtold 1997; Dooley and Van de Ven 1999; Brodbeck 2002; Plsek 2003), which command authority as recognised subjects. Yet, rather than delve into the many sub-theories, this review concentrates on the most relevant, established and influential theories. These are considered along side historical and contemporary empirical research that has contributed to current perspectives on implementing change and innovation.

2.3.2   Historical theoretical perspectives
Making the connection between management theory and management practice is problematic primarily because of the incongruent nomenclature dispersed throughout the literature. However, this should encourage rather than dissuade attempts to make sense of practice through a greater understanding of the theory (Schön 1983). This is especially true for the study of change. The phenomenon of change is relevant to many of the disciplines of art and science. It is particularly important to social scientists who are keen to understand the antecedent circumstances, and the conditions under which change occurs

(Becker and Stafford 1967; Damanpour 1991; Bender, Cedeno, Cirone and Klaus 2000; Walshe and Freeman 2002).

An important subject in the business and management world, the study of change probably began about 50 years ago with Lewin's planned model which has dominated the field as an established and influential change theory (Lewin 1954; Burnes 1996; Heller 2002). Lewin's three-phase approach of unfreezing, moving and freezing provided the foundation and impetus for other adapted versions including some of the newer models of change that are similarly founded on sequential events like phases, steps or stages (Isabella 1990; Judson 1991; Kotter 1995; Galpin 1996; Armenakis and Bedeian 1999; Prochaska, Prochaska and Levesque 2001). This approach draws heavily on centrally planning the direction and controlling the behavioural aspects of change by managing people, through, for example, pre-set milestones (Carnall 2003).

Although highly influential, the weakness of a phased approach to change lies in the sequential linearity and programmatic view of the world that underestimates and oversimplifies social interactions and organisational complexity. Hence, the planned model has become less popular in recent years and has been criticised because of a rapidly decreasing acceptance of a top-down, transactional and incremental approach which does not cope well in unstable, chaotic change environments where large scale rapid results are requisite (Schein 1985; Dunphy and Stace 1993; Garvin 1993; Burnes 1996; Garvin 1998).

In contrast to the planned model the emergent model gained popularity in the 1980's (Burnes 1996) and considers change as a continuous process rather than a one-off linear exercise with a beginning, middle and end. The emergent approach requires organisations to align and realign themselves in the rapidly changing environment of organisational transition (Wilson 1992; Dawson 1994; Burnes 1996; Bevan 1997), and relies on market mechanisms as a means of motivating changed behaviour, encouraging people to change (Carnall 2003). Rather than planning and implementing change, the role of managers switches

to fostering an organisational structure and climate that facilitates change (Burnes 1996).

Contemporary versions of the emergent model are evident in some of the new organisational change models as demonstrated in continuous quality improvement and total quality management models, as well as the concept of organisational learning (Garvin 1998; Argyris 1999; Carnall 2003).

To explain the main theories of the processes or sequences of events that unfold in change, Van de Ven and Poole (1995) conducted an interdisciplinary literature review in the social, biological and physical sciences. Of the 20 main process theories identified, they were able to group these into four basic schools of thought. The first of these, the life-cycle theory, is drawn from the metaphor of organic growth as a heuristic device and – similar to the planned model - is based on sequential steps or phases (Van de Ven and Poole 1995; Savitz, Kaluzny, Kelly and Tew 2000). The second, teleological theory, is based on the philosophical doctrine that purpose or goal is the final cause for guiding change and includes organisational theories like functionalism (Merton 1968) and most models of strategic planning and goal setting (Chakravarthy and Lorange 1991; Van de Ven and Poole 1995).

The third proposition, dialectical theory, is based on the Hegelian assumption that the organisational entity exists in a pluralistic world of colliding events, forces or contradictory values that compete with each other for domination and control (Van de Ven and Poole 1995), hence opposition and conflict prevail. The fourth cluster of theories is described as evolutionary theory which is used to explain change as a recurrent, cumulative, and probabilistic progression of variation, selection and retention of organisational entities (Van de Ven and Poole 1995). This is predominantly derived from Darwinism, but also includes a theory of evolution such as punctuated equilibrium (Arnold and Fristrup 1982; Gould 1989; Sastry 1997).

Allocating the broad range and diversity of theories to four narrow groupings creates theoretical pluralism and hence runs the risk of encouraging

compartmentalisation of perspectives with ensuing isolated lines of research (Gioia and Pittre 1990). However, although it could be argued that the propositions by Van de Ven and Poole (1995) oversimplify the complexity and differences of the theories they embody, they provide four internally consistent accounts of change processes in organisational entities. In doing so, they offer insight into the differing explanations for why and how change happens.

It is important that the various models and theories of change are not compared and contrasted in terms of which are better or worse but, instead, are considered for their appropriateness and suitability to different circumstances. The emergent model, for example, is described as best suited to fast-moving unpredictable situations; whereas the planned model has been successfully applied to stable situations and where top-down implementation might be required (Burnes 1996). The choice of approach should therefore also be judged in relation to the organisational culture (Schein 1984; Handy 1986; Weick 1987; Burnes 1996; Schein 1996; Weick and Sutcliffe 2003).

Contemplation of these and other contextual and situational differences engenders the basis for the contingency (or situational) models. These emanate from the belief that different organisations face different situations, and therefore should vary their change strategies accordingly (Burns and Stalker 1961; Wood 1979; Burke and Litwin 1992; Dunphy and Stace 1993; Burnes 1996). Contingency theory asserts the view that the structure and success of an organisation is dependent (contingent) on the situational variables it faces – the main ones being environment, size (Becker and Stafford 1967; Burnes 1996; Yao, Liu, Zu and Lu 2002) and, technology (Burnes 1996). Proponents of this view see organisations as goal-seeking functional systems, and emphasise the need to identify the key contingencies and adapt the prescribed approach accordingly (Burnes 1996; Carnall 2003). Hence contingency theory acknowledges the complex nature of change, and regards the organisations ability to adapt to contingencies as key to its success.

2.4 Organisational change

Organisations have been studied in many different ways using a variety of lenses and disciplines through which to view the organisational world. Even though the economist might be interested in economies, market structure and size; the sociologist in structure bureaucratisation, administrative size, and innovation; and the psychologist might focus on individual and group behaviour – they each share a desire to understand and explain why and how organisations change (Becker and Stafford 1967).

A review of organisational change in the 1990's attempted to categorise the main ways that organisational change has been studied and identified four main research themes (Armenakis and Bedeian 1999). These can be summarised as, content, contextual, and process issues; and the nature of criterion variables commonly assessed as outcomes in organisation change (Armenakis and Bedeian 1999). As this is a useful framework these same categories have been used to discuss the literature relating to the successful implementation of change, and innovation.

2.5 Content issues

2.5.1 Overview

Content issues relate to factors that account for successful and unsuccessful implementation of change(s), for example, strategic orientation, organisational structures, performance incentive systems and environmental issues (Armenakis and Bedeian 1999). A number of different change implementation areas (or levers) have been identified including levers relating to structure, control, reward, selection and socialisation and culture (Pennings 2002).

It is not surprising that research in this area has concentrated on identifying potential factors that define successful and unsuccessful change efforts. The potential usefulness, and practical application of such work in aiding diagnoses, planning and evaluation of the impact of change, is flagrant. Homa (1998) emphasised that to understand any radical change effort, the organisation's temporal and strategic context should be considered. This perspective is well

supported in the literature (Woodman 1989; Pettigrew 1990; Chakravarthy and Lorange 1991; Van de Ven 1992; Bashein, Markus and Riley 1994; Turner 1995; Beer and Eisenstat 1996; Turner 1997; Turner 1998; Piercy and Cravens 2000). Thus, both empirical and theoretical literature is consistent in the stated importance of aligning strategy with the chosen change model.

2.5.2 Structure

Structure is a dominant theme within the fields of both change and innovation. The structure of an organisation comprises the characteristics that determine the management processes used to organise and control its decision-making activities (Sciulli 1998). Thus, the structure influences interactions between individuals within the organisation. Such influence can produce either positive or negative results depending on whether the structure adopted is appropriate for the type of organisation in question. An appropriate structure can foster the information processing cycle between individuals, linking the various elements of the organisation through the transformation of information and providing channels of communication through which information can flow (Hong 1999). Appropriate structures can create flexible environments where knowledge is effectively transferred and the adoption of innovative change is heightened.

Carnall (2003) broadly identified six 'model' structures, these are: simple or entrepreneurial, functional, product, divisional, matrix and federal. Each of these has various unique characteristics and organisations usually implement a variation of one of these structures. Sciulli (1998) described five major characteristics that determine organisational structure, these are centralisation, formalisation, complexity, size and integration. Centralisation refers to the hierarchical level of authority and the extent that individuals participate in decision-making (Sciulli 1998). According to Arad et al (1997) and the CIMA study text (1996) a flat structure, autonomy and work teams help to promote innovation, whereas specialisation, formalisation, standardisation and centralisation inhibit innovation. In contrast to these findings Dewar and Dutton (1986) found no associations between the adoption of either radical or incremental innovations and decentralisation.

Ham (2003) noted that Hospitals and health care organisations tend to have inverted power structures. People at the bottom of these structures generally have greater influence over the daily decision-making than those who are nominally in control at the top (Ham 2003). This kind of structure places strong emphasis on the role of negotiation and therefore health organisations need to recognise this when implementing change.

With regard to structure and performance, two useful models have been proposed (Burke and Litwin 1992; Vollman 1996). The first of these is proffered to predict individual and organisational performance and the way that effective change occurs. Empirical support is cited for causal linkages with transformational factors - like leadership and culture - and transactional factors including management practices, structure, systems, policies and procedures (Burke and Litwin 1992; Martin de Holan and Philips 2002).

A matrix type model was designed to help encourage organisations to consider a number of important issues when planning organisational change (Vollman 1996). Eight themes were outlined – strategic intent, competencies, processes, resources, outputs, strategic responses, challenges, and learning capacity. The matrix is designed to assist organisations in properly and thoroughly assessing their ability to consider and link these components to achieve successful transformational change. However, despite their usefulness, it is important that these, and other models, are not regarded as the exclusive panacea for all change initiatives.

2.5.3 Leadership and power

The concept of leadership is recurrent throughout the literature. Its importance and relevance to implementing transformational change is widely recognised (Schein 1985; Evans 1986; Bennis 1992; Firth 1994; Horner 1997; Homa 1998; Higgs and Rowland 2000; Cross 2001; Denis, Lamothe and Langley 2001; Diehl and Donnelly 2002). Leadership as a concept has a recognised potency in facilitating successful implementation of change. This is because of a widely acknowledged need to drive change in an engaging way which motivates people to change their behaviour (Grint and Willcocks 1995; Homa 1998).

Leadership is also closely linked to power. Carnall (2003) identifies five concepts which represent the social bases of power. These are; legitimate power, expert power, referent power, reward power and coercive power. Legitimate power is seen as formal authority deriving from the position of a manager, whereas expert power derives from the specific knowledge and experience of the individual as opposed to their formal position within the organisation. Referent power is a result of the way people identify with others and is often associated with charismatic individuals. Reward power derives from an individuals control over things such as pay, promotion and task assignments whereas coercive power is seen to derive from the capacity to sanction individual behaviour. Carnall (2003) suggests that the effective use of power is central to effective management and leadership.

2.5.4   Incentives

Carnall's notion of 'reward power' is also intrinsic to the idea of using incentives, to encourage desired behaviors, to achieve organisational change. Dearden and Ickes (1990), for example, were curious as to why the Soviet system consistently produced innovations, yet failed to introduce them. Their research examined the introduction of process innovations in hierarchical organisations. This culminated in a model outlining incentives that would entice people in the Soviet Union to adopt and implement innovations.

Whilst the specific incentives for different individuals and groups may vary, the authors argue that their analysis can be applied to general hierarchical systems. They found that a key obstacle to the adoption of innovations in hierarchical organisations was the cost of constructing incentives. Moreover, achieving increased adoption rates without prohibitive cost required modification of the hierarchical decision-making process (Dearden and Ickes 1990).

In health care, Ferguson and Lim (2001) used the concept of 'quality' – and in particular the introduction of evidence based health care - to incentivise improvement. Moreover, Llewellyn (1999) compared the UK and Canadian health care systems and refuted a frequently held misconception that incentives were confined to the realms of the private sector.

2.5.5 Culture

The theme of culture is concerned with shared beliefs and assumptions that guide behaviour. Although there are many forms and descriptions of culture (Handy 1986), a useful descriptor is an historically situated and emergent system of negotiated meanings and practices common to the people in an organisation (Brannen 1991). Thompson (1997) suggests that strong organisational cultures are an important strategic asset and that internalised beliefs can motivate people to exceptional levels of performance. He maintains that effective strategic leaders understand this and mould the culture to pursue their vision and implement intended strategies. This exemplifies the patent and compelling link between leadership and culture.

Brannen (1991) draws on anthropological theory to define culture and makes the point that culture is endogenous – not given to a particular firm. She maintains that it is developed and shaped by the ongoing interactions of the people in the firm as well as by the strategic choices made.

The effects of culture on implementing change and innovation have become increasingly relevant, and hence it is a widely researched topic (Schein 1984; Schein 1985; Handy 1986; Weick 1987; Brannen 1991; Burnes 1996; Schein 1996; Davies, Nutley and Mannison 2000; Callahan 2002; Weick and Sutcliffe 2003). Cultural change literature has generally focused on the relationship between a firm's culture and strategy, and studies frequently aim to uncover cultural assumptions that act as barriers or enablers to change (Brannen 1991). However, there is evidence to suggest a strong link between managerial practice and culture (Burnes 1996). This is reflected in 'role' cultures which emanate from a top-down bureaucratic managerial style, and 'task' cultures which are associated with a flexible and more decentralised style of management (Handy 1986). The implicational link between change models and culture is therefore self-evident, as role cultures would appear to align better with the planned model of change and task cultures with the emergent model.

Schein (1996) describes three cultures of management in respect of organisational learning. He defines these as, the 'operator culture' being the

internal culture based on operational success; the 'engineering culture' as concerned with functions that drive the core technologies; and the 'executive culture' which is asserted by the CEO and executive team. He noted that these three cultures are often not aligned with each other and that it is this lack of alignment that causes organisational failures.

The concept of culture is linked to many different aspects of organisational performance and is used to explain a range of phenomena and situations. Weick (1987), for example, uses culture to explain organisational variation and the occurrence of accidents. In his later work he describes hospitals as 'cultures of entrapment' in his analysis of the Bristol Royal Infirmary (Weick and Sutcliffe 2003).

As with most of the other topics discussed in this review, culture links with other concepts. In particular, it is closely linked to the informal reward system (Cacioppe 1999) which, in turn, is also associated with the earlier discussion of incentives.

Given the preceding discussion about strategy, culture and leadership, it is important not to assume that a flexible decentralised approach is a prerequisite for the successful adoption of innovation or the introduction of change. Although Dearden and Ickes (1990) found the hierarchical decision-making process an important consideration in the implementation of innovation, empirical analysis has shown no association between adoption and decentralised decision-making (or managerial attitude) where process innovations are concerned (Dewar and Dutton 1986). As implementation does not happen by chance alone, more important is the need to devote time and resources, and to vary the approach depending on the type of innovation and the culture of the organisation.

2.6   Contextual issues

Contextual issues can be described as the context in which an organisation functions, and includes forces or conditions in an organisation's external and

internal environment (Armenakis and Bedeian 1999). Of particular interest is a meta-analysis of the relationships between a range of determinants - for example, functional differentiation, professionalism, managerial attitude toward change, and external and internal communication – and whether they are negatively or positively related to organisational change (Damanpour 1991). The author suggests that the type of organisation adopting innovations is more important that the type of innovation and the stage of adoption (Damanpour 1991). Furthermore, a simulation model developed by Sastry (1997) confirmed prevailing theory and prior research in the claim that a change-effort is likely to fail if an organisation adopts a strategic orientation that does not match the requirements of its external environment (Sastry 1997).

Communication aspects are covered in the section on knowledge management and transfer. However, it is worth mentioning here that reinvention of the adopted practice, to gain ownership and adapt the practice to suit local needs, is key to success (Ross 1974; Olshavsky 1980; Dewar and Dutton 1986; Gauvin and Sinha 1993; Lewis and Sebold 1993; Fischer, Arnold and Gibbs 1996; Getz and Siegfried 1997; Nabin, Bloem and Poiesz 1997; Cooper 1998; Gopalakrishman and Bierly 2001; Jensen 2001; Maguire 2002; Berwick 2003; Plsek 2003). It is important to recognise the distinction between individual and organisational adaptation and that different strategies are required for each. In his early study of innovation adoption Ross (1974) stressed the importance of this commenting that:

> 'Conditions affecting adaptive behaviour for individuals and organizations may be parallel in some instances, different in others.'
> (Ross 1974) p24.

2.7   Process issues

Research in the fields of organisational behaviour and development shows three principles that should characterise change processes if they are to result in effective implementation and adaptation for local fit. These are that change should be a systematic series of processes, encourage open discussion of

barriers and develop a partnership among all relevant stakeholders (Beer and Eisenstat 1996). Each of these three principles is worthy of further discussion.

2.7.1 Systematic processes

The early work of Lewin (1947) identified the phases of unfreezing, moving, and freezing and so began a trend of exploring and conceptualising change through successive processes, or phases. In an attempt to categorise the necessary processes to enable successful change, various other authors have similarly identified phases or stages (Lewin 1947; Isabella 1990; Judson 1991; Argyris and Kaplan 1994; Prochaska, Prochaska and Levesque 2001), steps (Kotter 1995), wedges (Galpin 1996) and components (Armenakis, Harris and Feild 1999) of change. These describe processes at points in time - before during and after the change - at individual, organisational and strategic levels, that must be considered to improve preparedness, minimise resistance and increase the likelihood of successful implementation of change. Each author asserts a different series of process concepts that must be demonstrated to move further through their identified phases of change. Argyris and Kaplan (1994) for example describe firstly the need to demonstrate that the change - and in this example the introduction of new knowledge - is valid, then to work on education and sponsorship, articulate the merits of the change and gain senior management support for the idea. Interestingly, they subordinate the requirement to create internal commitment and overcome barriers to the afore mentioned process steps (Argyris and Kaplan 1994).

Such assertions imply that change occurs through a series of multiple steps or processes. Hence, failure to consider the nomothetic implications of these theoretical propositions could, potentially, jeopardise successful implementation, slow the uptake or threaten sustainability of the change. However, establishing the focus on linear processes is not without its problems. A number of authors have described the negative effects of mechanistic, rigid organisational models of change; and stress the positive effects of more organic adaptive models (Burns and Stalker 1961; Bennis 1969; Kanter 1983; Homa 1998; Bevan, Buchanan, Godfrey Harris and Plsek 2002; Whittington and Mayer 2002). Interestingly and in contrast to this, Daft's (1978) duel core model

of innovation, though somewhat dated, showed that whilst technological innovation favoured organic organisational structures, administrative type innovations did best in bureaucratic, mechanistic type organisations.

As links between process and structure are largely inconclusive (Cooper 1998), the most likely conclusion from the various work cited is that one size does not fit all and a reliance on a single approach to implement change will undermine and impact on the success or failure of implementation.

Though not necessarily linear in nature, it is worth noting that business process re-engineering (BPR) is a nomothetic example of focusing on systematic processes to create organisational change and innovation. Proponents of BPR could argue that it crosses the three aforementioned principles relating to processes, barriers and stakeholders. However, Homa (1998) noted that the re-engineering label is often applied to diverse publications, and that the attendant associated risk of this is that little of importance is communicated, and the subject is devalued. Nevertheless, the indications for success in BPR projects are not dissimilar to the criteria for success in other change projects (Davenport 1994; Davenport and Prusak 2000). Whilst this aspect of BPR is relevant, the subject of BPR in its own right holds little relevance to this review. Hence where BPR literature is cited it is because of its derivation, and theoretical closeness to the overarching theme of change, rather than because it is of direct relevance to this review, or the research.

2.7.2 Barriers and stakeholders

Frequently, the management and implementation of change focuses on overcoming barriers to implementation. Typically these include resistance at individual, group, inter-group and organisational levels (Argyris and Kaplan 1994). Consequently change strategies are often designed to reduce different barriers at different levels. Although winning the hearts and minds of participants is recognised as an important part of delivering successful change, the literature offers no universal 'golden bullet' for successful implementation. Hence the importance of considering a wide range of processes to implement

change - that attempts to go beyond aligning the interests and incentives of participants - is key to successful implementation (Argyris and Kaplan 1994).

The importance of Change Agents in implementing change and innovations is emphasised in the literature (Armenakis, Harris and Feild 1999; Buchanan and Badham 1999; Buchanan 2001; Huy 2001; Bevan, Buchanan, Godfrey Harris and Plsek 2002; Dover 2002; Griffith 2002) and a number of different roles like champions, sponsors and advocates are subsumed under this topic. Furthermore the requisite competencies for change agents have been proffered and described (Buchanan 2001; Bevan, Buchanan, Godfrey Harris and Plsek 2002).

2.8 Criterion issues

2.8.1 Employee affective and behavioural criteria

Change initiatives inevitably require individuals to alter their attitude and behaviour, and adopt new processes. This theme is concerned with criterion variables commonly assessed as outcomes in organisational change. Specifically, this includes change efforts using affective and behavioural criteria (Armenakis and Bedeian 1999). These are synonymous with those mentioned in the section on knowledge transfer - where the importance of demonstrating the benefits to individuals is emphasised (Plsek and Kilo 1999; Horwitch and Armacost 2002) – and the discussion of incentive and reward systems.

Building on the concept of getting employees to adopt change, a number of authors have studied various types of commitment (or loyalty) as a criterion variable (Kanter 1991; Becker 1992; Becker, Billings, Eveleth and Gilbert 1996; Meyer and Allen 1997) and how this impacts on organisational change. In their review of nine years of organisational change theory and research, Armenakis and Bedeian (1999) conclude that receptivity, resistance, commitment, cynicism, stress and related personal reactions are relevant criterion variables which need to be considered when planning and implementing an organisational change.

Though not separated out in the same way, the change concepts discussed above are recurring themes that are also reflected in the later section on knowledge management, transfer and implementation.

2.9   Innovation as a sub-theme of change

2.9.1 Introduction

Although innovation has been discussed throughout the preceding section on change, the ensuing discussion draws on the more specific literature and sub-theory of innovation.

Innovation, like change, has been studied in different ways. Often treated as all-inclusive, the terms innovation and change are used interchangeably, hold different meanings and refer to very different events or processes. This makes comparison of findings across studies difficult to assimilate (Cooper 1998) and leaves an inconclusive void. There are many definitions of innovation. The most relevant, and useful in the context of this research, is one which captures both a broader meaning as well as the notion of implementing new things which are not absolutely new, but are new to those implementing them. The following incorporates these qualities:

> *'the intentional introduction and application within a role, group or organisation of ideas, processes, products or procedures, new to the relevant unit of adoption designed to significantly benefit the individual, the group, organisation or wider society'.*

West and Farr (1990) cited in Martins and Terblanche (2003): p 67

In service organisations innovation is key to maintaining competitive advantage (Porter 1980; Cooper 1998; Bender, Cedeno, Cirone and Klaus 2000). Thus, it is both important and interesting to study different aspects of innovation - for example innovators, innovativeness and how and why some organisations or individuals are more innovative in designing and implementing new ways of working than others. Moreover, much of the literature on innovation is

dedicated to the diffusion of innovations (Premkumar and Ramamurthy 1994; Rogers 1995; Cooper 1998; Baptista 1999; Drury and Farhooman 1999; Fraser 2000; Gladwell 2000; Jensen 2001; Berwick 2003; Plsek 2003). These aspects of innovation - which are concerned with the ability to generate and spread innovations - are of interest, but are not specifically relevant to this research. Instead the main focus is on a later aspect of the innovation journey, which is concerned with its implementation, regardless of its origin and how it spread.

2.9.2 Implementation of innovation

Implementation of innovation is often captured under the broad umbrella term of adoption. The literature is replete with research and theory of adoption from a range of different perspectives. These include the speed or rate of adoption (Olshavsky 1980; Fischer, Arnold and Gibbs 1996), consideration of innovation by type (Dewar and Dutton 1986; Damanpour 1988; Cooper 1998), organisational determinants (Becker and Stafford 1967; Ross 1974; Kimberly and Evanisko 1981; Gauvin and Sinha 1993; Lewis and Sebold 1993; Getz and Siegfried 1997; Jensen 2001; Yao, Liu, Zu and Lu 2002), individual and group behavioural aspects (Swan 1994; Nabin, Bloem and Poiesz 1997; Maguire 2002; Wood and Swait 2002; Dennis and Garfield 2003) and other adoption issues (Gopalakrishnan and Damanpour 1992; Gopalakrishnan and Bierly 2001; Berwick 2003; Plsek 2003).

Despite the plethora of literature on the adoption of innovation, for the purpose of informing this research, only a limited aspect of this is relevant. Principally, this is that which is directly concerned with the implementation of innovation (and change) and what the critical success or failure factors for implementation might be.

2.9.3 Types of innovation

To help make sense of the complexity of the topic of innovation, it has been sub-divided into different forms (Gopalakrishnan and Damanpour 1992; Utterback 1994; Gopalakrishnan and Damanpour 1997; Cooper 1998) and categorised according to uni-dimensional types. Most notably it is frequently described by the paired opposites: **radical/incremental** (Dewar and Dutton

1986), **technological/administrative** (Kimberly and Evanisko 1981; Swan 1994) and **product/process** (Baptista 1999; Bender, Cedeno, Cirone and Klaus 2000; Savitz, Kaluzny, Kelly and Tew 2000; Savitz, Kaluzny and Silver 2000). Although other types have been described, these are the most common types cited in the literature and the most relevant in relation to the adoption and implementation process (Cooper 1998). However, reviewing innovation by type is problematic because using such definitions relies on the assumption that researchers are clear and consistent in their understanding and application of these terms, and that innovations are either/or in terms of their dimensionality.

Conversely, an additional dichotomy exists in so much as some of the literature does not clearly state which type of innovation is under scrutiny, or the concept is referred to as though it is a single all-encompassing phenomenon (Burgelman and Sayles 1986; Utterback 1994; Cooper 1998). Ravichandran (1999) accuses earlier researchers of content and contextual fallacy by equating adoption with innovation and using the term innovation merely as a cover term for adoption. Consequently, and confusingly, the term is used interchangeably to describe different sub-types and to mean different things.

Although assessing innovation by type is problematic for the reasons outlined above, it is of great value to consider both the type and different variables separately because the literature shows that different variables affect different types. For example, Kimberly and Evanisko (1981) found that hospital adoption of two different types of innovation (technological and administrative) was influenced by different organisational factors. Only one variable – size – was consistent for the adoption of both types of innovation. Similarly, Premkumar, and Ramamurthy (1994) found that while relative advantage and duration were important predictors of internal diffusion of electronic data interchange[2], technical compatibility and duration were more important to external diffusion.

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[2] This is an example of the problems associated with evaluation and comparison of findings of innovation studies by type. The example of electronic data interchange (EDI) as described by the authors could refer to either a technological or an administrative innovation as well as radical or incremental. The authors do not clarify a typology for the innovation being studied. Hence comparing this work with other studies of administrative or technological, and radical or incremental innovation would not be possible without further clarification.

Innovation has also been described according to organisational correlates (or determinants) of its adoption, including aspects already discussed in the section on change, like structure, climate and leadership (Gopalakrishnan and Damanpour 1992; Ravichandran 1999). In particular, structure has been said to play a prominent role, explaining as much as 60 per cent of the variation in the adoption of innovation (Kimberly and Evanisko 1981; Cooper 1998). However, despite some agreement, there is a lack of consensus regarding which aspects of structure correlate with which types of innovation, and findings vary (Dewar and Dutton 1986; Damanpour 1988; Damanpour 1991; CIMA Study Text 1996; Arad, A and Shneider 1997; Cooper 1998; Sciulli 1998).

2.9.4 Innovation as process or event

An additional issue of relevance is whether innovation is regarded as either a process or a discrete event (Cooper 1998). Those who view innovation as an event believe that implementation occurs when there is actual acceptance of risk and the commitment of resources occurs (Cooper 1998). Proponents of this view would focus their efforts on identifying potential adopters, and studying organisational structures or strategies. In this case, characteristics such as firm size, age and type are of interest in terms of how they correlate with promoting or impeding innovation (Cooper 1998).

Conversely, the process stance accords with phases that the potential adopter goes through over time (Rogers 1995) and is consistent with the planned model of change (Lewin 1954). This perspective relies on focusing efforts on good communication, determining and aligning the phases of change, engaging people in the change, and the nature of relationships (Gopalakrishnan and Damanpour 1992; Rogers 1995). This view is consistent with this research which, rather than being concerned with understanding the characteristics of adopters, is more interested in what adopters do to make it happen.

2.9.5 Summary - change and innovation

No single model or theory applies across the board for the implementation of either change, in the broader context, or its sub-component innovation. This illustrates that, despite the plethora of literature, the issues are extremely wide

ranging, varied and complex. What is clear is that implementation of either change or innovation should not be left to chance. Implementation is influenced by many factors including strategic intent, managerial action and organisational policy (Cooper 1998). Thus it is imperative to understand what factors facilitate or hinder implementation, and what actions can be taken to increase the chance of successful introduction of new processes and practices.

No simple analytical exercise offers solutions to these complex issues. The variables, relationships, definitions and recommendations from empirical research and theory are numerous, inconsistent, conflicting and often seemingly inconclusive. Even where there is some degree of agreement, there remains a lack of unification of theory and terms. Moreover, where there is consensus on the necessary approach to achieve successful implementation for given types of innovation or change, there is no consensus on the order and importance of each.

The importance of links across and between different concepts - as cited in the sections on leadership, culture and structure - is striking. This adds to the complexity of understanding which factors are important for successful implementation. This dispels any simplistic notion of finding one 'best way' for implementation of change. Thus, consideration of a range of different concepts and their contextual alignment appears to be more important than the consideration of individual concepts in isolation. Argyris and Kaplan (1994) stressed the importance of considering a wide range of processes for successful implementation strategies. The need for alignment also extends to the chosen theory of change, which must be consistent with, for example, the structure and culture of the organisation (Brannen 1991; Burnes 1996; Schein 1996).

Given the lack of agreement on definitions of innovation (Cooper 1998; Ravichandran 1999). Cooper (1998) eloquently argues that specificity is vital. Failure to be clear on the type of innovation under discussion risks validity of propositions and findings as well as the transfer of research into practice. Contradictory findings like those of Sciulli (1998) and Ettlie et al (1984)

regarding the adoption of radical innovations; and Sciulli (1998) and Damanpour & Evan (1984) regarding firm size and innovation, might be more easily explained if definitions had been more transparent, reliable and clearly specified.

Like change, the complexity of innovation is frequently underestimated (Van de Ven 1986) and this can lead to gross oversimplification and ensuing unjustified generalisations. Ostensibly it can also lead to unrealistically high expectations that may not be realised. Furthermore, the situation is exacerbated by the many and varied definitions propounded (Kimberly and Evanisko 1981; Dewar and Dutton 1986; Damanpour 1988; Damanpour 1991; Rogers 1995; Cooper 1998; Ravichandran 1999; Savitz, Kaluzny and Silver 2000; Van de Ven, Angle and Poole 2000).

The definitional dilemmas outlined render comparison of findings across studies difficult and inconclusive (Cooper 1998). To overcome some of these difficulties models have been suggested by Damanpour (1988) and Cooper (1998) to assist in part in evaluating the relationship between organisational characteristics and the adoption of innovation.

2.10 Knowledge management and transfer as an informative dimension to change strategies

2.10.1 Introduction

Knowledge management and transfer is becoming increasingly important as organisations realise the value of capturing and communicating the learning of their own and others successes and failures (Dougherty 1999; Bender and Fish 2000; Mockler and Adams 2002; Lindsay, Chadee, Mattsson, Johnston and Millet 2003). This is particularly relevant to the NHS where managers are beginning to realise the importance of transferring knowledge about good practice at both micro level - across departments – and macro level - across health communities. Knowledge management literature covers both internal and external knowledge transfer but no major differences are apparent in the

various suggested approaches to each of these aspects, they have therefore not been separated in the ensuing discussion.

There is limited evidence about which practices have what effects and under which conditions (Huber 2001). However, there is considerable crossover from the change management literature. The indications for success in knowledge management projects are not dissimilar to the criteria for success in other business change projects (Davenport and Prusak 2000).

Knowledge management is a relatively new concept and whilst no universally accepted definition of knowledge management is apparent in the literature, one helpful definition is:

'the practice of creating, capturing, transferring, and accessing the right knowledge and information when needed to make better decisions, take actions and deliver results in support of the underlying business strategy'

(Horwitch and Armacost 2002) p27

In its broadest context, this definition encompasses the concept of learning organisations where a holistic approach is adopted to create an environment which recognises the importance of the people within it and their ability to learn (Griffiths and Williams 1998; Moilanen 2001). Hence the concepts of learning organisations and knowledge management are closely linked. A learning organisation is essentially about the individuals within an organisation and the development of their full potential assisted by the organisation. Similarly, knowledge management looks at learning development, but collectively through the organisation in order to produce continual improvement (Baines 1997).

Simplifying the definition of knowledge management, it is primarily concerned with turning data into meaningful information and then acting on it to achieve a desired outcome. Hence good knowledge management strategies to transfer knowledge, such as good practice in health care, play a crucial role in ensuring that good practice is shared and transferred and implemented across the NHS.

The need for good strategies to manage and transfer knowledge applies equally to health care and other public and private sector organisations. A popular approach to knowledge management is to build on current re-engineering efforts by compiling and leveraging identified 'best practices' (Davenport and Prusak 2000). Illustrative examples for the NHS include the dissemination and implementation of guidelines, evidence, research, policies and good practice. However, despite a considerable volume of literature on health care research and good practice (Bero, Grilli, Grimshaw, Harvey, Oxman and Thomson 1998), the transfer and subsequent implementation of knowledge, relating to potential ways to improve services, is often sluggish, time-consuming and inconsistent (Dawson 1992).

Managers in the NHS have long been frustrated by their inability to transfer known improvements from one area to another. This can be attributed to a number of factors. These include, firstly, the process of identifying and transferring knowledge (of improvements) is difficult, time consuming (O'Dell and Grayson 1997) and has inconsistent and varying degrees of success. And, secondly, even when knowledge is successfully passed on, it is still by no means guaranteed that action will be taken to introduce the new idea or practice.

Barriers to introducing new knowledge are synonymous with those identified in the change literature and include lack of motivation to adopt the practice; inadequate information about how to adapt the practice and lack of the resources and skill to manage the change (O'Dell and Grayson 1997). This view is supported by Harrison (2000) who observed that the implementation of most guidelines, policy and research during the 1990's entailed communicating to all concerned the specific interventions that needed to be carried out by whom and under which circumstances. He noted that little, if any, attention was paid to potentially persuasive elements like resources, training, providing good examples, benefits, incentives and disincentives, potential constraints, and evidence base (Rogers 1995; Gladwell 2000; Harrison 2000).

O'Dell and Grayson (1997) further described barriers to transferring good practice as: silo thinking, a culture that values knowledge creation over knowledge sharing, lack of common values and relationships, over-reliance on transmitting 'explicit' rather than 'tacit' information and not rewarding people for sharing and helping each other outside their own area. Like most large organisations, the NHS is extremely complex and diverse. Consequently it is a rich source of these negative characteristics.

2.10.2 Theory and related themes of knowledge management

A framework for knowledge management has been suggested which focuses on enablers (leadership, measurement, culture and technology) and processes (applying, creating, identifying, collecting, organising, sharing and adapting) (O'Dell and Grayson 1997). These general themes are reflected in, and serve to summarise, the related literature.

Information is described as a message that has a sender and a receiver, and is meant to change the way a receiver perceives something (Davenport and Prusak 2000). Value is added to data which is turned into meaningful information when it is contextualised, categorised, calculated, corrected and condensed (Davenport and Prusak 2000). The authors describe knowledge as a mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. Therefore, just as information is derived from data, knowledge is derived from information. It is feasible to extrapolate from this that, as knowledge is closer to action - and action is the desired outcome to achieve change - knowledge is a valuable commodity. It is also evident from the descriptions that knowledge is more complex than data and thus more difficult to capture, describe and transfer. This is highly relevant to transfer aspects of change and innovation where the information may be highly complex.

2.10.3 Explicit versus tacit knowledge

There are fundamental differences between explicit and tacit knowledge, and strategies for capturing and communicating each are different (Horwitch and Armacost 2002). Furthermore, Heitor et al (1999) stress that codified knowledge (ideas) and tacit knowledge (skills) differ in ways that have important

implications for how knowledge is produced, diffused, and used. While ideas correspond to knowledge that can be articulated in words, symbols, and other means of expression; skills correspond to knowledge or know-how that cannot be easily formalised or codified (Heitor, Conceicao and Gibson 1999; Davenport and Prusak 2000). This is sometimes referred to as the hard and soft concepts of knowledge management. Hard skills include structured knowledge, technical abilities and professional experience, whereas soft skills comprise a sense of the cultural, political, and personal aspects of knowledge management (Davenport and Prusak 2000). To understand how knowledge is managed the authors studied 31 different management projects in 20 different companies. They noted that the projects all devoted substantial attention to human contributions, which is the one characteristic that generally distinguishes knowledge from information or data. Hence, the human dimension of change is an important aspect of any strategy for knowledge transfer.

The literature fails to identify, a single model for dealing with either explicit or tacit knowledge; although most would agree that tacit knowledge is notoriously difficult to reproduce (Davenport and Prusak 2000). This raises questions about a single model to successfully transfer knowledge of any type.

A pollenation model, in which a select few people hear about good practices and pass on the news of what they have heard, is another approach (O'Dell and Grayson 1997). It is likely that this originated from the notion of using geographical clusters in accelerating knowledge diffusion which has been emphasised by several authors (Rogers 1995; Baptista 1999; Gladwell 2000). However, models that support geographical proximity or cross pollenation are not without problems. They run the risk of sibling rivalry by promoting one unit, department or organisation as better than another. This can create problems in the NHS where one organisation may be reluctant to adopt the practices of another. Furthermore this approach may focus on transferring explicit, rather than tacit, knowledge (O'Dell and Grayson 1997) and explicit knowledge, that is more easily codified than tacit knowledge, may be an incomplete representation of the knowledge concerned. Knowledge management must therefore be concerned with both tangible and intangible features such as the skills required to interpret and exploit those representations (Sutton 2001).

Tacit knowledge is hard to communicate and difficult to replicate. A better strategy for handling such knowledge might be to identify people who had been involved in implementing the change and use person to person contact, enabling them to talk about their experience. This can be done either on a one-to-one or group basis. Narratives, and story telling exemplify how this can be a useful way of conveying tacit information (Davenport and Prusak 2000). This notion is potentially threatened, both in the NHS and elsewhere, with the increasing use of home working and virtual teams that seldom meet to share experiences. The use of collaborative methodology – where managers and clinicians are regularly brought together in learning sets – can help overcome this difficulty as well as preclude some of the barriers associated with silo thinking as described by O'Dell and Grayson (1997). Collaborative methodology draws on structured opportunities, bringing teams together to share their change improvements (Bero, Grilli, Grimshaw, Harvey, Oxman and Thomson 1998; Plsek 2000).

An example of successfully transferring explicit knowledge is that of the U.S. Army's Lessons Learned program. This is a powerful and flexible knowledge-management initiative that gives soldiers rapid access to condensed information which allows them to cope with combat situations more flexibly and capably (Horwitch and Armacost 2002). Although the authors do not make the reasons for success clear, it is likely that it is due to the appropriate use of technology to rapidly transmit information of a precise and repetitive nature. Ostensibly, scenarios of military missions are practised and executed with exactitude. Moreover, in military organisations soldiers are not routinely encouraged to be creative in their thinking and actions. On the contrary, they may be severely reprimanded for deviating from standard operating procedures. Hence it is likely that the information transmitted is of an explicit and precise nature in this example and this is conducive with the top-down, autocratic management style mentioned in the earlier section on change.

Sharing improvements and knowledge of good practice across the NHS requires the capture, transfer and implementation of both explicit and tacit

information or knowledge. Therefore, it would appear important that multiple methods are incorporated in to any strategy to achieve maximum gain.

2.10.4 Transfer issues

The passive dissemination of information has been shown to be generally ineffective in altering practices, no matter how important the issue or how valid the assessment methods (Lomas 1989; Lomas 1991; Haines and Jones 1994; Oxman, Thomson and Haynes 1995; Bero, Grilli, Grimshaw, Harvey, Oxman and Thomson 1998). However, this remains to be an overused method for disseminating information, or knowledge, within health care. Examples of passive approaches include didactic, non-interactive style conferences and seminars, newsletters, bulletins and journals and the distribution of 'top down' guidance, protocols and policy documents. There is often little or no evidence to support these passive methods as effective approaches to transferring knowledge and effecting positive change.

The key to success of change management is good communication (Murdoch 1998). Researchers have treated communication of knowledge (implicitly or explicitly) as an iterative process of convergence on a shared meaning making distinction between a phase of initiation and one (or several) phases of implementation (Szulanski, Winter and Cappetta 2000; Horwitch and Armacost 2002).

From the communication perspective an initial awareness-raising phase for disseminating knowledge needs to be followed by actively raising understanding, acceptance, commitment, support systems, structures and individual capacities such as skills and knowledge to support new ways of doing business (Jacobs 2000).

Much of the extant research is founded on the theory of communication and, in particular, the signalling metaphor. This is evident in the important text by Rogers about the diffusion of innovations (Rogers 1995), on which many health care improvement programmes in both Britain and North America base their health improvement programmes.

Conversely, Szulanski et al (1996) suggest that the signalling metaphor may have outlived its usefulness because it employs a single, easy to understand framework for the instantaneous movement of knowledge, rather than a complex series of processes. They analysed 122 transfers of best practices to better understand the difficulties experienced in the transfer of knowledge – these difficulties are described as 'stickiness' (Szulanski, Winter and Cappetta 2000). In his earlier fieldwork, Szulanski (1996) also observed that transfer related problems that cannot be handled routinely require additional deliberation, recourse to non-standard skills, allocation of supplemental resources, and escalation of transfer-related decisions to higher levels for resolution (Szulanski 1996).

Szulanski's work has implications for managers when attempting to deal with, and resolve, difficulties with transfer. To overcome such difficulties, managers need to focus more closely on the fact that although their organisations may want to engage in effective knowledge transfer, they may not necessarily know how to do so in an effective way. There is a need to tackle the internal barriers which exist in terms of: lack of absorptive capacity of the recipient, causal ambiguity and arduous relationships between the source and the recipient (Szulanski 1996).

However, even if the communication of a change or an innovation is good, it will be of little use if the people required to receive and act on the information are not convinced of its benefit. Memoranda, mass meetings, newsletters and similar methods may provide useful first-level communication, but they alone will not necessarily result in action. Proper use and control of communication is therefore essential (Murdoch 1998). Raising awareness should be regarded as the first part of a wider communication strategy. This first awareness raising needs to be followed by actively raising understanding, acceptance, commitment, support systems, structures and individual capacities such as skills and knowledge that support new ways of doing business (Jacobs 2000).

Although the concepts of culture and leadership have been discussed in the section on change, they impact on knowledge transfer so are worthy of further

brief mention. Cultural inhibitors include lack of trust, different vocabularies and frames of reference, and intolerance of mistakes or the need for help (Davenport and Prusak 2000). Where there is little history of sharing information, leaders need to think of ways to break down cultural barriers or a knowledge transfer and management programme could fail. Demonstrating that the change will help staff do their job better (Horwitch and Armacost 2002) and identifying other benefits (Plsek 2000) are ways to overcome some of these barriers. Although cultural and behavioural issues are often hardest to change it may be more appropriate to focus on them rather than begin with relatively easy to fix problems like technology (Davenport and Prusak 2000).

2.10.5 Modification phase

Internal benchmarking and transfer of best practice are some of the most tangible manifestations of knowledge management. This involves the identification, capture, and leverage of knowledge (O'Dell and Grayson 1997). Benchmarking, in this context, is defined as the process of identifying, understanding and adapting outstanding practices from others, to improve your own performance (O'Dell and Grayson 1997). For this to occur, however, it is important to acknowledge the need to modify or adapt knowledge – and, interestingly, this same need to modify/adapt applies to the implementation of innovations (Lewis and Sebold 1993) - to suit local needs. In the NHS this is particularly relevant because the 'not invented here' mentality (Davenport and Prusak 2000) is often evident. This is where there is sometimes difficulty in appreciating how a particular practice in one organisation could be relevant and applicable to another.

Adaptation is important because newly developed ideas drive knowledge generation. But, more importantly, reinvention and adaptation of the adopted practice to suit local needs and gain ownership is key to success (Ross 1974; Olshavsky 1980; Dewar and Dutton 1986; Gauvin and Sinha 1993; Lewis and Sebold 1993; Fischer, Arnold and Gibbs 1996; Getz and Siegfried 1997; Nabin, Bloem and Poiesz 1997; Cooper 1998; Gopalakrishman and Bierly 2001; Jensen 2001; Maguire 2002; Berwick 2003; Plsek 2003)

An organisation's ability to adapt is based on two principal factors - having existing resources that can be used in new ways, and being open to change (Davenport and Prusak 2000). As the NHS has vast resources (e.g. its staff) it therefore has huge potential to use these new ways to effect improvement. Sibling rivalry (as previously mentioned) can also be a barrier to implementing knowledge. The 'modification' stage allows staff to 're-invent' and adapt an idea for local implementation, giving them ownership and the impetus to make the change.

2.10.6 Implementing knowledge

In their review, Bero et al (1998) noted that few studies compared the relative effectiveness of different strategies for implementing new knowledge. Furthermore, there is insufficient evidence to assess the effectiveness of single interventions - like the identification and recruitment of the local opinion leaders that Rogers (1995) observed and described in his observational studies - to improve the implementation of new knowledge. The authors warn of the false conclusions drawn by many studies regarding the significance of the effectiveness of interventions in both meta-analyses and qualitative analyses. They are critical of the small to moderate size of observed effects and that few studies have attempted to undertake any form of economic analysis. The most successful interventions were found to be educational outreach visits, reminders (manual or computerised) and interactive educational meetings (Bero, Grilli, Grimshaw, Harvey, Oxman and Thomson 1998). However, the use of a combination of methods (i.e., where two or more interventions such as audit and local consensus are used) appears to be more effective than applying any single intervention (Haines and Jones 1994; Bero, Grilli, Grimshaw, Harvey, Oxman and Thomson 1998; Davenport and Prusak 2000). This means that it would be unwise to rely on a single strategy for implementation of improvements.

Few reviews of interventions to promote implementation of knowledge appear to link their findings to theories of behavioural change (Bero, Grilli, Grimshaw, Harvey, Oxman and Thomson 1998). This is surprising given that implementation is predominantly concerned with getting people to do, or

introduce, something different. Hence a change in their behaviour is a prerequisite to achieving this. Furthermore, where there is an identified link to theory, different studies have used different theories to underpin their work; rather than one theory emerging as the most relevant or important (Davis, Thomson, Oxman and Haynes 1995).

2.10.7 Organisational, professional and managerial determinants

In health care, senior clinicians have for many years enjoyed the freedom to make autonomous decisions. There is a potential risk that they may perceive the introduction of new guidelines, policies and changes as a threat to their clinical decision making prowess. Whilst professionals may attribute their resistance to objective concerns there may also be highly personal and subjective factors (Empson 2001). To overcome this it has been shown that increasing clinicians' participation in the development of new policies, guidelines and intervention trials may improve the uptake of their findings (Haines and Jones 1994). Similarly Berwick (2003) advocates investing in early adopter clinicians by encouraging them to suggest and test guidelines. In the NHS this is important because professionals play a central role in both creating new knowledge as well as in the knowledge transfer process. Notably, their views are essential in supporting, articulating and legitimising information.

It has also been demonstrated that professionals resist knowledge transfer when they perceive that there are fundamental differences in the quality of the firms external image (Empson 2001). This too is played out in the NHS where professionals' perceptions of individual organisations may range from being considered as centres of excellence to poor performers. Hence, knowledge emanating from an institution that is not held in high regard could be at risk of being disregarded. With regard to knowledge creation, the role of professional bodies could include ensuring their active participation in systematic reviews of the literature (Haines and Jones 1994; Iles and Sutherland 2005) and their active involvement in the development of guidelines, policies and new ways of working (Cameron and Cranfield 2005).

Davenport and Prusak (2000) identified three factors concerned with knowledge sharing. These are reciprocity, altruism and repute. Reciprocity is concerned with giving knowledge freely if something is expected in return. Altruism is when the knowledge sharer is so passionate about his/her knowledge that they are happy to share it. With regard to health care professionals this, and the notion of repute, are potentially motivating, in particular when there is a desire to be known and recognised as a knowledgeable person with valuable expertise.

As with all aspects of change leadership, support from senior managers/leaders is also important. To secure their support senior managers need to be convinced that the transfer has merit and will constitute an improvement. A different strategy, other than that used for clinicians, may therefore be necessary to engage with, convince, and gain the support of managers. Plsek and Kilo (1999) describe this as identifying the 'attractors' for individuals or groups in order to convince them of the merit of the new way of working and, in so doing, persuade them to change.

2.10.8 Technological aspects of knowledge management
Some organisational leaders naively view knowledge management as a new trend that is mostly concerned with information technology. This view engenders a belief that knowledge management is a new technology that merely needs to be 'plugged in' to generate value (Horwitch and Armacost 2002). Such managers underestimate the complex change processes involved with implementing or transferring knowledge both within and between organisations. Sutton asserts that not all enterprise-critical knowledge can be captured and transferred by the use of data warehouses or knowledge repositories (Sutton 2001).

Blumentritt and Hardie (2000) claim that technology is altering the main role of middle managers from supervision to the support of knowledge transfer. Hence middle managers must take the responsibility for identifying knowledge gaps and thinking of ways to bridge them. The authors state that this bridging activity creates a network organisation, linked by knowledge transfer between groups.

They note that this is particularly relevant to service organisations where knowledge transfer is difficult.

Whilst technology is a useful conduit for rapidly transferring information, knowledge management is not simply concerned with distributing knowledge. It involves devoting personnel to capturing, identifying, transferring, prioritising, and disseminating the right information at the right times (Horwitch and Armacost 2002). This, the authors refer to as brokerage. Knowledge brokers make connections between those who have knowledge and those who require it (Davenport and Prusak 2000). It reinforces the view that the responsibility for knowledge management cannot be handed over to, and maintained, by an IT department alone.

The ease of transferring large volumes of information to a vast number of people by simply pressing a button is now both possible and alluringly tempting. The use of email, the Internet, software solutions and databases have all quickly become part of everyday life. This means that information technology is now frequently used to support knowledge transfer and management. Computer networks have created a potential infrastructure for knowledge exchange (Davenport and Prusak 2000). However, it is important that this is not considered to be the panacea for transferring knowledge and information. It may be necessary, but is not sufficient for the successful transfer of knowledge. It is equally important that the technological aspect of knowledge management is not regarded as simply a method for sharing all the information that is available, with everyone. Instead, if used appropriately it is a useful mechanism to support - but not achieve - the transfer of knowledge to the right people, in a timely and appropriate way.

Moreover, technology should not be used to replace person-to-person communication, where this is warranted. Where tacit knowledge is concerned, the building of relationships and person-to-person contact can be an important route for meaningful sharing and transfer. Transfer is an interactive, ongoing and dynamic process that cannot rest on a static body of knowledge (O'Dell and Grayson 1997).

In health care, computerised decision support systems have been shown to aid implementation of improvements. In particular, decision support systems for drug dosages and clinical management have been shown to be effective (Haines and Jones 1994; Johnston, Langton, Haynes and Mathieu 1994). Therefore there is potential relevance of this, and other types, of application of knowledge management methods when dealing with clinicians. However, one example where this has not been the case is that of the rapid and widespread implementation of NHS Direct (in England). This relies on clinical decision support software and, in general, during the early implementation phase, was not well received by doctors.

Technology clearly does have a useful role to play in the capture, transmission and implementation of knowledge, but is less useful for imparting tacit or complex knowledge, which requires person-to-person contact. It is however extremely useful for supporting the transfer of fairly straightforward, explicit information (O'Dell and Grayson 1997) especially where there is a large number of recipients and rapid transfer of information is required.

2.10.9 Summary - knowledge management literature
Knowledge is a very valuable commodity and organisations are beginning to realise the importance of knowledge management and transfer strategies to capture and communicate the learning of their own and others successes and failures.

Knowledge management is a relatively new concept and, consequently, there is no universally accepted definition apparent in the literature. However, there appears to be considerable crossover from the change management literature indicating that the criteria for success in both cases may be very closely linked.

Both public and private sector organisations are keen to adopt successful knowledge management and transfer practices, yet both have encountered difficulties in doing so. Knowledge is much more complex than its simpler component 'data'. This makes it extremely difficult to capture, describe and transfer. There are a number of factors which have been attributed to this,

including, the time consuming and difficult process of identifying and transferring knowledge (O'Dell and Grayson 1997), and the fact that even when knowledge is passed on, it is still not guaranteed that action will be taken to introduce the new idea or practice.

Identified barriers to introducing new knowledge include, lack of motivation to adopt the practice, inadequate information about how to adopt the practice and lack of the resources and skill to manage the change (O'Dell and Grayson 1997). One of the most common problems, which hinders knowledge transfer, is silo thinking. Silo thinkers tend to think of their work in isolation to that of others and this stems from a culture which values knowledge creation over knowledge sharing.

The differences that exist between explicit and tacit knowledge create further complications in knowledge transfer. Tacit, or soft, concepts of knowledge management comprise skills and personal aspects of knowledge which cannot be easily formalised or codified (Heitor, Conceicao and Gibson 1999; Davenport and Prusak 2000). This has important implications for how knowledge is produced, diffused and implemented. As explicit knowledge can be easily codified, tacit knowledge may sometimes be ignored. This renders the knowledge transfer an incomplete representation of the knowledge concerned.

One strategy to overcome the difficulties concerned with tacit knowledge is to identify people who have been involved in implementing a given change and to use person-to-person contact in sharing the experience of the change. Learning sets (as used in collaborative methodology) facilitate sharing of ideas and tacit knowledge and can help to preclude the problems associated with silo thinking. This is in sharp contrast to the passive dissemination of information through didactic, non-interactive style conferences and seminars, newsletters, bulletins and journals and the distribution of 'top down' guidance, protocols and policy documents.

One of the main barriers to knowledge transfer in the NHS is the possible threat that the introduction of new policies and procedures may pose on the

autonomous decision making of senior clinicians. This issue needs to be carefully addressed in order to ensure that clinicians play an active role in the development of any new policies and guidelines.

Successful knowledge management and transfer strategies must first of all address the barriers that exist at both the individual and the organisational level. Any strategy must also fully consider both explicit and tacit knowledge and place equal importance upon each in order for successful capturing, description and successful and accurate transfer of knowledge.

2.11 Additional implementation literature

2.11.1 Introduction

Van de Ven, et al (2000) described the implementation period as the period which begins when application and adoption activities are undertaken. Implementation is therefore an area of concern and interest to a wide range of research fields. Successful implementation strategies cross the boundaries of research domains of both public and private sector businesses. As such it is difficult to tease out the concept of implementation from the themes of change, innovation and knowledge management and transfer. Doing so risks isolating the concept from the context within which it has been studied and presented. For this reason implementation is discussed within each section of this literature review. However, the area of project management, as a discrete and separate area of the literature, has not been discussed and is replete with research into implementation. Therefore key studies into the main issues relating to implementation, from a project management perspective, are included here.

2.11.2 Project management

Research into managing projects, and their effective execution, focuses heavily on the behavioural and organisational aspects of successful implementation.

Pinto and Slevin (1986; 1987; 1988; 1988) have extensively researched in to the area of project implementation. In doing so they highlight the complex nature of the project management process, drawing attention to the broad

variety of human, budgetary and technical variables that exist within this process. Employing an underpinning positivistic, cause and effect, paradigm, their research is based on defining the critical success factors that contribute towards successful project implementation and management. They offer several conceptual models that can be used as diagnostic tools for practicing managers. Pinto's work with Prescott (Pinto and Prescott 1988; 1990) further developed the tool and considers the relative importance of success factors noting that these change significantly depending on the life cycle stages and the dynamic nature of the project.

Four stages were identified within the project life cycle (Pinto and Prescott 1988). These are: conceptualisation, planning, execution and termination. A further study found that the relative importance of planning varies across the project life cycle with 'successful' projects placing high importance on planning in the early stages of the project and this is later superseded by tactical issues as the project progresses through its life cycle (Pinto and Slevin 1988). The authors assert the importance of a clear definition of success. They highlight the inconsistencies which exist when projects are declared to be successful simply because they finish on time and don't go 'over budget' (Pinto and Slevin 1988).

Based on Pinto, Slevin and Prescott's empirical research, 14 critical success factors have been identified as predictors of project success (see table 2.1 on the following page).

Table 2.1.

Critical project success factors for project implementation

Project mission
Top management support
Schedule/Plans
Client consultation
Personnel
Technical tasks
Client acceptance
Monitoring and Feedback
Communication
Trouble shooting
Leadership
Power and Politics
Environmental effects
Urgency

(based on the combined works of Pinto, Slevin and Prescott)

Interestingly, some of these factors were also commonly identified in the earlier discussion as important to the successful implementation of change, innovation and knowledge transfer. Most notably these are aspects relating to: top management support, personnel, communication, leadership, power and politics and environmental effects. In a later study some of these constructs were used to devise measures of implementation success (Pinto and Prescott 1990). In particular, the questions posed in the study about top management support, communication methods and personnel could readily be asked of implementing change or innovation. The same authors also highlight the importance of a 'project champion' (Pinto and Slevin 1989) and this is similar to the notion of change agents, and roles like champions, sponsors and advocates previously mentioned as important in implementing change and innovation.

Belassi and Tukel (1996) reviewed the project implementation literature, and suggested that whilst the critical factors developed by earlier research were helpful in developing better scheduling techniques for the successful implementation of projects, they were inadequate in defining the many factors which lie outside the control of management and which could also determine the success or failure of a project. To overcome this problem they proposed an

enhanced set of critical success/failure factors by grouping them according to criteria, to assist in analysing the interactions between factors (see table 2.2) (Belassi and Tukel 1996). These factors are input related and affect project implementation rather than project outcome.

Table 2.2. Critical success/failure factors in projects
(Belassi and Tukel 1996)

Project manager factors	Project factors	Organization factors	External factors
Ability to delegate authority	Uniqueness of project activities	Top management support	Political environment
Ability to trade-off	Size and value	Project organisational structure	Economical environment
Ability to co-ordinate	Density of project	Project champion	Social environment
Perception of roles and responsibilities	Life cycle	Functional managers support	Technological environment
Competence	Urgency		Nature
Commitment			Client
			Competitors
Project team member factors			Sub-contractors
Technical background			
Communicating skills			
Troubleshooting			
Commitment			

Though small in number, it is clear from the influential literature reviewed, that the field of project management gives a valuable insight into the implementation process. This can be used to help determine some of the possible success/failure factors, which contribute to the successful implementation of change.

2.12   Literature - overall summary and conclusions

The field of change is extremely broad and encompasses many phenomena and concepts. The literature review (and the ensuing research) focused on aspects relating to the successful implementation of new ways of working in a health care setting. Relevant literature from the field of change, and the sub-themes of innovation, knowledge management and transfer, and implementation was reviewed and a concentric model (figure 2.1, page 35) designed to show how these aspects of change interlink at the individual, group/organisational and strategic levels.

Innovation was considered an important subsidiary concept of change because any innovation requires and implies change (although the reverse is not necessarily true). The topic of innovation can be further divided into the subgenera: diffusion, adoption, innovativeness and type.

Using the different component levels of the concentric model of change (figure 2.1, page 35), a variety of concepts became relevant, apparent and important to the successful implementation of innovation and change. Concepts such as leadership and power, for example, have a recognised potency in facilitating successful implementation.

At the individual level of analysis, roles such as, change agents, leaders and stakeholders, as well as behaviours and characteristics including resistance, loyalty, receptivity, scepticism, cynics, adopters and laggards. All these identified concepts influence how individuals respond and adapt to change.

At the group or organisational level, knowledge management and transfer is of paramount importance in ensuring the successful transfer of innovations from one organisation or department to another. The role of the individual can also impact on this process. Internal barriers, which may exist in the mindset of the individual and their unwillingness to share information, can also cause major setbacks at the organisational level. This illustrates the tentative relationship between the individual and the group or organisation in implementing innovation.

Implementation was also found to be an important sub-theme of change and there was notable cross-over with the innovation and knowledge management literature. Furthermore, it was an especially prevalent theme in the project management literature. The implementation process for innovation, change and knowledge transfer was considered at the different concentric levels - individual, group/organisation and strategic level. It was apparent from the literature that each of these levels must operate in harmony for successful change to take place.

Though prolific, the literature was highly multifaceted and complex resulting in inconclusive and conflicting findings and recommendations. No single model or theory applied across the board for the implementation of either change, in the broader context, or the sub-component innovation. It was however apparent from the literature that implementing change and improvement should not be left to chance. Success of implementation is influenced by strategic intent, managerial action and organisational policy (Cooper 1998).

The importance of links and relationships of different concepts is striking. Thus, consideration of a range of different concepts and their contextual alignment appears to be more important than the consideration of individual concepts in isolation (Brannen 1991; Burnes 1996; Schein 1996). Additionally, the association and concordance of theory and concept – for example, organisational culture and the applied change model – is evidently an important factor in devising appropriate change strategies.

Links between process and organisational structure were also largely inconclusive (Cooper 1998). The most likely conclusion from the depth and breadth of work cited is, as avowed by Burnes (1996), that one size does not fit all and reliance on a single approach to implementing change undermines and impacts on the success or failure of implementation. The importance of giving due consideration to a wide range of processes to implement change – which attempt to go beyond considering the interests and incentives of participants – also appears to be key to successful implementation (Argyris and Kaplan 1994).

Definitions of innovation and type were inconsistent and inadequately described in the literature. This rendered comparison across studies difficult to assess. Some researchers, for example, refer to innovation as a single all-encompassing phenomenon (Burgelman and Sayles 1986; Utterback 1994; Cooper 1998) rather than specifically recounting the exact type and attribute of the innovation under discussion. Consequently the term is frequently cited in its broadest sense, and is used interchangeably. This leaves the reader unclear as to the precise nature of the study and serves to confuse and hinder the interpretation and comparison of findings.

The variables, relationships, definitions and recommendations from empirical research and theory are numerous, inconsistent, conflicting and inconclusive. Even where there is some degree of agreement or overlap, there remained a lack of unification of theory and terms. Moreover, even where there appeared to be consensus in the necessary approach or steps to increase successful implementation for given types of innovation or change, there was a lack of agreement as to the order and importance of each.

Modification at local level appeared to be important to the successful implementation of change, innovation and new knowledge. Re-invention of an adopted practice, to gain ownership and adapt the practice to suit local needs, was frequently cited as key to success (Ross 1974; Olshavsky 1980; Dewar and Dutton 1986; Gauvin and Sinha 1993; Lewis and Sebold 1993; Fischer, Arnold and Gibbs 1996; Getz and Siegfried 1997; Nabin, Bloem and Poiesz 1997; Cooper 1998; Gopalakrishman and Bierly 2001; Jensen 2001; Maguire 2002; Berwick 2003; Plsek 2003). In the NHS this is particularly relevant because of a prevailing 'not invented here' mentality (Davenport and Prusak 2000) which can discourage the uptake of ideas created by others. The 'modification' stage presents staff with an opportunity to 'reinvent' and adapt an idea for local implementation, giving them ownership and impetus to make the change.

With regard to all aspects of the change literature, the human dimension of change was found to be an important factor (Maslow 1943; Lewin 1947; Beer

and Eisenstat 1996; Galpin 1996; Buchanan and Badham 1999; Empson 2001). This human behavioural element of change also resonates in practice where staff frequently cite dealing with difficult colleagues as inhibitive.

A summary of the main themes which emerged from this literature review - with key supporting references - is presented in figure 2.2 on the following pages.

Figure 2.2 – Emergent themes from the literature

Theme	Key references
Strategic orientation	(Tichy, Hornstein and Nisberg 1976; Kotter and Schlesinger 1979; Porter 1980; Quinn 1980; Ettlie, Bridges and O'Keef 1984; Van de Ven 1986; Greenwood, Royston and Hinings 1988; Chakravarthy and Lorange 1991; Van de Ven 1992; Wilson 1992; Dunphy and Stace 1993; Beer and Eisenstat 1996; Bechtold 1997; Thompson 1997; Turner 1997; Turner 1998; Turner 1998; Sastry 1999; Stacy 2000; Buchanan 2001; Denis, Lamothe and Langley 2001; Greenly and Carnall 2001; Jensen 2001; Mercer 2001; Dunphy and Griffiths 2002)
Environmental issues	(Damanpour 1991; Sastry 1997; Turner 1997; Armenakis and Bedeian 1999; Buchanan and Badham 1999; Motwani, Klein and Navitskas 1999; DOH 2000; Empson 2001; Crump 2002; Fulop, Protopsaltis, Hutchings, Allen, Normand and Walters 2002; Cereste, Doherty and Travers 2003)
Organisational Structure (& restructuring)	(Merton 1968; Kimberly and Evanisko 1981; Kanter 1983; Dewar and Dutton 1986; Gould 1989; West and Farr 1990; Burke and Litwin 1992; Vollman 1996; Arad, A and Shneider 1997; Cooper 1998; Sciulli 1998; Dennis, Lamothe, Langley and Valette 1999; Hong 1999; Jones, White and Uyanik 1999; Motwani, Klein and Navitskas 1999; Robertson 2000; Martin de Holan and Philips 2002; Carnall 2003; Ham 2003)
Competencies	(Boyatzis, Goleman and Rhee 2000; Gremler, Hoffman, Keaveney and Wright 2000; Higgs and Rowland 2000; Bevan, Buchanan, Godfrey Harris and Plsek 2002; Moody, Stewart and Bolt-Lee 2002)
Resources	(Kanter 1983; West and Farr 1990)
Learning capacity & capability	(DiBella; Dewey 1938; Argyris and Schön 1978; Schön 1983; Kolb 1984; Argyris 1990; Argyris 1991; Argyris 1993; Senge 1994; Mumford 1995; Beer and Eisenstat 1996; Baines 1997; Garvin 1998; Griffiths and Williams 1998; Riding and Rayner 1998; Argyris 1999; Hong 1999; Gremler, Hoffman, Keaveney and Wright 2000; Mingers 2000; Van den Brink-Budgen 2000; Coghlan and Brannick 2001; Jacobs 2001; Moilanen 2001; Hodgson 2002; Walshe and Freeman 2002)
Power	(Harrison, Hunter, Marnock and Politt 1992; Department Of Health 2002; Carnall 2003; Ham 2003)
Leadership	(Stogdill 1974; House and Baetz 1979; Conger and Kanungo 1987; Bass 1990; Bass and Yammarino 1991; Bennis 1992; Shamir, House and Arthur 1993; Bass and Avolio 1994; Firth 1994; Hogan, Curphy and Hogan 1994; House 1996; Podsakoff, MacKenzie and Bommer 1996; Bass 1997; Cannella and Monroe 1997; Horner 1997; Sosik 1997; Bennis 1999; Hunt 1999; Shamir 1999; Bichard 2000; Cannon 2000; Higgs and Rowland 2000; Higgs and Rowland 2000; Denis, Lamothe and Langley 2001; Densten and H 2001; Higgs and Rowland 2001; Diehl and Donnelly 2002; Elenkov 2002; Heller 2002; Higgs 2002; Kouzes and Posner 2002; Dulewicz and Higgs 2003; Higgs 2003; Trevor-Roberts, Ashkanasy and Kennedy 2003; Wilberg 2003; Judge and Piccolo 2004; Dulewicz and Higgs 2005; NHS Modernisation Agency Leadership Centre, Steele, Cummins, Brown, Malik, Lee, Offley, Beers and Ajmal 2005; Yan and Hunt 2005)

Figure 2.2 *(continued)* – **Emergent themes from the literature**

Theme	Key references
Change Roles Including: - Change agents - Clinical leaders - Champions - Advocates - Opinion leaders - Stakeholders - Sponsors	(Pinto and Slevin 1989; Argyris and Kaplan 1994; Berwick 1994; Beer and Eisenstat 1996; Grol 1997; Armenakis, Harris and Feild 1999; Buchanan and Badham 1999; Thompson O'Brien, Oxman, Haynes, Davis, Freemantle and Harvey 1999; Bisognano 2000; Cunningham and Kitson 2000; Hall and Eccles 2000; Jacobs 2000; Murray 2000; Silversin and Kornacki 2000; Cunningham and Kitson 2000-2001; Buchanan 2001; Doolin 2001; Empson 2001; Graham and Steele 2001; Huy 2001; Bevan, Buchanan, Godfrey Harris and Plsek 2002; Dover 2002; Griffith 2002; Shortell 2002; Berwick 2003; Doolin 2003; Ham 2003; Ham 2003; Cameron and Cranfield 2005; Cunningham Dec 13 2000-Jan 2,2001)
Culture	(Schein 1984; Schein 1985; Handy 1986; Weick 1987; Higgs 1990; Brannen 1991; Harrison, Hunter, Marnock and Politt 1992; Meyerson and Martin 1994; Baron 1995; Burnes 1996; Higgs 1996; Oswick, Lowe and Jones 1996; Schein 1996; Schein 1996; Thompson 1997; Davies, Nutley and Mannison 2000; Higgs and Morton 2001; Callahan 2002; Martins and Terblanche 2003; Weick and Sutcliffe 2003)
Incentives e.g: - Cost savings - Improvement - Good practice - Competitiveness	(Porter 1980; Kanter 1983; Dearden and Ickes 1990; West and Farr 1990; Pettigrew and Whipp 1994; CIMA Study Text 1996; O'Dell and Grayson 1997; Bero, Grilli, Grimshaw, Harvey, Oxman and Thomson 1998; Cacioppe 1999; Llewellyn, Eden and Lay 1999; Plsek and Kilo 1999; Plsek 2000; Ferguson and Lim 2001; Kegan and Laskow Lahey 2001; Fraser 2002; Plsek 2003)
Behaviours & Characteristics	(Tajfel and Turner 1985; Conger and Kanungo 1987; Conger and Kanungo 1988; Judson 1991; Argyris and Kaplan 1994; Raelin 1994; Nabin, Bloem and Poiesz 1997; Armenakis, Harris and Feild 1999; Plsek and Kilo 1999; Speight 2000; Einstein and Humphreys 2001; Prochaska, Prochaska and Levesque 2001; Horwitch and Armacost 2002; Van de Weide and Wilderom 2004)
Communication	(Kotter 1995; Rogers 1995; Szulanski 1996; O'Dell and Grayson 1997; Murdoch 1998; Dougherty 1999; Griffith 1999; Harkness 1999; Heitor, Conceicao and Gibson 1999; Hong 1999; Kynell and Krieg Stone 1999; Bender and Fish 2000; Davenport and Prusak 2000; Harrison 2000; Hawkins 2000; Speight 2000; Szulanski, Winter and Cappetta 2000; Ryan 2001; Horwitch and Armacost 2002; Mockler and Adams 2002; Waring and Wainwright 2002; Lindsay, Chadee, Mattsson, Johnston and Millet 2003)

2.13 Developing a guiding model to help make sense of the literature

The considerable number and diversity of the concepts, theories and assertions found in the literature concerning what makes change happen is complex and obscure. It was particularly exigent to conclude about how these might best be applied to the real world of the NHS. In addition to this challenge, it is equally perplexing for a novice researcher to make sense of the overwhelming plethora of information and devise a meaningful, value adding, research study.

The emergent approach adopted for this research is highly conducive to working within such a messy and complex environment. Whilst a pre-determined approach may present an appealing road-map to guide novice researchers, the inflexible rigidity that this type of approach confers underestimates and oversimplifies the complex nature of the subject matter. Such an approach would not sufficiently permit important concepts to emerge through the complexity, hence risking acquisition of meaningful, novel and robust results that can be applied to the real world setting.

In contrast to employing pre-planned methods, adopting an emergent approach requires the researcher to remain open to a continuous and potentially changing research direction rather than devising a linear research strategy with a beginning, middle and end. Thus the researcher is able to realign emergent findings as knowledge unfolds.

After analysing and assimilating the learning from the literature, there was a compelling need to reduce the information to a more manageable size and focus that could be meaningfully applied to the research problem.

Figure 1.2 in chapter 1 showed the early prototype emergent model developed to guide the research process. This was constructed to enable integration of extant theory with NHS practice based views without necessarily pre-determining either the research methods, or the themes (constructs) for inclusion in the research study. This process enables the themes generated from both the literature and the qualitative research to be compared, contrasted and reduced as part of the first phase of the research to help define and focus

the research problem. The model was further developed and the actual themes generated were added. This is re-presented in its developed form in subsequent chapters.

2.14 Concluding remarks and personal reflection

The ensuing research will consider and incorporate the issues raised from the literature review as described above. Moreover, in the light of inconsistent descriptors used for some of the constructs, particular attention will be paid to ensure that there are explicit descriptions of the factors under discussion. This is particularly important when the information is taken to the field and tested with NHS practitioners regarding what is important for the successful implementation of change in the NHS.

Reviewing the literature has demonstrated unequivocally that the field of change is vast and highly complex. Arguably, and as identified by Burnes (1996), it is somewhat simplistic to plan and adhere to a linear, single method or research strategy to deal with such complexity. This renders the initial research problem, with the multiple theories and concepts identified, as immensely ambitious - particularly for a novice researcher. The multifarious themes, sub-themes and abundant constructs identified heighten the importance of developing robust methods to determine a clear focus for the research.

Notwithstanding the obvious value of the literature review in increasing my knowledge of the subject matter, it has also served to ground the focus and direction of the research and firmly positioned it in an action research and action learning (Argyris and Schön 1996; Coghlan and Brannick 2001; Meyer 2001; Bevan, Buchanan, Harris and Plsek 2002; Coghlan, Dromgoole, Joynt and Sorensen 2004) context.

The next chapter (chapter 3 - methodology) describes the research processes outlined in the model and considers these within a phased approach. The merits of some of the potential methods for conducting the research are outlined and evaluated. But, more importantly and relevant to this discussion, it

describes how qualitative and quantitative methods were applied to reduce the problem and provide a more manageable and practical focus. This was paramount if the research was to yield nomothetic value to the NHS, and enhance understanding of what makes change happen.

CHAPTER THREE

Methodology

3.1   Introduction

This chapter describes the methodological approach taken. A summary of Phases I and II of the research is presented to contextualise the discussion that follows.

The multistage research strategy and development of the research process is described to show how the different phases of the research integrated, iterated and informed each stage.   The first phase of the research focused on refining and defining the research problem. The second phase is described in terms of how the problem was investigated through the generation of hypotheses.

The methodological discussion begins by outlining two different potential methods of data collection for phase II of the research. These were to adopt either a case study approach, or conduct a large-scale survey. These two research methods are discussed and a critique of each is offered to demonstrate the rationale for the concluding decision to use survey research. The rationale and methods used for the selection, design and administration of a survey questionnaire, to test the hypotheses and generate new theory, is then described.

A philosophical discussion is also offered.

Although a prototype emergent model for handling multiple constructs was set out at an early juncture of the research (Figure 2.2 page 81), the evolutionary development of research process is described in this chapter together with the methodological approach. These were continually refined and progressed as the design evolved through continuous iteration. Thus, as each stage was completed the findings were used to inform the next. This iterative process is best illustrated by noting the shift from the original intention – which was to

understand what critical success factors were responsible for helping change happen in the NHS - to a later decision (after completing the first phase of the research) to investigate the relationship between just one of the identified critical success factors and the impact of this single construct on NHS organisational performance.

The former abstract phase of the research is referred to as Phase I, and the latter measurement period, Phase II. The methodological section is thus discussed as two separate entities. It is, however, important to emphasise that the research was conducted as one continuous learning journey and the research process (Figure 3.2 page 89) was continuously refined and developed as the learning unfolded. This approach reflects the phenomenon of double-loop learning described by Argyris (1999). Such a focus on double-loop learning is less concerned with singularly achieving the intended outcome but, instead, when a mismatch between intention and outcome is identified and corrected, it turns a mismatch into a match. This is demonstrated throughout this thesis by the unfolding research journey which began with a broad focal point which was concerned with 'change' and which later shifted to focusing on a single critical success factor (construct).

3.2 Developing the research process

To establish the critical factors that support the implementation of change in NHS hospitals, a multistage emergent research strategy was required. This aimed to incorporate both qualitative and quantitative stages. Rossman and Wilson (1984) suggest three broad reasons why a mixed approach is beneficial; these are:

1. It enables the confirmation or corroboration of each method via triangulation. Triangulation is broadly defined by Denzin and Lincoln (1994) as, 'the combination of methodologies in the study of the same phenomenon'.
2. It enables the researcher to elaborate and develop analysis, providing richer detail.

3. It initiates new lines of thinking through attention to surprises or paradoxes, 'turning ideas around', providing fresh insight.

These three suggestions were each desirable and consistent with the ambitions for the research design. Furthermore, Miles and Huberman (1994) helpfully suggest a framework which illustrates four different ways of successfully designing research to link and incorporate both qualitative and quantitative data. These are illustrated in Figure 3.1

Figure 3.1

Illustrative designs linking qualitative and quantitative data
(Miles and Huberman 1994) p 41

1. **QUAL**   continuous, integrated collection
                                             of both
   QUANT   ⟶   kinds of data   ⟶

2. **QUANT**   wave 1   wave 2   wave 3
   QUAL   ---------------- continuous fieldwork ------------------------

3. **QUAL**   ⟶   **QUANT**   ⟶   **QUAL**
   (exploration)   **(questionnaire)**   **(deepen, test findings)**

4. **QUANT**   ----------------→ **QUAL**   ----------------------→ **QUANT**
   (survey)   **(fieldwork)**   **(experiment)**
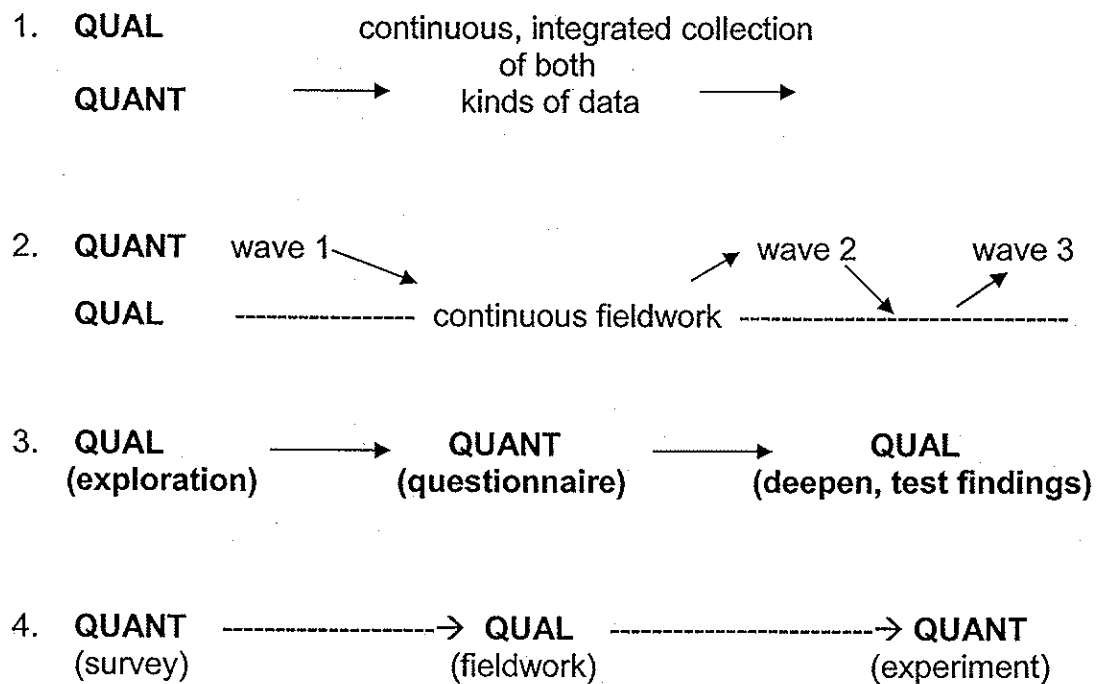
The third design was considered to be most relevant and provided a sound basis on which to establish the research process. It proposed a qualitative phase followed by a quantitative phase, with the potential to incorporate a third qualitative phase later in the research process.

The Miles and Huberman (1994) design framework was one of several influencing features which were incorporated into the ongoing iterative development of the research process. The early model presented in chapter one *(Figure 1.2 page 30)* was thus further progressed to incorporate the emergent themes from the literature; a practice based qualitative element to compliment and validate these; and the notion of reduction to facilitate data handling and refinement of the research problem.

The newly developed model constitutes the first phase of the research process and is presented below in Figure 3.2

Figure 3.2

The developing research process:
Phase I
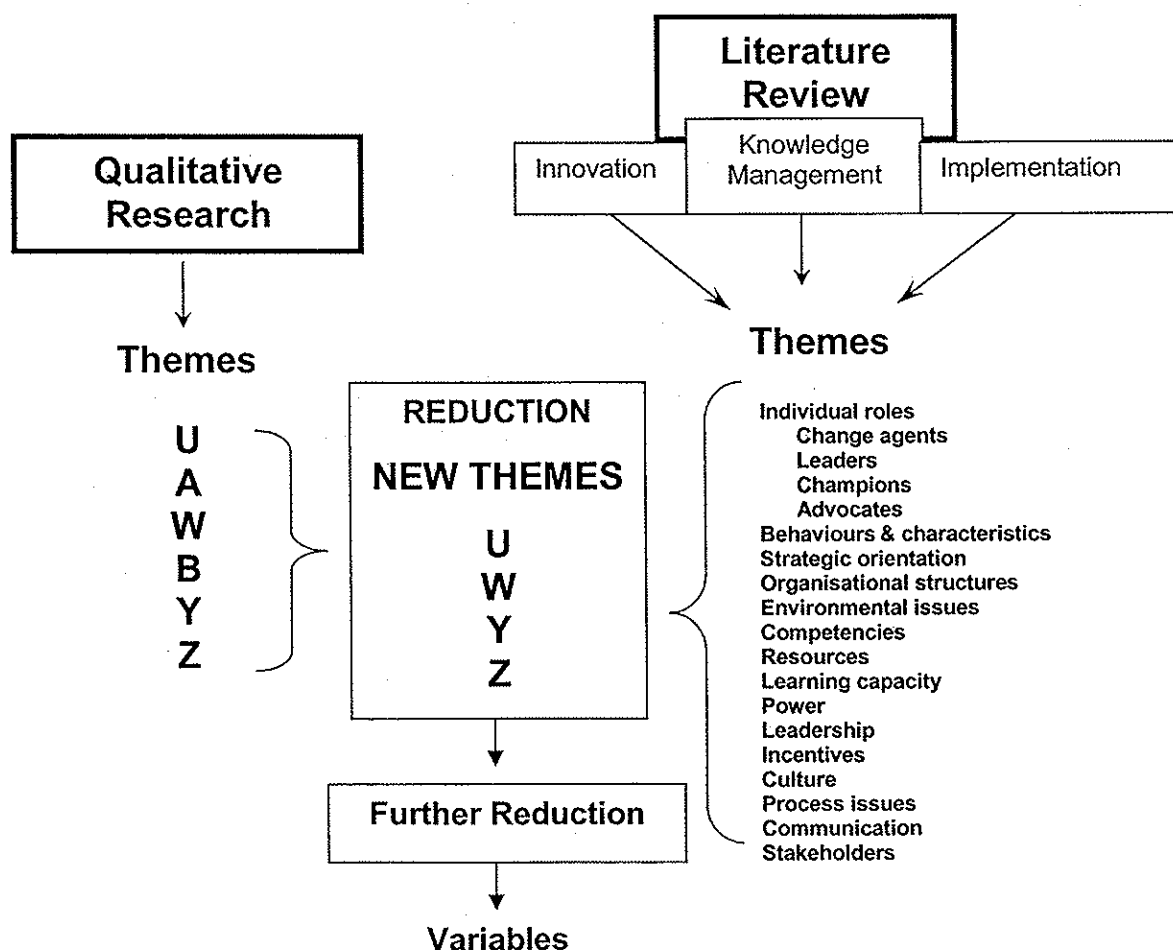
3.3 Phase I – Defining the Problem

The first phase of the research was based on the initial broad question - what makes change happen in the NHS? The sub-question arising from this was – what are the critical success factors that are responsible for making change happen in the NHS?

3.3.1   Phase 1 - Steps

The model developed in Figure 3.2 was used to guide the necessary steps required to deal with the research question. Phase I of the research necessitated six distinct steps to enable the research problem (and question) to be refined and defined. These were:

1. Reviewing relevant literature to understand important themes, issues, extant empirical research and theory.

2. Distilling and condensing emergent themes from the literature.

3. Conducting qualitative interviews to generate issues and themes of perceived importance that influence the implementation of change in the NHS.

4. Distilling and condensing the themes derived from the field.

5. Comparing, contrasting and condensing both sets of themes to produce a new single set consistent with both the literature and the field.

6. Reducing the themes into one or more critical success factor(s); and using these constructs as the independent variable(s) for phase II of the research.

3.3.2   Step 1 – Reviewing the literature

Historical and contemporary theory, together with empirical research relevant to implementing change was reviewed and this was described in chapter two. The most relevant overarching business management field was change. As change

is a vast topic, three sub themes associated with change, and relevant to the research question *(what makes change happen in the NHS?)*, were identified for more detailed review.

The three sub categories were: **Innovation** (Drucker 1985; West and Farr 1990; Robbins 1996; Hellreigel, Slocum and Woodman 1998; Martins and Terblanche 2003); **Knowledge management and transfer** (O'Dell and Grayson 1997; Dougherty 1999; Bender and Fish 2000; Davenport and Prusak 2000; Huber 2001; Horwitch and Armacost 2002; Mockler and Adams 2002; Lindsay, Chadee, Mattsson, Johnston and Millet 2003); and **Implementation** (Pinto and Slevin 1986; Pinto and Slevin 1987; Pinto and Prescott 1988; Pinto and Slevin 1988; Pinto and Slevin 1988; Pinto and Slevin 1988; Pinto and Prescott 1990; Belassi and Tukel 1996; Van de Ven, Angle and Poole 2000). A concentric model was developed to illustrate the three sub-categories (presented earlier in Chapter 2, figure 2.1 p 33). This was proffered to show the themes deemed to be important for implementing change in the NHS.

3.3.3   Step 2 – Condensing emergent themes from the literature

Distillation and thematic analysis of the literature for each of the three initial sub-themes of change gave rise to an array of diverse constructs. These comprised themes (constructs) which were consistent and common to each of the sub categories (innovation, knowledge management & transfer, and implementation), as well as being present in the general literature for successful organisational change.

An early research model was developed to guide the research process (figure 1.2 page 30). The model showed how both extant theory and primary qualitative data would be used to generate a single set of constructs. This was further developed by incorporating the identified themes from the literature. The newly developed model also included enhancement of the research process (presented in figure 3.1).

3.3.4 Step 3 – Conducting qualitative interviews

To develop the left-hand side of the process model and generate data to validate and cross reference the themes from the literature, a series of qualitative interviews were conducted.

Three sites were selected using a design comparable with that adopted by Homa (1998), i.e., an attempt was made to recruit three hospital sites which could be pre-designated as good, intermediate or poor performing sites. To find and assign sites to each of these categories, national Department of Health performance data for the previous six-month period was reviewed and all sites were assigned to one of the three categories according to their reported performance. These data were used as a proxy for performance. The 20th site listed in each of the three categories was selected. The three selected sites were not informed of the nominal ascribing to the three categories as it could have been construed pejorative. Instead the selection method was used as a way of capturing three different sites that might be experiencing different degrees of difficulty in performance achievement and implementing change.

To protect their identity, and any associated assumptions that might be made about which of the sites was good, intermediate or poor, it was pre-arranged with each site that the names of the sites would not be disclosed in this thesis. Selecting three separate sites and different levels of staff within each aimed to give a broad spectrum of views from participants.

From a geographical perspective, one site was in the North of England, one in the Midlands and the third was in London (the South). One of the sites was a university teaching hospital, the remaining two were district general hospitals. This was considered to be a good geographical spread as well as including both a teaching hospital and district general hospital perspective. The latter was thought to be important because of reported difficulties and differences with each when implementing change.

The interviews were carried out during October 2003 at three separate NHS hospital sites, all of which were actively involved in implementing service

improvement through process changes. The main purpose of the interviews was to gain a richer and deeper understanding (Steinar 1996; Cross 2001) into what helps or hinders the implementation of change – in this case this involved the introduction of new ways of working into the organisation to effect performance improvement.

Between seven and ten participants were interviewed in each of the three sites. The participants were NHS staff - of varying grades, roles and experience - all of whom were (at that time) actively involved in implementing change in their organisation.

A proforma interview schedule with open-ended questions was used to guide the interview questions/discussion (Appendix A). Two independent researchers[3] jointly conducted all of the interviews and hand-written notes were produced during each interview. Deliberately, the interviewers were not familiarised with details of the hospitals, the staff or the organisational performance levels of each site. It was thought to be important that the researchers were not influenced in a way that might lead them to ask or emphasise the questions differently for each site, depending on whether they believed the organisation to be designated as good, intermediate or poor.

3.3.5 Step 4 – Distilling the themes derived from the field

The written data collected from all the interviews were analysed, and common themes were generated. The themes generated from each separate site were notably similar. These were combined to make a single set of nomothetic (practice based) themes.

The newly generated generic list of practice based themes was emailed to the participants of the three hospital sites for validation. Responses confirmed that the themes resonated with what had been discussed during the interviews.

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[3] As I was the national director of Emergency care, and overall lead for the ESC programme, I thought that interview participants might feel compromised in answering questions about difficulties they were experiencing with implementing change in their organisation. For this reason I employed two research associates to conduct the interviews on my behalf. Once the data had been collected to my specification, it was anonymised so that I was not aware of either the names of individual participants or which of the three sites the data was from.

There were however some classification differences whereby interviewees had used slightly different terms than those which were found in the literature. Kvale (1996) describes two methods of qualitative data analysis as 'meaning condensation' and 'meaning categorization'. These were used to abridge and categorise the meanings expressed by the interviewees into shorter formulations. This enables reduction of large interview texts into briefer, more succinct formulations (Kvale 1996). A validation process was used to seek clarification of the meaning of some of the terms used and confirm the interpretation with the individual interviewees to ensure that the words had not been misconstrued or misinterpreted.

The final validated set of 25 themes, agreed by the interviewees, is shown in the middle column of table 3.1 overleaf.

3.3.6 Step 5 – Merging the themes from the literature and practice
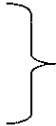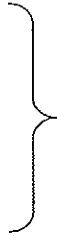
The themes generated from the qualitative interviews were compared and contrasted with those found in the literature.

The evolutionary development (from left to right) of the various theme set, is shown in table 3.1 overleaf. The first column shows the early themes (constructs) that emerged from the literature. The middle column summarises the nomothetic (practice based) themes generated by the qualitative interviews.

The third, right-hand, column shows the consolidated themes which were common to both and hence were retained to form this newly reduced single sub-set of 17 themes.

Despite being reduced to 17, further reduction of the constructs was necessary in order to bring even greater focus to the research and to facilitate data handling. The reduced 'hybrid' set of 17 was used to construct an initial ranking table which would be used for the next stage of the reduction process to facilitate development of independent variables for phase II of the research.

Table 3.1 Theme reduction

Emergent themes (constructs) from the literature (n = 19)	Qualitative interview themes (constructs) generated (n = 25)	Combined and reduced themes (constructs) (n = 17)
Strategic orientation Environmental issues Stakeholders	Trust Board politics Political environment Outside influences Government Targets	Politics
Organisational Structure Competencies	Organisational Structure Clinical participation Engagement Involvement Training Role expansion Project team capability & skills Staff turnover	Structure Engagement/participation Training/expanding roles Project teams Staff turnover
Resources	Resources (Staff / money / I.T.)	Resources
Learning capacity	Experience & capability	Staff experience
Power	Power	Power
Leadership Individual roles • Change agents • Leaders • Champions • Advocates • Stakeholders	Leaders Decision makers Change agents Champions	Leadership
Culture Incentives Behaviours & Characteristics Communication ⟶	Culture Rewards & incentives Support & Empowerment Behaviours, Attitudes & Mindsets Communication ⟶ Monitoring & feedback	Culture Rewards & incentives Support Empowerment Mindsets & Attitudes Communication (monitoring and feedback)
Process issues	Approach to change	Change methodology

3.3.7   Step 6 – Development of the independent variable(s) for phase II

Despite the method of reduction described above, the number of themes (n = 17) remained too great for the intended study. Further reduction was therefore desirable to enable the research to focus on one or more specific themes which could become the independent variable(s) for the research. This further reduction was achieved through the use of focus groups (Morgan 1993). This would be achieved by presenting the findings to different focus groups to stimulate discussion and debate on the individually identified themes, and the importance of each.

3.3.8   The first two focus groups

Three separate focus groups were carried out.

The first two groups comprised people that were health-care leaders who worked for the Department of Health, the NHS Modernisation Agency or in acute hospitals in the NHS. They were all people who had led either national or local change programmes or projects in an NHS context and therefore were experienced in implementing change in the NHS.

The first two focus groups were conducted as face-to-face meetings, each lasting two-hours. Two existing national meetings were used opportunistically and the two-hour focus group slot was built in to the existing agendas. Thus, even though convening both groups involved face-to-face meetings, it was possible to do so without incurring additional expense. Using an existing time slot when the individuals were already in London for an existing meeting was also deemed to be convenient for the participants. Participants were contacted by telephone and invited to participate in the focus group which was managed as a concurrent session to the main agenda. All invitees accepted the invitation and, some reported that they felt somewhat privileged to be asked to participate.

The aim of the first focus group was to discuss each of the themes, which were presented in a random order, and consider whether they concurred with their

views on what helped or hindered the implementation of change in the NHS. Participants were asked to discuss and judge the 17 themes (presented overleaf in figure 3.3) based on their extensive knowledge and experience of implementing change in a health care setting. During their discussion, the group was instructed to provide contextual descriptors or explanatory prompts for any of the 17 themes if they felt that this would help the next focus group understand the term being used. This was also done to clarify any ambiguities regarding the terminology used. Finally, they were informed that they could re-order or merge the themes (for presentational purposes) if they felt it necessary.

The first focus group reduced the 17 themes to 15. This, together with other changes made, is described in the results section below.

Figure 3.3

17 themes condensed from the literature and qualitative interviews

- Resources
- Politics
- Staff experience
- Leadership
- Change methodology
- Power
- Structure
- Engagement / participation
- Project teams
- Training / expanding roles
- Staff turnover
- Culture
- Mindsets and attitudes
- Support
- Communication (monitoring & feedback)
- Rewards and incentives
- Empowerment

The information provided by this first focus group was used to further build, amend and/or validate a pro-forma ranking table (shown in Appendix C). The revised pro-forma ranking table (Appendix C) was circulated to the second focus group and they were asked to discuss the themes listed in the ranking table and debate the relative importance of each for the successful implementation of change in the NHS. After considerable discussion they were instructed to rank the themes in order of importance – the most important being 1, and the least being 15. They were asked to do this as individuals, rather than as a group, to establish their personal view of the relative importance of each theme.

3.3.9 The third focus group

The main criterion for selecting participants for the third focus was not because they had a health care background (although two of the participants had worked in health care). Instead, this group comprised people who were renowned international leading experts in the field of change. Most had published extensively on issues relating to implementing change. This was thought to be a useful way of triangulating (Pinsonneault and Kraemer 1993; Denzin and Lincoln 1994) their perceptions about general change concepts with more specific NHS experiences expressed by the first two focus groups.

The third focus group was carried out via electronic communication (email). This was necessary in order to obtain the views of such a wide geographical spread of people who were of national or international standing within the field of change. It was thought to be both unrealistic and impractical to convene a face-to-face meeting with such a prominent group of people and, after informally approaching some of those identified, it was suggested by two of the prospective participants that they (and others) would find it more acceptable to participate in an email focus group.

The ranking table, developed and refined by the first and second focus groups, was circulated to the third focus group by email with an introductory letter and explanatory text (Appendix B).

3.3.10   Focus groups – Results

The first focus group was used to build a ranking table from the 17 themes listed in figure 3.3. The original theme set of 17 items was slightly amended and reduced to 15. The group felt that both Structure and Culture were broader concepts which overarched some of the more specific themes. Hence the ranking table (shown in Appendix C) was designed to reflect this view.
Ten ranking tables were completed by the individuals in the second focus group; and eleven completed ranking tables were received from the third (email) focus group.

Despite the second and third focus groups being made up of people with different perspectives (i.e., NHS change managers/implementers and more general change experts) the ranking results from both groups were remarkably similar. No diverse differences were obtained and the same themes featured in the highest ranked positions.

Figure 3.4 shows that the top four were ranked consistently as the top four by all respondents; although the ordering within the top four differed.

The theme of 'leadership' was consistently ranked as the most important of all the themes in impacting on the successful implementation of change - by all respondents (figure 3.4). The overall top ten is also shown in figure 3.4 although the ranked importance of these varied, with the exception of the theme of leadership which was unequivocally ranked by all participants as the most important.

3.3.11   Focus groups - Tacit responses

Despite the consistent findings using the methods of reduction described for identifying the relative importance of themes, there were some interesting qualitative responses that are worthy of comment.

Figure 3.4

Combined ranking of the themes from focus groups

1. Leadership

- Empowerment

- Mindsets and attitudes

- Engagement/participation

These were consistently in the top four

- Communication

- Support

- Change methodology

- Staff training

- Power

- Politics

These were consistently in the top ten
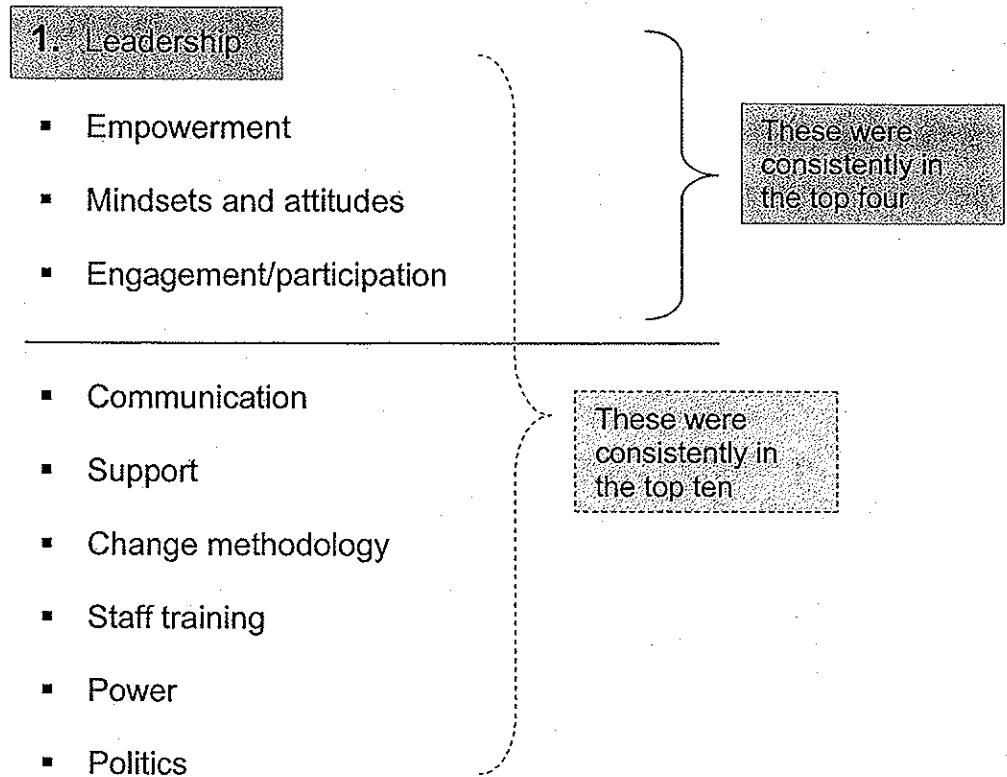
One of the participants in the second NHS focus group expressed concerns that the importance of each theme might be context specific, depending on the specific change taking place. This view reflects the work of Petigrew, Ferlie et al (1992) who used the metaphor of 'receptive' and 'non-receptive' contexts of change in the NHS. This could also, possibly, reflect the contingent approach to change (as described in chapter 2). Proponents of this suggest that contextual and situational differences engender the basis for contingency (or situational) models of change. This emanates from the belief that different organisations face different situations, and therefore should vary their change strategies accordingly (Burns and Stalker 1961; Wood 1979; Burke and Litwin 1992; Dunphy and Stace 1993; Burnes 1996).

Furthermore one of the 'change experts' from the third email focus group initiated an email discussion with the group expressing discomfort with the

notion of reduction and the request to rank the themes in order of importance. As the email debate ensued, the individual described their personal stance which was closer to an interpretivist approach to research, and the debate became more philosophical in nature. Thus the debate appeared to reflect their discomfort with reductionism and the positivistic paradigm within which the research was framed. Interestingly, the individual did complete the ranking form and commented that they had enjoyed the email debate.

Finally, two respondents commented that by limiting the key themes to such a small number (i.e. 15) may have missed other valuable themes from emerging regarding other potential success/failure factors for more context specific changes. However, as the 15 themes were generated from the literature there was some degree of confidence that these were important, if not exclusively so.

3.3.12 Emerging dilemmas – Convening an additional focus group

Despite the consistent findings from the three focus groups that leadership was deemed to be the most important of four top important themes (leadership; empowerment; mindsets and attitudes; engagement/participation) there remained the dilemma regarding which of the top 10 identified important themes to include in phase II of the research.

Furthermore, a second dilemma existed which concerned the context for implementing change in the NHS. The research was firmly embedded in the notion of introducing change to achieve performance improvement, rather than change for change sake. This was evident from the outset and is especially prominent in chapter one which describes the NHS context. It is also apparent throughout the first phase of the research where the implicit desire was to produce meaningful results which would support NHS front-line staff in their efforts to implement improvement for the benefit of patients.

This notion of change to achieve improvement is contextually different to mandatory change that might be required as part of government reform and which may, or may not, result in tangible improvements. Examples of such change include restructuring, organisational mergers, cost saving schemes and

introducing new systems such as HR or IT (Kanter 1983; West and Farr 1990). Hence there is recognition that change does not always lead to improvement in an organisation (West and Farr 1990; CIMA Study Text 1996).

Given this acknowledged context for NHS change it seemed appropriate to assign performance as the dependent variable but, as yet, no validation of this had been sought.

In response to these dilemmas, a final focus group was conducted at Henley Management College to either validate or refute the findings from the focus groups and confirm which themes should be included as independent variables in Phase II of the research. In addition, the focus group would be asked to debate the idea of using performance as the dependent variable.

Members of this focus group were not from a health care background. Instead they comprised doctoral students from a variety of specialist management fields, Henley Management College academic staff and other visiting professors. Some of the participants had an interest or specialist knowledge in the field of change. From a philosophical perspective they represented a range of paradigms.

The results of the work to-date were presented to the group as work-in-progress, and a debate followed on the merits/weaknesses of the work so far. The main conclusions from this group were, firstly, that the research needed to adopt an approach which was even narrower in focus than it presently was.

Secondly, based on their experience and knowledge of change and the results of the data presented to them, they asserted that leadership appeared to be the most appropriate singular construct which warranted further detailed exploration. And finally, following considerable debate (mostly about whether leadership should constitute the independent or dependent variable) the group confirmed that performance would be an appropriate dependent variable.

Interestingly, if this additional focus group had not been convened, it is likely that I may have attempted to select either all ten or the top four themes for inclusion in phase II of the research. This, once again, served to reinforce the benefit of adopting an emergent strategy to enable iteration and promote the ongoing development of the research process.

Leadership was thus confirmed as the independent variable for the research; and performance as the dependent variable.

3.3.13 Phase I – Conclusion

The combined concluding results from the literature, the qualitative interviews and the focus groups concurred regarding the importance of leadership as a key influencing factor for the successful implementation of change. This was to be considered in the context of performance.

As leadership had emerged as the most important concept to effect change in the NHS, this necessitated a further, more detailed, literature review on leadership to better understand the issues of leadership in the context of NHS change.

Moreover, the more specific issue of clinical leadership had been raised in the qualitative data as being of paramount importance. Some of the comments received emphasised that clinical leaders were key to either negatively, or positively, impacting on change efforts. Consequently clinical leaders were deemed to be in a position to yield a powerful negative, or positive, effect on organisational performance. As a result of this a brief review of the specific literature on clinical leadership, and performance was also deemed necessary.

3.4 Phase II – Investigating the problem

The second phase of the research emerged only after reduction of the themes generated in phase I. Leadership had emerged as the prime construct to be included in phase II, and this became the independent variable for the research.

Furthermore, organisational performance was confirmed as the dependent variable.

The constructs of leadership - as the newly designated independent variable, and organisational performance - as the confirmed dependent variable, were added to the emergent model to complete the research process.

Thus it was possible to complete the development of the final model for the research process, incorporating the independent and dependent variables as the key aspects of phase II. The final developed model is shown in figure 3.5.

Figure 3.5

The final research process

Literature Review

Innovation

Knowledge Management

Implementation

Qualitative Interviews

Themes

U
A
W
B
Y
Z

Themes

REDUCTION

NEW THEMES

U
W
Y
Z

Individual roles
   Change agents
   Leaders
   Champions
   Advocates
Behaviours & characteristics
Strategic orientation
Organisational structures
Environmental issues
Competencies
Resources
Learning capacity
Power
Leadership
Incentives
Culture
Process issues
Communication
Stakeholders

Focus Groups

(further reduction)

Variables

Incorporate into Instrument

Independent Variable(s)
(Leadership)

Dependent Variable
(Organisational Performance)

Data Analysis

Interpretation

3.4.1 Phase II - Steps

Phase II of the research comprised six distinct steps. These involved:

1. Reviewing the literature on leadership, and more specifically on clinical leadership.

2. Reviewing the literature on performance as the designated dependent variable

3. Selecting, designing and applying a robust research methodology.

4. Generating hypotheses to test relationships between the independent and dependent variable.

5. Collecting and analysing data to test the stated hypotheses *(reported in Chapter four)*.

6. Generating new knowledge - which makes a theoretical and practical contribution to the field - on what makes change happen in the NHS (England) and more specifically, the impact of leadership on performance improvement in the NHS *(reported in Chapter five)*.

3.4.2 Steps 1 and 2 – Reviewing the leadership and performance literature

As leadership had emerged as the independent variable for the research a further, more detailed, review of the leadership literature – and the more specific area of clinical leadership - was carried out to better understand the concept. Moreover, the more specific topic of clinical leadership was also reviewed.

Similarly, an additional literature review for organisational performance was also carried out (in step 2 below) as this was identified as the dependent variable for the research as previously described.

These additional reviews of the literature are designed to complement the earlier reviews on change and the subcomponents of change. These new reviews on leadership and performance are reported here rather than in chapter two because they were conducted at a later stage of the research as a result of the emerging themes from the research process.

3.5   Leadership

3.5.1 Introduction

The construct of 'leadership' has been described and applied in diverse ways and in a variety of different contexts. There exists a plethora of leadership theories and whilst this brief summary will not extensively cover these, a short review of the main issues is presented in the context of the research strategy and model.

3.5.2 Key leadership theories

Definitions of leadership vary, but typically the concept of leadership is defined by the traits, qualities and behaviours of the leader. Conversely, leadership has also been described as a process. But, by and large, most theories and research on leadership are built on the study of an individual, to gain understanding (Drath and Palus 1994).

In a review of leadership theories, Stogdill (1974) identified a range of different categories of leadership. One early typology, for example, involved the study of the qualities of great leaders based on the belief that great leaders were born rather than taught. This was later criticised for its disregard of situational and environmental factors that may impact on leader effectiveness (Horner 1997).

Leader behaviours have been studied to help determine and understand what successful leaders do. Such studies were more context receptive, and considered leader behaviours in terms of organisational effectiveness (Halpin and Winer 1957; Hemphill and Coons 1957). This theoretical stance is a closer fit to the research in this thesis which aimed to consider (clinical) leaders in the

workplace, and their effectiveness and impact on the organisation's performance.

Several contingency theories have been identified and these are concerned with the interaction between the leader's traits and behaviours, and the situation in which they exist. One of these, the path-goal theory, considers followers rather than leaders, believing that leadership is an interaction between the goals of the followers and the leaders.

More contemporary work on leadership has focused on studying leaders in the context of organisational culture (Schein 1985; Schein 1996; Schein 1996). This view includes the concept of change; in that leaders must be able to adapt to change as the environment shifts. Additionally, to be successful, leaders must be able to read, adapt and manage the culture (Baron 1995). However, it is acknowledged that culture is notoriously difficult to define and measure (Horner 1997).

There is also an acknowledged link between leadership and motivational theory (Maslow 1943; Herzberg 1964), suggesting that leadership is concerned with creating an environment in which people are motivated, accordingly the leader should be less concerned with their own actions and more concerned with the situation in which the work is done.

In response to the confusing cacophony of theories available, Horner (1997) offers a useful caution and warns that it is unrealistic to assume that any one theory is more valid or useful than another.

In terms of how and why leadership theories matter in the context of today's management environment, Dulewicz and Higgs (2003) assert that effective leadership is paramount to meeting the challenges of the 21st century. This is exemplified by the plethora of research conducted in which the construct of leadership has been measured, assessed, researched and reported (Conger and Kanungo 1988; Bass and Yammarino 1991; Herold, Fields and Hyatt 1993; Hogan, Curphy and Hogan 1994; Den Hartog, Van Muijen and Koopman 1997;

Steyrer 1998; Avolio, Bass and Jung 1999; Cacioppe 1999; Waldman and Yammarino 1999; Alimo-Metcalf and Alban-Metcalf 2000; Bass and Avolio 2000; Cannon 2000; Higgs and Rowland 2000; Densten and H 2001; Einstein and Humphreys 2001; Higgs and Rowland 2001; Kouzes and Posner 2001; Antonakis, Avolio and Sivasubramaniam 2003; Dulewicz and Higgs 2003; Judge and Piccolo 2004; Van de Weide and Wilderom 2004; Bass 2005; Dulewicz and Higgs 2005; Groves 2005; NHS Modernisation Agency Leadership Centre, Steele, Cummins, Brown, Malik, Lee, Offley, Beers and Ajmal 2005; Yan and Hunt 2005).

Shamir et al (1993) sought to advance leadership theory by addressing a fundamental problem which acknowledges that although literature on charismatic and transformational leadership demonstrates that it has profound effects on followers, no literature appears to explain the process by which these effects are achieved. Drawing mainly on Bandura's (1986) social-cognitive theory, Stryker's (1980) identity theory, and Tajfel and Turner's (1985) social identity theory, the authors espouse a set of assumptions which underlie motivational theory. Their basic assumptions are that:

a) humans are not only pragmatic and goal-oriented, but are also self-expressive.
b) people are motivated to maintain and enhance their self-esteem and self-worth.
c) people are also motivated to retain and increase their sense of self-consistency.
d) self-concepts are composed, in part, of identities. In addition to values, identities, sometimes referred to as role-identities, also link the self-concept to society.
e) humans may be motivated by faith.

(Stryker 1980; Tajfel and Turner 1985; Bandura 1986)

The authors suggest a self-concept based motivational theory to explain the process by which charismatic leader behaviours cause profound

transformational effects on followers. These effects are caused by five main motivational processes. Firstly, leaders may motivate behaviour by emphasising the symbolic and expressive aspects of the effort. Secondly, charismatic leaders increase effort accomplishment expectancies by enhancing the follower's self-esteem and self-worth. Thirdly, articulation of a vision and mission by charismatic leaders presents goals in terms of the values they represent. Doing so makes action oriented toward the accomplishment of these goals more meaningful to the follower in the sense of being consistent with his or her self-concept. Leaders may also motivate behaviour by instilling faith in a better future and also, by creating personal commitment.

Many of these leadership characteristics have been further developed in some of the assessment tools that are available to measure transformational leadership behaviours. Examples include the Leadership Practices Inventory (Kouzes and Posner 2001) and the Multifactor Leadership Questionnaire (Bass and Avolio 1990). The leader behaviours described by Shamir et al (1993) are divided into two classes: role modelling, whereby vicarious learning occurs when the relevant messages are inferred by followers from observation of leaders' behaviour, life style, emotional reactions, values, aspirations, preferences and the like, and the second class, frame alignment (Snow, Rochford, Worden and Benford 1986) which refers to the linkage of individual and leader interpretative orientations.

Conger and Kanungo (1987) affirm that the term 'charisma' is often used in political science and sociology to describe a subset of leaders who, by the force of their personal abilities, are capable of having profound and extraordinary effects on followers. House and Baetz (1979) view 'charisma' both as a set of dispositional attributions by followers, and as a set of leaders' manifest behaviours. The two are linked in the sense that the leaders' behaviours form the basis of the followers' attributions.

Bass (1990) describes transactional leadership using Xerox's reprographic business group (RBG) to provide examples. The study observed that managers engage in a transaction with their employees and explain what is

required of them as well as what consideration they will receive if they fulfil these requirements. Bass does, however, warn that transactional leadership is often a prescription for mediocrity. This being particularly true if the leader relies heavily on passive management-by-exception, intervening with his or her group only when procedures and standards for accomplishing tasks are not met. He offers the example of such managers who might espouse the popular adage, 'if it ain't broke, don't fix it'. He qualifies this cautionary note by asserting that superior leadership performance – transformational leadership – occurs when leaders broaden and elevate the interests of their employees, when they generate awareness and acceptance of the purpose and mission of the group, and when they stir their employees to look beyond their own self-interest for the good of the group (Bass 1990).

Bass claims that transformational leaders achieve these results in one or more ways, by:

- being charismatic to their followers, thus inspiring them
- meeting the emotional needs of the employee
- intellectually stimulating employees

After analysing responses to the Multifactor Leadership Questionnaire (MLQ), Bass argued that managers who behave like transformational leaders are more likely to be seen by their colleagues and employees as satisfying and effective leaders than those who behave like transactional leaders. He concludes that fostering transformational leadership through policies of recruitment, selection, promotion, training and development is likely to pay off in the health, well-being, and effective performance of the organisation.

A more contemporary aspect of leadership acknowledged by a growing number of academics and senior managers recognises the importance of emotional intelligence as a critical factor for effective leadership. Goleman, Boyatzis and McKee (1995) have contended that as individual leaders advance up the hierarchy in an organisation, the more important emotional intelligence becomes.

Goleman (1995) reports that emotional intelligence explains a higher proportion of individual success than IQ does. There does however appear to be some debate in the literature about what constitutes the domain of emotional intelligence, the terminology used to describe the construct and the methods used to measure it. Goleman (1995) presented a model with 25 competencies derived from the Hay-McBer competencies framework - these have since been reduced to 20 competencies - to form the Emotional Competencies Inventory (Boyatzis, Goleman and Rhee 2000). Dulewicz and Higgs (2003) have also produced models for emotional intelligence and developed questionnaires derived from empirical research into personal factors related to emotional intelligence.

Higgs (2002) acknowledges that thinking has moved on from a personality or trait basis, through a behavioural and contextual (or situational) stage, and onto the transformational/transactional models. A new stream of thinking appears to be emerging which looks at the challenges faced by organisations and the need to think of the associated leadership requirements in less rational or analytic terms. Such thinking focuses on the emotional aspects of leadership, typified by the work of Kouzes and Posner (1987) and Conner (1999). A number of authors have suggested that not only is the concept of emotional intelligence important for the success of an individual in an organisational setting, but it becomes even more important as individuals rise through to leadership positions (Bennis 1992; Goleman 1995; Dulewicz and Higgs 2003).

Higgs and Rowland (2001) demonstrated these linkages in a study whereby they combined their Change Leadership Competency Questionnaire with the EIQ to assess 74 change leaders. They were able to demonstrate strong correlations between emotional intelligence and change leadership competencies.

3.5.3 Summary - Leadership

The multiple broad and varied leadership theories available suggests that there are many appropriate ways to successfully lead, and indeed to study leadership (Horner 1997). Furthermore, it is unrealistic to assume that any one theory is

more valid or useful than another. The context and environment appears to be a key consideration for the way in which leaders lead, followers follow and successful organisational change is achieved.

3.6 Clinical leadership

3.6.1 Introduction

Whilst clinical leadership is not well defined as a specific construct, in the context of the research it is important to describe clinical leadership, as opposed to leadership per se, to offer some distinction regarding how this may differ from leadership in general. The key theories of leadership do still apply and are highly relevant, but there are some interesting aspects of clinical leadership that are worthy of discussion.

The contemporary NHS environment comprises complex, multi-professional organisations with structures designed around multiple interacting hierarchies of authority, accountability and responsibility. Such complexity poses a challenge for the study of leadership, and clinical leadership.

In the context of the research the term 'clinical' pertains to practicing doctors, nurses or other allied health professionals who provide leadership and engagement in key change initiatives. The key difference is that clinical leaders are clinical professionals, such as doctors, nurses, physiotherapists, pharmacists etc, rather than trained or qualified managers – although it is true to say that some may have both clinical and managerial experience and qualifications.

The concept of clinical leadership has been driven by an historical acknowledged power of the professions, in particular medical staff (doctors). Clinical leadership is based on the need to constructively engage with the professions to effect a positive leadership contribution to the provision and improvement of health care services. Berwick (2003), a nationally recognised doctor and health leader asserts that a number of important groups such as the

Medical Royal Colleges and the British Medical Association have not yet accepted their obligations to participate in systematic change and improvement. Moreover he believes that improvement of the NHS would triple if this was to be accomplished (Berwick 2003).

Berwick had already set the seeds for this same argument in 1994 when he pushed the notion that the central premise of the health change debate was that only those who provide care *(referring to clinical staff)* can in the end change it (Berwick 1994). He argued that clinicians should be playing a central role in making changes in the health care system to offer better outcomes, greater ease of use, lower cost, and more social justice in health status.

Clinical leadership has long been identified as fundamental for making and sustaining successful changes and health system reform. This is especially true in the National Health Service in England where empirical re-engineering studies have shown that doctors, and their clinical colleagues, are unwilling to make changes unless they can see the benefits for their own practice (Bevan 1997; Homa 1998). However, whilst the rhetoric of clinical leadership pertains to the wider health care professions, in the real world of the NHS, it is both realistic and evident from practice to suggest that the term 'clinical leadership' mostly frequently pertains to doctors. This is manifest in the clinical directorate structure of acute hospitals where very few clinical directors are not doctors.

Traditionally, UK hospitals and other health care organisations have an inverted power structure in which people at the bottom – especially clinical staff that have regular contact with patients – have greater influence over decision making on a day to day basis. This means that organisational leaders have to negotiate, rather than impose, new policies and practices and engage leaders throughout the development of new initiatives.

A key feature of clinical leadership is engagement and understanding that professionals - especially doctors - need to feel that they are genuinely leading the process, rather than having change imposed upon them. UK studies concur

with this emphasising the fragility of changes that are introduced without effective engagement of clinical teams (Bevan 1997; Homa 1998; Ham 2003).

3.6.2 Nursing leadership

From a nursing perspective, (Cunningham and Kitson 2000; Cunningham Dec 13 2000-Jan 2,2001) state the importance of leadership and especially that of clinical leadership. The role of ward sister *(the title most frequently used to describe the senior nurse on a hospital ward)* is exemplified as a key role in determining the provision of quality patient care and the efficiency of the ward as a learning environment. However, the difficulties of this role are also highlighted in issues such as role overload, role conflict, and lack of time; and these all contribute to the pressures of this position. The RCN clinical leadership development programme was established to address some of these issues, with the focus being on work based, problem focussed ways of helping ward sisters and senior nurses become effective clinical leaders.

The RCN programme was tested on four senior nurses and 24 ward sisters in four acute hospital trusts in England over an 18-month period. The primary research question was whether the intervention improved the clinical leadership skills of participants. The intervention itself included a menu of activities that were identified in the research literature as contributing to improvements in personal development and professional performance. The Multifactor Leadership Questionnaire (MLQ) was distributed to all senior nurses and clinical leaders in the program and it was found that the majority of self and follower scores improved following the intervention. The results also showed that on a number of leadership dimensions, ward sisters' and senior nurses' performance had significantly improved. Five key themes emerged from the process data, documenting the journey towards more effective clinical leadership. The study concluded that there is a need for more effective clinical leadership development programmes for nurses to achieve better patient-centred care.

3.6.3 The executive's role in clinical leadership

Though not regarded as clinical leadership, the role of the executive leadership role is worthy of mention because of the influence of senior executives on

clinical leaders, and on leading clinical services in the NHS. Therefore a short contextual summary is proffered below.

In the NHS, clinical governance places personal accountability on the chief executive and the board for the quality of clinical services. This emphasises corporate responsibility, embracing both support and training to maintain clinical competence through strong leadership. From a clinical governance perspective, Wallace, Boxall et al (2004) studied the introduction of clinical governance and clinical effectiveness in the English and Welsh NHS and noted how patchy implementation greatly hindered efficiency. They found that senior executives' and clinicians' frequently cited that a principle barrier to clinical governance was a personal blame culture (Campbell, Sheaff, Sibbald, Marshall, Pickard, Gask, Halliwell, Rogers and Roland 2002). It could be argued that this has the potential to negatively affect both clinical and executive leadership, and encourage defensive behaviours.

The west midlands regional office commissioned a three year project to chart the development of clinical governance (Wallace, Boxall and Spurgeon 2004). Against the backdrop of the 'learning organisation' and the views of senior executives and clinical governance leads they looked at how well they believed their organisation were achieving Senge's 'five disciplines' of the learning organisation (Senge 1990). The survey of Trusts showed reliance on largely educative approaches to changing practice, based on prior experience, rather than evidence of past effectiveness in the trust or, in research literature.

With regard to clinical governance and the relatively recent extension of the chief executive's role to include clinical standards as part of the duty of quality, Sausman (2001) suggests that this has created implications and new responsibilities for relationships with clinicians, achieving performance targets, establishing new collaboratives in accordance with national policy objectives and for establishing local modernisation boards. The developing role of the chief executive and the complex world in which they operate is discussed and questions how well equipped they are for these extra responsibilities required to lead the clinical quality agenda. She is critical that chief executives are

envisaged, by politicians, as entrepreneurial visionary leaders but in the public sector they are required to operate within mechanisms of accountability and authority that limit the freedom of the organisational head. Her research has found that NHS Trusts exhibit conflicting organisational processes in which three specific pressures operate around the chief executive:

1. The push for entrepreneurship and innovation.
2. Trusts are highly regulated and politically controlled.
3. Medical professionals can participate in high level decision making and can unite as a professional group to exert control over decisions.

She suggests that support from colleagues at organisational and national level is required to help them discharge their new responsibilities (Sausman 2001).

3.6.4   Summary - Clinical leadership

Although clinical leadership is highly influential in making change happen in the NHS, it is important that this is considered with a complex multiple leadership structure within which the NHS operates. In the British Medical Journal, Grol (1997), highlighted the differences in opinion between the different players within healthcare (such as clinicians, epidemiologists, health service researchers, educationalists, social scientists, economists, health authorities etc) stating that this can often lead to problems when it comes to deciding on the best strategies to improve practice and the best way of making changes. He presented an overview of some of the theoretical approaches to change and integrates these approaches into a general framework for changing clinical practice. These included:

- Educational approaches
- Epidemiological approaches
- Marketing approaches
- Behavioural approaches
- Social interaction
- Organisational approaches
- Coercive approaches

In terms of clinical leadership and, in particular medical leadership, Berwick (1994) asserts the notion that clinical leadership matters and suggests that only those who provide care *(referring to clinical staff)* can in the end change it. But this needs to be considered in the context of Grol's (1997) stepwise model for implementing changes and stresses the need to implement change through a collaborative model of leadership that integrates the different approaches and views to achieve effective change.

3.7 Organisational Performance

3.7.1 Introduction

The original research question *(what makes change happen in the NHS?)* emanated from a broad theoretical framework derived from the main theories of change and what makes change happen. As a critical success factor for the implementation of change, the construct of leadership was identified as the independent variable. Accordingly, the emergent underpinning theoretical conjecture was that leadership – and in particular clinical leadership – impacted on the successful implementation of change (Kouzes and Posner 1987; Bass and Avolio 1994; Hogan, Curphy and Hogan 1994; Scholtes 1998; Higgs and Rowland 2000; Silversin and Kornacki 2000; Collins 2001; Denis, Lamothe and Langley 2001; Elenkov 2002; Ham 2003; Wilberg 2003; Sandbakken 2004; Yan and Hunt 2005).

The research strategy was based on using a national change programme (the ESC) which aimed to implement large-scale change to effect improvement in NHS organisational performance. Consequently, organisational performance was assigned as the dependent variable for the research and it was necessary to conduct a brief review of the organisational performance literature.

3.7.2. Organisational performance literature

Organisational performance is a vast topic which encompasses a wide range of related literature. Organisational learning, for example, is a relatively new concept which incorporates a range of issues that relate to organisational

performance. In the 1970's attention was focused on the need for continual improvement in performance, quality and production processes and authors began to refer to the importance of organisational learning in this context (Hayes, Wheelwright and Clark 1988; Argyris 1999). There was recognition that organisations that are quick to learn new things and improve on current systems and processes would improve their performance and become more competitive.

Much of the available literature on organisational performance - and performance improvement - considers different ways of measuring performance, and how devising and applying robust measurement techniques could ultimately increase performance of the organisation. Amaratunga et al (2001) suggest that performance measurement is, for example, a key factor in ensuring the successful implementation of an organisation strategy. The Balanced Scorecard (BSC) is recommended as a means of measuring performance suggesting that it is useful in assessing the state of the processes of an organisation by taking a 'balanced' view across a range of performance measures (Letza 1996; Amaratunga, Baldry and Sarshar 2001).

Using basic principles from complexity theory, psychology and management theory, Robson (2004) demonstrated that many traditional methods of identifying performance measures may not necessarily result in improvement in overall performance. Measurement systems are often put in place in the belief that these alone will serve to improve performance but Robson (2004) challenges organisations to identify exactly how measuring performance can lead to an overall improvement in the effectiveness of a business process. Paradoxically, the work of Fowler (1999), suggests that measurement can assist in managing performance, but only when it is part of a control system. He describes the four main elements as sensing, assessing, selecting and acting but cautions that every control system will have an improvement effect and that such systems may often have the opposite effect. Robson (2004) suggests that this may occur because of three inappropriate rules, imbalance, and variance.

Inappropriate rules often occur because of a complete misunderstanding of how measurement is used in feedback control. Imbalance in a control system may also decrease performance where the focus is centred on only one particular aspect of the process rather than the whole. And variance overlooks the fact that a change in performance may merely be as a result of individual values of performance measurement varying against the overall average rather than indicating a change in the underlying capability of the system.

In a series of two articles concerning performance improvement, Millar (1999a; 1999b) focuses on the need to ignore the many acronym based initiatives and programmes that tend to drive business performance. Instead he illustrates how 'correct' behaviour is a prerequisite for the successful installation of projects or initiatives. Millar (1999a) states that when a company is in trouble, acronym based initiatives are often turned to for help - examples include TQM, BPR, IT, COQ, new management may be introduced, organisational change is tried and measurement systems put in place. Quoting Drucker (1985), Millar (1999a) argues that a greater understanding of the value, relevance and effective installation of the 'people factor' is what is needed for today's working environment. This is achieved by harnessing the knowledge, experience and enthusiasm of everyone in the organisation.

Millar (1999a) uses the work of Belbin (1993) to illustrate an effective method of helping to understand effective team configuration and operation as teamwork is an essential component in improving organisational performance. He is critical of the many senior executives who talk about teamwork, but appear to have little understanding of what it means and how effective teams are formed. Everyone in the company needs to understand team dynamics and that change affects everyone from top to bottom and from bottom to top throughout the organisation.

3.7.3 NHS performance

Performance improvement in the NHS is historically measured by national performance measures determined by the Department of Health. The figure below (which is repeated from chapter one for ease of reference) illustrates this

point. It shows national situation reporting or 'sit rep' data for the NHS England against the 4-hour A&E target. The graph demonstrates improved performance against this NHS (Department Of Health 2000) target.

Figure 1.1 – *(repeated from Chapter one for ease of reference)*

Total time in A&E between January and September 2003
(source: Compiled from Department of Health, national SITREP data, unpublished)
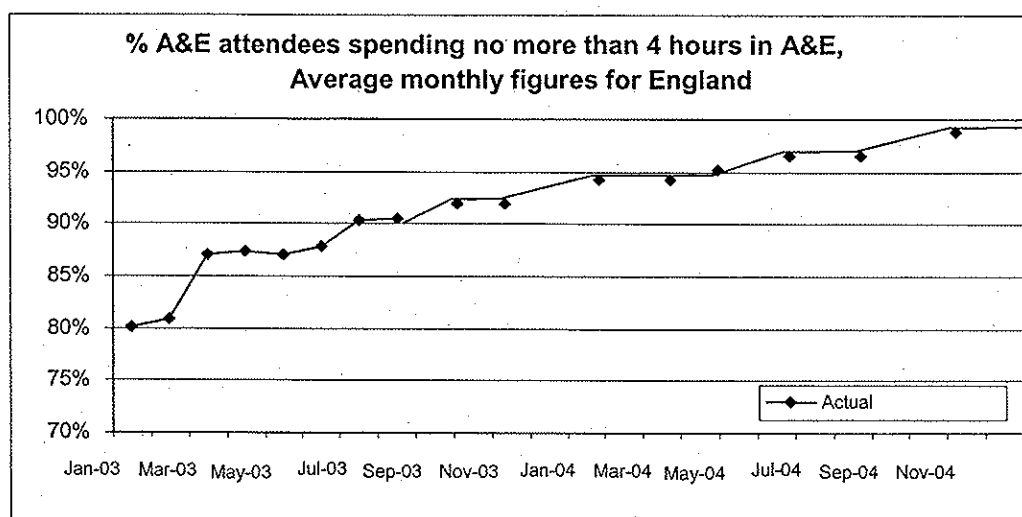
However, there is a widening acceptance of the importance of developing local performance and planning frameworks which are more sophisticated and responsive to local priorities (Department Of Health 2002). Such new systems need to maximise the responsibilities of NHS organisations to change the culture and manage their own performance (Department Of Health 2002).

Many NHS organisations have developed or are in the process of developing a balanced score-card approach (Letza 1996; Amaratunga, Baldry and Sarshar 2001) but performance improvement measurement remains a difficult and unresolved issue that warrants further attention (Adler, Riley, Kwon, Signer, Lee and Satrasala 2003). In response to this the Healthcare Commission (2005) is currently developing a methodology to derive an overall performance rating that will summarise the performance of an organisation during 2005/2006.

3.8   Methodological discussion *(step 3 of phase II)*

3.8.1   Introduction
The following discussion presents the methodological considerations and subsequent chosen methods for the research. A discussion of philosophical issues, which also yielded an important influence on the approach, is also included.

Phase I of the research was designed to explore the literature, theory and issues related to the early research question which was concerned with what makes change happen in the NHS. This abstract phase was predominantly qualitative and involved defining and refining the research problem with the intention of providing clarity, focus and narrowing of the research problem and question.

The intention for the second phase was to be a highly focused and predominantly quantitative phase in which hypotheses would be generated and tested. The methodological considerations presented in the discussion that follows relate to this, the second phase of the research.

The focus of the methodological discussion and rationale for choice of method considers two different, but highly apposite, potential approaches. These are firstly a case study method, and secondly, the use of a large-scale survey. After consideration of a wide range of different approaches these two appeared the most appropriate for the main subject area of change; the NHS context; and the research problem which was concerned with what makes change happen in the NHS.

Both case study method and large-scale surveys have been successfully applied to behavioural science research, and research in a health care setting (Alwin 1978; Pinsonneault and Kraemer 1993; Weisberg, Krosnick and Bowen 1996; Bevan 1997; Mathie 1997; Fink and Kosecoff 1998; Homa 1998; Boddy and Macbeth 2000; McColl, Jacoby, Thomas, Soutter, Bamford, Steen, Thomas, Harvey, Garratt and Bond 2001; Cereste, Doherty and Travers 2003;

Wilberg 2003; Sandbakken 2004). The following discussion evaluates these two methods and then presents the benefits and weaknesses of each together with the factors that influenced the final decision for the chosen approach.

3.9 Case study

An early consideration for the proposed research was to use case study as the main method of data collection. The use of case study as a method for research into health service management has gained in popularity over recent years. This is probably due to the ostensibly intangible, complex, social and humanistic nature of this field; as well as the relative newness of business and management as a topic area. Case study is an appropriate method for dealing with such complexity (Yin 1994; Scholz and Tietje 2002). Two contemporary, seminal, doctoral theses relating to change in the NHS were successfully completed at Henley Management College (Bevan 1997; Homa 1998) and these, to an extent, set a precedent and paved the way for case study as a strong, early contender for similar research studies.

A number of definitions of both 'case' and 'case study' have been suggested. A case could, for example, be a university department, a railway company, a city or even a child (Scholz and Tietje 2002), cases being both empirical units and theoretical constructs (Ragin 1992). It is therefore an effective method for describing the nature and content of a service initiative – including the context in which it has been developed – and for identifying those factors that may explain its success or failure (Keen and Packwood 2000). Case studies are particularly suited to examining inter-linked complex social relations as they generate rich, descriptive and explanatory accounts of organisational processes and work practices. Studying the impact of change from the perspective of those being studied can also provide a source of explanation for wider developments (Yin 1994; Keen and Packwood 2000).

Several important contemporary case studies have been successfully carried out in a healthcare setting and in very different ways, each offering a unique contribution (Bevan 1997; Homa 1998; Motwani, Klein and Navitskas 1999;

Bender, Cedeno, Cirone and Klaus 2000; Buchanan 2001; Denis, Lamothe and Langley 2001; Fulop, Protopsaltis, Hutchings, Allen, Normand and Walters 2002).

Such case studies serve to illustrate the wide and varied use of case study as a useful method of enquiry for health service research and are relevant to the research reported in this thesis because they are concerned with health care improvement, and successfully implementing new practice. The authors successfully used case study method to: analyse the implementation of a re-engineering programme in an acute hospital setting (Bevan 1997; Homa 1998; Motwani, Klein and Navitskas 1999; Bender, Cedeno, Cirone and Klaus 2000; Buchanan 2001; Denis, Lamothe and Langley 2001; Fulop, Protopsaltis, Hutchings, Allen, Normand and Walters 2002); analyse the successful implementation of a quality improvement programme (Motwani, Klein and Navitskas 1999); identify the main drivers and impact of hospital mergers (Fulop, Protopsaltis, Hutchings, Allen, Normand and Walters 2002); determine which success factors are most important to service organisations when innovating new processes (Bender, Cedeno, Cirone and Klaus 2000) and develop a process theory of strategic change in pluralistic settings (Denis, Lamothe and Langley 2001). Each 'case' in the examples cited is scrutinised from a specified perspective and with a specific interest.

Although the research reported in this thesis was concerned with complex health care organisations - which are typified as classic pluralistic domains, with divergent objectives and multiple actors (Denis, Lamothe and Langley 2001) - the fundamental aim of the research was to study a large number of organisations with a view to generalising findings to the wider population. Whilst acknowledging that richness and depth of understanding are compromised, the opportunity to generalise is increased by the adoption of more quantitative methods such as large-scale surveys.

The aim of the research was to extend beyond the study of a small number of organisations. It was therefore important to ensure that methodological choices arose out of the aim and underpinning philosophy, rather than a preferred

method. The distinctive need for case studies arises out of the desire to understand in detail complex social phenomenon (Yin 1994; Scholz and Tietje 2002). This is reinforced by emphasising the requirement to design studies that optimise understanding of the case rather than generalisation beyond (Stake 1994). The need to gain this type of in-depth understanding was unmistakably inherent in the study by Denis et al (2001) who stated at the outset of their work:

> *'we were interested in describing and explaining the temporal sequence of events involved in change rather than in identifying relationships between variables'*

> (Denis, Lamothe and Langley 2001) p 812.

Their aim and desire was thus clear from the outset.

With regard to what is considered to be the strengths or weaknesses of case study research, academic scholars use a number of different features to explain its use and merits. In doing so they describe the inherent qualities of case study as a method, and collectively locate the identified properties somewhere along a continuum depending on the descriptors used. However, extant work on case study exists along a number of different continuums ranging from highly qualitative descriptive studies, through to exploratory work and at the opposite end of the spectrum, explanatory or causal enquiries (Yin 1994). The seven illustrative case studies cited reflect this range of diversity and philosophical intent.

Case study is particularly suited to investigations where the central research question is either a 'how' or 'why' type question as well as 'what' type questions when asked as part of an exploratory study (Yin 1994). Some social scientists who subscribe to a more positivistic stance would support the view that an in-depth study of a particular case is less important than multiple observations/studies from which it is possible to make generalisations pertaining to a wider population of cases. Motwani et al (1999), for example, extrapolated their findings and generalised them to a wider population. An

important consideration is therefore whether the case study is case-oriented or variable oriented (Ragin 1999).

Although it is possible to generalise from a single case, a serious drawback of single case study methodology is the lack of generally accepted rules for drawing causation and generalisation inferences from the data (Kennedy 1979; Stake 1994). This perceived weakness, is balanced by the immense opportunity of case study research to influence, and contribute to the development of theory (Kennedy 1979; Eisenhardt 1989). Furthermore, even when generalisation is appropriate, and whether or not statistics are used, inferences are always tentative. This is because the data only offers confirming or dis-confirming evidence, and never conclusive evidence (Kennedy 1979).

Learning from a single case may be derived from how the case is like, or not like other cases. However, Stake (1994) argues that direct comparison diminishes opportunity to learn from it, focusing on a few attributes and obscuring other knowledge about the case. He qualifies this by adding that most naturalistic, ethnographic, phenomenological researchers will concentrate on describing the case in sufficient detail so that the reader can make their own comparisons (Stake 1994).

In addition to the debate on the value of single versus multiple case studies (Kennedy 1979; Stake 1994; Yin 1994) a further consideration is whether the approach is inductive or deductive (Eisenhardt 1989; Yin 1994). This issue is not restricted to the debate on case study research, it is an important consideration for all research design.

The inductive/deductive perspective is part of a spectrum. At the inductive end the researcher begins by defining the research question(s), collects and analyses data and only then would the researcher consider and compare with conflicting and similar literature (Eisenhardt 1989). Conversely, a deductive stance begins with the theory (considering both the supporting and rival theory) and the research is then designed in light of this (Yin 1993; Yin 1994). These

two examples are the extreme poles of the inductive/deductive spectrum. Approaches can also fall anywhere between.

It is also possible to mix the approach (Buchanan 2001; Denis, Lamothe and Langley 2001) as demonstrated by Denis et al (2001) who used both an inductive approach - which was data inspired - and a deductive approach - which was theory inspired. A mixed approach was justified by the researchers who thought that it would be fruitful because:

> *'it allows one to gain creative insights from the data, without necessarily denying or reinventing concepts that have been useful previously'*

(Denis, Lamothe and Langley 2001) p 812.

As part of a national change programme (the Emergency Services Collaborative) every acute hospital in England (155 in total) was working to implement change to improve against a pre-set national target. During the life of the programme, not surprisingly, front-line NHS staff reported varying degrees of ease or difficulty with this. The research reported in this thesis used this large population to ascertain the factors that helped or hindered their efforts to successfully implement change. The aforementioned theories of Bevan (1997) and Homa (1998) (together with other extant literature on change, implementation and innovation) were used to inform the research design. However, rather than replicate their comprehensive, rich and detailed analyses from a single hospital perspective, the aim of the research reported in this thesis was to identify and describe general patterns that characterise a much larger population, with a view to increasing understanding of what makes change happen.

3.10   Survey research

The main purpose of the research was to establish factors that assisted or hindered the implementation of change in the NHS. Survey method is quick and convenient way of collecting a large quantity of evidence, normally by administration of a questionnaire, from a defined population (Remenyi, Williams,

Money and Swartz 1998; Easterby-Smith, Thorpe and Lowe 2002). Survey method - which attempts to discover a large number of respondents' beliefs and attitudes concerning the importance of critical success/failure factors - was therefore an appropriate method for achieving this.

A survey is a method of collecting information directly from people. Surveys are frequently used to measure attitudes (or preferences), beliefs (including predictions and assessments of importance), or facts (including past behavioural experiences) (Weisberg, Krosnick and Bowen 1996).

Surveys are a relatively cheap and quick method of reaching a large sample. With regard to the research presented in this thesis, the population was all the Acute Hospital Trusts in England, thus there was a wide geographical spread across the whole country. Surveys are also a highly efficient and effective method for testing a large sample.

Although surveys are usually designed to take a predominantly quantitative approach, to gather valid, reliable, unbiased and discriminatory responses, they are also a useful method for combining qualitative and quantitative data through the use of both open and closed questions. This results in more complete data on the phenomenon and allowed a broader and richer understanding. The quality of the data could thus be enhanced because triangulation is possible (Pinsonneault and Kraemer 1993; Denzin and Lincoln 1994).

3.10.1 Methodological risks of survey research

Non-response (either accidentally or deliberately) to some of the questions is a risk with large questionnaires and is a common problem and is more likely to occur if the survey is too complex, or contains too many questions. Using a large number of questions may also lead to the respondent losing interest or motivation during the course of completing the survey. This is particularly problematic where closed quantitative questions are used as respondents can simply 'tick boxes' in order to speed up the process without giving any real thought to their answers which could affect the quality of responses. There is thus a balance to be had between asking too many questions - and risk losing

the interest of the respondent - and asking too few, which could result in insufficient or inadequate data to sufficiently address the research problem. Piloting the instrument before final administration, and seeking qualitative feedback on these issues is a useful way of helping minimise such problems.

Response errors may occur if the survey is badly structured or if question wording/content is poorly constructed. Even when efforts are taken to reduce the likelihood of response errors occurring from these factors, there is still the possibility that respondents may inadvertently make errors when answering questions. Additionally, and separate to this, there is also the possibility that respondents may not give a truthful response in an attempt to produce an outcome which they think the researcher wants to hear, or to sabotage what they think the researcher wants to hear, or for fear that the response may be traced back to them.

3.11 Philosophical issues
Most of the disputes about the use of different methods in research emanate from philosophical assumptions, rather than reasoned argument. Furthermore, interpretivists, for example, would argue that different paradigms are incommensurable.

From a philosophical stance, employing a logical tabular approach to outlining advantages and disadvantages of different research methods, though plausible, could be construed as over simplistic and somewhat superficial. Such an approach undermines, and fails to take account of, the fundamental philosophical, epistemological and ontological issues that underpin the research strategy, and the resultant chosen methods.

The philosophical research debate centres on a circular argument regarding which should drive what? To compound the debate the 'which' and the 'what' could relate to the philosophical paradigm, method, strategy or object of study. Stake (1994), for example, argues that decisions about method do not necessarily need to be driven by the chosen research strategy. He stresses

that it is not a methodological choice, but a choice of object to be studied. This is equally relevant whether applied to a positivistic orientated framework, or within a more phenomenological approach (Remenyi, Williams, Money and Swartz 1998; Ragin 1999).

Whilst the approach may differ depending on the philosophical stance, what matters most - and what needs to drive the methodological choice - is the researcher's starting point, i.e., does the researcher seek to either understand specific cases, or document general patterns that characterise a population? (Ragin 1999). Different strategies are necessary to satisfy both types of questions. This means that different methods can be successfully applied to answer both quantitative and qualitative questions, the issues for each are different. Where - for example - a positivistic approach is taken, there will be concerns of validity and reliability as well as the limits for generalising. The importance placed on these issues, and the ways in which they are addressed (if at all), will be very different and depend on the underpinning philosophy of the research.

An early, primary influencing factor relating to the research reported in this thesis arose from decisions about, and differences between, a variable, or case orientated approach. The former is centrally concerned with the problem of assessing the relationship across a large sample of 'observations' to specify patterns that hold for a population, and the other is more concerned with making sense of a small number of observations (Ragin 1999). Variable oriented research is thus routed in positivism with a desire to control, predict and generalise, the latter is not.

Philosophical issues are not always as clear and simplistic as they might appear. There are challenges and differing views on which methods can or should be used within different paradigms. A positivistic view might consider, for example, that using a single case study approach can be likened to researching with a 'sample of one' and, as such, inhibits opportunities to generalise in the statistical sense (Buchanan 2001). An alternative view which challenges this notion is that single cases can be used to inform theory through

analytical generalisations (Yin 1994; Bevan 1997; Butler 1997; Homa 1998; Buchanan 2001). Motwani et al (1999), for example, appear to reject the view that single cases cannot be used to generalise and demonstrate this in the application of a single case within a more quantitative paradigm.

Although the debate continues, there are some clear guiding philosophical principles for conducting research. Methodological decisions must be commensurate with the main research aim and be consistent with the underpinning philosophy of the research. A clearly stated aim often reflects the philosophical starting point of the researcher by stating the desire to explain, explore, describe, compare, control etc. Some researchers start from a naturalistic stance, for example, with a desire to study things in their natural settings. Their stated aim would reflect this by articulating it in a way that describes their intention to, for example, help them to gain a better understanding and a deeper or richer knowledge of phenomena (Kennedy 1979; Bevan 1997; Buchanan 2001; Denis, Lamothe and Langley 2001).

It is acknowledged that there are different philosophical perspectives within which research is carried out. The aim of the research reported in this thesis was, initially, to establish critical success factors for implementing change in NHS acute hospitals. Ultimately the aim was narrowed and focused to explore the relationship between clinical leadership and organisational performance. The intention was always to identify and test a range of variables; and search for patterns and relationships that could be generalised to the wider population. This is entirely appropriate for, and commensurable with, a positivistic perspective, rather than a naturalistic one.

3.11.1 Philosophical summary

With regard to the philosophical debate, both case study and survey method have each been successfully applied from a range of paradigms in an NHS change context (Bevan 1997; Homa 1998; Boddy and Macbeth 2000; McColl, Jacoby, Thomas, Soutter, Bamford, Steen, Thomas, Harvey, Garratt and Bond 2001). It is however important to establish the philosophical basis for the

research and this is frequently evident in the language of the stated intention of the research.

3.12 Phase II - Methodological conclusions

It is acknowledged that there are many merits and disadvantages for both case study and survey method. The two main contentions centre on trading the richness and depth of understanding that can be achieved through case study, with the opportunity to generalise which is increased when more quantitative methods - such as large-scale surveys - are used.

Pragmatically, survey method was considered to be more practical and appropriate because it would be quicker and easier in terms of access and researcher time available. From the perspective of the potential contribution that the research could make to the field, using a large-scale survey would complement rather than replicate the previous NHS studies by Bevan (1997) and Homa (1998). Moreover the desire to identify and test variables and search for relationships, with the potential opportunity to generalise to the wider population was an explicit aim of the research. This rendered survey method highly appropriate.

Given the philosophical and methodological argument, a large-scale survey approach was deemed to be the most appropriate method for addressing the stated research problem.

3.12.1 Mitigation of potential risks

Whilst survey method was selected as the main data collection method for Phase II of the research, it was important to consider how some of the potential weaknesses of this method could be minimised.

In the case of the research described in this thesis, the survey concentrated mostly on obtaining quantitative data that could be usefully analysed. However, there was still scope for obtaining some qualitative data as part of the survey by offering a 'free text' section for comments. This is a useful way of allowing the

identification of any 'unexpected responses' which the survey may not have covered. This results in more complete data on the phenomenon and enables a broader and richer understanding to be gained. The quality of the data could thus be enhanced because triangulation is possible (Pinsonneault and Kraemer 1993; Altheide and Johnson 1994; Denzin and Lincoln 1994).

Some of the identified risks were given due consideration and addressed during the questionnaire design stage. NHS staff from some of the hospital sites were involved in helping to shape the earlier research and so were already interested in the work. A database of names was set up and used to provide information about how the work was progressing to retain interest. Feedback and support for the work was obtained by presenting at national workshops - and Henley Management Colloquia - as the work progressed. The delegates at these forums provided helpful feedback on the design of the research as it was being developed and flagged potential weaknesses of the study.

A pilot survey, and follow-up focus group of respondents from the pilot, was also carried out to seek views on the instrument, its structure, content and ease of use. Respondents were asked to note how long it had taken them to complete the instrument. The maximum time taken was 12 minutes. Those involved in the pilot thought that this was a reasonable length of time to ask a respondent to devote to completing the instrument. To avoid contamination of the field a different group of NHS managers were used for the pilot study than intended participants in the main research.

The pilot survey was used with good effect to inform the final instrument design. In the introductory letter accompanying the questionnaire respondents were assured that their responses would be treated as confidential, and that all published information would be anonymised. Appendix F shows the letter used and the final instrument is shown in Appendix H.

3.13 Survey construction

3.13.1 Overview of instruments

This section presents a discussion and critique of the different instruments which could, potentially, be employed in the research to measure the independent (leadership) and dependent (organisational performance) variables. The first part of the discussion begins by presenting a debate, and clarification of some of the fundamental issues, concerning validity, reliability and generalisation. This is offered to set the context for discussion of the various instruments examined.

3.13.2 Validity and reliability

The research was designed to make use of survey instruments to measure social science concepts and their potential relationships. When using scales to measure a described construct it is essential to consider and address both the validity and reliability of the measure. These two concepts are also discussed in the context of generalisation. The three terms are frequently confused by novice researchers. For this reason a short description of these, and the context within which they are used in this thesis, is offered.

Validity expresses the extent to which a scale or measure accurately represents the concept of study, whereas reliability relates to the extent to which a variable is consistent in what it is intended to measure (Hair, Anderson, Tatham and Black 1998). However, the definitions are not necessarily as simple as described. Easterby-Smith et al (2002) caution that the meaning of these terms varies considerably according to the philosophical underpinning. Their warning about over simplifying the terms stems from a reminder that the language of validity and reliability was originally developed for use in quantitative social science (Easterby-Smith, Thorpe and Lowe 2002).

In the past, there was reluctance to apply notion of validity and reliability to interpretative research (Easterby-Smith, Thorpe and Lowe 2002) because of an implied acceptance of one absolute (positivist) reality. In general, qualitative research was previously confined to only considering **face validity**, which is

concerned with the robustness of the construct. However, this view is changing with some of the more contemporary researchers. Bevan (1997), for example, presents a useful discussion on the dilemmas she faced on the concept of research validity. She based her work on the premise that reliability, or the stability of methods and findings, is an indicator of the accuracy and truthfulness of the findings (Altheide and Johnson 1994). The issues and dilemmas that different researchers face and how they deal with them will thus depend on the different philosophical paradigms within which they work. Where, for example, a positivistic approach is taken, there will be concerns of validity and reliability as well as the limits for generalising.

As the research reported in this thesis is based within a positivistic paradigm, it is important to state that all reference to the terms validity, reliability and generalisation will reflect this stance. Hence, a principle goal of the research, which will use measurement scales, is to reduce measurement error.

Methodological texts distinguish between several types of validity. These are: construct; internal; external; and conclusion validity (Scandura and Williams 2000; Trochim 2001). The first of these, **construct validity,** is concerned with whether an instrument accurately measures reality. It refers to establishing correct operational measures for the concepts being studied (Remenyi, Williams, Money and Swartz 1998). Cooper (1998) eloquently argues that specificity is vital. Failure to achieve construct validity risks the opportunity to transfer the research findings into practice.

In general, there are three types of construct validity and these are described as construct, content and criterion (Scandura and Williams 2000). Content validity incorporates the notion of face validity where the construct is regarded as valid as a result of superficial enquiry (Remenyi, Williams, Money and Swartz 1998). Criterion related validity refers to the ability of clusters to show the expected differences on a variable not used to form the clusters (Hair, Anderson, Tatham and Black 1998)

Internal validity is of concern in all causal and explanatory studies of the relationship between different events (Remenyi, Williams, Money and Swartz 1998) which is typical of the research in this thesis. It questions whether the research design is capable of eliminating bias and the effect of extraneous variables. It is regarded as the approximate truth of cause-effect or causal relationships (Scandura and Williams 2000; Trochim 2001)

The third type of validity, **external validity** involves defining the domains to which the results of the study may be generalised to other populations (Scandura and Williams 2000; Easterby-Smith, Thorpe and Lowe 2002). For positivistic studies, such as the research reported in this thesis, this is a central issue (Remenyi, Williams, Money and Swartz 1998).

Conclusion validity refers to drawing conclusions about the relationship between independent and dependent variables (Scandura and Williams 2000).

Reliability is concerned with the degree to which observations or measures are consistent of stable (Remenyi, Williams, Money and Swartz 1998), in simple terms it questions whether the measures would yield the same results on other occasions (Easterby-Smith, Thorpe and Lowe 2002)? With regard to surveys, reliability is most commonly concerned with 'equivalence reliability' which is the extent to which different items intended to measure the same thing correlate with each other (Easterby-Smith, Thorpe and Lowe 2002). Correlations are examined and discussed in chapter four.

3.13.3 Leadership instruments
In order to investigate leadership and how this may influence performance improvement within an NHS setting, two well established US-based leadership instruments (LPI and MLQ) were found to adequately address the issue of assessing leadership style.

In addition to the LPI and MLQ there is a relatively newly developed UK tool: the Transformational Leadership Questionnaire (TLQ) (Alimo-Metcalf and Alban-Metcalf 2000; Alimo-Metcalf and Alban-Metcalf 2000; Alimo-Metcalf and Alban-

Metcalf 2001). This instrument initially appeared to be an attractive option as it is developed in a UK context and is available in three different formats: Local Government, Public Sector, and Private Sector. However, it covers 12 dimensions and uses 100 items which makes it extremely large to manage. More importantly and relevant to this research, whilst the TLQ is more explicit that the MLQ, it has not yet been subject to independent validation and therefore posed too great a risk for the research as it has not been sufficiently tried and tested (to date). It does however hold potential for future UK researchers when it has been more formally externally validated.

Thus an overview of the two most likely instruments the LPI and MLQ is presented in table 3.2 on the following page. Further more detailed evaluation of both of these instruments was necessary in order to decide upon the most appropriate instrument for the research.

Table 3.2 Overview of attributes for LPI and MLQ instruments
Sources: (Bass 1995, 2000; Kouzes and Posner 2003)

ATTRIBUTES	LPI	MLQ
Source	Kouzes & Posner (1987)	Bass (1985)
Scales/Factors	5 'Five Leadership Practices' 1. Challenging the Process 2. Inspiring a Shared Vision 3. Enabling others to Act 4. Modelling the Way 5. Encouraging the Heart	6 Individualized consideration Intellectual Stimulation Charisma/Inspirational Contingent Reward Active Management by Exception Passive Avoidant
Items/Questions	30	45
Reported Alphas	α = .81-.94 α = .71-85 observer, .81-.91 self	α = .71 - .82 (other)
Scale	1 – 10 point Likert scale	0 – 4 point Likert scale
Rater/Ratee	Self and/or observer 360°	Leader and/or other rater/subordinate 360°

3.13.4 The Leadership Practices Inventory (LPI)

The LPI (Kouzes and Posner; Kouzes and Posner 1987; Kouzes May 2003) consists of 30 statements that address the essential behaviours found when people report being at their personal best as leaders. Responses are marked on a 10-point scale, with behavioural anchors. For each statement, respondents indicate the frequency with which the particular behaviour is engaged by the individual. The 10-point scale ranges from 1 (indicating 'almost never') to 10 (indicating 'almost always'). Six statements comprise each of the five leadership practice measures.

Kouzes and Posner state that they, 'translated the actions that make up the five practices of exemplary leadership into behavioural statements so that individuals across both private and public organisations, could assess their skills and use this feedback to improve their leadership abilities.'(Kouzes May 2003).

The LPI has strong underpinning research behind its use with more than 150 doctoral theses having used the instrument (Kouzes and Posner 1987; Kouzes and Posner 2003).

The LPI is available in both self and observer format. The 'self' version of the instrument enables individuals to complete the inventory by using their own perception of themselves and their leadership behaviours to be assessed. The observer version allows for 360 degree feedback from constituents, managers, colleagues, and/or others in order to provide an outsider view of someone's leadership behaviours. Using more than one observer of the same leader is also possible and this aims to achieve a more balanced picture of leadership behaviours.

An overview of the six items for each of the five LPI constructs, designed to measure the five leadership practices, is shown in table 3.3 overleaf.

Table 3.3 Overview of the six items for each of the LPI constructs that measure the five practices

Source: James M. Kouzes and Barry Z. Posner (with permission). Copyright © 2003.All rights reserved

Model the Way	1. Sets a personal example of what is expected 6. Makes certain that people adhere to agreed-on standards 11. Follows through on promises and commitments 16. Asks for feedback on how his/her actions affect people's performance 21. Builds consensus around organization's values 26. Is clear about his/her philosophy of leadership
Inspire a Shared Vision	2. Talks about future trends influencing our work 7. Describes a compelling image of the future 12. Appeals to others to share a dream of the future 17. Shows others how their interests can be realized 22. Paints 'big picture' of group aspirations 27. Speaks with conviction about meaning of work
Challenge the Process	3. Seeks challenging opportunities to test skills 8. Challenges people to try new approaches 13. Searches outside organization for innovative ways to improve 18. Asks 'what can we learn?' 23. Makes certain that goals, plans, and milestones are set 28. Experiments and takes risks
Enable others to Act	4. Develops co-operative relationships 9. Actively listens to diverse points of view 14. Treats others with dignity and respect 19. Supports decisions other people make 24. Gives people choice about how to do their work 29. Ensures that people grow in their jobs
Encourage the Heart	5. Praises people for a job well done 10.Expresses confidence in people's abilities 15. Creatively rewards people for their contributions 20. Recognizes people for commitment to shared values 25. Finds ways to celebrate accomplishments 30. Gives team members appreciation and support

3.13.5 The Multifactor Leadership Questionnaire (MLQ)

The MLQ is reported to be one of the most established and widely used instruments within transformational leadership research (Hunt 1999). The MLQ measures a broad range of leadership types from passive leaders, to leaders who give contingent rewards to followers, to leaders who transform their followers into becoming leaders themselves (Bass 2005). The instrument is

available at three organisational levels (i.e., individual MLQ, team MLQ, and organisational description questionnaire).

The MLQ dates back to 1985 and has been continuously developed over time. Over the last four years, the MLQ has been used in nearly 200 research programs, doctoral dissertations and masters theses around the globe (Bass and Avolio). However, the instrument is also the most frequently debated and criticised.

Table 3.4 outlines the operational definitions of the six identified factors in the MLQ.

Table 3.4 Overview of the operational definitions of the six factors in the MLQ (Avolio, Bass and Jung 1999)

1. **Charismatic/Inspirational leadership**	Provides followers with a clear sense of purpose that is energising, is a role model for ethical conduct and builds identification with the leader and his or her articulated vision.
2. **Intellectual stimulation**	Where the leader encourages followers to question tried and true ways of solving problems and the methods used and to improve upon them.
3. **Individualised consideration**	Where the leader focuses on understanding the needs of each follower and works continuously so they develop their full potential.
4. **Contingent reward**	Where the leader clarifies what is expected from followers and what they will receive if they meet unexpected levels of performance.
5. **Active management**	Where the leader focuses on monitoring task execution for any problems that might arise and correcting those problems to maintain current performance levels.
6. **Passive-avoidant leadership**	Where the leader tends to take corrective action only after problems have become serious, and often avoids making any decisions at all.

3.13.6 Overview of both leadership instruments

There are both similarities and differences between the two leadership instruments described.

Both the LPI and the MLQ are general leadership instruments and they do not distinguish between private and public sectors. However, the LPI is a very well used and tested instrument and has independent support (Carless 2001) for capturing the one common transformational leadership dimension which is also featured in the MLQ instrument.

One key difference between the instruments is the number of items/questions which the instrument consists of (LPI 30, MLQ 45), as well as the number of leadership factors/dimensions (LPI 5, MLQ 6). The 30 items in the five transformational leadership practices of the LPI are also covered in the transformational elements of the MLQ. Although both instruments claim to cover multiple transactional leadership dimensions, independent research by Den Hartog, (1997), Avolio et al, (1999), and Carless, (2001) suggests that both the MLQ and the LPI only cover one overarching transformational construct.

3.13.7 Choice of leadership instrument

Choosing the leadership instrument was not easy. After much deliberation and discussion with other researchers who had used either the MLQ or the LPI, the LPI-Observer (Kouzes May 2003) was chosen as the instrument to assess the leadership styles and practices of the respondents taking part in this research.

With its basis in the new leadership / transformational approach, the LPI (Kouzes and Posner 1995; Kouzes and Posner 2001; Kouzes and Posner 2002; Kouzes and Posner 2003) is highly appropriate for addressing the overarching research question. Furthermore, this instrument contains only 30 items (as opposed to the MLQ's 45) whilst still covering different dimensions of leadership. This is a positive determinant in terms of the overall questionnaire to be developed, and the desire for a high response rate from respondents.

Permission to use the LPI was gained free of charge from the authors on the basis that it would be used for research purposes (see Appendix E). Dr. Posner was extremely helpful in answering questions and queries with regard to the use of the LPI and the electronic conversations that were possible helped ensure that its use would be appropriate, relevant and grounded.

Importantly, Sandbakken (2004) evaluated three leadership instruments these being the LPI (Kouzes and Posner 2001; Kouzes and Posner 2003), the MLQ (Bass and Avolio 1990) and the TLQ (Alimo-Metcalf and Alban-Metcalf 2000). He presented a detailed and authoritative argument which supported the use of the LPI for his research into leadership practices which is very similar to the aims of the research reported in this thesis. His discussion and conclusions apply to this research.

Notwithstanding the strengths of other instruments, the LPI was selected as the most appropriate instrument to use in this doctoral research based on the issues discussed above.

3.13.8 Organisational performance instrument

A similar process of evaluation to that used to select the leadership instrument was used to select an instrument which would best measure organisational performance and operationalise the construct.

Organisational performance is commonly identified and reported as important in research studies which aim to enhance understanding of how organisations develop and improve (Damanpour and Evan 1984; Dess and Robinson 1984; Burke and Litwin 1992; Millar 1999a; Millar 1999b; Brett 2000; Amaratunga, Baldry and Sarshar 2001; Collins 2001; Elenkov 2002; National Institute of Clinical Studies 2003; Wilberg 2003; Robson 2004; Sandbakken 2004; Sharma and Wanna 2005).

In terms of measurement instruments for public sector organisations a perception based approach has been evaluated as a useful and accurate way of measuring organisational performance (Miller and Cardinal 1994; Tanner

2005). Using a perceptions based instrument presented a good fit with the research especially as the selected leadership instrument (the LPI) was based on perceptions. A performance instrument based on perceptions could therefore be readily combined with the LPI to make one instrument.

Brett (2000) identified three types of organisational performance. These were economic performance, survival performance and performance excellence as described by Peters and Waterman (1982). The latter is a multi-dimensional concept which is less concerned with economic performance and thus aligns well with the requirements of a performance measure for the research instrument in a public sector organisation. Sandbakken (2004) conducted a comprehensive review of the attributes of performance measurement instruments and concluded that in devising a performance measure for his combined study of both private and public sectors,

> "ROA, sales growth, market share and market diversification are not relevant" (Sandbakken 2004) p 114

Tanner (2005) also noted that many of the instruments designed to measure performance focused on the use of financial data and that this was limited in its application to public organisations.

The recent systematic reviews by Sanbaken (2004), Tanner (2005) and Brett (2000) were helpful in establishing the most appropriate instrument for this particular research. Their conclusions collectively helped support the 'Excellence' approach, as operationalised by the Sharma Excel questionnaire (Sharma, Netemeyer and Mahajan 1990; Sharma and Wanna 2005). Therefore this was selected as an appropriate instrument to measure organisational performance in an NHS context.

3.13.9. The Sharma Excel scale (Excel)

The construct of corporate excellence is described as those managerial practices and principles that lead to sustained performance (Sharma, Netemeyer and Mahajan 1990). These principles are deemed to be a

necessary but not sufficient condition for superior corporate performance (Bearden and Netemeyer 1999). Peters & Waterman (1982) describe eight attributes of excellence, namely; a bias for action, being close to customers, autonomy and entrepreneurship, being productive through people, an active shared value system among all levels, a simple and lean staff, simultaneous loose-tight properties, and sticking to the knitting (i.e., a resistance to conglomeracy and a focus on what is known or done best).

The Excel scale is a 16-item scale designed to measure eight attributes of excellence espoused by Peters and Waterman (1982). It builds on the assumption that there is a positive relationship between excellence and performance. All items are scored on Likert scale which ranges from 'strongly disagree' to 'strongly agree'. Though originally hypothesised to be an eight factor measure based on the eight attributes, factor analysis has shown that it presents a single higher-order factor which is a combination of all eight attributes and provides a single measure of performance excellence (Sharma, Netemeyer and Mahajan 1990; Bearden and Netemeyer 1999). Coefficient Alpha for this version of the scale have been reported as .89 and .90 (Bearden and Netemeyer 1999). Examination of validity of the scale has shown strong support for the nomological validity (Bearden and Netemeyer 1999). The instrument has also been validated and used by Sandbakken (2004), Brett (2000) and Caruana, Pitt et al (1995) and is published in the Handbook of Marketing Scales (Bearden and Netemeyer 1999).

In the context of transformational leadership, organisational performance is linked to leadership style and effectiveness (Bass and Avolio 1994). Furthermore both Brett (2000) and Sandbakken (2004) suggest that the excellence concept is the most appropriate in today's world and argue its fit with transformational leadership.

In conclusion the performance excellence concept as expressed by the Excel scale (Peters and Waterman 1982; Sharma, Netemeyer and Mahajan 1990; Sharma and Wanna 2005) was deemed an appropriate measure to contribute to the combined research instrument.

3.14 Structure of the combined instrument

The survey comprised of three sections. The first part consisted of introductory context questions that were used to find out information such as age, gender and occupational background of the respondent. The two chosen instruments were incorporated into the second and third sections of survey in order to measure the dependant and independent variables of the research (i.e., leadership and performance). In order to measure leadership, the Leadership Practices Inventory, *James M. Kouzes and Barry Z. Posner* (2003) was used. Performance excellence was measured using, *The 'Excel' scale (Sharma, Netemeyer & Mahajan, 1990)*. A consistent 10 point Likert scale was used (with permission) as designed and presented by Kouzes and Posner (2003). The descriptors for the scale were not changed from the original instrument. Using a ten point scale rather than one with fewer points increases granularity and thus provides greater variability in the responses.

3.14.1 Data collection

The survey was piloted using some of the national team members from the NHS Emergency Services Collaborative (ESC) as well as some national NHS project leads from other MA programmes. These people were all familiar with the ESC programme and were experienced NHS managers. Hence they would be familiar with the content and language of the survey and had similar types of experiences of working in the NHS, to the intended respondents. The pilot was intended to check and clarify survey issues such as; ease of use, understandability, layout and structure. The pilot revealed helpful suggestions about wording and clarity as well as layout, text size etc. Amendments were made accordingly. Appendix H shows the final version of the survey after slight amendments had been made following the pilot survey.

3.14.2 The research population

The population selected for the research included every NHS Acute Hospital Trust in England (n= 155)[4], all of which were participating in the national change

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[4] There was a total 155 NHS Acute Hospital Trusts in England at the time that the research was carried out. This figure excluded one Acute Hospital Trust that did not have an Accident and Emergency Department and therefore did not participate in the ESC. This figure fluctuated and has changed since the study was carried out due to hospital mergers and re-designation of service provision.

programme – the Emergency Services Collaborative. Thus the total population of 155 was surveyed and the sample involved surveying the perceptions of the designated programme manager (there was one in each Trust) who was directly involved in implementing change in each site. There was also a designated clinical leader (these were mostly doctors) who provided overall clinical leadership for the change programme.

The programme manager was asked to respond to questions in a survey questionnaire on both organisational performance (the dependent variable) and the leadership practices (independent variable) of the designated clinical lead that they were working with whilst they were introducing change as part of the ESC.

The survey was disseminated to 155 programme managers at 155 Acute Hospital Trusts throughout England. The surveys were sent via post and respondents were asked to complete the survey in light of their local overall ESC clinical lead. Programme managers were asked to return the completed surveys either by post or fax. After piloting the survey questionnaire several issues arose which influenced the final decision not to use an electronic version of the questionnaire. Primarily, not all of the project managers (the respondents) had access to email at the time that the research was carried out. Furthermore, piloting an electronic version of the questionnaire was problematic and showed that some of the recipients' computer systems crashed when they received it. In addition others reported that they were unable to open the e-version because they did not have compatible software.

Reminder follow-up emails, letters and phone-calls were sent/made two-three weeks later to respondents who had not yet returned a completed survey. Appendix G outlines the timeline of activities for the data collection.

3.14.3 Access
Access to participants for completion of the survey questionnaire was relatively unproblematic. The ESC programme structure was a national structure and included every acute hospital in England. As the National Director of

Emergency Services and in being responsible for the ESC, site access was available as a routine part of the researcher's full-time role.

National funding of £35 million was made available to fund programme managers, clinical leads and facilitators as part of a project budget allocated to each of the participating hospital sites. Participation in the ESC was compulsory which means that every acute hospital with an A&E department in England was involved.

3.15   Development of the hypotheses

The primary aim of the research was to investigate what makes change happen in NHS hospitals. After completion of the first phase of the research process a secondary and more specific aim emerged which was to investigate the relationship between leadership and organisational performance.

Supported by the literature on leadership and performance the initial hypothesis generated was:

H1.   There will be a positive relationship between leadership and organisational performance (Kouzes and Posner 1987; Conger and Kanungo 1988; Bass and Yammarino 1991; Bass and Avolio 1994; Kouzes and Posner 1995; Bass 1997; Alimo-Metcalf and Alban-Metcalf 2001; Einstein and Humphreys 2001; Elenkov 2002; Kouzes and Posner 2002; Sashkin and Sashkin 2003; Wilberg 2003; Sandbakken 2004; Borrill, West and Dawson 2005).

An important aspect of the research process involved the design, administration and analysis of a survey questionnaire intended to test the stated hypothesis that leadership would have a positive effect on organisational performance. To achieve this, two validated instruments were appraised. One of these was selected - the Leadership Practices Inventory (Kouzes and Posner 1987; Kouzes and Posner 1992; Kouzes and Posner 1995; Kouzes and Posner 2001; Kouzes and Posner 2003) - to measure the independent variable of

transformational leadership - as expressed by the Leadership Practices Inventory (LPI) and the dependent variable of performance - as expressed by the Excel Scale (Peters and Waterman 1982; Sharma, Netemeyer and Mahajan 1990; Sharma and Kesner 1996; Sharma and Wanna 2005).

The LPI comprises five specific constructs, each measuring a different aspect of transformational leadership. Accordingly, the original intention to use a single independent variable of leadership changed to become five separate independent variables; one for each of the LPI five constructs which made up the overall instrument. This led to the theoretical conjecture that each of the five leadership practices, as defined by Kouzes and Posner (2003), would have a positive relationship with organisational performance. Hence the hypotheses were further developed and expanded to test all five aspects of the LPI construct, as well as the overall LPI. The newly generated hypotheses were therefore:

H2. The overall LPI scores will be positively related to organisational performance as measured by the Excel Scale (Kouzes and Posner 1987; Conger and Kanungo 1988; Bass and Yammarino 1991; Bass and Avolio 1994; Kouzes and Posner 1995; Bass 1997; Alimo-Metcalf and Alban-Metcalf 2001; Einstein and Humphreys 2001; Elenkov 2002; Kouzes and Posner 2002; Sashkin and Sashkin 2003; Wilberg 2003; Sandbakken 2004; Borrill, West and Dawson 2005).

H3. There is a positive relationship between 'Challenging the Process' and organisational performance (Kouzes and Posner 1987; Kouzes and Posner 1995; Kouzes and Posner 2002).

H4. There is a positive relationship between 'Inspiring a Shared Vision' and organisational performance (Conger and Kanungo 1987; Bass 1990; House, Spangler and Wolycke 1991; Shamir, House and Arthur 1993; Cannella and Monroe 1997; Steyrer 1998; Kouzes and Posner 2003; Smith 2004).

H5. There is a positive relationship between 'Enabling Others to Act' and organisational performance (Kouzes and Posner 1992; Berwick 1994; Kouzes and Posner 1995; Waldersee, Simmons and Eagleson; Bennis 1999; Silversin and Kornacki 2000; Denis, Lamothe and Langley 2001; Kouzes and Posner 2002; Dennis and Garfield 2003; Ham 2003; Kouzes and Posner 2003; Sashkin and Sashkin 2003).

H6. There is a positive relationship between 'Modelling the Way' and organisational performance (Kouzes and Posner 1992; Kotter 1995; Kouzes and Posner 1995; Kotter 1996; Silversin and Kornacki 2000; Kouzes and Posner 2002; Kouzes and Posner 2003).

H7. There is a positive relationship between 'Encouraging the Heart' and organisational performance (Kouzes and Posner; Conger and Kanungo 1987; Conger and Kanungo 1988; House, Spangler and Wolycke 1991; Kouzes and Posner 1992; Shamir, House and Arthur 1993; Kouzes and Posner 1995; Hunt 1999; Kouzes and Posner 2002; Kouzes and Posner 2003; Groves 2005).

Further development of the hypotheses occurred following analysis of the data. This information is included in Chapter five, Analysis and Results.

3.16 Summary of chapter

A multistage biphasic emergent model to guide the research strategy and process (Figure 3.5 page 105) was developed, based on sound methodological principles. The two discrete phases of the research were designed to be complimentary and were integrated and iterated to enable each stage to inform the next. This iterative process enabled a shift from the original intention - which was to understand what critical success factors were responsible for making change happen in the NHS - to a later decision (after completing the first phase of the research) to investigate the relationship between just one of the identified critical success factors (leadership) and the impact of this single construct on NHS organisational performance.

The first phase of the research focused on refining and defining the research problem and developing the research process.

The second phase was concerned with how the problem would be investigated. After appraisal of different potential methods of data collection, a large-scale survey was selected as the method of choice. The survey questionnaire design was based on a combination of the LPI (Kouzes and Posner 2001; Kouzes and Posner 2003) five factors to measure transformational leadership and the Sharma Excel scale for measuring organisational performance (Sharma, Netemeyer and Mahajan 1990; Sharma and Wanna 2005).

After piloting a prototype survey instrument, the final survey (Appendix H) was designed and administered with the aim of testing the hypotheses.

CHAPTER FOUR

Analysis and Results

4.1 Introduction

In the conclusion of the previous chapter the qualitative aspects of the research were discussed. This chapter focuses on the quantitative data and how they were collected and analysed. It begins by setting out the structure of the instrument, how it was modified, distributed and how the data were collected.

Analysis of the quantitative data involved a sequence of progressive steps and therefore, accordingly, these are reported in the chronological order in which they were carried out.

Descriptive statistics are reported at the beginning of this chapter to show the demographic spread of the sample population. The data are then presented with a view to exposing outliers to check for errors. Instrument statistics are presented prior to regression. Multicollinearity was found and this necessitated further analysis. As the chosen method of factor analysis, Principle Components Analysis (PCA) was carried out and this is described. Several models are subsequently built, tested and compared and these are discussed.

The chapter concludes by summarising the results which are discussed more fully in the last chapter.

4.2   The instrument

A survey questionnaire was used as the method of data collection for the quantitative aspect of the research. The survey instrument was designed to appear as one combined questionnaire but was a combination of three distinct sections (Appendix H). The first section comprised introductory context questions that were used to disclose biographical information such as age,

gender and occupational background of the respondent. The two instruments selected to measure the dependant and independent variables of the research (i.e., leadership and performance) became the second and third sections of survey. The instrument used to measure leadership was the Leadership Practices Inventory © 2003, which comprised 30 items, *James M. Kouzes and Barry Z. Posner* (Kouzes and Posner 2003). Performance was measured using the *'Excel' scale (Sharma, Netemeyer and Mahajan 1990)*. The original scale comprised 16 organisational items.

4.2.1 Modifying the instrument for NHS suitability

A focus group of 12 NHS managers and clinicians was assembled to review the instrument and assess its suitability and appropriateness for NHS purposes. To avoid contaminating the field the focus group were drawn from a different group of managers who were not directly involved in the ESC.

The focus group was convened to validate two different aspects of the instrument. Firstly, for face/construct validity, in terms of the wording, content and context. And secondly, for content validity, to elicit whether they deemed the instrument to be a suitable measure of performance excellence in the context of the NHS.

Three items in the Excel scale were deemed by the focus group to be inappropriate for the assessment of health care organisations because they were either too product focused, or they were deemed not to be relevant to NHS hospitals which, at the time that the focus group was conducted, had limited choice in the services that they provided. The items excluded were:

- This organisation develops products (and/or services) that are natural extensions of its products/services

- This organisation concentrates on products (and/or services) where it has high levels of skill and expertise

- This organisation considers after-the-sale service (and/or follow up of customer/clients) as important as making the sale itself

Appendix D outlines the Excel scale (Sharma, Netemeyer and Mahajan 1990) and indicates the amendments made including deletions and additions and wording changes.

This left a total of 13 items for this section of the instrument *(question number 1 to 13 – Appendix H).*

The language of the scale was considered by the group to be too American and thus risked irritating the respondents. An undesirable and potential outcome of this could have been that respondents may not have completed the survey as they might not associate with it. The focus group therefore helpfully suggested anglicising some of the words but without changing the meaning of the statement. Examples included, where relevant and appropriate, to change the word 'products' to 'services'; the words 'company' and 'firm' were replaced with 'organisation'; and the word 'customers' was replaced with 'patients/customers'. American spellings were also changed to the equivalent English spelling of the same word.

The group also suggested changing statements such as 'this firm believes/instils/provides ....' to a first-person format. They believed that this would personalise the language of the statements to one which was more likely to engage the respondent. Thus some statements were framed in the first person – for example 'we believe/instil/provide'.

They commented that, with the suggested amendments, the instrument was suitable for measuring NHS performance excellence.

The single combined instrument was distributed to the designated project manager in each of the 155 Acute NHS Trusts in England. The total number returned was 132. Of these, twelve were incomplete. In recognition that missing data can distort results, Hair (1998) describe a range of approaches for dealing with missing data. These include using only those surveys with complete data, deleting cases or variables where the data is missing or estimating missing values. The number of incomplete returns was regarded to

be small (n=12) and most of the respondents were contactable. Therefore, rather than using one of the strategies previously outlined, the approach to handling missing data was, in the first instance, to return the incomplete instrument to the respondent to request completion of the missing information.

Six out of the 12 respondents who had submitted instruments with missing data were contacted. The instrument was returned to them with a polite request to complete the missing information. All six of these were subsequently returned fully completed. The remaining six were deemed to be unusable for inclusion in the study as some of the data were either incomplete or missing and the respondents had not disclosed their contact details so they could not be contacted to request completion of the missing data. Excluding the six incomplete surveys left a total of 126 complete surveys for analysis. Hence the overall return rate of fully completed surveys was 81%.

A unique reference number was ascribed to each survey form and each item in the survey was numerically coded and entered into SPSS.

4.3 Descriptive statistics - Introduction

Descriptive statistics were generated for the demographic variables in the sample to examine the sample population and to check for erroneous values. Frequency tables were generated using standard SPSS menus *(Analyse, Descriptive Statistics, Frequencies)* and charts using the *Graphs and interactive chart* menus. Cross tabulations were generated through *Analyse, Descriptive Statistics and Cross tabs* menus.

Descriptive Statistics were generated for the project managers (the respondents) who completed the survey – one from each of the 155 NHS Acute Hospital Trusts – and also for the leaders that they were assessing using the instrument – one clinical lead for each of the 155 Acute NHS Hospital Trusts. *(n = 155 potential total respondents, 126 completed instruments for analysis)*

4.4 Descriptive statistics – The project managers (respondents)

4.4.1 Gender

In terms of gender, 71.4% of the sample were female compared to 28.6% male
(table 4.1). Thus females made up almost three-quarters of the respondents.
This is not considered to be unusual. A later chart reports on the respondents
occupation and shows that the majority of the respondents were nurses and it is
therefore likely that the female gender bias reflects the fact that the majority of
nurses are female (although not all nurses are members of the Royal College of
Nursing, RCN data shows that approximately 90% of their members are
female).

Table 4.1 Gender of respondents

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	90	71.4	71.4	71.4
	Male	36	28.6	28.6	100.0
	Total	126	100.0	100.0	

28.57%

Gender
Female
Male

71.43%
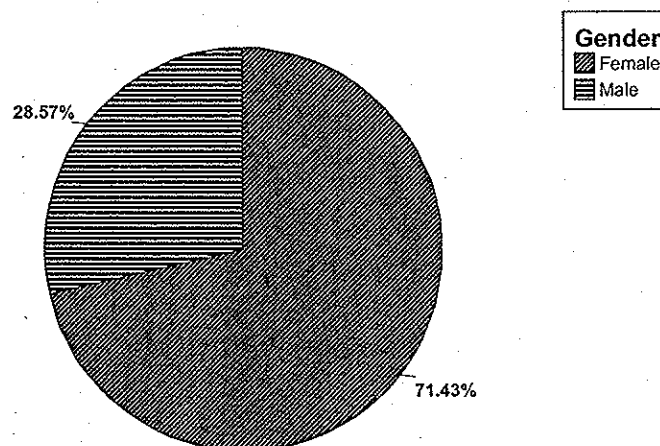
4.4.2 Age of respondents

The age of the population was assigned to one of four pre-assigned age bands.
The four bands were those who were aged 25 – 34 years; 35 to 44 years; 45 –
54 years; and those who were 55 years or over. These same age bands were

used to review the age of the respondents, as well as the estimated age of the leader who was being assessed. This was of potential interest as it could be argued that leadership skills could be acquired through experience and this might be reflected in the age groupings.

When the age bands of the respondents were considered, the banding with the highest frequency was age 35-44 years. There was only one respondent over 55 (table 4.2). The age distribution is consistent with a senior nurse/middle manager role in the NHS which the respondents – as ESC project managers – were currently employed in.

Table 4.2 Age of respondents

Age (in years)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25-34	36	28.6	28.6	28.6
	35-44	53	42.1	42.1	70.6
	45-54	36	28.6	28.6	99.2
	55+	1	.8	.8	100.0
	Total	126	100.0	100.0	
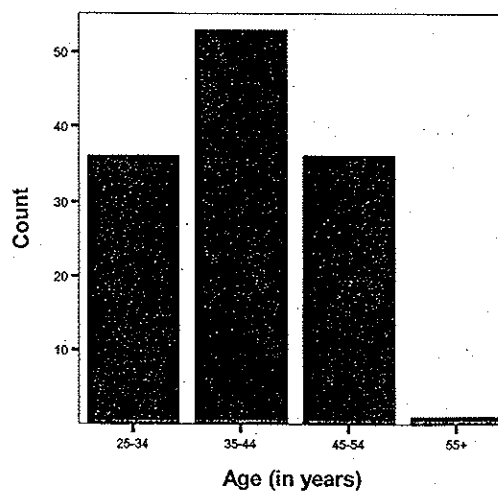
4.4.3 Age and gender (respondents)

A cross tabulation of age against gender (of respondents) showed that the largest group of responders were females aged 35 to 44, followed by females aged 45 to 54 *(table 4.3)*. Although the respondents were currently working as 'project managers', it was thought likely that many project managers would be drawn from people with a nursing background. This assumption was later validated and shown in table 4.4, which depicts the occupational background of respondents.

Table 4.3 Age and gender crosstabulation of respondents

Age (in years) * Gender Crosstabulation

Count

| | | Gender | | Total |
		Female	Male	
Age (in years)	25-34	16	20	36
	35-44	42	11	53
	45-54	31	5	36
	55+	1	0	1
Total		90	36	126

4.4.4 Occupational background of respondents

In terms of the occupational background, the majority of respondents were from a nursing (43.7%) or managerial (45.2%) background *(table 4.4)*. This was not surprising given that national funding was allocated to finance the recruitment of a project manager for each acute hospital. In general, the posts carried a salary scale which was more than a senior nurse salary and equivalent to a middle manager pay scale. This meant that most posts attracted nurses and junior managers from a pay-scale perspective.

Interestingly however, qualitative interview data and qualitative responses in the free text comments section of the survey showed that some organisations had recruited more senior (and higher paid) staff by either topping-up the salary locally to make the role attractive to more senior people, or by offering the role as a part-time post.

Table 4.4 Occupational background of respondents

Occupational background

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Nurse	55	43.7	43.7	43.7
	Doctor	2	1.6	1.6	45.2
	AHP	8	6.3	6.3	51.6
	Manager	57	45.2	45.2	96.8
	Other	4	3.2	3.2	100.0
	Total	126	100.0	100.0	

*(AHP =
Allied Health
Professional
e.g. physiotherapist,
pharmacist, or
radiographer)*

Occupational background
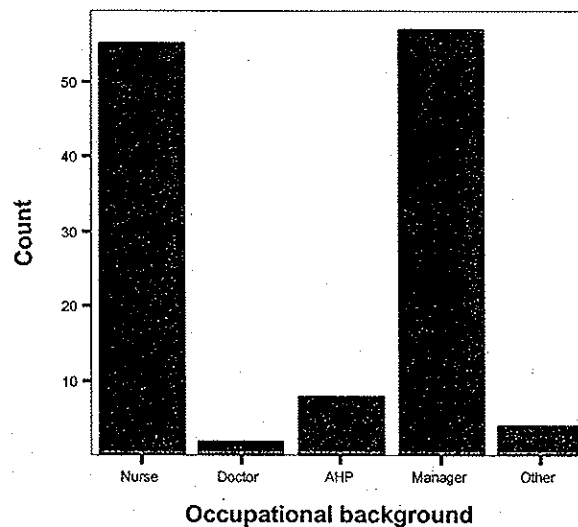
4.4.5 Respondents' organisation

When considering the type of organisation in which the respondent worked, the majority of respondents (72.2%) were based at a district general hospital *(table 4.5)*. This reflects the total population of Acute NHS Hospital Trusts of which the majority are classed as District General Hospitals; the proportion of NHS University Teaching Hospitals being less. This was thought to be an important demographic to understand because implementing change in larger, more complex organisations is considered to be more difficult. The ratio of respondents who worked in a university teaching hospital or a district general hospital was approximately 1:3. This concurs with the estimated balance of these two main types of acute hospitals in the NHS.

The remaining five respondents indicated that they worked for an 'other' organisation and these were Primary Care Trusts (4) and one Ambulance Trust.

Table 4.5 Respondents' organisation

Organisation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	University Hospital	30	23.8	23.8	23.8
	District General	91	72.2	72.2	96.0
	Other	5	4.0	4.0	100.0
	Total	126	100.0	100.0	
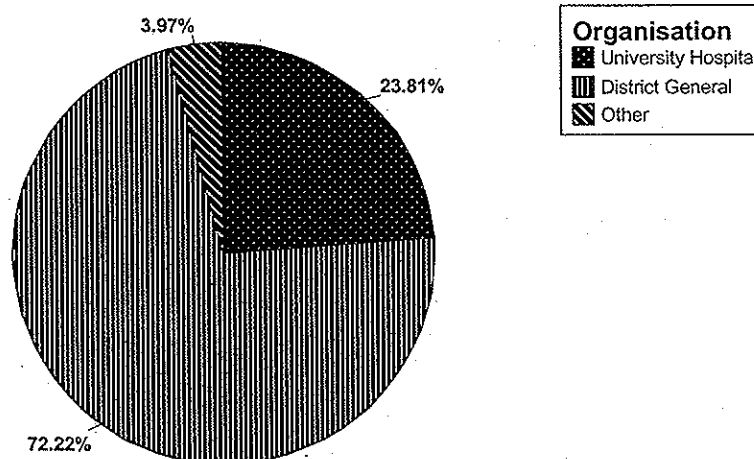
4.4.6 Length of time in the ESC (respondents)

The length of time that the respondent had been involved in the change programme (the ESC) was thought to be an important consideration because it was possible that those with very limited experience of the programme may not have been able to adequately assess the leaders ability to lead the change and their impact on the successful implementation of the change(s).

The average reported length of time that the respondents had been involved in the ESC was 13.26 months. The minimum was 3 months and the maximum was 24 months *(table 4.6)*.

Table 4.6 Length of involvement in the ESC (respondents)

Statistics

Length of time involved in the ESC (months)

N	Valid	126
	Missing	0
Mean		13.26
Std. Deviation		3.891
Minimum		3
Maximum		24

Length of time involved in the ESC (months)
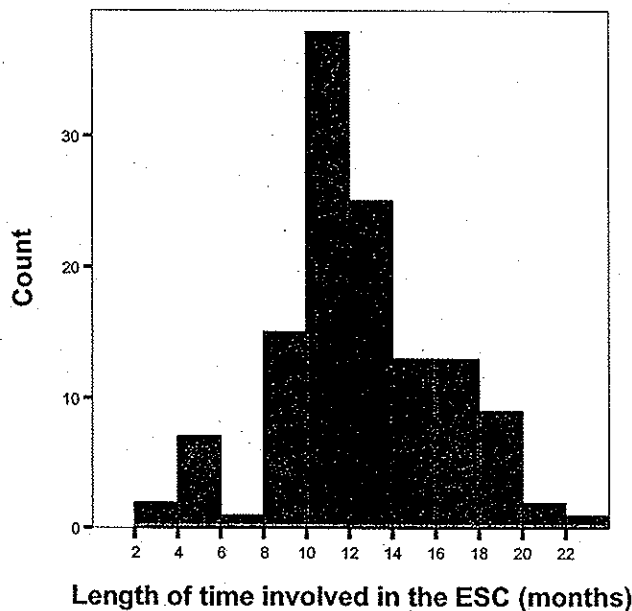
The histogram showing length of time that the project managers (the respondents) had been involved in the ESC indicated that the group with the highest frequency was those whose duration was 11 or 12 months. This was desirable from the survey perspective because the longer they had been involved in the ESC the more opportunity there was for them to have observed the clinical lead demonstrate their leadership skills and competencies. From a

research perspective it meant that their assessment was thus based on a reasonable length of time in the role working with the clinical lead.

4.5 Descriptive statistics – The clinical leads (those assessed)

4.5.1 Number of clinical leads

Respondents were asked if there had been more than one overall clinical lead during the life cycle of the ESC programme *(table 4.7)*. If there had been more than one clinical lead during the life cycle of the programme, they were asked to assess the leadership skills of the one that had been in post for the longest period of time. Respondents were instructed to assess and report in the survey, for all of the questions, on this one person when answering the questions.

Table 4.7 More than one clinical lead during the ESC?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	23.0	23.0	23.0
	No	97	77.0	77.0	100.0
	Total	126	100.0	100.0	

The majority of respondents (77%) reported that there had not been more than one clinical lead during the life cycle of the ESC programme *(table 4.7)*. This meant that in the majority of cases only one (main) clinical lead was assessed for each organisation. This was important because the intention was to explore the relationship between their leadership and performance. A high number showing that several leaders had been in place during the programme would have meant that there had been multiple leadership influences thus, potentially, distorting the assessment of impact of leadership on performance.

Conversely, almost a quarter (23%) of respondents *(table 4.7)* reported that there had been more than one designated leader during the ESC programme

(table 4.7). This was not surprising as [5](98%) of the clinical leads were doctors, the majority of these being hospital doctors. Junior and middle-grade hospital doctors regularly move between departments and hospitals during their tenure. It is therefore likely that some middle-grade doctors may have been designated as a clinical lead for the local project but moved on during the life cycle of the ESC programme.

4.5.2 Clinical lead duration

To countermand the aforementioned potential issue of multiple leaders and to ensure that respondents were not assessing relatively new leaders – and arguably did not know the clinical leads well enough to carry out an informed assessment of their leadership skills – respondents were asked how long the clinical lead that they were assessing had been in post.

The average ESC clinical lead duration was 13 months, the minimum was five and the maximum was 24 *(table 4.8)*. The histogram below shows that the most frequent clinical lead duration in the ESC was 10-15 months. The minimum of five months was considered to be enough time for a leader to demonstrate leadership skills and have potential impact on performance.

Table 4.8 Clinical lead duration

LeadDuration

N	Valid	126
	Missing	0
Mean		13.04
Std. Deviation		3.163
Minimum		5
Maximum		24

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[5] This information was obtained from the national ESC data-base, not the questionnaire survey. Ninety eight percent of ESC clinical leads were doctors (hospital doctors and GPs) the remainder were nurses, and one was a pharmacist.

...continued - Clinical lead duration
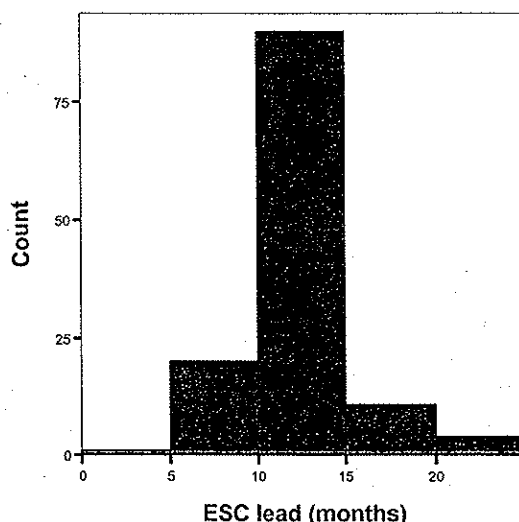
4.5.3 Gender of clinical lead

With regard to the gender of the clinical leads, 78% were male, whereas only 22% were female *(table 4.9)*. Around 95% of the clinical leads were senior doctors, the rest being nurses and allied health professionals. The high proportion of males in the sample is consistent with the current situation in the NHS (England) where the majority of senior medical staff in hospitals are male. *(This may change in the longer-term future as recent figures for England show that the intake for the number of female medical students is now slightly greater than the number of male medical students).*

Table 4.9 Gender of clinical lead

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	28	22.2	22.2	22.2
	Male	98	77.8	77.8	100.0
	Total	126	100.0	100.0	

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Gender of the clinical lead
▓ Female
▥ Male

22.22%

77.78%
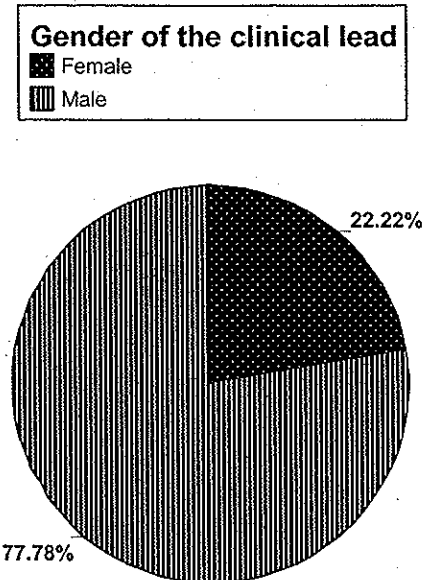
4.5.4. Estimated age of clinical lead

Respondents were asked to estimate the age of the clinical lead and ascribe this to one of the age bandings. There is a caution around their responses as the ages were only estimations but, nevertheless, it is regarded as a useful indicative statistic.

The majority of the clinical leads were aged either 35-44 yeas (44%) or 45-54 years (49%). Less than 1% of leads were under the age of 35 *(table 4.10)*. This too was expected as most were senior (experienced) doctors (GPs and hospital doctors) who had been through medical school and post-graduate training after which they would have spent time gaining experience as a senior doctor.

Table 4.10 Estimated age range (in years) of the clinical lead

Estimated age range (in years) of the clinical lead

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25-34	1	.8	.8	.8
	35-44	55	43.7	43.7	44.4
	45-54	62	49.2	49.2	93.7
	55+	8	6.3	6.3	100.0
	Total	126	100.0	100.0	

... *Continued* - Estimated age range of clinical leads
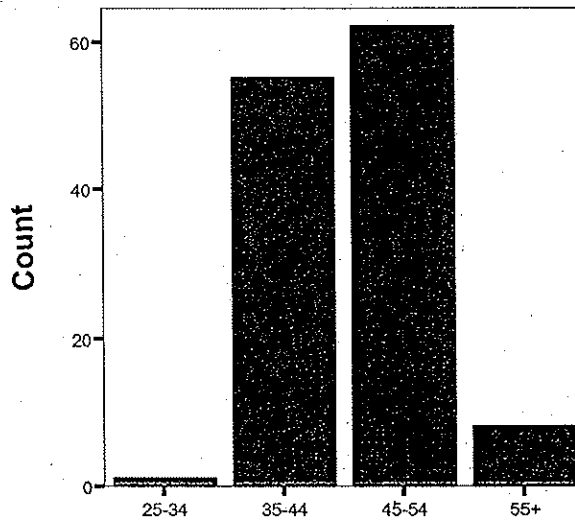
Estimated age range (in years) of the clinical lead

4.5.5 Age and gender of clinical lead

A cross tabulation *(table 4.11)* of the age of the clinical lead against the gender of the clinical lead indicated that the majority of the clinical leads described in the study were male and between the ages of 35 and 54 years.

Table 4.11 Age and gender crosstabulation of clinical lead

LeadAge * LeadGender Crosstabulation

Count

		LeadGender		Total
		Female	Male	
LeadAge	25-34	1	0	1
	35-44	15	40	55
	45-54	12	50	62
	55+	0	8	8
Total		28	98	126

4.5.6 Clinical lead effectiveness

To lead the implementation of change within the ESC programme, each of the 155 Acute NHS Hospital Trusts had five clinical leads. Four of these led sub-groups and one was the overall clinical lead. At regular learning events and monthly meetings the project managers (who became the respondents in the research) reported varied levels of effectiveness of the leads and some commented that the senior lead was not always the most influential or the most effective of the five leads.

A reasonable assumption might be that there were cases where the overall lead (as assessed by the respondent) might not be an effective leader and this might be masked in the results of the research by the leadership ability of the other four leaders who might effect a positive impact on performance. For this reason it was thought to be important to build a question in to the survey which could expose this potential weakness of the study. Thus, the respondents were asked if the overall lead was the most effective of the five clinical leads.

The majority (77.8%) of the respondents thought that the clinical leader was the most effective of all the clinical leads in bringing about change and improvement *(table 4.12)*. Incidentally, it could be argued that this validated the majority of the organisations' decisions to appoint the people that they did as their overall clinical lead of the project. This is also exemplified by one of the free text responses received as part of the completed survey from one of the project managers who stated:

> *"Our clinical lead was a little old fashioned in his methods and was not very informed or knowledgeable about service improvement or project management but he was able to win over some very difficult consultants who tried to stop us designing and making changes"*

> *ESC Project Manager (Respondent)*

It is likely that the best of the clinical leads were selected for the overall lead role because they were either the most experienced or influential of the leads

and this may help them in their leadership role. However this question was not asked and therefore this assumption can not be validated.

Table 4.12 Clinical lead effectiveness

Was/is the person you have described above the most effective/influential of all the clinical leads in helping to bring about change and improvement in the ESC?

		Frequency	Percent	Valid Percent	Percent
Valid	Yes	98	77.8	77.8	77.8
	No	28	22.2	22.2	100.0
	Total	126	100.0	100.0	

4.5.7 Summary of descriptive statistics
Within the demographic variables, there appeared to be no unusual values or obvious errors.

As commented throughout the preceding text, the sample demographics appeared to be proportionally consistent with, and typical of, those of the wider population, i.e., managers and nurses (the respondents) and clinical leads, mostly doctors (those who were assessed) in the NHS (England).

4.6 Outliers
Box plots were used as a method of representing the distribution of the scale variables in the data set (i.e., duration, organisational items and the leadership items) in order to check for outliers. The aim of this was to look for outliers in the data collected from the 44 items - which included both the leadership and performance items (see Leadership Questionnaire Appendix H) - to search for cases that consistently presented as outliers to expose errors that may have

occurred. This is considered to be a very useful way of making comparisons of one or more variables across groups. It offers a pictorial representation of the data distribution. The upper and lower boundaries of the box mark the upper and lower quartiles of the data distribution (Hair, Anderson, Tatham and Black 1998).

Boxplots were generated through SPSS standard menus (*Analyse; Descriptive Statistics; Explore*). Boxplots were the preferred option for the Outliers procedure within the explore menu in SPSS because ticking the Outliers box only provided the five highest and lowest cases for each variable with no indication as to whether these cases were extreme or not. The boxplot is able to indicate the median and the inter-quartile range of the data (Hair, Anderson, Tatham and Black 1998). Two lines extend from each box and cut off where SPSS deems that the data should end. Cases that fall outside the lines are deemed to be outliers, and the row number of the case is shown (Hair, Anderson, Tatham and Black 1998).

It was expected that there would be a few outliers for some of the variables, but it was important to note cases that repeatedly appeared as outliers across several variables.

4.6.1 Outliers - Summary

All the outliers that were generated appeared on - at most - three charts (therefore occurred in - at most - three items). Thus there were no cases apparent that systematically appeared as outliers in a large number of items. At this preliminary stage of the analysis it was not possible to determine the effect that any of the outliers would have on the regression models. Furthermore, the sample size was only 126 cases and removing up to 25 cases, because they were unusual in some items, would reduce the sample size considerably. A reduction in sample size could have had a much more detrimental effect on the accuracy of the regression models than including a number of unusual cases.

Moreover, the main aim of model building was to create models that applied to the range of clinical leads in the sample and by retaining unusual cases the

model would better reflect this wider group. Hence, no outliers were removed from the sample.

4.7 Reliability

Reliability is defined as the, 'extent to which a variable or set of variables is consistent in what it is intended to measure, i.e., a set of two or more indicators measures the same latent construct' (Hair, Anderson, Tatham and Black 1998). A reliable survey is one where responses differ as respondents have different opinions not because the survey is confusing or has multiple interpretations.

The 13 organisational items in the Excel instrument and the 30 items in the LPI instrument were tested for internal consistency using Cronbach's Alpha. Cronbach's Alpha uses split-half reliability to measure the extent to which item responses obtained at the same time correlate highly with each other.

4.7.1 Reliability statistics - Organisational performance items

The Excel scale is designed to measure the Peters and Waterman eight attributes of excellence (Peters and Waterman 1982). The overall construct of corporate excellence, as expressed by the scale, relates to managerial practices that lead to sustained performance. The instrument is validated, has confirmed reliability (Bearden and Netemeyer 1999) and has been widely used by other researchers (Caruana, Pitt and Morris 1995; Brett 2000; Sandbakken 2004). To test the reliability of the scale it was necessary to calculate Cronbach's Alpha for the 13 organisation questions.

Alpha scores were generated in SPSS using *Analyse; Scale; Reliability; Analysis.* Within the Statistics dialog box *Descriptives* for *Item, Scale* and *Scale if item deleted* were checked along with *Inter-item correlations.*

Table 4.13 Cronbach's alpha scores for Sharma Excel scale

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.965	.965	13

Cronbach's Alpha was 0.965 for the 13 data items *(table 4.13)*. This was a very good alpha as the rule of thumb is that alpha should be 0.7 or higher for a set of items to be considered a reliable scale. Hair, Anderson et al (1998), deem the lower limit of acceptability to be .60 to .70). The alpha score obtained should imply that item responses correlated highly with each other. However, it is also important to be aware that the alpha can increase in size when the number of items in a scale increases in which case a high alpha score should be treated with caution as this could suggest a potential weakness in the study. However, as there were only 13 items in the scale this was not considered to be applicable to the Excel scale.

The Item-Total Statistics *(table 4.14)* gave Alpha if Item Deleted figures for each item. These figures are used for refining a scale. An item should be dropped from the scale where the alpha increases significantly when the item is removed. These figures were all very high, but close to the alpha for the instrument as a whole. As there was no sharp increase in alpha for any of the items, this suggested that there were no obvious items for removal. However it remains important to acknowledge that the alpha is high and, consequently, the figures need to be treated with caution.

Table 4.14 Item total statistics

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
The organisation is flexible and quick to respond to problems	80.60	438.481	.710	.611	.965
The organisation is flexible towards people, but administers discipline when necessary	80.79	441.754	.676	.571	.965
We have an efficient management team	80.59	427.940	.794	.675	.963
The organisation's values are the driving force behind our organisation	80.70	415.604	.861	.806	.961
In this organisation we instil a value system in all our employees	81.04	419.430	.852	.812	.961
It is the belief of management in this organisation that its people are of utmost importance of the organisation	80.36	416.599	.856	.866	.961
The organisation truly believes in its people	80.49	417.196	.889	.897	.960
In this organisation we encourage employees to develop new ideas	80.34	418.611	.841	.770	.962
This organisation believes in experimenting with new services and ideas	80.48	425.452	.820	.772	.962
In this organisation the management creates an atmosphere that encourages creativity and innovation	80.94	407.301	.908	.859	.960
The organisation believes that listening to what patients/customers have to say is a good skill to have	80.06	427.189	.790	.686	.963
We provide personalised attention to all our patients/customers	80.79	438.437	.709	.550	.965
This organisation delegates authority efficiently	81.20	420.672	.803	.679	.963

Nevertheless, the high alpha scores can, to some extent, be vindicated by supporting theory. It is interesting to note for example that other researchers have found similar results using the Excel scale. Caruana (1995) and Sandbakken (2004) both independently reported a Cronbach's alpha of .92 in their results.

4.7.2 Alpha scores for LPI

The Leadership Practices Inventory (LPI) is a compilation of thirty items designed to measure five leadership practices and act as an overall scale for the construct of transformational leadership. Each of the five practices comprises six items designed to measure one of the five practices. The names given to each five leadership practices are: 'Model the way', 'Inspire a shared vision', 'Challenge the process', 'Enable others to act', and 'Encourage the heart'. The overall measure and each of the five practices were the independent variables for the research and as such were reflected in hypotheses H1 to H6.

Alpha scores were generated for each of the five leadership practices separately and these are shown in tables 4.15 through to 4.19.

Table 4.15 Alpha scores for 'Model the Way' and Alpha if item deleted

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.911	.914	6

continued over page…

Continued …. Alpha scores for 'Model the Way' and Alpha if item deleted

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Sets a personal example of what he/she expects of others	31.46	105.594	.784	.663	.891
Spends time and energy making certain that the people he/she works with adhere to the agreed principles and standards	32.10	107.319	.750	.619	.896
Follows through on promises and commitments he/she makes	31.48	111.244	.740	.582	.898
Asks for feedback on how his/her actions affect other people's performance	33.67	104.000	.677	.544	.908
Builds consensus around a common set of values for running the organisation	32.51	100.284	.842	.721	.882
Is clear about his/her philosophy of leadership	32.08	101.434	.747	.574	.897

Table 4.16 Alpha scores for 'Shared Vision' and Alpha if item deleted

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.958	.959	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Talks about future trends that will influence how the work gets done	32.72	138.218	.826	.729	.956
Describes a compelling image of what the future could be like	33.33	127.373	.880	.808	.949
Appeals to others to share an exciting dream of the future	33.72	126.154	.904	.867	.947
Shows others how their long-term interests can be realised by enlisting in a common vision	34.03	129.391	.877	.825	.950
Paints the "big picture" of what we aspire to accomplish	33.30	126.708	.919	.849	.945
Speaks with genuine conviction about the purpose of the work	32.70	130.052	.817	.684	.957

Table 4.17 Alpha scores for 'Challenge Process' and Alpha if item deleted

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.939	.941	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Seeks out challenging opportunities that test his/her own skills and abilities	31.80	120.432	.825	.710	.927
Challenges people to try out new and innovative ways to do their work	31.45	119.162	.880	.788	.921
Searches outside the formal boundaries of the organisation for innovative ways to improve what we do	31.84	119.623	.872	.780	.922
Asks, "what can we learn?" when things don't go as expected	31.79	116.389	.811	.668	.929
Makes certain that achievable goals are set, concrete plans are made and measurable milestones are established for the projects in the ESC programme	32.44	120.392	.721	.575	.941
Experiments and takes risks, even when there is a chance of failure	31.87	118.998	.821	.717	.928

Table 4.18 Alpha scores for 'Enable others to act' and Alpha if item deleted

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.926	.926	6

Continued over page...

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Develops co-operative relationships among the people he/she works with	35.05	94.302	.829	.738	.907
Actively listens to diverse points of view	35.05	93.822	.839	.745	.906
Treats others with dignity and respect	34.18	98.838	.830	.740	.908
Supports the decisions that people make on their own	35.10	97.709	.848	.746	.905
Gives people a great deal of freedom and choice in deciding how to do their work	34.73	108.999	.627	.457	.932
Ensures that people grow in their jobs by learning new skills and developing themselves	35.45	99.466	.754	.629	.917

Table 4.19 Alpha scores for 'Encourage Heart' and alpha if item deleted

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.951	.951	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Praise people for a job well done	31.94	121.317	.842	.766	.943
Makes it a point to let people know about his/her confidence in their abilities	32.59	120.660	.835	.723	.944
Makes sure that people are creatively rewarded for their contributions to the success of projects	32.91	120.080	.854	.762	.941
Publicly recognises people who exemp commitment to shared values	32.25	117.791	.852	.740	.942
Finds ways to celebrate accomplishme	33.13	122.848	.821	.736	.945
Gives the members of the team lots of appreciation and support for their contributions	32.29	116.817	.890	.818	.937

The alphas for each LPI were all very high, all being above 0.9, suggesting that the scale for the five practices was a reliable scale. This concurs with the internal reliability reported by Kouzes and Posner, (2003), who state that all five leadership practices have internal reliability scores (as measured statistically) that are above .85 level. They state that tests showed no significant social desirability bias (Kouzes and Posner 2003). Similarly Sandbakken, (2004) reported high alphas in his study of leadership practices and organisational performance.

The comparative table shown in table 4.20 presents the comparative findings of Kouzes and Posner (2003), Sandbakken (2004) and the findings from this research. It is possible that high alphas could be due to there being too many items in each scale. Individual alphas were checked after deleting items. After each item was deleted the alphas were found to be very similar to the overall alpha for each scale. This suggested that there was no evidence to support removing individual items from any of the scales.

Table 4.20 Comparative reliability Cronbach's Alpha scores for the five LPI practices

Leadership Practice	Kouzes & Posner, 2003	Sandbakken 2004	Castille 2006
1. Challenging the process	.89	.89	.93
2. Inspiring a shared vision	.92	.90	.95
3. Enabling others to act	.88	.89	.92
4. Modelling the way	.88	.85	.91
5. Encouraging the heart	.92	.87	.95

Finally, the alphas for all five practices together as an overall leadership scale for transformational leadership were computed *(questions 14 - 43 on the instrument Appendix H)*. These are shown in table 4.21 on the following page.

Table 4.21 Alpha scores for items 14 - 43 and Alpha if item deleted

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.983	.983	30

(...continued – Alpha scores for items 14-43 and Alpha if item deleted)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Sets a personal example of what he/she expects of others	190.60	3340.147	.764	.787	.982
Talks about future trends that will influence how the work gets done	190.56	3349.225	.784	.843	.982
Seeks out challenging opportunities that test his/her own skills and abilities	191.36	3313.031	.843	.821	.982
Develops co-operative relationships among the people he/she works with	190.93	3310.755	.823	.833	.982
Praise people for a job well done	190.71	3324.878	.806	.849	.982
Spends time and energy making certain that the people he/she works with adhere to the agreed principles and standards	191.23	3338.211	.778	.774	.982
Describes a compelling image of what the future could be like	191.16	3309.559	.793	.853	.982
Challenges people to try out new and innovative ways to do their work	191.01	3311.656	.870	.883	.982
Actively listens to diverse points of view	190.93	3312.899	.814	.827	.982
Makes it a point to let people know about his/her confidence in their abilities	191.36	3320.295	.806	.779	.982
Follows through on promises and commitments he/she makes	190.62	3361.630	.759	.751	.982
Appeals to others to share an exciting dream of the future	191.56	3290.201	.860	.911	.982
Searches outside the formal boundaries of the organisation for innovative ways to improve what we do	191.40	3315.121	.859	.865	.982
Treats others with dignity and respect	190.06	3364.524	.708	.826	.983
Makes sure that people are creatively rewarded for their contributions to the success of projects	191.68	3316.794	.824	.846	.982
Asks for feedback on how his/her actions affect other people's performance	192.80	3302.560	.779	.770	.982
Shows others how their long-term interests can be realised by enlisting in a common vision	191.87	3296.022	.873	.894	.982
Asks, "what can we learn?" when things don't go as expected	191.35	3283.413	.862	.852	.982
Supports the decisions that people make on their own	190.98	3338.752	.802	.835	.982
Publicly recognises people who exemplify commitment to shared values	191.02	3293.031	.867	.851	.982
Builds consensus around a common set of values for running the organisation	191.64	3292.247	.884	.879	.982
Paints the "big picture" of what we aspire to accomplish	191.13	3295.510	.863	.907	.982
Makes certain that achievable goals are set, concrete plans are made and measurable milestones are established for the projects in the ESC programme	191.99	3317.960	.739	.747	.983
Gives people a great deal of freedom and choice in deciding how to do their work	190.61	3421.856	.518	.585	.983
Finds ways to celebrate accomplishments	191.90	3339.597	.761	.796	.982
Is clear about his/her philosophy of leadership	191.21	3314.810	.749	.773	.983
Speaks with genuine conviction about the purpose of the work	190.53	3304.619	.804	.838	.982
Experiments and takes risks, even when there is a chance of failure	191.42	3314.726	.808	.795	.982
Ensures that people grow in their jobs by learning new skills and developing themselves	191.33	3317.264	.845	.791	.982
Gives the members of the team lots of appreciation and support for their contributions	191.06	3302.860	.845	.871	.982

4.8 Examining the relationship between the LPI and Excel score prior to regression

To check for evidence of a linear relationship between the dependent variable and the independent variables, which is an assumption of linear regression, the relationship between each of the five LPI scores and the Excel score was examined using scatterplots. This was also carried out to check for outliers. The scatterplots were generated through *Graph; Interactive; Scatterplot.* Figure 4.1 shows the scatterplots generated to explore the relationship between the LPI and Excel constructs of leadership and performance.

Figure 4.1   Scatter plots to explore the relationship between the constructs of leadership and performance
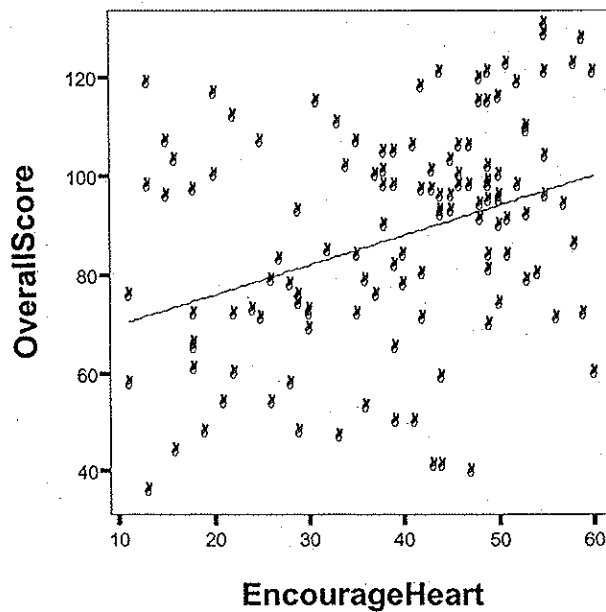
(continued from previous page)

Scatter plots to explore the relationship between the constructs of leadership and performance
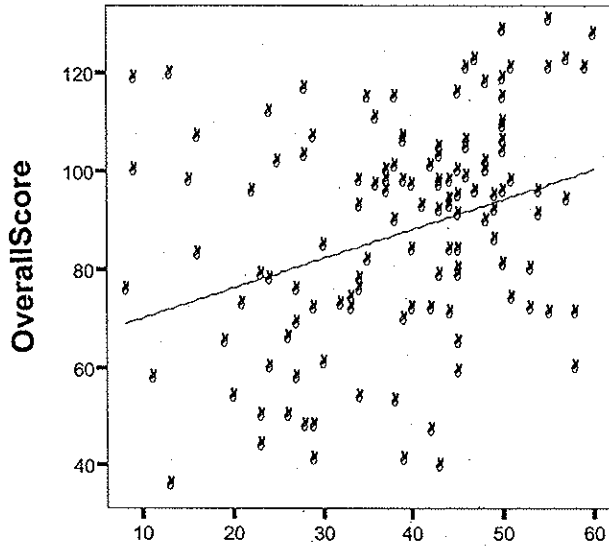
ModelWay
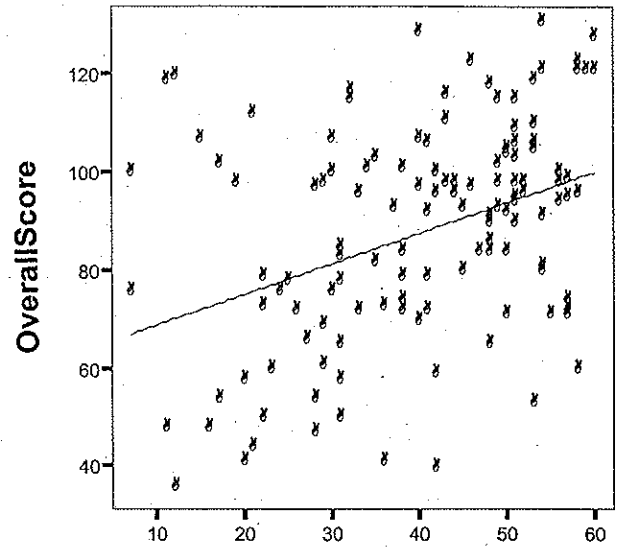
SharedVision
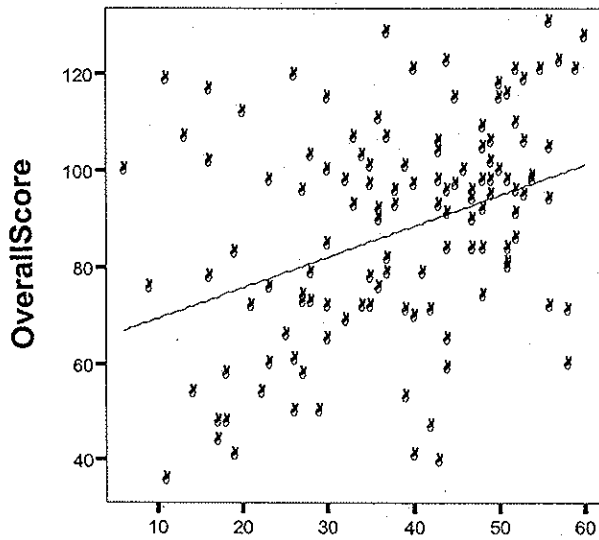
ChallengeProcess
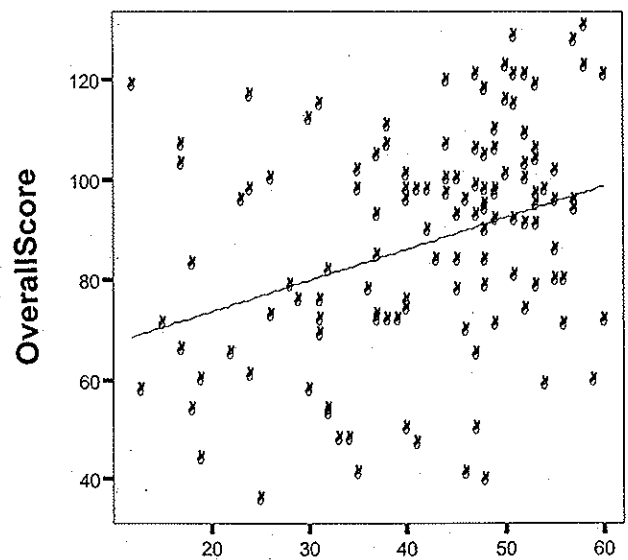
EnableOthers

The scatterplots *(figure 4.1)* show that there was some evidence of linear relationships, although somewhat moderate, between the LPI and Excel scores. There were no extreme points in any of the scatterplots therefore there was no evidence of any significant outliers at this stage of the analysis.

4.9 Regression

Regression analysis was the statistical technique used to analyse the relationship between the dependent variable (performance) and the five leadership practices – the independent variables. This is an appropriate technique as the main objective of multiple regression analysis is to use the independent variables whose values are known to predict the single dependent value (Hair, Anderson, Tatham and Black 1998).

4.10 Regression with five scales

The first regression analysis was carried out using each of the five practices of leadership as independent variables in order to predict the Excel score (dependent variable). In order to force each IV into the model an enter method was used.

The regression was run through: *Analyse; Regression; Linear.* Descriptives (to check correlations), Collinearity diagnostics (to check for evidence of multicollinearity) and outliers outside two standard deviations (to check for extreme cases) were requested from the statistics dialog box. A histogram of residuals was requested to check for normality of residuals together with a scatterplot of residuals against predicted values to check for heteroscedasticity of residuals *(not shown)*. The statistics for the regression analysis are summarised in table 4.22 on the following page.

Table 4.22 Summary of statistics for regression analysis with five scales

Correlations

	OverallScore	ModelWay	SharedVision	Challenge Process	EnableOthers	Encourage Heart
OverallScore	1.000	.331	.379	.373	.337	.355
ModelWay	.331	1.000	.902	.912	.831	.842
SharedVision	.379	.902	1.000	.914	.716	.775
ChallengeProces	.373	.912	.914	1.000	.809	.843
EnableOthers	.337	.831	.716	.809	1.000	.881
EncourageHeart	.355	.842	.775	.843	.881	1.000

(In all charts and tables the **overall score** pertains to the combined score for the 5 LPI practices. This is designed to measure the overall construct of transformational leadership)

All of the independent variables (IVs) had correlations between 0.33 and 0.38 with the DV *(table 4.22)*. Pallant (2002) suggests that positive correlation is evident at the level of .3. Therefore each LPI practice had some positive correlation with the Excel score implying that each of the IVs may have been useful in predicting the DV (Excel). 'Shared Vision' and 'Challenge Process' had the highest correlations with the dependent variable.

One area of concern however was the high correlations between each of the IVs *(table 4.22)*. Many of the correlations were greater than 0.9 possibly indicating multicollinearity. Multicollinearity represents the degree to which any variable's effect can be predicted or accounted for by the other variables in the analysis (Hair, Anderson, Tatham and Black 1998). Potential multicollinearity is suggested where the correlation is above values between .7 (Tabachnick and Fidell 1996) and .9 (Hair, Anderson, Tatham and Black 1998; Pallant 2002). If some of the five LPI practices were measuring almost the same concept this would cause the regression model to become unstable.

Table 4.23 R square values for regression analysis with five scales

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.410[a]	.168	.134	20.740

a. Predictors: (Constant), EncourageHeart, SharedVision, EnableOthers, ModelWay, ChallengeProcess

b. Dependent Variable: OverallScore

R Square values were calculated and this showed that R Square was 0.168 indicating that almost 17% of the variation in the Excel score could be accounted for by the leadership practices (table 4.23). The adjusted R Square reduces R Square based on the number of IVs and the number of cases in the model. The R Square was reduced somewhat as there were several IVs in the model (table 4.23).

The ANOVA (table 4.24) tests whether there is a significant relationship between the DV and the IVs. The significance figure was 0.00, well below the 0.05 significance level, therefore the model was significant overall.

Table 4.24 Anova vales for regression analysis with five scales

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10434.621	5	2086.924	4.852	.000^a
	Residual	51616.586	120	430.138		
	Total	62051.206	125			

a. Predictors: (Constant), EncourageHeart, SharedVision, EnableOthers, ModelWay, ChallengeProcess

b. Dependent Variable: OverallScore

The coefficients table (table 4.25) gives the coefficients needed to build the regression model and also tests that each IV is significant in the model.

Table 4.25 Coefficients for the five constructs of leadership

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	59.235	7.049		8.403	.000		
	ModelWay	-.655	.463	-.358	-1.413	.160	.108	9.272
	SharedVision	.659	.389	.403	1.696	.092	.123	8.135
	ChallengeProces	.177	.440	.103	.401	.689	.105	9.548
	EnableOthers	.295	.369	.157	.801	.425	.181	5.536
	EncourageHeart	.204	.342	.120	.598	.551	.172	5.808

a. Dependent Variable: OverallScore

The regression equation was:

59.235 – 0.655*Modelway + 0.659*Sharedvision + 0.177*Challengeprocess + 0.295 *Enableothers + 0.204*Encourageheart.

The results shown in table 4.25 indicate that none of the IVs were significant as all significant values were above 0.05. Furthermore the coefficient for ModelWay was negative even though the correlation between ModelWay and the DV was positive. Both of these were a strong indication of multicollinearity.

Collinearity is the relationship between two variables and multicollinearity is the relationship between more than two. Variables exhibit complete collinearity if their correlation coefficient is 1, and a complete lack of collinearity if their correlation coefficient is 0 (Hair, Anderson, Tatham and Black 1998). The condition index is the measure of the relative amount of variance associated with an eigenvalue so that a large condition index indicates a high degree of collinearity. Eigenvalues close to zero would indicate multicollinearity.

The Collinearity Diagnostics table *(table 4.26)* shows two Eigenvalues close to zero and the last conditioning index was above 30 (although only one of the associated variance proportions was above 0.5). Overall there was a great deal of evidence to suggest multicollinearity amongst the IVs.

Table 4.26 Collinearity diagnostics for regression analysis with five scales

Collinearity Diagnostics

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | | |
				(Constant)	ModelWay	SharedVision	Challenge Process	EnableOthers	Encourage Heart
1	1	5.870	1.000	.00	.00	.00	.00	.00	.00
	2	.073	8.940	.73	.00	.01	.01	.00	.01
	3	.032	13.630	.08	.01	.13	.01	.12	.17
	4	.011	23.405	.11	.16	.04	.00	.40	.72
	5	.008	26.737	.01	.34	.08	.80	.03	.07
	6	.006	30.845	.07	.49	.74	.17	.46	.04

a. Dependent Variable: OverallScore

Multicollinearity is a problem in regression models because it causes the model to become unstable, i.e., deleting a case or variable can dramatically alter the regression coefficients. For this reason it was necessary to look at ways of avoiding multicollinearity by building models that did not include pairs of highly correlated variables, or by running a factor analysis prior to running the regression.

4.10.1 Analysis of residuals

Table 4.27 Casewise diagnostics

Casewise Diagnostics[a]

Case Number	Std. Residual	OverallScore	Predicted Value	Residual
2	2.375	118	68.74	49.264
57	2.040	128	85.69	42.309
90	-2.259	40	86.86	-46.860
111	-2.466	39	90.13	-51.134

a. Dependent Variable: OverallScore

Standardised residuals are residuals (the difference between the observed and expected values) divided by the standard deviation of all residuals. The size of the standardised residuals is in standard deviation units. The casewise diagnostics table *(table 4.27)* lists all standardised residuals that are more than two standard deviations, i.e., cases that are more than two standard deviations from the regression line. If the residuals are normally distributed it is reasonable to expect 5% of cases to be more than two standard deviations from the regression line.

Four cases had standardised residuals greater than two or below minus two which is less than 5% of the sample. No cases were greater than three standard deviations from the mean. Therefore no extreme cases needed to be considered for removal from the model.

Figure 4.2 Standard residuals for the five constructs of leadership

Histogram

Dependent Variable: OverallScore

Mean = -3.98E-16
Std. Dev. = 0.98
N = 126
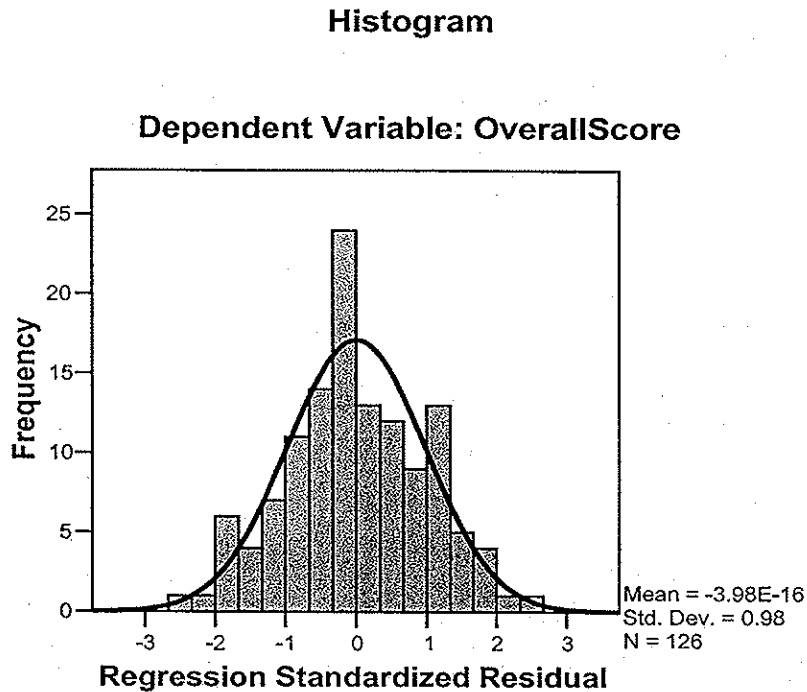
One of the assumptions of linear regression is that the residuals need to be normally distributed with a mean of 0. The histogram of standardised residuals can be used to check this assumption and is shown in figure 4.2. The residuals from the five LPI model deviated slightly from normality (they did not fit perfectly under the normal curve as the histogram was not symmetrical or bell-shaped). It was therefore deemed necessary to try and improve the normality of residuals by trying out different regression models.

An assumption of linear regression is homogeneity of variance that means the variation of residuals should be constant for all values of the dependent variable. In order to check for this a scatterplot of standardised residuals against standardised predicted values should not show a fan shape. There was no fan shape *(figure 4.3)* so the assumption of homogeneity of variance was met.

Figure 4.3 Standard residuals for the five constructs of leadership (scatterplot)

Scatterplot

Dependent Variable: OverallScore
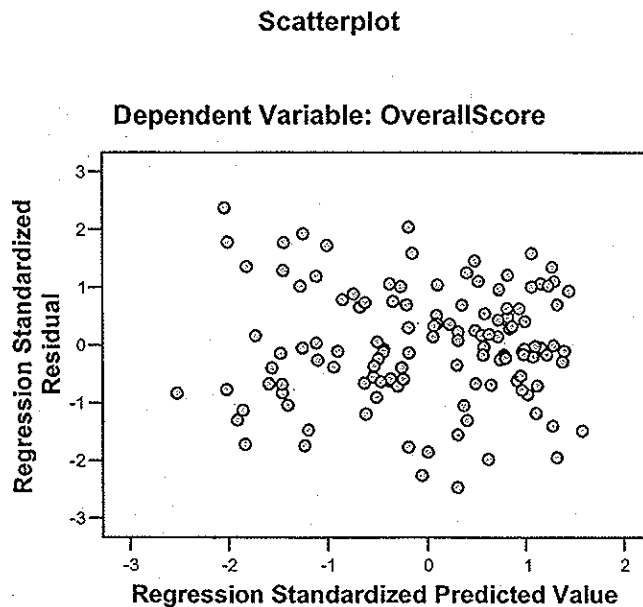
4.10.2 Summary of regression with the five LPI practices

Although the regression model with five LPI practices had an R square of almost 17% there were a number of warning signs to challenge the robustness of this model. Although each of the five LPI practices showed some positive correlation with the Excel score - implying that the IVs may have been useful in predicting the DV (Excel) – many of the correlations between each of the IVs *(table 4.22)* were greater than 0.9 thus suggesting strong evidence of multicollinearity i.e., above .7 (Tabachnick and Fidell 1996) to .9 (Hair, Anderson, Tatham and Black 1998; Pallant 2002). Furthermore there was also some deviation from normality in the residuals from the five LPI practices model in that they deviated slightly from normality.

For these reason it was considered necessary to explore further models to produce a more robust model.

4.11 Stepwise regression with five LPI

The previous model had strong indications of multicollinearity implying that several IVs were measuring very similar things. Stepwise is a method of selecting variables for inclusion in the regression model that starts by selecting

the best predictor of the dependent variable (Hair, Anderson, Tatham and Black 1998).

By running a stepwise model, SPSS would only choose those variables that would significantly predict the Excel score and hence would deal with the issue of multicollinearity.

In stepwise regression SPSS looks at a pool of possible IVs and selects the best predictor variable (this will be both significant at predicting the DV and has the highest correlation with the DV). Once the first IV is in the model the pool of possible IVs is examined again to see if any further IVs would be significant if brought into the model. If any IVs are significant the best predictor variable (i.e., the IV with the highest partial correlation with the DV) is added to the model. This process continues until no more possible IVs are significant. Furthermore, if an IV entered early into the model becomes non-significant after other IVs have been added, this IV is removed from the model.

The regression was set up in SPSS in the same way as for the previous regression except that the method used was *Stepwise* and the *R Squared Change* check box was ticked within the *Statistics* dialog box *(table 4.28)*.

Table 4.28 Stepwise regression with five scales

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Shared Vision	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: OverallScore

The only variable to be entered into the model was Shared Vision.

Table 4.29 Model summary for stepwise regression with shared vision

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.379[a]	.144	.137	20.700	.144	20.816	1	124	.000

a. Predictors: (Constant), SharedVision
b. Dependent Variable: OverallScore

The R-Square for the regression model was 0.144 (table 4.29) implying that Shared Vision alone accounted for 14.4% of the variation of Excel score. Although this was a decrease in 2.8% from the previous model, this model could constitute an improvement overall if the issues raised in the previous model had been addressed.

Table 4.30 Anova scores for stepwise regression with shared vision

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8919.256	1	8919.256	20.816	.000[a]
	Residual	53131.951	124	428.483		
	Total	62051.206	125			

a. Predictors: (Constant), SharedVision
b. Dependent Variable: OverallScore

The ANOVA (table 4.30) had a significance value below 0.05 implying that the model was significant overall.

Table 4.31 Coefficients for stepwise regression with shared vision

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	62.559	5.741		10.896	.000		
	SharedVision	.621	.136	.379	4.562	.000	1.000	1.000

a. Dependent Variable: OverallScore

The coefficients *(table 4.31)* indicated that Shared Vision was significant in the model. It gave the regression equation as:

Excel score = 62.559 + Shared Vision * 0.621

The coefficient of Shared Vision implied that a one unit increase in Shared Vision resulted in a 0.621 increase in Excel score.

Table 4.32. Excluded variables from stepwise regression

Excluded Variables

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	ModelWay	-.061[a]	-.318	.751	-.029	.186	5.381	.186
	ChallengeProc	.160[a]	.778	.438	.070	.164	6.080	.164
	EnableOthers	.134[a]	1.124	.263	.101	.487	2.053	.487
	EncourageHea	.154[a]	1.177	.241	.106	.400	2.501	.400

[a]·Predictors in the Model: (Constant), SharedVision

[b]·Dependent Variable: OverallScore

The excluded variables table *(table 4.32)* provides information about the variables not in the model at each step of the regression analysis. There was only one step in the stepwise regression so information was given about the remaining four LPI once Shared Vision had been included in the model. Once Shared Vision had been included, no LPI would have been significant if it had been added to the model (as all significance values were above 0.05). The partial correlations (the correlation between each LPI and Excel score left after the correlation between Excel score and Shared Vision has been factored out) were very low. This implied that once Shared Vision had been added to the model the remaining LPI had very little to offer in terms of predictive power.

Table 4.33 Collinearity diagnostics for overall performance score

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	SharedVision
1	1	1.947	1.000	.03	.03
	2	.053	6.062	.97	.97

a. Dependent Variable: OverallScore

The Collinearity table 4.33 shows that there were no Eigenvalues close to zero and the conditioning index values were well below 30. Therefore this model showed no evidence of multicollinearity.

4.11.1 Analysis of residuals

Less than 5% of cases had standardised residuals greater than two or less than minus two and there were no standardised residuals whose magnitude was greater than three *(table 4.34)*. Therefore there were no extreme cases that needed to be considered for removal from the model.

Table 4.34 Analysis of residuals

Casewise Diagnostics[a]

Case Number	Std. Residual	OverallScore	Predicted Value	Residual
2	2.348	118	69.39	48.613
51	2.367	119	70.01	48.992
73	-2.100	52	95.46	-43.460
90	-2.169	40	84.91	-44.907
111	-2.398	39	88.63	-49.631

a. Dependent Variable: OverallScore

Figure 4.4 Residuals for stepwise regression

Histogram

Dependent Variable: OverallScore
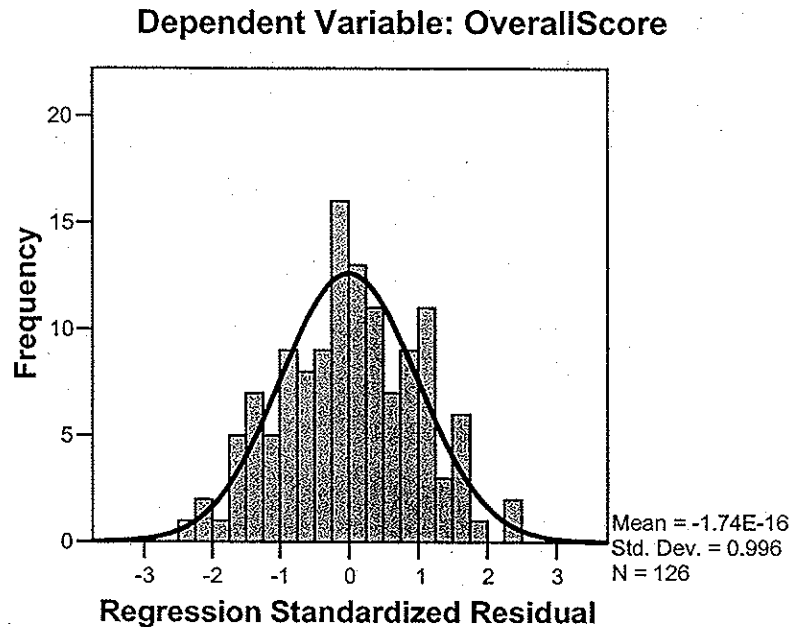
The histogram of residuals to assess for distribution against normality *(figure 4.4)* showed a better fit against the normal curve than the previous model. Although the fit was not perfect, the histogram was more symmetric and bell-shaped. Therefore the residuals were closer to a normal distribution than the previous model.

The scatterplot of standardised residuals against standardised predicted values did not show a fan shape *(figure 4.5)* therefore the assumption of homogeneity of variance was met.

Figure 4.5 Residuals for stepwise regression (scatterplot)

Dependent Variable: OverallScore
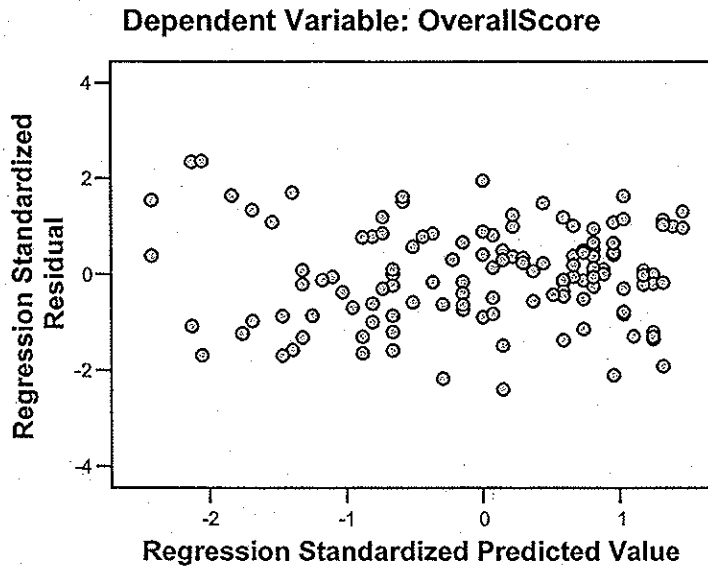
4.11.2 Summary of stepwise regression

The only significant IV to be included was 'Shared vision', indicating that this variable had the highest correlation with organisational performance. Although the R Square had fallen by 2.4%, down to 14.4% it was felt that the model was an improvement on the previous regression as there was no evidence of multicollinearity and the residuals fitted a normal distribution more closely.

4.12 Factor analysis

Factor analysis is a statistical approach that can be used to analyse interrelationships among variables and explain these in terms of their common underlying dimensions – or factors (Hair, Anderson, Tatham and Black 1998). The multicollinearity found within the IVs in the initial regression indicated that factor analysis was necessary. The main aim of factor analysis is to reduce the number of variables in the data set whilst retaining all the dimensions of the data. It addresses the problem of correlations among a large number of variables, as typically found in questionnaire responses, by defining a set of common factors (Hair, Anderson, Tatham and Black 1998).

Factor analysis considers patterns of responses, groups them and helps achieve parsimony (reducing excess) and hence finds a more simple solution. It does this by creating linear combinations of variables (factors) to be used in place of the IVs. The analyst may specify that the factors be uncorrelated with each other. Factor analysis was therefore considered appropriate for dealing with the multicollinearity in the IVs as it would enable the 30 items making up the LPI to be condensed into a number of uncorrelated factors. The newly created factors could then be used as IVs in the regression model in place of the LPI.

There are two basic models available to obtain factor solutions. These are common factor analysis and component analysis. Selection is based on the objectives of the factor analysis and prior knowledge about the variance in the variables (Hair, Anderson, Tatham and Black 1998). There remains considerable debate over which factor model is the more appropriate (Hair, Anderson, Tatham and Black 1998) but, in general, the component factor model is appropriate when the primary concern is about prediction, or the minimum number of factors needed to account for the maximum portion of the variance represented in the original set of variables. These issues were the main concerns and therefore component analysis appeared conducive with the analytical aims. Moreover, unlike common factor analysis, component analysis is also able to determine a single unique solution.

4.12.1 Principle Components Analysis (PCA)

Principle Components Analysis (PCA) *(SPSS refers to factors as 'components')* was the chosen method of factor analysis used to handle the multicollinearity in the data.

The factor analysis was carried out in SPSS through: *Analyse; Data; Reduction; Factor.* The 30 items were used as the input variables in the list box. *KMO and Bartlett's test of sphericity* was checked in the *descriptives* dialog box. Within the *Extraction* dialog box the method chosen was *Principle Components*, within the *Rotation* dialog box the *Varimax* rotation was checked. Within the *Scores* dialog box the check box was ticked to request factor scores being saved.

Finally within the *Options* dialog box, coefficients were requested to be sorted by size and to suppress absolute values below 0.5.

4.12.2. Kaiser-Meyer-Olkin and Bartlett's test

Kaiser-Meyer-Olkin (KMO) measures the proportion of variance of the variables that is common variance. The KMO measure was 0.961 implying that 96% of the variance in the 30 items was common variance *(table 4.35)*. This would imply that the 30 items were well suited to factor analysis. The Kaiser-Meyer-Olkin measure of sample adequacy value (KMO) should ideally be above .6 or .7 for a value/item to be included in the factor analysis (Pallant 2002). As shown in table 4.36, a KMO value of .961 conforms to the criteria set out by Pallant (2002).

Bartlett's test refers to the null hypotheses that the correlation matrix is the identity matrix (i.e., that there is no shared variance in the items). The significance value was well below 5% so the null hypothesis was rejected. It could therefore be assumed that shared variation existed in the data and this justified the need to carry out PCA.

Table 4.35 KMO and Bartlett's test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.961
Bartlett's Test of Sphericity	Approx. Chi-Square	4675.905
	df	435
	Sig.	.000

Tables 4.36 through to 4.38 on the following pages show the results of the Principle Components Analysis.

Table 4.36 Communalities

Communalities

	Initial	Extraction
14: Sets a personal example of what he/she expects of others	1.000	.615
15: Talks about future trends that will influence how the work gets done	1.000	.745
16: Seeks out challenging opportunities that test his/her own skills and abilities	1.000	.754
17: Develops co-operative relationships among the people he/she works with	1.000	.743
18: Praise people for a job well done	1.000	.777
19: Spends time and energy making certain that the people he/she works with adhere to the agreed principles and standards	1.000	.687
20: Describes a compelling image of what the future could be like	1.000	.794
21: Challenges people to try out new and innovative ways to do their work	1.000	.838
22: Actively listens to diverse points of view	1.000	.764
23: Makes it a point to let people know about his/her confidence in their abilities	1.000	.710
24: Follows through on promises and commitments he/she makes	1.000	.615
25: Appeals to others to share an exciting dream of the future	1.000	.829
26: Searches outside the formal boundaries of the organisation for innovative ways to improve what we do	1.000	.832
27: Treats others with dignity and respect	1.000	.784
28: Makes sure that people are creatively rewarded for their contributions to the success of projects	1.000	.769
29: Asks for feedback on how his/her actions affect other people's performance	1.000	.649
30: Shows others how their long-term interests can be realised by enlisting in a common vision	1.000	.828
31: Asks, "what can we learn?" when things don't go as expected	1.000	.775
32: Supports the decisions that people make on their own	1.000	.806
33: Publicly recognises people who exemplify commitment to shared values	1.000	.777
34: Builds consensus around a common set of values for running the organisation	1.000	.812
35: Paints the "big picture" of what we aspire to accomplish	1.000	.874
36: Makes certain that achievable goals are set, concrete plans are made and measurable milestones are established for the projects in the ESC programme	1.000	.589
37: Gives people a great deal of freedom and choice in deciding how to do their work	1.000	.532
38: Finds ways to celebrate accomplishments	1.000	.677
39: Is clear about his/her philosophy of leadership	1.000	.683
40: Speaks with genuine conviction about the purpose of the work	1.000	.782
41: Experiments and takes risks, even when there is a chance of failure	1.000	.680
42: Ensures that people grow in their jobs by learning new skills and developing themselves	1.000	.738
43: Gives the members of the team lots of appreciation and support for their contributions	1.000	.791

Extraction Method: Principal Component Analysis.

4.12.3 Communalities

Communalities represent the proportion of variance in a variable accounted for by the factors. Variables with small communalities (say 0.2 or below) would have very little in common with the other variables and would need to be removed from the analysis. However, the communalities for all questions were a good size *(table 4.36)* and this justified the inclusion of all variables in the analysis.

Table 4.37 Total variance explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	20.155	67.184	67.184	20.155	67.184	67.184	12.221	40.737	40.737
2	2.093	6.977	74.161	2.093	6.977	74.161	10.027	33.425	74.161
3	.918	3.061	77.223						
4	.759	2.530	79.752						
5	.624	2.080	81.833						
6	.614	2.047	83.880						
7	.495	1.649	85.529						
8	.455	1.518	87.047						
9	.403	1.343	88.390						
10	.370	1.232	89.622						
11	.340	1.135	90.757						
12	.295	.984	91.741						
13	.266	.886	92.627						
14	.239	.797	93.424						
15	.237	.789	94.213						
16	.196	.653	94.866						
17	.171	.571	95.437						
18	.169	.563	96.000						
19	.154	.513	96.513						
20	.144	.481	96.994						
21	.134	.447	97.441						
22	.126	.420	97.861						
23	.114	.379	98.240						
24	.099	.331	98.570						
25	.089	.295	98.866						
26	.086	.285	99.151						
27	.076	.252	99.403						
28	.069	.229	99.631						
29	.060	.202	99.833						
30	.050	.167	100.000						

Extraction Method: Principal Component Analysis.

The Eigenvalues shown in table 4.37 correspond to the amount of variance accounted for by a factor. Only those factors which have latent roots or Eigenvalues greater than 1 are considered significant (Hair, Anderson, Tatham

and Black 1998). An eigenvalue of one shows that a factor explains the same amount of variance (or information) as one variable. In the analysis, factors were dropped if their Eigenvalues were below one. This is because these factors represented less variance than was contained in one variable; hence they were doing less work in terms of expressing information than one variable.

Two factors were retained in this solution. Factor 1 initially explained 67% of the variance in the original 30 items whereas factor 2 explained 7% of the variance (table 4.37). This showed that factor 1 was doing much more work in terms of explanation than factor 2. Overall, factors 1 and 2 together accounted for 74% of the variance in the original 30 items (table 4.37). This meant that in reducing the number of variables from 30 to two, almost three quarters of the original variance could be retained. Therefore the PCA did not lend support to Kouzes and Posner's five-factor solution.

4.12.4 Factor rotation

An important next step in interpreting the factor solution was factor rotation. Unrotated factor solutions extract factors in the order of their importance. Rotation redistributes the variance from earlier factors to later ones, reducing ambiguities and achieving a simpler, theoretically more meaningful factor pattern (Hair, Anderson, Tatham and Black 1998).

Orthogonal rotational approaches are more commonly available in computer software packages and are better developed than oblique methods which are not as widely used (Hair, Anderson, Tatham and Black 1998). A varimax (orthogonal) rotation was applied to the factor solution in order to allow the factors to be more easily interpreted (table 4.38). Although the quartimax solution is analytically simpler than the varimax solution, varimax gives a clearer separation of the factors and has proved very successful as an analytic approach to obtaining an orthogonal rotation of factors (Hair, Anderson, Tatham and Black 1998).

Table 4.38 shows the loadings after the rotation had been applied. A consequence of the rotation was that the variance explained by each factor was more equally distributed (41% for factor 1 and 33% for factor 2).

Table 4.38 Interpreting the factors (rotated component matrix)

Rotated Component Matrix

	Component	
	1	2
35: Paints the "big picture" of what we aspire to accomplish	.874	
20: Describes a compelling image of what the future could be like	.852	
40: Speaks with genuine conviction about the purpose of the work	.834	
26: Searches outside the formal boundaries of the organisation for innovative ways to improve what we do	.832	
25: Appeals to others to share an exciting dream of the future	.825	
21: Challenges people to try out new and innovative ways to do their work	.825	
15: Talks about future trends that will influence how the work gets done	.814	
30: Shows others how their long-term interests can be realised by enlisting in a common vision	.807	
39: Is clear about his/her philosophy of leadership	.778	
19: Spends time and energy making certain that the people he/she works with adhere to the agreed principles and standards	.750	
34: Builds consensus around a common set of values for running the organisation	.747	.504
16: Seeks out challenging opportunities that test his/her own skills and abilities	.736	
41: Experiments and takes risks, even when there is a chance of failure	.655	.502
36: Makes certain that achievable goals are set, concrete plans are made and measurable milestones are established for the projects in the ESC programme	.655	
14: Sets a personal example of what he/she expects of others	.627	
27: Treats others with dignity and respect		.861
32: Supports the decisions that people make on their own		.822
18: Praise people for a job well done		.785
22: Actively listens to diverse points of view		.761
28: Makes sure that people are creatively rewarded for their contributions to the success of projects		.753
43: Gives the members of the team lots of appreciation and support for their contributions		.745
37: Gives people a great deal of freedom and choice in deciding how to do their work		.726
38: Finds ways to celebrate accomplishments		.720
17: Develops co-operative relationships among the people he/she works with		.711
23: Makes it a point to let people know about his/her confidence in their abilities		.688
31: Asks, "what can we learn?" when things don't go as expected	.577	.665
33: Publicly recognises people who exemplify commitment to shared values	.607	.639
29: Asks for feedback on how his/her actions affect other people's performance	.501	.631
42: Ensures that people grow in their jobs by learning new skills and developing themselves	.597	.618
24: Follows through on promises and commitments he/she makes		.607

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

The factor loadings allow the factors to be interpreted. Factors should only be retained if they make sense therefore it was particularly important at this stage to try to attach meanings to each factor. The loadings are similar to correlations so the higher the loading the stronger the correlation between the original variable and the factor. The factor analysis was set up so as to suppress loadings below 0.5 (Hair, Anderson, Tatham and Black 1998) in order to highlight only the strong relationships between factors and variables hence there are many blank values *(table 4.38)*.

4.12.5 Summary of the two factor solution

All of the 30 the variables (LPI items) were retained in the two factor solution. The two factors were scrutinised to observe the distribution of the original 30 LPI items in each of the factors. This is summarised below for both factor 1 and factor 2 in tables 4.39 and 4.40 respectively.

Factor 1 (table 4.39) contained 15 items from three out of the five Kouzes and Posner's five leadership practices (Kouzes and Posner 1987; Kouzes and Posner 2003). The number of items in each was:

Model the way   4 items
Inspire a shared vision   6 items
Challenge process   5 items

Factor 1 explained 41% of the variance.

Table 4.39 Factor 1 comparison with LPI variables

Item No.	Factor 1	Corresponding LPI Factors MW - Model Way SV – Shared vision CP – Challenge process EO – Enable others EH – Encourage heart		
35	Paints the 'big picture' of what we aspire to accomplish		SV	
20	Describes a compelling image of what the future could be like		SV	
40	Speaks with genuine conviction about the purpose of the work		SV	
26	Searches outside the formal boundaries of the organisation for innovative ways to improve what we do			CP
25	Appeals to others to share an exciting dream of the future		SV	
21	Challenges people to try out new and innovative ways to do their work			CP
15	Talks about future trends that will influence how the work gets done		SV	
30	Shows others how their long-term interests can be realised by enlisting in a common vision		SV	
39	Is clear about his/her philosophy of leadership	MW		
19	Spends time and energy making certain that the people he/she works with adhere to the agreed principles and standards	MW		
34	Builds consensus around a common set of values for running the organisation	MW		
16	Seeks out challenging opportunities that test his/her own skills and abilities			CP
41	Experiments and takes risks, even when there is a chance of failure			CP
36	Makes certain that achievable goals are set, concrete plans are made and measurable milestones are established for the projects			CP
14	Sets a personal example of what he/she expects of others	MW		

Factor 2 (table 4.40) contained 15 items from four out of the five Kouzes and Posner five leadership practices items (Kouzes and Posner 1987; Kouzes and Posner 2003). However, interestingly, this factor was predominantly made up of just two of the LPI factors – 'Enable others' and 'Encourage the heart'.

The number of items in each was:

Model the way	2 items
Challenge process	1 item
Enable others	6 items
Encourage the heart	6 items

Factor 2 explained 33% of the variance.

Table 4.40 Factor 2 comparison with LPI variables

Item No.	Factor 2	MW	SV	CP	EO	EH
		Corresponding LPI Factors MW - Model Way SV – Shared vision CP – Challenge process EO – Enable others EH – Encourage heart				
27	Treats others with dignity and respect				EO	
32	Supports the decisions that people make on their own				EO	
18	Praises people for a job well done					EH
22	Actively listens to diverse points of view				EO	
28	Makes sure that people are creatively rewarded for their contributions to the success of projects					EH
43	Gives the members of the team lots of appreciation and support for their contributions					EH
37	Gives people a great deal of freedom and choice in deciding how to do their work				EO	
38	Finds ways to celebrate accomplishments					EH
17	Develops co-operative relationships among the people he/she works with				EO	
23	Makes it a point to let people know about his/her confidence in their abilities					EH
31	Ask, 'what can we learn?' when things don't go as expected			CP		
33	Publicly recognises people who exemplify commitment to shared values					EH
29	Asks for feedback on how his/her actions affect other people's performance	MW				
42	Ensures that people grow in their jobs by learning new skills and developing themselves				EO	
24	Follows through on promises and commitments he/she makes	MW				

4.12.6 Naming the factors in the two factor solution

All the 30 LPI items were retained in the two factor solution. Factor 1 comprised three of the Kouzes and Posner's (2001; 2003) leadership practices. Factor two clustered four of the LPI practices. There are both similarities and differences when these results are compared with similar work.

Sandbakken (2004) carried out a similar study involving leadership practices in a Norwegian context. He suggested a three factor solution and this is in contrast to the two factor solution found in this work involving NHS clinical leaders in England. It is interesting to speculate and suggest reasons for this difference and this may be due to a difference in both the country in which the

work was conducted and the different types of leaders in the study. This is discussed in more detail in Chapter five.

Interestingly, the composition of the second factor found in this research was similar to the research carried out by Sandbakken (2004) in which he found a second factor that was also (mostly) made up of Kouzes and Posner's 'Enable others' and 'Encourage the heart'. He postulates that this reflects how leaders treat and collaborate with their people in the everyday working process through active involvement, showing trust in their abilities, creating mutual respect and motivating through positive reinforcement. He labelled this second factor 'supporting actions'. He named his factor 1 'transforming the organisation', and factor 3 'modelling the way'. He suggests that by labelling and considering the newly generated factor groupings in the Norwegian context helped leaders focus on various aspects of (transformational) leadership (Sandbakken 2004).

Although Sandbakken (2004) found some support for his three factor solution he asserts that this appeared to be consistent with the Scandinavian context. It is possible therefore that contextual issues may present different LPI factor solutions. Others have reported differing solutions that were neither consistent with his three factors solution, nor the five factors suggested by Kouzes and Posner (2001; 2003). Carless (2001) concluded that the LPI assesses one overarching higher transformational leadership construct with five first-order factors.

Norusis (1993) asserts that fewer factors results in a more simple solution which is more meaningful and interpretable (page 48-49). Thus interpretation of only two factors – as found by this research - should be (relatively) easier to translate into a meaningful interpretation which makes sense from both a theoretical and practice based 'real world' perspective. In terms of clinical leadership, the NHS Modernisation Agency Leadership Centre developed a Leadership Qualities Framework (LQF) which sets out the qualities, behaviours, skills and knowledge required by clinical leaders (NHS Modernisation Agency 2002). The LQF adopts the trait-based perspective, specifying fifteen

characteristics of effective leaders grouped into the following three clusters:

- personal qualities

- setting direction

- delivering the service

The first of these – the **personal qualities cluster** – described as unlike the other qualities because they are most often identified by an absence of the qualities, rather than a presence. The second cluster **setting direction** is concerned with scanning the future, driving for results and seizing opportunities. The third, **delivering the service** describes collaborative working through empowering people, influencing and working collaboratively. Comparison of these with the two factor solution found produced limited results. Arguably, the qualities identified in 'delivering the service' (NHS Modernisation Agency 2002) align somewhat with the second factor of the two factor model in terms of 'Enabling others' and 'Encourage the heart'. Other convincing links are tenuous.

Given that validation of the model using extant theory was inconsistent, a focus group of nine clinical NHS staff was assembled to discuss the descriptors for the two factors found, and to test their views on whether these appeared relevant to the health care setting.

The five descriptors for the LPI five factors were not used. Instead, the more detailed descriptions of each variable which made up the factors were presented to the group. The words that the focus group used to describe their interpretation of the two factors and their collective terms to describe their interpretations of the lists are shown below.

Factor 1

Future focused

Trail blazer

Inspires the vision

Strategist

Building & creating

Innovator

Risk taker
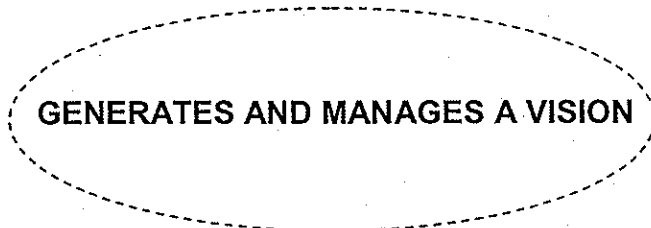
Factor 2

People focused

Delivers through people

Builds relationships

Empowers/supports/enables

EMPOWERS OTHERS

GENERATES AND MANAGES A VISION
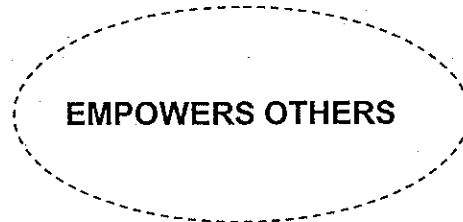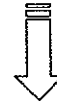
Thus factor 1 was named as **'Generates and manages a vision'** and factor 2 was labelled **'Empowers others'**.

In a discussion of leadership theories, Horner (1997) captures the essence of these two concepts. Firstly, and consistent with factor 1 **'generates and manages a vision'**, Horner states:

> *'Leaders are involved in managing the culture by establishing an explicit strategic direction, communicating that direction and defining the organizational vision and values'.*

> ((Horner 1997) p 272

There exists a plethora of literature on the visionary element of leadership - some of which draws on the concept of charismatic leadership – and which lends support to the first factor **'Generates and manages a vision'** (Conger and Kanungo 1987; Bass and Avolio 1990; Kouzes and Posner 1992; Shamir,

House and Arthur 1993; Kouzes and Posner 1995; Cannella and Monroe 1997; Steyrer 1998; Kouzes and Posner 2003; Smith 2004).

Similarly, and consistent with factor 2 which is concerned with **'empowering others'**, Baron (1995) refers to cultural change and management and maintains:

> *'Part of the culture change found in this research consisted of a drive for greater flexibility and the development of employee empowerment and autonomy.'*

> Baron (1995) cited in (Horner 1997) p 272

In addition to Baron, work by Keller (1999), Bennis and Nanus (1985) and Sashkin and Sashkin (2003) also refers to leadership in terms of empowering and/or enabling others. Nuttall (1998) developed a model of empowerment which breaks the construct of empowerment down into three critical constructs; empowerment potential, empowerment opportunity and empowered outcomes. He also links this model with other motivational initiatives to stimulate improvement (Nuttall 1998).

Thus support was found in the extant literature for the two named factors. Moreover the references cited locate the two factors in an organisational change context which is highly apposite to the research context.

The focus group confirmed that they thought that these two factors would be the qualities that they would wish to see in clinical leaders and provided practical examples of when they had seen these qualities in action. This practice based validation therefore concurred with the aforementioned supporting literature.

Thus the conclusion from naming the factors was that they aligned with some extant theory and also made sense in a clinical practice setting. This rendered the two factor solution suitable for the next regression model.

4.12.7 Development of the hypotheses

Two additional hypotheses were developed in light of the two emergent factors. These were:

H8. There will be a positive relationship between factor 1 **(Generates and manages a vision)** and organisational performance (Conger and Kanungo 1987; Bass and Avolio 1990; Kouzes and Posner 1992; Shamir, House and Arthur 1993; Kouzes and Posner 1995; Cannella and Monroe 1997; Steyrer 1998; Kouzes and Posner 2003; Smith 2004).

H9. There will be a positive relationship between factor 2 **(Empowers others)** and organisational performance (Bennis and Nanus 1985; Baron 1995; Horner 1997; Nuttall 1998; Sashkin and Sashkin 2003).

4.12.8 Exploring the relationship between the DV and the factors prior to model building

To investigate the relationship between each factor and the Excel score scatterplots were generated of Excel against each factor. Also a correlation matrix was generated.

Figure 4.6 Relationship between the DV and the factors prior to model building
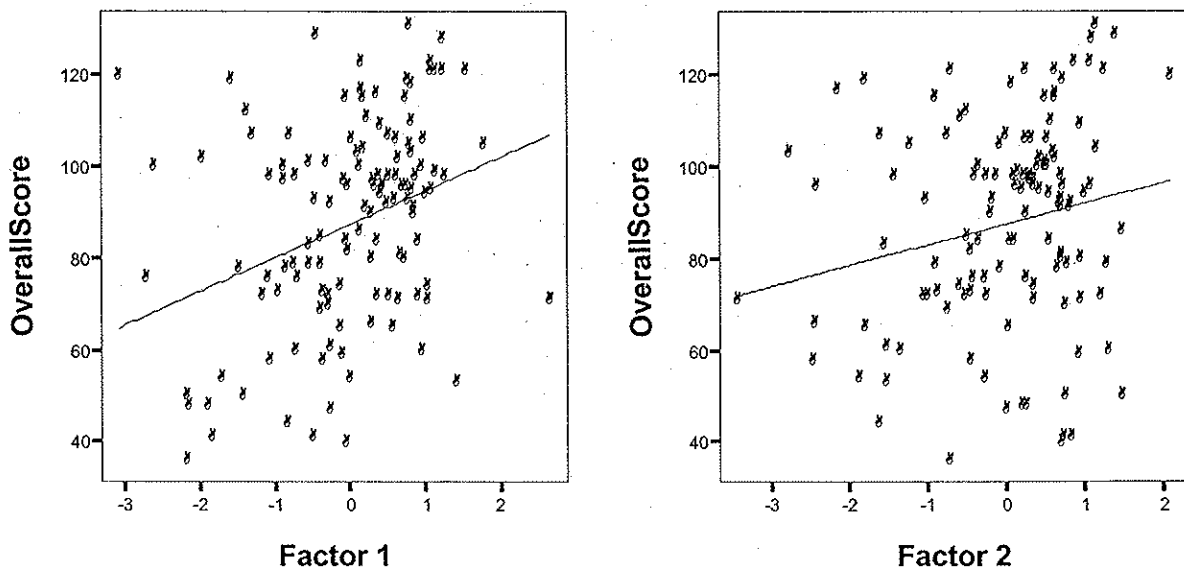
The scatterplots *(figure 4.6)* showed some evidence of a linear relationship between each factor and the Excel score although the relationship appeared to be stronger between factor 1 and Excel as the points were closer to a straight line. This is supported by the correlation matrix *(table 4.41)* as factor 1 had a correlation of 0.33 (some positive correlation) with Excel score whereas factor 2 was 0.202 (weak positive correlation). The correlation matrix also showed that the correlation between factors 1 and 2 was 0.

Table 4.41 correlations matrix for the two factors

Correlations

		OverallScore	Factor 1	Factor 2
OverallScore	Pearson Correlation	1	.330**	.202*
Factor 1	Pearson Correlation	.330**	1	.000
Factor 2	Pearson Correlation	.202*	.000	1

** · Correlation is significant at the 0.01 level (2-tailed).

* · Correlation is significant at the 0.05 level (2-tailed).

4.13   Stepwise regression with factors 1 and 2

A further stepwise regression was carried out using the two factors generated by SPSS as possible IVs. The stepwise method was used to ensure that only significant IVs were entered into the model.

The stepwise regression was run using factors 1 and 2 as possible independent variables *(table 4.42)*. Once the stepwise regression had identified the subset of IVs to include in the model, a regression using the enter method was run to check the assumptions of the model.

Both factors were brought into the model. Factor 1 was brought in initially at step 1 (as factor 1 had the highest correlation with the DV) followed by factor 2 at step 2 *(table 4.43)*.

Table 4.42 Stepwise regression with two factors

Variables Entered/Removed [a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 1 for analysis 1	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	REGR factor score 2 for analysis 1	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: OverallScore

Table 4.43 Model Summary for stepwise regression with two factors

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.330[a]	.109	.101	21.121
2	.386[b]	.149	.135	20.716

a. Predictors: (Constant), REGR factor score 1 for analysis 1

b. Predictors: (Constant), REGR factor score 1 for analysis 1 , REGR factor score 2 for analysis 1

The R square at step 1 was 0.109 which indicated that factor 1 alone accounted for 11% of the variance in the Excel score. When factor 2 was added to the model at step 2 the R square increased to almost 15% indicating that factor 2 accounted for 4% of the variance of the DV.

Table 4.44 Anova scores for stepwise regression with two factors

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6737.838	1	6737.838	15.105	.000[a]
	Residual	55313.368	124	446.076		
	Total	62051.206	125			
2	Regression	9263.595	2	4631.797	10.793	.000[b]
	Residual	52787.611	123	429.168		
	Total	62051.206	125			

a. Predictors: (Constant), REGR factor score 1 for analysis 1

b. Predictors: (Constant), REGR factor score 1 for analysis 1 , REGR factor score 2 for analysis 1

c. Dependent Variable: OverallScore

The ANOVA table *(table 4.44)* showed that overall, the model was significant at steps 1 and 2.

The coefficients table *(table 4.45)* indicated that factor 1 was significant in the model at step 1 (as the significance value was well below 0.05) and that both factors were significant at step 2. The Beta coefficients indicate the order of importance of IVs in the model, the larger the magnitude of Beta the more influential the IV is in predicting the DV. At step 2 the Beta for factor 1 was larger than for factor 2 indicating that factor 1 was more influential in predicting Excel score than factor 2.

Table 4.45 Coefficients for stepwise regression with two factors

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	87.365	1.882		46.432	.000
	REGR factor score 1 for analysis 1	7.342	1.889	.330	3.886	.000
2	(Constant)	87.365	1.846		47.338	.000
	REGR factor score 1 for analysis 1	7.342	1.853	.330	3.962	.000
	REGR factor score 2 for analysis 1	4.495	1.853	.202	2.426	.017

a. Dependent Variable: OverallScore

The excluded variables table *(table 4.46)* shows that at step 1 factor 2 was excluded but that factor 2 would be significant if added to the model at step 2.

Table 4.46 Excluded variables for stepwise regression with two factors

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	REGR factor score 2 for analysis 1	.202[a]	2.426	.017	.214	1.000

a. Predictors in the Model: (Constant), REGR factor score 1 for analysis 1

b. Dependent Variable: OverallScore

4.14 Enter method with factor 1 and 2 as IVs

The stepwise regression was next run as an, 'enter method' to test the assumptions of the model in terms of multicollinearity and analysis of residuals. This is shown in table 4.47.

Table 4.47 Enter method with factors 1 and 2 as IVs

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 2 for analysis 1 , REGR factor score 1 for analysis 1[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: OverallScore

Both factors 1 and 2 were entered simultaneously at step 1.

Table 4.48 R square values for enter method with factors 1 and 2 as IVs

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.386[a]	.149	.135	20.716

a. Predictors: (Constant), REGR factor score 2 for analysis 1 , REGR factor score 1 for analysis 1

b. Dependent Variable: OverallScore

Table 4.48 shows that as before the R square for the 2 factor model was 14.9%.

Table 4.49 Anova values for enter method with factors 1 and 2 as IVs

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9263.595	2	4631.797	10.793	.000[a]
	Residual	52787.611	123	429.168		
	Total	62051.206	125			

a. Predictors: (Constant), REGR factor score 2 for analysis 1 , REGR factor score 1 for analysis 1

b. Dependent Variable: OverallScore

As for the stepwise method at step 2 the model was significant overall*(shown in tables 4.49 & 4.50).*

Table 4.50 Coefficients for enter method with factors 1 and 2 as IVs

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	87.365	1.846		47.338	.000		
	REGR factor sco 1 for analysis 1	7.342	1.853	.330	3.962	.000	1.000	1.000
	REGR factor sco 2 for analysis 1	4.495	1.853	.202	2.426	.017	1.000	1.000

a. Dependent Variable: OverallScore

The regression equation for the two factor model was:

Excel score = 87.365 + 7.342*Factor 1 + 4.495*Factor 2

The B values suggested that a one unit increase in factor 1 would result in a 7.342 increase in organisational performance and a one unit increase in factor 2 would result in a 4.495 increase in organisational performance. This implied that factor 1 was slightly more influential in predicting organisational performance than factor 2.

Table 4.51 Collinearity values for enter method with factors 1 and 2 as

Collinearity Diagnostics

Model	Dimension	Eigenvalue	Condition Index	(Constant)	REGR factor score 1 for analysis 1	REGR factor score 2 for analysis 1
					Variance Proportions	
1	1	1.000	1.000	.00	1.00	.00
	2	1.000	1.000	1.00	.00	.00
	3	1.000	1.000	.00	.00	1.00

a. Dependent Variable: OverallScore

Eigenvalues and conditioning indices of 1 showed that there was no further evidence of multicollinearity *(table 4.51).*

4.14.1 Analysis of residuals

Less than 5% of standardised residuals had a magnitude greater than 2 *(table 4.52).*

Table 4.52 Casewise diagnostics for enter method with factors 1 and 2 as IVs

Casewise Diagnostics

Case Number	Std. Residual	OverallScore	Predicted Value	Residual
2	2.432	118	67.62	50.376
51	2.165	119	74.14	44.859
90	-2.267	40	86.96	-46.957
111	-2.467	39	90.11	-51.110

a. Dependent Variable: OverallScore

Figure 4.7 Residuals for enter method with factors 1 and 2 as IVs

Histogram

Dependent Variable: OverallScore

Mean = -8.42E-17
Std. Dev. = 0.992
N = 126

Regression Standardized Residual
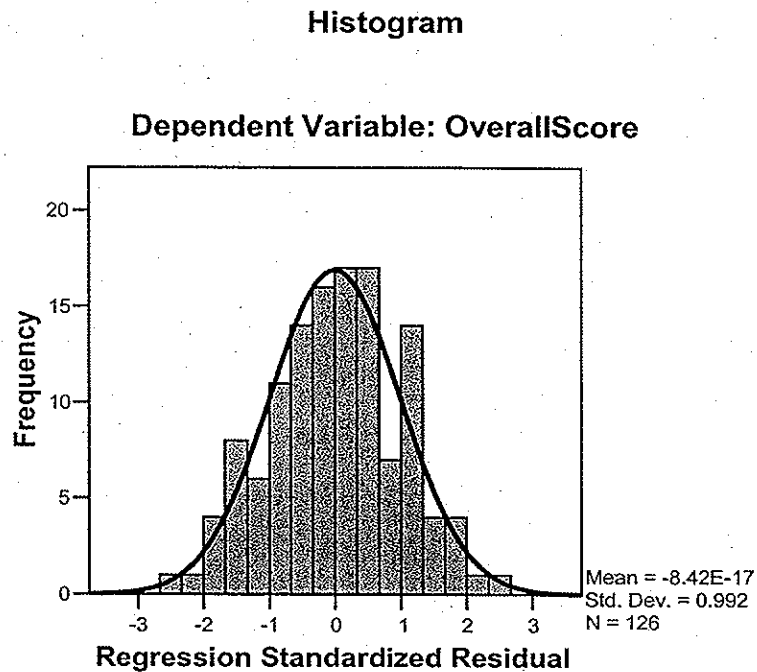
The histogram of residuals *(figure 4.7)* shows that the distribution of residuals was very close to a normal distribution.

Figure 4.8 Residuals for enter method with factors 1 and 2 as IVs
Scatterplot

Dependent Variable: OverallScore

Regression Standardized Predicted Value
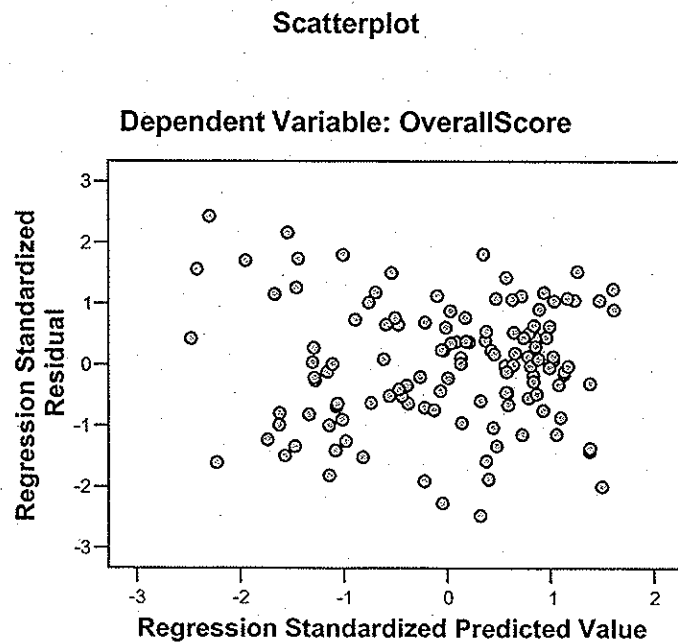
The scatterplot *(figure 4.8)* of standardised residuals against standardised predicted values shows that the model met the assumption of homogeneity of variance.

4.14.2 Summary of the two factor model

Despite the fact that the R^2 value still remained quite low in this model (explaining 15% of variation in organisational performance), there were no problems with multicollinearity and the residuals were normally distributed.

4.15 Investigating demographics within the regression model

In order to investigate demographics, a stepwise regression was run using factors 1 and 2 alongside gender and duration as possible IVs *(table 4.53)*. Duration was used as this was a scale variable and gender was used as it had only two categories, male and female, and regression could handle dichotomous variables. Occupation, age band and organisation could not be used as these were categorical variables with many categories and regression is not designed to deal with these types of variables.

Table 4.53 Stepwise regression using factors 1 & 2 against gender and duration

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	Factor 1	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Factor 2	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: OverallScore

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Factor 1 and factor 2 only were added to the model. Therefore this model was the same as that created with factors 1 and 2.

Table 4.54 Excluded variables for stepwise regression using factors 1 and 2 against gender and duration

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Factor 2	.202[a]	2.426	.017	.214	1.000
	Gender	-.121[a]	-1.432	.155	-.128	.999
	Length of time involved in the ESC (months)	-.096[a]	-1.122	.264	-.101	.987
2	Gender	-.130[b]	-1.575	.118	-.141	.997
	Length of time involved in the ESC (months)	-.052[b]	-.604	.547	-.055	.936

a. Predictors in the Model: (Constant), Factor 1

b. Predictors in the Model: (Constant), Factor 1, Factor 2

c. Dependent Variable: OverallScore

The excluded variables table *(table 4.54)* indicated that gender and duration would not have been significant if added to the model at any step.

4.16   Comparison of models

Although the first regression model incorporating all five LPI constructs had the largest R square value there was too much evidence of multicollinearity to accept this as a good, robust model.

The 'two factor' model and the earlier stepwise 'Shared Vision' model had very similar R squared values, although the R square for the two factor model was 0.5% higher at 14.9%. Both models did not violate any of the assumptions of regression in terms of multicollinearity or normality of residuals. The factors used to create the two factor model incorporated all 30 leadership items whereas there were only 6 items making up 'Shared Vision'. This meant that any unusual values or errors in the data would carry much less weight in the two factor model than in the 'Shared Vision' model. Therefore it was likely that the two factor model was more reliable than the Shared Vision model.

4.17 Validating the two factor model

The final step in the model building process was to validate the regression model. The regression models built so far were only applicable to the data sample collected. An aim of this analysis was to build a model that would generalise to a wider health care population. During validation the data set is split into two sets, a training set (to build the model) and a set of reserved data points to test the model. If a model performs well on unseen data then it should generalise well to the population. The sample size was relatively small and therefore it was not feasible to split the data set into two components prior to any model building. This is because there would not have been enough data points left in the training set to build a stable model.

The next best strategy available was to split the data set in two after model building to see if a model built on 80% of the data set would perform well on the remaining 20% of the data. Whilst this was not validation in the truest sense, it was the best strategy available given the sample size. This was considered better than no validation at all. It was decided to validate only the two factor model since this was the 'best' model generated.

Initially a filter was created to distinguish whether a case should be used to build or test the model. This was done using: *Data; Select Cases; Random Sample of Cases*. The sample was size was specified at 80% (for the training set). The filter was switched off through: *Data; Select cases; All cases*. This procedure generated a variable called 'filter$' which took the value 1 for the training data and 0 for the testing data. The name of this variable was changed to 'filter' so that when the data set was saved this variable would be retained. The two factor regression model was run again using an enter method. The filter variable was arrowed into the *Selection* variable list box and the value 1 was placed in the *Rule* dialog box. This ensured that all cases whose filter value was 1 were used to build the regression model and all cases with the value 0 were used to test the model. Finally, in order to produce R square statistics for the test data set, *unstandardised predicted values* were requested in the *Save* dialog box.

Table 4.55 R square values for the training set

Model Summary[b,c]

Model	R		R Square	Adjusted R Square	Std. Error of the Estimate
	Approximately 80 % of cases (SAMPLE) = 1 (Selected)	Approximately 80 % of cases (SAMPLE) ~= 1 (Unselected)			
1	.389[a]	.404	.151	.135	21.002

a. Predictors: (Constant), Factor 2, Factor 1

b. Unless noted otherwise, statistics are based only on cases for which Approximately 80 % of cases (SAMPLE) = 1.

c. Dependent Variable: OverallScore

The R square for the training set was 15.1% *(table 4.55)*, which was almost identical to the previous two factor model. R was given as 0.404 for the test set and this had to be manually squared to generate an R square of 16.3%. This figure was very close to that of the training set. This proved that the two factor regression model should generalise well to the population.

4.18   Sample size

A criticism of the regression analysis could be the sample size. Hair et al, (1998) suggest that around 40 cases are needed per IV in stepwise regression. This would require a sample size of 200 cases for the stepwise regression using all five of the groups from the LPI as possible IVs. The stepwise model based on the two factors only required a minimum of 80 cases. As the requirement for sample size was met for the two factor regression model, it was likely that this was more reliable than the stepwise model using the five LPI constructs. Furthermore, the two factor model performed well under validation (or test conditions) which implied that this model would generalise well to the population.

4.19 Conclusion

The primary conclusion from the research is that there is a positive relationship between transformational leadership, as described by the LPI (Kouzes and Posner 2001; Kouzes and Posner 2003), and organisation performance as measured by the Excel scale (Sharma, Netemeyer and Mahajan 1990; Sharma and Wanna 2005).

A two factor regression model was developed, and this challenged the five factor transformational leadership model proposed by Kouzes and Posner (2001; 2003). The two factor model suggested that transformational leadership explained around 15% of successful organisational performance as expressed by the successful implementation of change. The two factor model did not violate any of the assumptions of regression in terms of multicollinearity, or normality of residuals. The factors used to create the two factor model incorporated all 30 leadership items from the original LPI scale.

After consulting an NHS clinical focus group, factor 1 was named **'Generates and manages a vision'** and factor 2 was labelled **'Empowers others'**. The focus group confirmed that they viewed the two factors as depicting the qualities that they would wish to see in clinical leaders. Thus the two factor model could be said to make sense in a clinical practice setting.

Furthermore, there was support in the literature for both factor 1 **'Generates and manages a vision'** (Conger and Kanungo 1987; Bass and Avolio 1990; Kouzes and Posner 1992; Shamir, House and Arthur 1993; Kouzes and Posner 1995; Cannella and Monroe 1997; Steyrer 1998; Kouzes and Posner 2003; Smith 2004); and factor 2 **'Empowers others'** (Bennis and Nanus 1985; Baron 1995; Horner 1997; Nuttall 1998; Sashkin and Sashkin 2003).

CHAPTER FIVE

Conclusions and Recommendations

5.1   Introduction

This final chapter summarises the previous chapters by reconsidering the research problem, the approach taken to develop the research strategy, and the way in which the research was executed. These are appraised, contrasted and presented in light of the results obtained, the literature, extant theory and, in particular, other similar empirical studies.

The theoretical and practical contributions that the research has made are outlined in conjunction with resultant conclusions and recommendations for further research.

Strengths and limitations of the research are discussed together with the practical implications, potential application and resultant learning.

Finally a reflective account of the learning gained from the results and conclusions of the work, the actual research process and other personal learning is presented to assist others who may be embarking on a similar learning journey.

5.2   The nature of the problem and research question

5.2.1 Reporting approach

The research is reported in five chapters adhering to traditional doctoral thesis requirements. However, despite the quantitative nature of the main stay of the research, tradition was somewhat contravened by adopting - where appropriate - a reporting structure that was slightly more descriptive and iterative than custom dictates. This active decision to report findings in the order in which

they occurred and adopt a chronological reporting approach was taken to portray the account in a more interesting way to the reader by enabling the research story to unfold in the manner and sequence that it occurred.

5.2.2 Aim and context of the research

The primary stated aim of the research was to investigate what makes successful change happen in NHS acute hospitals in England. Working in the NHS since 1981, this has been (and remains to be) of long standing, practical and academic interest to me. It is particularly pertinent to me in my current roles as an Executive Director of an NHS London Teaching Hospital, and Director of the South West London NHS Improvement Academy.

The broad research aim was sub-divided into two discreet but linked components. These were to:

- Establish critical success factors for implementing change in NHS acute hospitals in England
- Explore one (or more) of the identified critical success factor(s) and the impact of this/these on successful implementation of changes expressed by strong organisational performance.

The contextual milieu for the research was within the highly complex prefecture of implementing new practices in an English acute hospital setting - to reduce waits and delays for patients - in a politically charged, publicly funded national health system (the NHS England). Hence, the most relevant overarching business management field was 'change'.

5.3 Theoretical conjecture

The research strategy was based on using a national change programme (the Emergency Services Collaborative) which aimed to implement large-scale change and improve NHS organisational performance.

Preliminary preparation for the wider study involved a comprehensive review of 'change' literature. In the context of the research question *(what makes successful change happen in the NHS?).* Relevant sub components of 'change' (innovation, knowledge management and transfer, and implementation) were identified. These were conceptually represented in a concentric model (figure 2.1 page 35).

Historical and contemporary theory, together with empirical research relevant to implementing change and innovation, was reviewed. The literature proffered a plethora of theories and concepts which, ostensibly, augment, moderate or restrict the implementation of change.

Despite the availability of contemporary, empirical, seminal research, most notably that carried out by Bevan (1997) and Homa (1998) on redesigning an NHS hospital, there was a notable dearth of work which explored the concept of what makes NHS change happen and the resultant impact of change on performance? The exception to this is perhaps to acknowledge that there is an empirical research base pertaining to the impact of hospital mergers (Empson 2001; Fulop, Protopsaltis, Hutchings, Allen, Normand and Walters 2002; Cereste, Doherty and Travers 2003). There is a pool of literature on the industrial models of re-engineering and this predominantly focuses on function (management) and process (which translates as the patient). However, the nomothetic change methodologies used for re-engineering in industrial settings have been criticised as insufficient for the hospital context (Oswick, Lowe and Jones 1996; Bevan 1997).

The research was therefore set within a broad theoretical framework derived from the main theories of change, and what makes change happen in an NHS context. This was later refined to consider and include more contemporary theory from the leadership literature. Accordingly, the subsequent underpinning theoretical conjecture was that leadership – and in particular clinical leadership – impacted on the successful implementation change (Kouzes and Posner 1987; Bass and Avolio 1994; Hogan, Curphy and Hogan 1994; Scholtes 1998; Higgs and Rowland 2000; Silversin and Kornacki 2000; Collins 2001; Denis,

Lamothe and Langley 2001; Elenkov 2002; Ham 2003; Wilberg 2003; Sandbakken 2004; Yan and Hunt 2005) as expressed by strong organisational performance.

5.4 Methodology

5.4.1 The approach and first phase of the research

A biphasic emergent research strategy, adapted from Miles and Huberman (1994), was adopted which involved combining both exploratory (qualitative) and quantitative methods (figure 3.1. page 88). This enabled confirmation or corroboration of each method via triangulation (Rossman and Wilson 1984; Altheide and Johnson 1994; Denzin and Lincoln 1994). In adopting an emergent strategy, the initial qualitative phase of the research was designed to validate and contextualise the findings from the literature, and explore the perceived critical success factors responsible for implementing change in the NHS. Furthermore it was used to support the design and development of phase II of the research.

The qualitative methods employed included thematic analyses, individual interviews and a variety of different focus groups. These were designed to reduce the multifarious espoused critical success factors extended by the literature (n = 19), and to establish and reduce those generated from qualitative interviews with NHS staff (n=25).

5.4.2 The research process

The first phase of the research was used to inform, build and develop a process model which would describe and guide - whilst at the same time permit emergence of - the research process (figure 3.2 page 89). This was the guiding 'road map' for conducting the research.

The research process was further developed, as described in Chapter three, by the addition of themes (or constructs) which were subsequently reduced to

become the independent variable(s) as part of the overall model (figure 3.5 page 105).

The reduction of themes ultimately resulted in the emergence of the single principal construct of transformational leadership, this was later developed into five independent variables derived from the leadership practices inventory (LPI) five components of transformational leadership (Kouzes and Posner; Kouzes and Posner 1987; Kouzes May 2003). The LPI consists of 30 statements, grouped into five factors, which address the essential behaviours found in transformational leaders.

Whilst leadership was identified as the independent variable(s), organisational performance was assigned as the dependent variable.

The reductive deductive nature of the first phase of the research served as a foundation to support the design and development of the second, quantitative phase. This was guided by the structured, yet emergent, nature of the model.

5.5 The second phase of the research

5.5.1 Introduction
The aim of the second phase of the research was to explore the impact of one of the identified critical success factors - leadership - on performance, in the NHS context.

Thus, the initial deductive phase was complemented by this second, inductive – data inspired – approach (Eisenhardt 1989; Denis, Lamothe and Langley 2001). This enabled the wider research to benefit from a mixed approach and permit creative insights to be gained from the data, without necessarily denying or reinventing concepts that others have used (Buchanan 2001; Denis, Lamothe and Langley 2001).

5.6 Development of the hypotheses

The aim of the second phase of the research was to investigate the relationship between leadership and organisational performance.

Supported by the literature on leadership and performance the initial hypothesis generated was that there would be a positive relationship between leadership and NHS organisational performance (Kouzes and Posner 1987; Conger and Kanungo 1988; Bass and Yammarino 1991; Bass and Avolio 1994; Kouzes and Posner 1995; Bass 1997; Einstein and Humphreys 2001; Elenkov 2002; Kouzes and Posner 2002; Sashkin and Sashkin 2003; Wilberg 2003; Sandbakken 2004; Borrill, West and Dawson 2005)

An important aspect of the research process involved the design, administration and analysis of a survey questionnaire to test the stated hypothesis and measure the independent variable of transformational leadership - as expressed by the LPI (Kouzes and Posner 1987; Kouzes and Posner 1992; Kouzes and Posner 1995; Kouzes and Posner 2001; Kouzes and Posner 2003), and the dependent variable of performance - as expressed by the Excel Scale (Peters and Waterman 1982; Sharma, Netemeyer and Mahajan 1990; Sharma and Kesner 1996; Sharma and Wanna 2005).

The LPI comprises five specific constructs, each measuring a different aspect of transformational leadership. Accordingly, the single independent variable of leadership changed to become five separate independent variables; one for each of the LPI five constructs. This led to the conjecture that each of the five leadership practices, as defined by Kouzes and Posner (2003), would have a positive relationship with organisational performance. Hence the single originally stated hypothesis increased to include all five aspects of the LPI factors as independent variables, as well as the overall LPI score.

Further development of the hypotheses occurred in the second phase of the research, after the survey data were analysed. A two factor model emerged and, accordingly, two additional hypotheses were developed. Factor 1 was

named **'Generates and manages a vision'** and factor 2 was labelled **'Empowers others'.** The resultant two additional hypotheses were:

H8.   There will be a positive relationship between the newly generated factor 1 (**'generates and manages a vision'**) and organisational performance as measured by the Sharma Excel Scale (Conger and Kanungo 1987; Bass and Avolio 1990; Kouzes and Posner 1992; Shamir, House and Arthur 1993; Kouzes and Posner 1995; Cannella and Monroe 1997; Steyrer 1998; Kouzes and Posner 2003; Smith 2004).

H9.   There will be a positive relationship between the newly generated factor 2 (**'empowers others'**) and organisational performance as measured by the Sharma Excel scale (Bennis and Nanus 1985; Baron 1995; Horner 1997; Nuttall 1998; Sashkin and Sashkin 2003).

5.6.1 Development of the instrument

Two instruments were modified, combined and incorporated into a unified survey questionnaire which was used to measure the independent and dependant variables as identified in the model which shows the research process. These were leadership and performance respectively. The Leadership Practices Inventory © 2003 (Kouzes and Posner; Kouzes and Posner 1987; Kouzes May 2003) was used to measure the construct of transformational leadership. The performance excellence concept as expressed by the Excel scale (Peters and Waterman 1982; Sharma, Netemeyer and Mahajan 1990; Sharma and Wanna 2005) was deemed an appropriate measure for the dependent variable.

A single consistent instrument was designed to incorporate the leadership and performance items and a 10 point Likert scale was used to increase granularity and provide greater variability in the responses.

5.7   Contributions

5.7.1 Introduction

The contributions that the research makes to the knowledge base are several in number and diverse in genre. They constitute theoretical and practical offerings derived from both the results obtained after testing the stated hypotheses, and from the novel methodological approach and model developed to describe and guide the research process. The interpretation and implications of these, together with the potential practical application to the NHS (England) are also of importance. The opportunity to generalise some of this learning to a wider field extends the potential of the contributions that the research has made.

Each contribution is structured around some of the principle results obtained and the methodological approach taken. The discussion of each contribution also includes specific reference to concluding comments in relation to the stated hypotheses.

5.7.2 Contribution # 1

There is a positive relationship between (transformational) leadership (LPI) and organisational performance (Sharma Excel) in an NHS (England) context.

The first overarching hypothesis (H1) was that the overall LPI score would be positively related to organisational performance (as measured by the Excel scale). Multiple regression analysis was the technique used to explore whether the independent variables (leadership practices) predicted the single dependent value (Hair, Anderson, Tatham and Black 1998) as measured by the Excel scale. The regression model with the combined five LPI practices showed that R Square was 0.168 indicating that almost 17% of the variation in Excel score could be accounted for by the LPI score (*table 4.23 – page 182*).

All the independent variables (IVs) had correlations between 0.33 and 0.38 with the DV *(table 4.22)*. Pallant (2002) suggests that positive correlation is evident at the level of .3. From a health care perspective, an Australian review of the literature was carried out on factors associated with high performance (National Institute of Clinical Studies 2003). The authors suggest that the prerequisites for high performance in health care are leadership and goal setting *(as well as human resource management)*. Their results support the findings of this research. The positive relationship found also corroborates similar studies (Bass and Avolio 1994; Kouzes and Posner 1995; Avolio, Bass and Jung 1999; Elenkov 2002; Kouzes and Posner 2002; Wilberg 2003; Sandbakken 2004). The results of the research therefore confirmed the theoretical conjecture that leadership matters in relation to performance excellence (as expressed by the scales used) in an English health care setting.

Moreover, it is important to note that the supporting studies cited were neither conducted in a health care setting nor an English context - being based in different countries such as the USA, Russia, Sweden, Australia and Norway. This strengthens the contribution that this research makes in two ways. Firstly, the research adds to the international theoretical base by corroborating the relationship between leadership and organisational performance. More importantly, the research adds to the theoretical base from both an English, and a health care perspective.

5.7.3 Contribution # 2
A two factor solution was found for the LPI in an English NHS context

The research found that although each of the five LPI practices showed positive correlation with the Excel score, many of the correlations between each of the five practices – the independent variables - were greater than 0.9 *(table 4.22 – page 182)*. This suggested strong evidence of multicollinearity i.e., above .7 (Tabachnick and Fidell 1996) to .9 (Hair, Anderson, Tatham and Black 1998; Pallant 2002). There was also some (slight) deviation from normality in the

residuals from the five LPI practices model. It was therefore considered necessary to explore further to produce a more robust model.

Stepwise regression showed that the only significant IV to be included in the model was 'Shared Vision', indicating that this variable had the highest correlation with the dependent variable of organisational performance. Although the R Square had fallen by 2.4% down to 14.4%, the model was an improvement on the previous regression as there was no evidence of multicollinearity and the residuals fitted a normal distribution more closely.

To deal with the multicollinearity found, Principle Components Analysis (PCA) as a method of factor analysis was carried out. Two factors were retained in this solution. Factor 1 initially explained 67% of the variance in the original 30 items whereas factor 2 explained 7% of the variance (table 4.37). Overall, factors 1 and 2 together accounted for 74% of the variance in the original 30 items. This reduced the number of overall variables from 30 to two, suggesting a two factor solution which retained almost three quarters of the original variance.

After applying a varimax (orthogonal) rotation (Hair, Anderson, Tatham and Black 1998), the variance explained by each factor was more equally distributed (41% for factor 1 and 33% for factor 2).

Both the two factor model and Shared Vision model had very similar R Squared values, although the R Square for the two factor model was 0.5% higher at 14.9%. Both models did not violate any of the assumptions of regression in terms of multicollinearity or normality of residuals. The items used to create the two factor model incorporated all 30 leadership items, whereas there were only six items in the Shared Vision model. This meant that any unusual values or errors in the data would carry much less weight in the two factor model than in the Shared Vision model. Thus the two factor model was the model of choice as it was more reliable than the Shared Vision Model.

It is noteworthy that both the Shared Vision model and the two factor model conflicted with the findings of similar studies by Wilberg (2003) and Sandbakken (2004) who each found a different LPI factor (other than Shared vision) had the highest correlation. Interestingly Wilberg (2003) forced a three factor model and Sandbakken (2004) obtained a three factor model using factor analysis, suggesting that a three factor model might be valid in the Scandinavian context (Wilberg 2003; Sandbakken 2004). Both the MLQ and the LPI instruments claim to cover multiple transactional leadership dimensions. Independent research by Den Hartog, (1997), Avolio et al, (1999), and Carless, (2001) suggests that both the MLQ and the LPI only cover one overarching transformational construct. This also conflicts with the two factor model reported in this research.

Whilst not confirmatory, it is interesting to speculate that the inconsistent findings noted could be due to either the influence of the different countries in which the three research studies were conducted (i.e., Sweden, Norway and England), or the different contextual setting of the studies (i.e., newspapers, private and public sector organisations and acute NHS hospitals).

Whilst the two factor model retained all of the 30 items in the Kouzes and Posner Leadership Practices Inventory (2001; 2003), the results of this research in an English NHS context challenged the Kouzes and Posner's five factor solution.

5.7.4 Contribution # 3
Adopting an emergent approach to develop a novel methodological research strategy

The research was conducted within sound, authoritative and traditional research methods. However, the way in which the different methods were selected, combined, developed and applied was novel. The proposition and rationale for proclaiming this as a novel methodological contribution is provided below.

The notion of a journey was used as a metaphor for establishing an emergent research strategy to drive both the subject matter and the methodological approach. This was a deliberate decision to enable the research to develop over time, rather than establish a predetermined specific topic of study and a menu of methods within which it would be studied. A complementary combination of deductive and inductive (Eisenhardt 1989; Denis, Lamothe and Langley 2001) methods was employed as part of an overall emergent strategy. This was designed to enable the wider research to benefit from a mixed approach and permit creative insights to be gained from the data, without necessarily denying or reinventing concepts that others have used (Buchanan 2001; Denis, Lamothe and Langley 2001).

The critique of the literature incorporated both an ideological and grounded viewpoint drawing on focus groups of both NHS front-line staff and renowned experts in the field of change. This was intentional and facilitated a continuous iteration between espoused theory, to real world application in an NHS context. As an NHS senior manager with both clinical and managerial experience I was able to consider whether the findings from the literature were consistent with my own experience.

This approach is consistent with Argyris's (1991) notion of double-loop learning which examines the underlying values and context in which the study is taking place. He argues that the focus should be on learning rather than change. As such attention may shift from feedback that alters actions (single-loop learning) to questioning the values that govern conventional problem-solving routines (double-loop learning), (Argyris, 1991,1999). He advocates that to improve management education, organisational development and social inquiry requires a shift away from defensive behaviour, whereby a stated course of action is defended, and towards openness and learning from error in a no-blame culture.

The emergent nature of the research demonstrated both single and double-loop learning and is especially strong on the latter which is often much more difficult to describe because it requires the ability to be open to change and self critical, rather than defending a course of action (Argyris 1991). This was particularly

evident in the range of possible alternative causes of action that were not taken as exemplified by abandoning the original intention to use case study method. This formative aspect of the study offered a continuous re-appraisal of the study design and ensured constructive efforts to improve it in the future.

Although the strategy was allowed to emerge, it is important to affirm that methodological choices were only permitted to evolve within sound, established research principles and traditions. The desire to generate general patterns that characterised the research population (Ragin 1999) was a primary driver. This made it possible to remain open to a range of different methods, all of which could be successfully applied, whilst remaining consistent with the acknowledged positivistic paradigm. Thus it was possible to permit the final research process, including the addition of further detail to the process model, (e.g., establishing the independent variable of transformational leadership relatively late on in the research journey) to emerge using each stage of the research to inform the next.

Unequivocally, transformational leadership would not have emerged as the prime focus of the research if such an emergent approach had not been adopted.

It is also highly likely that if a fixed strategy had been determined at the outset, case study method would have been the chosen method for the research. Both Bevan (1997) and Homa (1998) had successfully used case study method within different philosophical paradigms to study change in an NHS hospital context. These two highly respected and influential doctoral theses had thus, inadvertently, paved the way and sanctioned case study method as an appropriate methodological choice. To a novice researcher, case study method was therefore a seductively reliable and enticing approach. Arguably, if case study method had been used, it is doubtful that the results of the research would have proved to be as novel and interesting as those ultimately obtained. It is likely that the findings of the research would have been more confirmatory in nature.

It is thus possible to conclude that the novel and emergent methodological approach taken has resulted in a strong contribution to both theory and practice.

5.7.5 Contribution # 4
Minor contributions

There are other aspects of the research that despite not being directly related to the testing of hypotheses make a contribution. These are not discussed in detail but are summarised below.

- Notwithstanding the results obtained by the research and the first two major contributions that originated from these, the actual design and use of the combined LPI and Sharma Excel instrument - in an NHS context - presents a new research opportunity for NHS leadership and performance. Despite the excellent work of Sandbakken (2004), who used a similar instrument to explore leadership and performance in a Norwegian context, no similar English study was found in a health care context.

- The comprehensive review of the change literature with the added dimension of the NHS context presents a stand alone contribution. This is strengthened by the additional reviews on leadership and clinical leadership which were completed at the end of chapter three. Collectively these add a combined comprehensive review of change in a clinical NHS context.

- The section below (5.8) discusses the practical implications of the research and outlines how the findings can be used to influence, change and develop NHS practice. In particular the issues relating to clinical leadership and pluralistic leadership add to the body of knowledge on leadership in the NHS and influence the application of leadership models and frameworks, training and development programmes, and how leadership is used in the NHS as an enabler to improving organisational

performance. These practical implications present a nomothetic contribution.

5.8   Practical implications

5.8.1 Introduction

All doctorate level research has a prerequisite requirement to demonstrate that it adds an academic contribution to the theoretical knowledge base. In addition to this, a Doctorate of Business Administration (DBA) requires that there are demonstrable practice based implications which emanate from the research and which have the potential to change practice in the field within which the research is conducted (Henley Management College 2001). This section substantiates how the research satisfies this nomothetic requirement. More importantly, as an NHS practitioner, the opportunity to influence practice provides impetus for conducting research and adds value from a personal achievement perspective. This aspect also helps legitimise the amount of time and energy invested in completing the doctorate.

Advice, recommendations and implications for practice are presented, including aspects of clinical leadership in the context of the NHS.

In an eminent and widely respected medical journal – the British Medical Journal (BMJ) - Haines and Jones (1994) asserted the importance of implementing findings of research. It is therefore germane to acknowledge that practical implications only become meaningful if they are heeded and used to improve practice for the benefit of patients, as well as contributing to the arts and sciences and relevant knowledge base.

5.8.2 Leadership issues

The link between poor leadership and negative effects is not new (Day and Hamblin 1964). Conversely to achieve good leadership requires genuine participation of clinical staff in the leadership of change. Berwick (1994) asserts that only those who provide care *(referring to clinical staff)* can in the end

change it. Thus, clinicians need the time, space and support to review established practices and lead the introduction of new and more effective ways of working. Consequently, NHS managers have an important role in ensuring that clinicians (such as nurses and doctors) are freed from other commitments to properly and genuinely participate in leading health care improvement initiatives.

With regard to the transformational leadership model, Sandbakken (2004) suggested that considering new factor groupings in the Norwegian context helped leaders focus on various aspects of transformational leadership (Sandbakken 2004). The two factor model for transformational leadership in the NHS generated by the research (**'generates and manages a vision'** and **'empowers others'**) was tested out with a clinical director in my own organisation. The research methodology and model were explained to him and the results proffered. His response was that it sounded eminently sensible and resonated with his own practice as a clinical NHS leader in which he explained he spent a great deal of time painting the picture, reassuring others on how it was going to be in the future, and actively supporting others to achieve what he was describing. Though anecdotal this serves to illustrate the practical application of the two factor model to the real world of the NHS.

Ham (2003) refers to obstacles to engagement as clinicians' efficiency and development of clinical leadership. The latter lies in the nature of professional work in healthcare. Professional autonomy is valued by doctors and some are therefore extremely reluctant to support peers who take on leadership roles. As well as the incentives for clinicians who become leaders not being particularly clear – action is needed to make the transition into and out of leadership roles as easy as possible (Ham 2003).

5.8.3 NHS complexity
The NHS is vast and complex. Whilst leadership has been shown to be important in relation to organisational performance as demonstrated by the findings of this research, it is important to acknowledge that there are multiple reasons for performance improvement. Caution should be exercised in

suggesting simple, single solutions in what is ostensibly a highly complex health care environment. These assertions are supported by a plethora of literature on complexity science in both a generic and health care context (Plamping 1998; Dooley and Van de Ven 1999; Boje 2000; Stacy 2000; Weick and Sutcliffe 2001; Brodbeck 2002; Dooley 2002; Waring and Wainwright 2002; Maxwell 2003; Plsek 2003).

Dealing with NHS complexity requires a transformational approach to change and improvement that crosses boundaries and encompasses multiple strategies for improving leadership and culture. These issues were born out by the early focus groups conducted during phase I of this research. This is also advocated by Burnes (1996) who suggests that there is no such thing as 'one best way' to manage organisational change.

Deconstructing complex issues into simpler tasks runs the risk of achieving unintended consequences from oversimplifying complex social phenomena (Argyris and Schön 1978; Hage 1980; Lammers 1980; Argyris 1999).

Ham (2003) highlights how health system reform has generally fallen short of expectations claiming that this has led to reappraisal of the strategies pursued and a search for new policies. He stresses that recent 'radical solutions' to NHS problems have failed in part from their limited effect on clinical practice, and the fact that they have to compete for attention with established ways of working and other imperatives.

Using basic principles from complexity theory, psychology and management theory, Robson (2004) demonstrated that many traditional methods of identifying performance measures may not necessarily result in overall performance improvement. Measurement systems are often put in place in the belief that these alone will serve to improve performance but Robson (2004) challenges organisations to identify exactly how measuring performance can lead to an overall improvement in the effectiveness of a business process. Paradoxically, the work of Fowler (1999), suggests that measurement can assist in managing performance, but only when it is part of a control system.

This yields practical consideration of the development of improved performance measurement tools which are NHS context receptive.

5.8.4 Pluralistic/distributive leadership

Homa (1998) suggests that the medical leader as role model, advocate and change agent offers a compelling leadership mandate for improving health systems. However this must now be considered in the new paradigm of pluralistic leadership (Waldersee, Simmons and Eagleson 1995; Denis, Lamothe and Langley 2001). Similarly, Buchanan (2003) is critical of the absence of a more contemporary view of leadership based upon dispersed leadership in the NHS. Berwick's (1994) earlier assertion that clinical leadership matters because only those who provide care *(referring to clinical staff)* can in the end change it must also be considered in the context of Grol's (1997) stepwise model for implementing change.

Thus the paradigm shift is from a single model of medical leadership to a pluralistic, collective model which stresses the need to implement change through collaborative leadership that integrates the different approaches and views to achieve effective change. A later affirmation by Berwick (2003) strongly supports this and the notion of NHS complexity in which he discusses the need to create a system of health care which involves the co-ordinated energies of a number of top-level people who act as a team.   He discredits the idea of having a single identifiable leader, suggesting that the complexity of the NHS creates the need for a system of multiple leaders. Ham (2003) also maintains that no single approach to improvement of performance is likely to be sufficient, suggesting that the inclusion of educational initiatives, use of a variety of leaders, peer-review mechanisms, financial and other incentives are some of the interventions that are needed.

Nomothetic (practice based) implications are legion and include the importance of improving relationships between clinicians and managers and the vital role of clinical leaders within a pluralistic leadership model.

5.9 Strengths and limitations of the research

5.9.1 Introduction

This section discusses the strengths and limitations of the research from a range of perspectives and considers the methodology, research instrument, the sample and some of the practical elements which may have influenced the research ether positively or negatively. The strengths and limitations are not discussed separately because some of the issues raised could be construed as either a strength, or a weakness, depending on the perspective taken.

5.9.2 Methodological Issues

Despite the consistent findings reported in chapter three on the reduction methods used in identifying the relative importance of themes, in the early focus groups several participants expressed concerns stating that the importance of each issue might be context specific and could be dependent on the specific change taking place. Two respondents commented that by limiting the key themes to such a small number (i.e., 15) might result in valuable themes being lost which related to the potential success/failure factors for more context specific change. Though interesting and useful, these two comments were not representative of the larger group and reduction was considered necessary to limit the set of key themes down to a manageable number and enable the research to narrow in focus. Furthermore, the inclusion of all of the key themes from both the qualitative interviews and the literature would have resulted in a survey which was too big with the consequential risk that it might not be completed by respondents.

To either validate or challenge the decision to continue with further reduction of the themes, an additional expert focus group was convened and tasked with discussing the value of further reduction. This third focus group was carried out at Henley Management College in March 2004. The group primarily comprised of change experts, academics and researchers and they concurred that reduction was entirely appropriate and necessary. Indeed, they thought it necessary to reduce the number of themes, even further than originally

intended, to a single construct comprising the strongest theme from both the literature and earlier focus group research; this single theme was leadership.

5.9.3 Sample Issues

It is rare that researches are able to survey the total population (Hair, Anderson, Tatham and Black 1998; Easterby-Smith, Thorpe and Lowe 2002). This requires sampling methods to be robust and response rates strong in order to generalise findings. In the case of this research it was possible to survey the total population which included every NHS acute NHS hospital Trusts in England with an A&E department. The survey yielded a very strong response rate (n = 126 out of 155 sites which equated to an 81% response rate). This presents a strong case in terms of transferability of the findings and the opportunity to generalise the findings to the population of clinical leads in acute hospital settings.

Conversely, in terms of the number of leaders in each site, only one clinical lead in each hospital and one project manager was asked to participate in the survey and this, it could be argued, presents a weakness of the study. However, the sample demographics appeared to be proportionally consistent with, and typical of, those of the wider population of clinical leaders, mostly doctors (those who were assessed) in the NHS (England).

Although the research focused on clinical leadership per se, the vast majority of the leaders assessed in the survey were in fact doctors (n = 98%) which meant that this was a study of medical leadership. However, rather than declare this as an identified weakness of the study, it is probably more apt to be clear when reporting findings that they pertain to medical leadership, rather than the wider framed clinical leadership.

5.9.4 Data issues

The concluding results of the research showed that there was a positive relationship between transformational leadership and organisational performance in the NHS context. However, the analysis showed that leadership accounted for around 15% of successful organisational performance. These

results were slightly lower than other similar (Wilberg 2003; Sandbakken 2004) studies had found. The important question that these data pose is what accounts for the remaining 85% of performance? It is interesting to speculate on a range of different potential reasons for these findings in an NHS (England) context. A potential answer might lie in some of the excluded themes of importance (mindsets, engagement, communication, support) which were found during the early qualitative phase of the research and on which the focus groups and the literature had concurred.

The decision to exclude the remaining five themes (empowerment, mindsets, engagement, communication, support) is vindicated because whilst constructing a survey of multiple validated instruments for each theme may have resulted in a higher R Square value and explained a larger amount of variation in organisational performance, this would have resulted in an instrument which was far too big and posed a consequential risk to response rates. Furthermore, and in addition to emerging as one of the qualitative themes, the construct of empowerment also emerged as an important sub-component of leadership. For this reason it is considered of heightened importance and is recommended for further exploration in the section below on recommendations for further research.

5.9.5 Philosophical dilemmas

Although not consistent with the prime aim of the research, the consequences of locating the research within a positivistic paradigm inevitably denied the opportunity to explore important issues such as the interactions and relationships that occur between clinical and managerial leaders and how these impact on change. To gain a greater level and depth of insight and understanding into the temporal change process in an NHS hospital setting a more qualitative, interpretivist approach similar to that taken by Bevan (1997) would have been required. The depth and breadth of description, and the exploratory nature of the discourse, builds a comprehensive picture that was not possible with the positivistic approach taken.

These comments are offered less as a weakness and more as an acknowledgement of the trade-offs between qualitative and quantitative research. Moreover, taking an entirely naturalistic stance would have reduced opportunities to generalise from the work.

5.9.6 Minor considerations – Ethical issues and patient involvement

The research involved people, their views, behaviours and perspectives. Whilst there was some discussion of the ethical considerations of the participants during the early stages of the research design this predominantly focused on issues regarding confidentiality and disclosure. It was therefore regarded that there were no major ethical issues which needed to be addressed. This aspect could, arguably, have been expanded to perhaps include more ethical debate and sign-up from the participants in the study.

Finally, it could be argued that a limitation of the research was that there was no patient perspective or involvement. However, as the focus was on leaders and the impact of leadership on organisational performance this was considered to be out of the scope of the work.

5.11   Recommendations for future research

5.11.1 Introduction

Research often poses more questions than it answers and culminates in extending suggestions for supplementary enquiry. Despite presenting useful findings that can be translated into practice, this research is consistent with other studies by concluding with additional questions and opportunities for further study. The recommendations are based on both theory and practice and combine a nomethetic and ideographic approach.

Despite the consistent findings described for identifying and reducing the number and relative importance of themes, two participants in the expert focus group expressed concerns that the importance of each issue might be context specific, depending on the specific change taking place. Both respondents

commented that by limiting the key themes to such a small number (i.e., 15) I might have missed or prevented other valuable themes from emerging that were also potential success/failure factors for more context specific changes.

The 15% result obtained showed that leadership accounted for 15% of performance improvement. Whilst this indicates that leadership is an important factor and was found to have a positive influence on ensuring good organisational performance (evidenced by the leadership literature and a positive R Square value in this research), it should be considered alongside other factors.

During the development of the model which set out the research process, an earlier phase of this research identified six top-ranked themes of importance (leadership, empowerment, mindsets, engagement, communication, support). Only the first of these – leadership – was used in the final stage of the research. Analysis of qualitative data from focus groups and the change literature had concurred that all six of these themes were deemed important in impacting on improved organisational performance in an NHS change context.

There is a strong recommendation to conduct further research into the effects of the excluded five (from the top six) identified themes to better understand their independent and collective impact on change and organisational performance. Moreover, this is especially important for the construct of empowerment which also emerged as an important sub-component of leadership and became one of the factors in the two-factor model. Thus the construct of empowerment especially warrants further research attention.

The research assumed and measured the leadership practices of one overall clinical leader. There is a body of literature which bestows the notion and value of pluralistic (or distributive) leadership (Waldersee, Simmons and Eagleson; Denis, Lamothe and Langley 2001). This suggests that an alternative approach might be taken which consideres groups of leaders rather than single leaders. Quality improvement initiatives in the USA have shown that this applies in a health care context and have demonstrated that substantial change is most

likely to take place in organisations in which managers and clinical staff work and lead together to introduce new ways of working (Berwick 1994; Silversin and Kornacki 2000; Ham 2003). Hence further study of multiple shared leadership models would add to the understanding of leadership in the context of multiple leaders.

As part of the literature review for this research an appraisal of the available frameworks for NHS leadership development failed to find synergies or alignment between some of the key models available. These included the LPI (Kouzes and Posner 2001; Kouzes and Posner 2003), the LQF (NHS Modernisation Agency 2002) and the two factor model which resulted from the research. There is therefore a need to validate frameworks specifically for clinical leadership which would present both a theoretical contribution as well as important practical application.

Finally, much of the empirical research on organisational change focuses on the antecedents or consequences of change (Huber and Van de Ven 1995). The research described in this thesis adds to this pool. However, it could be argued that too few studies have paid attention to the way that organisation change emerges, develops or declines over time. Bevan's research (1997) attempted to re-dress this balance and made a much-needed contribution to the body of theory and research on organisational change. Hence the field would benefit from more published research that is of an exploratory, qualitative nature which would serve to confirm or refute the findings of this and other positivistic studies.

5.12   Learning from the research process

5.12.1 Introduction
There is an array of learning opportunities inherent in this research. It is important not to oversimplify these by focusing entirely on extracting the learning that is directly related to the findings and recommendations presented. Learning at several different levels and perspectives is available, and this is presented below.

Learning and reflection occurred on two different levels. The first was concerned with what the research set out to achieve and poses the question - did I achieve or realise the stated aims of the research? This is described as first-order learning.

The second level is concerned with learning that arose from actually doing the research – second-order learning. Both aspects are incorporated into the ensuing discussion in an iterative and descriptive way.

5.12.2 First-order learning

The answer to the question - was the stated aim of the research achieved? - debatably relies on subjective perceptions; these being my own and those of the reader. Most research culminates in a conclusion which poses further unanswered questions, and this research complies with this tradition. Chapters four and five, arguably, present the evidence for achievement of the stated aims.

The research was conducted as a continuous learning journey and the model which was developed to guide research process (Figures 3.2 and 3.5 pages 89 and 105) was continuously refined and developed as the learning unfolded. This approach reflected the phenomenon of double-loop learning described by Argyris (1999). The focus of double-loop learning is less concerned with singularly achieving the intended outcome. Instead, when a mismatch between intention and outcome is identified, it is corrected and thus turns a mismatch into a match.

Double-loop learning is demonstrated throughout this thesis by the nature of the unfolding research journey which began with a single focal point which was concerned with 'change', and which later shifted to a focus on the construct of 'leadership'. The emphasis on single-loop learning may be partly due to activities being treated as single-loop by deconstructing complex issues into simpler tasks. This however often results in the unintended consequence of oversimplifying complex social phenomena (Argyris and Schön 1978; Hage 1980; Lammers 1980; Argyris 1999) such as the NHS.

An important issue raised by both Bevan (1997) and Homa (1998) is relevant to this research and is concerned with the closeness of the practitioner/researcher to the work and whether this weakens the objectivity of the research. Their research was founded on very different epistemological and ontological underpinnings. Homa, (1998), for example describes his role as chief executive and management researcher in the context of the obligation of evidence based management. With regard to the philosophical underpinning, a parallel can be drawn with my own experience as a practitioner/researcher and the work of Homa. Interestingly, and contrary to this approach, Bevan (1997) acknowledged and eloquently described her experiences of being close to the work. Using actionable knowledge (Argyris 1993) as her underpinning approach, she argued that she and the research were appropriately interactively linked. Hence the integrative nature was epistemologically and ontologically consistent, and appropriate with the approach that she adopted.

Other aspects of first-order learning included asking questions about the potential strengths and limitations of the research and these were described in an earlier section.

5.12.3 Second-order learning

The phenomenon of second-order change was described by Greenwood et al (1988) as a shift from one strategic orientation to another. This can be extrapolated and applied to a learning environment in which an immense opportunity is created for more complex, or second-order, learning which shifts thinking from one orientation to another (Greenwood, Royston and Hinings 1988).

Second-order realities are the natural product of human 'sense-making' (Weick 1995) in which people move from inference from observable data and experiences to drawing conclusions which provide a basis for action (Argyris 1990; Senge, Roberts, Ross, Smith and Kleiner 1994).

Second-order learning is highly personal and relies less on the views of others and more on my own personal experience of and reflection on carrying out the

research. This presents an array of questions about the process, self, the research, decisions made as well as personal reflection on the inevitable conflicts and trade-offs made between time spent on learning and development, and personal life issues. The action learning approach adopted throughout the research provided practical grounding as well as a framework for ongoing critical appraisal. Action learning is increasingly recognised as critical to the survival and development of organisations (Argyris 1993; Argyris and Schön 1996; Coghlan and Brannick 2001; Coghlan, Dromgoole, Joynt and Sorensen 2004).

Carrying out this research evidently required me to read extensively on empirical research, theory and management issues. As a full-time NHS senior manager this was extremely challenging especially in terms of the amount of personal time required to do this well.. On reflection, despite it being arduous and time consuming, the onerous research journey was, in my view, a very worthwhile use of my time given the rich personal development and learning opportunities that it presented. A similar personal experience was described by Homa (1998) who was a NHS Chief Executive whilst carrying out his doctoral studies.. Both he and Bevan (1997) described the complexity and dilemmas of the combined researcher practitioner role. They concluded that this role was neither well understood nor described.

Experiential learning and the use of reflection play a central role in the learning process (Kolb 1984; Mumford 1995). This offers an important nomothetic contribution to the research, the researcher and those who might implement the findings or apply the theory. The process of carrying out the study, to achieve the designated aims, required experiential learning. The practitioner/researcher role assisted me with this in a similar way to the processes that might be adopted for action research (Coghlan and Brannick 2001; Meyer 2001). The strength of such an approach involves the desire to solve practical problems and generate new knowledge about a subject which is of genuine concern to both researcher and those within an organisation who engage with the research (Meyer 2001). In this instance, there was a need to solve the very practical and real problem of how best to design the study, gather accurate data, and analyse

and interpret them. In this I was also keen to learn from the focus groups, the qualitative interviews with NHS staff, the data and the evolving method, for the benefit of other researchers and the practitioners who were participating in the study.

The methodological approach adopted was consistent with one of four types of action research described by Hart and Bond (1995) in their typology. The 'profession' type is informed by an agenda grounded in practice, characterised by the new professions keen to develop research-based practice (Hart and Bond 1995). The process for developing the methodology presents an example of this whereby the research strategy was designed to support the research process whilst allowing the research process and questions to evolve from a practice based stance, albeit within a pre-determined framework.

To extend the journey metaphor used throughout this thesis, conducting this doctorate level research was analogous to a temporal and physical marathon which required deep intellectual thinking and reflection, combined with resilience, discipline, endurance and stamina.

5.13   Final remarks

The research question began with what makes change happen in the NHS and was refined to ask about the effects of clinical leadership on organisational performance. The complexity of the former question requires knowledge and support from a plethora of theory and research to even begin to come close to answering it. Grol's (1997) stepwise model for implementing changes which integrate different approaches to understanding change in the NHS exemplifies this. He concluded that people are often very naïve and opportunistic when planning changes and as a consequence expected results are not always achieved.

The differences in opinion between the different players within healthcare can lead to problems when it comes to deciding on the best strategies to improve practice and the best way of making change happen.

This too serves to emphasis the complexity of change in the NHS, the realisation that there is no single solution (Burnes 1996) and that change is not a once only phenomenon with a beginning and end, but is part of a continuum (Argyris 1993).

The Notion of team leadership asserted by Berwick (1994; 2003) was embedded in most NHS Modernisation Agency Programmes including the Emergency Services Collaborative programme which is the basis on which the research in this thesis was founded. Similar to other MA programmes, the ESC had designated clinical leaders supported by project managers and board level sponsors. The model was supported by designated funding coupled with training and support to enable the leaders to be freed from some of their daily commitments to ensure that they had designated time to fully participate in the programme of change. This and other similar programmes in which clinical, managerial and executive leadership are brought together to bring about successful change is contributing to the formation of a sound scientific basis for achieving clinically led reform within a multi-professional setting.

In conclusion, whilst clinical leadership does matter in the NHS – as shown by this research – it must be considered in the context of a pluralistic complex interwoven network of multiple leader and follower assumptions about human behaviours and the change itself.

Much of the evidence presented showed that the study attained its goal, and that novel theory was created. This summative element of the thesis is evident. Hence there is a single-loop learning (Argyris 1991) element of the work. This emanated from the described identification and solving of problems, in an adaptive and incremental way, and showed that learning occurred from carrying out the research. Form the aspirations documented, the study also involved second-order change – described by Greenwood et al (1988) as a shift from one strategic orientation to another – and this created immense opportunity for more complex second-order learning.

Bevan (1997) argues that change is not an all or nothing phenomenon and that it is important to prioritise developments. She asserts that barriers to change can be broken with improved communication, networking and by using respected leaders. She also emphasises that change should be driven by a multi-disciplinary team to ensure proper engagement of all stakeholders. Despite the enormous differences in philosophical paradigms, methodologies, and time-frames within which this and Bevan's research were conducted, the similarity of some of the conclusions is notable. In a discussion with her about this I asked her what she would do differently if she was to embark on her work a second time. Her response was:

"I wish I could have known then what I know now"
(personal communication, Bevan 2004)

This is entirely consistent with my own view of continuous learning, and reflects the value of the learning which resulted from both the results of the study, and from doing the research. Hence both summative (did it work, did it meet its objectives?) and formative (how could it be made better?) learning could be said to have occurred.

Interview Schedule Questions

INTERVIEWEE I.D.

1. An example of a change / innovation which has taken place within the hospital?

2. How was the change / innovation brought about? (what was the process of events)

3. What role did you play within the change / innovation process?

4. What factors helped / accelerated the change / innovation process?

5. What factors hindered / prevented the change / innovation process?

6. What effect did the change have overall?

Invitation letter to 3rd Focus group

2nd February, 2004

Dear Colleague,

As a leading expert in the field of change I would like to invite you to participate in an important piece of research which is a small part of a doctorate research into implementing change in the NHS. Your participation will involve just a few minutes of your time to rank 15 criteria that have been identified by NHS staff as critical to the successful implementation of change.

We would value your opinion on which factors you perceive to be the **most** important to the successful implementation of change. This involves allocating a ranking score of importance to each of the factors listed on the following page – 1 being the most important, and 15 the least important.

Those criteria ranked as most important will be used to develop a survey that will seek to establish the views of NHS staff on the critical factors that both assist and hinder the implementation of change. The findings from the research will ultimately be used to inform change programmes and NHS staff about future change initiatives.

Please be assured that your responses will remain completely anonymous and will be treated with the strictest of confidence. All information will be reported as aggregated data and respondents will not be named.

If you have any queries please don't hesitate to contact either myself (07885 80 20 60), or Emma Angus my Research Assistant (07771 630 104) who will be collating responses on my behalf.

Many thanks (in advance) for your time and participation. Once you have ranked the criteria, please could you save it as a word document and email it as an attachment to: Emma.Angus@doh.gsi.gov.uk, no later than **13th February 2004.** Your email response also provides an opportunity for any additional comments that you may wish to make. If you would like to receive feedback on the results of this work please mention this in your reply.

Thank you once again,

Kind regards,
Yours sincerely,

Karen.

Karen Castille
Director of Emergency Services
NHS Modernisation Agency
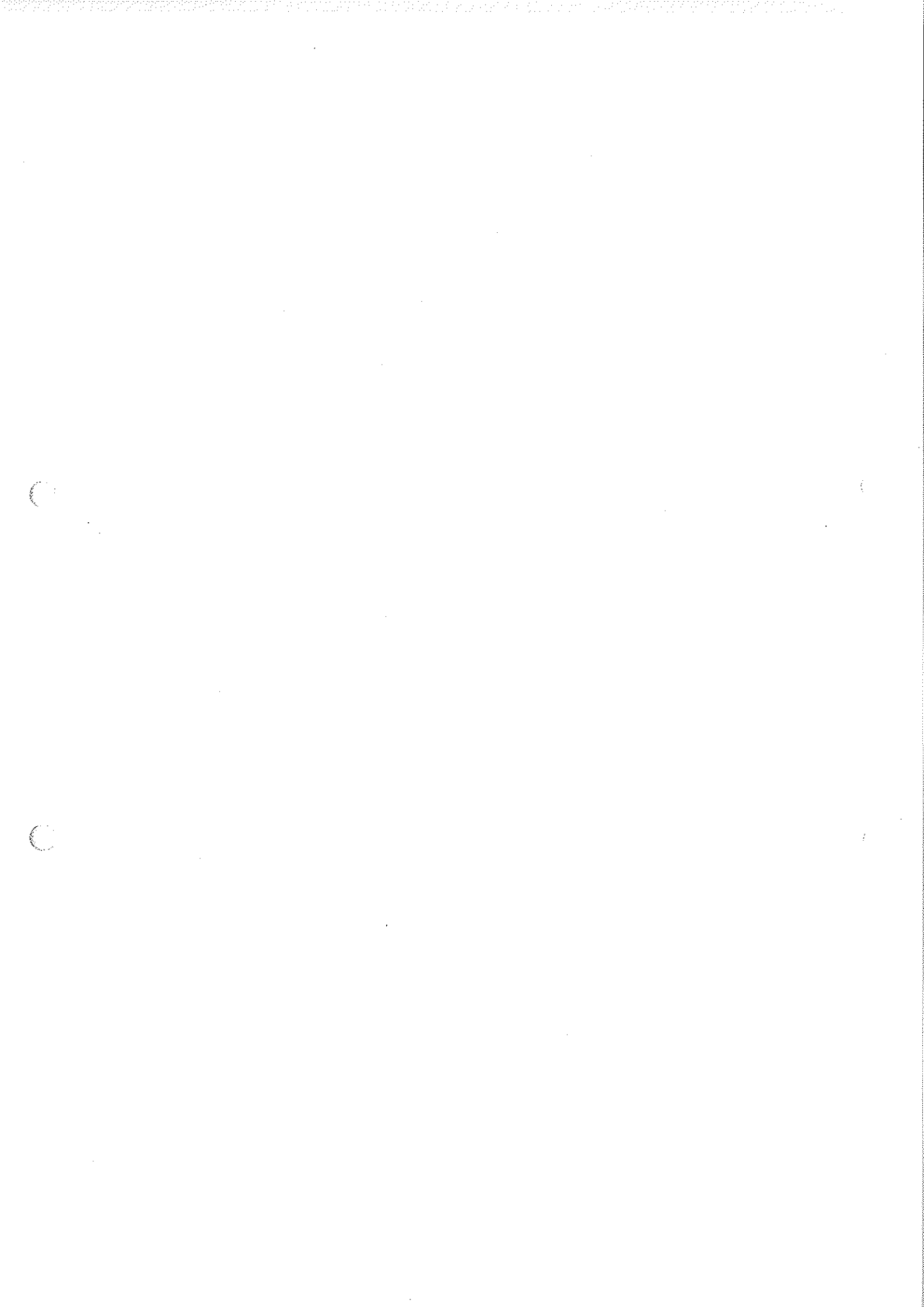
Focus Group Ranking Table

Please rank these themes in terms of how important you think they are when implementing change
(1 = Most important through to 15 = least important)

THEME	DESCRIPTION	RANK
Leadership	How important is it to consider leadership when implementing change?	
Power	Although leadership and power are closely linked, how important is power as a separate factor in considering change implementation?	
Culture		▮
Mindsets and attitudes	Individual characteristics and attitudes such as: commitment /motivation /old habits / resistance / scepticism / risk involvement	
Support	How important is support from peers, managers and other departments within the workplace?	
Communication Monitoring and feedback	Communication and information flow between staff, and the feedback given to staff about change implementation progress.	
Rewards and incentives	Do rewards and incentives greatly influence the success of change implementation?	
Empowerment	How important is to have an empowered workforce?	
Structure		▮
Engagement / participation	Is staff participation a big accelerating / hindering factor in change implementation?	
Project teams	How important is it to have a project team dedicated to change implementation?	
Training (expanding roles)	How important a factor is training in ensuring that change can be successfully implemented by staff at all levels?	
Staff turnover	Does staff leaving in the middle of a change process greatly affect the outcome?	
Resources	Money / Staff / IT / Building constraints	
Change methodology	Approach, goals, mission, objectives, planning, data collection, measurement tools.	
Staff experience	Does staff experience / inexperience have a big influence on change implementation?	
Politics	Political barriers? Pressure from targets? Targets encroaching on ability? Targets good for initiating change?	

Thank you once again for your participation

The Sharma Excel Scale - (Sharma, Netemeyer and Mahajan 1990)

Items included	Item wording and amendments – (deletions are highlighted, text in brackets denotes additions)
1 √	The organisation is flexible and quick to respond to problems
2 √	This organisation is flexible towards people, but administers discipline when necessary
3 √	We have a small, but efficient management team
4	This organisation develops products (and/or services) that are natural extensions of its products/services
5	This organisation concentrates on products (and/or services) where it has high levels of skill and expertise
6 √	The organisation's values are the driving force behind our organisation
7 √	In this organisation we instil a value system in all our employees
8 √	It is the belief of management in this organisation that its people are of utmost importance to the organisation
9 √	The organisation truly believes in its people
10 √	In this organisation we encourage employees to develop new ideas
11 √	This organisation believes in experimenting with new products (services) and ideas
12 √	In this organisation the management creates an atmosphere that encourages creativity and innovation
13 √	The organisation believes that listening to what (patients)/customers/clients have to say is a good skill to have
14	This organisation considers after-the-sale service (and/or follow up of customer/clients) as important as making the sale itself
15 √	We provide personalised attention to all our (patients)/customers/clients
16 √	This organisation has a small staff that delegates authority efficiently

LPI permission letter

KOUZES POSNER INTERNATIONAL
15419 Banyan Lane
Monte Sereno, California 95030 USA
FAX: (408) 354-9170

June 16, 2004

Ms. Karen Castille
Director of Emergency Services
3rd Floor, Heron House
322 High Holborn
London WC1V 7PW5

Dear Karen:

Thank you for your request to use the Leadership Practices Inventory (LPI) in your dissertation. We are willing to allow you to reproduce the instrument as outlined in your email, at no charge, with the following understandings:

> (1) That the LPI is used only for research purposes and is not sold or used in conjunction with any compensated management development activities;
> (2) That copyright of the LPI, or any derivation of the instrument, is retained by Kouzes Posner International, and that the following copyright statement is included on all copies of the instrument: 'Copyright © 2003 James M. Kouzes and Barry Z. Posner. All rights reserved. Used with permission.';
> (3) That one (1) **bound** copy of your dissertation and one (1) copy of **all** papers, reports, articles, and the like which make use of the LPI data be sent **promptly** to our attention; and,
> (4) That you agree to allow us to include an abstract of your study and any other published papers utilizing the LPI on our various websites.

If the terms outlined above are acceptable, would you indicate so by signing one (1) copy of this letter and returning it to us. Best wishes for every success with your research project.

Cordially,

Barry Z. Posner, Ph.D.
Managing Partner

I understand and agree to abide by these conditions:

(Signed)   Date: 16.6.04

NHS

Modernisation Agency

Ms Karen Castille
Tel: 0207 061 6773

Emergency Services Collaborative
3rd Floor Heron House
322 High Holborn
London
WC1V 7PW

14th June 2004

Dear [First name of the programme manager],

I am writing to ask for your help with some important research that draws on your experience of implementing change in the ESC. The attached questionnaire has been sent to all past and current ESC programme managers and seeks your views on clinical leadership. **It should only take about 10 minutes to complete.**

This research aims to increase our understanding of different leadership styles and the influence these might have on implementing change and improvement in the NHS. The questionnaire is based on internationally recognised instruments for measuring leadership *(Leadership Practices Inventory © 2003, James M. Kouzes and Barry Z. Posner)* and corporate excellence *(The "Excel" scale – Sharma, Netemeyer & Mahajan, 1990).*

Some of you have already helped to shape the design of this research. Your feedback and support has been immensely helpful. The findings will ensure that the learning from your work in the ESC is captured and used constructively to help other NHS staff to implement change. If you would like to stay in touch with this research, or would like more information, please do not hesitate to contact either myself, or Emma Angus (Research Assistant) on 07771630104. Alternatively, you may prefer to write your contact details in the space provided at the foot of the questionnaire.

After completing the questionnaire please post it to the above address using the enclosed envelope, or alternatively fax it to: 0207 061 xxxx, **no later than Friday 25th June 2004.** Your responses will be completely confidential and all published information will be anonymised.

I do hope that you are able to find the time to complete the questionnaire and would like to thank you in advance for taking the time to participate.

Very best wishes.
Yours Sincerely,

Karen.

Karen Castille
Emergency Services Team

Timeline of activities - 2004

June 7th
Pilot the questionnaire on ESC wave leads

Following the pilot, make any amendments to the questionnaire

June 16th
Send out the questionnaire to ESC programme managers (postal distribution)

June 25th
Deadline for returning questionnaire

June 28th
Send out follow up emails to respondents who have not returned a completed questionnaire

July 8th / 9th
Phone-calls to be made to respondents who still have not returned a completed questionnaire

July

Input questionnaire data into SPSS

Questionnaire Analysis

Clinical leadership survey

LEADERSHIP QUESTIONNAIRE

This questionnaire seeks your views on the leadership styles/practices of **your local overall ESC clinical lead.** Please complete this questionnaire with the same person in mind throughout.

The first part asks for background information about you and your organisation. The last part asks about your views on the leadership practices of your local ESC clinical lead. Please either **circle the appropriate number or tick the box** that best describes your choice. A few questions ask you to write in the space provided.

E.g: 1 2 3 4 5 6 7 8 9 10   **OR**   Yes o   No ✓

ABOUT YOU

- Gender: Male O   Female O

- Age (in years):   25-34 O   35-44 O   45-54 O   55+ O

- Your occupational background:

  Nurse O   Doctor O   AHP O   Manager O   Other O

- How long have you been/were you involved in the ESC?   ....months

ABOUT YOUR ORGANISATION

- Is it: A University Hospital   O   A District General O   Other O

With your organisation in mind, please indicate the extent to which you agree/disagree with the following statements by using the following 10 point scale,
1 = almost never and 10 = almost always.

Please circle one number for each statement.

[Excellence scale. Shama, Netemeyer, and Mahajan (1990).In Handbook of Marketing Scales (1999).]	Almost Never	Rarely	Seldom	Once in a While	Occasionally	Sometimes	Fairly Often	Usually	Very Frequently	Almost Always
1. The organisation is flexible and quick to respond to problems.	1	2	3	4	5	6	7	8	9	10
2. The organisation is flexible towards people, but administers discipline when necessary.	1	2	3	4	5	6	7	8	9	10

	Almost Never	Rarely	Seldom	Once in a While	Occasionally	Sometimes	Fairly Often	Usually	Very Frequently	Almost Always
3. We have an efficient management team.	1	2	3	4	5	6	7	8	9	10
4. The organisation's values are the driving force behind our organisation.	1	2	3	4	5	6	7	8	9	10
5. In this organisation we instil a value system in all our employees.	1	2	3	4	5	6	7	8	9	10
6. It is the belief of management in this organisation that its people are of utmost importance to the organisation.	1	2	3	4	5	6	7	8	9	10
7. The organisation truly believes in its people.	1	2	3	4	5	6	7	8	9	10
8. In this organisation we encourage employees to develop new ideas.	1	2	3	4	5	6	7	8	9	10
9. This organisation believes in experimenting with new services and ideas.	1	2	3	4	5	6	7	8	9	10
10. In this organisation the management creates an atmosphere that encourages creativity and innovation.	1	2	3	4	5	6	7	8	9	10
11. The organisation believes that listening to What patients/customers have to say is a good skill to have.	1	2	3	4	5	6	7	8	9	10
12. We provide personalised attention to all our patients/customers.	1	2	3	4	5	6	7	8	9	10
13. This organisation delegates authority efficiently.	1	2	3	4	5	6	7	8	9	10

ABOUT YOUR LOCAL, OVERALL ESC CLINICAL LEAD

- Has there been more than one designated overall clinical lead during the ESC programme?   Yes O   No O

(if yes, please choose the overall clinical lead that was in post for the longest period of time when answering the remaining questions)

- Gender of the clinical lead?   Male O   Female O

- How long has he/she been an ESC lead?   .... months

- What is the estimated age range (in years) of the clinical lead?

   25 – 34 O   35 – 44 O   45 – 54 O   55+ O

- Was/is the person you have described above the most effective/influential of all the clinical leads in helping to bring about change and improvement in the ESC?

Yes O   No O

LEADERSHIP STYLES/PRACTICES OF YOUR CLINICAL LEAD

[Based on LPI questionnaire. 'Copyright © 2003 James M. Kouzes and Barry Z. Posner. All rights reserved. Used with permission.]

Please rate the leadership qualities of the person that you have described above.

Please be realistic and honest about **the extent to which this person *actually* engages in the described behaviour.** Do not answer in terms of how you would like to see this person behave or how you think he or she should behave. Please answer in terms of how this person typically behaves on most days, and with most people. There are no right or wrong answers as leadership style varies greatly between individuals.

Using the following 10 point scale **please circle one number** for each statement **1 = almost never and 10 = almost always.**

How frequently does the person engage in the behaviour described?	Almost Never	Rarely	Seldom	Once in a While	Occasionally	Sometimes	Fairly Often	Usually	Very Frequently	Almost Always
14. Sets a personal example of what he/she Expects of others.	1	2	3	4	5	6	7	8	9	10
15. Talks about future trends that will influence how the work gets done.	1	2	3	4	5	6	7	8	9	10
16. Seeks out challenging opportunities that test his/her own skills and abilities.	1	2	3	4	5	6	7	8	9	10
17. Develops co-operative relationships among the people he/she works with.	1	2	3	4	5	6	7	8	9	10
18. Praise people for a job well done.	1	2	3	4	5	6	7	8	9	10
19. Spends time and energy making certain that the people he/she works with adhere to the agreed principles and standards	1	2	3	4	5	6	7	8	9	10
20. Describes a compelling image of what the Future could be like.	1	2	3	4	5	6	7	8	9	10
21. Challenges people to try out new and Innovative ways to do their work.	1	2	3	4	5	6	7	8	9	10
22. Actively listens to diverse points of view.	1	2	3	4	5	6	7	8	9	10
23. Makes it a point to let people know about his/her confidence in their abilities	1	2	3	4	5	6	7	8	9	10

	Almost Never	Rarely	Seldom	Once in a While	Occasionally	Sometimes	Fairly Often	Usually	Very Frequently	Almost Always
24. Follows through on promises and commitments he/she makes.	1	2	3	4	5	6	7	8	9	10
25. Appeals to others to share an exciting dream of the future.	1	2	3	4	5	6	7	8	9	10
26. Searches outside the formal boundaries of the organisation for innovative ways to improve what we do.	1	2	3	4	5	6	7	8	9	10
27. Treats others with dignity and respect.	1	2	3	4	5	6	7	8	9	10
28. Makes sure that people are creatively rewarded for their contributions to the success of projects.	1	2	3	4	5	6	7	8	9	10
29. Asks for feedback on how his/her actions affect other people's performance.	1	2	3	4	5	6	7	8	9	10
30. Shows others how their long-term interests can be realised by enlisting in a common vision.	1	2	3	4	5	6	7	8	9	10
31. Asks, 'what can we learn?' when things don't go as expected.	1	2	3	4	5	6	7	8	9	10
32. Supports the decisions that people make on their own.	1	2	3	4	5	6	7	8	9	10
33. Publicly recognises people who exemplify commitment to shared values.	1	2	3	4	5	6	7	8	9	10
34. Builds consensus around a common set of values for running the organisation.	1	2	3	4	5	6	7	8	9	10
35. Paints the 'big picture' of what we aspire to accomplish.	1	2	3	4	5	6	7	8	9	10
36. Makes certain that achievable goals are set, concrete plans are made and measurable milestones are established for the projects in the ESC programme.	1	2	3	4	5	6	7	8	9	10
37. Gives people a great deal of freedom and choice in deciding how to do their work.	1	2	3	4	5	6	7	8	9	10
38. Finds ways to celebrate accomplishments.	1	2	3	4	5	6	7	8	9	10
39. Is clear about his/her philosophy of leadership.	1	2	3	4	5	6	7	8	9	10
40. Speaks with genuine conviction about the purpose of the work.	1	2	3	4	5	6	7	8	9	10
41. Experiments and takes risks, even when there is a chance of failure.	1	2	3	4	5	6	7	8	9	10

	Almost Never	Rarely	Seldom	Once in a While	Occasionally	Sometimes	Fairly Often	Usually	Very Frequently	Almost Always
42. Ensures that people grow in their jobs by learning new skills and developing themselves.	1	2	3	4	5	6	7	8	9	10
43. Gives the members of the team lots of appreciation and support for their contributions.	1	2	3	4	5	6	7	8	9	10
44. Is generally viewed as a very effective leader by the organisation.	1	2	3	4	5	6	7	8	9	10

Thank you for taking the time to complete this questionnaire, your response is greatly appreciated. Please feel free to make any additional comments below if you wish.

OPTIONAL SECTION

If you would like to receive information about the results of the research please provide your contact details below.

Name:

....

Email Address:

....

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