THE IMPACT OF RISK MANAGEMENT PROCESSES ON CLINICAL NEGLIGENCE CLAIMS ACROSS NHS ACUTE HOSPITAL TRUSTS

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Thesis submitted to the University of Nottingham

for the degree of Doctor of Philosophy

MAY 2012

Executive Summary

The Impact of Risk Management Processes on Clinical Negligence Claims Across NHS Acute Hospital Trusts

Recent years have seen a global trend towards the pursuit of healthcare quality as countries attempt to maximise the usage of resources amidst concerns about increasing costs, competing priorities and patient safety (World Health Organisation 2003; Dey, Hariharan & Brookes 2006, Lagrosen, Backstrom & Lagrosen 2007). The incentives for quality care were traditionally provided by the tort system of medical negligence – this offered patients a route to pursue compensation for sub-optimal levels of care, and thereby incentivised providers to treat patients carefully. However, large increases in the cost of this system in recent decades led to modifications being made; many state governments assumed the role of insurer of healthcare providers as private insurers exited the market – and the approach taken in the UK in 1990 was to introduce a fault-based enterprise liability system known as NHS indemnity. This system allowed secondary health providers (NHS trusts) to be indemnified for clinical negligence claims in return for the payment of insurance premiums – such premiums were paid to a special health authority - the NHS Litigation Authority (NHSLA) – who assumed responsibility for the management of claims throughout the NHS in 1995.

Particular interest in this study will be on the incentives for quality care which exist between the NHSLA and NHS trusts – these incentives evolved from a system of excess levels in the 1995-2001 period to a system of risk management standards in the 2002-2009 period. The system of risk management standards offered reputational and financial benefits to trusts who achieve higher risk management levels (where higher levels are assumed to represent superior risk management processes within trusts), and the impact of this system on the clinical negligence outcomes of NHS trusts is the particular focus of this study.

Previous studies have examined the role of quality management systems in healthcare (Braithwaite et al, 2006; Macinati, 2008); however, a lack of suitable data has meant that no empirical studies on the effectiveness of the NHSLA system of risk management standards have been conducted. However, such data is available for this study, and this will allow an empirical investigation into the impact of risk management processes on the clinical negligence claims of acute NHS trusts – where risk management processes are proposed to be dependent on the governance structure and financial health of a trust i.e. it relates to how risk management is supported by good governance and the availability of finance.

The study was conducted in two phases; firstly, a series of ten exploratory interviews with trust managers who were informed on risk management within NHS trusts were sought – this yielded valuable insights for the subsequent empirical analysis of a unique panel database. The empirical analysis initially analysed the determinants of risk management levels, and found that adoption of a new governance structure (by becoming a foundation trust (FT)) is significantly associated with more efficient risk management processes, controlling for other factors. The determinants of clinical negligence claims were then considered and this revealed that more efficient risk management processes (reflected in higher risk management

levels, adoption of an FT governance structure and higher levels of financial health) are significantly associated with lower numbers of clinical negligence claims, controlling for other factors. In addition, adoption of an FT governance structure was found to be associated with higher closed claim values - this implies that well managed trusts are willing to offer higher amounts to settle claims early (thereby reducing legal costs and avoiding reputational damage).

Overall, this study offers strong support for the proposition that more efficient risk management processes should lead to improved clinical negligence outcomes for NHS trusts, and provides recommendations to assist trusts to improve their own risk processes. Specifically, the system of risk management standards, which is costly for the NHSLA to administer, is shown to deliver benefits in the form of reduced numbers of new claims. However, there are a considerable number of trusts with room for improvement in their risk management processes, and recommendations are also offered to assist such trusts to become more efficient at risk management. In short, the study has contributed to knowledge and understanding of the impact of risk management processes on clinical negligence claims within NHS trusts and provides a useful framework for further research into this field.

Acknowledgements

I would like to take this opportunity to acknowledge the support of and say thank you to a number of people without whom this thesis would not have been started nor completed:

My supervisors, Professor Paul Fenn and Dr. Dev Vencappa of Nottingham University Business School for their constant advice, encouragement and patience. As a part-time student based in Ireland, these relationships were crucial to getting this project completed. I would also like to acknowledge the support of Aoife Hanley who assisted me in the early stages of this research.

The NHSLA for providing the claims and specialist data which was central to the empirical analysis in this study.

Andrea Tomlinson and all the staff in the Doctoral Programme office at Nottingham University Business School, for the support and flexibility offered to me in completing my PhD part-time. I did find that the process of undergoing annual reviews (one, two and three) greatly helped to develop my research ideas and would like to thank Professor David Paton and Professor Stephen Diacon for the helpful feedback offered at these reviews.

The ten interviewees (nine NHS trust managers and a risk manager at the NHSLA) who volunteered to take part in the first phase of this study – the insights offered helped greatly to clarify my research thoughts for the subsequent empirical analysis.

My own Head of School, Dr. Tom O'Toole for his never-ending support to those undertaking research in WIT Business School – I still recall the email soliciting staff interest in health economics research as the trigger which started this all off. At this time, the help and support of Dr Sheila O'Donohue in referring me to Paul Fenn and in allowing me become part of the Centre for Healthcare Management and Health Economics at WIT was also crucial to my research journey.

The heads of department at WIT Business School (Ger Long, Joan McDonald, and particularly Dr. Denis Harrington) for the support and flexibility offorded to me particularly in the latter stages of this study.

To the many other staff in WIT who helped out in various ways (such as providing access to Stata software and assistance with Endnote) particularly the words of encouragement of the business staff in the Applied Technology Building. The words of wisdom and friendship of John Casey were also constant throughout this process.

To my parents for their constant support and friendship throughout my life.

Finally, to my wife Mary and children Padraig, Moya and Hannah – three wonderful distractions throughout this research project – for being there for me.

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
CNST	Clinical Negligence Scheme for Trusts
CRIS	Centre of Risk and Insurance Studies
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortisations
ELS	Existing Liabilities Scheme
FT	Foundation Trust
GP	General Practitioner
GMM	General Method of Moments
MDO	Medical Defense Organisation
NHS	National Health Service
NHSLA	National Health Service Litigation Authority
NICE	National Institute of Clinical Negligence
NPSA	National Patient Safety Agency
NSF	National Service Framework
PCT	Primary Care Trust
PDC	Public Dividend Capital
PIE	Perceived Injurious Event
RAB	Reserve Accounting and Budgeting
RHA	Regional Health Authority
RPST	Risk Pooling Scheme for Trusts
SHA	Strategic Health Authority
UK	United Kingdom
US	United States

CHAPTER ONE

INTRODUCTION

1.1 Chapter Overview

This chapter aims to provide a rationale for conducting this study on acute National Health Service (NHS) trusts, in particular the focus on the impact of risk management processes on clinical negligence claims within these organisations. In doing so, the chapter will provide a background to the study, the framing of the research question and the associated research objectives, and the location of this study within the literature. Existing studies in this area are also reviewed and the gaps that have been identified are presented. Finally, the structure for the remainder of the thesis is outlined.

1.2 Background to the Research

A number of studies in recent decades (World Health Organisation 2003; Dey, Hariharan and Brookes 2006, Lagrosen, Backstrom and Lagrosen 2007) have highlighted a global trend towards the pursuit of healthcare quality amidst concerns of increasing costs, competing priorities and patient safety. This quest for quality has become the touchstone of these debates as the OECD (2004, p37) noted that '*attention to the quality of care is a relatively new policy concern ... nevertheless, innovation in this area appears promising, and many changes, such as those designed to reduce medical injuries and decrease the provision of unnecessary care, stand to improve the cost-effectiveness of health-care delivery'*. At the same time, there is also extensive debate about what constitutes quality in healthcare (Morgan & Potter 1995; Blumenthal 1996, Boaden 2006). This is evidenced by the plethora of definitions offered in the literature which include 'doing the right thing' to achieve the best possible clinical outcomes; patient safety; giving patients what they need as opposed to what they want; retaining talented staff and satisfying policy makers and healthcare funders (Ovretveit 1992; Leahy 1998; Lerer 2000; Black and Gruen 2005).

The incentives for quality care have been affected by the tort liability system for decades; this system holds healthcare providers liable for medical injuries that are attributable to negligence. In theory, a well functioning negligence rule will create incentives for optimal care; however, this assumes perfect information on the part of potential injurers, the courts and, ex-post, of victims (Danzon, 2000). A consequence of tort liability in the presence of imperfect information is the existence of a network of insurance arrangements whereby providers protect themselves against costly litigation claims made against them (Studdert et al., 2004). In the UK prior to the 1980s, such arrangements mainifested themselves in situations where doctors retained individual liability [although they were insured through a medical defense organisation – (MDO)] while claims made against other hospital staff were covered by the provider's insurance (Fenn et al, 2004). However, Dingwall and Fenn (1994) found that the costs of such a system escalated in the 1980s and this led to very high liability insurance premiums and the withdrawal of insurance organisations from this market. This led to alternative approaches to overhaul the existing tort liability arrangements being considered and the approach adopted in the UK was a fault-based enterprise liability system (known as NHS Indemnity) in 1990 whereby health authorities assumed full responsibility for all clinical negligence claims against all employees (including doctors) (Abraham and Weiler, 1994).

At the same time that NHS Indemnity was introduced, a number of other structural changes occurred within the NHS - health authorities ceased to run hospitals which now became NHS Trusts, while concerns about the ability of such authorities to finance costly clinical negligence claims made against them led to the creation of a special health authority – the NHS Litigation Authority (NHSLA) – to manage claims (Fenn et al. 2004; Visvalingam, 2011). The NHSLA became the indemnifier for clinical negligence claims made against NHS trusts, and in return trusts were required to make annual contributions to cover the cost of this indemnity - the contributions varied for different types of trust, and incentives were introduced to help reduce the number of negligent or preventable incidents within trusts (NHSLA, 2011a). Such incentives are the focus of this study – in particular the impact of a risk management programme which was introduced in 2000; this allowed trusts to obtain generous financial discounts from their NHSLA contributions in return for the achievement of higher risk management levels (Bush and Arulkumaran, 2003). Three risk management levels were created by the NHSLA – level one relates to documenting policy, level two

relates to practice/implementation, and level three relates to performance – and trusts operating at higher risk management levels would be expected to have superior risk management processes in place (NHSLA, 2011a). Discounts of 10%, 20% and 30% were offered for the attainment of levels one, two and three respectively, and such discounts offered significant savings to acute trusts as shown below:

Table 1.1 Average Acute Trust CNST Contribution and Trust Turnover, 2005-2008

Year	Average CNST Contribution	Average Turnover	CNST Contribution as a % of Turnover
2005/2006	£1,717428	£144,852,934	1.2%
2006/2007	£1,865,317	N/A	N/A
2007/2008	£1,815,511	N/A	N/A

Source: NHSLA (2011a)

This table shows that a 10% reduction on a trust's CNST contribution equates to an average saving of almost £180,000 which represented significant potential savings for trusts in need of extra resources. This system of risk management levels was a unique system for the NHS, but can be considered to be broadly similar to quality management systems which are now widely advocated in healthcare (Macinati, 2008). Such systems are typically administered by regulatory bodies such as the NHSLA and can be important tools to help hospitals improve their quality of care (Kunkel and Westerling, 2006). However, healthcare organisations must successfully undergo a rigorous assessment process before achieving this public recognition of quality care, and the eventual outcome to such assessments is influenced by a range of organisational factors. Two such factors are of particular interest to this study – financial strength and governance structure – as it is argued that these are key enablers to trusts achieving higher risk management levels (Holtz and Janger, 2011; Tidd et al, 2004).

1.3 Research Question and Research Objectives

Recognising that the system of risk management levels is a relatively new phenomenon in the NHS, this study seeks to answer the following research question:

> *What is the impact of risk management processes on clinical negligence claims across acute NHS trusts?*

Note that the term 'risk management processes' will be used in this study to encompass risk management levels, governance structures and financial strength; this is because it is proposed that risk management as a function within NHS trusts relates to more than the external risk management level awarded by the NHSLA at an assessment – it also relates to how risk management is supported by good governance structures and by the availability of finance. In short, a trust's risk management process is dependent on the interconnections between risk management levels, governance structures and financial efficiency; each of these variables will thus be considered as part of its risk management process.

The research question shows that this study will examine the relationship between risk management processes and clinical negligence outcomes; arising from this, there are a number of specific research objectives as follows:

(i) To explore the determinants of the risk management levels achieved by acute NHS trusts;

(ii) To assess the level of discretion available to NHS trust managers to influence it's risk management level;

(iii) To analyse the impact of risk management processes on clinical negligence claims – this will be decomposed into two components:

   i. To analyse the relationship between risk management levels and new clinical negligence claims controlling for other factors;

   ii. To analyse the relationship between risk management levels and total closed claim payments controlling for other factors;

(iv) To propose a model highlighting the effect of risk management processes on clinical negligence claims.

The following sections will aim to locate this study within a range of relevant literatures. This will furthermore provide a rationale for why research in this area is both timely and appropriate in terms of responding to an under-researched area. Finally, it will be demonstrated that both the methodology and empirical data available for this study have been selected to highlight an area which the existing body of literature has not addressed to date.

1.4 Locating the Research

There are a number of theoretical lens through which this study can be explored, and these include the following:

(i) *Corporate Risk Management Literature*: Interest in risk management has increased significantly in recent years, and a number of hypotheses can be advanced as to why firms seek to manage risk. For example, the shareholder wealth hypothesis argues that risk management activities are beneficial if they enhance a firm's value, while a managerial risk aversion hypothesis argues that managers seek to maximise their own personal wealth at the expense of shareholders. This literature can be drawn upon when assessing the rationale for NHS trusts' seeking to improve their risk management levels.

(ii) *Quality Management Literature*: Parallels can be drawn between risk management levels and quality management literature based on the recognition that improvements in risk management levels are similar to the achievement of a quality management standard in other healthcare countries. Such systems are now used widely in healthcare; this can be viewed as both a reaction to the increased pressure to reduce costs, and the desire to maintain high levels of quality care (Shortell et al. 1998; Kunkel and Westerling, 2006). Such systems do not guarantee high levels of quality care, and the absence of such a system does not imply poor levels of quality care (Kunkel and Westerling, 2006).

(iii) *Innovation Literature:* This literature is also relevant to this study to the extent that decisions by NHS trusts' to seek to improve their risk management level are innovative attempts to improve one's quality of care (Varkey et al. 2008). Such decisions can lead to failure if careful consideration is not given to a wide range of factors (internal and external to the organisation) – any one of which can derail the innovation project. Two such factors which impact on the outcome of innovations are the presence of suitable governance structures and the availability of financial investment.

(iv) *Insurance Literature*: Given that the indemnity scheme for NHS trusts is effectively an insurance arrangement whereby the NHSLA reimburses trusts for the cost of clinical negligence claims, literature from the field of insurance is very relevant to this study. For example, a moral hazard argument can be made that indemnifying trusts in full for clinical

claims may dilute the incentives for quality care (Fenn et al. 2010), while an adverse selection argument can be made that the policy of offering financial discounts for higher risk management levels will incentivise trusts to invest in improved risk management practices (Bond and Crocker, 1991).

(v) *Claims Management Literature*: Clinical negligence claims can be viewed as a reflection of perceived substandard care in healthcare organisations, and a review of the process by which medical treatment can result in such claims is included. This will show that a proactive approach to dealing with medical errors when they occur can help reduce the proportions of such events which end up as clinical negligence claims, and thereby reduce the associated legal costs of such claims.

In summary, a number of different theoretical lens' can be applied to this particular study as the decision to seek higher risk management levels within NHS trusts will overlap into a variety of strands of literature.

1.5 Existing Research and Gaps in the Literature

Notwithstanding the vast range of literature under each of areas (i) to (v) above, there has been an almost complete lack of empirical research into the extent to which risk management processes impact on clinical negligence claims within healthcare systems. In the UK, the relatively recent emergence of risk management levels in 2001 as a vehicle for improving healthcare quality is a contributing factor, given that a full evaluation of the effectiveness of this system is only possible a number of years after their introduction. A second explanation for the paucity of studies in this area is the difficulty in accessing empirical data for such a study – in particular, clinical negligence claims data is highly sensitive information which is typically not released into the public domain by the insurance companies who control such information.

The absence of available claims data has prevented an extensive empirical study from being conducted into the impact of risk management processes on claim outcomes. In such an empirical study, one would expected to find that higher risk management levels would be associated with

lower numbers of clinical negligence claims in future years – such a view is consistent with Nair and Chandraharan (2010) who found that there are reputational advantages associated with higher risk management levels i.e. trusts with higher levels are perceived to have superior patient safety records. However, such an anticipated relationship can be distorted by many factors; for example, Fenn et al. (2010) noted that while one would expect higher levels of care in hospitals to lead to better health outcomes (i.e. lower levels of claims), it is possible that hospitals may respond to incentives to reduce claims levels by practising a form of 'defensive medicine' – where excessive care is provided to avoid medical negligence issues; this implies that hospitals with very lower claims experiences may actually be less efficient than those who have higher levels of claims. In addition, Fenn et al. (2010) posit that the level of care supplied can be affected by the level of certainty over anticipated court rulings – there are strong incentives for appropriate care when there is certainty over court rulings while there may be excessive levels of care when there is much more uncertainty over these outcomes. Clearly, clinical negligence claims are affected by a range of factors and an empirical study which control for such factors could shed light on the above hypotheses.

An empirical study in this field was conducted by Fenn et al. in 2012 – this examined the relationship between risk management levels and MRSA infection rates, and found that the attainment of a level three risk management standard was significantly associated with improvements in infection rates; however level two compliance did not lead to significant improvements in care. A quantitative panel data approach was employed for this study which provided support for a viewpoint that risk management levels can drive changes in quality levels. Furthermore, the results of this study indicate that financial discounts provide incentives to hospitals *'so that the presence of insurance itself need not completely dilute the incentives for care provided by tort liability'* (Fenn et al., 2010, p14). The authors conclude that these insights are relevant to efforts to improve patient safety but also to the wider evaluation of alternative mechanisms for compensating medical injuries.

On a broader level, there have been studies into the effectiveness of quality management systems in healthcare, and the results are mixed; from a positive viewpoint, introducing such systems can both improve an organisation's professional standing (Bohigas et al. (1996) and act as a vehicle to

achieve organisational change and development (Pomey et al. 2005; Shaw, 2003). However, Sewell (1997) found that such systems can develop into paper-chase exercises with no guarantee of improving quality and that they are built around rigid standards and criteria that fail to address the service outcomes of patients. One such quality management system which has been adapted to the healthcare industry is the ISO 9001:2000 system (additional text was added to this standard specifically for health service organizations); implementing this system should lead to the pursuit of process improvement in order to prevent errors and other adverse outcomes (Frost, 2006); however, no studies to date have analysed whether the introduction of this system has delivered on this objective.

While acknowledging the contributions of the aforementioned authors, it is clear that there is an overall paucity of empirical studies and related literature on the tangible impacts of quality management systems on quality levels in healthcare. This deficit in empirical work has been alluded to by a number of authors:

- Braithwaite et al. (2006) question the quality management systems approach given that research into its effectiveness (in terms of high quality clinical and organisational performance) is at an embryonic stage.
- Macinati (2008) cites the lack of systematic evidence on the relationship between the quality management systems and organizational performance. This is especially marked in relation to the effect of such systems on patient care, which can lead to clinical negligence claims if the patient does not perceive this to be at a desired level.

In summary, while there have been empirical studies into the effectiveness of quality management systems in healthcare, no extensive empirical studies have been found which assess the effect of risk management processes on clinical negligence outcomes.

1.6 Contribution of the Research

Having discussed the limited empirical studies to date on the effectiveness of risk management levels on clinical negligence claims, it must also be stated that the "*the data available from the NHSLA has opened up a unique opportunity for research on this topic*" (Fenn et al., 2010, p13). Specifically, the emergence of the NHSLA as the insurer of clinical negligence claims in the UK did lead to claims (and risk management level) data being made publicly available for analysis – such claims data included details of each acute trust's number of new claims and closed claim payments per annum. This publicly available data was complemented by the provision of a unique individual database of NHS claims to the Centre of Risk and Insurance (CRIS) at Nottingham University Business School – this database was available for this study and allowed additional information such as the number of closed claims per trust per annum to be obtained. Such data will permit an extensive empirical study into the impact of risk management processes on clinical negligence claim outcomes – this reinforces Fenn et al. (2010, p13) who point out that "*whether hospital care levels respond to the financial incentives explicitly incorporated into risk pooling contributions is an empirical matter*".

The methodology proposed for this empirical study will primarily be a quantitative panel data approach similar to that employed by Fenn et al (2012) in their analysis of the impact of risk management levels on MRSA infection rates. Such a methodology has not been employed to date to assess the impact of risk management processes on clinical negligence claims, and given the unique database of information which was collected by the researcher, this will permit a more extensive analysis of this issue than was possible in prior studies. This quantitative panel data approach will be complemented by a small number of initial exploratory interviews with NHS personnel, and is also part of the contribution of this study to the body of knowledge in this field.

As outlined in the research objectives, risk management processes will encompass the system of risk management levels, governance structures and financial performance; this study will thus shed light on the interconnections between these elements of risk management processes, and also highlight their relationships with clinical negligence outcomes. Research in this field is timely for the NHS for a number of reasons:

(1) A major reform of NHS trusts' governance structures (the formation of foundation trusts) took place during the time period of this study (2002-2009) and this governance change had financial implications for trusts – this study will thus provide insights into the effect of such reforms on both risk management levels and clinical negligence claim outcomes;

(2) A review of the publicly available data on risk management levels (NHSLA, 2011a) shows that of the 159 acute trusts in 2009/2010, 72 of them (45%) were still at risk management level one – this is surprising given the reputational and financial advantages for progressing to higher levels, and suggests that there are barriers preventing trusts from making such improvements. These barriers will be addressed as part of this study;

(3) The system of risk management levels has a number of costs - these include the cost of administering the risk management level assessments (the NHSLA annual report 2010-11 states that £2.07 million was spent on external contractors for such assessments) as well as the discounts offered for trusts that achieve higher risk management levels - and an anticipated benefit for undertaking these costs would be reductions in both the number and value of clinical negligence claims. The impact of risk management processes on clinical negligence claims will be assessed in subsequent chapters, and at the outset, an aggregate analysis of the trends in clinical negligence variables is shown below:

Table 1.2 Trends in Claims Recorded and Clinical Claims Payments

Year	Number of Clinical Claims Recorded	Clinical Claims Payments (£ million)
2005/06	5,697	384.4
2006/07	5,426	424.4
2007/08	5,470	456.3
2008/09	6,088	614.3
2009/10	6,652	651.0
2010/11	8,655	729.1

Source: NHSLA Annual Report 2010-2011

This table highlights that despite the incentives offered through risk management levels, both clinical claim numbers and claim values have increased significantly in recent years. It is argued in the above report that part of the reason for the increase in 2010-2011 was due to a requirement for claimants to send a letter of claim to the NHSLA at the same time it was sent to the defendant NHS body;

however, a deeper analysis of this data is merited as it implies that the system of risk management levels which was introduced in 2000 has not succeeded in reducing either the number or cost of clinical negligence claims.

1.7 Structure of the Thesis

The remainder of the thesis is structured as follows:

Chapter two provides a background to the risk management processes within the NHS from its origin in 1948 to the time of completion of this study. This will show how risk management was not taken very seriously in the early years but has grown to become a major issue in recent decades. The development of risk management levels will be discussed along with other institutional changes which have occurred within the NHS. In addition, trends in the management of clinical negligence claims will be highlighted along with the new approach being adopted by the NHSLA to managing these claims.

Chapter three examines the literature relevant to risk management decisions in healthcare. This commences with a brief review of the objectives and governance structure within healthcare systems as these will provide a context for the risk management decisions taken by healthcare managers. Literature from the area of corporate risk management will then be considered – this will assess the extent to which approaches used to manage risk in the private sector can be applied in healthcare. Studies of quality management systems in healthcare will then be discussed – this will show that while there are strong motivations for introducing such systems, the extent to which these perceived benefits are achieved is questionable. Literature reviewing the critical success factors which impact on the success of innovations are then presented – this literature will show that a range of factors internal and external to the organisation impact on the success or otherwise of an innovation project. This will be followed by insurance literature which will address the incentives introduced by the NHSLA to avoid the moral hazard risks of its insurance arrangement for the clinical negligence claims of NHS trusts. Finally, the process by which medical claims are managed within healthcare trusts will be explored – this will discuss the reasons why claimants take lawsuits against healthcare

providers, and suggest that a proactive approach to remedying complaints can help to reduce the number of these which turn into clinical negligence claims.

Chapter four describes the approach proposed to achieve the research question and associated objectives. A conceptual framework is initially presented which revolves around the decision making process of NHS trust managers in relation to risk management levels, and the approach taken for this study is then described – this will consist of initial exploratory interviews with NHS trust managers followed by a quantitative panel data analysis of a unique database of empirical data.

Chapter five presents the results of ten exploratory interviews which were conducted as the first phase in this study; nine of these were with NHS trust managers and one with an NHSLA risk manager. These interviews address the first research objective of this study (the determinants of risk management levels in NHS trusts), and discuss a range of issues including the nature of risk management within NHS trusts and the extent to which risk management levels are perceived to impact on claims management variables within trusts. The limitations of this approach are also discussed, and it will be highlighted that while much useful data was obtained during these interviews, the main purpose of such discussions was to clarify assumptions/hypotheses used in the subsequent empirical chapters.

Chapter six summarises the empirical data available for this study; this will show that a unique combination of data is available from public sources and data obtained from the NHSLA through CRIS at the University of Nottingham. All of the key variables of interest are described along with a time series analysis of major trends in these variables in the period 2002-2009.

Chapter seven is the first of the empirical chapters and addresses the second research objective of this study (the level of discretion available to NHS trusts managers to influence it's risk management level). Initially, factors which are hypothesised to impact on risk management levels are described – this leads to a specification of the appropriate estimator and estimating equation before the results of this analysis are presented. This analysis will commence with an analysis of pooled data and progress to panel data analysis which controls for the individual trust heterogeneity in the data.

Chapter eight presents the regression analysis on new clinical negligence claims and follows a similar structure to that of chapter seven i.e. it commences with a description of relevant factors which are hypothesised to affect new claims in NHS trusts', and progresses to consider suitable measures /proxies for these variables. Two alternative estimators are proposed – a count data model (negative binomial model) and a log linear model – and the respective results from each model are then compared and discussed. The possible endogeneity of certain variables is also assessed at the end of this chapter.

Chapter nine presents the last of the empirical chapters – regression analysis on closed claim values. The approach taken is similar to that in chapters seven and eight, and a log-linear model is proposed to capture the relationship between the dependent variable and the covariates. Additional tests of robustness and endogeneity issues are addressed at the end of this analysis.

Chapter ten presents the conclusions that can be drawn from this study on NHS acute trusts. Initially, the results of the findings chapters are reviewed – this leads to a model on the effect of risk management processes on clinical negligence claims being presented. Arising from this, a number of recommendations are proposed, both for further research in this area and also for practice and policy. Finally, the limitations associated with this research are acknowledged.

1.8 Chapter Summary

This chapter has sought to present the rationale for undertaking this study as the basis for a doctoral study. In doing so, it has provided an overview of the focus of the study with reference to relevant literature in the area. Gaps in the current literature were identified and the proposed contribution of this research was described. Chapter two now turns to the risk management processes within NHS trusts.

CHAPTER TWO

BACKGROUND: RISK MANAGEMENT PROCESSES WITHIN THE NHS

2.1 Chapter Overview

The review of secondary material relevant to this research commences with the origins of the NHS and the manner in which risk management operates within it. Evolutions in risk management processes within the NHS will be included up to the time period of this research – this will include major institutional changes such as the setting up of NHS trusts, the NHSLA, and the advent of foundation trusts (FTs). The chapter then concludes with an updated picture of the risk management arrangements operating within the NHS.

2.2 Origins of the NHS

Prior to the establishment of the NHS, a mixed system of social insurance (with employee and employer contributions) and private voluntary insurance was in operation – such a system was created by Lloyd George in 1911. This system proved to be both costly and inequitable, with 50% of the population (mainly women, children, and older people) without coverage (National Health Service History, 2011). These deficiencies led to proposals for change, and with the election of a new Labour government in 1945, plans for a nationalised health service with a regional framework were formulated. This plan went through with modest concessions, and with it the National Health Service (NHS) was created in 1948 (Rivett, 1998).

The original NHS structure had three arms: *hospital services* (14 regional hospital boards to administer hospital services), *primary care* (self-employed general practitioners, dentists, opticians & pharmacists); and *community services* (various services provided by local authorities such as health visiting and community nursing) (National Archives, 2011). This was known as the tripartite system, and a strong system of political accountability was established – Anneurin Bevan promised in 1948 that '*a dropped bed-pan would resound through the corridors of Whitehall*' (Talbot-Smith

and Pollock, 2006 p1). In terms of funding, the NHS was to be funded from central taxation, and Talbot-Smith and Pollock (2006) cite strong arguments for this choice – these include lower administration costs, and the belief that this was the most efficient and fairest system.

The core principles upon which the NHS was founded were as follows:

- It was to be universal i.e. the same standard of health care for all;
- It was to be comprehensive, covering all health needs;
- It was to be free at the point of delivery on the basis of need, not ability to pay.

(Talbot-Smith and Pollock, 2006; NationMaster, 2011)

The view of a free service at the point of use was that costs would lessen as the nation's health improved; however, demand for health care exceeded all expectations – in 1947, doctors issued 7 million prescriptions per month; this rose to 19 million per month in 1951 (National Archives, 2011). By the 1950s, spending was consequently exceeding what had been expected, leading to the introduction of charges such as a £1 charge for dental treatment in 1952, and a one-shilling charge for prescriptions (House of Commons Health Committee, 2006).

The following decade (1960s) saw continued increases in the demand for health care – this led to growth in health centres with more mental health patients being discharged back to communities, and improvements in treatment as better drugs were introduced (National Archives, 2011; NationMaster, 2011, and Rivett, 1998). However, concern was growing at this stage about the structure of the NHS and the difficulties of the tripartite system which separated hospital, community and primary care services. This led to a number of reports in the late 1960s which culminated with the decision in 1974 to bring together services provided by hospitals and local authorities under the umbrella of Regional Health Authorities (RHAs) (NationMaster, 2011). A total of fourteen RHAs were introduced, and the new system aimed to unite the tripartite system; however, the reorganisation was underpinned by consensus management but this was criticised for being complex and managerially driven (Rivett, 1998). This led to further change, and the emergence of modern management processes in the 1980s - this included the appointment of general managers (National Health Service History, 2011).

In addition to these changes, there was also a growing acknowledgement at this time of the clear financial bounds within which the NHS operated; this led Prime Minister Margaret Thatcher to announce a review of the NHS in 1988. This led to reforms which kept the NHS as a state-funded institution but reflected the Conservative view that competition would reduce costs and improve quality (Rivett, 1988; Visvalingam, 2011). These reforms are discussed further in section 2.3.

2.2.1 Risk Management in the Early Years of the NHS

Prior to the establishment of the NHS, patients who experienced adverse outcomes from healthcare treatment in the UK had two options (Dingwall and Fenn, 1994):

(a) Sue the medical practitioner – in such lawsuits, the practitioner would typically be represented by a medical defence organisation (MDO) which grew out of concern for doctors appearing in criminal trials.

(b) Use other channels such as complaining to the General Medical Council or to one's local insurance committee if there had been a breach of a general practitioner (GP)'s contract to provide services under the National Health Insurance Act 1911. The General Medical Council was established in 1858 with the aim of protecting, promoting, and maintaining the health and safety of the public by ensuring proper standards in the practice of medicine (General Medical Council, 2011).

With the advent of the NHS in 1948, it was intended that regional health boards and local authorities would assume responsibility for the actions of all hospital and community medical staff – such a position of vicarious liability predominated among corporate organisations where it was felt that negligence was not a matter of individual failures but of organisational failure. However, this arrangement was not popular with hospital doctors who felt that employers might settle claims for economic reasons and thereby damage their professional reputation; therefore, an eventual outcome was reached in 1954 which allowed employed doctors to retain their individual liability although they were required to be a member of an MDO as a condition of employment (Dingwall and Fenn,

1994). With doctors as members of MDOs, a situation existed in the period 1954-1990 where claims arising from a doctor's professional duties were met by the MDO, while claims against other hospital staff (such as nurses) for whom the hospital was vicariously liable were be covered by the relevant district health authority. Furthermore, where there was negligence by both doctors and nurses, liability was apportioned amongst the defendants, and patients frequently cited both the hospital and the clinician when making claims (Fenn et al., 2004; Dute et al., 2004).

The costs of this system were relatively low almost up to the 1980s with few claims; MDO data from the 1978 Royal Commission on Civil Liability and Personal Injury (cited in Dingwall and Fenn, 1994) estimated that there were about 500 negligence claims annually in 1974 and 1975, and the total value of compensation paid was about £1 million. However, there was a significant increase in the frequency and cost of claims in the 1980s - Dingwall and Fenn (1994) cite studies by Bowles and Jones (1989) and Hawkins and Paterson (1987) which found that the frequency of claims grew by about 500% and the average severity grew by about 250% when adjusted for inflation. Problems with medical negligence arrangements were not unique to the UK; Table 2.1 below shows that there was a rapid rise in both the claim frequency and claim severity in many jurisdictions at this time.

Table 2.1 Average Annual Growth Rate in Malpractice Claim Frequency and Claim Severity (various time periods)

Country	Claim Frequency	Claim Severity
US	10% (1976 – 1984)	19% (1980 – 1987)
Canada	9% (1971 – 1987)	19% (1971 – 1987)
UK	17% (1980 - 1987)	17% (1976 – 1985)

Source: Danzon (1990)

While the exact causes of these increases are unclear, Studdert et al. (2004) posit that plausible arguments can be made for at least five factors;

- greater public awareness of medical errors;
- lower levels of confidence and trust in the healthcare system among patients as a result of negative experiences;
- advances in medical innovation particularly diagnostic technology;
- rising public expectations about medical care; and

- a reluctance among plaintiffs' legal advisors to accept offers that would have previously closed cases.

The increases in the number of claims fluctuated by specialty; Dingwall et al. (1991; cited in Dingwall and Fenn, 1994) reported that five specialties – obstetrics/gynaecology, orthopaedics, accident/emergency, general surgery and anaesthetics – accounted for two-thirds of the claims and just over half of the total costs in the Oxford region in the period studied. A consequence of this was that the MDO announced in 1989 that it would charge differential subscription rates to reflect the relative losses from different specialties; this was also a response to the emergence of commercial insurers who were offering coverage at lower rates for low risk specialties coverage than an MDO - the Department of Health was concerned at this development as the long-term commitment of such new insurers to the market might be uncertain (Dingwall and Fenn, 1994). In addition, it was felt that such a move to differential rates would make it very difficult to recruit doctors in certain fields.

In short, it was clear that change was needed to the method of settling medical negligence claims in the 1980s as a combination of the rapid rise in claim payments, the big increases in liability insurance premiums for medical practitioners, and the possible withdrawal of insurance organizations from this market forced the UK government to consider overhauling the existing arrangements. The approach taken to amend existing arrangements (NHS Indemnity) will be considered shortly; however, it is firstly considered important to discuss the legal rule of liability which prevailed in most developed countries at this time – the tort liability system.

2.2.2 The Tort Liability System

The tort system of medical negligence aims, as far as possible, to put the plaintiff back in the position he or she would have been in had the tort[1] not occurred. It has two principal objectives – it compensates patients injured as a result of medical care (compensation) and it provides incentives for practitioners to supply an appropriate standard of care (deterrence) (Fenn et al., 2004). To prevail

[1] A tort, in common law juristictions, is a civil wrong (Williams, 1982)

with a medical negligence lawsuit, it had be proven that the defendant owed a duty of care to the plaintiff, that the defendant breached this duty by failing to adhere to the standard of care expected and that this breach of duty caused an injury to the plaintiff. Collectively, this three-part test of the validity of a malpractice claim was known as the 'negligence' rule (Studdert et al., 2004). Tort based law systems are in place in the US, the UK, India, Australia, Ireland and other commonwealth countries (Chief Medical Officer, 2003).

While theoretically this system should lead to optimal levels of care, Bovbjerg and Raymond (2003) found that this fault-based system was flawed on many grounds as follows:

- *The system compensates the wrong cases* – Taragin et al. (2002) found that valid cases can fail to be compensated especially at trial, while invalid claims can receive compensation. In addition, while one would also expect claims to be linked to the occurrence of negligence, the evidence is far from clearut - Localio at al. (1991) found that only 17 percent of claims appeared to involve a negligent injury, while Studdert et al. (2004) found that about one third of the claims examined were not attributable to error on the part of the provider. This suggests that the signal provided to poor medical providers by the occurrence of clinical negligence claims is very unclear.
- *The compensation amounts are inappropriate* - Sloan and van Wirt (1991) found under-compensation for severely injured patients, while on the other hand, large cases may win huge awards as a result of jury sympathy for the claimant.
- *Over-deterrence or "Defensive Medicine" can occur* – Tancredi et al (1978) found evidence that medical providers engage in unproductive medical practice decisions made more for legal reasons than for medical benefit to a patient. Such "defensive medicine" can be "positive" where extra services (e.g., extensive radiological work-ups) are provided which are not justified by medical indications, or "negative" where needed services are not provided due to high liability risk (e.g., ceasing to perform high-risk surgery).

In short, prior to the 1990s, legal proceedings for medical injury frequently took place in an atmosphere of confrontation, misunderstanding and bitterness with an emphasis on revealing as little as possible and defending clinical decisions taken with a view to minimising provider liability (Chief

Medical Officer, 2003). This added to the escalating costs of operating such a system led to various solutions which had been applied in other countries being considered – for example, Sweden implemented a no-fault malpractice system in 1975 with compensation and deterrence being decoupled (Danzon, 1994). While such a scheme did represent an alternative to the negligence standard and proponents of such schemes emphasized its superior compensation and lower transaction costs, opponents argued that the broadening of the base of compensable injuries would lead to higher compensation costs, even accounting for the savings in administrative costs and lower compensation levels (Kessler, 1996). In the UK, such concerns over no-fault systems saw it rejected in favour of a fault-based enterprise liability system which became known as NHS Indemnity.

2.3 Advent of Enterprise Liability System (NHS Indemnity)

NHS indemnity was introduced in January 1990 when all health authorities were instructed to take on full responsibility for all new and existing claims of negligence against employees (including doctors). Doctors were no longer required to be a member of an MDO as the NHS assumed full responsibility for medical negligence claims brought against all staff working in NHS hospitals. Claims relating to events before that date continued to be managed by health authorities under the established financial arrangements at that time (Dute et al., 2004; Dingwall and Fenn, 1994).

1990 also saw changes to the administrative structures of the NHS; the Thatcher government introduced the 'NHS & Community Care Act' which introduced an 'internal market' into the NHS; Primary Care Trusts (PCTs) were created as the new bodies to provide primary care services, while health authorities ceased to run hospitals which now became NHS Trusts (Visvalingam, 2011). Trusts were set up as independent health providers while health authorities and GPs were given budgets to buy health care from such trusts. Liability for new claims was now transferred to NHS Trusts as the employers of medical staff, and these trusts were now expected to meet the costs of damages awarded against them (Dute et al., 2004).

The NHS indemnity scheme operated as a fault-based enterprise liability system – it proposed to make hospitals and other medical institutions responsible for insuring and defending practitioners

who practice within them (Abraham and Weiler, 1994). Proponents of such systems argue that they improve the deterrence incentives provided by the existing tort system and that they reduce litigation costs (there is now just one defendant whereas prior to this, multiple doctors in a hospital could each have separate counsel - Danzon, 2000). In addition, to the extent that medical errors are caused by systemic errors rather than the carelessness of individual physicians, assigning liability to institutions should lead to system-wide quality improvement (Corrigan et al., 2003). However, potential disadvantages of this system include giving lawyers a deep pocket to claim against, the limited additional information for system-wide prevention measures, and the limited savings available from such systems (Kessler 1996; Danzon 2000). Notwithstanding these drawbacks, the implementation of NHS indemnity was justified to the extent to which it was believed that hospitals are better placed than individual clinicians to institute risk management policies although for such policies to be successful, '*the hospital must resolve the principal-agent problem that may arise between itself and its employees*' (Fenn et al., 2004 p277).

2.3.1 Risk Management after the Advent of NHS Indemnity

Notwithstanding the changes in administrative structures, the introduction of NHS Indemnity was far from radical and left many principles of the previous system intact (Dingwall and Fenn, 1994). These authors found that the new scheme had little impact on the frequency or severity of claims in its initial years. For patients, the prospect of getting compensation seemed largely unchanged, while the pressure of litigation continued to be felt by the medical profession and by local trust managers who had acquired new responsibilities for claim management. Litigation had now become a signal for quality improvement and risk management although Dingwall and Fenn (1994, p73) found that *'it is a notoriously ineffective signal since litigation is not related in any simple way to the quality of service offered'*. The ability to assess this signal at an overall organisational level was also very limited in the NHS as comprehensive information on the number of claims and their costs was not collected centrally - cases were handled at local NHS trust level (for hospital cases) and by the MDOs (for primary care) with no centralised amalgamation of this data (Chief Medical Officer, 2003).

Concern also grew in the aftermath of NHS Indemnity as to how local trusts and local health authorities would manage claims for damages against them. Seth (1991, p80) found that local authorities now had an aim of *'minimising the risk of medical negligence by advocating better practice of incident reporting'* and also stated that they would find it difficult to manage the dual role as employer and insurer i.e. it would be difficult to distinguish between disciplining and defending their members. In addition, health authorities and trusts operated with limited budgets and now faced damages potentially reaching into millions of pounds - this was expected to lead to cuts in the quality and quantity of care that would be offered. The response to these concerns was the creation of a special health authority – the NHS Litigation Authority (NHSLA) – in 1995 to manage claims (Fenn et al., 2004). This authority is discussed in the next section.

2.3.2 The NHS Litigation Authority

According to Professor Joan Higgins, Chair of the NHSLA in 1997, this authority has two key roles:

(i) *Management of claims and litigation:* The establishment of the NHSLA led to a very different approach to managing clinical negligence claims being implemented. The emphasis was also on avoiding litigation where possible - this meant that schemes to fast track claims and develop the use of mediation were piloted, and in addition, the authority encouraged trusts to offer apologies and provide explanations. Training for local trust managers was also introduced to assist with this process (Chief Medical Officer, 2003). The amalgamation of claims within one organisation also led to considerable savings in legal costs - for example, the NHSLA appointed a panel of 18 defence solicitors in 1998 to handle litigation claims brought against NHS bodies – previously, it had to work with almost 100 defence firms (Tingle and Cribb, 2002).

(ii) *Risk management in NHS trusts:* The authority sought to minimise the overall costs of clinical negligence through a combination of defending unjustified actions robustly, settling justified claims efficiently, and creating incentives to reduce the number of negligent incidents (Towse and Danzon, 1999). To achieve this role, it initially set up a Clinical Negligence Scheme for Trusts (CNST) which pooled the costs of trusts' liabilities for clinical negligence arising from

> incidents occurring after 1st April 1995. Membership of the CNST was voluntary but by 1996/1997, 384 out of 429 English NHS trusts were CNST members – this trend continued in subsequent years; 95% of trusts were CNST members in 1998 and all trusts and PCTs were members of the scheme by 1999 (NHSLA (2011a). A separate Existing Liabilities Scheme (ELS) was established in April 1996 for claims for injuries occurring prior to 1st April 1995, while responsibility for the residual liabilities of RHAs was also assumed by the NHSLA in 1996 (Towse and Danzon, 1999).
>
> (Higgins, 2011)

Having created the CNST and ELS schemes, the NHSLA then managed a pool of claims on a pay-as-you-go basis to minimize the short-term cash implications for trusts i.e. each year, sufficient money was collected from trusts to cover payments for claims in that period (Winn, 2007). To do this, the aggregate contributions required to finance the scheme were initially estimated, and then individual contributions from scheme members were calculated based on trust turnover and the number of staff employed in different risk categories by each trust (this was divided into five risk categories, low risk, medium risk, high risk, very high risk, and obstetrics / gynaecology). Weightings were attached to each of these, and these were used to calculate the annual contribution required from each member. Such premiums were initially set at low levels in 1995 (approximately £2,000 for ambulance trusts and of the order of £60,000 for large acute hospitals - Towse and Danzon, 1999); however, they increased considerably to an average contribution of £1.8 million by 2007/2008 for acute trusts – see Table 1.1.

2.3.2.1 Impact of Excess Levels on CNST Contributions

An additional factor which influenced the contribution required from each trust was the excess level chosen by the trust (Towse and Danzon, 1999). Excess levels operated up to 2002, and allowed trusts to choosing an excess, below which they met all the costs of a claim (Fenn et al., 2004). An excess level of £100,000 was compulsory from 1995 to 1997 and most trusts opted for lower excess levels after choice was introduced in subsequent years – this is shown in Table 2.2 below:

Table 2.2 Trust Excess Levels By Year, 1995-2001

Year	Excess Levels					
	£10k	£25k	£50k	£100k	£250k	£500k
1995	0 (0%)	0 (0%)	0 (0%)	366 (100%)	0 (0%)	0 (0%)
1996	0 (0%)	0 (0%)	0 (0%)	383 (100%)	0 (0%)	0 (0%)
1997	58 (15%)	218 (55%)	82 (20%)	35 (9%)	2 (1%)	0 (0%)
1998	123 (31%)	179 (45%)	67 (17%)	27 (6%)	1 (1%)	0 (0%)
1999	139 (36%)	159 (41%)	59 (15%)	31 (7%)	0 (0%)	2 (1%)
2000	133 (39%)	131 (39%)	47 (14%)	26 (7%)	0 (0%)	1 (1%)
2001	130 (44%)	102 (34%)	38 (13%)	25 (8%)	0 (0%)	1 (1%)

Source: Adapted from Fenn et al. (2010)
Note that the figures in parentheses represent the proportion of total trusts with excess levels at each particular level in each of the given years.

This table confirms the general movement to lower excess levels from 1997 to 2001 – 44% of trusts chose an excess of £10,000 in 2001 compared to just 15% in 1998 when choice had just been introduced. As trusts were liable for all claim costs below the chosen excess level, the general trend to reduce excess levels over this period implies that trusts were willing to pay additional CNST premiums over this period to avoid the cost of servicing claims below their excess levels.

2.3.2.2 Impact of NHSLA Approach to Managing Claims

The advent of the NHSLA in 1995 did signal a very different approach to handling clinical negligence claims as previously outlined, and the effect of this new approach is summarised in the following extract from the report of the Chief Medical Officer in 2003:

Table 2.3 Summary of Outcomes of Medical Negligence Claims 1995-2002

Outcome	Number	Percentage
Abandoned by claimant	7,527	28%
Settled out of court	12,469	47%
Fought in court and won by claimant	489	2%
Fought in court and won by NHS	138	1%
Yet to settle	5,751	22%
Total ('files opened')	26,374	100%

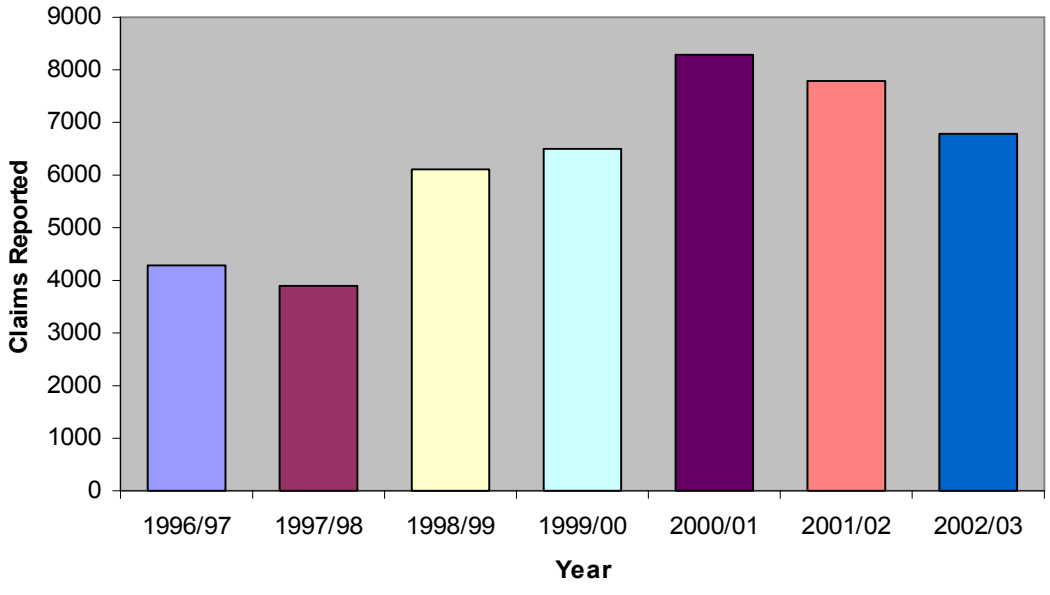
Source: NHSLA database 1995 to 2002
Note: This data is for actual claims reported under all schemes, above excess levels. The analysis does not include cases investigated but not proceeded with as a claim.

This table indicates that the vast majority of the claims taken in the 1995-2002 period did not end up in court (only 3% ended up in court) while of those claims that had reached a conclusion, about half had been settled out of court (47%). This suggests that the approach of the NHS to resolving claims more quickly was being successfully implemented – this included an increased emphasis on settlement where there is liability, and on offering apologies and providing explanations as to what caused the adverse outcome (Tingle and Cribb, 2002; Chief Medical Officer, 2003).

2.3.2.3 Trends in Clinical Negligence Claims 1995-2002

As indicated in section 2.3.1, comprehensive information on the number and value of claims was not historically collected centrally by the NHS prior to 1995. In the period 1995-2002, the existence of excess levels meant that claims below these excess levels were not reported to the NHSLA – this meant that the NHSLA could not assess the true extent of claims across the NHS over this period. However, claims above the excess level were reported and the following extract summarises trends over this period:

Figure 2.1 Trends in Claims Reported to the NHSLA, 1996-2003



Source: Chief Medical Officer (2003) – this is adapted from NHSLA claims database: 3,110 claims for which the notification year is not known have been averaged out between the years 1997/98 – 1999/00.

It can be seen in the above diagram that the number of claims reported to the NHSLA generally increased, and this is consistent with the National Audit Office (2001) which noted that new claims rose by 72% between 1990 and 1998. However, this trend reversed itself in the 2000/2003 period although the Chief Medical Officer (2003) considered it too soon to say if this was the start of a downward trend.

In summary, the reviewed literature does indicate that the centralised approach adopted by the NHSLA in 1995 to the management of claims did lead to improvements in system performance particularly in terms of reducing litigation costs. However, limitations in the data gathered at this time (mainly due to the existence of excess levels in the period 1995-2002) do not allow a full assessment of trends in both claim numbers and claim values to be conducted.

2.3.2.4 Call-In of Claims in 2002

The situation prior to 2002, where hospitals retained part of the cost by choosing an excess level below which they were responsible for patients' claims, was logical in the sense that those who cause injuries faced at least some of the injury costs, thus providing potential injurers with an incentive to take care (Fenn, 2002). Indeed, Fenn et al. (2004) found that high excess levels reduced the observed frequency of new claims – this supported a view that '*hospitals with a higher share of liability are more likely to take action to reduce the frequency of claims – a 'deterrence effect'* (Fenn et al., 2004, p279). Notwithstanding this positive impact, the use of excess levels did have its disadvantages as follows:

- Data on the cost of clinical negligence was dispersed and difficult to consolidate despite an obligation on all members of such schemes to provide information on all claims to the NHSLA.
- The decentralisation of accounting responsibilities for small value claims placed an additional burden on hospital management and led to problems in generating consolidated NHS accounts.

- The process of handling claims became more complex – most trusts employed an individual with a claims management role but still deferred to solicitors on matters of valuation and strategy rather than rely on in-house expertise.

(Fenn et al., 2002)

These difficulties were behind the move in April 2002 to shift all financial responsibility for claims to the NHSLA - a move viewed as one which would markedly increase public information on the frequency and costs of NHS claims. Given that the NHSLA would now be responsible for all claims, it was argued that it should be better able to report on national trends as well as identify the activities most at risk of litigation (Fenn, 2002). While all claims post April 2002 were now to be handled centrally by the NHSLA, the trust remained the legal defendant, and the scheme was still funded by 'pay-as-you-go' contributions from hospitals. A downside of this 'call-in' of claims is that the financial discipline and incentives provided by excess levels in the period 1995-2002 were now removed, although a new incentive to promote good risk management practices was now in place in the form of risk management standards (Fenn et al., 2002).

Risk management standards will be discussed in subsequent sections of this chapter; however, an overview of the quality agenda which also emerged at the same time will be initially provided as the introduction of risk management standards was considered to be part of this broader quality agenda in the NHS.

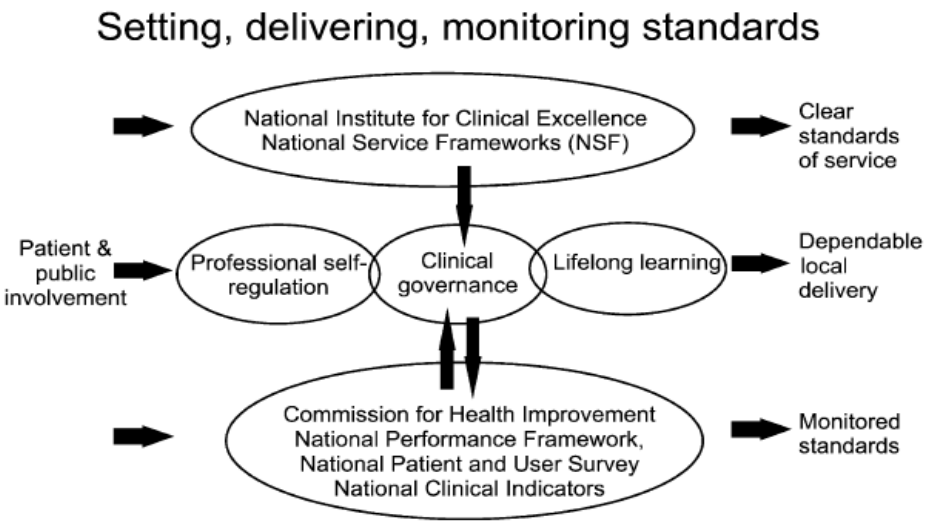
2.3.3 The Emergence of the Quality Agenda in the NHS

When the NHS was established in 1948, there was no particular agenda for quality; it was assumed that this would automatically result from the provision of an infrastructure and from the training and education of staff (Freedman, 2002). Indeed, the UK Department of Health's report in 2003 found that little attention had been given to understanding why medical errors and accidents occur – such information could have been used to generate quality improvements and reduce future risks. Some quality improvements did occur in the 1980s but according to Freedman (2002), it was not until 1997

with the launch of the government document 'The New NHS: Modern, Dependable' that there was a statutory duty to report on quality issues.

This emphasis in 1997 on quality led to the concept of clinical governance being placed at the top of the list of NHS priorities – this is a framework through '*which all NHS organisations are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish*' (Masterton and Teare, 2001, p25). In short, clinical governance provided an umbrella under which all aspects of quality could be gathered and monitored (Freedman, 2002). This author also found that the achievement of improved quality was to be achieved through the setting of clear, national standards and ensuring optimal clinical care through National Service Frameworks (NSF) and the National Institute for Clinical Excellence (NICE). This process is summarised below:

Figure 2.2 Quality Process in the NHS



Source: Freedman (2002)

In short, the achievement of monitored standards became a benchmark against which to assess quality levels in the late 1990s and early parts of this century. This emphasis on quality and patient safety improvements throughout the NHS coincided with the advent of patient safety movements; in the UK, the National Patient Safety Agency (NPSA) being established in 2002 with a remit to set up

an incident reporting system for England and Wales and to support patient safety in the NHS. This new emphasis on patient safety was consistent with a key function of the NHSLA which was to contribute to the incentives for reducing the number of negligent or preventable incidents (NHSLA, 2011a). For the NHSLA, this aim was to be achieved by an extensive risk management programme.

2.3.4 The Advent of Risk Management Standards

At the time that the NHSLA was formed in 1995, a risk management programme was introduced; this consisted of a set of clinical standards which reflected good practices that trusts could use as a framework to manage risks effectively. However, it took time for the various standards to be developed and tested, and it was 2000 before the standards were finally launched (Joyce and Lannen, 2008). The initial risk management standards (known as CNST standards) were grounded in areas which were known to give rise to litigation and to reflect issues which had arisen through clinical negligence claims reported to the NHSLA (Nair and Chandraharan, 2010). These standards were designed primarily for acute trusts and covered seven core and three specialty areas as follows:

Table 2.4 Initial CNST Standards

Core	Standard 1: Learning from Experience
	Standard 2: Response to Major Clinical Incidents
	Standard 3: Advice and Consent
	Standard 4: Health Records
	Standard 5: Induction, Training and Competence
	Standard 6: Implementation of Clinical Risk Management
	Standard 7: Clinical Care
Specialty	Standard 8: The Management of Care in Trusts Providing Mental Health Services
	Standard 9: Ambulance Service
	Standard 10: Maternity Care

Source: Adapted from Droppo (2004)

2.3.4.1 Levels of Risk Standard

All of the above risk management standards were divided into three "levels": one, two and three. Level one relates to documenting policy where trusts had to demonstrate that the process for managing risks has been described and documented (Nair and Chandraharan, 2010). Organisations were required to achieve this level (until they did so, they remained at level zero) and were assessed on an annual basis until such time as they achieved level one compliance. Level two relates to

practice/implementation where trusts had to demonstrate that the process for managing risks is in place. Level three relates to performance and to achieve this level, trusts had to show that the practice is being monitored by audit and other tools (NHS Litigation Authority, 2011; Joyce and Lannen, 2008).

Assessments were carried out on behalf of the NHSLA by an outside risk management company (Det Norske Veritas Ltd.) to ensure that the necessary impartiality in operating the programme was achieved. These assessments typically took place over two days and involved a review of documentation (some of which had to be provided prior to an assessment visit) and possible interviews with a range of staff (Winn, 2007; NHSLA, 2011a).

The rewards for progressing through the various levels were significant from a financial point of view; NHS organisations which achieved success at level one in the relevant standards received a 10% discount on their CNST contributions, with discounts of 20% and 30% available to those achieving levels two and three respectively. The discount earned was applied to contributions in the financial year following a successful assessment and was valid for two years (Bush and Arulkumaran, 2003). Given this financial incentive, it was envisaged that all trusts would seek to move to level three although progress was slow in the years 2000-2006 as shown below:

Table 2.5 Distribution of Overall Risk Management Levels, 2000-2006

Year	CNST Risk Management Scores				Total
	0	1	2	3	
2000/2001	93 (26%)	223 (63%)	37 (10%)	1 (1%)	354 (100%)
2001/2002	50 (15%)	229 (71%)	42 (13%)	2 (1%)	323 (100%)
2002/2003	55 (20%)	177 (64%)	41 (15%)	4 (1%)	277 (100%)
2003/2004	14 (5%)	198 (74%)	51 (19%)	6 (2%)	269 (100%)
2004/2005	0 (0%)	176 (74%)	53 (22%)	10 (4%)	239 (100%)
2005/2006	0 (0%)	161 (68%)	64 (27%)	11 (5%)	236 (100%)

Source: Adapted from Fenn et al. (2010)

This table does show that there were improvements each year in terms of greater proportions of trusts moving to levels two and three respectively; however, the relatively high proportions at level

one in each of these years reinforces the views of Nair and Chandraharan (2010) that hard work, dedication and commitment from every member of the team is required if an increase is to be achieved. It also shows a decline in the number of trusts over this period – this is related to consolidations within the trust sector which will be addressed later in this chapter.

2.3.4.2 Developments in the Risk Standards

Since the development of the initial CNST standards in 2000, a number of amendments have been made, and these will now be addressed in turn.

(a) Development of Separate Standards for Maternity Services

It was shown in Table 2.4 that the initial CNST standards consisted of seven core and three specialty standards for organisations to be assessed against, and that one of these specialty standards related to maternity care which required trusts to attend to some of the specific risks posed within obstetrics and maternity care (Winn, 2007). However, this single standard was quite limited in addressing specific clinical risk areas, and claims data on the number and value of obstetric claims confirmed the need for more focus on risk management in this area. Therefore, a decision was made by the NHSLA to introduce separate standards and assessments for maternity services – development of new maternity standards began in 2001 and from 2003, a differential premium was introduced for maternity services (Bush and Arulkumaran, 2003). This led to eight new maternity standards being introduced (these are summarised in *Appendix One*) and a similar incentive structure was applied with three levels (one, two and three respectively) and the same financial discounts available for achieving higher levels. The overall effect of the new maternity standards for trusts which offered such services was that CNST contributions were now split between "maternity" and all other clinical services - discounts are earned from each in accordance with their respective assessment outcomes (NHSLA, 2011a).

(b) Separate Risk Management Standards for each Type of NHS Organisation

A parallel development with the generation of maternity standards was the generation of separate standards for different types of NHS organisation – this reflected a viewpoint that the specific risks faced by each organisation required a separate set of standards. This led to the following standards being developed:

- PCT standards (covering clinical and non-clinical risk) were introduced along with separate maternity standards in 2003;
- Ambulance trust standards were introduced in 2004;
- CNST Mental Health & Learning Disabilities standards were introduced in 2005.

(Det Norske Veritas, 2009)

The main effect of these revised standards was that NHS organisations now had standards which were peculiar to their own type of organisation, and details of the various standards for the various types of NHS organisation are shown in *Appendix One*. Within each standard, there were sets of criteria which reflected minimum requirements to be achieved - as an example, the criteria applied for NHSLA acute trusts is shown below:

Table 2.6 Risk Standards and Criteria for Acute Trusts

Standard	1	2	3	4	5
Criterion	**Governance**	**Competent & Capable Workforce**	**Safe Environment**	**Clinical Care**	**Learning from Experience**
1	Risk management strategy	Corporate induction	Secure environment	Patient identification	Incident reporting
2	Policy on procedural documents	Local induction of permanent staff	Safeguarding children	Patient information	Raising concerns
3	Risk management committee(s)	Local induction of temporary staff	Safeguarding adults	Consent	Complaints
4	Risk awareness training for senior management	Supervision of medical staff in training	Moving & handling	Clinical record-keeping standards	Claims
5	Risk management process	Risk management training	Slips, trips & falls	Transfer of patients	Investigations
6	Risk register	Training needs analysis	Inoculation incidents	Medicines management	Analysis
7	Responding to external recommendations specific to the organisation	Medical devices training	Maintenance of medical devices & equipment	Blood Transfusion	Improvement
8	Clinical records management	Hand hygiene training	Harassment & bullying	Resuscitation	Best practice - NICE, NCEs & national guidance
9	Professional clinical registration	Moving & handling training	Violence & aggression	Infection control	Best practice - NSFs & High Level Enquiries
10	Employment checks	Supporting staff involved in an incident, complaint or claim	Stress	Discharge of patients	Being open

Source: Joyce and Lannen (2008)

This table shows that the risk management programme for acute trusts consisted of five standards, and within each of these standards, there are ten criteria which change as one moves from level one through to levels two and three (Joyce and Lannen, 2008).

Note that within the category of acute trusts, there are two types of trust which differ from the standard multi-service organisation - specialist trusts provide specialist care (for example cancer),

while teaching trusts combine teaching and research activities with one or more local universities (May and Price, 2009; Gibberd et al., 2004). However, separate standards were not introduced for these particular types of acute trust.

(c) Replacement of CNST Standards with NHSLA Standards

In addition to the development of separate standards for different types of NHS trusts, a consultation process was in place at this time to consider reducing the duplication between the general and specific assessments; this led to CNST general standards being replaced by NHSLA standards in 2006, and pilot assessments against the revised standards (which included revised maternity standards) were conducted in 2006/2007 to test the robustness of the new standards. This led to the new standards being rolled out for all NHS organisations in 2007/2008 (Nair and Chandraharan, 2010).

The workload associated with getting assessments for the new revised standards meant it was some years later before the NHSLA had completed assessments for all trusts under the new NHSLA standards. As a result, it was 2009 before a clear picture of the risk management standards for the various types of NHS organisation was available and these results are shown below:

Table 2.7 Risk Management Standards of NHS Organisations at April 2009

	Level 0	*Level 1*	*Level 2*	*Level 3*	*Total*
Acute Trusts	1 (1%)	77 (47%)	74 (46%)	10 (6%)	162 (100%)
Ambulance Trusts	1 (9%)	10 (91%)	0 (0%)	0 (0%)	11 (100%)
Mental Health & Learning Disability Trusts	0 (0%)	25 (73%)	8 (24%)	1 (3%)	34 (100%)
Primary Care Trusts	0 (0%)	21 (91%)	2 (9%)	0 (0%)	23 (100%)
Maternity Standards	0 (0%)	36 (24%)	85 (56%)	31 (20%)	152 (100%)

Source: Adapted from NHSLA (2011a)

The values in the table do show that considerable progress to levels two and three has been made amongst the acute NHS organisations (over 50% have progressed beyond level one – this is much higher than the percentage of all trusts to have progressed beyond level one in 2005/2006 (32% - see Table 2.5)). Progress has been slower for other types of NHS organisation, although this is affected

by the fact that a significant number of mental health trusts and PCTs had yet to be assessed under the new standards in April 2009 (NHSLA, 2011a). The last row of this table shows the risk management levels for trusts with maternity services; such trusts are assessed against both the acute standards and the maternity standards with separate CNST contributions for these areas – progress on the maternity standards is proportionately higher than for the acute trust sector with 76% of trusts having achieved at least level two status.

(d) Process of Assessment

In tandem with the introduction of NHSLA risk management standards, the NHSLA provided greater clarification on what trusts needed to demonstrate in order to be eligible to progress to higher risk management levels. Such clarification is provided in the table below:

Table 2.8 Assessment Scoring Table for NHSLA Risk Management Assessments

			Lower Level			Existing Level			Higher Level		
Existing NHSLA Level			2	3	3	1	2	3	0	1	2
Level Applied for			1	1	2	1	2	3	1	2	3
Scoring range	40-50	Outcome	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
		Level Achieved	1	1	3	1	2	3	1	2	3
		Time frame for reassessment	2 years	2 years	2 years	2 years	3 years	3 years	2 years	3 years	3 years
		Level(s) organisation can next be assessed at	1 or 2	1 or 2	1, 2 or 3	1 or 2	1, 2 or 3	1, 2 or 3	1 or 2	1, 2 or 3	1, 2 or 3
	30-39	Outcome	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
		Level Achieved	0	0	1	0	1	2	0	1	2
		Time frame for reassessment	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year
		Level(s) organisation can next be assessed at	1	1	1	1	1	1 or 2	1	1	1 or 2
	29 or less	Outcome	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
		Level Achieved	0	0	0	0	0	0	0	0	0
		Time frame for reassessment	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year
		Level(s) organisation can next be assessed at	1	1	1	1	1	1	1	1	1

Source: NHSLA (2009)

This table shows that the assessment process for NHSLA assessments now became a single scoring system with a maximum of 50 marks (one for each of the ten criteria at each of the five standards as shown in Table 2.6), and a pass mark of 40 out of 50 was set with a requirement to pass no fewer than seven criteria passed in any one standard. Trusts did have discretion to apply for either an increase, a reduction or a retention of it's NHSLA level (and each level is a distinct assessment with standalone question sets); if an increase was obtained, the new level applied for at least two years while trusts which failed an assessment were required to be assessed at the level assigned in the following financial year (NHSLA, 2011a; Bush and Arulkumaran, 2003).

In summary, there have been a range of developments to the risk management standards in recent years; however, the same features of three levels (and discounts available for attaining higher levels) has been maintained during the amendments which have been made.

2.3.5 Additional Risk Management Incentives for NHS Trusts

The discounts offered for the various risk management levels created an incentive structure for trusts to progress to higher risk management levels – this was consistent with the NHSLA's overall drive for quality improvement as it sought to *'manage and raise the standards of risk management throughout the NHS'* (NHSLA, 2011a). In addition to the financial incentives, Nair and Chandraharan (2010) allude to the reputational advantages of higher risk management levels i.e. trusts operating at higher levels are perceived to be superior at patient safety.

However, one could also argue that the NHSLA insurance scheme for clinical negligence may dilute the incentives for trust managers to implement expensive but beneficial procedures for patient safety. This relates to the moral hazard aspect of insurance contracts whereby the insured is less incentivised to avoid potential adverse events. To counteract this incentive, the NHSLA developed a range of additional measures as follows:

- *Experience rating* arrangements were developed which adjusted contributions based on the historic claims experience of the trust. In practice, this meant that each trust's claims experience (number and value of claims) was assessed against its risk profile, and was then categorised into one of five categories with consequent effects on the trust's CNST contribution as follows:
    - A very poor claims experience – 10% increase in contribution
    - A poor claims experience – 5% increase in contribution
    - A good claims experience – 5% reduction in contribution
    - A very good claims experience – 10% reduction in contribution
    - Remainder – no change in contribution

- *Process rating* arrangements rewarded trusts who took actions which were expected to lead to improved future claims outcomes. For example, this could include a reward for adoption of procedures which were believed to impact positively on patient safety (e.g. an infection control programme). (Fenn et al., 2010)

In summary, a number of additional incentives other than financial discounts for achieving higher risk management levels were developed by the NHSLA to improve risk management practices in NHS trusts.

2.3.6 Trends in Clinical Negligence Claims 2002-2009

As indicated in earlier sections, there were historical problems in the collection of claims data centrally in the NHS; prior to 1995, such data was not collected centrally by the NHS, and from 1995-2002, claims were reported to the NHSLA but many trusts did not keep records of claims which were settled below the excess levels which operated during this period (Chief Medical Officer, 2003). However, one of the advantages of the call-in in of claims in 2002 was that it should have led to greater public availability of data on the frequency and value of NHS claims (Fenn, 2002). Indeed, claims data information was now reported by the NHSLA on an annual basis, and a summary of this data at March 2010 is provided below:

Table 2.9 Number and Value of Clinical Negligence Claims by Year of Incident at March 2010

Year	Number of Claims	Outstanding Value of Claims (£000)
2002/2003	5,530	447,892
2003/2004	5,474	442,263
2004/2005	5,190	622,031
2005/2006	5,304	753,535
2006/2007	4,590	653,172
2007/2008	3,209	350,564
2008/2009	1,983	213,970
2009/2010	515	48,800

Source: Adapted from NHSLA (2010)

Note: The claims data included in this table includes both open and closed claims but excludes potential claims or 'incidents'.

It is noticeable in this table that the number of claims remained relatively constant in the period 2002-2006 while the value of claims rose significantly over this period. While this type of data is a marked improvement on what prevailed pre-2002, there are two main difficulties in drawing any further conclusions from it as follows:

- The data on both the number and value of claims is aggregated by year of incident – while it is common to evaluate the number of new claims in any given year by the year of incident, it is also common to assess the value of claims based on the year in which claims were closed.

- The time delay in making claims; clinical negligence claims must be made within three years of an incident but this can be longer if the patient is a child or has a mental health disorder (NHSLA, 2011a). This means that the data from 2007/2008 to 2009/2010 must be treated with caution as it is likely that further claims could be made for incidents which occurred over this period but which have yet to be registered as claims.

These difficulties do limit one's ability to draw firm conclusions on the real trends in NHSLA claim numbers and values over this period. Further data on the NHSLA website does provide the number of new claims per trust on an annual basis; however, this data also has limitations which will be addressed further in chapter six of this study.

The data available on the NHSLA website in relation to claims post-2002 also strongly supports the presence of a specialty factor as shown in Table 2.10 below:

Table 2.10 Number of Reported CNST Claims by Specialty, March 2010

Speciality	Number of Claims	Outstanding Value of Claims (£000)	Average Claim Value (£000)*
Surgery	22,474	1,820,654	81
Obstetrics & Gynaecology	11,533	4,386,700	380
Medicine	10,154	1,414,379	139
Accident & Emergency	6,498	644,286	99
Psychiatry/Psychology/Mental Health	1,484	136,323	92
Anaesthesia	1,360	182,929	135
Radiology	964	98,466	102
Pathology	887	104,992	118
Ambulance	573	43,098	75
Paramedical Support Services	562	21,748	39
Public Health	205	13,376	65
Primary Care (GP)	197	14,871	75
Nursing	176	13,822	79

Source: NHSLA (2010)
* Calculated as Outstanding Value divided by number of claims

This table shows that the areas of surgery, obstetrics & gynaecology, and medicine account for a large majority of both the number and value of claims – together, they account for 77% of the total number of claims and 85% of the total outstanding claim values. Within these three categories, it is clear that the 'obstetric & gynaecology' specialty has much higher average claim values than for all other categories – this supports the development of separate risk standards for trusts offering maternity services (Bush and Arulkumaran, 2003).

In summary, the claims data post-2002 is more complete as all claims were now reported to the NHSLA; however, the publicly available claims data still limited one's ability to draw firm conclusions on the trends in claim numbers and claim values.

2.3.7 Additional Reforms Impacting on Risk Management in NHS Trusts

While the creation of the NHSLA and the imposition of risk management standards represented major changes to claims/risk management in the NHS, they were not the only reforms which took place in the period 1995-2010; trusts also faced considerable reforms in their overall composition, financial and governance structures over this period. A brief review these additional reforms is now provided:

2.3.7.1 Trust Consolidations

While efforts continued throughout the 1990s and beyond to improve quality and risk management practices within the NHS, a parallel movement to increase concentration of NHS organisations was underway. This movement was not unique to the UK: many studies (Posnett, 1999; Garside, 1999; Hutchings et al., 2003; Cereste et al., 2003) cite the high levels of merger activity in the healthcare sector globally at this time. Within the NHS, common reasons cited to justify the greater concentration of trusts included the excess capacity, the need to reduce transaction costs, and political drivers such as facilitating hospital closures and securing the viability of smaller organizations (Hutchings et al., 2003). The net effect of this drive for a more concentrated NHS trust sector can be seen in the following table:

Table 2.11 Number of NHS Trusts by Type, 1995-2005

Year	Small Acute	Medium Acute	Large Acute	Acute Specialist	Acute Teaching	Total
1995	25	54	85	25	28	217
1996	25	54	86	26	28	219
1997	25	54	87	26	28	220
1998	25	54	87	26	27	219
1999	25	54	87	26	27	219
2000	25	54	87	26	27	219
2001	21	51	81	25	24	202
2002	21	50	81	25	25	202
2003	18	47	67	25	24	181
2004	17	45	67	25	24	178
2005	17	46	63	25	24	175

Source: Fenn et al. (2010)

This table shows that the number of trusts fell over this period as many trusts were dissolved as part of merger activity, and the reductions led to smaller numbers of trusts of all types (large/medium and small); however, the number of specialist and teaching trusts have largely remained unchanged over this period.

While the high level of merger activity over this period could have been expected to deliver benefits of increased concentration, the evidence in terms of achieving these benefits has been mixed as follows:

- Cereste et al. (2003) conducted a study of 268 trusts that had an involvement in merger activity - only 54% viewed the mergers as successful or very successful although it was the trusts that have already merged as opposed to those about to merge who were most positive about the experience.
- Fulop et al. (2002) conducted a study of nine trusts in the London area, and found that mergers had unintended consequences such as one management team tending to dominate over another after the merger; in addition, they found that the target of £500,000 in savings two years after the merger had not materialised.
- Posnett (1999) claims that economies of scale are shown to only exist for small hospitals (up to 200 beds), and that average costs increase for hospitals above 400-600 beds.

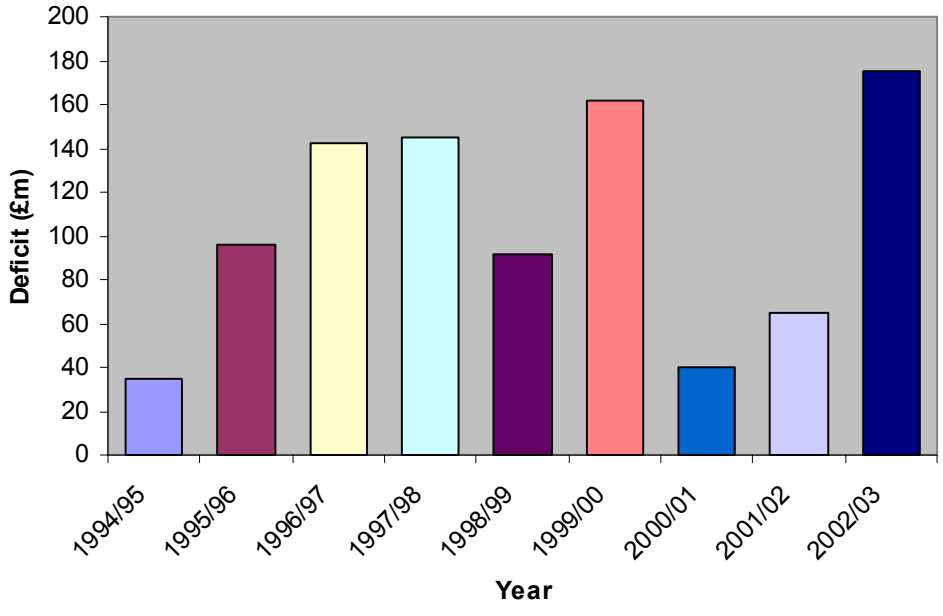
It can be summarised from this literature that despite the high level of merger activity within the NHS over the period 1995-2000, there is a lack of supporting evidence to justify this activity on economic grounds.

2.3.7.2 Financial Reforms

Efforts were made for many decades to improve financial management arrangements in the UK public sector – these include the Fulton Report in 1968 to the Financial Management Initiative of the early 1980s (HM Treasury, 2005). Financial management is defined as a *'system by which the financial aspects of a public body's business are directed and controlled to support the delivery of the organisation's goals'* (Chartered Institute of Public Finance and Accountancy, 2004, p7). Within the NHS, financial management processes provide information that can be used to direct and control the activities of the organisation, as well as enabling it to report and discharge accountability, and to utilise resources efficiently and effectively. In short, good financial management arrangements were seen as essential if NHS bodies were to meet their objectives and deliver effective healthcare to patients (National Audit Office, 2006).

While good financial management is greatly assisted by the common application of accounting and reporting standards; it was not until the 1990s that the NHS moved to an accruals accounting system which allows the matching of revenues and expenditure in a period. The adoption of accruals accounting could be viewed as part of a process at this time to transplant private sector ideology to public sector organisations in an attempt to control expenditure and at the same time, deliver an acceptable level of service (Mellett and Williams, 1996). This movement to increased financial discipline was strengthened by Section 10 of the 'NHS and Community Care Act 1990', which was interpreted to mean that trusts should achieve a break-even position in their income and expenditure account over a three- or five-year period (Audit Commission, 2004). However, progress towards achieving this level of financial discipline was slow as indicated in the following diagram:

Figure 2.3 Annual Deficits by NHS Trusts, 1994-2003



Source: National Audit Office (2006)

This diagram shows that many trusts struggled to adapt to the statutory duties of breaking even over a short term horizon and these figures support a query from Mellett and Williams (1996, p69) as to

whether the *'quasi market established for healthcare within the NHS is sufficiently like a competitive market to justify its control through accounting mechanisms developed for the commercial market context'*. Particular criticism was reserved for the Resource Accounting and Budgeting (RAB) initiative which was introduced in 2001 - local application of this meant that trusts who incurred deficits found their incomes reduced in the following years when they are trying to achieve break-even – this 'double deficit' issue became a source of controversy as it put some trusts into an irrecoverable financial position (National Audit Office, 2006).

Successive reports from the National Audit Office (2006, 2007, 2008) continued to stress the need for improvements in financial management arrangements in the NHS to ensure that the benefits of funding are translated into improved service delivery. Encouragingly, progress has been made - the 2008 National Audit Office report found that only 7 of 178 trusts reported a deficit in 2007/2008 (this compares with 65 of 278 trusts reporting a deficit in 2003/04). The exact causes of this improvement in trust's financial performance are somewhat unclear but one key aspect has been the improved governance arrangements which are discussed in the next section.

2.3.7.3 Governance Reforms (Foundation Trusts)

The trend of NHS trusts adopting financial practices that were traditionally employed in the corporate world has been followed by a similar trend in governance practices. Governance consists of the processes and attitudes that steer an organisation towards the achievement of its objectives, and NHS trusts need robust processes in place as they are resource constrained with a mandate to meet clinical needs in a cost effective manner but do not have shareholders or do not seek the pursuit of profit (Institute of Directors, 2008).

Since the start of this century, a movement towards decentralising the governance of the NHS has taken place - this took the form of creating NHS foundation trusts (FTs) which acted as independent public benefit corporations with far greater local ownership and involvement of patients, the public and staff

rather than control from the Department (National Audit Office, 2006). A key feature of foundation trusts was that the board of directors were now collectively responsible for all aspects of the trust's activities – this equates to the responsibility of a corporate board of directors. The role of the FT board was also conceptually similar to that of a corporate board in terms of deciding on strategy, delegating authority to management, and being accountable to stakeholders (Institute of Directors, 2008).

To assist trusts wishing to progress to FT status, an independent regulator of foundation trusts (Monitor) was set up – it developed a code of governance for foundation trusts which outlined best practice in a series of corporate governance principles and provisions. The process of becoming a foundation trust involves three stages – a *development* phase to prepare for the application process, a *support* phase to determine whether a trust is eligible to apply for assessment and a *monitor* phase to assess and potentially authorise the trust as an FT (Monitor, 2010a). If successful in achieving FT status, trusts were then granted financial freedoms such as the ability to raise capital from both the public and private sectors within borrowing limits determined by projected cash flows. In addition, FTs were not required to break even each year although they must show that they are financially viable.

The combination of the financial freedoms available by becoming a foundation trust member as well as a desire for control over trust activities contributed to the significant growth in the number of FTs since their introduction in June 2004. A summary of this growth along with some financial metrics is shown below:

Table 2.12 Trends in Foundation Trusts, 2005-2009

Financial Year	Number of Trusts	Overall Surplus / (Deficit)	Operating Margin on EBITDA *
2005/2006	32	(8 m)	5.6%
2006/2007	59	130 m	6.7%
2007/2008	89	404 m	8.1%
2008/2009	115	269 m	6.1%

Source: Adapted from Monitor (2010a)
* Earnings before interest, taxes, depreciation & amortization

This table highlights the increased numbers of FTs and improved financial performance which have been made in a relatively short period of time; the improvements in overall surpluses are particularly striking although it is worth noting that trusts were not allowed to keep surpluses prior to becoming an FT. The positive trend in operating margin on EBITDA suggests that foundation trusts were becoming more efficient year-on-year up to 2007/2008. The reversal of this positive trend in 2008/2009 suggests that some trusts found it more difficult to deliver the full extent of efficiencies whilst at the same time meeting contractual service performance requirements (Monitor, 2009).

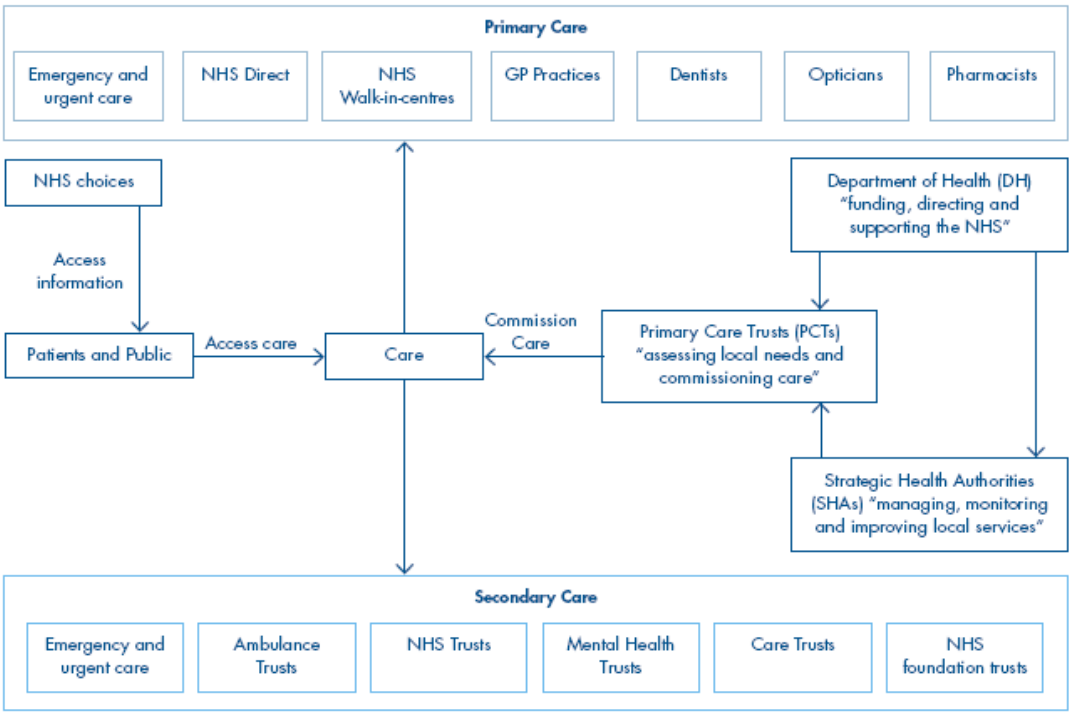
The general trend towards improved financial performance has been matched by improvements in the quality of care – the National Audit Office (2008) reported that trusts reporting a deficit are more likely to be providing care of lower quality than those in surplus. Foundation trusts also rated more highly than NHS trusts on quality ratings over this period – this was timely as a report on quality in 2008 by Lord Darzi (cited in National Audit Office, 2008) announced that future funding in the NHS will focus more on quality of care rather than the emphasis on quantity of care in the past ten years.

In summary, the creation of foundation trusts led to changes in the governance structures in NHS trusts - in particular greater financial freedoms which contributed to the improved financial performance of those achieving such status. These freedoms are related to the different funding and accountability arrangements for NHS foundation trusts compared to NHS trusts – as summarised in *Appendix Two*.

2.4 Summary of Revised NHS Structure

Previous sections have summarised the major reforms which have taken place in the NHS in recent years as it strives to improve the achievement of its aims of quality care with optimum use of resources. A diagrammatic structure of the NHS following these reforms is given below:

Figure 2.4 The NHS System, 2007/2008



Source: NHS (2012) and National Audit Office (2007)

This diagram shows that after the introduction of the various reforms as outlined in previous sections, the NHS structure retains a system of primary and secondary care, with groups such as GPs and nurses providing primary care and NHS Trusts as providers of secondary care (National Audit Office, 2007). In addition, strategic health authorities (SHAs) replaced the existing health authorities in 2002 - these were created to manage the local NHS on behalf of the secretary of state.

2.5 Summary of Risk Management Processes in NHS Trusts

This chapter has summarised the main reforms which have occurred within the NHS since its inception in 1948 with particular emphasis on the risk management processes and how these have evolved over time. The major highlights in this review were as follows:

- The process for making clinical negligence claims changed in 1990 when a system of fault-based enterprise liability was introduced; doctors were no longer required to be members of an

MDO as the NHS was now fully responsible for clinical negligence claims. The initial impact of this change was not radical – a patient's prospects of getting compensation seemed unchanged, while litigation pressure continued to be felt by the medical profession and by local trust managers who had acquired new responsibilities for claim management.

- The 'NHS & Community Care Act' led to the formation of Primary Care Trusts (PCTs) and NHS Trusts to provide primary and secondary care services. While trusts initially covered the costs of damages awarded against them, concern grew as to how they would continue to do so (given the high cost of claims) and this led to the creation of the NHSLA in 1995 to manage claims. Risk management became much more important in the NHS at this time, and a more proactive regime of avoiding litigation was adopted by the NHSLA (including offering apologies and explanations).
- Within the NHSLA, an insurance arrangement of indemnifying trusts against all claims in return for a CNST premium was implemented. Discipline were provided within this system through the use of excess levels in the period 1995-2002 although this was replaced by risk management standards from 2002 – this offered reputational and financial benefits to trusts who progressed from level one (policy) to level two (practice) and level three (performance). The potential financial savings from achieving level three are considerable; however, there was a considerable workload and challenge associated with making the improvements to achieve higher levels. Additional incentives were available through experience rating and process rating as this system evolved – these countered the potential moral hazard issue which trust managers face given that all claims since 2002 were indemnified by the NHSLA.
- In general, the centralisation of claims through the NHSLA did improve the efficiency of claims handling although deficiencies in the available sources of data do not allow for a thorough analysis of its impact on the number and value of claims.
- In parallel with the reforms to the management of claims within the NHSLA, other reforms in the NHS have seen many consolidations within the trust sector, and there have also been improved governance and financial reforms in the last decade. All of these adjustments have led to a more efficient NHS which has quality at the top of its list of priorities.

- While much of the evidence supports the various reforms to the risk management incentives within the NHS, there is a lack of detailed studies on the relationships between many of the associated reforms within the system. In particular;
    - Lack of suitable data has prevented a thorough analysis on the impact, if any, of risk management standards on the number and value of claims in future years – incentives are provided to attain high risk management levels but little is yet known as to the impact of higher risk management levels on claims variables.
    - While trusts have made considerable efficiency improvements and in their overall financial positions (particularly those who have progressed to foundation trust level), little is yet known on how significant financial strength or FT status are as predictors of risk management practices (in particular, the risk management level within trusts).

Addressing the deficits within the existing research on the NHS reforms will become the focus of the primary research for this thesis.

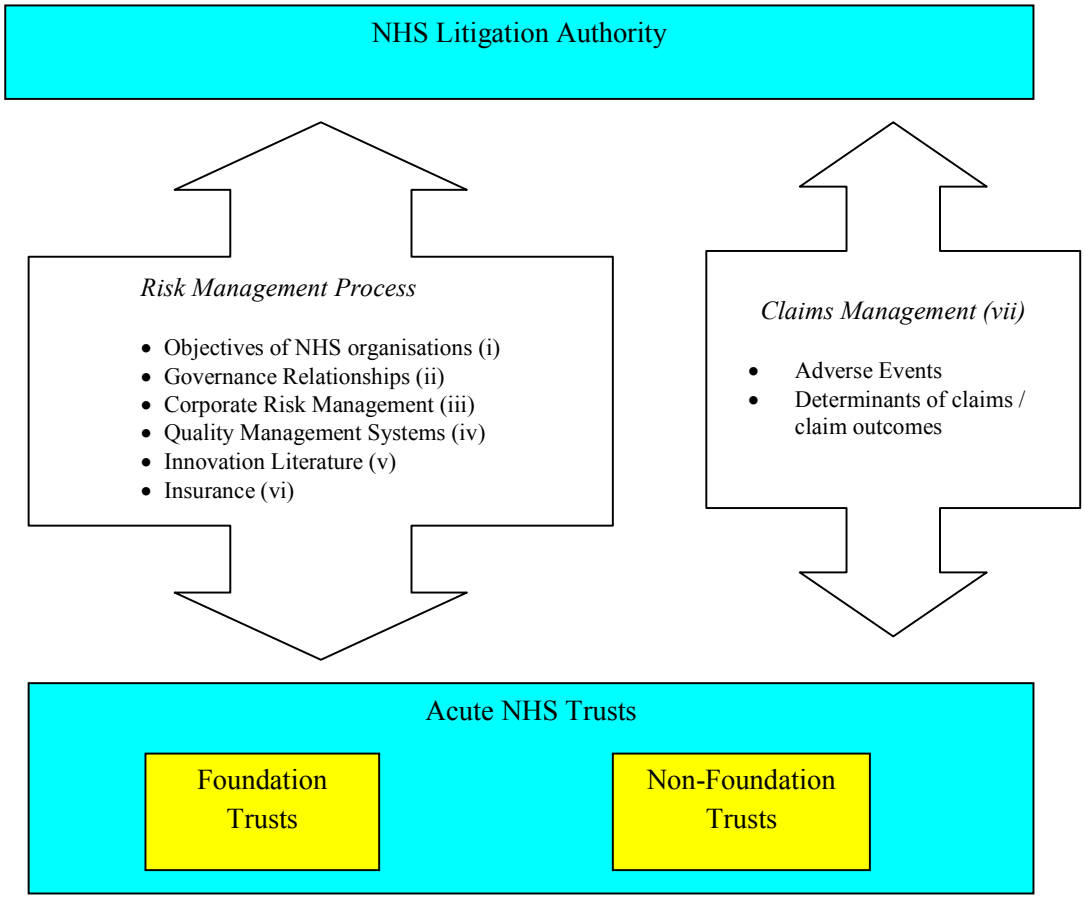
CHAPTER THREE

RISK MANAGEMENT DECISIONS IN HEALTHCARE ORGANISATIONS: THEORY AND EVIDENCE

3.1 Chapter Overview

This chapter provides a theoretical background to the risk management decisions faced by NHS trust managers. An overview of the areas to be reviewed is provided below:

Figure 3.1 Overview of Literature Areas



Source: Author

Initially, literature which sets a context for the role of risk management in healthcare organisations will be reviewed – this will include:

(i) A review of the objectives of healthcare organisations; this will provide a benchmark for assessing the success of healthcare organisations in achieving their aims.

(ii) A review of governance relationships within the healthcare sector; this will have implications for how effectively organisations can achieve their chosen objectives, and the possible need for risk management activities.

The chapter will then concentrate on literature relevant to the risk management incentives faced by healthcare managers – this will include the following:

(iii) Corporate risk management literature – this will outline a range of approaches which are used to manage risk in the private sector, and will assess the extent to which these can be applied in healthcare.

(iv) Quality management systems literature – this will highlight the similarities between such systems and the risk management levels operated by the NHSLA, and review the arguments which can be made in favour of, and against, such systems.

(v) Innovation literature – this is included as a decision to seek higher NHSLA risk management levels can be viewed as an innovation decision by trust management, and reviews the key factors which affect the eventual success or failure of such decisions.

(vi) Insurance literature – to the extent that the CNST scheme operated by the NHSLA is effectively an insurance scheme, the incentives created by this scheme will be reviewed.

(vii) Claims management literature – this will examine the clinical negligence claims process commencing with the occurrence of adverse events which may or may not lead to claims being filed; this section will progress to consider the determinants of both the occurrence of such negligence claims and of the final settlement value.

Core as well as supporting articles and studies are identified and referenced throughout the chapter and appear in full in the bibliography section. Secondary sources referred to in this chapter come largely from online journals accessed through various databases; this is complemented by additional material obtained from relevant websites.

3.2 Objectives of Healthcare Organisations

Liu and Mills (2007) suggest that to model hospital behaviour, one must firstly consider hospital type as different types can have different goals and financing arrangements, leading to different types of behaviour. By ownership, hospitals can be divided into private hospitals (invested mainly by private entities) and public hospitals (invested by public entities such as governments); while hospitals can also be categorised by financial objectives into for-profit and non-profit types – for-profit hospital are generally understood to seek to earn profits while non-profit hospital seek to break even. While there are exceptions, these authors do conclude that the majority of private hospitals seek to make profits and that the majority of public hospitals are non-profit entities (such entities do have incentives to make profits, but use the profit differently).

While one would expect for-profit organisations to be more efficient than non-profit organisations, the empirical evidence examined by Sloan (2000) showed no systematic differences between the two groups – there was a big similarity in for-profit and not-for-profit organizations except in areas such as capital structure where there must be differences. This finding is echoed by Brickley and Van Horn (2000) who found that non-profit hospitals care about profit, and the marginal incentives for increasing profit were as strong in non-profit hospitals as in profit ones.

As hospitals come in many different shapes and sizes, generalisations about their objectives are difficult to make, and developing a single model for predicting hospital behaviour is challenging (McGuire, Henderson and Mooney, 1988 – cited in Preker et al., 2007). In the same article, Liu and Mills (2007) summarise alternative objective functions for various hospital types as follows:

(i) Profit maximisation is the most important objective of for-profit hospitals (Feldstein, 1979). For non-profit hospitals, profit making is not the major goal but may implicitly affect their behaviour as money is important to them – this is significant as Eeckloo et al. (2004) found that most European hospitals are public, non-profit making hospitals.

(ii) Quantity maximisation: Many health economists support the hypothesis that this is the objective of non-profit hospitals (Brown, 1970; Klarman, 1965; Reder, 1965). An implication of this objective is that hospitals will offer more health care until profits are driven to zero (Newhouse (1970) cited in Horwitz and Nichols, 2009). However, there can be inconsistencies here as quantity means different things to different people – for example, Klarman (1965) suggests the number of patients treated, while Reder (1965) suggests the weighted number of patients.

(iii) Social welfare maximisation: this means to maximise the total consumer surplus in economic terms and was reported by Feldstein (1961 – cited in Preker et al., 2007) as a goal of non-profit hospitals subject to constraints on financial solvency. This is rarely investigated in detail and most hospitals (public and private) seem to pursue this explicitly or implicitly.

(iv) Sales maximisation – this was reported by Finkler (1983) as a goal of hospitals based on the ideal that hospitals keep expanding services even when losing money. The rationale here is that hospitals want more demand for their services which should lead to more revenue although this is broadly equivalent to quantity maximisation.

(v) Capacity maximisation – this was reported by Lee (1971) based on the idea that hospitals always want to expand services, acquire more high tech equipment, attract more doctors and increase service quality and quantity. This may be based on prestige or reputation reasons, and is similar to quantity maximisation.

(vi) Utility maximisation – this has the potential to cover the objectives of all hospitals but can be difficult to conduct empirical tests as elements of the utility function are difficult to measure.

In summary, Preker at al (2007) find that consideration of the various objectives reported in the past thirty years reveals no single objective that captures the nature of the hospitals. As Berki (1972, cited in Preker et al. (2007) p216) states '*if the literature on the objectives of hospitals agree on a central point, it is that the objectives are vague, ill-defined, contradictory, and sometimes nonexistent*'. Frequently, hospitals share more than one objective – for example, Eeckloo et al. (2004) found that hospitals in general aim to provide high-quality specialised care but also pay attention to the accessibility of care and the financial equilibrium (Eeckloo et al, 2004).

3.2.1 Objectives of the NHS

When the NHS was established in 1948, it was a public health service with core principles (rather than objectives) of meeting the needs of everyone, being free at the point of delivery, and being based on clinical need, not ability to pay (Talbot-Smith and Pollock, 2006). Many changes have since occurred to the structure of the NHS but the approach of core principles rather than high-level objectives has continued; in 2010, the Labour government published the NHS constitution which had seven key principles as follows:

(i) A comprehensive service available to all;

(ii) Access is based on clinical need, not ability to pay;

(iii) Aspiration to the highest standards of excellence and professionalism;

(iv) Services that reflect the needs and preferences of patients, their families and their carers;

(v) Working in partnership with other organisations in the interests of patients, communities, and the wider population;

(vi) Providing best value for taxpayers money;

(vii) Accountability to the public, communities and patients.

(Findlay, 2010)

This emphasis on principles rather than objectives led Findlay (2010) to conclude that the NHS prefers to leave a wide gap between vision and detail. At trust level, a similar emphasis on core principles is to be found on many trust websites as shown below:

Table 3.1 Sample Trust Aims / Mission Statements

Trust Name	Trust Aims / Mission
Whittington NHS Trust	• To have a clean hospital; • To be welcoming and caring; • To be well organised; • To give the best possible treatment; • To give you information and listen to you.
Weston Area Health NHS Trust	To deliver safe, high-quality and clinically effective services
University Hospitals Bristol NHS Foundation Trust	To provide patient care, education and research of the highest quality – this will be guided by the following values: respecting everybody, embracing change, recognising success, and working together.
Wrightington, Wigan & Leigh NHS Foundation Trust	To create the right conditions for our staff to put our patients needs at the heart of everything we do.

Source: Whittington NHS Trust (2011), Weston Area Health NHS Trust (2011), University Hospitals Bristol NHS Foundation Trust (2011), and Wrightington Wigan & Leigh NHS Foundation Trust (2011).

It is noticeable in this table that there are no references to the financial bottom line in any of these statements which implies that the generation of profits is not a core value for these organisations. This is consistent with Eeckloo et al. (2004) who found that NHS trusts lack the principle of maximisation of profits and the objectives are thus less equivocal – this is typical of non-profit / public organisations in the healthcare sector.

The literature will now progress to consider alternative governance structures which exist in private and public organisations with particular emphasis on those in healthcare systems. These structures will affect the extent to which organisations can achieve their chosen objectives.

3.3 Governance in Healthcare Organisations

Governance issues arise whenever a corporate entity acquires a life of its own, and the ownership of an enterprise is separated from its management (Tricker, 2009). For companies, the term corporate governance is frequently used – this stands for the system by which companies are directed and controlled and is based on the two pillars of accountability and transparency towards shareholders (this should lead to long-term shareholder value (Eeckloo et al., 2004)). Such governance systems are important, as evidenced in a 2008 study published by the Association of British Insurers which found that well governed companies deliver higher risk-adjusted returns and that governance expenditure can be cost-effective (Selvaggi and Upton, 2008).

Governance practices can be examined in a number of ways (Tricker, 2009), and two of these will now be considered:

3.3.1 Agency Theory

This theory perceives the governance relationship as a contract between the owners (typically shareholders) and the management of the firm (typically the directors). This raises the agency dilemma of how to ensure that the agent acts solely in the interest of the principal given that directors seek to maximise their own personal benefit by taking actions that are advantageous to themselves but detrimental to the shareholders (Jensen and Meckling, 1976). This creates agency problems which have the following sources:

(i) Moral hazard – this is where the agent's actions are hidden from the principal or are costly to observe; this makes it difficult for the principal to observe if the agent has put forth maximum effort (Eisenhardt, 1989).

(ii) Adverse Selection – this is where the principal cannot ascertain if the agent has accurately represented his/her ability to do the work for which he/she is being paid. This arises where there

is asymmetric access to information which typically involves directors knowing more about the corporate situation than the shareholders (Tricker, 2009).

These problems arise from the divergence of interests between shareholders and management, and resolving those leads to the following costs being incurred:

(a) Monitoring costs – these are costs associated with observing the behaviour and performance of agents; Denis, Denis and Sarin (1997) contend that effective monitoring is restricted to a certain number of people and must pose a credible threat to management's control of the company.

(b) Bonding Costs – these relate to arrangements that penalise agents for acting in ways that violate the interests of principals or reward them for achieving the principal's goals. An optimal bonding contract should aim to entice managers to make all decisions in the shareholder's best interest; however, this is unlikely as it is almost impossible to get managers to do everything that shareholders would wish (McColgan, 2001).

In summary, agency theory focuses at the level of owners and managers as entities, and has remained as the mainstay of corporate governance publications in the past two decades. However, it is not without its critics – these state that by focusing on the contractual relationships between two parties, it ignores other factors such as interpersonal behaviour and group dynamics; in addition, they also argue that the assumption that individuals maximise their own utility is dubious (Tricker, 2009).

3.3.2 Stewardship Theory

This theory looks at governance through the lens of the legal view of the corporation – each company is incorporated as a legal entity and the owners nominate and appoint the directors who then act as stewards for their interests. Directors have a fiduciary duty to act in the owners' interest, and inherent in this concept of the company is a belief that directors can be trusted (Tricker, 2009). Contrary to agency theory, it argues that directors do not always act in their own personal interest as it is believed that they

will act responsibly with independence and integrity. Directors are also assumed to be able to recognise the interests of customers, employees, suppliers and other stakeholders, but their first responsibility is to the owners (shareholders). There are elements of organisational psychology and sociology in this theory in that it posits that what motivates individual action by managers is their personal perception; Silverman (1970) extends this view when he argues that to the extent that managers feel their fortunes are bound to their current employers, they may perceive their interest as aligned with those of the owners. There is now no need for contracts to motivate managers, and the issue is whether the organisational structure facilitates the manager to achieve high corporate performance (Donaldson, 1985).

While Donaldon and Davis (1991) do cite evidence preferring stewardship theory to agency theory, critics argue that this theory also has limitations as follows:

- The concept of shareholders appointing directors is naïve in modern circumstances;
- The theory is normative, and is unable to show casual relationships between specific behaviours and corporate performance;
- The corporate collapses in the late 20th and 21st centuries has undermined the trust owed by directors to companies. (Tricker, 2009)

In summary, this theory stresses the role of top management acting as stewards, integrating their goals as part of the organization – in this way, stewards are satisfied and motivated when organizational success is attained.

3.3.3 Summary of Corporate Governance Theories

While agency theory and stewardship theory offer opposing views on the appropriate governance structures in organisations, they are not the only theories in existence – for example, resource dependency theory takes a strategic view of corporate governance where the directors are viewed as

creating networks to connect the firm to its environment (Abdullah and Valentine, 2009). However, none of the available theories provide a widely accepted theoretical base or a commonly accepted paradigm – in short, corporate governance lacks any form of coherence, either empirically, methodologically or theoretically with only piecemeal attempts to try and understand and explain how the modern corporation is run (Pettigrew, 1992).

3.3.4 Applications to the Healthcare Sector

Eeckloo et al. (2004) considered the question as to whether corporate governance models developed in the corporate world can be valuable to health care personnel in their organizations – despite the fact that this sector is mainly non-profit driven with multiple objectives, they conclude that such models can still be of use as a frame of reference; solutions to governance problems can be found in the creation of a system of checks and balances which can apply to the hospital situation as much as the profit situation. Examples of how such governance models can be of value is provided below:

- Tricker (2009) illustrates how agency problems can arise in the NHS as the Department of Health contracts with Regional Health Authorities to deliver healthcare in the community; in turn, these authorities contract with hospitals, setting standards and targets to measure achievement. In this way, he posits that the NHS promulgates a list of performance measures with quantifiable outputs to reduce the agency dilemma.
- Harris (1977) cites a particular governance problem within healthcare in that a hospital is actually two separate firms (a medical staff division and an administration division) – there is ambiguity in the relationship between these divisions with each having its own managers, objectives, pricing strategies and constraints. Within this organization, medical staff and administration are locked in a non-cooperative oligopoly type game and the only resolution is for the firm to get bigger and more complicated.
- Eldenburg et al. (2004) examined the performance of various health care boards and found that governance varies across ownership types; for-profit hospitals have a board of directors to

oversee them, and non-profit hospitals have a board of trustees to provide governance and leadership to all of the activities of the hospital. Trustee responsibilities include issues such as providing personnel, equipment and facilities for the delivery of high quality health care and overseeing the financial health and stability of the organisation (Steinburg, 2005).

Within healthcare organisations, a variety of governance terms are used more frequently than the term corporate governance - healthcare governance (similar to hospital governance) is defined by Eeckloo at al (2004, p2) as the '*process of steering the overall functioning and effective performance of a hospital, by defining the hospital's mission, setting its objectives, and supporting and monitoring their realization at the operational level*'. This hospital (or healthcare) governance can in turn be divided into financial governance and clinical governance, where Scally and Donaldson (1998, p61) define clinical governance as a '*framework through which NHS organisations are accountable for continuously improving the quality of their services and ... creating an environment in which excellence in clinical care will flourish*'. This concept of clinical governance was shown in chapter two to be at the core of recent organisational changes in the NHS, and is a partnership between clinicians and managers with four key elements:

(1) Clear lines of accountability and responsibility for the quality of clinical care;

(2) Comprehensive programmes of quality improvement;

(3) Clear risk management policies;

(4) Procedures for identifying and remedying poor performance.

(Masterton and Teare, 2001)

3.3.4.1 Governance Structures within the NHS

Within the NHS trust sector, foundation trusts were created in 2006 and Table 2.7 in the previous chapter showed that over one hundred trusts had become foundation trusts at the end of the 2008/2009 financial year. Such foundation trusts have a new governance regime which differs fundamentally from that of

NHS trusts – boards of directors have more autonomy to make financial and strategic decisions, while they also have a framework for local accountability through members and a board of governors which has replaced central control from the Secretary of State for Health. To assist such trusts to improve their governance practices, a NHS Foundation Trust Code of Governance was first published in 2006 (with reviews in 2008 and 2010) – this has taken best practice from the private sector (the prime standard for corporate governance in the UK is the *Combined Code of Corporate Governance* which was last updated in 2008) to the foundation trust sector (Monitor, 2010). Key aspects of this code are as follows:

- The unitary nature of the board of directors and the collective responsibility for all aspects of the performance of the foundation trust;
- A recommendation that at least 50% of board members to be independent, non-executive directors;
- A board of governors which will represent the interests of foundation trust members and partner organisations in the local economy in the governance of the trust;
- The board of directors should take a formal and rigorous annual evaluation of its own performance;
- Levels of remuneration should be sufficient to attract and retain directors of the required skills and experience but the foundation trust should avoid paying more than is necessary for this purpose.

In short, it can be seen that with the transition of most NHS trusts to foundation trusts, the governance arrangements within NHS trusts have increasingly sought to resemble best practice in the private sector with some modifications for the healthcare sector. While it is still relatively early to conclude if these arrangements will lead to improved trust performance, Beazley (2005) argues that NHS trusts seem to have largely benefited from adopting and integrating corporate governance structures. This implies that the increased checks and balances within the system, such as the introduction of boards of governors to hold boards of directors to account, will lead to improved trust performance over time. He also contends

that while governance structures are in good shape, foundation trust policies will require integrated governance structures to evolve further towards those of the private sector.

The literature review will now progress to examine risk management within organisations, and a similar approach of reviewing relevant literature pertinent to the private sector before adapting it to the NHS will be adopted.

3.4 Risk Management within Healthcare Organisations

The management of risk is one of the most important issues facing organisations (Merna and Al-Thani, 2008), where risk management is defined as any set of actions taken by individuals or corporations in an effort to alter the risk arising from their business (Merna and Smith, 1996). Interest in risk management has increased significantly in recent decades; this can be attributed to the increased volatility of security prices, the globalisation of business activities, and an increasing array of methods to manage risk (Bartram, 2000).

Modigliani and Miller (1958) suggest that in efficient capital markets, risk management can be accomplished by either the firm or shareholders, and there is consequently no need for corporate risk management systems as the costs of such systems will reduce the value of the firm. However, a modification of these assumptions to allow for market imperfections (such as transactions costs) creates a theoretical justification for corporate risk management (Stulz, 1996; Tufano, 1998) – this view is echoed by Bartram (2000) who found risk management to be more efficient at the firm level.

Fatemi and Luft (2002) posit that a number of different hypotheses can be advanced to explain why firms should manage risk – three of these are now considered:

3.4.1 Shareholder Value Maximisation Hypothesis

This predicts that a firm will engage in risk management policies if they enhance the firm's value and thus its shareholders value. This value enhancement can occur in a number of ways:

(1) Risk management can reduce costs of financial distress and bankruptcy - by reducing these costs, it can increase the value of the firm (Tufano, 1996). This implies that risk management activities can help to mitigate an organisation's downside risks as Bartram (2000) finds that companies with more volatile cash flows and high fixed payment obligations are more likely to encounter financial distress problems. This point is further supported by Smith and Stulz (1985) who state that hedging can reduce financial distress costs while Fatemi and Luft (2002) state that the avoidance of financial distress is the strongest motive for engaging in risk management behaviour.

(2) Risk management can be used to lower tax payments - it enables a firm to use more debt which allows it to reduce taxes through interest tax shields (Kaen, 2000). This point is further alluded to by Smith and Stulz (1985) who argue that it is optimal to hedge if taxes are a convex function of earnings.

(3) Minimising the probability of under-investment – Tufano (1996) suggests that in the absence of risk management, firms will be forced to pursue suboptimal investment policies (this hinges on costly external financing and suggests that firms which find this costly are more likely to use risk management). Furthermore, Bartram (2000) suggests that firms with more secure funding are more likely to take on more profitable investment projects – here, corporate risk management harmonises the need for and availability of internal funds.

These views all support the presence of a positive relationship between engagement in risk management activities and firm value, and the combination of these benefits acts as a powerful incentive for firm to engage in such activities.

3.4.2 Managerial Risk Aversion Hypothesis

This is based on a premise of agency theory that managers will seek to maximise their personal wealth at the expense of shareholders. In such a world, managers may pursue risk management strategies so as to keep control of resources, preserve their jobs and increase their salaries – these agency costs reduce the value of the company (Kaen, 2000). Oba (2004) posits that such costs are positively related to firm size - managers become more risk averse as firms grow based on their desire to protect their position and this leads to them building structures which increase their chances of control.

While this hypothesis creates a motive for investing in risk management, such investments ignore the impact on shareholders wealth – the focus is to enhance the position of the firm's management. Tufano (1998) argues that these agency costs will continue until the agency conflicts are resolved, and the existence of these costs makes it imperative that shareholders understand risk management processes in their organisation.

3.4.3 Align Conflicts of Interest Hypothesis

While risk management can lead to unprofitable investments in the presence of agency conflicts, it can also be used to resolve such conflicts by aligning the interests of management with those of the owners of the company. Kaen (2000) states that this conflict of interest stems from the inability of managers (unlike shareholders) to diversify away all the unique risks of the company – they will consequently make decisions based on the total risk of the company as opposed to shareholders who prefer them to make them based only on systematic risk. In such situations, risk management strategies such as hedging manager's unsystematic risk can be used in conjunction with managerial evaluation systems to align managers' interests with those of shareholders.

Additional conflicts of interest can also be addressed through risk management; Bartram (2000) states that risk management can reduce conflicts between shareholders and debtholders by reducing the volatility of firm value – the evidence supports this as more risk management activities are observed for

companies with high debt ratios. This ability to reduce the volatility of firm value sends more stable signals to investors (Mango and Major, 2007); Scordis (2008) expands on this to state that managers prefer smooth progressions in earnings with low volatility, and shareholders in turn generally assign high P/E ratios to companies with more stable income streams. To the extent that risk management can reduce conflicts between stakeholders, it can also be an important ingredient in managing public perceptions by helping companies to avoid negative publicity. This view is supported by DeMarzo and Duffie (1992), who suggest that managers undertake hedges to influence the labour market perception, while Tufano (1996) also supports this view when stating that managers engage in risk management to signal their own quality to the marketplace.

In summary, a review of corporate risk management literature reveals a variety of motives for investing in risk management activities, and it is clear that risk management activities go further than simply ensuring the survival of the firm and thereby support broader public policy objectives. This suggests that risk management will be of benefit to healthcare organisations which as public organisations are more focused on quality care and patient safety than on shareholder wealth concerns.

3.4.4 An Integrated Approach to Risk Management

The increased interest in risk management in recent decades has been accompanied by an amended approach to the management of risk within organisations. The approach has evolved from a concentration on quantitative risk analysis in the 1980s to a current emphasis on understanding and improving risk management processes. These processes now include a prescriptive approach such as identification, assessment, response and documentation (Merna and Al-Thani, 2008). In addition, the approach has evolved from one which tended to isolate risks to one where risks are now aggregated (Meulbroek 2002). Firms adopting this new approach have risk management issues much higher up the board agenda and have committees which have overall responsibility for risk management across the organization. This new approach has been termed integrated risk management, and involves addressing

all of a firm's risks within an organised and coherent framework. It implies that management must move from a tactical approach to a strategic approach and look at how risk affects the entire firm. This more cogent approach to the integration of risk started in the financial services sector and has been found to have benefits in terms of direct firm profitability instead of being a regulatory burden (Jablonowski, 2007).

However, despite being now seen as a more important part of business management, Merna and Al-Thani (2008) state that risk management may not always be easy to justify – this is because the benefits it generates are often unseen while the costs are all too visible. To sell it successfully requires a focus on the benefits it will bring which includes satisfying a genuine need within the organisation.

3.5 Quality Management Systems in Healthcare

It was seen in chapter two that the risk management system chosen for NHS trusts in 2002 after the call-in of claims was the implementation of a system of risk management standards by the NHSLA. While the uniqueness of the NHS structure makes it difficult to find a similar risk management system in other countries, this system can be viewed as a quality management system in that it involves trusts being subject to quality audits at regular intervals by the NHSLA. Given that there is much literature on the role of such quality management systems within healthcare, this will now be reviewed.

While the assessment and control of quality medical care were largely left to professionals in the past, quality management systems are now advocated widely (Macinati, 2008). Shortell et al. (1998) attributed the increased usage of such systems as a reaction to the increased pressure to contain costs and maintain quality in the health sector. This view is reinforced by Kunkel and Westerling (2006) who argue that quality systems can help hospitals maintain a high quality of care – they can be a tool to ensure that resources are efficiently and effectively used.

In essence, quality management systems in health care are structured organizational processes involving staff at different levels in planning, measuring and assessing patient care in such a way as to provide optimal medical service to patients (Macinati, 2008). These systems are administered by professionally based, private sector accrediting bodies and through state regulatory agencies (such as the National Committee for Quality Assurance, and the Joint Commission on Accreditation of Healthcare Organisations). Such systems typically begin with the setting of contemporary standards for important organisational functions, and then encourage organisations to comply with these standards through the awarding of accreditation (O'Leary, 2000). The principle behind such an approach is that organisations who comply with these standards are less likely to have errors and adverse outcomes than if they did not meet such standards.

Implementing a quality system does not guarantee a high quality of care, nor does the absence of one necessarily imply bad quality (Kunkel and Westerling, 2006). Rather, quality systems should be considered as tools for developing quality, and viewpoints on the merits and drawbacks of such systems will now be considered.

3.5.1 Motivations for Implementing Quality Management Systems

While improving the overall quality of healthcare must be the fundamental objective of becoming accredited with various quality management systems (Bair and Milner 1995; Schyve 2000; Collopy 2000; Sheaff 2002; Saufl 2003), a variety of other motivations exist which, in turn, have contributed to the growth in its adoption as a means of addressing quality in healthcare. Firstly, the potential of such systems to improve accountability is mentioned widely in the available literature. Scrivens (1995) identifies the accountability that may be leveraged from introducing national programmes of accreditation – "*accreditation is being perceived as an appropriate vehicle for ensuring public accountability for delivering healthcare*" (p.180). For Duckett (1983) and Heaton (2000), this improved accountability is achieved by introducing the comparability of standards that quality systems offer. Associated with this may be the emergence of using the self-assessment process and overall accreditation

ratings as the basis for funding and budgetary decisions, both inside and external to the organisation, for example from government funders (Bohigas et al. 1996; Schyve 2000).

The potential to increase the credibility of the healthcare provider / organisation and the accompanying improvement in the confidence of service users, employees and funders in the quality of process, structures and outcomes, may also serve as a motivation for implementing quality systems (Steiner et al. 1995; James and Hunt 1996; Sewell 1997; Schyve 2000; Klazinga 2000; Saufl 2003; Gaster and Squires 2003; Rad 2006). In a similar vein, Pomey et al. (2005, p51) posit the view that "*accreditation is a means of publicly recognising that a healthcare organisation meets predetermined national standards*" and that additionally, accreditation carries a "... *brand image*" (p.52) to market to healthcare authorities and other stakeholders about the quality of the healthcare services provided (James and Hunt 1996; Pomey et al. 2005). This improved professional standing can be viewed as improving the hospital's corporate reputation which is defined by Fombrun (1996, p72) as a *'perceptual representation of a company's past actions and future prospects that describe the firm's overall appeal to all its key constituents when compared to other leading rivals*'.

Finally, while quality systems may not directly refer to changing existing attitudes in an organisation, it can be implemented as a vehicle to achieve such organisational development and change within a healthcare environment (Steiner et al. 1995; James and Hunt 1996; Shaw 2003; Sweeney 2004; Pomey et al. 2005). James and Hunt (1996) suggest that quality systems may be driven by a change agenda based on the potential to focus the organisation on continuous improvement. Likewise, Duckett (1983) argues that implementing quality systems may be instigated as a means of influencing and changing the behaviours of staff (most notably those in the medical sphere) within the organisation. O'Leary (2000) extends this further by arguing that external quality oversight bodies do have the ability to foster constructive change in healthcare organisations because of their roles as agents of public accountability.

3.5.2 Criticisms of Quality Management Systems in Healthcare

The aforementioned motivations for becoming accredited to various healthcare quality standards must be balanced by the criticisms of it that appear in the literature as an organisation-wide quality approach. At the most basic level, Dey and Hariharan (2006) argue that it does not offer a framework of strategies for corrections and improvement and hence, as a process, its effectiveness is questionable. Furthermore, Milakovich (1991) posits the view that quality systems represents an ineffectual model for improving quality across the organisation and serves to create passive resistance or overt opposition from hospital staff. This resistance can be linked to the observations made by Scrivens (1995) who acknowledges that quality systems can be viewed as an approach that is initiated from outside as opposed to internal to the organisation.

Gaster and Squires (2003) suggest that the external monitoring process on which accreditation is based " *...may be mainly an irritant and a diversion from doing the 'real job*'" (p.87) in a healthcare organisation. They further purport that the process may be divisive as it may mean the organisation is labelled a failure by virtue of its accreditation rating. This view is also held by Natarajan (2006) who observes that the accreditation approach may be interpreted as punishing organisations as a result of non-compliance. Moreover, Sewell (1997) observes that "*accreditation is often viewed as a necessary evil*" (p.21) and that it has the potential to develop into "*…a paper-chase exercise*" (p.21) with no guarantee of improving quality and that it is built around rigid standards and integral criteria that fail to address the service outcomes of patients. The additional workload involved in seeking to become accredited with such standards is referred to by Steiner et al. (1995) who noted that accreditation implementation had increased the workload of respondents and displaced activities with a lesser priority.

An additional concern with quality systems is the costs associated with it – significant costs are associated with the initial implementation according to Redmayne et al. (1995) and Steiner et al. (1995) and although Hurst (1997) qualifies this by arguing that long term savings will be made if accreditation uncovers inefficient and unsafe practices. Braithwaite et al. (2006) cite US data which shows the first year cost of accreditation systems to be of the order of $370,000 while additional annual costs run to

$630,000 – given that most healthcare organisations are subject to funding constraints, it is clear that these costs represent a drain on already scarce resources.

Finally, Pomey et al. (2005) observe that quality systems will fail in their ability to generate organisational change and quality improvement where their implementation is weak. Instead, they have the potential to become "… *an essentially bureaucratic exercise that will not serve thoroughly to review organisational processes in order to improve structures and treatment modalities as a whole*" (p.52).

3.5.3 Quality Management Systems in the NHS

Within the NHS, all trusts are compelled to achieve risk management standards as part of the CNST scheme with the NHSLA, and while trusts are required to obtain a minimum of risk management level one, one can view the decision to seek risk management level increases as part of a strategy to seek improvements in quality – hence, the arguments in favour and against quality management systems have relevance to hospital management.

The volume of studies on the effectiveness of quality management systems in the NHS is limited; however, a study conducted by Steiner et al. (1995) provided a view on the impact of quality systems – it found that quality systems led to the development of improved internal documentation; had introduced a practice of internal audit and had enhanced both inter-departmental communication and staff morale. In addition, a study by Fenn et al. (2010) found that the attainment of a level three risk management standard was significantly associated with improvements in infection control; however level two compliance was not significant in leading to improvements in care. This suggests that risk management levels can be a driver of changes in quality levels in the NHS.

Having assessed quality management systems in healthcare, the role of innovation literature will now be examined as decisions to seek to improve one's risk management level represents innovative attempts to promote one's professional standing in comparison to that of other hospitals (Bohigas et al., 1996).

3.6 Innovation Decisions in Healthcare

Innovation has been defined by Beswick and Gallagher (2010) as the successful exploitation of an idea that adds value to the customer and commercial return for the creator. Other innovation definitions (Luecke and Katz, 2003; Baregheh et al., 2009) allude to the generation of growth / positive returns – this explains the motivations for companies to introduce innovations, and reinforces Davilla et al. (2006, p6) view that '*innovation is the key element in providing aggressive top-line growth, and for increasing bottom-line results*'. These authors argue that innovation programmes within organizations are primarily driven by the need to improve quality, which will translate into higher returns over time.

A range of factors have been found to affect innovation activity in commercial organizations, and these include factors which are both external and internal to the organization. A summary of these factors is now provided:

External Factors

(i) *Firm Size*: Beaver and Prince (2002) argue that there is no optimum firm size that is particularly suited to innovation; on one hand, smaller firms enjoy unique advantages including a lack of bureaucracy, efficient and often informal communications, and flexibility to adapt quickly to market changes. However, small firms face disadvantages such as a possible lack of technically qualified staff, lack of colleagues to interact with [Nutter (1956) argues that researchers are more productive when they have more colleagues with which to interact], and difficulties in attracting and securing finance.

(ii) *Access to Finance*: Innovation frequently requires considerable front-end sunk costs (Beaver and Prince, 2002; Kamien and Schwartz, 1982) which makes access to external resources a key concern for successful innovation activity (Holzl and Janger, 2011). In the absence of access to external finance, this makes current profitability a key enabler to investment in innovation activity.

(iii) *Degree of market control*: A number of authors (Schumpeter, 1934; Rothwell and Zegveld, 1982) argue that innovation may be higher in concentrated industries as large firms with monopoly power are better able to finance innovation activity from their own profits.

(iv) *Nature of Rivalry in the Industry*: Van Cayseele (1998) states that the degree of rivalry in an industry will impact on the 'carrot' (post-innovation profitability) and 'stick' (losses after innovation by a rival) for innovation activity. This author expands to say that an 'intermediate' level of rivalry is best for innovative activity in an economy as an intense rivalry will lead to imitation by rivals (thus making the carrot not last very long) while feeble rivalry implies that the stick (threat of rival firms innovating) is not very strong.

(v) *Market conditions*: This can be a significant barrier to innovation as firms are likely to have more resources available for investment in good economic periods and vice versa. Furthermore, such conditions can create additional risk factors in certain industries such as entry barriers which limit competition (Larsen and Lewis, 2007)

Internal Factors

(i) *Leadership*: The role of top management in organisations can significantly influence the level of innovation that a firm will engage in (Tidd et al., 2004). Successful innovations require project champions, and leaders are more likely to be heavily involved in developing new products/processes for such innovations (Laforet and Tann, 2006).

(ii) *Culture*: The prevailing culture in an organisation can influence innovative behavior as a firm's culture must be receptive to innovative practices (Humphreys et al., 2005). Laforet and Tann (2006) reinforce this point when they found that more innovative firms have a culture of empowerment with staff being regularly trained to support innovation efforts.

(iii) *Communication:* Clear communication of a firm's vision is essential to drive and inspire innovation as it will ensure awareness of the strategic direction of the firm amongst all employees (Mosey et al. 2001). Furthermore, innovative firms tend to have semi-structured decision making processes which fosters creativity through fair and constructive judgement of ideas (Bommer and Jalajas, 2002).

(iv) *Willingness to take risks*: Innovation involves taking risks and failure is consequently an inevitable part of the innovation process - even successful organizations factor in an appropriate level of risk for innovation projects. The impact of such failure can go beyond the simple loss of investment, and extend to a loss of morale among employees and a higher resistance to further innovations in the organization (Berkun, 2007).

In summary, a wide range of factors impact on the level of innovation within companies and innovation projects can fail because of factors that are external or internal to the organization (O'Sullivan, 2002).

3.6.1 Challenges in Implementing Innovation in Healthcare

While there is a need for innovation in healthcare to potentially enhance the quality of care (Varkey et al., 2008), implementing innovation projects creates its own unique challenges, and attempts to understand the process of innovation in healthcare must begin with an in-depth analysis of these challenges. These include the following:

(1) Several researchers have suggested that it is difficult to change the behavior of clinicians in healthcare organizations (Shortell et al. 1998; Shortell et al., 2001; Greco and Eisenberg, 1993) - this resistance is linked to their tendency to protect their individual autonomy and reputation.

(2) The adoption of healthcare innovations is often regulated by laws, making changes more laborious (Faulkner and Kent, 2001).

(3) Impact of innovation outcomes: In healthcare, the starting points of an innovation process may lead to death, disability, or permanent discomfort (Lansisalmi, et al., 2006). This can promote a culture of blame and secrecy that inhibits organizational learning and the generation of innovations (Huntington et al., 2000).

In short, healthcare innovations must consider these challenges and include the views of a range of stakeholders (clinicians, patients, organizations, innovator companies, regulatory agencies) (Omachonu and Einspruch, 2010). However, making successful innovations requires careful adherence to a range of factors, any one of which can derail an innovation programme at any stage.

3.7 Role of Insurance Arrangements in Healthcare Organisations

Insurance is a form of risk transfer whereby risk(s) are passed from one party who does not wish to have the risk(s) (the insured) to another party (typically an insurance company) who is willing to take on this risk in return for the payment of a fee or premium (Williams et al., 1995). This is a popular method of managing risk for individuals as risk aversion is a characteristic of most people as evidenced by their behaviour when faced with risky scenarios. Insurance purchasers typically have an insurable interest in the asset or liability for which they are seeking insurance, and this gives rise to two problems in the relationship between the insurer and the insured (Culp, 2001; Arrow, 1963). Both of these problems are a result of asymmetric information as follows:

(i) *Moral hazard* – this is the tendency of insurance to reduce behavioural incentives to prevent loss, and it can lead to fraudulent claims for benefits if care is not taken to monitor claims for benefits (Williams et al., 1995). This can be broken into two components – ex ante moral hazard where the insured's action occurs before the realization of the insured event, and ex post moral hazard where the insured action occurs after the realization of the insured event.

   a. In studies of ex ante moral hazard, Pauly (1974) and Shavell (1979) showed that insurance reduces the incentive to take care when the insurer is unable to monitor the insured's action. Rubinstein and Yaari (1983) found that an insurer can eliminate the moral hazard problem by choosing an appropriate experience rating scheme which provides incentives to take care – this links the premiums paid to one's historical claims experience.

b. In the case of ex post moral hazard, the nature of the accident is not observable by the insurer who has to rely on the insured's report or engage in costly verification – Mookerjee and Png (1989) showed that random audits represent an appropriate response by the insurer in such situations.

Other features in insurance contracts which can mitigate moral hazard problems include deductibles and co-insurance; a deductible is a portion of a claim which is not covered by the insurer and must be paid before the benefits of the policy can apply, while co-insurance requires the insured to pay a portion of the covered losses (Culp, 2001).

(ii) *Adverse selection* is the result of insurance having the greatest appeal to individuals who are likely to have a loss. As a consequence, demand for insurance is likely to be greatest amongst those who are most likely to have a loss, and this problem is compounded if managers can conceal information used to evaluate the likelihood of loss or amount of damage (Williams et al., 1995). In other words, the prospective insureds are heterogeneous and the risk class to which they belong cannot be determined a priori by the insurer (without costs), so that every insured is charged the same premium rate. One device which can be used to deal with adverse selection is risk categorization – this uses statistical information on correlations between risk classes and observable variables (such as age, gender etc). This was studied by Crocker and Snow (1986) and Rea (1992) who found that it enhances efficiency when classification is costless, but that its effect is ambiguous when statistical information is costly. One way to avoid this problem would be if the insureds had a feasible strategy to signal their quality level; however Dionne (2000) found that such signaling does not generally occur in insurance markets.

3.7.1 Insurance Incentives of the NHSLA's CNST Scheme

In the UK, a form of enterprise liability was introduced in 1990 where the NHS agreed to indemnify NHS trusts from possible claims. In return for this, trusts were required to join the CNST scheme which was effectively allowing trusts to purchase insurance against the risk of clinical negligence claims in return for contributions to the NHSLA (Fenn et al., 2010). These authors argue that membership of the CNST scheme may have the following effects:

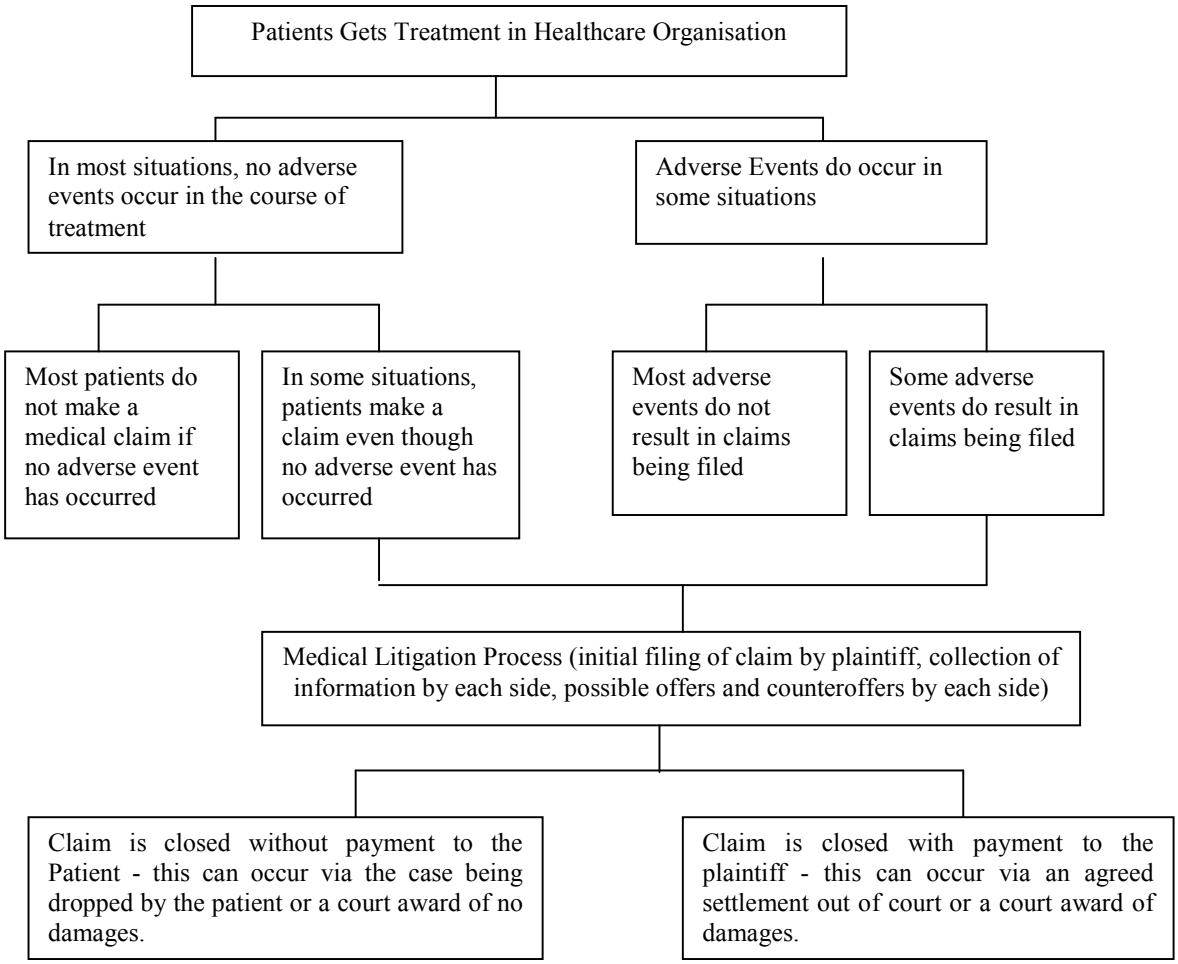
- Insurance contributions to the NHSLA may be perceived as excessive by trust management if not closely linked to underlying risk management levels and this may lead to alternative arrangements being sought by lower risk trusts, and higher contributions for the remainder.
- Care levels may be diluted by such insurance leading to increases in the volume of claims. As shown in chapter two, these moral hazard effects were managed through the use of excess levels and experience rating trust contributions up to 2001, and have been managed by a combination of risk management levels, experience rating and process rating arrangements since 2001.
- In relation to the adverse selection aspect to insurance schemes, it is not possible for the NHSLA to a priori determine the riskiness of each NHS trust; therefore, it may be using risk management levels as a way of classifying hospitals into groups which merit differing contributions due to differing expected claim costs on actuarial grounds (Crocker and Snow, 1986; 2000). Fenn et al. (2010) add that this view is consistent with a policy of incentivizing trusts to invest in improved risk management (through offering financial discounts for the attainment of higher risk management levels) in that hospitals with good safety outcomes are likely to have higher risk management levels (Bond and Crocker, 1991).

In short, the system of risk management levels operated by the NHSLA is very much intertwined with the CNST scheme which indemnifies trusts for clinical negligence claims made against them, and the financial discounts available for attaining higher risk management levels need to be balanced against the moral hazard and adverse selection incentives of this insurance scheme.

3.8 Claims Management within Healthcare Organisations

While claims management (commonly known in literature as clinical risk management) traditionally looked at litigation which leads to financial loss, the area has evolved to include improvements in quality as this represents the mechanism through which exposure to litigation can finally be eliminated (Vincent, 2007). Claims management can be viewed as a subcategory of the risk management function within trusts, and captures the means by which claims are handled by trusts (Fenn et al., 2004). This process under which claims arise and are managed is summarized below:

Figure 3.2 Background to the Medical Claim Process



Source: Adapted from Danzon and Lillard (1982)

This diagram breaks the medical claims process into a number of phases as follows:

3.8.1 Phase One – Possible Occurrence of Adverse Event

Outcomes in complex work environments depend on the integration of individual, team and organizational factors (Barach and Small, 2000). While the majority of healthcare treatments result in satisfactory patient treatment, other possible outcomes include:

- Errors / Close Calls / Near Misses – this refers to situations where unintended or unforeseen circumstances occur during the course of healthcare which do not result in harm to the patient. Most medical care entails some level of risk and these unforeseen outcomes can have negative consequences for the patient under slightly different circumstances.
- Adverse Events – this are defined as injuries which are caused by medical management which prolongs hospitalization or produces disability (Brennan et al., 1996). This definition implies harm to the patient and subsequent clarifications (Baker et al., 2004; Wilson et al., 1995) stated that these events relate to unintended injuries or complications which are caused by health care management rather than the patient's disease.

The occurrence of such events is inevitable in modern healthcare and a summary of empirical studies on the extent of adverse events is shown below:

Table 3.2 Summary of Major Studies of Adverse Events

Study	Year	Number of Patient Records Sampled	Main Findings
Harvard Medical Practice Study (US)	1984-1986	30,195	3.7% adverse events
Australian Health Care Study	1992	14,179	16.6% adverse events, 51% of these considered preventable
Canadian Adverse Events Study	2000	3,745	7.5% adverse events, 36.9% of these considered preventable
UK study (London)	1999-2000	1,014	10.8% adverse events, 48% of these considered preventable
New Zealand study	1998	6,579	12.9% adverse events, 37% of which considered preventable

Source: Adapted from Baker et al (2004)

This table shows that substantial amounts of injury can result to patients from medical treatment, and that many of these are as a result of substandard care. Such adverse events can eventually lead to clinical negligence claims but two possibilities exist prior to a claim being taken as follows:

(i) *A complaint is made by the patient*. McCay and Jonas (2009) listed the top ten issues which lead to complaints in the NHS as follows:

Table 3.3 Top Ten NHS Complaints

Safety/effectiveness of clinical practice
Poor communication/lack of information
Poor response to a complaint
Patient's experience of care
Clinical treatment
Delay or cancellation of appointment
Attitude of staff
Lack of access to personal records
Access to services and waiting times
Lack of carer/relative involvement

Source: McCay and Jonas (2009).

Many of the sources of complaints in the above table can be avoided by adopting an open and timely communication and disclosure process to keep family members informed – this plays an important role in how victims react to such events, and whether they become medical claims in time (Vincent et al. 1993, Vincent at al, 1994).

(ii) *Action is taken internally in the healthcare organisation to avoid recurrence of similar adverse events.* Regardless of the level of adverse events, a key concern of patient safety groups is how they are reported within healthcare organisations - this ensures that errors can be monitored and lessons learned so that the same mistakes will not be repeated (Leape, 2002). In this regard, schemes for reporting adverse events or 'near misses' have been institutionalized in industries such as aviation and nuclear power, and the characteristics of successful reporting systems are as follows:

Table 3.4 Characteristics of Successful Reporting Systems

Characteristic	*Explanation*
Nonpunitive	Reporters free of fear of retaliation / punishment as a result of reporting
Confidential	Identities of patient, reporter, and institution never revealed to third party
Independent	The programme is independent of any authority with power to punish the reporter or organization
Expert Analysis	Reports are evaluated by experts who understand the clinical circumstances and who are trained to spot underlying system causes
Timely	Reports are analysed promptly and recommendations are rapidly disseminated to those who need to know, especially where serious hazards are identified
Systems Oriented	Recommendations focus on changes in systems, processes, or products, rather than on individual performance
Responsive	The agency that receives reports is capable of disseminating recommendations, and participating organizations agree to implementing recommendations when possible

Source: Leape (2002)

This successful reporting of adverse events in industries has reduced the overall prevalence of adverse events as organisations freely share their experiences and help reduce the probability of such events recurring. This has led to questions being asked as to how such schemes can be implemented in healthcare; however, many studies have found that such reporting schemes have rarely been encountered in healthcare (Blendon et al., 2002; Vincent et al., 1994). Barriers to open disclosure in healthcare include discomfort and lack of training, a lack of knowledge of patient expectations, a fear of litigation and the culture of infallibility in health care (Manser and Staender, 2005). As a consequence, many medical claims arise which could easily have been avoided with a more sensitive treatment of the initial adverse event by the health authorities.

3.8.2 Phase Two – Possible Occurrence of Medical Claim

Figure 3.2 showed that clinical negligence claims may be filed regardless of whether an adverse event has occurred. Such a proposition is consistent with the findings of Bovbjerg and Raymond (2003) (shown in section 2.2.2) who found that the tort liability system of medical negligence frequently compensates the wrong cases. This suggests that there are factors other than the circumstances of a medical injury which lead patients to decide to pursue medical claims and factors which deter them from doing so; each of these will now be considered.

Firstly, Vincent at al. (1994) analysed the reasons as to why patients proceed with clinical negligence claims into four main categories as follows:

> (1) Accountability – to hold an individual or organization responsible. In medical ethics and law, this relates to one's ability to account for professional judgements, acts or omissions.
>
> (2) Explanation – to uncover what happened and why it happened. Open communication and honesty are vital to injured patients and families.
>
> (3) Standards of care – to see that the organization is taking action to prevent recurrences of the event in the future. Many medically injured patients want assurances that what happened to them will not happen to others.
>
> (4) Compensation – to obtain reparation for financial loss, pain and suffering; these payments will pay for losses and help to deter other providers from engaging in similar conduct.

It is noticeable that three of the above factors relate to non-financial motives; this is consistent with the research of Lind et al. (1993) who suggested that claiming behaviour cannot be fully explained using economic reasons and that noneconomic factors such as judgement of wrongdoing, responsibility and injustice help to explain claiming behaviour. The judgement of wrongdoing factor is also referred to by Felstiner et al. (1981) in their "PIE model - perceived injurious event" – this suggests that what matters is what people think has happened to them and how they interpret this state of affairs. Gilmour (2006, p131) summarises these studies when she states that many people who are dissatisfied with treatment just want an explanation or apology, and the '*lack of explanations does fuel lawsuits*'. This implies that countries which have established alternative complaints procedures in place will have lower numbers of clinical negligence claims, and vice versa.

Regardless of the motive for taking a clinical negligence claim, Lord Woolf's report in 1996 found that the legal costs mitigate against taking such cases; this was reinforced by the National Audit Office (2001, cited in Gilmour (2006)) which found that the legal and administrative costs of settling most claims under £45,000 exceeded the money actually paid to the claimant. However, such costs can be reduced if

there are funding arrangements available to cover the legal costs of claims. Two possible such arrangements include legal aid and conditional fee arrangements; legal aid is a means tested scheme for getting public funding for cases and increases the probability of claims being taken – the Chief Medical Officer reported in 2003 that nearly 90% of clinical negligence cases received legal aid (Chief Medical Officer, 2003); while conditional fee arrangements allow a lawyer not to charge for unsuccessful cases but to pay a fee plus a markup if the claim is successful – these markup fees tend to be higher for cases with greater risks and complexity (Fenn et al., 2004).

While the above factors can contribute to clinical negligence claims being taken, it is also clear in Figure 3.2 that claims may not be taken even though an adverse event has occurred during treatment – this suggests that other factors can lead to patients deciding not to pursue such claims. These reasons include:

- Lack of knowledge of the injury - most medical injuries occur to people who are already under care for some injury or illness and therefore, harm from medical error is difficult to distinguish from that due to the underlying condition (Elgie et al., 1993).
- The difficulty in getting a good lawyer to take a case – malpractice cases are hard to win and expensive to prepare, and many lawyers may only take cases where it is highly likely that a large award will be achieved (Meyers, 1987).
- The difficulty in proving that an injury was due to negligence (Weiler, 1991).
- Reassurance offered by the healthcare provider in the aftermath of the adverse event which restores a feeling of fairness and reduces the inclination to claim (Tyler and Lind, 1992).

In short, the decision to take a clinical negligence claim against a healthcare provider is affected by a range of factors, and a proactive approach to remedying injuries and resolving complaints can impact on the proportions of such claims that are taken.

3.8.3 Phase Three – Claim Negotiation Process Leading to Claim Outcome

The final phase of the medical claim process in Figure 3.2 involves a two-way negotiation process between the plaintiff (patient and his/her legal team) and the defendant (hospital provider and their legal team). This commences when a claim is filed; this typically leads to a pre-trial discovery phase where information is exchanged between the plaintiff and defendant. Each exchange allows each party to revise its expectations about the case and adjust the offers and counteroffers made to the other party; however, each step in this discovery process also increases each sides' litigation costs. Given that the outcome of a court case is uncertain and entails further litigation cost, making a settlement out-of-court is generally attractive for both parties; this explains why the vast majority of disputes are either dropped or settled out-of-court (Hay and Spier, 1998).

Ultimately, a claim outcome is reached at the end of a medical claims process (popular outcomes of NHS claims between 1995-2002 are shown in Table 2.3), and a summary of key factors which were found to impact on claim resolution outcomes is as follows:

(i) *Quality of Care*: The reviewed literature revealed a divergence of views on the impact of quality of care on clinical negligence claims. On one hand, a number of studies do find a strong relationship between these variables, as shown in the following US studies:

Table 3.5 Role of Care Quality in Selected Medical Malpractice Studies

	Taragin et al. (1992)	**Cheney et al. (1989)**	**Farber and White (1991)**
Distribution of care quality in claims			
- Negligent	25%	47%	35%
- Unclear	13%	13%	23%
- Nonnegligent	62%	40%	42%
Probability of Payment			
- Negligent	91%	89%	66%
- Unclear	59%	--	45%
- Nonnegligent	21%	47%	16%

These studies assume that low levels of quality care are associated with the presence of negligence which in turn makes clinical negligence claims more likely to succeed. For these studies, the distribution of

negligence varies but it is noticeable that the probability of payment to the plaintiff is much higher for all studies where negligence was present. In addition, White (1994) extends Farber and White's (1991) study to find that the average cost of liability per malpractice claim involving negligence is $135,000 at the time the claim is filed compared to a cost of $6,600 per claim which does not involve negligence – this suggests that the negligence system gives hospitals a strong incentive to provide medical care that is not negligent.

Some healthcare organisations may go further in their desire to reduce claims, and provide excessive levels of care i.e. 'defensive medicine' may be practiced; for example, Fenn et al. (2004) reported findings consistent with defensive medicine in the NHS – they compared treatment decisions and outcomes at hospitals bearing high costs of litigation to those bearing low costs, and found that patients in hospitals faced with high costs of litigation received tests such as costly diagnostic imaging most frequently holding activity levels and case mix constant. In short, high levels of quality care are associated with both lower numbers and lower value of clinical negligence claims and vice versa.

On the other hand, problems with the tort liability system of medical negligence (as outlined in section 2.2.2) make it difficult to draw conclusions on the relationships between levels of quality care and clinical negligence outcomes. Particular difficulties here include verifying the level of quality care and possible presence of negligence - Boubjerg and Berenson (2005) state that such determinations are prone to disagreements between experts due to the lack of agreed standards. These difficulties reinforce the views of Dingwall and Fenn (1994) who found that litigation is a largely ineffective signal of the quality of service provided in healthcare.

(ii) *Quality of Documentation*: As shown above, difficulties in ascertaining the exact level of care provided and/or presence of negligence are common in clinical negligence lawsuits. Such difficulties are related to the quality of documentation which is maintained by healthcare providers, and a number of empirical studies suggest that the quality of such records contributes directly to claim outcomes; in particular, plaintiffs are more likely to succeed with claims when

poor or inaccurate records are maintained (Taragin et al., 1992). Having accurate records is of benefit to healthcare providers even if it confirms that they are liable as it will allow them to settle early out of court and avoid costly additional litigation charges – Farber and White's (1991) study of claims revealed that lawsuits where the quality of care was good or bad will be resolved more quickly than where the care quality was ambiguous.

(iii) *Severity of Injury*: A number of empirical studies of clinical negligence claims found the severity of injury sustained by the patient to be a significant determinant of the final claim settlement value; Taragin et al. (1992) found that the median payments for low, medium and high severity injuries were $7,159, $50,000 and $115,089 respectively. This is reinforced by Farber and White (1991) who found higher damage cases to be more likely to be settled rather than dropped, while Brennan et al. (1996) found that type of disability was the only significant predictor of closed claim payment.

(iv) *Mix of Specialties Offered*: There are also empirical studies which indicate that the clinical negligence outcomes are linked to the complexity of medical practice being undertaken at the time that a claim originated. In particular, claim severity was found to be higher in US states which had a high ratio of surgical specialties (Brennan et al., 1996), while Charles et al. (1992) found that surgical specialty is associated with a higher risk of medical malpractice claims. Furthermore, Bovbjerg and Raymond (2003) cite the much larger average claim payout for high risk specialties (neurosurgery, obstetrics, and orthopaedics) as contributing to large increases in liability insurance premiums for medical practitioners in these fields – this led to many practitioners closing their practices, or moving to other locations with lower rates.

In summary, it can be seen that a variety of factors impact on the eventual outcome of clinical negligence claims and the outcome of each individual claim outcome reflects the complex interaction of these factors.

3.9 Summary of Key Hypotheses from Literature

It is clear from the reviewed literature that there are a wide range of viewpoints in relation to the various incentives for risk management at NHS trusts. These will now be discussed under a range of appropriate headings as shown below:

Objectives and Governance Structures of NHS Trusts

The review of the objectives of healthcare organisations showed that the majority of such organisations are public, not-for-profit entities which do not have a shareholder value maximisation objective; one can thus hypothesise that NHS trusts are mainly interested in the quality of care with financial equilibrium as a secondary goal (Eeckloo et al, 2004). However, with many NHS trusts now designated as foundation trusts since 2005, it can now be hypothesised that financial health is now equal with quality of care as a trust objective – to the extent that generating surpluses allows for more investment in the quality of care, the linkage between financial efficiency and quality of care should now be more visible to trust managers, and this should incentivise them to become more efficient as NHS foundation trust managers than they were as NHS trust managers.

The governance relationships for organisations were also examined, and a key issue here for NHS trust managers is the extent to which they act in their own self interest (agency theory) or whether they act responsibly in the interests of the firm (stewardship theory). This has implications for trusts seeking to improve their risk management level as literature suggests that such increases will require a coordinated effort across the organisation; such increases would be more likely to be achieved if a stewardship theory approach prevailed across the organisation.

Corporate Risk Management

Literature from the area of corporate risk management was then reviewed, and a number of hypotheses can be developed as follows:

- Managerial risk aversion will lead to NHS trust managers not seeking risk management level increases as it exposes them to the threat of a risk reduction (Kaen, 2000) i.e. it is possible that

the NHSLA will not just refuse this request but can drop the trust down a level (NHSLA, 2011a). Furthermore, decisions to seek a risk management level increase will involve an organisation wide effort and this reduces a trust manager's chances of control and being able to protect their position.

- NHS trusts will make investments to help secure a risk management increase if they believe that such investments represent good value – in this regard, the significant discounts on its CNST contributions for trusts that achieve higher risk management levels is a significant incentive, particularly as any discounts achieved apply for the next two years after an increase has been secured (Bush and Arulkumaran, 2003).

Quality Management Systems

The nature of quality management systems in healthcare and the factors affecting innovation decisions in healthcare were also explored, and a number of hypotheses emerged as follows:

- Managers seek risk management level increases to drive quality improvements and change attitudes in their hospital (Steiner et al., 1995; James and Hunt 1996); an additional reason to seek such an increase is to make long term savings from the elimination of inefficient and unsafe practices (Hurst, 1997).
- Managers may not seek risk management level increases as they view the NHSLA risk management programme as a paper chase exercise with no impact on the outcomes for patients (Sewell, 1997); in addition, the significant costs associated with such systems acts as a barrier to implementing such systems (Redmayne et al., 1995; Steiner et al., 1995). This implies that organisations which have better financial positions are better placed to secure risk management level increases as they will be able to afford the costs and additional investments that accompany such decisions.

Innovation

The following hypotheses can be derived from a review of this literature:

- A range of factors which are both internal and external to an organisation will impact on the success of a decision to pursue a risk management level increase; important external factors include firm size and access to finance while key internal factors include leadership and culture. For NHS trusts, good relations between managerial staff and clinical staff will facilitate applications for risk management level increases while trusts without a good history of such relationships will be unlikely to pursue increases in the first place.

Insurance

This field of literature had clear relevance to the incentives faced by trust managers, and the following hypotheses emerged:

- Due to the moral hazard incentive, the CNST scheme which indemnifies hospital managers from clinical negligence claims may cause care levels to decline, leading to higher volumes of claims (Fenn et al., 2010). However, a counter argument to this is that the incentives in place to avoid moral hazard such as experience rating, and process rating will lead to optimal levels of care being provided.
- While the policy of offering financial discounts for risk management standards incentivises hospitals to invest in improved risk management (Bond and Crocker, 1991), it can also be argued that the NHSLA uses risk management standards as a way of classifying trusts into groups which merit differing contributions due to differing expected claim costs. Both of these scenarios imply a negative relationship between risk management levels and the number of clinical negligence claims.

Claims Management

The reviewed literature in this area led to the following hypotheses being generated:

- Claims typically originate as adverse events in healthcare organisations, and a proactive approach to dealing with such events can reduce the proportion of these events which become claims. This requires an emphasis on explanations and apologies which is frequently all that an injured patient wants – lack of such explanations fuel lawsuits (Gilmour, 2006).

- Low claim levels and low claim values are consistent with higher levels of quality care (Vincent et al., 1993; Steiner et al., 1995). However, this relationship can be complicated by difficulties in verifying the quality of care (in particular the presence of negligence) and the possibility of 'defensive medicine' – where excessive care is provided to reduce the possibility of claims (Fenn et al., 2004).

In summary, a range of hypotheses relating to managerial incentives and behaviour in relation to risk management levels and clinical negligence claims can be drawn from the reviewed literature, and many of these will be explored further as part of the research objectives which will be outlined in the next chapter.

3.10 Chapter Summary

This chapter has reviewed the context in which risk management decisions are made by NHS trust managers. Initially, it was highlighted that healthcare organisations are typically non-profit organisations, and while the financial equilibrium is important to them, they are not likely to embrace the shareholder value maximisation objective which is the standard objective of for-profit firms. A review of governance arrangements then showed that new arrangements exist for NHS foundation trusts which aim to replicate best practice from the private sector. The areas of quality management systems, innovation and insurance were then reviewed, and it emerged that there are many rational reasons why healthcare managers will seek to employ risk management techniques to manage firm risk. Finally, the process by which medical claims are generated in trusts was considered – this showed them to be the result of a complex set of factors, and the extent to which claim variables act as a proxy for hospital quality is open to alternative views.

Notwithstanding this wide range of relevant literature, there is a lack of empirical evidence on the tangible impacts of risk management processes on clinical negligence outcomes in NHS trusts; this deficiency in existing research will be addressed in this study, commencing with the next chapter which outlines the objectives of this study and the approaches that will be taken to achieve them.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Chapter Overview

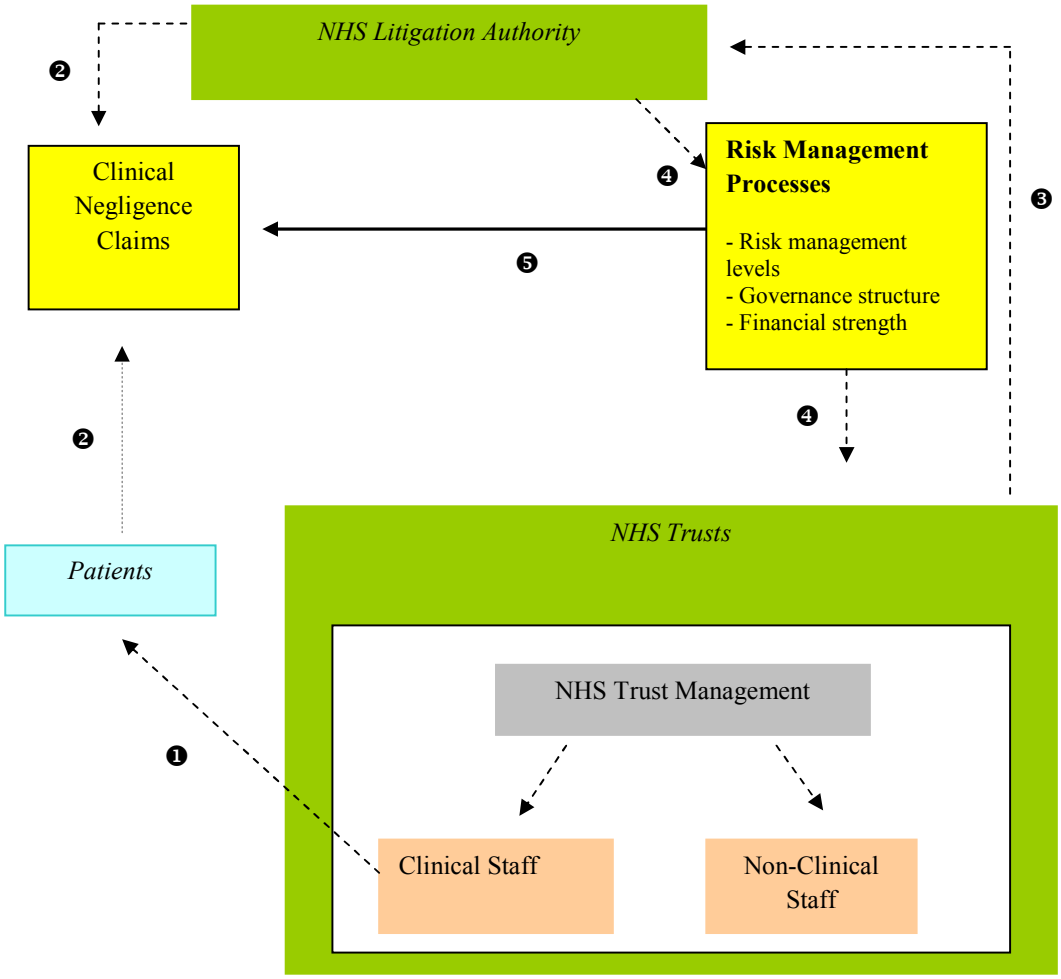
This chapter outlines the methodology which is proposed to achieve the research question and objectives of this study. Initially, a conceptual framework for this research study is outlined; this then leads to an expression of the research question and objectives. A two-phase approach is then proposed to address these objectives - this will consist of a combination of initial exploratory interviews followed by an empirical analysis of a unique database of quantitative data. Further operational details on these two phases are then provided before the chapter concludes with a discussion of the limitations of this study.

4.2 Conceptual Framework

Figure 4.1 presents a conceptual framework which sets a context for the proposed objectives of this study. In this framework, the key concepts of interest – risk management processes and clinical negligence claims – are shown to be the result of interactions between three participants: the NHSLA, the general public (patients), and NHS trusts. Risk management processes are divided into three elements – risk management levels, governance structures and financial strength – and the interconnections between these elements are argued to exert an impact on clinical negligence claims. Such a system commences when patients are treated for medical injuries by the clinical staff in NHS trusts, with no adverse consequences being anticipated if adequate care is provided (❶). However, regardless of the level of care provided, there is a possibility that a clinical negligence claim may be filed against an NHS trust, and such claims are managed by the NHSLA (this includes indemnifying the patient if he/she has been the victim of substandard care) (❷). In return for managing claims on behalf of NHS trusts, the NHSLA receives a CNST contribution (❸) from each trust and obliges trusts to complete a regular

assessment of their risk management processes within NHS trusts – this leads to a risk management level being awarded to each trust) (❹).

Figure 4.1 Conceptual Framework for Research Problem



Note that a trust's risk management level is an assessment by the NHSLA of the quality of risk management processes operating within the trust, and is also affected by the governance and financial structures employed at the trust; hence the interconnections between these three elements of risk management processes will be explored, before the effect of such processes on clinical negligence claims

is assessed – this is the main focus of this study (❺), and will be discussed further below as part of the research question and objectives for this study.

4.3 Research Question

The process of formulating the research question begins with the identification of a broad research area, followed by the explanation of the research objectives. This, in turn, produces a clear statement of issues to be investigated (Brannick and Roche, 1997; Patton, 2002). The research question that emanates from the research problem in this instance may be stated as:

What is the impact of risk management processes on clinical negligence claims across acute NHS trusts?

The research question is a clear, precise and succinct statement of the question or issue that is to be investigated with the objective of finding an answer or solution (Sekaran, 1992). Addressing this effect of risk management processes on clinical negligence claims will offer insights on the effectiveness of a key element of the NHSLA's approach to risk management – the system of risk management levels to assist trusts to improve their quality of care levels; a consequence of higher quality levels should be a reduction in both the number and value of clinical negligence claims. Failure to demonstrate such a relationship will question the wisdom of the NHSLA's approach to risk management, and could signify that alternative strategies will need to be considered to get trusts to improve their quality of care levels.

The approach being proposed to achieve this research question will be elaborated in the research objectives which are discussed in the next section.

4.3.1 Research Objectives

The broad research question can be broken into research objectives which are generally more acceptable to the research community as evidence of the researcher's clear sense of purpose and direction (Saunders et al., 2003; Zikmund and Babin, 2007).. For this study, the following research objectives are proposed:

Objective ① *To Explore the Determinants of the NHSLA Risk Management Levels Achieved by Acute NHS Trusts*

The initial focus of this study will be on the determinants of risk management levels in NHS trusts – this recognises that while literature can shed light on some variables which will impact on these levels, the relative lack of research on risk management levels in the NHS requires an initial exploratory approach to be employed. Such an approach is considered appropriate as the literature reviewed (Tables 2.5 and 2.7) showed that despite the financial advantages for progressing to higher risk management levels, proportionately very few trusts succeeded in doing so in the period 2000-2009 – this implies that there are barriers impeding trusts from making risk management level increases.

Following discussions with the author's supervisors, it was decided that the initial approach to be used in this study would be to gather qualitative data from a small number of personnel who are informed on the risk management process within acute NHS trusts (this includes NHS trust managers and NHSLA personnel). Such data was considered important as it would allow an assessment of the effect of both governance structure and financial strength on risk management processes within NHS trusts, and would also inform an assessment of the potential endogeneity of these variables. Further details of the approach taken to achieve this objective are outlined later in this chapter, and the results obtained from this approach are described in chapter five.

Objective ② *To Assess the Level of Discretion Available to NHS Trust Managers To Influence it's NHSLA Risk Management Level*

Given that the result of an NHSLA risk management assessment is an observed level of risk for each NHS trust, this objective will initially classify the factors which are believed to impact on risk management levels into two groups; those that impact on a trust's actual risk type, and those that impact on its desired risk type. The rationale for this is that while a risk management assessment is largely an objective assessment of whether a trust adheres to minimum requirements in fifty areas (ten criteria times five standards – as shown in Table 2.6), it is also clear in Table 2.8 that local trust management retain some flexibility in that they can choose in advance of an assessment to apply for an increase, a reduction or a retention of their existing risk management level (Table 2.8).

Having classified all factors which potentially impact on risk management levels into either of these two groups (both governance structure and financial strength will be two such factors), a multivariate regression analysis will then be employed to assess the extent to which each of these factors impact on risk management levels (the dependent variable). The findings to this analysis are will shed light on the degree of control available to local NHS management in efforts to influence its risk management level, as well as the potential interconnections between some of these variables. Such findings are shown in chapter seven of this study.

Objective ③ *To Analyse the Impact of NHSLA Risk Management Processes on Clinical Negligence Claims*

The third research objective focuses on the impact of risk management processes on clinical negligence claims - given that these both act as possible proxies for the level of quality care administered in NHS trusts, a natural experiment exists to see if they are related to each other. It is the author's view, based on literature readings, that better risk management processes (symbolised by higher risk management levels,

good governance structures and the availability of finance) will drive changes in clinical negligence claims (both in terms of numbers and value), and the third research objective will seek to accept or reject this hypothesis.

As clinical negligence claims can be broken into two main components (the number of new claims and the value of closed claim payments), this objective will be broken into two parts as follows:

3a To Analyse the Relationship between Risk Management Processes and Number of New Claims Controlling for Other Factors (This will be addressed in chapter eight)

3b To Analyse the Relationship between Risk Management Processes and Total Closed Claim Payments Controlling for Other Factors (This will be also be addressed in chapter nine)

Each of these elements of clinical negligence claims is now discussed:

(a) Number of New Claims

The number of new claims is a count data variable as such claims can arise in an ad hoc manner over a period of time based on patient's experiences of treatment in NHS trusts. While the literature review showed that the extent to which such claims reflect quality of care levels in healthcare organisations is subject to debate, it will be hypothesised in this research that higher levels of quality care in acute NHS trusts should lead to reduced numbers of new claims. As higher levels of quality care are also likely to be reflected in higher risk management levels (i.e. trusts moving from level one (policy) to level two (practice) to level three (performance) should have better processes in place to reduce future claims), it is expected that higher risk management levels will lead to lower numbers of new claims ceteris parabis. The timing of such an effect will be hypothesised to be an immediate effect i.e. trusts which increase their risk management level should see a same period reduction in a trust's number of new claims; however, additional model specifications will be included to assess the robustness of this proposed relationship.

(b) Total Value of Paid Closed Claims

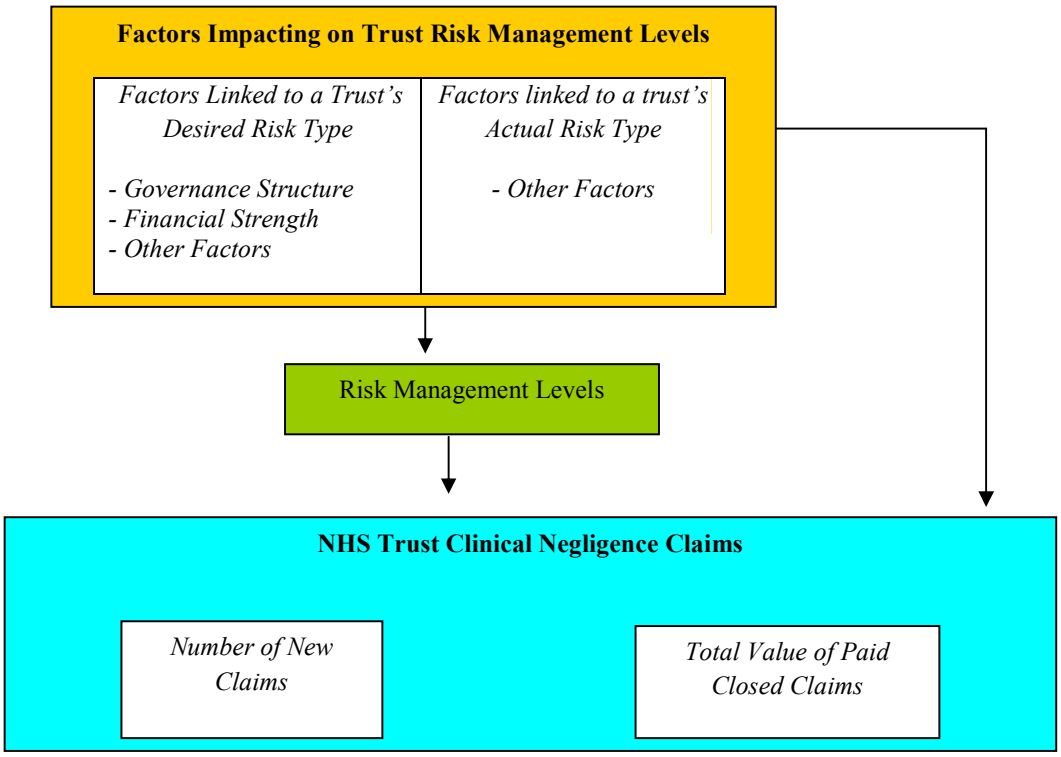
A second important component of clinical negligence claims is the value of closed claim payments - this is a product of the number of closed claims multiplied by the average closed claim payment, and is of particular interest to the NHSLA as it funds the cost of the CNST scheme that it offers to trusts. The total value of closed clinical negligence claims per annum will contain a variety of values – some very low value claims where minimal damages were paid compared to other high value claims where very high damages are paid to the patient.

The author is particularly interested in the factors which affect the amounts paid out by trusts for closed claims as it is believed that trusts with good risk management processes are likely to have lower average claim payments ceteris parabis. The rationale for this belief is that closed claim values should depend, at least in part, on the quality of care and documentation being maintained at local trust level; hence, one can hypothesise that trusts with higher risk management levels should have lower total closed claim values, and vice versa. Governance structures and financial strength are also considered relevant to clinical negligence claim outcomes as they can affect the quality of decision making made when resolving such issues.

Objective ④ To Propose a Model Highlighting the Effect of Risk Management Processes on Clinical Negligence Claims

Having addressed each of the previous objectives, the author then proposes to develop a model highlighting the effect of risk management processes on clinical negligence claims – this will be presented in the conclusion chapter to this study. This model will integrate the findings of the four empirical chapters (five, seven, eight and nine), and will allow an assessment of each of the relationships shown in Figure 4.2 below:

Figure 4.2 Summary of Objectives and Overview of Proposed Model



This diagram shows that this study commences with a discussion of the factors affecting trust risk management levels (chapter five) including a classification of such factors into those which are linked to a trust's actual risk type and those which are linked to its desired risk type – here, it will be assumed that governance structure and financial strength are factors at the discretion of trust management which can be used to drive a change in one's risk management level. Details of the other factors which impact on risk management levels and the nature of this impact are considered in chapter seven before the effect of risk management levels (and other covariates such as governance structure and financial strength) on clinical negligence claim outcomes will be considered in chapters eight and nine. It is also recognised here that there are other factors (such as trust size and mix of specialties) which will impact on risk management levels and on clinical negligence claims - such factors will be controlled for in the empirical analysis. An amalgamation of the findings to these chapters will lead to a model highlighting the effect of risk management processes on clinical negligence claims being presented in chapter ten.

4.4 Research Design

A research design provides the basic directions for carrying out a research project, and careful attention to this area ensures that approaches to solving the research problem in the best possible way are arrived at (Hair et al, 2007; Ghauri and Gronhaug, 2005). In this regard, this section will provide further details of the combination of qualitative (objective one) and quantitative (objectives two and three) research methodologies which are proposed for this study.

4.4.1 Phase I: Qualitative Research

As previously outlined, it was decided to commence the primary research will a qualitative discussion of the determinants of risk management processes with personnel who were informed on such matters within NHS trusts – such an exploratory approach is considered appropriate to develop an understanding of a business problem, and is not intended to test specific hypotheses (Hair et al, 2007; Ghauri and Gronhaug, 2005). In particular, the following issues were ones where clarifications were sought on information obtained during the literature review:

(i) The nature of how risk management is addressed throughout the trust – firms outside the healthcare sector have adopted an integrated approach to risk management (Meulbroek, 2002) but it is unclear as to how healthcare organisations have embraced this trend;

(ii) The key factors which enable trusts to progress to higher risk management levels. In particular, while it is known that there are financial discounts on a trust's CNST contribution for obtaining a risk management increase, it is unclear as to how much of an incentive this is for trusts at the time of a risk management level application;

(iii) The barriers which are holding trusts back from progressing to risk management levels two and three (Table 2.7 showed that 47% of acute trusts were still at level one in 2009, but did not elaborate on what are the reasons for the relatively low progression rate to levels two and three);

(iv) The approaches being taken to the NHSLA risk management assessments within NHS trusts – in particular, the extent of coordination between the various staff groups/departments within

each trust. While Nair and Chandraharan (2010) outlined that achieving a risk management level increase requires an extensive effort from a team of people; however this may not be easy as Greco and Eisenberg (1993) suggested that it is difficult to change the behaviour of clinical staff;

(v) The opinions of trust personnel on the extent to which risk management processes impact on clinical negligence claims; this is the focus of the empirical chapters eight and nine but the opinions of trust personnel on the presence of such a causal relationship was considered important at the outset of this study.

In summary, the views of NHS trust professionals who were informed in the risk management area on the above matters was considered as an important first step to this research study; the gathering of such opinions was not viewed as a statistical exercise but would provide valuable insights to assist with the generation of appropriate hypotheses in the subsequent empirical chapters. For completeness, the views of a risk manager in the NHSLA was also sought – this would ensure that the viewpoint of both the organisation which created and manages risk management levels as well as those of NHS trusts would be included in the subsequent qualitative analysis.

4.4.1.1 Choice of Qualitative Research Methods

The most popular methods of qualitative data include in-depth interviews and focus groups (Pope and Mays, 1995). When seeking to gather the views of NHS trust managers on the above risk management issues, the fact that the potential interviewees were geographically dispersed throughout the UK made a focus group option less practical than individual in-depth interviews with potential interviewees. For this reason, personal face-to-face interviews were the initial preferred form of data collection, although telephone interviews were also offered as an alternative data collection method to the target interviewees during the initial correspondence with each potential interviewee.

4.4.1.2 Development of Interview Guide and Selection of Participating Trusts

Having decided to undertake exploratory interview discussions in September 2009 (after discussions with the annual review year two assessors and with the author's supervisors), the approach adopted when selecting trusts was one of prioritising those which had recently seen an improvement in their risk management level – it was felt that such discussions would shed light on the factors which enabled the risk management level increase to be obtained. Subsequent discussions between the author and his supervisors led to the development of a set of interview questions which were pre-tested on colleagues of the author in his own institution. The revised questions were customised for participating trusts (a sample is provided in *Appendix Three*) and addressed the following core issues:

- *Background Questions:* The initial questions related to the nature of risk management at the trust – this included a discussion of the governance structure and the overall priority given to risk management issues at the trust.
- *Risk Management Level Questions*: These questions formed the main part of each exploratory interview and addressed a range of areas such as the process by which the risk management level had increased, and the factors which helped to contribute to this increase including the role of factors such as financial investments in helping to secure this increase was explored.
- *Impact of Risk Management Level on Claims Management Questions*: The latter questions explored the potential impact of risk management level changes on subsequent claims management variables at the trust, and also explored the process by which such claims are managed at each trust when they arise.

In terms of prioritising trusts which had recently gained an improvement in their risk management level, an examination of publicly available NHSLA data (NHSLA, 2011a) showed that thirty one trusts experienced such an improvement over the period 2006/2007 to 2008/2009 – this information is summarised in *Appendix Four*. In terms of identifying trusts for exploratory interviews, the following decisions were then made:

- It was felt at the outset that the appropriate person to speak to within each NHS trust would be the finance director as this person would be a member of the board of directors and be aware of all financial aspects of a recent risk management level increase. Details of finance directors were available on the Monitor website – Monitor (2010a). As a result, twelve trusts were initially sent a letter in December 2009 (see *Appendix Five*) which included a supporting letter from the author's supervisor (See *Appendix Six*) with an enclosed reply stamped envelope – this letter allowed a trust to indicate a willingness to become involved in the research, and to state their preference for a personal interview or a telephone interview.
- Of the twelve initial letters, two positive responses were received from the Royal Bournemouth and Christchurch NHS Foundation Trust and the Mid Cheshire NHS Foundation Trust – this led to a personal interview and a telephone interview being arranged in early January 2010.
- It emerged during these two interviews that the most likely person within trusts to comply with this research request would be a person from the clinical governance / risk management area – such a person would be likely more familiar with the process which led to this increase. For this reason, a further nineteen letters were subsequently sent in February 2010 to a person in this area (the names were sourced from advance telephone conversations to each trust), and a total of six positive responses were received – all indicating a willingness to take part in a telephone interview for this research.
- On receipt of a positive response from a trust, a semi-structured approach was proposed and agreed with each interviewee in advance of the telephone interview; therefore, a set of interview questions was subsequently customised and emailed to the interviewee in advance of each interview. This approach facilitated having guiding themes for the discussions but still allowed flexibility for the interviewee to volunteer a wide range of additional information.
- Recording devices were used to assist with the taking of interview notes and permission was secured to use this device in each case. All interviewees were also assured that a copy of the interview findings would be emailed to them after the interview and that no publications of their views would be made without securing their prior cooperation.

In summary, eight positive responses were received from the thirty one targeted NHS trusts – a response rate of 26% - and details of these responses are described in the next chapter. This response rate is considered to be typical of those obtained in postal questionnaires where one has no prior familiarity with the organisation in advance (Saunders et al, 2003); in addition, it was felt that a sample of eight interviews would be sufficient to meet the needs of this phase of the research.

4.4.1.3 Inclusion of a Deviant Case

Upon completion of the eight interviews with trusts which had recently gained a risk management level increase, it was possible to summarize the factors which had enabled these trusts to make this improvement, and such factors are discussed in the next chapter. However, given that the initial selection process had explicitly targeted at trusts which achieved a risk management level increase, it was felt that an interview with a manager of a trust which had not made a recent risk management level increase was also desirable for two reasons; firstly, this interview would shed light on the barriers which are holding trusts back from progressing to higher risk management levels, and secondly, proper qualitative analysis should seek to avoid selecting cases which are likely to support your argument (Mason, 1996). Instead, it makes sense to seek out negative instances as defined by the theory with which you are working' i.e. deviant cases.

With this in mind, an approach agreed with the author's supervisor was to make contact with the Nottingham University Hospitals NHS Trust – this trust was known to the author to have remained at risk management level one throughout the period of this study; furthermore, the author's supervisor was known to personnel at this trust which was considered to increase the likelihood of receiving a positive response. This represented a form of purposive sampling method where the researcher chose the sample based on what would be appropriate for the study (Patton, 1990). A similar approach to making contact with a risk manager in the clinical governance department of this trust was undertaken, and a positive response was received to discuss issues pertaining to its NHSLA risk management level at an agreed future date. As with other interviews, a set of interview questions was subsequently sent to the

interviewee in advance of the interview date, and the findings of this interview are also included in the next chapter.

4.4.1.4 Selection of Interview with NHSLA Risk Manager

Notwithstanding the range of replies that would be received from these nine trust managers, it was felt that another important perspective on the impact of risk management processes on clinical negligence outcomes would be obtained with the inclusion of an interview from a risk manager in the NHSLA given that it is the organisation which sets and implements risk management levels in NHS trusts. This led to contact being made through CRIS at the University of Nottingham with the NHSLA, and email correspondence was established with a risk manager in the NHSLA. This correspondence led to a telephone interview being arranged where a range of risk management issues for NHS trusts were discussed. A copy of the questions which were emailed to the risk manager in advance of the discussion is attached in *Appendix Seven*, and these issues included:

- The rationale for the NHSLA offering financial discounts for the achievement of higher risk management levels;
- The NHSLA view on why many trusts have failed to progress beyond risk management level one;
- The NHSLA view on how risk management levels impact on claims levels and claim values;
- Any proposed future developments with risk management levels for NHS trusts.

In short, this interview allowed the researcher the opportunity to get an assessment of trust risk management processes from the organisation which administers risk management assessments to trusts, and it was felt that this would complement the views of the trust managers, as well as allowing the researcher the opportunity to assess the extent to which the views of trust managers on risk management processes correlated to those of the NHSLA.

4.4.1.5 Reliability and Validity of Exploratory Interviews

In advance of conducting the exploratory interviews, consideration was given to the likely reliability and validity of results that would be obtained. In relation to reliability concerns, these relate to the ability of another researcher to achieve similar results and on potential bias brought by the interviewer or the interviewees (Saunders et al., 2003; Sarantakos, 2005). For the interviews conducted with NHS trust managers, establishing reliability of this type is not feasible although this study did follow the recommended approach (Saunders et al., 2003; Sarantakos, 2005) of keeping a full documentary trail that can be referred to by other researchers who may seek to adopt a similar approach. In relation to potential bias arising from the behaviour of the interviewer, the careful preparation for, and management of, the interview, sought to negate this risk.

In relation to validity issues, the approach taken by the author in pursuing a general, but not exhaustive, line of questioning was reviewed by other academics which led to minor changes based on the wording and sequencing of questions. In this regard, it is argued that the careful approach adopted to the interviews will allow '*the researcher to gain access to the participants' knowledge and experience, and is able to infer a meaning that the participant intended from the language that is used by this person*' (Saunders et al., 2003, p.253).

4.4.1.6 Exploratory Interview Data Analysis

Verbatim transcription of the audio tapes was completed following each of the exploratory interviews, and these transcripts then became the raw data of the author (Henn et al., 2006). The analysis of this data then proceeded using the process advocated by Dey (1993) – this involved identifying patterns and integrating the concepts and relationships to emerge from the data using quotations and tables as appropriate. The output from this analysis is shown in the next chapter.

4.4.2 Phase II: Quantitative Data Analysis

The second phase of this research involved multivariate regression analysis on a suitable database of quantitative information on NHS trust organisations. Such a database included claims management data, risk management levels, financial data, and other data such as proxies for the size and type of each trust. Further details of this dataset (and how it was collected) are provided in chapter six of this study, and this shows the dataset to be unbalanced as there were some missing values (not all variables will be available for all NHS organisations over the time period of the research).

As this dataset will contain data for NHS trusts over a number of years, panel data analysis can be performed in additional to an analysis of pooled data. A panel dataset does offer advantages to a cross sectional or time series data including:

- It increases the sample size considerably
- It is better suited to the dynamics of change
- It allows for control of unobserved heterogeneity (Gujarati, 2002)

In addition, the analysis of panel data (via regression analysis) will have both a spatial and a temporal dimension – the spatial dimension refers to the cross-sectional units or NHS organisations in this case, while the temporal dimension refers to periodic observations of a set of variables over a time period (Frazier and Kockelman, 2005).

The available quantitative data will be described in chapter six; this will include time series analysis of the variables of interest to this study. This data is also the basis of three empirical chapters - c*hapter seven* presents the output of a regression analysis on risk management levels, chapter eight presents the regression analysis on new claims, while c*hapter nine* presents the regression analysis on closed claim values. The regression output in each case will commence with an analysis of pooled data (this does not recognise the panel nature of the data but can be used as a base against which to compare the panel data models) before proceeding to considering panel data models such as fixed- and random effect models (Woolridge, 2009). Additional model specifications will also be considered where appropriate.

4.5 Chapter Summary

This chapter has outlined the research question and objectives of this study along with the process by which these will be achieved. This planned approach will incorporate some initial qualitative interviews followed by a multivariate regression analysis - such a mixed approach is supported by Robson (2002) who found that a research question can, in almost all cases, be addressed via a combination of quantitative and qualitative approaches. The justification for such a mixed approach is that the initial exploratory interviews are largely a forerunner to the empirical regression chapters – they will mainly act as a way of pre-testing assumptions which will be made in the empirical chapters on a set of people who are informed on risk management issues in NHS trusts; such an approach is argued to lead to more informed empirical research chapters being generated.

CHAPTER FIVE

ANALYSIS OF EXPLORATORY INTERVIEWS

5.1 Chapter Overview

This chapter will describe the views obtained from phase one of this research study – exploratory interviews with nine NHS trust managers and an interview with an NHSLA risk manager. Initially, details of the interviews are provided before the findings of the interviews are presented, and the structure adopted largely follows the order of the issues in the interview guide as described in the previous chapter.

For these interviews, it was important for the researcher to build up trust with each interviewee to assist to elicit detailed replies to the various issues of interest. This was facilitated by the emailing of the proposed interview questions in advance to each interviewee, and by the clarifying of any confidentiality concerns at the start of each interview. This approach was successful as all interviewees were subsequently very willing to divulge information relating to risk management issues (the emphasis on trusts which had achieved a risk management level increase was justified to the extent that such trusts were more than happy to tell the good news as to how this was achieved), and while not all interviewees had the information to fully answer all of the proposed questions, no interviewee refused to answer any of the questions for confidentiality reasons. The detailed responses were initially transcribed, checked for consistency, before the trends were extracted and summarised in the following sections of this chapter.

5.2 Description of Exploratory Interviews

Table 5.1 below provides summary details of the exploratory interviews as follows:

Table 5.1 Details of Exploratory Interviews

Number	Trust Name and Description	Interviewee Name and Title	Interview Type and Date	Interview Duration
1	Royal Bournemouth and Christchurch NHS Foundation Trust *(Medium sized acute trust with two hospitals)*	Joanne Sims *(Associate Director of Clinical Governance)*	Personal – 6th January 2010	Two Hours
2	Mid Cheshire Hospitals NHS Foundation Trust *(Small acute trust with one main hospital)*	Jane Palin *(Associate Director of Integrated Governance)*	Telephone – 15th January 2010	39 Minutes
3	Central Manchester University Hospitals NHS Foundation Trust *(Large acute teaching hospital)*	Joe Mallabone *(Head of Patient Safety and Risk Management)*	Telephone – 11th March 2010	30 Minutes
4	Alder Hey Children's NHS Foundation Trust *(Paediatric trust)*	Janet Waring *(Head of Integrated Clinical Governance and Risk Management)*	Telephone – 16th March 2010	28 Minutes
5	The Christie NHS Foundation Trust *(Single site specialist trust)*	Jane Hadfield *(Risk and Health and Safety Manager)*	Telephone – 16th March 2010	24 Minutes
6	North Tees and Hartlepool NHS Foundation Trust *(Acute trust with two hospitals)*	Carole Pearson *(Deputy Director of Clinical Governance)*	Telephone – 19th March 2010	24 Minutes
7	Camden and Islington NHS Foundation Trust *(Mental health and social care trust)*	Alison Martin *(Risk Manager)*	Telephone – 24th March 2010	26 Minutes
8	Northumbria Healthcare NHS Foundation Trust *(Large acute trust)*	Neil Gibson *(Head of Quality and Assurance)*	Telephone – 25th March 2010	31 Minutes
9	NHS Litigation Authority	Alison Bartholomew (Risk Manager)	Telephone – 15th February 2011	45 Minutes
10	Nottingham University Hospitals NHS Trust *(Large acute trust)*	Owen Bennett (Clinical Quality, Risk and Safety Manager)	Telephone – 17th May 2011	25 Minutes

A brief description of each of the nine trusts is provided under each trust's name in this table to highlight the variety of trusts that were represented in these interviews. In terms of interview length, the table shows that the personal interview lasted for a total of two hours while the telephone interviews averaged

29 minutes each (these ranged from 24 minutes to 45 minutes); this greater length for the personal interview allowed for more detailed information to be obtained on issues such as the objectives, governance structures and culture at the trust.

While none of the trust managers were informed as to the views of any other trust manager, the NHSLA risk manager (Alison Bartholomew) was provided with a summary of the trust manager views on risk management levels in advance of her interview (with the names of both interviewees and trusts removed as per confidentiality assurances) – this was to facilitate the subsequent discussion of risk management issues at NHS trusts.

The findings to the exploratory interviews are now described in the following sections:

5.3 Nature of Risk Management

The opening questions to each of the interviews sought to gather information on the manner in which risk management is conducted at each trust – this was considered important to see if the approaches to risk management varied for of each of the trusts involved. In this regard, it became clear in the early stages of the interview conversations that trusts have adopted different approaches to risk management as illustrated in the following table:

Table 5.2 Alternative Risk Management Structures at NHS Trusts

Approach One: Small Risk Management Team as part of Divisional Structure	
Central Manchester University Hospitals NHS Foundation Trust	Risk Management is a *'corporate function with four staff members plus a part-time assistant'* – it is a small department which sits under the umbrella of clinical governance (there are eight clinical divisions with their own systems of governance). The clinical governance area sits under the medical director.
The Christie NHS Foundation Trust	The staff numbers in the risk management area is seven and this *'sits within the nursing and governance division which provides the overall lead for risk management'*. A divisional structure is employed with each division having its own risk management structure.
Northumbria Healthcare NHS Foundation Trust	The risk management area has four staff members, but the trust has a devolved structure with governance leads taking on risk management roles at each of the clinical business units.
Approach Two: Larger Risk Management Team and Unclear Structure	
North Tees and Hartlepool NHS Foundation Trust	The clinical governance area consists of 47 staff members in total and this department has direct access to the board of directors.
Alder Hey Children's NHS Foundation Trust	The medical director is the overall lead for risk management, and a clinical governance committee sits underneath to address risk and clinical governance issues. There are a total of about twenty staff in this division.

This table reinforces the view of Joe Mallabone of the Central Manchester University Trust that *'no two trusts are managed the same'* in terms of a risk management structure. However, it does appear that the larger trusts with a number of hospital sites typically adopt a divisional structure with clinical divisions; these typically report to a smaller risk management team which *'provides the infrastructure to allow this system to operate efficiently and effectively in the organisation'*. For smaller sized trusts with less hospital sites, a larger clinical governance team with no divisional structure underneath appears to be the most common approach adopted.

Despite the variations in risk management structure, all respondents felt that the particular arrangements which they had in place worked quite well for them; the arrangements had taken time to bed down and *'there is certainly a balance to be struck for trusts with a divisional structure between the central team and the governance leads to ensure that both are pulling in the same direction'* (Neil Gibson,

Northumbria Interview). All interviewees agreed that risk management is a high priority activity at their trust and that it encompasses a range of activities as shown below:

Table 5.3 Alternative Approaches to Risk Management at NHS Trusts

Trust Name	Description of Risk Management Approach
Central Manchester University Hospitals NHS Foundation Trust	Risk management has two aspects – a proactive role which relates to risk management and patient safety and a reactive role which covers incident reporting and claims management.
The Christie NHS Foundation Trust	Risk management covers a wide area from health and safety to emergency planning; in addition, it involves looking at the strategic planning for risk management and ensuring compliance with a range of standards.
Northumbria Healthcare NHS Foundation Trust	The area of risk management is really a 'learning from experience' area – it covers risk assessments, complaints, claims and clinical audit as well as the regulatory aspects of the Care Quality Commission (CQC).
North Tees and Hartlepool NHS Foundation Trust	Risk management covers incidents, adverse events, infection control, CQC compliance, complaints and claims.
Alder Hey Children's NHS Foundation Trust	The risk management department manages health and safety, security, clinical audit and clinical governance, clinical risk, non-clinical risk, complaints and claims.
Camden and Islington NHS Foundation Trust	Risk covers a broad range of areas from information governance to mental health act law to claims and complaints.
Mid Cheshire Hospitals NHS Foundation Trust	Risk management covers areas such as ensuring compliance with a range of regulatory bodies, clinical claims, and non-clinical claims.
Royal Bournemouth and Christchurch NHS Foundation Trust	Risk management covers areas such as regulatory compliance, incident reporting, and claims management.
Nottingham University Hospitals NHS Trust	There are three arms to the integrated governance team at the trust – an infections prevention and control team, an organisational risk & health & safety team, and a clinical quality risk & patient safety team.

The above comments imply that risk management is a very wide-ranging process with proactive elements which seek to minimise risks as well as reactive elements which seek to manage adverse events / claims when they occur. It was clear to the researcher that each interviewee saw their role as one of implementing the processes and structures for effective risk management, and all emphasised that this task is taken very seriously – all indicated that the person at the head of the risk management area had direct access to the trust board of directors (this was typically secured through the medical director). In addition, the chosen trusts have adopted an integrated approach to risk management which delivers

'enormous benefits - risk is taken very seriously at the top board of the trust and this cascades through the organisation' (Carole Pearson, North Tees and Hartlepool interview). Furthermore, Neil Gibson of the Northumbria trust added that *'risk is really the number one issue on the board agenda each month – even before finance'*.

The personal interview at Royal Bournemouth and Christchurch NHS Foundation Trust also gave the interviewer the opportunity to discuss this importance placed on risk management in more detail. Here, Joanne Sims stated that her trust aims to *'provide high quality patient care and safety in an efficient manner'* – they constantly use initiatives such as process mapping to make improvements while looking closely at the patient experience; this ensures that they avoid a situation where the *'fast tracking of patients to meet financial targets becomes a false economy as you end up with higher readmission rates as a result'*.

While all interviewees emphasised the importance of risk management at their own trust and expressed general satisfaction with their own current risk management structures, some were less than satisfied with the resourcing arrangements for this area. Some selected views on this matter are shown below:

Table 5.4 Selected Views on Resourcing of Risk Management at NHS Trusts

Trust Name	Opinion on Resourcing of Risk Management
North Tees and Hartlepool NHS Foundation Trust	*'As the agenda for risk management increases, the trust is short of resources'*
Alder Hey Children's NHS Foundation Trust	*'What is particularly under-resourced is the capacity to undertake all the compliance work – at the last count, we were up to 80 external organisations we had to comply with'*
Camden and Islington NHS Foundation Trust	*'The trust could easily double its staff complement in clinical governance and still give everyone a full-time amount of work'*

These views suggest that there is considerable pressure on the risk management / clinical governance areas with the volume of work to be completed – Owen Bennett of the Nottingham University Hospitals NHS Trust elaborated that *'it is quite a challenge to make sure that all the risk management issues at the trust can be managed by the governance team'*. This issue is likely to become more relevant in future years with anticipated cuts in the NHS budget and Joe Mallabone of Central Manchester University NHS

Foundation trust expressed a fear that with a need for savings to be made, risk management may be seen as a *'soft underbelly by others'* and hence be subjected to even more resource constraints. Alison Bartholomew of the NHSLA reiterated this point and felt that sacrificing risk management expenditure would not be advisable as the savings made in the short term may lead to higher costs over the longer term such as higher readmission rates, more incidents, and more staff getting injured.

A further issue in the opening discussion of risk management related to the culture at the respective trusts. Given that eight of the nine trusts recently achieved a risk management level increase, it was expected that the interviewees would report a positive experience in terms of engaging staff to implement changes, and this indeed proved to be the case. In the personal interview, Joanne Sims felt that there has been a big improvement in the safety culture at the trust in recent years, and that *'the trust has learned that the way to get success is to have change being driven by the clinical staff'*. This view was echoed in many other interviews; Jane Palin of the Mid Cheshire Hospitals Trust stated that the culture of her trust has embraced all recent reforms – *'there have been so many change initiatives that the ethos of providing evidence is embedded in people at this stage'*; and Neil Gibson of Northumbria Healthcare Trust stated that there is a really positive culture at the trust with *'very good engagement with risk issues through all members of staff'*. In short, the policy of selecting trusts with recent risk management level improvements did lead to positive reports on the willingness of staff to embrace changes. The hardest aspect of this process was the initial phase – Joanne Sims felt that the involvement of service development facilitators from the NHS Centre for Innovation an Improvement had been of great benefit at the outset – these facilitators initiated changes and it now *'happens automatically'*.

For the one trust which had not achieved a risk management level increase in recent years (Nottingham University Hospitals NHS Trust), it was also found that there is a very positive culture in terms of engagement by clinical staff with the governance team; indeed, Owen Bennett remarked that clinical staff '*do realise the importance of having identified risks and managing them to the best of their abilities'*. He did note that '*there is a possible gap at staff level as to how risk management feeds into the*

overarching trust position' but it was clear to the interviewer that cultural factors were not the main reason why this trust had remained at risk management level one in recent years.

5.3.1 Importance of Governance Relationships to Risk Management

The issue of governance relationships was also considered in this initial assessment of risk management practices within NHS trusts as it is believed that good governance is a necessary ingredient for effective risk management within trusts. For each of the nine selected trusts, all had recently acquired foundation trust (FT) status – a move which was encouraged by the UK government who wanted trusts to have good governance and financial management arrangements in place. Trusts who attained FT status had to demonstrate to the independent regulator (Monitor) that they had good risk management arrangements in place when applying for FT status - *'trusts had to have CNST level one and Risk Pooling Scheme for Trusts (RPST) level one'* (Joanne Sims, Royal Bournemouth and Christchurch Trust). With level one as effectively the lowest level of risk management, this meant that there was no impetus to move to levels two and three in advance of achieving FT status; however, upon achieving FT status, many trusts felt that there was now an impetus to improve risk management arrangements as shown below:

'Obtaining FT status gave us a good governance structure which helped when applying for risk management level increases' *Northumbria Trust*

'After achieving FT status, the board now felt it should be taking risk assessments seriously and seek to move to level two'. Camden and Islington Trust

Joanne Sims from the Royal Bournemouth and Christchurch Trust did elaborate on the governance structures in place as a result of acquiring FT status – this includes public interest governors which are elected by the membership of the trust, staff governors which are elected by staff groups, and representation from the trust board. While her trust did struggle initially to work out how such arrangements would work, the arrangements now worked quite well and both *'public and staff governors are willing to support quality initiatives such as the patient experience'*.

5.4 Review of Risk Management Level Experience

Prior to evaluating the processes which had led to risk management level improvements at most of the selected trusts, the experience of each selected trust in relation to risk management levels was clarified as shown below:

Table 5.5 Risk Management Level Experience at the Participating Trusts

Trust Name	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010
Royal Bournemouth and Christchurch NHS Foundation Trust	1*	1	1	2	2
Mid Cheshire Hospitals NHS Foundation Trust	1*	1*	1	2	2
Central Manchester University Hospitals NHS Foundation Trust	1*	1*	1	2	2
Alder Hey Children's NHS Foundation Trust	1*	1*	2	2	2
The Christie NHS Foundation Trust	2*	2*	2	3	3
North Tees and Hartlepool NHS Foundation Trust	1*	1*	2	2	2
Camden and Islington NHS Foundation Trust	1*	1*	1	2	2
Northumbria Healthcare NHS Foundation Trust	1*	1*	2	2	3
Nottingham University Hospitals NHS Trust	1*	1*	1	1	1

* These risk management levels were assessed using CNST standards which were replaced by NHSLA standards in 2006.

As can be seen from the above table, all of the participating trusts, apart from the Nottingham University Hospitals NHS Trust, increased their risk management level to at least level two in the years 2005-2010; indeed, most of those currently at level two were found to be hoping to progress to level three at their next NHSLA risk management assessment.

5.4.1 Reasons for Seeking a Risk Management Level Increase

From the interview discussions, it emerged that risk management level increases have occurred as a result of a well planned strategy, and the following reasons were put forward to justify the decision to seek a risk management level increase:

(i) **Reputational benefit** – the most common reason for seeking an increase was not the financial saving on the NHSLA premium that the author had expected, but related to the reputational benefits from being seen to be seen as a trust operating at a higher risk management level. The following quotations capture the views of respondents here:

'The push for level two was about reputation and how we looked as a trust'

Camden and Islington NHS Foundation Trust

'Achieving level three was a strategic objective of the trust, and while the previous move to level two might have been largely motivated by the desire to get the reduction in premium, the move to level three was balanced by the benefits of having safer systems this time – these now outweigh the financial benefits' Alder Hey Children's NHS Foundation Trust

'It was a priority at board level to get to level three … to demonstrate that the trust's safety and quality agenda was in place and was embedded across the trust'

Northumbria Healthcare NHS Foundation Trust

'There is the financial incentive but it's about more than that i.e. reputation and safety at the trust'

Mid Cheshire Hospitals NHS Foundation Trust

'The move to level two would have benefits for patient safety, patient care, staff safety ..'

Royal Bournemouth and Christchurch NHS Foundation Trust

The high priority given to reputational issues were subsequently discussed with Alison Bartholomew of the NHSLA who, while she was surprised to see that some trusts ranked reputational benefits higher than financial benefits, was not surprised to see the importance attached to reputational issues – she elaborated here as follows:

'Reputation is a huge issue in the NHS; some chief executives have lost their jobs because of reputational issues, and a lot of adverse publicity can come out of this. So the NHS is probably quite sensitive to reputational issues, and in addition, because other organisations such as the Care Quality

Commission or Monitor look at the NHSLA risk management levels, this feeds into the overall reputational picture, and how they are seen by other bodies. In addition, a lot of people make comparisons / benchmarks within the system, and people don't want to be seen to be at the bottom and there may be some peer pressure here. ... So reputation can be a big issue when you have patient choice as perhaps people will make decisions based on this rather than for a well defined clinical decision'.

(ii) **Financial benefits** – given that the NHSLA offers reductions in its CNST contribution for trusts who achieve risk management level increases, it was unsurprising that many trusts also alluded to these incentives as a reason for seeking a risk management level increase. This motive seems to have strengthened in recent years with NHS budget cutbacks as captured by the following quotations:

'With the increased priority on funding constraints and cost cutting as a whole, there is more of a focus on financial savings' Northumbria Healthcare NHS Foundation Trust

'There also was the financial incentive – the 10% discount on the premium was substantial and this came at a time when financial pressures were starting to be considered'
Royal Bournemouth and Christchurch NHS Foundation Trust

'There is a financial incentive – the maternity department has taken on two obstetricians to enhance the quality of care on the back of savings made when progressing to level two'
Mid Cheshire Hospitals NHS Foundation Trust

Note that the interview with the Alison Bartholomew of the NHSLA Risk Manager clarified that while discounts are offered to trusts with higher risk management levels, the organisation does still collect the same total amount to cover claim payments in a given year – it is the allocation of money between trusts that is affected by the discounts. The rationale for offering these discounts on the part of the NHSLA is a belief that '*having risk management processes in place will actually improve patient safety*' – and one of the NHSLA's remits is about patient safety. A further benefit to the NHSLA of having risk management levels is that it gives it an '*improved ability to deal with complaints / claims as they are made'*, and with trusts removed from claim management duties, they are allowed more time to devote to other issues.

(iii) **Other Reasons** – a small number of additional reasons for seeking risk management level increases were offered as follows:

Build on Work Completed When Adjusting to NHSLA Standards

All trusts had moved from CNST to NHSLA standards in 2006, and the workload required for this transition made it a logical step to progress on to a higher risk management level. In the words of Joanne Sims at the Royal Bournemouth and Christchurch Trust, *'we had spent a lot of time reconfiguring our policies and our risk management framework to meet the new standards and we felt in a strong position to go forward to level two'*. This was reinforced by Jane Hadfield of the Christie NHS Foundation Trust who stated that *'the work put into the level two pilot made the trust feel that they were not that far off getting level three so a decision was made – why not?'*.

Increased Expectation as a Result of Acquiring Foundation Trust Status

One of the trusts – the Camden and Islington NHS Foundation Trust – also suggested that the sense of push for achieving a risk management level increase was added to by having recently become a foundation trust.

5.4.2 Preparation Process for Risk Management Level Assessment

While risk management level increases do offer benefits to trusts, the consensus of the various interviews was that obtaining such an increase takes considerable time and effort on behalf of many staff to be realised. The process adopted by these trusts differed slightly in each case but generally included the following steps:

(i) **Process Mapping**

Some trusts took the approach of process mapping across the whole organisation to see not just how they would make a risk management level increase at their next assessment, but also to see how they would move from level one to level two and on to level three in time. In the view of Joe Mallabone of the

Central Manchester University Trust, a one-off approach for each assessment is '*absurd as the three levels are inextricably linked and the way you progress from one level to the next is more effectively done if you process map it all out'*. Process mapping involved issues such as getting the performance management systems in place, and writing documents where you identified how you disseminated and implemented policies and how you would measure compliance and subsequently monitor compliance. Regular meetings were then held over several months to map out how evidence would be presented and how a trust would demonstrate evidence of compliance.

Process mapping was also discussed by Joanne Sims of the Royal Bournemouth and Christchurch Trust – this initiated by a service development team from the NHS Centre for Innovation and Improvement, but is now *'central to people's consciousness in the trust'* – the trust now has a *'team based approach to embracing change'*. In short, for the two trusts who spoke of process mapping, it was clear that they viewed the rise to risk management level two as just a step on the way to ultimately achieving level three status.

(ii) Lead Person(s) with Responsibility for the NHSLA Assessment

All trusts which achieved risk management level increases put a specific person in charge of the NHSLA risk management level assessment, and this person was the chief coordinator of all of the various pieces of information which had to be prepared and collated for an assessment submission. The lead person chosen for each of the nine trusts was the interviewee for this research (apart from the Camden and Islington trust where Alison Martin jointly led the assessment with her colleague Ian Diley), and it was clear from the discussions that this role was a very necessary but onerous part of obtaining the risk management level increase. Aspects which were managed by this lead person included:

- Coordinate a range of meetings with staff over a period of typically twelve months in advance of the assessment;
- Coordinate interim meetings with NHSLA assessors which typically take place some months in advance of the assessment;
- Understanding what the NHSLA handbook asked for and preparing the evidence to a high standard – this involved providing support to people writing policies;

- Determine where clinical engagement is needed and what administrative support is needed for the data collection;
- Identify gaps in the organisational plans to achieve a target risk management level and taking appropriate action to remedy these gaps;
- Report to a member of the board of directors (typically the medical director) on a regular basis on progress made;
- Coordinate the NHSLA assessment – this involves having someone accountable for each of the 50 standards, having staff on call for interview to explain parts of the documentation, and being preparing to provide extra evidence if needed on the day.

In short, it was clear to the interviewer that the lead person role required very good leadership and communication skills to mobilise a wide range of people in each trust to achieve this overall goal – in the words of Joe Mallabone of the Central Manchester trust, *'it was not his assessment, it was the staff's assessment and he just facilitated the process of getting from A to B as a lot of the individuals were healthcare professionals who didn't have much of a handle on governance systems'*. This lead person role was explicitly acknowledged by Alison Bartholomew of the NHSLA who felt that a barrier preventing many other trusts from achieving higher risk management levels was the absence of such a risk management champion. Looking to the future when funding will be restricted because of the economic situation, she felt the role of such champions will be crucial as these organisations will be more likely to conclude that risk management can help it in the current times whereas other organisations may be tempted to think that they can do without it.

(iii) Engagement with Clinical Staff and the Board of Directors

An additional enabler in the process of successfully securing a risk management level increase was engagement with clinical staff in the trust – many of whom initially viewed the document preparation as an unnecessary paperwork exercise. Joanne Sims of the Royal Bournemouth and Christchurch trust felt that the real key to *'get success is to have change being driven by the clinical staff - this is also the way in which you involve all aspects including the financial and efficiency side as well as the quality and safety side'*. Neil Gibson of the Northumbria trust also spoke of the successful engagement of clinical staff with risk issues, and cited it as a key factor in it obtaining a risk management level increase. However, obtaining such clinical involvement is not easy – Janet Waring of the Alder Hey Children's

trust felt that it was only when her trust went for level three that a '*more positive viewpoint of the relevance of standards was realised especially among clinicians and clinical staff – prior to this, it was seen as a huge bureaucratic exercise'*.

The interview with Alison Bartholomew of the NHSLA also confirmed the importance of successfully engaging with clinical staff to secure risk management level increases. Initially, she acknowledged that completing the risk management level one assessment can largely be done by a good risk manager (with help from just a small number of additional people); but when one tries to move beyond level one, '*you have to get engagement from a lot of other people and it becomes much more difficult'*. She elaborated to say that the big progress block seemed to be from level one to level two – *'it is not to say it is easier to get from level two to three (as it was from level one to two) but it is more part of a natural journey at that stage'*. This implies that an inability to foster clinician involvement in the risk assessment process may be a strong barrier to trusts achieving risk management level increases. Obtaining such clinical involvement is difficult as this group of staff *'often don't see the benefit of the NHSLA risk management levels and if they have a very strong influence in the trust, it can reduce the chances of risk management level increases'*.

In addition to successfully engaging with clinical staff, trusts which secured a risk management level extended this engagement through to the top levels of management in the trust – the interviewees alluded to board members wanting to be regularly informed as to how preparations were faring for the NHSLA assessment. This involvement initially consisted of selecting an appropriate lead person and providing that person with the necessary support to perform his/her role; however, it became more actively involved in the lead up to an assessment visit when the need to have everyone communicating the same message became more important.

(iv) Heavy Workload in Advance of NHSLA Assessment

A common theme for each of the successful trusts which secured risk management level increases was the thorough preparation in advance of the NHSLA assessment – the key to getting a successful result was '*preparation, preparation, preparation*' according to Joe Mallabone of the Central Manchester University Trust. This preparation commenced up to eighteen months in advance of an assessment, and typically increased considerably in the weeks leading up to the assessment. Most interviewees spoke of the fact that the assessment became a prioritised part of their normal work during these weeks and the workload involved reached 70 to 80 hour weeks as the assessment approached. The additional workload did put considerable pressure on each of the lead people over this period - all felt that the volume of work put into the assessment added to the fact that it was a key strategy of the trust to get an increase made the assessment visit a very stressful and nerve wracking experience. However, Alison Bartholomew of the NHSLA, while being aware that the assessment required extensive effort, was surprised to hear of the '*level of pressure which trusts feel at the time of an NHSLA assessment*'.

5.4.3 Barriers to Obtaining a Risk Management Level Increase

While eight of the interviewed trust managers spoke of the challenging but ultimately rewarding experience of obtaining a risk management level increase, the situation was different for Owen Bennett of the Nottingham University Hospitals NHS Trust, as this trust had remained at risk management level one since the advent of risk management levels. This interview and the interview with the NHSLA risk manager addressed the issue of what barriers are holding trusts back from achieving risk management level increases; a wide range of possible reasons were outlined as shown below:

- Restructuring issues – '*some trusts are constantly being restructured so they constantly have to look at their policies and processes before they can implement them and move up a level. This is considered to be a big problem in the NHS at the moment*' (NHSLA Risk Manager Interview). This view was reinforced by Owen Bennett who felt that the biggest barrier to his trust achieving a risk management level increase is that the trust is a merged organisation – '*this has*

impacted on how quickly we can apply for a risk management level two assessment; after merging in that previous assessments didn't count – it was then reassessed as a new organisation'.

- Inconsistencies in the assessment criteria; Owen Bennett felt that such issues were present as there are different assessors in different trusts, and additional barriers were found to be the evidence that the NHSLA wants at risk management level assessments. This view was reinforced by Carole Pearson of the North Tees and Hartlepool trust which recently failed in a bid for level three status - *'we felt there was inconsistency from the NHSLA assessors – the guidance we received in advance of the assessment differed from what we received at the assessment itself'*.
    - This issue of a perceived inconsistency between assessors was raised with Alison Bartholomew of the NHSLA – she remarked that she was surprised to hear of this as *'the NHSLA works hard to avoid it despite the fact that the assessment process does have a degree of subjectivity particularly at the higher levels'*. She also felt that a possible contributing factor to this perceived inconsistency may be the fact that '*some trusts have the same assessor throughout, while others have experienced changes – people will be more comfortable with those that they are familiar with'*.
- Lack of a champion in the organisation to lead the NHSLA assessment process (NHSLA Risk Manager);
- Lack of clinician involvement (NHSLA Risk Manager);
- Lack of resources (NHSLA Risk Manager);
- Lack of priority – '*other trusts may not see the NHSLA risk management level as a priority and may prefer to focus on something else such as the Care Quality Commission*' (NHSLA Risk Manager Interview). However, this was not the case for the Nottingham University Hospitals NHS Trust for which a risk management level increase is a clear priority of the trust.
- Fear – '*some trusts don't want to take the risk of looking for higher levels as if it goes wrong, they can end up back at level zero, so perhaps they are doing their own risk assessment and*

deciding that it is too risky – it is preferable to do the minimum and maintain level one status rather than aim for level two' (NHSLA Risk Manager Interview).

5.4.4 Financial Investments Made as Part of Assessment Process

The next issue to be investigated during the exploratory interviews was the extent to which financial investments had been made to help secure risk management level increases – as such a linkage could be used to infer that trusts with stronger financial positions are using this strength to boost their chances of obtaining such increases. The responses received here were mixed as follows:

Viewpoint A *Additional Financial Investments Made*

Four of the participating interviewees gave evidence of additional investments made as part of the process to secure a risk management level increase as follows:

Table 5.6 Examples of Additional Financial Investments Made to Help Secure Risk Management Level Increases

Trust	Financial Investment
Northumbria Healthcare NHS Foundation Trust	Investment of about £8,000 made when applying for level two and about £15,000 made when applying for level three – this covered the cost of a part time project manager for a five-month period prior to the assessment.
Alder Hey Children's NHS Foundation Trust	Investment of about £8,000 made when applying for level three – mainly on administrative expenses.
Royal Bournemouth and Christchurch NHS Foundation Trust	Investment of c. £70,000 made when applying for level two – a risk manager for £40,000 and the balance on training / administrative support.
Central Manchester University Hospitals NHS Foundation Trust	No exact figure given but the interviewee (Joe Mallabone) was hired because he had the '*experience needed to achieve a risk management increase in the short-term*'

While these trusts did commit financial resources towards the planned risk management level increase, all felt that the amounts invested were small and Janet Waring of the Alder Hey Children's NHS Foundation Trust stated that she knew of other trusts which had spent as much as £100,000 as part of a planned risk management level increase. The given investments also appear to be relatively small when

compared against the huge potential savings available in the form of reduced NHSLA contributions – Joanne Sims of the Royal Bournemouth and Christchurch NHS Foundation Trust felt that a £70,000 investment was justified considering that the potential saving in its CNST contribution was £150,000 per annum for a three year period. Indeed, she marketed the proposed financial investment as an 'Invest to Save' initiative - this helped her to obtain the needed investment, and conceded that the request *'would not have succeeded if the trust were not in as good a financial position'*. A similar background prevailed at the Northumbria trust at the time of the financial request – the potential saving on CNST contributions was even higher than for the Royal Bournemouth trust and *'the trust could also afford the additional investment as it was in a fairly comfortable financial position'*. For the Alder Hey trust, Janet Waring produced a business plan for the *'minimal financial investments'* and these were met with the response that she should *'do whatever it takes because of the reputational benefit of a risk increase and for the financial saving'*.

In summary, the four trusts that did invest to help secure risk management level increases did so in a very prudent manner and such investments were typically only signed off if the trust was sufficiently well off financially to be able to do so. In addition, while the Nottingham University Hospitals NHS Trust had not yet secured a risk management level increase at the time of the interview, it would be willing to make such investments going forward; Owen Bennett remarked that the trust '*is already looking at the possibilities of using some money that is available within the team to recruit on a temporary basis a person to help influence the process for NHSLA assessments'*.

Viewpoint B *No Additional Financial Investments Made*

In contrast to the four trusts that did make financial investments to facilitate risk management applications, another four trusts indicated that no additional financial investments were made to help secure the risk management level increase. The responses received here typically were that *'the work was part of everybody's normal role'* (The Christie Trust'), and *'there were sufficient staff in the governance and administrative departments to enable the trust to progress to level two without additional resources – it is their job anyway, it is not an extra'* (Mid Cheshire Hospitals Trust).

These trusts were probed on the reasons for not making additional financial investments and most responded that this was because additional funds were not available at the time – for example, Carole Pearson of the North Tees and Hartlepool trust stated that *'additional financial investments would have been of enormous benefit but it wasn't available – had it been available, it would have been spent to help with the workload for the assessment'*. In addition, while some trusts had cited the large potential savings from reduced CNST contributions as an incentive to make financial investments, Alison Martin of the Camden and Islington Trust felt that such savings were much lower for mental health trusts – the saving was of the order of £30,000 for this trust (this was much lower than for acute trusts).

5.4.5 Managing the Actual NHSLA Assessment

The interview discussions then moved to discuss the actual risk assessment which is typically a two-day period with two NHSLA assessors; these assessors work through the files which have been submitted to them in advance (all of the evidence must be electronically linked together), and in the words of Jane Palin of the Mid Cheshire Hospitals Trust, it is *'not just about documentation – at levels two and three, they can go out to meet staff or if they have queries, one can ask to see the records library'*. Jane actually worked as an NHSLA assessor prior to joining the Mid Cheshire trust, and she felt from her experience that the assessment is a *'thorough examination – more than for other assessments that trusts face'*.

All interviewees found the process to be quite stressful as there was a lot at stake for their trusts after the extensive preparation and possible financial investment which went into it – in the words of Jane Hadfield of the Christie Trust, it is like *'being on a rollercoaster – some elements we were confident about while others would get dashed by queries on the evidence'*. From her past experience as an assessor, Jane Palin felt that there is also pressure on the assessors when offering a verdict on a trust's risk management level – this pressure can relate to trusts' needing the savings from progressing up a level. The NHSLA don't like to be pressured into awarding an increase and consequently, they can drop a trust down a level if they feel they are going too early for a risk increase. For risk management level decisions which are difficult to make, there is also a degree of flexibility – for example, the Alder Hey

trust got 37 points out of 50 and needed 40 to progress up a level; here, the trust was given a period of additional time to submit additional evidence which could lead to a risk management level increase.

Most interviewees acknowledged that the assessment was a difficult but fair process which worked out well for trust who were well organised in advance. However, some reservations were expressed as follows:

'It is a very prescriptive process – one can get upset by the pedanticness of the report - If your policy doesn't contain what the criteria require, you will fail; If the evidence doesn't support what you say you will do, you will fail.' Royal Bournemouth and Christchurch Trust

'It is rather frustrating as an exercise in terms of having to prove precisely what is in the standard – it is a very prescriptive and inflexible process' Alder Hey Children's Trust

'On the day of the assessment, 50 standards were assessed by two assessors over two days – it works out at 12 minutes to assess each standard which is barking!' Central Manchester Universities Trust

A key influence on the outcome of such an assessment was the existing relationship which the trust has with its assessor – for example, the assessment at the Northumbria trust only lasted for one day as a lot of the groundwork had been done at the informal visit in advance of the assessment where *'we gave the assessor a positive feeling about the trust so that he knew the trust was comfortable and confident about the process'*. In addition, while the Nottingham University Hospitals NHS Trust has yet to secure a risk management level increase, it has prioritised this area for its 2012 visit by conducting a number of meetings with its assessors in May 2011. This recognises that the chances of getting a positive result at the assessment are improved by having a good prior relationship with one's assessors.

5.4.6 Risk Management Level Strategy After Obtaining a Risk Increase

The achievement of a planned risk management level increase was met with a mixture of relief and happiness at the respective trusts, and as the new risk management level is valid for two years, a window of breathing space was afforded to trusts before preparing for the next NHSLA risk management assessment. Some of the interviewed trusts have availed of a breather in the aftermath of an assessment –

such as the Central Manchester trust which took a *'bit of a rest for 12 months after achieving level two as the organisation was undergoing substantial reorganisation at the time'* - but most trusts have chosen to continue to seek to improve their risk management level as they have process mapped out a longer term strategy to get /stay at level three.

For trusts which have recently acquired level two status and are planning to get to level three, the main challenge is making the conversion from having policies to having monitoring arrangements in place. In the words of Joe Mallabone of the Central Manchester trust, this *'involves coming up with targets, identifying where we are going to report to, who will be involved in the process, identifying what action plan will be taken when deficiencies are revealed'*. While this represents a considerable additional hurdle to be climbed, Joe did feel that this should be *'the easiest level to achieve if monitoring is embedded in the organisation'*. This view was echoed by Joanne Sims of the Royal Bournemouth trust who feels that *'level three is achievable if you have the right policy and have the right implementation'*. In short, it was clear that if the effort in mobilising staff (especially clinical staff) to achieve a risk management level increase to level two has succeeded, it made sense to continue the momentum through to a level three application.

For trusts who have recently achieved level three status, it is clearly the aim to stay at this level; however, this is not as straightforward as it might appear at first glance. Carole Pearson of the North Tees and Hartlepool trust referred to the *'regular changes in the standards'* and likened this to a *'showjumping puissance competition where the fences keep rising as soon as you jump them'*. This was similar to the views of Jane Hadfield of the Christie trust who said there will always be something to worry about – staff there fear a new level four will be introduced!. Neil Gibson of the Northumbria trust also felt that a '*new level four could be created or else the current level three will probably be amended to state that one must have higher levels of compliance'*. This issue was also explored with Alison Bartholomew of the NHSLA who confirmed that a risk management level four is a possibility in the future but this may only occur after the completion of an industry review by government which was

being conducted in 2011. The shape of such a level four had not been finalized in 2011, but it will *'probably be more linked to outcomes as it is seen as another level that trusts can go to'*.

While risk management level three represents the highest level that can be achieved, it does not in itself represent a guarantee of quality systems at a trust – Jane Palin who had previously worked as an NHSLA assessor remarked that *'achieving level three doesn't give an assurance on quality – one can have monitoring processes in place but be only 50% compliant at level three'*. This comment suggests that a new risk management level four may indeed be needed in the future to create a better connection between risk management levels and trust quality of care levels.

5.5 Impact of Risk Management Levels on Claims Management

The final section of the exploratory interviews sought to gather trust manager views on the likely impact of risk management level increases on claims management (i.e. on the number of new claims and value of closed claims) at the trust. The responses received to this issue generally supported the view that risk management level increases do impact on claims management as shown below:

Table 5.7 Trust Views on the Impact of Risk Management Levels on Claims Management

Trust	***Trust View***
The Christie NHS Foundation Trust	*'Trusts with good risk management systems should have lower claims and such an impact should occur in the short term.'*
Northumbria Healthcare NHS Foundation Trust	*'A likely impact of achieving level three status is lower future claims and this trend will be more pronounced once a trust starts to ensure that compliance is at a high level.'*
Mid Cheshire Hospitals NHS Foundation Trust	*'Risk management levels should influence claims levels although this is difficult to track as claims can drag on for many years.'*
Camden and Islington NHS Foundation Trust	*'Even staff who felt the standards were very bureaucratic would agree that they contain things a trust should be working towards i.e. if you have good policies, and you embed these policies, there should be less risk.'*
Alder Hey Children's NHS Foundation Trust	*'Achieving a risk increase should have a positive effect on claims, and this effect could be expected within six months. Claims can also be better defended against as we now have policies and documentation in place. However, as a children' trust, claims can take up to 25 years to emerge so change could take time to emerge.'*
Royal Bournemouth and Christchurch NHS Foundation Trust	*'When we defend claims, good documentation is the most important thing'.*
North Tees and Hartlepool NHS Foundation Trust	*'Claims did fall for us in the year after the risk increase, but this was more to do with the culture of the trust in dealing with adverse events than the NHSLA standard which is very bureaucratic'* .
Nottingham University Hospitals NHS Trust	*'There is not a direct correlation between having a policy in place and having a culture of safety in an organisation. Furthermore, it should also be noted that one does not have to be strong in all areas to secure a risk management level increase– one may be weak in an area which is critical to clinical claims!'.*

The first six views expressed in this table concur that improved risk management levels should drive down future claims (both in quantity and in value terms) – however, the timing of this impact is uncertain as current claims can relate to incidents up to three years' ago (and up to 25 years for children's claims). However, the last two trust manager views express doubt as to whether there is any causal relationship between risk management levels and claims management variables - these interviewees feet that a linkage between risk management levels and claims management was very unclear. However, it should be acknowledged that these trusts have had different risk management level experiences to that of the other trusts – the North Tees and Hartlepool trust had recently failed in an application for level three status (and had also dropped from level two to level one in 2005/2006) while the Nottingham University trust had not achieved a risk management level increase since such levels

were introduced. This suggests that trusts with poor risk management level experiences are less likely to see the benefits of risk management increases compared to trusts who have seen improvements with their levels.

5.5.1 NHSLA Perspective on Impact of Risk Management Levels on Claims Management

In addition to the educated opinion of nine trust risk managers on the impact of risk management levels on claims, the viewpoint of the organization which administers the risk management level scheme and manages clinical negligence claims was sought. Here, Alison's Bartholomew's views reflected the general consensus in the replies of the various trust managers; she felt that higher risk management levels should generally lead to lower new claims but there are complicating factors to consider with this relationship – particularly the difficulties in proving such a relationship – '*one can never really prove whether one is successful in this regard at all unless you have zero claims'*; an additional complicating issue is that '*you can have two identical issues and yet one person claims, and the other does not; one can never really allow for this. There can also be solicitor firms who target hospitals with advertisements such as 'have you been injured at this hospital?' ... this shows that claims can be a very difficult measure to relate to risk management levels'*. She also commented that the direction of the relationship between risk management levels and the number of new claims is straightforward to hypothesise, it is not as clear-cut for the relationship between risk management levels and claim values - '*trusts at higher risk management levels are better placed to manage claims – this does not mean that it gets dropped as it may just mean that it gets settled more quickly as we know we are liable*'. This suggests that trusts with good risk management processes may experience higher claim values as a result.

5.5.2 Extent of Local Trust Involvement in Claims Management

The views of interviewees on how clinical negligence claims are managed once they occur was also sought - the NHSLA (2011a) suggests that the it took over the management of claims above the excess

level in 1995 and of all claims since 2002; however, as the trust remains the legal defendant for such claims, it is unclear as to the extent of local trust involvement in claims negotiations.

All trusts initially acknowledged that they had a local position of claims manager who liaised with the NHSLA in relation to claims at the trust; however, there was variation in the extent of local involvement in claims negotiations. On one hand, some trusts felt that they were heavily involved in such matters; for example, Joanne Sims of the Royal Bournemouth and Christchurch trust commented that the trust does *'have some say in the decision on whether claims are settled or taken to court but is guided by the NHSLA Claims Manager for each particular case'*. She elaborated to say that the *'NHLSA will give advice on what level of settlement should be offered given the quantum of risk, the degree of harm, loss of earnings etc quantified in the claim. However if the trust is unhappy with the potential level of settlement to be offered, we can discuss this with the NHSLA Claims Manager and potentially agree another course of action.'* This suggests local trust involvement in claims resolution outcomes and this view was echoed by Jane Hadfield of the Christie trust who felt that '*claims management is a remit for the board of directors at the trust – in other words, an improvement in claims payment could be viewed as good trust management'*. In addition, Janet Waring of the Alder Hey Children trust referred to a local team of people who gather information on claims and *'if there has not been a breach, we look to our solicitors to defend the claim locally'*.

By contrast, other trusts felt that claims resolution was largely the remit of the NHSLA with little or no local input. For example, Carole Pearson of the North Tees and Hartlepool trust stated that her trust *'really just gathers information on claims for the NHSLA who then manage it from there.'* Indeed, she added that the trust would be *'very happy to try and settle some claims locally but the protocol doesn't allow it'*. This reinforces the views of Neil Gibson of the Northumbria trust who added that a trust *'will do the investigation which is passed to the NHSLA who takes it from there – it is all in their hands from there'*. Jane Palin of the Mid Cheshire trust also subscribed to this view – her experience was that the *'settlement of claims is in the hands of the NHSLA'* with no local involvement at the settlement stage.

5.6 Implications of the Interview Findings

The findings to the exploratory interviews have offered important insights on the process leading to each trust being awarded a risk management level by the NHSLA. A summary of these insights is now provided:

A risk management level increase will only occur after an extensive organizational effort across all levels of a trust; this implies that a risk management strategy is required by trust management – this will include the appointment of suitable people to manage risk management assessments and the provision of additional funds to assist with the risk management level application. It is implied that trusts which have a positive culture of engagement throughout the organization and who have sufficient financial flexibility to be able to channel funds into such applications will be successful with risk management level applications. All trusts which achieved risk management level increases had also succeeded in becoming foundation trusts, and the responses received suggest that achieving such status acted as an impetus to achieving the higher risk management level.

Trusts which do achieve risk management level increases are much more convinced that benefits will accrue in terms of clinical negligence claims (i.e. they expect it to lead to lower numbers and value of claims) relative to those who have yet to increase their risk management level. This implies that a greater promotion of the benefits of higher risk management levels which is focused on trusts which operate at level one may convince them to make a renewed effort to progress to higher levels. On the other hand, involvement in restructuring activity can act as a barrier preventing trusts from achieving a risk management level increase for a number of years.

The consensus from all interviews was that additional financial investments do help with an NHSLA assessment bid - such investments tend to occur when there is a large potential CNST contribution saving, the trust is financially well off to afford the investment, and the existing resources at the trust are in need of reinforcement at the time of preparing the assessment documentation. This importance of financial health was emphasized by Alison Bartholomew of the NHSLA who remarked that '*it is true*

that it takes money to be able to demonstrate that you are implementing; this is not to say that the assessments cost money but doing what you are doing and demonstrating it does cost money, and if you are struggling financially with resources / staff, this is difficult'. In short, it is implied that financially stronger trusts are more likely to achieve higher risk management levels.

While risk management level increases are not being sought to directly drive improvements in claims experience, it is an indirect benefit which materialises some time after the increase has been obtained. This implies that risk management levels are more than mere signals of a trust's quality level (which is then used to charge an appropriate CNST premium to the trust), although the limited sample size used for these interviews and the unclear timing of such an impact need to be considered before any final conclusions can be drawn on this matter.

Regardless of the divergence of views in relation to the extent to local trust involvement in claims resolution negotiations, it is clear that the quality of local documentation will have a big bearing on the ultimate claims outcome. This implies that risk management levels will impact on claims negotiations as many interviewees felt that improved risk management levels make a trust more likely to have proper documentation which can assist in resolving claims. However, the direction of the impact of risk management levels on claim outcomes was unclear - some trusts feel that better documentation should lead to reduced claim values while the NHSLA risk manager felt it could lead to higher claim values as trusts will settle quickly when it knows if it is liable or not.

5.7 Limitations of Exploratory Interviews

While the exploratory interviews did generate detailed responses from all interviewees, the findings from such discussions nonetheless will have the limitations associated with them as follows:

(i) Sampling issues – as the views of just a sample of trust risk managers are included in these interviews, there is clearly a risk that the views may not accurately reflect the views of all trusts which have undergone risk management level assessments since they were introduced.

(ii) Priority given in sample selection process to trusts which recently secured a risk management level increase – while this policy did succeed in gathering eight detailed viewpoints on the factors that contributed to this risk management level increase, it did not represent the general experience of all trusts with risk management levels i.e. many trusts have not changed their risk management level since they were introduced.

(iii) Limitations of telephone interview – telephone interviews proved to be the strong preference of interviewees compared to a personal interview, but such interviews do restrict an interviewer's ability to obtain additional benefits of (face-to-face) interviews which include the ability to observe body language and an ability to develop a stronger rapport with the interviewee.

(iv) Confidentiality concerns – while every effort was made from the initial communication process with trusts (including the supporting letter from the author's supervisor) through to the actual interviews to assure interviewees of the confidentiality of replies, the possibility exists that such concerns may have led to some information not being made available to the researcher.

(v) Exposure to the preconceptions and values of the author – while every effort has been made to negate this through careful planning and systematic execution of the interviews, it is appropriate to acknowledge that this also represents a limitation within the research.

5.8 Chapter Summary

This chapter has presented a summary of the experiences of nine NHS trusts in relation to their risk management levels: eight of whom successfully increased their risk management level in recent years. The views of an NHSLA risk manager were also gathered and the main findings were as follows:

- Risk management increases have occurred as part of a planned strategy (this involves capturing the reputational and financial benefits, and usually relates to more than one NHSLA assessment). However, achieving this goal is a considerable challenge across an entire trust – it

will require a heavy workload for the staff who lead the assessment and other staff such as the board of directors and clinical staff must be engaged for such a strategy to succeed.

- There are a range of issues which can restrict a trust's ability to obtain a risk management level increase – these include external factors such as restructuring activity as well as internal factors such as a lack of a risk management champion to drive a risk management level application.
- Trusts that are in a position to commit financial resources to assist with an NHSLA assessment typically will do so, although making such an investment is not a pre-requisite to obtaining a risk management level increase – however, there was a general consensus was that financially stronger trusts are in a better position to obtain risk management level increases.
- The NHSLA assessment is a stressful and arduous process for all involved at trust level. Those that prepare well are much better placed to have a successful outcome and this includes having a good relationship developed with one's assessor in advance of the assessment visit.
- Risk management level increases should impact on future claims levels, although there is an uncertain time lag before this effect will become evident. In addition, there is limited support for the view that local trust management can affect claim values, and this implies that risk management level increases can reduce both the number and value of future claims.
- Risk management level increases are not being primarily sought to drive improvements in claims experience but this may be an indirect effect of improving quality systems in each trust. Such increases are being sought to improve a trust's reputation for patient safety and to secure financial benefits in the form of reduced CNST premiums – this suggests that risk management levels are being used to indirectly improve claim levels and claim values (they are by-products of an improved trust quality level) rather than act as a signal of a trust's quality level.

In short, these findings confirm some of the hypotheses expressed in the literature chapters, but have also uncovered new information relevant to risk management processes which were unknown to the author in advance of such discussions. This information will be added to that obtained from relevant literature to assist the development of appropriate empirical models – these will be addressed after the empirical data available for this study is described in the next chapter.

CHAPTER SIX

DATA SOURCES, VARIABLES AND SUMMARY STATISTICS

6.1 Chapter Overview

This chapter introduces the dataset to be used for multivariate regression analysis in chapters seven, eight and nine – this was obtained from a combination of public sources and data secured from the NHSLA through the Centre for Risk and Insurance (CRIS) at the University of Nottingham. All of the variables for this study will be described including an analysis of major trends in recent years. The analysis will include tables, graphs and summary statistics with supporting material being included as appendices.

6.2 Overview of Data Sources

The empirical data came from a variety of sources as shown below:

- *Risk management data* for each NHS organisation was obtained from the NHSLA website (NHSLA, 2011a) for the years 2002 to 2009.
- *Financial data* was obtained from Laing & Buisson database of NHS financial accounts data (which was purchased by CRIS), and consists of all published accounts of NHS organisations from 1995/1996 to 2007/2008.
- *Specialty data* for the years 1995 to 2008 for each NHS organisation across a range of specialities was obtained as hospital episodes data (Hospital Episodes Statistics, 2010) – although the specific form of the data accessed came following a request from CRIS.
- *Claims data* – there were two sources of such information:
    - *Aggregate trust data* was also obtained from NHSLA website – this includes details on the number of new claims (broken into CNST and ELS components) and payments made for claims (again broken into CNST and ELS components) from 2003/2004 to 2008/2009.
    - *Individual claims data* including new claim and claim payments data was obtained from the CRIS at the University of Nottingham; this consisted of all NHSLA claims (open and

closed) up to the end of 2008; this data can be analysed to generate data similar to the aggregate trust data available from the NHSLA website, and this data will also contain additional variables which are not available from this NHSLA website.

- *Additional trust details* such as numbers of trust per annum, type of trust, whether or not the trust was dissolved / amalgamated during the period of this research – this was generated from a desk research of publicly available information.

A brief introduction to each of these types of information will be provided in subsequent sections of this chapter; however, the rationale for concentrating on acute trusts to the exclusion of other types of NHS organisation will initially be explained.

6.2.1 Concentration on Acute Trusts

While data was available on a variety of types of NHS organisation such as acute trusts, mental health trusts, ambulance trusts, care trusts and primary care trusts (PCTs), it was decided to focus this study on acute trusts for the following reasons:

- Larger sample sizes: It was clear from the reviewed literature (e.g. Table 2.6 in Chapter Two) that there are far greater numbers of acute NHS trusts over the period of this study than for other types of NHS organisation. The low numbers of other types of NHS organisation mitigated against their inclusion as it would make it difficult to generalise trends from such small sample sizes;
- The exploratory interview with the Camden and Islington trust (a mental health trust) clarified that all non-acute trusts typically had much lower levels of activity (i.e. much lower total beddays) compared to acute trusts – in effect, acute trusts were much larger organisations which served much larger proportions of the population;
- As non-acute trusts were typically much smaller in size, they were also likely to have lower numbers of claims (and claim values) compared to other types of NHS organisation – this point was made by the trust manager in the Camden and Islington Mental Health Trust during her exploratory interview. This interview also suggested that the financial incentives offered by the

NHSLA for the achievement of risk management level increases will be more valuable to acute trusts than to non-acute trusts as they typically have much higher CNST contributions. In short, acute NHS trusts represented the only NHS organisational type for which sufficient variation existed in claims variables over the period of the study.

For these reasons, this study will concentrate on acute trusts, and subsequent sections of this chapter will concentrate on such trusts to the exclusion of other NHS organisational types.

6.3 Risk Management Data

Chapter two of this research outlined that risk management levels were introduced in 2000 and that trusts had made considerable progress in progressing through the various levels in the period 2000-2005. The following table summarises the acute trust risk management level information which was available from the NHSLA website:

Table 6.1 Distribution of NHS Acute Trust Risk Management Levels, 2002-2010

Year	Risk Management Level				Total Number of Acute Trusts Per Year
	0	1	2	3	
2002/2003	21 (12%)	119 (67%)	34 (19%)	3 (2%)	177 (100%)
2003/2004	8 (4%)	118 (68%)	43 (25%)	5 (3%)	174 (100%)
2004/2005		114 (65%)	50 (29%)	10 (6%)	174 (100%)
2005/2006		91 (53%)	70 (41%)	10 (6%)	171 (100%)
2006/2007		86 (51%)	72 (43%)	11 (6%)	169 (100%)
2007/2008	2 (1%)	80 (47%)	75 (45%)	12 (7%)	169 (100%)
2008/2009		75 (45%)	81 (48%)	11 (7%)	167 (100%)
2009/2010	1 (1%)	72 (45%)	76 (48%)	10 (6%)	159 (100%)

This table confirms that the proportion of trusts moving from risk management level one to level two has grown steadily over this period; however, the percentage of trusts that have progressed through to level three has remained at under 10% of all acute trusts throughout this period. The last column shows the

total number of acute trusts with risk management levels for each of these years and trust consolidations have seen this fall to 159 trusts by 2009.

While the above table captures the acute CNST and NHSLA risk management levels, additional information such as the maternity standard for trusts with an obstetric division and the breakdown of the overall risk management level into component standards were also available for inclusion (A full list of all of the possible risk management level variables is shown in *Appendix One*).

Note that subsequent analysis of risk management levels in future sections/chapters will ignore the 32 risk management level 0 records – this was shown in chapter two to be just a transitional risk management level which trusts operate at for a year before progressing to level one. Furthermore, the above table shows that the vast majority of the excluded 32 records relate to the year 2002/2003 when risk management levels were new to all acute trusts.

While Table 6.1 indicates the overall distribution of risk management levels over the period 2002-2010, it is not clear from this table as to how many trusts have experienced a change in their risk management level over this period – such information is significant as a major part of this study will examine the reaction of other variables (such as new claim numbers) to changes in risk management levels. For this reason, data on changes in risk management levels over this period was gathered as follows:

Table 6.2 Acute Trust Risk Management Level Changes by Year, 2003-2010

Year	Number of Risk Management Level Increases	Number of Risk Management Level Decreases
2003/2004	20	5
2004/2005	19	3
2005/2006	31	7
2006/2007	5	0
2007/2008	12	8
2008/2009	11	4
2009/2010	6	7
Total	104	34

This data shows that a total of 138 risk management level changes occurred over this period (104 increases and 34 decreases), and a further examination revealed 80 trusts did not experience any change in their risk management level over the period of this study. Given that there are approximately 170 acute trusts per year (Table 6.1), this means that almost 50% of acute trusts in this study have not seen a change in their risk management level over a seven-year period. Of the risk management level increases that have occurred, the majority have taken place in the earlier years of this study (2003-2006) while the risk management level decreases are more evenly spread throughout this period. While it is surprising to see 34 risk management level decreases over this period, it was shown in Table 2.8 in Chapter Two that trusts who do not achieve a score of at least 40 out of 50 criteria at an NHSLA risk management assessment are liable to drop down to a lower risk management level.

6.4 Financial Data

A range of financial variables which were considered relevant to a trust's overall financial health were obtained from the Laing & Buisson database (A full list of the financial variables on this database is given in *Appendix Eight*). In particular, five variables were chosen for analysis: two from the income statement, one from the cash flow statement, and two from the balance sheet as follows:

Income Statement Variables

- *Operating Surplus* – this is a trust's total income less its total expenditure, and is equivalent to the net profit or net margin in an organisation.
- *Retained Surplus for the Year* – this is the operating surplus adjusted for financial and public dividend capital (PDC) values (note that the PDC adjustment is significant here as it typically involves 3.5% of net assets being charged to the Department of Health as a notional cost of servicing debt). As the PDC adjustment is quite crude and unrelated to a trust's profitability, operating surplus is regarded as a superior measure of a trust's financial management in a given year.

Cash Flow Statement Variables

- *Increase / Decrease in Cash* – this is the ultimate change in the cash flow of a trust in a given year and can be viewed as a true measure of the purchasing power of a trust as opposed to income statement variables which can be distorted by non-cash items such as depreciation and profit/losses on the sale of assets.

Balance Sheet Variables

- *Bank and Cash Balance* – this represents the stock of cash that has been accumulated over a trust's entire existence, and is arguably a better predictor of a trust's ability to make financial investments than the change in cash flow for any one period.
- *Net Assets* – this represents a trust's total assets less its current liabilities and while it does not indicate financial health, it gives an indication of the size of a trust which needs to be considered when evaluating financial performance for any particular period.

A time series analysis of these financial measures is shown below:

Table 6.3 Trends in Key Financial Variables of Acute Trusts, 1997-2008

Year	Average Operating Surplus (£000)	Average Increase / Decrease in Cash (£000)	Average Retained Surplus (£000)	Average Bank / Cash Balance (£000)	Average Total Net Assets (£000)
1997/1998	3,506	- 59	- 347	519	40,656
1998/1999	3,981	- 236	- 64	326	56,290
1999/2000	3,961	- 74	- 488	311	80,593
2000/2001	4,828	20	245	428	84,193
2001/2002	4,758	35	- 143	658	93,923
2002/2003	5,265	33	- 512	623	113,013
2003/2004	2,967	43	- 802	676	128,263
2004/2005	1,771	77	- 2,014	547	134,460
2005/2006	319	40	-4,254	607	151,369
2006/2007	3,936	2,159	- 893	4,754	163,303
2007/2008	8,198	7,567	3,945	12,837	179,414
Average Value Over 1997-2008	*3,954*	*873*	*-484*	*2,026*	*111,407*

Firstly, this table does show that the average operating surplus per acute trust is approximately £4,000,000 over the period 1997-2008, and while values have remained close to this overall average over

the majority of these years, there has been a noticeable large increase in this variable in the 2007/2008 period. Similarly, while the values of three other variables (increase/decrease in cash, retained surplus, and bank/cash balances) have been close to zero and frequently negative in the years 1997-2006, these variables all improved strongly in the period 2006-2008. A contributing factor to these sharp increases has been the advent of foundation trusts (FTs) since 2004; this led to an examination of the impact of foundation trust status on these variables in the 2006-2008 period (these were years where the number of foundation trusts grew rapidly as shown in Table 2.10) as shown below:

Table 6.4 Impact of Foundation Trust Status on Financial Performance, 2006-2008

	2006-2007			2007-2008		
Financial Variable	**Foundation Trusts (n= 47)**	**Non-Foundation Trusts (n=125)**	**P-Value for Difference between means**	**Foundation Trusts (n= 63)**	**Non-Foundation Trusts (n=106**	**P-Value for Difference between means**
Average Operating Surplus (£000)	5,956	3,129	0.0093 **	9,024	7,690	0.3203
Average Increase / Decrease in Cash (£000)	6,354	546	0.0005 **	10,763 **	5,600 **	0.0118 *
Average Retained Surplus (£000)	712	- 1,510	0.1492	5,821 *	2,790 *	0.0064 **
Average Bank / Cash Balance (£000)	13,510	1,392	0.0000 **	22,243 **	7,048 **	0.0000 **
Average Total Net Assets (£000)	165,440	161,454	0.8249	178,217	180,151	0.9428

* Significant difference between the foundation trust and non-foundation trust values at the 5% level
** Significant difference between the foundation trust and non-foundation trust values at the 1% level

This table highlights that there are significant financial differences between the trusts which obtained foundation trust status and those who did not achieve such status over the 2006-2008 period, particularly for the cash flow based variables ('increase/decrease in cash' and 'bank and cash balances'). On the other hand, foundation trust status does not have a significant impact on the values of net assets over this period – such values grew steadily throughout the period 1997-2008, and this growth reflects the consolidations within the acute trust sector over this period.

6.5 Specialty Data

Hospital episode data is publicly available online at Hospital Episodes Statistics (2010), and this source contains a range of aggregate statistics under the headings of inpatient, outpatient, accident & emergency and maternity information. The publicly available information did not provide information at trust level; hence, a request was made through CRIS at the University of Nottingham for access to such specialist statistics at trust level. This request was granted, and trust data was thus secured for the years 1995- 2008 inclusive.

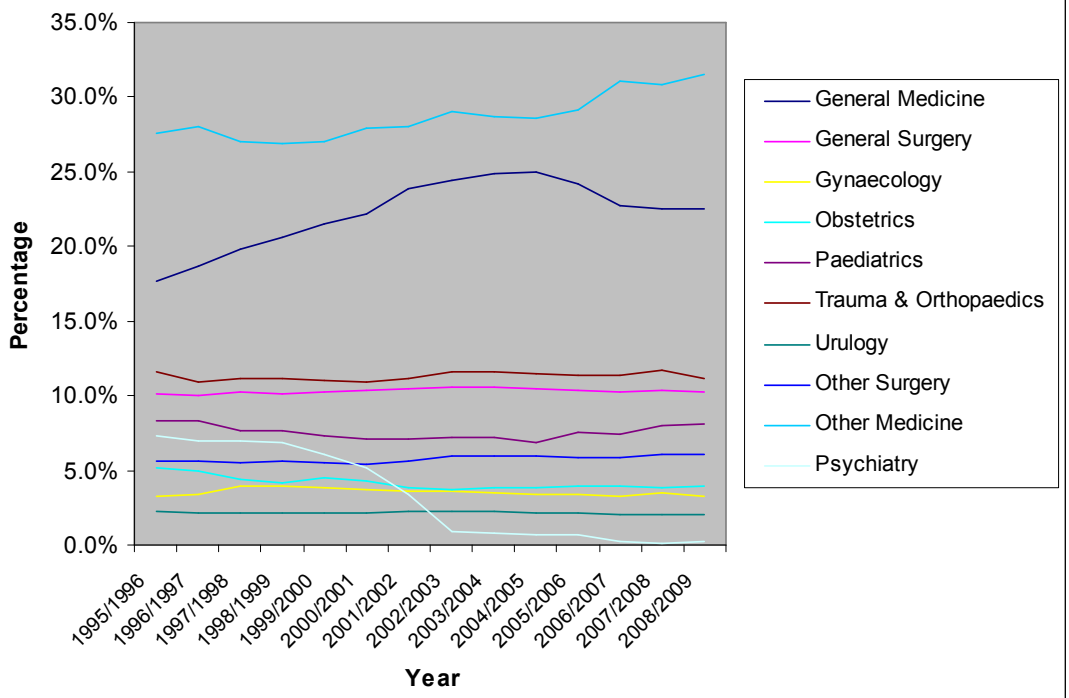
This data supplied through CRIS contained details of trust hospital specialties across over sixty different specialties for each year (note that the total number of activities is not the same for all of the available years), and as an example, the 62 specialties available for the year 1995 are provided in *Appendix Nine*. This list was initially reduced down into ten broader categories along the lines of Fenn at al (2012) as follows:

- General Medicine
- Gynaecology
- Paediatrics
- Urulogy
- Other Medicine
- General Surgery
- Obstetrics
- Trauma & Orthopaedics
- Other Surgery
- Psychiatry

For each of these specialties, a total of four activity measures (finished consultant episodes, number of discharges, length of stay and number of beddays) were available, and it was decided to employ the proportion of beddays allocated to each of these treatment specialities as the activity measure – this is consistent with the approach employed by Fenn et al (2012).

A graphical view of trends in these ten broad specialist categories over the period 1995-2008 is shown below:

Figure 6.1 Average Proportions of Various Specialist Categories By Year Across Acute NHS Trusts



This diagram shows that the specialist categories with the highest proportion of total beddays are 'other medicine' and 'general medicine' (these two categories comprise over 50% of total beddays for each of the years since 2000/2001). On the other hand, many other categories such as gynaecology, urology, obstetrics, and psychiatry account for less than 5% of total beddays for each of the available years of data. These findings led to the following amendments to the categories being developed for empirical analysis:

- The 'gynaecology' and 'obstetrics' categories were merged into a broader category called 'gynaecology and obstetrics' as these are closely linked medical surgery areas.
- The 'urology' category was merged into the 'Other Surgery' category as its low average percentages would greatly limit any conclusions that could be drawn from any regression coefficients obtained from this category.

- The category 'Psychiatry' was dropped from the panel data model as its average percentage of total beddays was 0.2% for the years 2005 to 2008 – this is related to the advent of other types of trusts such as mental health and care trusts which saw these services largely no longer being provided by acute trusts.

This led to a reduced total of seven specialist categories being used over the period of the study – proportion variables for each of these will be included as covariates in the subsequent empirical models.

6.6 Claims Management Data

The following options existed in relation to accessing claims data for NHS acute trusts:

(a) Aggregate Claims Data Available on the NHSLA Website

The first source of claims data was the publicly available data at NHSLA (2011a) - this has the following variables available on an annual basis from 2001:

- CNST Number of New Claims
- ELS Number of New Claims
- CNST Number of New Incidents
- ELS Number of New Incidents
- CNST Contribution paid per annum
- CNST Damages paid per annum
- CNST Defence Costs paid per annum
- CNST Claimant Costs paid per annum
- ELS Damages paid per annum
- ELS Defence Costs paid per annum
- ELS Claimant Costs paid per annum

The focus of this study will be on the number of new claims and the total value of closed claims (as shown in the methodology chapter); therefore, the new claims data (CNST Number of New Claims and ELS number of new claims) was firstly summarised as shown below:

Table 6.5 New Claims Data by Year of Notification from www.nhsla.com

Year	CNST New Claims	ELS New Claims	Total Number of New Claims	Number of Acute Trusts	Mean Number of New Claims Per Acute Trust
2003/2004	3,704	13	3,717	154	24.14
2004/2005	3,946	10	3,956	161	24.57
2005/2006	4,044	0	4,044	162	24.96
2006/2007	4,192	0	4,192	167	25.10
2007/2008	4,028	0	4,028	164	24.56
2008/2009	4,578	0	4,578	164	27.91

This table shows that CNST new claims comprise the large majority of total new claims in each year from 2003/2004 to 2008/2009 – however, it is surprising that there are ELS claims still being notified to the NHSLA up to 2004/2005 given that the CNST scheme replaced the ELS scheme in 1995. It is also clear from this table that both the total number and mean number of new claims per acute trust have risen gradually over this period.

Secondly, summary data from the NHSLA website on closed claim payments (i.e. the sum of CNST Damages, ELS Damages and all other costs of closed claims) is shown below:

Table 6.6 Closed Claim Payment Data Available on www.nhsla.com

Year	Total Value of CNST Payments	Total Value of ELS Payments	Overall Total Payments for Closed Claims
2003/2004	269,275,104	32,436,940	301,712,044
2004/2005	318,123,720	55,727,884	373,851,604
2005/2006	358,207,340	49,063,295	407,270,635
2006/2007	411,481,620	48,548,589	460,030,209
2007/2008	439,277,301	51,608,598	490,885,899
2008/2009	572,836,488	34,416,720	607,253,208

This table shows that total payments for closed claims more than doubled over the period 2003/2009, and while the vast majority of such payments related to the CNST scheme, significant payments were being made for ELS claims for each of the years in this table.

While this information in tables 6.5 and 6.6 is certainly useful, there are also limitations attached to it – in particular, the closed claim payments data is based on the year of closure but the total number of closed claims per year is not publicly available - this makes it impossible to know average closed claim value per closed claim from this data.

(b) Individual Claims Data Accessed Through CRIS at the University of Nottingham

As an alternative to the claims data at NHSLA (2011a), dialogue between CRIS at the University of Nottingham and the NHSLA led to access being secured to a large database of 85,096 medical incidents / claims within the NHS as at 31st December 2008. Some initial amendments were made to this file to account for changes in trust names and to remove claims relating to Health Authorities and Strategic Health Authorities which were not the focus of this research. These amendments are detailed in *Appendix Ten*, and the effect of these amendments was to reduce the number of claims available for analysis to 74,135 claims.

An initial description of this database of claims is shown below:

Table 6.7 Individual Claims Data Analysed by Scheme Type and Claim Status

Scheme Description	Closed	Open	Incident	Total
Existing Liabilities Scheme	7,207	325	32	7,564
Regulatory Health Authorities	564	14	1	579
Clinical Negligence Scheme for Trusts	54,650	10,200	1,142	65,992
Total	62,421	10,539	1,175	74,135

This table shows that 1,175 (1.6%) of the records relate to incidents which may or may not translate into medical claims, while remaining 72,960 records relate to medical claims; 62,421 or 86% of these are closed claims while the remainder are claims that are still open at the end of 2008. In addition, 7,564 of the records (10%) relate to the Existing Liabilities Scheme (ELS) which was in operation before 1995 while the majority of claims (65,992 or 89%) relate to the CNST scheme which was introduced in 1995.

For each claim in the database, the following date information was available:

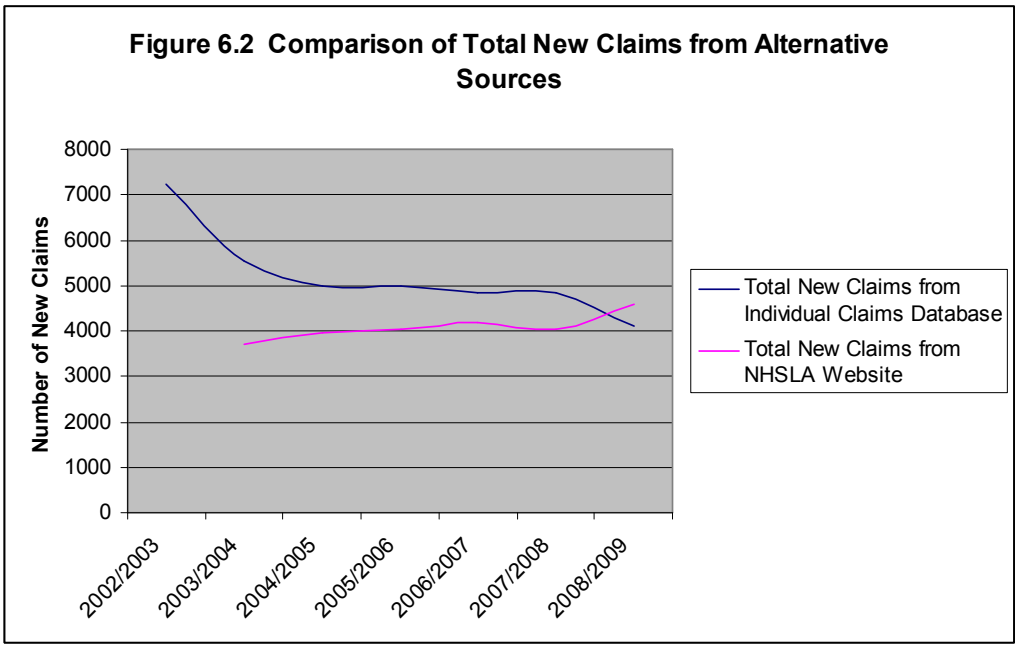
- Incident date – the date that the incident giving rise to the claim took place.
- Notification date – this was broken into two possible dates:
    - Trust notification date – the date that the case was reported to the trust in question.
    - NHSLA notification date - the date that the case was notified to the NHSLA.
- Status date – this is the date that the claims were last updated by the NHSLA, and it is assumed that this represents the closing date for closed cases.
- Close date – this is the date that closed claims were finalised.

The availability of such dates meant that aggregate claim information per trust can be generated by the individual claims data to generate the variables needed for empirical analysis. Firstly, summary data on the number of new claims by year of notification to the NHSLA was generated as follows:

Table 6.8 New Claims Data by Year of Notification from Individual NHSLA Claims Database

Year	CNST New Claims	ELS New Claims	Total Number of New Claims	Number of Acute Trusts	Mean Number of New Claims Per Acute Trust
2002/2003	6,829	390	7,219	162	44.56
2003/2004	5,432	121	5,553	169	32.86
2004/2005	4,924	67	4,991	177	28.20
2005/2006	4,951	54	5,005	175	28.60
2006/2007	4,814	28	4,842	173	27.99
2007/2008	4,795	31	4,826	168	28.73
2008/2009	4,058	36	4,094	169	24.22

This table shows that in the period since the call-in of claims in 2002, the mean number of new claims per trust declined up to 2004/2005 and remained relatively constant from then up to 2008/2009 (it fell sharply in 2008/2009 but this just represents nine months of claims data as the database was at 31/12/2008). It is also noticeable that the values in this table are quite different to those observed in Table 6.5 from the NHSLA website although the differences are narrowing over the period as shown below:



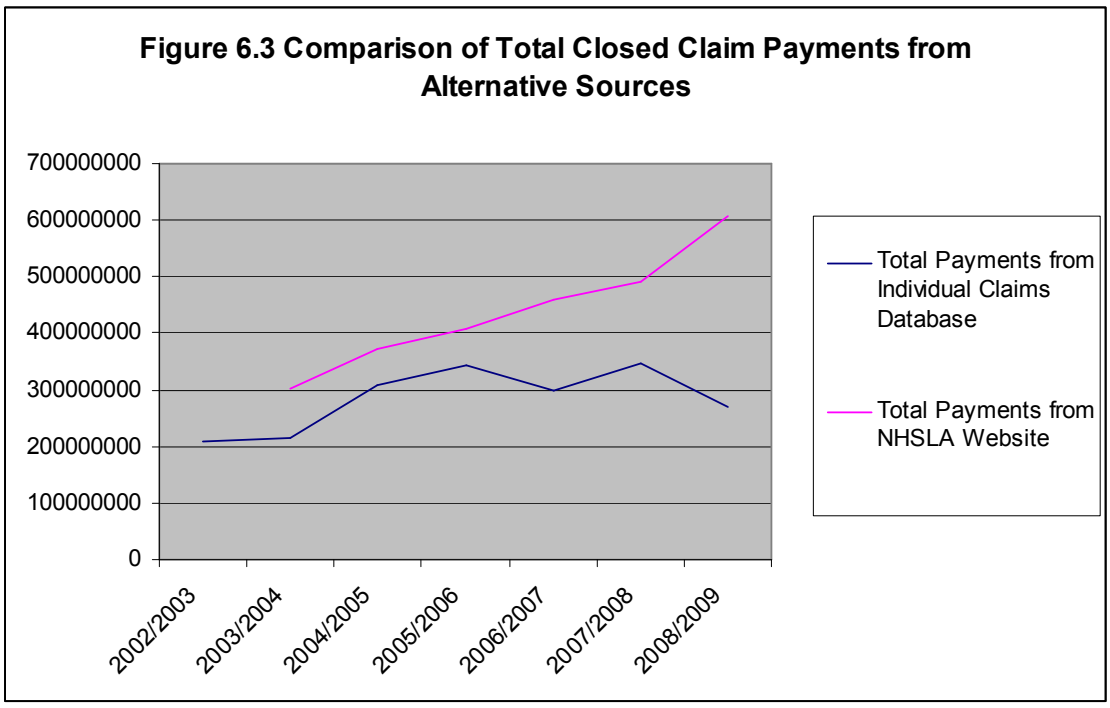
This diagram shows that data from the individual claims database starts in 2002/2003 and the sharp initial decline in this variable which can be linked to the new approach adopted by the NHSLA to resolving claims at this time (this included making apologies and offering explanations to help reduce the incidence of claims). The total number of new claims levels off for subsequent years and it is noticeable that the claims from the individual claims database consistently exceeds those available on the NHSLA website for all years up to 2007/2008; this situation is reversed in 2008/2009 but this is largely because only a nine-month period is available for the individual claims database. The differences between these variables is surprising to the extent that both sources are NHSLA sources and one would have expected a greater similarity in the total claims figures in each year from 2003/2004.

The individual claims database also enabled closed claim payment data to be generated as this is summarised below:

Table 6.9 Closed Claim Payments Data by Year of Closure from Individual Claims Database

Year of Closure	Total Value of CNST Payments	Total Value of ELS Payments	Overall Payments for Closed Claims	Number of Closed Claims	Average Payment per Closed Claim
2002/2003	128,747,621	76,978,431	209,893,356	5,405	38,833
2003/2004	185,170,596	29,747,059	215,038,135	7,060	30,459
2004/2005	270,042,528	38,009,405	309,795,135	7,535	41,114
2005/2006	303,377,375	35,014,613	343,591,325	6,150	55,869
2006/2007	271,794,591	21,562,980	298,326,563	6,048	49,326
2007/2008	333,381,906	12,488,613	345,463,776	5,912	58,434
2008/2009	270,225,930	5,267,103	270,278,658	4,040	66,901

This table shows that the total and average closed claim payments have risen generally from 2002/2003 to 2007/2008 (and the decline in 2008/2009 may be attributed to the nine-month period for which such data is available). It is also possible to observe the number of closed claims from this database and this enables average closed claim payments to be generated – the trends in such payments are largely similar to those of total closed claim payments. Finally, a comparison of the total payments from this database with the aggregate data on the NHSLA website (Table 6.6) is shown below:



While the large differences in values in the 2008/2009 period can be largely explained by the different time periods (the individual claims data is over a nine month period), it is clear that the total payments data from the NHSLA website consistently exceeds the data obtained from the individual database of claims. It is also clear that despite the involvement of the NHSLA in all claims since 2002, total closed claim payments have generally risen in most years since then.

6.6.1 Choice of NHSLA Website Data or Individual Claims Data

Having explored the two possible sources of claims management data, the question then arose as to which set would be used as a choice had to be made to made between them. Issues to consider in this regard were as follows:

- The individual claims database can generate the number of closed claims which is not available from the NHSLA aggregate information.
- The individual claims database produces data for 2002/2003 which is not available from the NHSLA website; however, this database only has nine months of data for the 2008/2009 financial year.

Overall, it was decided by the author in conjunction with his supervisors that the individual claims data was the superior source of claims data; hence, the analysis of claims data in the empirical chapters will be based on data obtained from this source.

6.7 Additional Trust Details

In addition to the above data, other trust details which were considered relevant to the empirical analysis were collected – this initially involved assessing the numbers of trusts which were dissolved over the period of this study as shown below:

Table 6.10 Acute Trust Dissolutions, 2001-2009

Year	Number at Start of Year	Number of Dissolutions During the Year	Number at End of Year
2001/2002	231	27	204
2002/2003	204	27	177
2003/2004	177	3	174
2004/2005	174	1	173
2005/2006	173	3	170
2006/2007	170	1	169
2007/2008	169	2	167
2008/2009	167	8	159

This table confirms that there were a large number of trust dissolutions from 2001 to 2009 (72 in total) Such dissolutions were mainly concentrated in the period 2001/2003 when 54 such dissolutions took place, and led to smaller numbers of acute trusts for the subsequent years (although many of the remaining trusts were larger in size as they had merged with the dissolved trusts). Further details of such trust consolidations are given in *Appendix Eleven* which shows details of each acute trust consolidation/dissolution.

Secondly, within the overall category of acute trusts, it was possible to identify specialist and teaching trusts and Table 6.3 shows the numbers of each of these type of trust across each of the years of this study:

Table 6.11 Composition of Acute Trusts, 2002-2009

Year	Number of Specialist Trusts	Number of Teaching Trusts	Other Types of Acute Trust	Total Number of Acute Trusts Per Year
2002/2003	23	28	126	177
2003/2004	23	28	123	174
2004/2005	23	28	123	174
2005/2006	22	27	124	173
2006/2007	22	26	122	170
2007/2008	22	24	123	169
2008/2009	22	24	121	167

This table shows that the numbers of specialist and teaching trusts have not varied as much as the total numbers of other acute trust types over this period – specialist trusts vary from 22 to 26 organisations

over this period while teaching trusts vary from 24 to 35 organisations. Overall, it is clear from this table that the inclusion of specialist and teaching trust variables in the subsequent empirical analysis will not suffer from extremely low value of either of these trust types in any of the years of this study.

6.8 Chapter Summary

This chapter has introduced the empirical data which will be used to assess test the research objectives ② and ③ in the subsequent empirical chapters. This data has been gathered from a mixture of publicly available and non-publicly available sources, and thus represents a unique rich set of data to analyse the relationships between important NHS variables. Particular points to note from this chapter include:

- The focus of this study will be on NHS acute trusts to the exclusion of other NHS organisational types for a number of reasons: greater data availability, higher levels of total activity (total beddays) and higher variability in claims management variables.
- Acute trusts have generally improved their risk management levels over the period 2002-2009, while the financial performance of these trusts improved greatly in the 2006-2008 period (this is significantly linked to the influence of foundation trust status).
- The most popular specialist categories are 'General Medicine' and 'Other Medicine') and the proportions of these categories are largely constant during the period 2000-2009.
- An individual database of claims obtained through the University of Nottingham allows for data such as the number of closed claims to be generated – this cannot be obtained from the data available on the NHSLA website, and the individual database of claims was consequently preferred as a source of claims data.

In summary, an extensive dataset is available for analysis in this study and this will allow for a detailed investigation of the research objectives in the following chapters.

CHAPTER SEVEN

EMPIRICAL ANALYSIS: NHSLA RISK MANAGEMENT LEVELS

7.1 Chapter Overview

This chapter presents the first set of empirical results, and assesses the level of discretion available to NHS trust managers to influence its risk management level at an NHSLA risk assessment. At the outset, the issues to be investigated are discussed and supporting information is provided from literature and the exploratory interviews. Bivariate and multivariate analysis is then undertaken, using the panel data as described in chapter six.

7.2 The Risk Management Level Determination Process

The focus of this chapter will be on the determination of risk management levels of NHS acute trusts – such levels are typically made every two years with final awards being made at either level one, two, or three based on a review of a range of risk management criteria. The involvement of a range of criteria (Table 2.8 in Chapter two revealed that a trust needs to get at least 40 marks out of 50 criteria to pass at an NHSLA risk level assessment) suggests that the level achieved is systematically related to the quality of risk management processes within the trust; however, it is also the case that trusts decide in advance of an NHSLA assessment as to whether they will seek to maintain their current level or seek an increase – this implies that the level achieved is at least partly dependent on the strategy employed by the trust in advance of an NHSLA assessment. This combination of factors which impact on a trust's risk management level suggests that there are two broad categories of factors impacting on trusts' observed risk management levels – factors related to the discretion of trust management in advance of a risk management level application, and factors related to a trust's actual level of risk as assessed by the NHSLA. These two categories are broken into a number of specific factors in Table 7.1 below:

Table 7.1 Factors Impacting on Observed NHSLA Risk Management Levels

Factors Influencing a Trust's Actual Risk Type	*Factors Influencing a Trust's Desired Risk Type*
• Trust Size	• Trust Financial Health
• Trust Type	• Foundation Trust
• Mix of Various Specialties	• Recent Involvement in Merger (Restructuring) Activity
• Prior Levels of Clinical Negligence Claims	• Time Effects (Learning Curve Effects of Managing Risk)
	• Disposition of Trust Clinical Staff to Risk Management Level Application
	• Lead Person in Charge of NHSLA Assessment
	• Attitude of Trust Management to Risk

It is proposed that all of the above factors influence a trust's risk management level, and while the majority of the fifty criteria that are assessed by the NHSLA relate to an objective assessment of risk management processes, a number of factors in the above table are viewed as being at the discretion of trust management when deciding on whether to apply for an increase/decrease or reduction in its risk management level. Each of these factors will be discussed further below and the subsequent empirical analysis will shed light on the significance of the relationships between these factors and risk management levels.

7.2.1 Trust Size

Decisions to pursue higher risk management levels can be viewed as innovative decisions by trust management to differentiate their levels of quality care from that of other trusts, and a review of innovation literature suggests that trust size will exert an influence on this decision. One can hypothesise the size effect to be in either of two directions; firstly, one can argue that larger firms will innovate more than smaller firms due to economies of scale - larger firms have more technically qualified staff and are in a better position to exploit research opportunities due to their established name and reputation. However, one could also counter-argue that diseconomies of scale exist and that smaller firms are more likely to be innovative than larger firms - this can be due to a lack of bureaucracy in small firms, and to their greater flexibility to adapt quickly to market changes (Beaver and Prince, 2002). Oba (2004)

extends this idea of smaller firms being more innovative by claiming that managers of larger firms are more risk averse and thus less likely to seek risk management level increases.

7.2.2 Trust Type

It was shown in Chapter Two that there are two particular types of acute trust (specialist and teaching trusts) which operate differently to other types of acute trust. Notwithstanding the effect of size (specialist trusts are typically smaller in size relative to other types of acute trust), it can be argued that the nature of specialist trusts (i.e. their focus on a narrow range of niche areas) lends itself to learning from experience more so than for trusts with a wider range of activities; consequently, such trusts can achieve higher risk management levels controlling for size effects (May and Price, 2009). Teaching trusts, on the other hand, are typically much larger in size than other types of acute trust, and one can argue that the educational nature of these trusts makes staff more likely to support quality initiatives such as risk management level applications (staff in such trusts are more likely to appreciate the reputational benefits of achieving risk management level increases); hence, such trusts can also achieve higher risk management levels controlling for size.

7.2.3 Specialty

Different specialties (e.g. surgery, medicine, obstetrics) attract higher levels of claims and claim values compared to other specialties (e.g. radiology, pathology) (NHSLA, 2010a); therefore, one could infer that the inherent risk is greater in the high claim specialties relative to the low claim specialties. However, it could also be the case that the high risk specialties (such as obstetrics and gynaecology) are the areas where trusts will prioritise its care (particularly as these areas are most likely to lead to high-value claims) and hence high proportions of these specialties could actually have a positive relationship with risk management levels. A positive relationship between the proportions of high risk specialties and risk management levels also lends supports to the existence of niche effects for specialist trusts as outlined in section 7.2.2.

7.2.4 Prior Levels of Clinical Negligence Claims

It is possible that trusts with high numbers of historical claims will be more motivated to seek risk management level increases as they may feel that such increases will help to reduce new claims in future years. The use of experience ratings by the NHSLA when deciding on trust's CNST contribution is consistent with such a proposition – it creates a financial incentive for trusts to reduce historical claims levels (the discount achieved on a CNST contribution can be as much as 10%), and trusts can use higher risk management levels as the instrument to drive this reduction in claims (Fenn et al., 2010). However, for trusts who do not believe that risk management levels can drive improvements in a trust's claims experience (the exploratory interviews revealed a number of trusts were sceptical when asked about the linkage between these variables), the motivation to seek a risk management level increase does not exist, and other avenues to improve patient safety procedures will have to be explored.

7.2.5 Financial Health

The first of the variables which is viewed as being at the discretion of trust management to impact on risk management level applications is financial health, and the direction of this relationship can be hypothesised in either a positive or a negative direction; on the positive front, a number of studies (Redmayne et al., 1995; Beaver and Prince, 2002; Holzl and Janger, 2011) found that the significant costs associated with quality management systems acts as a barrier to implementing such systems – this implies that a trust with limited financial resources will not be capable of making the additional investments which may be needed to secure a risk management level increase. In addition, many trust managers in the exploratory interviews stated that additional investments did help to secure a risk management level increase while the NHSLA Risk Manager stated in her interview that finance is a barrier to trusts obtaining risk management level increases. However, an opposing view of the direction of this relationship can be implied from Fombrum (1996) – this argument is that risk management level increases are of most advantage to trusts with poor current financial positions as these trusts are in most need of the significant financial savings from achieving higher levels. The results of some of the exploratory interviews, where it was found that such increases can be achieved without additional financial investment, support this argument to the extent that poor financial health is not an impediment

to achieving a risk management level increase. In short, both literature and exploratory interview findings suggest that financial health does impact on risk management levels, but the direction of this effect is subject to diverging views.

7.2.6 Governance Structure

It was shown in chapter two that a considerable number of NHS trusts converted to foundation trusts over the time period of this study (2002-2009), and in addition to improving the financial balances of such trusts, this governance reform led to changes such as making the board of directors responsible for all aspects of the trust's activities. Good hospital governance (in addition to sound finances) should be conducive to improved clinical risk management processes and outcomes (Fenn and Egan, 2011); in addition, one can argue that foundation trusts will be incentivised by the improved credibility and confidence of patients that results from being seen to have superior risk management processes (Schyve, 2000; Gaster and Squires, 2003). However, Fenn and Egan (2011) also cautioned that the relationship between governance and clinical risk is complex – they found little correlation between NHSLA risk management levels and Monitor's governance ratings in 2011.

7.2.7 Restructuring (Merger) Activity

The exploratory interviews revealed that an extensive organisation-wide effort is required to achieve a risk management level increase; this implies that trusts whose attention is diverted to other issues (e.g. trusts which were involved in merger activity over this period) are less likely to achieve such increases, and vice versa. Indeed the NHSLA policy document on risk management standards (NHSLA, 2009, p8) explicitly states that trusts which have undergone significant restructuring activity are allocated an assessment level which is determined by the '*level of the lowest component organisation*' and is valid for two years. This implies that trusts who engage in such activity are restricted in their ability to seek risk management level increases - this point was acknowledged in the NHSLA risk manager interview when Alison Bartholomew alluded to restructuring activity as a potential barrier to trusts making risk management level improvements. This point was reinforced by the interview with Owen Bennett of Nottingham University Hospitals NHS Trust when he stated that due to his trust's involvement in a

merger in 2006, it was not allowed to apply for a risk management level increase until four years later (i.e. 2010). In summary, while it is clear that involvement in such activity restricts a trust's ability to improve their risk management level, the precise nature of the impact can vary – trusts formed as a merger of two trusts which operated at the same risk management level prior to the merger may be permitted to apply for a risk management level increase much sooner than trusts involved in a merger with organisations operating at lower levels.

The literature review (Chapter Two) highlighted that a lot of NHS trust mergers occurred during the time period for this study (2002-2009), and an examination of the data available for this study (*Appendix Twelve*) confirmed that seventy nine acute trust mergers took place over this period - the majority of these occurred in the 2001/2003 period with limited merger activity in other years apart from 2006/2007. This high volume of mergers over the period confirms that merger activity may be a significant determinant of risk management levels over this period.

7.2.8 Time Effects

The time period of this study (2002-2009) is an extensive time interval where trusts would expect to improve their risk management levels due to increased familiarity with the processes behind risk management levels and with what NHSLA assessors want from trusts before granting risk management level increases – such a trend is consistent with the exploratory interviews with trust managers. These anticipated improvements over time imply that time variables will impact on risk management levels, although it must be acknowledged that the increased range of risks that healthcare organisations are exposed to could lead to reductions in trust risk management levels over time – this will occur if trusts fail to update their risk management approaches to the increased risks which they are exposed to.

7.2.9 Disposition of Trust Clinical Staff to Risk Management Level Application

The exploratory interview discussions with each of the trusts which successfully achieved a risk management level increase showed that the support of clinical staff was a necessary ingredient for such increases to be realised. This was particularly the case about the time of the NHSLA assessment when all

staff needed to be briefed on the nature of the application and be capable of addressing questions during the spot visits which the assessors performed as part of the assessment. Clearly, trusts where clinical staff are more disposed to trust quality initiatives such as a risk management level application are more likely to achieve risk management level increases and vice versa; however, such a situation may not occur in healthcare as Harris (1977) cites governance problems between the medical staff and the administrative staff – this is reinforced by Greco and Eisenberg (1993) who refer to difficulties in changing the behaviour of clinicians. In short, a firm's culture must be receptive to innovative practices and lack of clinical support will undermine efforts to achieve risk management level increases (Nair and Chandraharan, 2010; Humphreys et al. 2005). However, one could also counter-argue that the NHSLA assessment visit largely just verifies of what is largely evident in prior documentation and consequently the support of clinical staff or other staff at the assessment is largely irrelevant.

7.2.10 Lead Person in Charge of NHSLA Assessment

All of the trust managers who spoke of a successful risk management increase during the exploratory interviews highlighted the importance of appointing a lead person to take charge / coordinate the various aspects of an NHSLA risk management assessment. Such a role entailed a heavy workload in the run-up to the NHSLA assessment visit which typically meant that other work got delayed or postponed; however, this was considered necessary to help secure a risk management level increase. The positive effect of such a champion on risk management level application is consistent with literature (Tidd et al., 2005; Laforet and Tann, 2006); however, it is also true that the choice of person to lead such a project is even more critical – therefore, it could be that it is the personality of the lead person rather than the mere existence of such a person that could be the bigger driver of risk management level increases.

7.2.11 Attitude of Trust Management to Risk

At stated at the start of this chapter, trusts decide in advance of an NHSLA assessment as to whether they will seek to maintain their current level or seek a risk management level increase, and theories of how firms manage risk are hypothesised to affect this decision as follows:

- Risk averse trust managers will not seek risk management level increases as seeking an increase exposes the trust to the threat of a risk reduction and this prolongs the period before it will be eligible to reapply for an increase (Kaen, 2000; NHSLA, 2009). By contrast, Table 2.8 showed that trusts which seek to maintain their current risk management level will not have to wait as long to apply for an increase. This managerial aversion hypothesis is consistent with managers pursuing risk management strategies to keep control of resources and preserve their jobs – this mitigates against seeking a risk management level increase as succeeding with such a strategy requires an organisation wide effort which may reduce a trust manager's chances of control and being able to protect their position. In short, fear of the consequence if failing to achieve a planned increase (including reputational damage to a trust) will lead risk averse trust managers to avoid seeking risk management level increases in the first place – in the words of the NHSLA risk manager, some trusts find it '*preferable to do the minimum and maintain level one status rather than aim for level two*'.
- On the other hand, the shareholder wealth hypothesis argues that managers will engage in risk management activities if they enhance the firm's value – given that there are generous CNST discounts available for trusts who achieve risk management level increases, it is argued that seeking a risk management level increase will appeal to trust managers who will feel that such an increase will enhance the value of the firm. Firms which engage in such risk management projects are attracted by the financial and reputational benefits of obtaining risk management level increases and are generally comfortable taking risks as they factor an appropriate level of risk into such projects.

Overall, it can be seen that there are a wide range of factors which can impact on risk management levels within NHS trusts, and appropriate measures for these factors will be considered in the next section which initially proposes a framework to capture the effect of these factors on risk management levels.

7.3 Empirical Framework

The dependent variable for this empirical analysis is a trust's risk management level – this is an ordinal variable between one and three, and there are many options for analysing such variables (Menard, 2002); the preferred approach being to treat the variable as though it were measured on an ordinal scale even though this scale represents crude measurement of an underlying interval/ratio scale – in this case, the risk management level is a crude measure of the 50 criteria under which trusts are subjected to a risk management level assessment. Ordered logit and probit models can be used in such cases – this has a latent variable y* (score out of 50 criteria) whose value determines the observed ordinal variable y. The latent variable y* has various threshold points and the value of the observed variable y depends on whether one has crossed particular thresholds. For example, when there are three thresholds:

$$y_i = 1 \text{ if } y^*_i \leq a$$

$$y_i = 2 \text{ if } a \leq y^*_i \leq b$$

$$y_i = 3 \text{ if } b \leq y^*_i \leq c$$

In the population, the continuous latent y* is equal to:

$$y^*_i = \sum_{K=1}^{K} \beta_k X_{ki} + \varepsilon_i \qquad \text{(i)}$$

where the K β's and the thresholds a-c are parameters to be estimated. Consideration will shortly be given to the preferred estimator for such a model; however, the issue of measurement of the independent variables (X_{ki}) will firstly be addressed.

7.3.1 Measurement of Independent Variables

The decisions made in relation to measurement of the factors outlined in Table 7.1 (including the use of appropriate proxy measures if available) were as follows:

- **Trust Size**

Possible proxies for trust size from the set of data available included a trust's total net assets and a trust's total number of beddays; Table 7.2 below shows how these variables relate to risk management levels:

Table 7.2 Distribution of Risk Management Levels by Proxies for Trust Size (2002-2009)

	Risk Management Level		
	1	**2**	**3**
Mean Number of Total Beddays	230,374 (672)	227,934 (418)	167,168 (59)
Mean Value of Total Net Assets	141,059 (587)	159,001 (328)	106,166 (44)

Note that the number of trust records is shown in parentheses above.

This table shows that an inverse relationship exists between the various proxies for trust size and risk management levels particularly when one moves to level three, while it is also clear that there are more records available for the 'total beddays' proxy compared to the 'total net assets' proxy. Consideration of the additional records available, and of the fact that 'total beddays' captures the range of activities performed by a trust in a given year as opposed to 'total net assets' which reflects the book value of trust assets at the end of a financial year, led to 'total beddays' being selected as the proxy for total size for this model.

- **Trust Type**

To capture the effect of specialty and teaching trust types in the empirical model, binary variables was created for both of these trust types; such types of trust were easily identifiable from publicly available data. Note that specialist trusts are defined as regional or national centres for specialised care, while teaching trusts are typically are attached to universities and used to help train health professionals (NHS, 2012). A binary variable was also added for the London region based on a belief that the additional costs of operating in London may cause trusts operating in this region to think differently about risk management levels.

- **Specialty Mix**

It was shown in chapter six of this study that the list of trust activities per year had been reduced to proportions of seven broad categories – each of these proportion variables will now be included as covariates. As it is standard practice to omit one of these variables which is viewed as a benchmark against which all other specialties will be compared, a decision was made to assign 'General Medicine' as this reference category.

- **Prior Levels of Clinical Negligence Claims**

While a measure of the number of clinical negligence claims (the sum of CNST and ELS new claims per trust per year) was available for this study, such a variable was refined for this model as larger sized trusts will inevitably have higher numbers of new claims – given that the hypotheses for this factor relate to a trust's ratio of claims to size rather than its actual number of claims, a claims ratio variable (number of claims divided by total beddays) will be used as the proxy for the prior levels of clinical negligence claims in this model.

- **Financial Health**

Financial data was available for four potential proxies for financial health (operating surplus, retained surplus for the year, increase/decrease in cash, and bank and cash balances). As one would expect larger trusts to have larger financial balances (i.e. each of these proxies represents financial health multiplied by size), each of these variables was initially normalised (by dividing them by the relevant total net assets for that period). To assist in the identification of an appropriate proxy, an analysis of the resulting ratio variables against risk management levels was then conducted as shown below:

Table 7.3 Distribution of Means of Key Financial Ratio Variables by Risk Management Level, 2002-2009

	Risk Management Level		
	1	**2**	**3**
Operating Surplus Ratio	2.25% (n=578)	2.90% (n=325)	4.07% (n=41)
Increase/Decrease in Cash Ratio	0.71% (n=578)	1.22% (n=325)	3.61% (n=41)
Retained Surplus Ratio	-1.05% (n=578)	-0.20% (n=325)	0.95% (n=41)
Bank and Cash Balance Ratio	1.70% (n=578)	2.63% (n=325)	6.92% (n=41)

It is noticeable in this table that each of the ratio variables increase as one moves from risk management level one to risk level three, and that the sample size available for all four proxies are equal. In terms of choosing between these proxies, this choice was ultimately guided by the opinions of the exploratory interviews – during these conversations, it was felt by a number of trusts that the 'bank and cash balances' variable is more important to a decision to pursue a risk management level improvement; the justification was that this variable represents the stock of cash available to a trust for financial investments, and was therefore a better indicator of ability to make financial investments than the alternative financial variables. Hence, this variable will be the chosen proxy for financial health in the subsequent empirical analysis.

To test whether financial health enables investment in risk management activities, note that the value of financial health at the start of an accounting year is required – and given that current financial health values represent this variable at the end of an accounting year, the value of this variable lagged by one period will be included in the subsequent regression models.

- **Governance Structure**

To test the effect of foundation trust status on risk management levels, a FT dummy variable was created which was set equal to 1 for trusts in the year of acquiring FT status (and for all subsequent years after becoming a foundation trust) but was set equal to zero in the years prior to becoming an FT. For trusts which did not become FTs over the period, this variable will thus be zero for all years, and such an approach will capture the impact of acquiring FT status both the year of occurrence and in each subsequent year of FT status.

- **Merger Activity**

To test for the effect of merger activity on risk management levels, a merger activity dummy variable was created which was set equal to 0 for all trusts who had not experienced a merger over the period; while for trusts who experienced a merger over this period, this variable was set equal to 1 for trusts in the year of the merger and for all subsequent years but was set equal to zero in the years prior to the

merger. In this way, the impact of the merger in both the year that it occurred and in the subsequent years will be captured.

- **Time Effects**

To capture time effects, dummy variables were created for each of the years of this study (2002 to 2009) and having verified that the number of records is sufficiently large for all years to avoid a small sample issue when comparing different years, the decision was made to make 2002 the reference category against which all other years would be compared.

- **Disposition of Trust Clinical Staff to Risk Management Level Application**

While one can hypothesise that risk management levels will be linked to this factor, the difficulty for this study lies in the unavailability of a suitable proxy to capture the disposition of trust clinical staff to risk management level applications.

- **Lead Person in Charge of NHSLA Assessment**

While clear arguments can also be made as to the importance of such a champion to drive risk management level applications, no suitable measure or proxy measure existed to capture this factor.

- **Attitude of Trust Management to Risk**

While the attitude of trust management to risk can directly affect the strategy employed by trusts at the time of risk management level applications, no suitable measure or proxy of this factor was available for this study.

Overall, it can be seen from the above details that suitable measures were located for seven of the ten factors which are hypothesised in Table 7.1 to impact on risk management levels. All other variables which impact on risk management levels (including disposition of trust clinical staff to risk management level application and lead person in charge of NHSLA assessment) will consequently be part of the error term for this regression model.

7.3.2 Choice of Estimator

With an ordinal dependent variable y (risk management level) whose value is driven by a continuous latent variable y* (score out of 50 criteria) as outlined at the start of section 7.3, the choice of estimator is typically made between ordered logit and ordered probit models – these estimate the $\sum_{K=1}^{K} \beta_k X_{ki}$ portion of equation (i) and assume either a logistic or normal distribution for the error term. Both methods use maximum likelihood and tend to give similar probabilities in most situations – thus making it difficult to justify a preferred model on theoretical grounds (Rodriguez, 2009). For this model, the choice of estimator was the ordered probit model because of its linkages to the normal distribution – such a model assumes that the errors are distributed standard normal as follows:

$$y = \sum_{k=1}^{K} \beta_k X_k + e, \qquad e|x \sim N(0,1) \tag{ii}$$

Note that there is no intercept term here and the thresholds (cut-off terms) are used to estimate the probability that y will take on a particular value. In this case:

$$\text{Prob}(y=1) = \frac{1}{1+\exp(\sum_{k=1}^{K} \beta_k X_k - a)} \tag{iii}$$

$$\text{Prob}(y=2) = = \frac{1}{1+\exp(\sum_{k=1}^{K} \beta_k X_k - b)} - \frac{1}{1+\exp(\sum_{k=1}^{K} \beta_k X_k - a)} \tag{iv}$$

$$\text{Prob}(y=3) = = \frac{1}{1+\exp(\sum_{k=1}^{K} \beta_k X_k - c)} - \frac{1}{1+\exp(\sum_{k=1}^{K} \beta_k X_k - b)} \tag{v}$$

Ordered probit estimation will give the thresholds (a-c) and the parameters β - it can thus be used to estimate the probability that the unobserved variable y* falls within the various threshold limits.

7.3.3 Estimating Equation

Ordered probit estimation will estimate the $\sum_{k=1}^{K} \beta_k X_k$ portion of equation (i) and an expanded version of this shown below:

$$y^*_{it} = \sum_{k=1}^{K} \beta_k X_k + \varepsilon_{it} = \beta_1 \ln(Beddays_{it}) + \beta_2 Type_{it} + \beta_3 (London_{it}) + \beta_4 \rho_{it} + \beta_5 (FinancialRatio_{it-1}) + \beta_6 Foundation_{it} + \beta_7 (NewClaimsRatio_{it-1}) + \beta_8 Merger_{it} + \beta_9 Time_{it} + \varepsilon_{it} \quad \text{(vi)}$$

where

y^*_{it} is the unmeasured latent variable (score out of 50 criteria) for trust *i* in year *t*;

$Beddays_{it}$ is the total beddays of NHS trust *i* in year *t*;

$Type_{it}$ is a vector of trust type and consists of two binary variables which are set equal to 1 or 0 depending on whether the NHS trust *i* is a specialist or a teaching trust in period *t* respectively;

$London_{it}$ is a binary variable set equal to 1 if the NHS trust *i* resides in the London region and 0 otherwise;

ρ_{it} is a vector of measures of NHS trust *i*'s casemix variables, and consists of seven proportion variables (all between 0 and 1) in year *t* – these represent the proportions of general medicine, general surgery, gynaecology and obstetrics, paediatrics, trauma and orthapaedics, other surgery and other medicine respectively (Note that the proportion of general medicine is the chosen reference category);

$FinancialRatio_{it-1}$ is the ratio of the NHS trust *i*'s 'bank and cash balance' to total assets in year *t-1* (i.e. the ratio at the start of a financial year);

$Foundation_{it}$ is a binary variable which is set equal to 1 if trust *i* became a foundation trust in year *t* (and for all subsequent years) and set equal to 0 otherwise;

$NewClaimsRatio_{it-1}$ is the ratio of the number of new claims to total beddays for NHS trust *i* in year *t-1* i.e the new claims ratio lagged by one period;

$Merger_{it}$ is a binary variable which is set equal to 1 if trust *i* was involved in merger activity in year *t* and all subsequent years but was set equal to zero in the years prior to the merger;

$Time_{it}$ is a vector for time effects and consists of eight binary variables for each of the years 2002 to 2009 (Note that 2002 was chosen as the reference year);

ε_{it} is the error term.

When all covariates are included in equation (vi), a total of twenty variables will be considered – this include a size variable, two ratio variables, and a number of dummy variables. Attention was given to functional form in the above equation; hence it was decided to use the log of total beddays (as opposed to just total beddays) as the proxy for size to improve interpretability – coefficients can now be interpreted in terms of percentage change (Woolridge, 2009).

7.3.4 Panel Data Models

The availability of panel data allows for heterogeneity due to variation across trusts to be controlled for – to illustrate this, note that the error term (ε_{it}) can be divided into the unobserved trust effects, v_i, and the observation-specific errors, e_{it} i.e.:

$$\varepsilon = v_i + e_{it} \qquad \text{(vii)}$$

Examples of unobserved trust effects include the disposition of clinical staff to a risk management application and the presence of a lead person for NHSLA assessments, while observation specific errors include measurement error and stochastic shocks which are not viewed to be measurable – panel data methods can control for the unobserved trust effects but not for the observation specific effects. Within panel data models, two main approaches to capturing the individual trust effects are fixed and random effect models. Both of these models are typically more efficient than pooled models and an F-test / Breusch-Pagan test can be used to verify that these models out-perform a pooled model.

Fixed effect models are typically used where one wishes to control for omitted variables that differ between cases but are constant over time – such a model is appropriate if one assumes that the individual effects are correlated with the independent variables. However, a drawback of this model is that it is not effective if the variables of interest are constant for each individual. This is a particular problem for this data as it was shown in chapter six showed that the number of changes in risk management levels is relatively small (80 of the approximately 170 acute trusts each year did not change their risk management level over the period 2002-2009). This means that almost 50% of acute trusts in this study have not seen a change in their risk management level over a seven-year period, and implies that a fixed effects model (which will exclude such trusts) would not be appropriate.[2]

On the other hand, random effect models are typically used where one wishes to control for variables which may be constant over time but which differ between cases as well as control for variables which may be fixed between cases but vary over time; such a model assumes no correlation between the individual effects and the independent variables but is in principle more attractive as it retains observed characteristics that remain constant for each individual (Dougherty, 2006). However, Woolridge (2009) argues that one should suspect a positive correlation between independent variables and individual effects for most research problems, and thus this model produces biased estimates.

Given that random effect models do not exclude the relatively large numbers of trusts who have not changed their risk management level, it will be the preferred panel data model for the panel data output which is reported in the next section of this chapter.

7.4 Empirical Results

The regression output obtained from estimating equation (vi) using an ordered probit estimator on pooled and panel data for 2002-2009 is shown below:

[2] Additional problems with a fixed effects model include the lack of a ready-made formulation of such a model (Winkelmann and Winkelmann, 1997) and the fact that such an estimator is not well behaved (Greene, 2002).

Table 7.4 Ordered Probit Regression Output

Y* = Latent Risk Management Variable	**Pooled Model**	**Panel Data Model (Random Effects)**
	Coefficient (Standard Error)	*Coefficient (Standard Error)*
Log of Total Beddays	0.134 (0.091)	-0.278 (0.168)
Specialist	0.611 ** (0.232)	-0.164 (0.530)
Teaching	0.045 (0.126)	0.724 ** (0.272)
London	-0.033 (0.108)	-0.662 ** (0.206)
Proportion of General Surgery	2.049 (1.609)	-0.187 (3.792)
Proportion of Gynaecology and Obstetrics	1.493 * (0.691)	2.666 * (1.154)
Proportion of Paediatrics	0.009 (0.641)	2.121 (1.111)
Proportion of Trauma & Orthapaedics	0.151 (0.470)	1.759 * (0.825)
Proportion of Other Surgery	-0.082 (0.499)	1.566 (0.906)
Proportion of Other Medicine	0.433 (0.295)	1.780 ** (0.644)
Lagged Financial Health Ratio	0.013 (0.962)	-0.852 (1.473)
Foundation Trust	0.479 *** (0.108)	0.393 * (0.185)
Lagged New Claims Per Bedday	616.29 (345.80)	201.952 (476.695)
Merger	-0.526 *** (0.124)	0.035 (0.436)
Year 2003	0.296 (0.155)	0.493 * (0.205)
Year 2004	0.434 ** (0.156)	0.854 *** (0.211)
Year 2005	0.605 *** (0.161)	1.249 *** (0.227)
Year 2006	0.627 *** (0.162)	1.352 *** (0.231)
Year 2007	0.667 *** (0.164)	1.468 *** (0.239)
Year 2008	0.715 *** (0.169)	1.613 *** (0.253)
Model Statistics		
Number of Observations	1,090	1,090
LR chi2(20)	115.82 ***	159.36 ***
Cut1	2.976	-0.675
Cut2	4.536	2.380
Rho		0.82

Note: $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$

Note that 2009 was dropped from this model for collinearity reasons.

In terms of the relationship between the dependent variable and the covariates, it is evident that there are a number of significant coefficients across both models; in particular, the year dummy data suggests that the underlying risk management variable is significantly better in each of the years 2004-2008 compared to 2002-2003 – this is consistent with higher proportions of trusts progressing to risk management levels two and three over this period as shown in chapter six. In relation to the role of financial health on risk management levels, the lagged financial health ratio variable is found not to be significantly related in both pooled and panel data models; however, foundation trust status (which is associated with higher financial balances) is statistically associated with higher risk management levels [3]. It is also noticeable that just one specialty (the proportion of 'gynaecology and obstetrics') has a significantly different impact on the dependent variable than for the reference category (General Medicine).

The panel data model has some additional significant results which do not hold for a pooled model – these include teaching trust status (positive association) and the London region (negative association) while trust size and specialist trust variable were found to have insignificant negative associations with the dependent variable. A number of specialties now have a significantly different relationship with risk management levels compared to the reference category (General Medicine) while the lagged new claims ratio and the merger variable are not significantly related to the dependent variable.

The model statistics shown at the end of the table offer evidence on the significance of this model. The sample size is 1,090 observations for both models and the chi-square values of 115.82 and 159.36 with 20 degrees of freedom are highly significant as it means that the covariates as a whole have a significant effect on the dependent variable. The threshold parameters *a* and *b* (known as cut1 and cut2) can be used to compute the probability of levels one to three for known values of the covariates (further details of how this is done are provided in *Appendix Thirteen*). Finally, the output also includes a value for rho (proportion of total variance contributed by the panel level variance component) - this is high at 82%.

[3] Consideration was also given to the possibility of multicollinearity between the covariates – in particular, the possible collinearity between the financial ratio variable and the foundation trust variable. However, the correlation analysis between these covariates (0.46) is indicative of inconsequential collinearity.

While the ordered probit results presented in Table 7.4 represent the preferred approach to assessing the impact of a range of covariates on risk management levels, it should be noted at this stage that alternative approaches were considered during the analysis - particularly as ordered probit analysis assumes proportionality i.e. the coefficients stay the same between levels and only the intercept changes. One such approach which was considered as a robustness check was to collapse risk management levels two and three together and to focus on the impact of being at level two or three relative to level one. However, no new significant results were discovered during this analysis, and hence such output was not included in this chapter.

A broader discussion of the above empirical output in Table 7.4 will now be presented.

7.5 Discussion of Results

This chapter has presented the first of the empirical results and has examined the extent to which a range of covariates impact on risk management levels in acute NHS trusts. An ordered probit estimator was used to model this relationship and the effect of applying this estimator to pooled and panel data was presented in Table 7.4. The main conclusions to emerge from this output were as follows:

(a) Achieving foundation trust status is significantly linked with higher risk management levels

Both the pooled and panel data columns reveal significant positive coefficients for foundation trust status, which implies that trusts that become foundation trusts are significantly more likely to achieve higher risk management levels. This suggests that the governance structures which are put in place as part of acquiring FT status (public interest governors, staff governors, and the trust board) do facilitate improved risk management practices within trusts. The findings of the exploratory interviews also support such a relationship – Joanne Sims of the Royal Bournemouth and Christchurch trust outlined how the achievement of FT status gave the trust an impetus to apply for a risk management level increase, Alison Martin of the Camden and Islington trust felt that achieving FT status led the board to think it '*should be taking risk assessments seriously and seek to move to level two*', while Neil Gibson of the Northumbria trust felt that obtaining FT status gave the trust '*a good governance structure which*

helped when applying for risk management level increases'. Given that the acquisition of FT status and higher risk management levels are both demanding processes which require extensive organisation-wide efforts, it can be summarised that having achieved a positive outcome to the FT application, trusts are incentivised to go further and seek a risk management level increase to capitalise on the positive energy created within the trust. The positive linkage between FT status and risk management levels is also consistent with literature - the National Audit Office (2008) found that foundation trusts also rated more highly than NHS trusts on quality ratings.

(b) There have been significant improvements in trusts' risk management levels during the period 2002-2009

The positive and significant year dummy variables in Table 7.4 (and the higher coefficient for each successive year) confirm that risk management levels are significantly impacted by time ceteris parabis i.e. each year is significantly associated with higher risk management levels than for the reference year (2002). This is consistent with greater proportions of trusts moving to higher risk management levels over this period (as shown in Table 6.7 in Chapter Six) and implies that having become more familiar with the NHSLA risk assessment process, trusts are better placed to make risk management level improvements at successive NHSLA risk assessments (which take place typically every two years). Such improvements in risk management levels over time also imply that the NHSLA policy of offering generous discounts on CNST contributions in return for the attainment of higher risk management levels is yielding results – the evidence of the exploratory interviews suggested that such discounts acted as a big incentive for trusts to seek higher risk management levels.

(c) Trusts with higher proportions of high-risk activities are more likely to obtain risk management level increases

The significant positive coefficients for the proportion of 'gynaecology and obstetrics' on both pooled and panel data reflects that trusts with high proportions of this specialty are significantly more likely to achieve higher risk management levels (relative to the reference category - proportion of general medicine) ceteris parabis. Such a finding is consistent with the increased emphasis on risk management

in maternity care (Winn, 2007), and also implies that trusts are concentrating proportionately more of their risk management efforts in this high risk area – this is consistent with the higher proportions of level two and three for the maternity standards in Table 2.6 of Chapter Two relative to the general standards for other trust activities.

(d) Teaching trusts are significantly associated with higher risk management levels

When individual trust effects are controlled for via panel data, a significant positive coefficient is obtained for teaching trust status – this indicates that such trusts are more likely to achieve risk management level increases ceteris parabis. This finding is consistent with a view that staff in such trusts are more likely to embrace quality initiatives (such as a risk management level application) as they will more readily appreciate the reputational benefits of achieving higher risk management levels.

(e) Acute trusts in the London region are less likely to obtain risk management level increases

The significant negative coefficient for the London region using panel data in Table 7.4 indicates that trusts in this region are associated with lower risk management levels, ceteris parabis. This does not imply that more trusts are at level one in the London region (a further examination revealed that 46% of London trusts have achieved level two or more compared to just 41% for the entire population of trusts), but it does indicate that trusts in this area are less likely to seek risk management increases – this could be due to the fact that the proportionately higher costs of seeking an increase in the London area relative to the rest of the UK may it less attractive for trusts in this region to seek such increases.

(f) 'Involvement in Merger Activity', 'Prior Levels of Clinical Negligence Claims', and 'Lagged Values of Financial Health Ratios' are insignificantly related with risk management levels

While plausible hypotheses were forwarded as to why merger activity, prior levels of clinical negligence claims, and lagged financial health ratios may exert an influence on risk management levels, such factors were not found to be significant when other covariates were controlled for in the regression output.

In summary, given that the majority of factors found to influence risk management levels are driven by the process of audit over time (the proportions of 'gynaecology and obstetrics', the London region, and teaching trust status), one can conclude that the outcome of risk management level assessments is largely outside the short-term control of trust management. There are factors such as foundation trust status and learning effects on time which were considered to be at the discretion of trust management which have been found to exert a significant influence on risk management levels – however, such discretion is over the medium-term horizon (for example, trusts have to go through a three-stage process with Monitor before being granted FT status). Hence, while a trust does retain the discretion as to whether to apply for a risk management increase or not at a risk managament level assessment (and the trust's attitude to risk is likely to affect this decision), the actual outcome to such an assessment is largely beyond the short-term control of trust management – adjustments can be made but these are largely only practical over a medium term horizon.

7.6 Chapter Summary

This chapter has presented the first of the empirical results and has examined the extent to which a range of covariates impact on risk management levels. Initially, a range of factors were drawn from literature and the exploratory interviews, and an ordered probit model was chosen to model the relationship between the measurable factors and risk management levels. A number of model specifications were then presented; this ranged from an analysis of pooled data to an analysis of panel data, and revealed that the outcome to risk management level assessments is largely determined by factors which are not within the short-term control of trust management.

Note that the findings to this chapter are also important to the extent that they will inform the structural model for the empirical analysis of new clinical negligence claims which is the next chapter of this study.

CHAPTER EIGHT

EMPIRICAL ANALYSIS: NEW CLAIMS

8.1 Chapter Overview

This chapter presents the empirical analysis relating to the relationships between risk management processes and new clinical negligence numbers controlling for other relevant covariates. Initially, a discussion of the factors which impact on new clinical negligence claims is undertaken – this leads to the empirical framework which describes the data generating process and proposed estimators to be employed. The empirical findings are then presented – this will commence with an analysis of pooled data before more realistic assumptions are incorporated in subsequent model specifications. Conclusions are then drawn at the end of the chapter.

8.2 Determinants of Clinical Negligence Claims

The absence of sufficient care in medical treatment is a sufficient basis for a claim for clinical negligence; hence, such claims are a source of risk to NHS hospitals which can be minimised by good risk management procedures. Such claims are the focus of this chapter and a discussion of the factors which are believed to impact on the likelihood of such claims is now provided:

8.2.1 Risk Management Levels

As risk management levels were introduced as a classification scheme for risk management processes within NHS trusts, a natural experiment exists to see the extent to which such levels impact on clinical negligence claims, and the findings to this question are of clear policy interest to the NHSLA which indemnifies trusts from all clinical negligence claims since 2002. The viewpoints obtained from theory (e.g. Fenn et al, 2012) and from the majority of the trust manager interviews are consistent with a negative relationship between risk management levels and the number of new claims i.e. trusts which manage to improve their risk management levels will gain the benefit of lower numbers of new claims in

future years. However, it is also possible that new claims may not be impacted by risk management levels - such a viewpoint was supported by the NHSLA risk manager and a minority of NHS trust manager interviewees to the extent that they felt that the link between these variables was questionable.

8.2.2 Trust Size

A second factor which is likely to impact on clinical negligence claims in NHS trusts is trust size, and it is intuitive to suspect a positive relationship between these variables as larger sized trusts will have larger number of hospital procedures and are thus likely to attract more new claims than for smaller trusts. However, what is of particular interest here is the rate of increase in new claims relative to trust size; if one finds that new claims increase by proportionately less than the increase in trust size, it implies that larger trusts are superior at patient safety and vice versa. One can argue that larger trusts should be superior in this regard due to their greater likelihood of having control systems in place for managing risks, but it is also possible that larger sized trusts could be more unwieldy to manage and therefore generate proportionally more claims than for smaller sized trusts. It is also possible that new claims could be completely unrelated to trust size as literature suggests that claimants take lawsuits against healthcare providers for mainly economic and psychological reasons – this suggests that trust size may not be a relevant factor in the decision to pursue a clinical negligence claim.

8.2.3 Trust Type

As shown in the previous chapter, specialist and teaching trusts can be distinguished from other types of acute trust, and it can be hypothesised that these particular trust types will have different new claim experiences to that of other acute trusts. For specialist trusts, it can be argued that they will have lower than average claim numbers due to their concentration on particular areas which allows them to perform similar tasks on a repetitive basis and thus have a greater ability to learn from past errors/mistakes which led to new claims. Equally, teaching trusts, while they are typically larger in size and are engaged in more complex procedures than for other types of trusts, can be hypothesised to also have lower claim

rates as they will perform such complex tasks more frequently than in a standard trust; one could also argue that better clinical staff will prefer to work in such environments due to the increased variety and challenge associated with such tasks.

8.2.4 Specialty

The reviewed literature suggests that the mix of specialties offered by each trust impacts on trust claim levels; for example, Dingwall and Fenn (1994) found that five specialties (including obstetrics/gynaecology, orthapaedics, and general surgery) accounted for two thirds of total claims. Such a finding supports a view that trusts with high proportions of these activities will have higher numbers of new claims, and vice versa – this proposition is consistent with Charles et al. (1992) who found that surgical specialties are at a higher risk of medical malpractice claims.

8.2.5 Financial Health

Notwithstanding the impact of financial health ratios on risk management levels as discussed in the previous chapter, it is possible that financial health may directly impact on new claims; such a relationship could be hypothesised to be in either a positive or a negative direction - a positive relationship is consistent with more claims being filed against financially stronger trusts because they are perceived as having a larger pocket which can lead to higher claim awards [Bovbjerg and Raymond (2003) found that plaintiffs are encouraged to bring cases when there is a small chance of a large recovery] while a negative relationship is implied if there is good management at trust level (well managed trusts will have superior levels of financial health and low claims levels – the superior financial health may allow them to hire better medical staff that is less likely to be involved in negligent events which are more likely to lead to claims).

8.2.6 Governance Structure

The advent of foundation trusts at the start of this century saw a decentralisation of governance with far greater local ownership and involvement of patients rather than the Department of Health (National Audit Office, 2006). Trusts which succeeded in becoming foundation trusts adopted a code of best practice for governance, and it can be argued that the improved trust governance should lead to improved clinical risk management processes and outcomes (Fenn and Egan, 2011) i.e. reduced numbers of new claims. However, given that foundation trusts were found to have superior financial performance to that of non-foundation trusts (as shown in chapter six), it is also possible that foundation trusts may attract greater numbers of claims being filed for the chance of a large recovery (Bovbjerg and Raymond, 2003).

8.2.7 Quality of Care / Trust Culture

A review of relevant literature and consideration of the exploratory interviews suggests that a major driver of clinical negligence claims is the quality of patient treatment in NHS trusts - in particular, patients who feel that they have been a victim of negligence during medical treatment are more likely to take claims for compensation (White, 1994). Clearly, one would expect higher levels of care to lead to lower levels of claims ceteris parabis, as higher quality clinical staff will better understand the correct medical treatment to administer to a patient and will be more capable of administering the correct treatment without any mishaps. This 'quality of care' factor may also be reflected in a trust culture factor which can be more pro-patient in trusts where there is a higher quality of care administered to patients than in others.

8.2.8 Availability of Funding Arrangements

Given that clinical negligence claims entail considerable legal costs and that such costs may even exceed the final award for low-value claims (Gilmour, 2006), many patients would understandably be reluctant to take clinical negligence claims without the possibility of funding arrangements to cover legal costs. Two possibilities here include the presence of legal aid and conditional fee arrangements – it is argued that the availability of these arrangements (legal aid is subject to a means test) will impact on patient willingness to pursue claims. A related matter is that the particular types of solicitor firm in the vicinity

of a trust can affect the patient's willingness to take legal action – some firms are more eager to sue NHS organisations than others. This issue was raised by the NHSLA risk manager who referred to '*certain solicitor firms who target hospitals with advertisements such as 'have you been injured at this hospital?"*. Such firms may also offer fee arrangements which increase the likelihood being taken against trusts.

Overall, one can hypothesise that a wide range of factors will impact on the numbers of new claims taken against NHS trusts in any given year, and proposed measures for these factors will be considered in the next section.

8.3 Empirical Framework

With the number of new claims per trust in a given year (defined as the sum of CNST and ELS claims for the year) as the dependent variable for this empirical analysis, a number of possible estimators can be considered. Firstly, as the number of new claims can be viewed as a count variable, the use of various count data estimators will be examined; however, given that such estimators make distributional assumptions which one may not want to impose, a more flexible log-linear estimator will be considered as an alternative.

8.3.1 Count Data Estimators

Count data are distributed as non-negative integers, are intrinsically heteroskedastic, right skewed, and have a variance that increases with the mean (Hilbe, 2010). The literature abounds with alternative models for such data (Greene, 2008); however, the Poisson and negative binomial model overwhelmingly dominate the received applications (Hilbe, 2007; Cameron and Trivedi, 2001):

Poisson Model

This is the starting point for count data analysis, and implies that the process by which clinical negligence claims occur over time can be characterised as a poisson process with a constant rate of occurrence, λ. The actual number of claims (y) for a given trust in such a model is given by:

$$P(Y = y) = \frac{\exp^{-\lambda}(\lambda)^{y}}{y!} \qquad \text{where y = 0, 1, 2, ……}$$

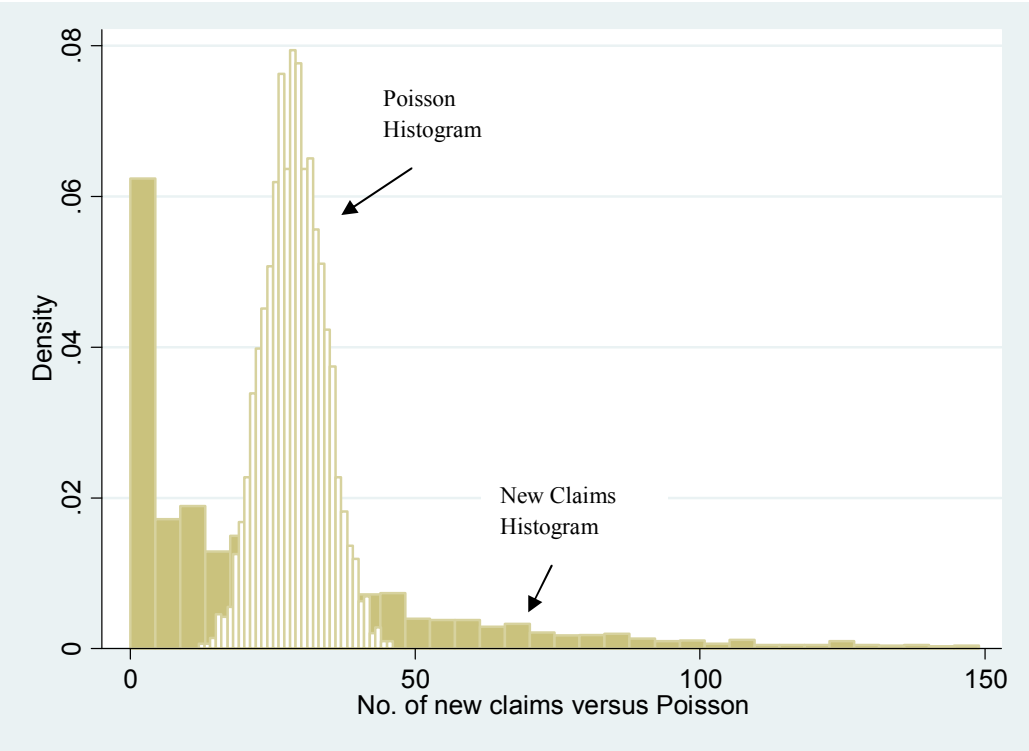
where the parameter λ can be viewed as the product of the number of treatment episodes in a given year (N) by the mean probability of a treatment leading to a claim (π). The Poisson regression model has been developed in a number of references (Winkelmann, 2003; Greene, 2008) – this typically includes the log-linear conditional mean function:

$$E[y_i \mid x_i] = \lambda_i \text{ and its equidispersion} \qquad Var[y_i \mid x_i] = \lambda_i$$

$$\text{where:} \quad E[y_i] = \lambda_i = \exp(\beta x_i) \quad \text{i.e.} \quad \ln(\lambda_i) = \beta' X_i$$

However, such a poisson distribution is generally viewed as being inadequate for count data processes which typically have data concentrated on a few small discrete values and intrinsically heteroscedastic with variance increasing with the mean (Jewell and Hubbard, 2006; Cameron and Trivedi, 2001). This point is evident when a poisson distribution with the same mean as the actual data is imposed on a histogram of new clinical negligence claims as shown below:

Figure 8.1 Histogram of New Claims with Poisson Distribution Superimposed



This diagram shows that the poisson distribution fails to capture the heteroscedasticity of the new claims distribution, and thus an alternative distribution is required to capture the overdispersion in the dependent variable.

Negative Binomial Model

Negative binomial regression can be used for over-dispersed count data i.e. when the conditional variance exceeds the conditional mean. It can be considered as a generalization of poisson regression since it has the same mean structure and an extra parameter to model the over-dispersion. This is shown below:

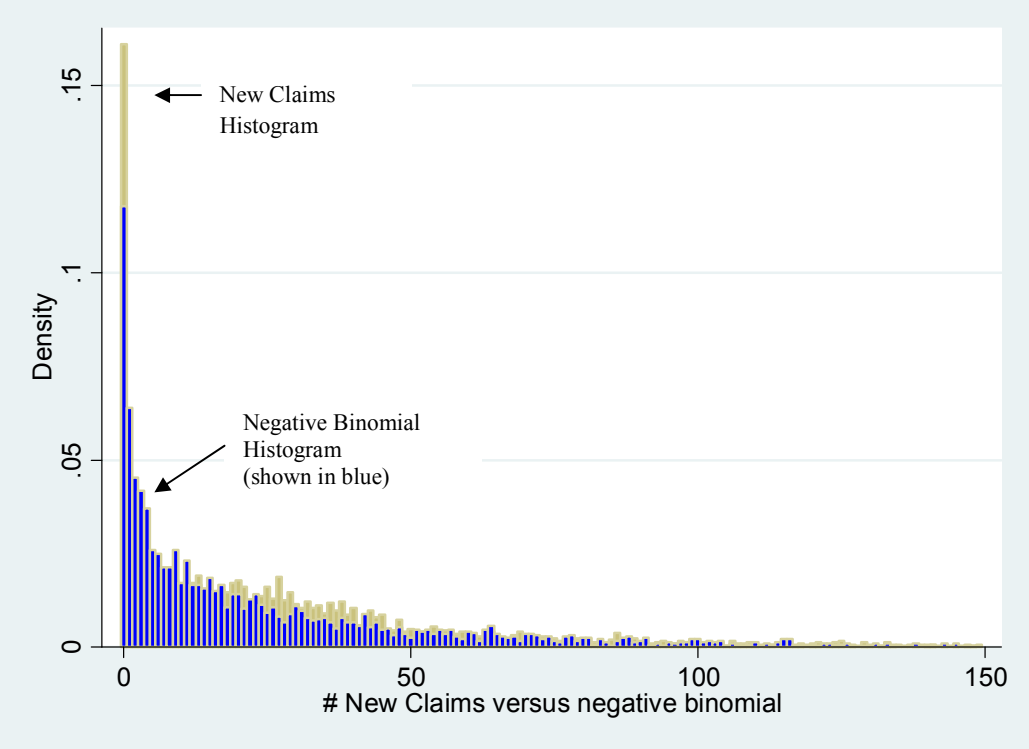
$$\lambda_i = \exp(\beta' X_i + \varepsilon_i) \qquad \text{(i)}$$

where $\exp(\varepsilon_i)$ is gamma distributed with mean = 1 and variance α. This additional parameter α is such that when $\alpha = 0$, the model reverts to the poisson model i.e.

$$VAR(y_i) = E[y_i][1 + \alpha E(Y_i)] \qquad \text{(ii)}$$

Such a model can capture overdispersed data and can test for overdispersion using a test devised by Cameron and Trivedi (2001). For the distribution of new claims, such a distribution fits the actual data very well as shown below:

Figure 8.2 Histogram of New Claims with Negative Binomial Distribution Superimposed



This distribution reflects the overdispersed nature of the new claims distribution (a statistical test for overdispersion found that the overdispersion parameter (alpha = 0.12) is statistically significant (p-value = 0.0000)). Consequently, the negative binomial distribution will be the chosen count data estimator used in the subsequent regression analysis later in this chapter.

8.3.2 Log-Linear Estimator

While the process by which new claims arise in NHS acute trusts may be characterised as a count data process, one may also not wish to impose any distributional assumptions – in which case, a log-linear specification may be preferred (Cameron and Trivedi, 2001). Such a model has a mean (λ_i) which depends on a set of explanatory variables x_i , and a logarithm of the mean (to make it non-negative) can be written as:

$$\log(\lambda_i) = x'_i \beta \qquad => \qquad \lambda_i = \exp(x'_i \beta) \qquad \text{(iii)}$$

where each β_i coefficient represents the expected change in the log of the mean per unit change in the covariate x_i. Such a model requires no further distributional assumptions unlike count data models. One possible concern with this model related to the exclusion of records where there were zero new claims; however, when the distribution of the new claims was examined for zero values, it was found that less than 1% of the values contained a value for zero.

In summary, while it is believed that the distribution of new claims will conform to the assumptions of a count data model, a log-linear estimator has been included as a robustness check – the log-linear model will sacrifice some efficiency in return for obtaining unbiased estimates.

8.3.3 Measurement of Covariates

Having outlined two alternative estimators which will be used to model the relationship between new claim numbers and a range of relevant covariates, consideration was then given to the measurement of the various factors outlined in section 8.2 including the selection of relevant proxies if available. The decisions made in this regard are summarised below:

Table 8.1 Measures Used for the Factors Impacting on New Claims

Factor	Unit of Measurement / Proxy Measure Used
Risk Management Levels	Dummy variables created for levels two and three (with level one as the reference category)
Trust Size	Total beddays used as a proxy measure
Trust Type	Dummy variables used for specialist and teaching trusts
Specialty	Proportion variables used for the specialty categories with 'General Medicine' as the reference category
Financial Health	Ratio of bank and cash balances to total net assets used as a proxy measure – note that 'bank and cash balance' was felt to be the best proxy for financial health as it represents the stock of liquidity available to a trust for financial investments, and this was divided by total net assets to normalise the variable
Foundation Trust	Dummy variable created which was set equal to one for each year that a trust operated as a foundation trust
Quality of Care / Trust Culture	No suitable measure or proxy measure available
Availability of Funding Arrangements	No suitable measure or proxy measure available

This table shows that six of the eight factors which are hypothesised to impact on new claim numbers are capable of being measured in the subsequent empirical models; all other variables which affect the dependent variable (along with measurement error) will be reflected in the respective error term of each model specification.

8.3.4 Estimating Equation

With the number of new claims as the dependent variable and a list of measurable independent variables as outlined above, the following estimating equations can be derived for the negative binomial and log-linear regression models – these represent expansions of equations (i) and (iii) as follows:

Negative Binomial Model

$$\lambda_{it} = \exp(\beta' X_i + \varepsilon_i)$$
$$\Rightarrow y_{it} = \exp(\beta_1 r_{it} + \beta_2 \ln(Beddays_{it}) + \beta_3 Type_{it} + \beta_4 London_{it}$$
$$+ \beta_5 \rho_{it} + \beta_6 FinancialR\,atio_{it-1} + Foundation_{it} + \varepsilon_i) \quad \text{(iv)}$$

Log-Linear Model

$$\lambda_i = \exp(X'_i \beta)$$
$$=> \log(y_{it}) = \beta_1 r_{it} + \beta_2 \ln(Beddays_{it}) + \beta_3 Type_{it} + \beta_4 London_{it}$$
$$+ \beta_5 \rho_{it} + \beta_6 FinancialRatio_{it-1} + Foundation_{it} + \varepsilon_i \quad \text{(v)}$$

where:

y_{it} is the number of new claims for NHS trust in year *t;*

r_{it} is the risk management level of NHS trust *i* in year *t;* (this will consist of two binary variables for risk levels two and three respectively);

$Beddays_{it}$ is the total beddays of NHS trust *i* in year *t*;

$Type_{it}$ is a vector of trust type and consists of two binary variables which are set equal to 1 or 0 depending on whether NHS trust *i* is a specialist or a teaching trust in year *t* respectively;

$London_{it}$ is a binary variable set equal to 1 if NHS trust *i* resides in the London region in year *t* and 0 otherwise (this covariate was added as the higher costs of operating in this region could be associated with different propensities to sue for medical negligence in this region);

ρ_{it} is a vector of measures of NHS trust *i*'s casemix variables in year *t*, and consists of six proportion variables (all between 0 and 1) for the proportions of general medicine, general surgery, gynaecology and obstetrics, paediatrics, trauma and orthapaedics, other surgery and other medicine respectively;

$FinancialRatio_{it-1}$ is NHS trust *i*'s bank and cash balance divided by its total assets in year *t-1*;

$Foundation_{it}$ is a binary variable which is set equal to 1 if trust *i* is a foundation trust in year *t*;

ε_i is the error term for trust *i* and measures variation in y that is not captured by the other covariates.

For each of equations (iv) and (v) above, a total of fourteen covariates will be regressed against the number of new claims (log of new claims for the log-linear model). Consideration was also given to functional form in these equations – hence, the log of total beddays is chosen instead of total beddays to simplify the interpretation of coefficients.

8.3.5 Panel Data Considerations

Panel data offers advantages over pooled data; these include the ability to generate more efficient estimates as well as the ability to control for individual trust effects (Gujarti, 2002). For both equation (iv) and (v), the error term can be broken into unobserved trust effects (v_i) and observation specific errors (e_{it}) i.e. $\varepsilon_i = v_i + e_{it}$. Note that both the 'quality of care/trust culture' and the 'availability of funding arrangements' factors are considered to be unobserved trust effects and are therefore included in v_i while observation specific errors (e_{it}) include measurement error and stochastic shocks which impact on new claims (and not captured by the measurable covariates).

Within such models, a choice must then be made between fixed and random effect models which represent alternative approaches to capturing individual trust heterogeneity. Fixed effect models are used where one wishes to control for omitted variables that differ between cases but are constant over time, and typically, such effects drop out when estimated by conditional maximum likelihood (Woolridge, 2009). Such models are appealing with count data as Montalvo (1997) reports that such individual effects have significant correlations with the explanatory variables in many cases. For this data, the individual effects (or trust level effects) can arise if there are unobservable differences in the riskiness of trusts which are correlated with risk management levels, and a fixed effects model can control for this. However, fixed effects models are not appropriate where the variables of interest are constant across different units (trust) and an additional issue with count data negative binomial regression models is that the conditional fixed effects negative binomial is not a 'true fixed effects' as it allows for the introduction of individual specific regressors (Guimaraes, 2008).

On the other hand, random effect models assume no correlation between the individual effects and the independent variables. However, it is also argued that one should suspect a positive correlation between independent variables and individual effects for most research problems (Woolridge, 2009) and if this is the case, a random effects model will produce biased results.

For this empirical analysis, preference will be given to the fixed effects model – largely due to its ability to control for individual trust effects which are correlated with risk management levels; however, given that there are limitations to both fixed and random effect models, the empirical results will display both models along with a standard hausman test (a hypothesis test which assumes no correlation between the individual effects and the covariates).

8.4 Empirical Results

The empirical results of the regression analysis on new claim numbers are now presented:

8.4.1 Regression Models on New Claims using Pooled Data

Estimating equations (iv) and (v) using pooled data produced the following results:

Table 8.2 Regression Models on New Claims Using Pooled Data

Y= Number of New Claims [4]	**Negative Binomial Model**	**Log-Linear Model**
	New Claim Numbers	*Log of New Claim Numbers*
Level 2	-0.016 (0.032)	-0.007 (0.030)
Level 3	0.002 (0.067)	-0.010 (0.071)
Log of Total Beddays	0.875 *** (0.041)	0.855 *** (0.041)
Specialist	-0.427 ** (0.133)	-0.544 *** (0.124)
Teaching	0.012 (0.054)	-0.007 (0.047)
London	-0.139 *** (0.039)	-0.147 ** (0.042)
Proportion of General Surgery	2.104 ** (0.733)	1.159 (0.794)
Proportion of Gynaecology and Obstetrics	2.134 *** (0.332)	2.338 *** (0.294)
Proportion of Paediatrics	0.855 * (0.393)	0.697 * (0.324)
Proportion of Trauma & Orthopaedics	1.218 *** (0.216)	1.205 *** (0.225)
Proportion of Other Surgery	1.839 *** (0.307)	1.853 *** (0.291)
Proportion of Other Medicine	-0.374 ** (0.117)	-0.248 * (0.121)
Lagged Financial Health Ratio	-0.732 * (0.295)	-0.913 ** (0.297)
Foundation Trust	-0.079 * (0.036)	-0.018 (0.037)
Constant	-7.883 *** (0.518)	-7.674 *** (0.517)
Other Model Statistics		
Number of Observations	1,136	1,094
Alpha	0.163 *** (0.012)	
R^2	0.6851	0.6482

Note that for each model, the top row shows the coefficient with attached levels of significance (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$) while the standard errors are shown in parentheses.

[4] Y is equal to the log of new claims in a log-linear model

It is noticeable that the coefficients and standard errors from both models in the above table are very similar, and given that the log-linear model was included as robustness check on the negative binomial model, this can be interpreted as a broad signal that the count data assumption is appropriate for this data. In terms of the covariates, there are insignificant negative relationships between the risk management level covariates and new claims; however, there are other significant covariates – new claim numbers are statistically associated in both models with total beddays (positive association), specialist trust status (negative association), the london region (negative association), and the lagged financial health ratio (negative association). In addition, a number of specialty categories have a significantly different relationship with new claims than for the reference category (proportion of general medicine).

Other model statistics are included at the end of this table – this includes the number of observations for each model (these are largely the same with only ten records less in the log-linear model - as these have zero number of new claims). The significant alpha coefficient for the negative binomial model confirms that the distribution is overdispersed. Finally, the r^2 values capture the variation in the dependent variable that is caused by the covariates (69% versus 65% for the log-linear model). A further measure of the efficiency of these alternative estimators can be assessed from the respective standard errors, and an analysis of these values shows that they are broadly equal (they are lower for the negative binomial model for seven covariates and lower for the log-linear model for seven covariates) – this suggests that there is little difference in the efficiency of the two estimators.

8.4.2 Regression Models on New Claims using Panel Data

Table 8.3 below presents the panel data output from both the negative binomial and log-linear models:

Table 8.3 Negative Binomial and Log Linear Models on New Claims using Panel Data

Y = New Claim Numbers [5]	Negative Binomial Model		Log Linear Model	
	Fixed Effects	Random Effects	Fixed Effects	Random Effects
	New Claim Numbers		Log of New Claim Numbers	
Level 2	-0.092 * (0.036)	-0.085 ** (0.032)	-0.089 * (0.041)	-0.040 (0.034)
Level 3	-0.310 ** (0.094)	-0.128 (0.080)	-0.249 * (0.112)	-0.106 (0.087)
Log of Total Beddays	0.378 *** (0.108)	0.683 *** (0.053)	0.246 (0.141)	0.777 *** (0.063)
Specialist	0.330 (0.424)	-0.707 *** (0.141)	(dropped)	-0.574 ** (0.182)
Teaching	-0.829 *** (0.182)	-0.096 (0.076)	(dropped)	0.057 (0.076)
London	0.397 (0.217)	-0.079 (0.066)	(dropped)	-0.172 * (0.071)
Proportion of General Surgery	0.337 (1.453)	0.330 (0.887)	1.638 (1.730)	1.298 (1.075)
Proportion of Gynaecology and Obstetrics	2.415 * (1.076)	2.104 *** (0.450)	2.330 (1.942)	2.438 *** (0.471)
Proportion of Paediatrics	-0.625 (0.455)	0.495 (0.418)	-0.672 (0.516)	0.446 (0.443)
Proportion of Trauma & Orthopaedics	-0.058 (0.740)	1.074 *** (0.306)	1.344 (1.554)	1.134 ** (0.349)
Proportion of Other Surgery	0.900 (0.614)	1.604 *** (0.328)	0.924 * (0.405)	1.653 *** (0.370)
Proportion of Other Medicine	-0.110 (0.205)	-0.283 (0.148)	-0.147 (0.261)	-0.180 (0.166)
Lagged Financial Health Ratio	-0.980 ** (0.360)	-0.738 * (0.338)	-1.065 ** (0.309)	-0.965 *** (0.274)
Foundation Trust	-0.119 ** (0.044)	-0.079 (0.040)	-0.123 ** (0.046)	-0.070 (0.038)
Constant	-2.398 (1.371)	-6.476 *** (0.681)	-0.210 (1.732)	-6.702 *** (0.789)
Other Model Statistics				
Number of Observations	1,095	1,104	1,094	1,094
Log Likelihood	-3,192	-4,206		
Evidence of Heterogeneity	Wald chi2 = 92.83 ***	Wald chi2=525 ***	F = 7.44 ***	Wald chi2 = 553 ***
Preferred Model (Hausman Test)	Fixed Effects Model, chi2 = 547 ***		Inconclusive, chi2 = -19	

Note that for each covariate, the top row shows the coefficient with attached levels of significance (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$) with the standard errors underneath in parentheses.

[5] Y is equal to the log of new claims in a log-linear model

Bearing in mind that a fixed effects models is preferred to a random effects model as outlined in the section 8.3.5, it is noticeable that there are significant relationships between new claims and a number of covariates in both of the fixed effect models; in particular, higher risk management levels are now significantly associated with lower number of new claims, while higher lagged financial health ratios and foundation trust status are also significantly associated with lower numbers of new claims (after controlling for other factors). Other significant covariates in the fixed effects models include trust size (negative binomial model - new claims rise at a lower rate than total beddays, indicating that larger trusts are superior at minimising claims), teaching trust status (negative binomial model - negative association), while higher proportions of 'gynaecology and obstetrics' is significantly associated with higher numbers of new claims relative to the reference category (negative binomial model).

The results presented in Table 8.3 do assume an instaneous impact of all covariates (apart from the lagged financial health ratio) on the number of new claims, and alternative model specifications were developed to test the robustness of this assumption – this was appropriate as the exploratory interviews revealed a mixture of views on when a change in risk management level would lead to an impact on new claims. However, no new significant results were uncovered during this analysis – new claims react more to current risk management levels than to lagged levels, and new claims react more to the financial health ratio lagged by one period than to this ratio lagged by any further periods.

In terms of the two estimators used to model the number of new claims, the similarity in the results of the negative binomial versus log-linear models added to the generally lower standard errors for the negative binomial model suggest that the count data approach is most appropriate to this data. Other model statistics here include the number of observations (the close proximity in the fixed versus random effect models suggests that there is sufficient variability in the variables over time) and the Wald ch2 and F statistics (these confirm that panel data models are more efficient than the prior analysis of pooled data). The findings to this table will be discussed further at the end of this chapter; however, it must be acknowledged at this stage that the findings in Table 8.3 assume that all of the covariates are exogenously determined - such an assumption will be tested in the next section.

8.4.3 Testing for Endogeneity

One of the most important assumptions in regression analysis is strict exogeneity i.e. the errors have mean zero: E[ε] = 0, and that the regressors are uncorrelated with the errors: E[$X\varepsilon$] = 0 (Hayashi, 2000). If this does not hold, then those regressors that are correlated with the error term are called endogenous, and the regression estimates become invalid. A particular concern with this data is that the unobserved individual trust effects (examples were given in sections 8.2.6 and 8.2.7) which are part of the error term will be correlated with either risk management levels or with foundation trust status - if this is the case, risk management levels and/or foundation trust status are effectively endogenous variables.

A common approach test for endogeneity given that the distribution of new claims is inherently heteroscedastic (as shown in Figure 8.1 and 8.2) is to employ a dynamic panel data Generalised Method of Moments (GMM) approach (Baum and Schaffer, 2002). Efficient GMM will produce consistent results in the presence of heteroscedasticity[6] and such an approach to test for endogeneity was chosen having verified that the potential cost of such an approach in terms of finite sample performance was minimal. Within GMM, two possibilities which allow one to test for endogeneity are the difference GMM developed by Arellano and Bond (1991) and the system GMM developed by Arellano-Bover (1995)/ Blundell–Bond (1996)[7]. Firsly, difference GMM transforms all regressors by differencing – such an approach would transform the error equation as follows:

$$\Delta\varepsilon = \Delta v_i + \Delta e_{it} = \Delta e_{it}$$

Such a transformation will remove the fixed trust-specific effect as it does not vary with time; however, this can be considered a drawback if we want to assess the impact of time-invariant covariates (such as specialist trust status) on the dependent variable. The second possibility (system GMM) augments the difference GMM approach by also assuming that the first differences of instrument variables are

[6] A Breusch-Pagan test for heteroscedasticity confirmed the presence of heteroscedasticity – chi2=87 ***.

[7] Note that while difference GMM and system GMM are dynamic panel data estimators, they can also be used to deal with endogenous variables where lagged dependent variables are not used as regressors.

uncorrelated with the fixed effects – this allows for more instruments to be introduced and leads to greater efficiency (Roodman, 2006) including the generation of coefficients for time invariant covariates. For this reason, the system GMM model output will be the preferred GMM approach, and the common approach to testing for endogeneity with such a model is to use the Hansen test of the exogeneity of an instrument set (Mileva, 2007) – this is reported for both risk management levels and for foundation trust status in the following output:

Table 8.4 System GMM Output on the Log of New Claim Numbers Testing for the Endogeneity of Risk Management Levels and Foundation Trust Status

Y = Log of New Claim Numbers	Coefficient	Robust Standard Error
Level 2	-0.018	0.034
Level 3	-0.016	0.061
Log of Total Beddays	0.800 ***	0.067
Specialist	-0.601 **	0.182
Teaching	0.033	0.064
London	-0.159 **	0.056
Proportion of General Surgery	1.007	1.069
Proportion of Gynaecology and Obstetrics	2.365 ***	0.413
Proportion of Paediatrics	0.483	0.380
Proportion of Trauma & Orthopaedics	1.135 ***	0.262
Proportion of Other Surgery	1.719 ***	0.427
Proportion of Other Medicine	-0.227	0.188
Lagged Financial Health Ratio	-1.024 ***	0.269
Foundation Trust	0.001	0.037
Constant	-6.944 ***	0.790
Model Statistics		
Number of Observations	1,094	
Number of Instruments	65	
Wald chi2	1769	
Hansen joint test of exogeneity of risk management levels and foundation trust status	Chi2 = 5.95	

Note: $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

While there are a number of significant covariates in this system GMM output, the real focus is on the endogeneity test in the bottom row – the insignificant chi2 statistic indicates that the assumption of exogenous risk management levels and foundation trust status cannot be rejected. If endogeneity had been found with this test, a revised system GMM output which assumed endogenous variables would be presented – however, the conclusion of exogeneity for these variables means that this next step is not needed.

In summary, given that we cannot reject the assumption of exogeneity for both risk management levels and foundation trust, preference will be given to the results of Table 8.3 (which assumes exogenous covariates) when the key results of this chapter are now discussed.

8.5 Discussion of Results

This chapter has presented a number of empirical results relating to the determinants of new claims in NHS trusts – the approach taken was to initially present straightforward models before alternative assumptions were incorporated into subsequent model specifications. The key findings to emerge from this analysis are as follows:

(a) Risk management levels two and three are significantly associated with lower numbers of new claims for the fixed effects models in Table 8.3; attainment of level two is associated with an approximately 10% reduction in new claims while level three is associated with an almost 30% reduction in new claims. This finding that risk management levels impact on new claims reinforces the views of Fenn et al (1995) and of the majority of the exploratory interviews who stated that higher risk management levels should lead to reduced numbers of new claims ceteris parabis i.e. risk management gives trusts an improved ability to deal with complaints/claims as they are made. This finding also implies that the policy of the NHSLA to offer generous discounts for attainment of higher risk management levels does generate a return in time i.e. it will lead to lower clinical negligence claims for trusts operating at higher levels.

(b) The lagged value of financial health has a significant negative relationship with new claim numbers controlling for other factors - this finding is robust to all model specifications and the coefficient of -0.98 in the negative binomial fixed effects output (Table 8.3) implies that a 10% increase in the ratio of bank and cash balances to total assets is linked to an 9.8% reduction in the number of new claims). This implies that trusts with more financial resources are able to use these resources to improve their risk management practices – this can take the form of short-term investments to help secure a risk management increase as well as longer term investments in better staff who are less likely to make errors which can lead to claims.

(c) Foundation trust status is significantly linked with lower numbers of new claims in the panel data fixed effects models - this reinforces the findings of Fenn and Egan (2012) that the governance arrangements for foundation trusts are associated with improved clinical risk management processes and outcomes.

(d) Larger trusts are significantly associated with proportionately lower numbers of new claims controlling for other factors in the vast majority of model specifications; for example, the coefficient for the log of total beddays of 0.378 in the negative binomial fixed effects model (Table 8.3) implies that as trust size rises by 10%, the number of new claims rises by approximately 3.78% - this implies that larger trusts are better at patient safety which is perhaps unsurprising as such trusts are more likely to have risk management control systems in place for managing risks throughout the organisation.

(e) The proportion of 'gynaecology and obstetrics' is significantly associated with higher numbers of new claims (relative to the reference category - general medicine) in all model specifications – such a finding is intuitive as the NHSLA (2011a) reports that the more high risk specialties are the ones most likely to lead to clinical negligence claims.

In summary, the findings of (a), (b), and (c) [i.e. higher risk management levels, higher lagged financial health ratios, and an FT governance structure are all significantly associated with lower claim numbers] implies that the three elements of risk management processes all exert a significant impact on the number

of clinical negligence claims in acute NHS trusts (controlling for other covariates). This implies that improved risk management processes can be the lever for trusts to reduce their clinical negligence claims, and those trusts who manage to simultaneously improve in each of the elements of risk management processes (these elements are interconnected to each other) can expect to see significant improvements in their clinical negligence claims experience.

8.6 Chapter Summary

This chapter has presented the empirical results of a multivariate analysis of the determinants of new clinical negligence claims in NHS trusts. An approach was followed of discussing relevant factors felt to affect such claims at the outset before details of the proposed estimator (a count data estimator and a log-linear model were discussed) and estimating equation were provided. The empirical results then commenced with the findings from pooled data which did not control for individual trust heterogeneity; this led to panel data models which controlled for such endogeneity but which assumed that all covariates were exogenously determined. This assumption was tested using a system GMM estimator, and the assumption of all covariates being exogenously determined could not be rejected – hence, the main conclusions are drawn from the panel data models which assumed exogenous covariates.

Further implications of these findings will be discussed further in chapter ten; however, prior to this, the empirical results of the multivariate analysis on closed claim values will be presented in the next chapter.

CHAPTER NINE

EMPIRICAL ANALYSIS: CLOSED CLAIM VALUES

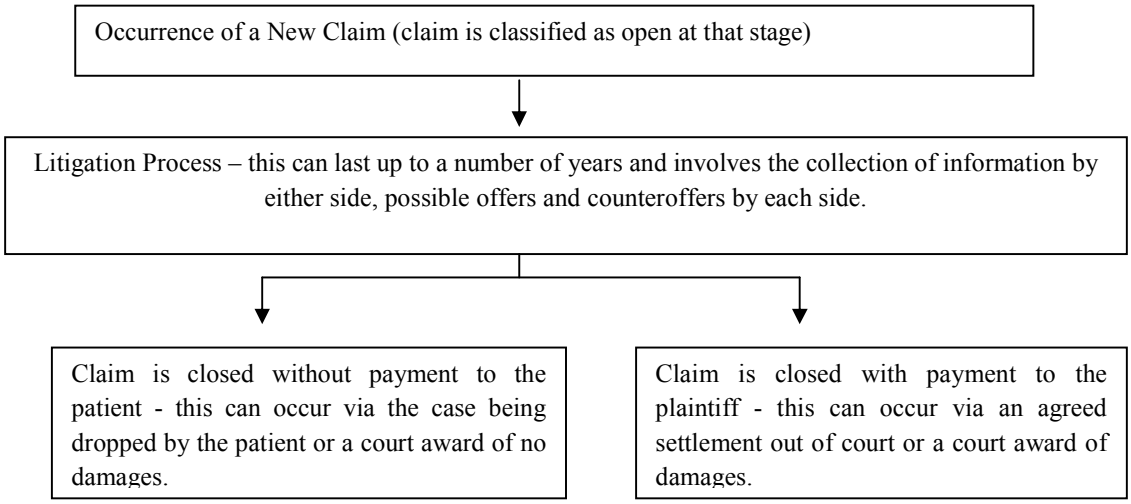
9.1 Chapter Overview

This chapter presents the empirical analysis relating to the relationship between closed claim values and a range of covariates, in particular the elements of risk management processes (risk management levels, governance structure, and financial strength). It commences with a discussion of the decision making process of interest, and then proceeds to discuss the covariates of interest using relevant literature and exploratory interview findings. The data generating process and proposed estimator are then discussed before the empirical findings are presented.

9.2 Determinants of Closed Claim Values in NHS Trusts

Clinical negligence claims arise due to perceived inadequate care in NHS trusts, and the process of resolving such claims is summarised below:

Figure 9.1 Process of Claim Resolution in NHS Trusts



Source: Adapted from Danzon and Lillard (1982)

This diagram shows that once a claim is made against an NHS trust, a two-way legal process begins between the plaintiff (patient and his/her legal team) and the defendant (the local trust/NHSLA and its legal team). This process can take a considerable amount of time with consequent legal costs although the advent of the NHSLA in 1995 did lead to a more proactive approach to managing claims within the NHS – mediation was a preferred alternative to litigation and trusts were encouraged to offer apologies and provide explanations where possible. The emphasis on apologies/explanations can be viewed as a mechanism to reduce claim costs; and is logical given that many patients may just be seeking an explanation for what happened to them (Vincent et al., 1994). However, despite this amended approach to the management of claims by the NHSLA, it was shown in the introduction chapter (Table 1.2) that closed claim payments have risen sharply rose sharply from 2005/06 to 2010/11; such payments represent a drain on NHS resources and information on the factors which are driving such increases can assist policy makers in taking appropriate action to arrest this trend.

The call-in of claims by the NHSLA in 2002 shifted all financial responsibility for clinical negligence claims to the NHSLA; however, it is unclear from literature as to how involved local trust management are in the negotiation process that leads to closed claim values; Fenn et al. (2002) stated that while claims are now handled centrally by the NHSLA, the trust remains as the legal defendant. This issue was addressed during the exploratory interviews and opinions varied – some trust managers felt that the defence of such claims is entirely the remit of the NHSLA while others felt that the NHSLA will involve local trust managers in the decision making process of how to resolve claims. However, regardless of who finalises claims negotiations with plaintiffs, it is proposed in this chapter that the risk management processes employed within the trust will impact on the amounts paid out for closed claims, controlling for other factors.

The focus of the empirical analysis will thus be on the determinants of claim payouts (total closed claim payments per trust per annum); however, given that this can be viewed as the product of the number of closed claims by the average closed claim value per trust, the subsequent analysis will control for the number of closed claims and allow the focus of the analysis to be on the determinants of closed claim

payouts given the annual number of closed claims per trust. These determinants will include factors which are linked to a trust's actual risk level as well as factors which reflect discretionary behaviour by trust management – thus enabling conclusions to be drawn from the subsequent multivariate analysis on the extent to which local trust management can influence closed claim outcomes.

A description of the determinants of closed claim values (other than the number of closed claims) is now provided.

9.2.1 Risk Management Levels

Risk management levels were shown to have a significant negative relationship with the number of new claims in the previous chapter, and a plausible extension to this relationship is to argue that higher risk management levels will drive reductions in average claim values over time – this can be implied from the exploratory interviews where a number of the trust managers stated that a benefit of higher risk management levels is the better processes and documentation for managing risks – this should better enable the NHSLA to successfully defend all claims than would have been the case had the trust remained at a lower risk management level. Taragin et al. (1992) also support this proposition – these authors found that claims were more likely to succeed when poor or inaccurate records were maintained. In short, improved documentation should lead to improved decision making in negotiating claim settlement values – this should lead to a robust defence of frivolous claims (as one will now know that there is no basis to the claim) as well as the avoidance of excessive offers (as one is more likely to now know the exact nature of the medical error and consequent injury sustained by the plaintiff).

However, while accepting that the attainment of higher risk management levels should lead to improved decision making in claim negotiations, the eventual effect of this may be for the trust to experience higher closed claim values. There are two arguments which support such a hypothesis – firstly, trusts operating at higher risk management levels will be more aware of whether they are liable or not for potential claims and therefore will be more willing to settle claims earlier when they know that they are liable – settling claims earlier will lead to more generous settlement offers and closed claim values but

could yield savings over time due to reduced legal costs. This viewpoint is consistent with Farber and White (1991) who found that claims are resolved more quickly when it is clear that the quality of care was good or bad as opposed to when it is ambiguous; furthermore, the NHSLA risk manager commented that '*trusts at higher risk management levels are better placed to manage claims – this does not mean that it gets dropped as it may just mean that it gets settled more quickly as we know we are liable'*. Such a viewpoint is also consistent with trusts' wishing to avoid the potential reputational damage which is associated with high publicity cases. A second argument which supports higher risk management levels leading to higher closed claim values is that the main benefits of higher levels will be reduced numbers of small-value claims (as one now has the information to know that they may be spurious), and consequently, the average value of the remaining claims will be higher.

A final possibility in relation to the effect of risk management levels on average closed claim values is that no relationship may exist – this is based on Dingwall and Fenn (1994, p73) when they found that litigation '*is not related in any simple way to the quality of service offered'*. In addition, the NHSLA risk manager questioned the link between risk management levels and claim values when she gave the example of '*two identical issues and yet one person claims and the other does not'* i.e. she felt that there are complicating factors on such a relationship between risk management levels and closed claim values.

9.2.2 Trust Type

Both specialist and teaching trusts can be hypothesised to impact on the closed claim values based on the range and quality of services provided to patients vis-à-vis other types of acute trust. For specialist trusts, one could argue that the repetitive nature of their work makes them less likely to commit serious errors which could lead to high-value payouts i.e. increased familiarity with the risks of such repetitive procedures should facilitate prompt preventive action being taken to reduce high-risk claims (this could include practicing defensive medicine where excessive care is provided to reduce the risk of possible claims). For teaching trusts, one could hypothesise that the higher quality of clinical staff who are attracted to work in such organisations will be less likely to commit serious medical errors (which lead to high value claims). Furthermore, given that such trusts play a vital role in the training and education of

doctors / healthcare professionals, they would be expected to have superior risk management processes in place which in turn should minimise the risk of high-value claims being taken against them. In summary, the particular nature of specialist and teaching trusts makes it likely that these will pay out proportionately less for closed clinical negligence claims relative to other types of acute trust.

9.2.3 Specialty

It was shown in chapter three (Table 2.8) that the mix of specialties offered by trust exerts an impact on closed claim values - specialties such as medicine and obstetrics were shown to attract higher claim values compared to other specialties such as radiology and pathology (NHSLA, 2010). This implies that the complexity of services offered by trusts directly affects the value of clinical negligence claims, and consequently, trusts with high proportions of high-risk specialties are likely to have higher claim values, and vice versa. A range of empirical studies also support this proposition; Brennan et al. (1996) found claim severity to be higher in US states with high proportions of surgical specialties, while Bovbjerg and Raymond (2003) concluded that the large payouts for high risk specialties was leading to insurers refusing to cover practitioners in these specialties.

9.2.4 Financial Health

A trust's level of financial health can also be hypothesised to impact on closed claim values – such a relationship could be in either a positive or a negative direction. Firstly, one can argue that higher levels of financial health will lead to higher closed claim values – this is consistent with literature on 'defensive medicine' where hospitals provide excessive care to reduce the threat of high payouts. This implies that trusts which are less efficient vis-à-vis trusts which provide an optimal level of care to patients will actually have lower closed claim values i.e. trusts with lower financial health ratios may have lower closed claim values ceteris parabis. Such a proposition is also consistent with Fenn et al. (2004) who found that hospitals faced with high costs of litigation tended to order more tests such as costly diagnostic imaging. An alternative explanation for this positive relationship between financial health and claim values is that the very reason why efficient trusts have favourable financial balances is due to a

reluctance to invest in adequate risk management processes - hence a strong financial position may actually signal poor risk management controls which can lead to higher claim payouts.

On the other hand, one can also argue that there will be a negative relationship between financial health and closed claim values - such a viewpoint is also consistent with the plaintiff jackpot mentality cited by Bovbjerg and Raymond (2003) whereby plaintiffs (perhaps supported by local solicitors) target financially stronger trusts based on a belief that these will have a greater purse with which to reimburse claims – this should lead to low average payments over time when many of such claims are found to be frivolous.

9.2.5 Governance Structure

Notwithstanding the fact that foundation trusts enjoy superior financial balances to non-foundation trusts (as shown in chapter six), it can be argued that the improved governance structures in such trusts (i.e. FT status) will lead to improved claim outcomes (i.e. lower claim values) (Fenn and Egan, 2011). For example, during the exploratory interviews, one trust manager of a foundation trust commented that the *'public and staff governors are willing to support quality initiatives such as the patient experience'* – an implication of this is that trusts which are more engaged with quality issues will be less likely to end up with high-value claims ceteris parabis. However, while accepting that a result of acquiring FT status is likely to lead to faster decisions being made on how to resolve claims, this may actually end up leading to higher claim values as such a trust may be concerned at the negative publicity that is attached to drawn-out cases (and consequently make more generous offers to avoid the likelihood of such publicity).

9.2.6 Severity of Injury

A number of empirical studies suggest that a major determinant of closed claim values is the severity of injury sustained by the patient during treatment, with more severe injuries being associated with higher claim payouts. For example, Taragin et al. (1992) found much higher median payments for severe injuries relative to less severe injury types, while Brennan et al. (1996) again found type of disability (permanent versus temporary) to be a significant determinant of claim value.

9.2.7 Quality of Care / Trust Culture

A number of empirical studies (Farber and White, 1991; Cheney et al., 1989; Taragin et al., 1992) suggest that the probability of payment in clinical negligence claims increases when care quality has been negligent – and White (1994) extended this analysis to state that the average cost of claims with negligence is far higher ($135,000) vis-à-vis claims without negligence ($6,600). This proposition is consistent a culture of quality care factor which some trust managers alluded to in the exploratory interviews – such a culture can vary from a very 'positive' culture where there is a high priority on patient safety over any personal or departmental interest (such trusts are less likely to have claims involving negligent events and less likely to have high-value claims) or a 'negative culture' where trusts put sectional interests over patient safety (thereby increasing the chances of negligent events and higher value claims).

9.2.8 Availability of Funding Arrangements

In the UK system of clinical negligence, patients unable to afford the legal costs of taking claims can avail of either legal aid financing (subject to means testing) or conditional fee arrangements; however, it can be argued that the presence of such arrangements will create moral hazard issues for injured patients as it can encourages frivolous claims to be filed. Increased numbers of frivolous claims will impact on closed claim values i.e. trusts with high proportion of claims which are funded by these arrangements are likely to have lower closed claim values (as the majority of the claims made are likely to turn out to be spurious).

Overall, one can hypothesise that a wide range of factors will affect the claims resolution process, and proposed measures for these factors will be considered in the next section.

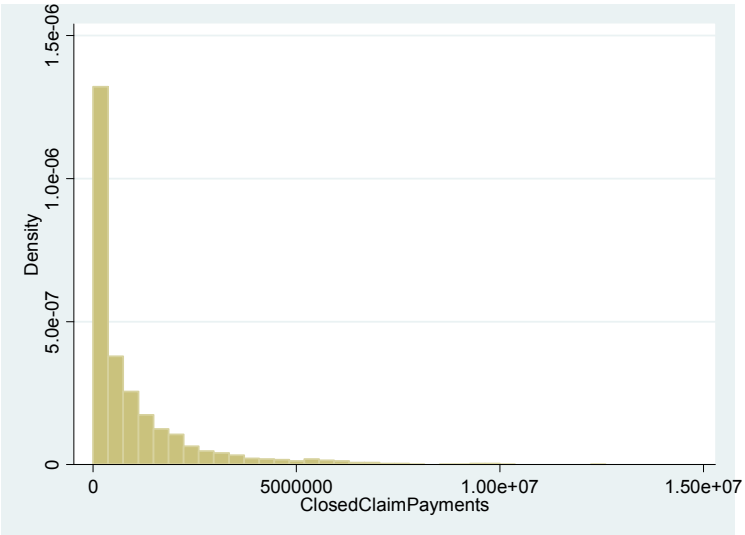
9.3 Empirical Framework

The relationship between total closed claim values (y) and a range of independent covariates can be written as follows:

$$y = x`\beta + \varepsilon$$

where x` represents a vector of independent covariates, β represents a vector of regression coefficients and ε is the error term. In terms of the generating process for the dependent variable, the distribution of this variable was firstly examined as shown below:

Figure 9.2 Histogram of Closed Claim Payments



This shows that closed claim payments have a non-negative, skewed distribution which is typical for a continuous financial variable, and implies that a log-linear model will be the appropriate estimator.

9.3.1 Measurement of Covariates

In advance of specifying the estimating equation for this regression model, consideration was given to the measurement of the various factors outlined in section 9.2. The decisions made in this regard are broadly similar to those made for the previous chapter as follows:

Table 9.1 Measures Used for Factors Impacting on Closed Claim Values

Factor	Unit of Measurement / Proxy Measure Used
Number of Closed Claims	Count data variable (derived from individual claims database)
Risk Management Levels	Dummy variables created for levels two and three (with level one as the reference category)
Trust Type	Dummy variables used for specialist and teaching trusts
Specialty	Proportion variables used for the specialty categories with 'General Medicine' as the reference category
Financial Health	Ratio of bank and cash balances to total net assets used as a proxy measure
Foundation Trust	Dummy variable created which was set equal to 1 for each year that trusts operated as foundation trust, and 0 otherwise
Severity of Injury	No suitable measure or proxy measure available
Quality of Care / Trust Culture	No suitable measure or proxy measure available
Availability of Funding Arrangements	No suitable measure or proxy measure available

Note that unlike previous empirical chapters, trust size is not now included as an independent variable as this effect is viewed as being captured by the inclusion of the number of closed claims in the model.

9.3.2 Estimating Equation

With the value of closed clinical negligence claims as the dependent variable and a range of measurable covariates as outlined above, a log-linear estimator will be employed to analyse the relationships between these variables. Such an analysis will have the following estimating equation:

$$\log(y_{it}) = \beta_1 \ln(ClosedClaimNumbers)_{it} + \beta_2 r_{it} + \beta_3 Type_{it} + \beta_4 London_{it} + \beta_5 \rho_{it} + \beta_6 (FinancialRatio_{it-1}) + \beta_7 Foundation_{it} + \varepsilon_i \quad \text{(i)}$$

where:

y_{it} is the total closed claim value for NHS trust *i* in year *t*

$ClosedClaimNumbers_{it}$ is the log of the number of closed claims for trust *i* in period *t* (the log value is taken to simplify the interpretation of coefficients);

r_{it} is the risk management level of NHS organisation *i* in period *t*;

$Type_{it}$ is a vector of trust type and consists of binary variables set equal to 1 if trust *i* is a specialist or a teaching trust in period *t* respectively;

$London_{it}$ is a binary variable set equal to 1 if trust *i* resides in the London region in period *t* and 0 otherwise (this was included based on a belief that the higher costs of operating in this region may be associated with higher claim payouts);

ρ_{it} is a vector of measures of NHS trust *i*'s organisation's casemix variables in period *t*, and consists of proportion variables for the proportions of general medicine, general surgery, gynaecology and obstetrics, paediatrics, trauma and orthapaedics, other surgery and other medicine respectively;

$FinancialRatio_{it-1}$ is NHS trust *i*'s bank and cash balance divided by its total net assets in period *t-1*;

$Foundation_{it}$ is a binary variable which is set equal to 1 if trust *i* is a foundation trust in year *t*;

ε_i is the error term for trust *i* and measures variation in y that is not captured by the other covariates.

In short, a total of fourteen covariates will be used in the empirical analysis to capture the extent to which the factors outlined in section 9.2 impact on closed claim values. However, Table 9.1 showed that not all factors discussed in section 9.2 were capable of being measured, and the unmeasurable factors (such as severity of injury and availability of funding arrangements) will be captured in the error term (e_i).

9.3.3 Panel Data Considerations

The empirical output from estimating equation (i) will commence with an analysis of pooled data, and will progress to panel data analysis which is typically preferred due to its ability to generate more efficient estimates as well as its ability to control for individual trust effects (Woolridge, 2009).

In panel data analysis, fixed and random effect models represent alternative approaches to capturing individual trust effects; fixed effect models have the advantage of controlling for unobservable differences in the riskiness of trusts which are correlated with risk management levels but may not be appropriate if the variables of interest are constant across trusts. On the other hand, random effect models assume no correlation between the individual effects and the independent variables but are considered to be more appropriate when there is little variation in the variables of interest – such models can also incorporate coefficients for time-invariant variables. Given the potential limitations of each of these models, the empirical output will display both models along with a standard hausman test which will be used to assist in the selection of the most appropriate model.

9.4 Empirical Results

The empirical output commenced with estimating equation (i) with a log-linear estimator using pooled and panel data (fixed and random effects) is shown below:

Table 9.2 Log-Linear Regression Models on Closed Claim Values

Y = Log of Closed Claim Values	Pooled Model	Panel Data Models	
		Fixed Effects	Random Effects
Log of Closed Claim Numbers	0.992 *** (0.052)	0.899 *** (0.089)	0.983 *** (0.060)
Level 2	0.051 (0.055)	0.186 * (0.081)	0.078 (0.061)
Level 3	-0.166 (0.132)	0.002 (0.183)	-0.135 (0.142)
Specialist	-0.782 ** (0.185)	(dropped)	-0.790 *** (0.213)
Teaching	-0.026 (0.078)	(dropped)	-0.021 (0.096)
London	0.269 *** (0.073)	(dropped)	0.283 ** (0.089)
Proportion of General Surgery	0.142 (1.095)	1.394 (3.276)	-0.123 (1.248)
Proportion of Gynaecology and Obstetrics	1.352 * (0.651)	-9.522 *** (2.724)	1.132 (0.794)
Proportion of Paediatrics	1.728 ** (0.669)	0.840 (1.632)	1.587 * (0.794)
Proportion of Trauma & Orthopaedics	0.713 (0.451)	-2.677 (3.337)	0.581 (0.539)
Proportion of Other Surgery	0.179 (0.506)	-1.669 (1.910)	-0.016 (0.591)
Proportion of Other Medicine	0.298 (0.193)	-0.401 (0.481)	0.169 (0.230)
Lagged Financial Health Ratio	0.787 (0.611)	0.801 (0.674)	0.843 (0.615)
Foundation Trust	0.128 (0.070)	0.327 *** (0.088)	0.188 ** (0.072)
Constant	10.555 *** (0.283)	12.154 *** (0.629)	10.676 *** (0.324)
Other Model Statistics			
Number of Observations	1,089	1,089	1,089
Evidence of Heterogeneity		Yes, F = 11.68 ***	Yes, Chi2 = 515 ***
Preferred Model (Hausman Test)		Fixed Effects Model (chi2 = 50 ***)	

Note that for each model, the top row shows the coefficient with attached levels of significance ($^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$) while the standard errors are shown in parentheses.

The inclusion of pooled and panel data output alongside each other allows one to examine whether the respective coefficients for each covariate are robust across each of the models. In this regard, the following comments can be made:

1. Closed claim payments have a significant positive association with the number of closed claims; this confirms what was stated to be an intuitive driver of closed claim values at the start of this chapter. However, all three of the coefficients in this row are less than one which implies that closed claim values rise less than proportionately with closed claim numbers e.g. for a fixed effects model, a 10% rise in closed claim numbers leads to an 8.99% rise in closed claim values;
2. Risk management levels are not significantly associated with closed claim values apart from the positive significant coefficient for level two in a fixed effects model. It is also noticeable here that the results of the pooled and random effects models are very similar for risk management levels but the fixed effects coefficients appear to be quite different to both of these;
3. Foundation trust status is positively associated with higher closed claim values in both of the panel data models while the lagged financial health ratios have insignificant positive associations with the dependent variable for all models;
4. Specialist trusts and trusts operating in the London region are significantly associated with lower closed claim values in both pooled and random effect models (such time invariant variables are not included in fixed effects output);
5. Most of the specialty categories do not have a significantly different relationship with closed claim values relative to the reference category; here the fixed effects coefficients appear to be very different for the proportions of 'gynaecology and obstetrics' and 'paediatrics' relative to the pooled and random effect models;
6. The model statistics in the latter rows of the table show similar numbers of observations for all models, and while the fixed effects model is preferred to the random effects model by the Hausman test. However, preference preference will be given to the random effects output despite the results of the hausman test as it has much lower standard errors for all coefficients; in addition, a number of the fixed effects coefficients are viewed to be unreliable such as the coefficient for the proportion of gynaecology and obstetrics.

The results in Table 9.2 do assume an instaneous impact of all covariates (apart from the lagged financial health ratio) on the log of closed claim values, and alternative model specifications were developed to test the robustness of this assumption – this was considered appropriate as the literature and exploratory interviews revealed that claims may be resolved many years after the occurrence of the incident which gave rise to the claim. However, these additional tests revealed no new significant results – in particular, closec claim values are not significantly associated with lagged risk management levels.

All of the models in Table 9.2 assume that all covariates are exogenously determined – and this assumption will be relaxed in the next section when the possibility of endogenous risk management levels and/or endogenous foundation trust status will be considered.

9.4.1 Testing for Endogeneity

The assumption of zero correlation between the error term (ε) and the covariates needs careful consideration, since the regression estimates become invalid if this is not the case. For this model, there are unobserved 'trust quality / trust culture' factors which are captured in the error term - one could argue that this will be correlated with either risk management levels or with foundation trust status, thus necessitating the use of instrumental variable models to deal with this possible source of endogeneity. As per the previous chapter, the approach adopted was to employ a system GMM estimator to test for endogeneity and the results of this analysis are shown below:

Table 9.3 System GMM Output on the Log of Closed Claim Values Testing for the Endogeneity of Risk Management Levels and Foundation Trust Status

Y = Log of Closed Claim Values	Coefficient	Robust Standard Error
Log of Closed Claim Numbers	0.067	0.064
Level 2	-0.169	0.145
Level 3	1.005 ***	0.063
Specialist	-0.655 **	0.223
Teaching	0.006	0.094
London	0.287 ***	0.070
Proportion of General Surgery	-0.201	1.455
Proportion of Gynaecology and Obstetrics	0.875	0.506
Proportion of Paediatrics	1.351 *	0.688
Proportion of Trauma & Orthopaedics	0.335	0.495
Proportion of Other Surgery	-0.307	0.618
Proportion of Other Medicine	0.129	0.237
Lagged Financial Health Ratio	0.999	0.633
Foundation Trust	0.109	0.073
Constant	10.724 ***	0.351
Other Model Statistics		
Number of Observations	1,089	
Number of Instruments	49	
Wald chi2	806.17 ***	
Hansen joint test of exogeneity of risk management levels and foundation trust status	Chi2=2.39	

Note: $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$

The last row in this table is of most interest, and the insignificant chi2 statistic means that the assumption of exogenous risk management levels and foundation trust status cannot be rejected. A finding of endogeneity would have led to a revised system GMM output being produced assuming such endogeneity – however, the conclusion of exogeneity for these variables means that this next step is not needed. This finding means that preference will be given to the results of Table 8.3 (which assumes exogenous covariates) when the key results of this chapter are now discussed.

9.5 Discussion of Results

This chapter has presented the empirical analysis of the determinants of closed claim values in NHS trusts, and the incorporation of different assumptions into alternative model specifications allowed for the robustness of the various relationships to be assessed. At the outset, it was clarified that closed claim values had a natural driver – the number of closed claims – and the subsequent analysis sought to uncover what covariates were significantly associated with closed claim values controlling for the number of closed claims. The main findings to emerge from this analysis were as follows:

(a) Risk management levels are not significantly associated with the average amount paid out for claims ceteris parabis; indeed the direction of this relationship differed across different risk management levels – the majority of models found level two to be associated with higher closed claim values but found level three to be associated with lower closed claim values.

(b) Foundation trust status is significantly associated with higher closed claim values in both of the panel data models - while such a finding may appear surprising at first glance, it is consistent with a number of possible interpretations as follows:

  (i) It supports literature such as Farber and White (1991) and Tingle and Cribb (2002) who found that hospitals will be more willing to settle claims earlier when they know that they are liable – settling claims earlier will lead to more generous settlement offers and closed claim values but could yield savings over time due to reduced legal costs.

  (ii) Such a finding supports a view that foundation trusts have successfully eliminated their small value claims (many of which may be spurious and can be resolved by issuing prompt apologies), leading to higher average values for the resulting claims that are settled. Such a view is supported by the histograms of average closed claim payments over time (shown in *Appendix Fourteen*) – these histograms are less skewed to the left in the later years when greater numbers of foundation trusts were in existence (thereby suggesting that there are smaller proportions of small claims for foundation trusts).

In short, the positive relationship between foundation trust status and closed claim values implies that such trusts are more strategic in their management of such claims.

(c) Lagged financial health ratios have insignificant positive relationships with closed claim values – this is unsurprising as it is the NHSLA who reimburses patients for clinical negligence claims.

(d) Specialist trusts have significantly lower claim values than for other types of acute trusts controlling for other factors – this is consistent with a view that such trusts do not commit serious medical errors which can lead to high value claims.

(d) Trusts in the London region are likely to pay more for clinical negligence claims ceteris parabis - this is intuitive as the higher costs associated with this region relative to the rest of the UK may be reflected in higher inflation rates for claim payments in this region.

Overall, this chapter provides some support for a view that the risk management processes employed by trusts will impact on its closed claim values – in particular, governance structure is positively associated with higher closed claim values. However, the other elements of risk management processes (risk management levels and financial health) are not significantly associated with closed claim values controlling for other factors, and it is clear that risk management processes exert more of an influence on the number of clinical negligence claims than on the average settlement values reached for these claims.

9.6 Chapter Summary

This chapter has presented the results of the regression analysis on closed claim values – initially, the hypotheses linking a range of factors to the claims resolution process was described and a log-linear regression analysis was chosen as the appropriate estimator to model this relationship. The empirical output included an analysis of pooled and panel data, and appropriate tests for the potential endogeneity of certain covariates were conducted. These findings were discussed and will be reviewed further in the next chapter which concludes this study.

CHAPTER TEN

CONCLUSIONS

10.1 Chapter Overview

This chapter presents the conclusions which have been arrived at from conducting this doctoral study on the impact of risk management processes on clinical negligence claims across acute NHS trusts. Initially, the main findings from the exploratory interviews and empirical analysis are reviewed under the structure provided by the research objectives; this then leads to a discussion of the contribution made of this study with particular reference to the gaps in the literature. Recommendations for practice, policy and future research are recognised, and where possible, specified. Finally, the limitations and restrictions that are inherent within the study are identified and discussed.

10.2 Conclusions on the Research Objectives

A summary of the findings obtained in this study is now provided using the stated research objectives

10.2.1 Conclusions: Determinants of Risk Management Levels

The first phase of this study consisted of nine exploratory interviews with NHS trust managers (eight of which had recently secured a risk management level increase) and an additional interview with an NHSLA risk manager. Such interviews helped to shed light on the key factors which impact on influence risk management levels, and a review of the findings from such discussions suggests that:

- Risk management levels are not a random process but represent an aggregate outcome when trusts are assessed across fifty criteria (five standards and ten criteria for each standard). This implies that the process for achieving higher risk management levels is quite objective and beyond the short-term manipulation of trust management; however, trusts retain some flexibility in advance of a risk management level assessment in that they can choose to apply for either a risk

management level increase or the retention of one's existing level – thus factors such as the trust's management's attitude to risk can ultimately affect the level achieved by the trust.

- There are a number of factors which enable trusts to achieve higher risk management levels – these include finance (the innovation/quality management literature and the exploratory interviews support a proposition that additional funds would be of '*enormous benefit*' to risk management level applications), clinical staff support (all of the trusts interviewed for this study had successfully engaged with clinical staff), and a lead person for an NHSLA assessment (to take charge / coordinate such an assessment). In addition, all trusts which were interviewed had achieved foundation trust status shortly before applying for a risk management level increase, and many felt that achieving such status gave them an impetus to seek to move to levels two and three. On the other hand, involvement in restructuring / merger activity (the NHSLA insists that such trusts have to reassess their existing policies for at least two years before they can apply for a risk management level increase) can act as barriers to trusts achieving risk management level increases.
- Trust managers agreed that it is difficult to progress to higher risk management levels despite the clear reputational advantages (from a patient safety viewpoint) and the financial advantages (discounts on one's CNST contribution) for achieving higher levels. These difficulties are reflected in the relatively small numbers of trusts progressing to higher levels in the 2002-2009 period, and the biggest difficulty appears to be trying to get trusts to progress from level one to level two; at level one, many staff see the risk management assessment as a '*huge bureaucratic exercise*' (Alder Hey Children's trust) but increasingly see the relevance of standards when a trust succeeds in achieving level two status – it is '*more of a natural journey at that stage*'(NHSLA Risk Manager Interview).

In summary, despite the considerable benefits to trusts for achieving higher risk management levels, many trusts did not move from risk management level one over the 2002-2009 period – therefore, careful attention should be given to the drivers of risk management level increases which have been identified in these interview discussions.

10.2.2 Conclusions: Level of Discretion Available to NHS Trusts with Risk Management Level Applications

Chapter seven analysed a range of factors which were hypothesised to impact on risk management levels using pooled and panel data; in particular it sought to assess the extent to which such levels can be influenced by factors which are within the control of trust management (such as the acquisition of foundation trust status and the financial health of the trust) and by factors which are linked to its actual risk type (such as its size and mix of specialties). The main conclusions to emerge from this empirical analysis were as follows:

- Trusts which achieve foundation trust status are significantly more likely to achieve higher risk management levels – this reinforces the views of trust managers during the exploratory interviews that acquiring such status can imbue a trust with the impetus and confidence needed to achieve higher levels.
- A considerable number of trusts improved their risk management processes during the 2002-2009 period - this could be due to familiarity and increased experience of what the NHSLA wants at NHSLA risk management assessments – although many trusts have remained at risk management level one throughout this period.
- A range of other factors which are considered to be exogenous to trust management (such as the proportions of 'gynaecology and obstetrics', operating in the London region, and whether the trust is a teaching trust) were also found to exert a significant influence on risk management levels.

In short, the significant relationships between foundation trust status and time effects with risk management levels does imply that trust management can influence the outcome of risk management level assessments; however, such discretion is over the medium-term horizon as the changes needed to affect such assessments take time to put in place.

10.2.3 Conclusions: Impact of Risk Management Processes on the Number of Clinical Negligence Claims

The impact of risk management processes on the number of clinical negligence claims was addressed in chapter eight of this study – the main findings of this chapter were as follows:

- Attainment of risk management levels two and three is associated with significant reductions in the number of new claims; level two is associated with an approximately 10% reduction in new claims while level three is associated with an almost 30% reduction in new claims. This finding, added to the opinions of the majority of trust managers in the exploratory interviews that higher risk management levels can drive lower claim numbers suggests that there is a casual relationship between these two proxies for the quality of patient care in NHS trusts. This finding also endorses the NHSLA policy of offering generous discounts for attainment of higher risk management levels – as this policy does generate a payoff in the form of reduced numbers of clinical negligence claims over time.
- The other two proposed elements of risk management processes in acute trusts (governance structure and financial strength) are also found to be significantly linked to new claim numbers - lagged financial health ratios are negatively linked to new claim numbers (this implies that the environment in which efficient trusts operate is also an environment where priority is given to risk management process), and foundation trusts are associated with lower numbers of new claims (this implies that the decentralised governance arrangements for such trusts are associated with improved clinical risk management outcomes). The combined effect of these factors is captured by the NHSLA risk manager who stated that *'having risk management processes in place will actually improve patient safety*'.
- Significant relationships were also reported between trust size (negative association), the London region (negative association) and the mix of specialties offered by the trust (positive association for the surgical specialties).

In summary, improved risk management processes are found to be the lever for trusts to reduce their clinical negligence claims, and trusts who manage to improve in the three interconnected elements of risk management processes are likely to see significant improvements in their clinical negligence claims experience.

10.2.4 Conclusions: Impact of Risk Management Processes on the Value of Closed Clinical Negligence Claims

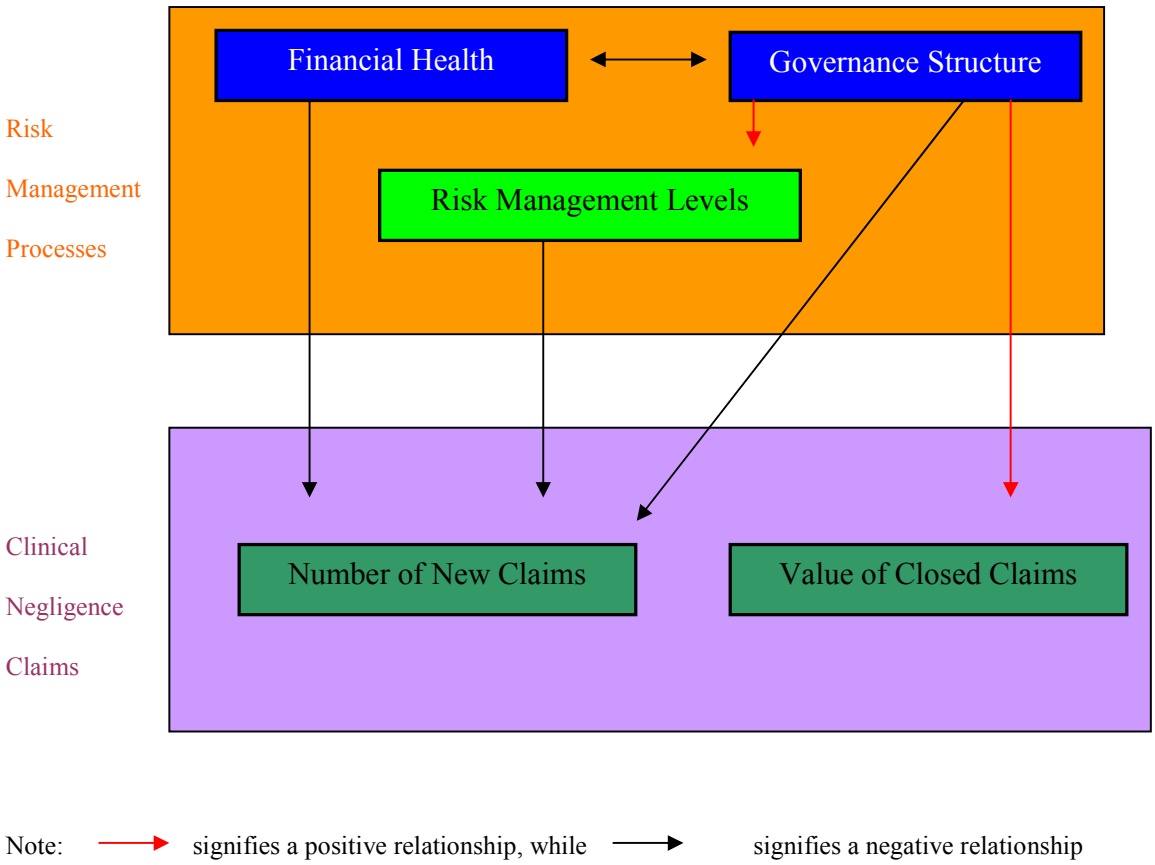
The second aspect to the effect of risk management processes on clinical negligence addressed the effect of the elements of such processes on the amounts paid to compensate patients in closed clinical negligence claims. The findings to this analysis revealed that risk management levels were not significantly associated with the average amount paid out for claims ceteris parabis, but governance structure (i.e. foundation trusts) were statistically associated with higher closed claim values ceteris parabis (this implies that such trusts are more willing to settle claims earlier by making more generous offers to reduce legal costs). This finding was reinforced by the NHSLA risk manager who felt that settling claims earlier makes sense when "*we know we are liable*', and is also consistent with the reduced numbers of small value claims for such trusts. Financial health was not significantly linked to closed claim values and it is clear that risk management processes do not exert as much of an influence on the average settlement values as they did on the number of clinical negligence claims. Such a finding is unsurprising to the extent that a number of trust managers felt that claim negotiations are managed by the NHSLA with little local trust involvement.

There are a number of other covariates which have significant relationships with closed claim values controlling for the aforementioned factors; for example, specialist trusts have significantly lower claim values than for other types of acute trusts, while trusts in the London region are significantly associated with higher clinical negligence payments.

10.2.5 Conclusions on the Effects of Risk Management Processes on Clinical Negligence Claims

Upon completion of the empirical chapters, conclusions can be drawn on the effects of risk management processes on clinical negligence claims – an integrated summary of such conclusions is included to accomplish the final research objective of this study. Initially, a graphical representation of the empirical findings in relation to the main variables of interest is provided below:

Figure 10.1 Summary of the Relationships between Risk Management Processes and Clinical Negligence Claims



Note: → signifies a positive relationship, while → signifies a negative relationship

This diagram summarises the significant relationships between the elements of a trust's risk management processes and its clinical negligence outcomes, and it is clear that there are many interconnections between these areas. These interconnections are briefly summarised below:

1. Risk management processes were proposed in the introduction chapter to be concerned with how a trust's management of risk is supported by good governance structures and by the availability of finance. The literature reviewed in chapter two on foundation trusts showed that the attainment of FT status automatically leads to improvements in a trust's financial position (as they are now allowed to retain surpluses). Furthermore, the empirical analysis in chapter seven showed that FT status has a significant positive relationship with risk management levels. In short, all three of these elements of risk management processes are interrelated, and trusts which succeed in achieving higher risk management levels are typically trusts which have acquired FT status which leads to consequent improvements in its financial position.
2. The impact of such processes on clinical negligence claims showed that all three elements of risk management processes exert a significant influence on the number of new claims, while only a trust's governance structure has a significant influence on the value of its closed claims. Such a finding is unsurprising as the incidence of new claims is likely to be affected by risk management processes (which are within the medium term control of trust management) while resolution of claims is largely managed by the NHSLA (with the assistance of local trust management). By contrast with the impact of risk management processes on the number of new claims, the impact of governance structure on closed claim values is positive, and this implies that trusts with FT status are willing to pay more for claims in the short-term to achieve long-term benefits such as less reputational damage.

The findings in Figure 10.1 control for a range of other covariates such as trust size and mix of various specialties; many of these other covariates were also statistically associated with the key variables in this study, and these associations will be highlighted later in this chapter when recommendations for a variety of relevant stakeholders are discussed.

10.3 Contribution of the Research

This study was initiated as a response to the identified gaps in the literature on the impact of quality management systems on clinical negligence claims in healthcare. Specifically, it has sought to connect two main signals of quality care within healthcare organisations: a risk management programme which was introduced as a framework to manage risks effectively in trusts, and clinical negligence claims which are an important indicator of patient safety in healthcare organisations. Research in this field is also timely as it will provide evidence to the NHS on the effectiveness of the risk management programme which was introduced in 2000 – given that such a system has a number of costs including the cost of administering the risk management level assessments and the cost of generous discounts offered to trusts that achieve higher risk management levels.

The unavailability of suitable data to investigate this research area was identified in the introduction chapter as a major reason for the paucity of studies in this area; such a deficiency has implications for literature in this field as Fenn et al. (2012, p13) state that "*whether hospital care levels respond to the financial incentives explicitly incorporated into risk pooling contributions is an empirical matter*". However, the availability of claims data through the NHSLA via CRIS at the University of Nottingham added to publicly available risk management level data opened up a unique opportunity for research. As such, this study provides a unique insight into the impact of the risk management processes employed in NHS trusts on clinical negligence claims, and contributes to both knowledge and practice in the area.

It is proposed in this study that risk management processes are the result of the interconnections between a trust's governance structure, its financial health and its risk management level – this is summarised in Figure 10.1 which can be a future research framework for other researchers in this field. Such risk management processes were found to have significant associations with clinical negligence claim outcomes, and this interconnectedness of the elements of risk management processes and claim outcomes is one of the main contributions of this study. Such a finding also reinforces the limited literature studies to date which implies that quality management systems do offer benefits to healthcare organisations – Frost (2006) found that the ISO 9001:2001 system should lead to reduced adverse events,

while Fenn et al. (2012) found that higher risk management levels are associated with lower MRSA infection rates. However, this study is a first of its kind to link risk management systems and clinical negligence claims in an empirical study, and thus makes a particular contribution to the effectiveness of risk management systems in healthcare.

In relation to the empirical analysis, the approach adopted was to consider a range of model specifications from an analysis of pooled data to an analysis of panel data, with consideration also being given to the endogeneity of both risk management levels and foundation trust status - the main conclusions are based on covariates which were found to have a consistent impact across a range of model specifications. Such an approach was facilitated by the initial gathering of qualitative data from ten exploratory interviews, with each interviewee being informed on the system of risk management levels in NHS trusts. This approach was considered appropriate due to the limited body of literature on risk management levels, and greatly assisted the researcher in generating suitable hypotheses for the empirical chapters. This thorough approach to the research issue led to a number of significant findings in relation to the effect of risk management processes on clinical negligence claims, and as such, the author believes that this study has made a significant contribution to knowledge and understanding of risk management within the NHS.

In summary, this study has enhanced the understanding and knowledge of the issues of risk management and claims management within healthcare organisations – in particular, the interconnectness of risk management processes and clinical claim outcomes - and such issues will be of interest to key stakeholders as they strive to maximise the use of resources in healthcare in future years when resources will be more limited than they were during the time period of this study.

10.4 Implications of the Research

A number of implications for theory and practice have emerged from this study. In relation to theory, these will address risk management and claims management issues in a wider context, while for practice, these will be divided into implications for the NHSLA and for NHS trusts.

10.4.1 Implications for Theory

There major implications of this study from a theoretical viewpoint are as follows:

The finding that risk management processes are significantly associated with lower numbers of new claims implies that quality management systems can deliver tangible benefits to healthcare organisations. Such a finding reinforces the views of Bohigas et al (1996) that such systems can improve an organisation's reputation and those of Frost (2006) that such systems can assist in preventing errors and other adverse outcomes. This, added to the financial benefits of lower CNST contributions, should lead to increased firm value for trusts which achieve risk management level increases (Tufano, 1996). Furthermore, these findings are consistent with Fenn et al.'s (2010) finding that level three compliance can lead to improvements in care (reduced MRSA rates) – for this study, risk management levels two and three were found to lead to approximately 10% and 30% reductions in the number of new claims respectively. Overall, the strong association between risk management processes and clinical negligence claims sheds important insights into efforts to improve patient safety in the NHS.

The reviewed literature suggested that the number of clinical negligence claims may be a very poor proxy for the level of quality care within healthcare organisations (indeed there are many factors which can distort such a relationship); however, the evidence from the exploratory interviews where the majority of trust managers felt that clinical negligence claims are an important proxy for the quality of risk management processes added to the finding that risk management processes are significantly associated with lower numbers of new claims, suggests that higher risk management processes can be the lever to drive improvements in a trust's number of new claims. This supports a broader view that the extent of litigation is significantly linked to the quality of patient safety efforts within NHS trusts.

A trust's risk management processes were proposed in this study to include its governance structure, risk management level and financial health – of these three elements, governance structure (foundation trust status) is shown to be critical in that it is significantly associated with all other key variables; this finding reinforces the views of Beaver and Prince (2002) which implies that the decentralised governance structures of such trusts are conducive to better risk management processes (FTs also have greater financial balances which allows more financial investment to help improve such processes). This positive impact of foundation trust status is consistent with Beazley (2005) who found that trusts have benefited from adopting corporate governance structures, and reinforces a view that trusts which have already undergone a change process find it easier to continue on a path of continuous improvement (Sweeney, 2004; Pomey et al., 2005). The converse of this also applies - trusts which do not achieve FT status will find it extremely difficult to either achieve risk management level increases or reduce new claim numbers in future years.

Finally, it is clear from this study that while there are strong incentives for trusts to progress to higher risk management levels, many trusts have remained at level one throughout the time period of this study – this reinforces O'Leary (2000) and Milakovich (1991) who argue that external quality oversight bodies do not have the ability to foster change in healthcare organisations. The high numbers of trusts at level one also implies that the rivalry between trusts is not intense enough to induce firms to follow rival trusts who have moved to higher risk management levels (Van Cayseele, 1988). It is clear that trusts which still operate at risk management level one will not succeed in making improvements unless certain barriers are addressed – this is consistent with a number of literature findings which state that such innovations require an organisation-wide effort which may not always be possible for trusts; Laforet and Tann (2006) found that achieving innovations requires a culture of empowerment of staff, Tidd et al. (2005) argues that top management need to be heavily involved in successful innovations, while Nair and Chandraharan (2010) note that risk management level increases require hard work and commitment from all members of staff. While these studies (and this study) make it clear that improvements in a trust's risk management level will take time to occur, it is also evident that the particular barriers faced by trusts which have consistently operated at risk management level one may need a different approach to

facilitate them to progress to higher levels. Such improvements in risk management levels are in the interest of the NHSLA, and recommendations to increase the likelihood of this occurring are provided in the next section of this chapter.

10.4.2 Implications for NHS Trusts

From a decision making viewpoint, this study has clear implications for senior management in NHS trusts; these trusts are subject to a bi-annual risk management assessment by the NHSLA - the outcome of which has direct implications for its reputation and CNST contribution. Data from NHSLA (2011a) confirmed that despite the incentives to progress to higher risk management levels, less than 50% of trusts had progressed beyond level one in 2009/2010. This suggests that action is needed if risk management level increases are to be obtained and on the basis of this study, this type of action could consist of:

(i) Improve one's governance structure. Foundation trust status is significantly associated with risk management levels and with both the number and value of clinical negligence claims, and trusts which achieve such status are more likely to achieve risk management level increases and lower numbers of clinical negligence claims. Becoming such a foundation trust requires trusts to satisfy the a three stage process imposed by the independent regulator of FTs (Monitor) but given the key role of such status in this study, a key recommendation for trusts seeking to improve their quality levels would be to seek such status as soon as possible.

(ii) Improving one's financial position. Financial health was found to be an enabler to trusts reducing their number of clinical negligence claims; this implies that culture of financial efficiency is also one which is conducive to improved risk management processes and practices. Improving one's financial position will also be a consequence of obtaining foundation trust status, and such financial benefits represent a key attraction for trusts applying for such status.

(iii) Making a risk management level increase a top priority. Apart from a financial commitment, the trusts which successfully increased their risk management level were those who appointed a

lead person to coordinate all aspects of a risk management level application, and who gave this person access to the board of directors during the build up to the application. An extensive organisation-wide effort is required for such an increase to be achieved, and this means extensive planning will need to be conducted far in advance of an assessment – this includes liaising with the NHSLA assessors to create a favourable impression of the trust.

(iv) Successful engagement with clinical staff – the involvement of clinical staff in the risk management assessment process was a key element of the successful increases achieved by the interviewed trusts. This has implications for the lead person in charge of a risk management level application, but also for the wider senior management and board of directors as such engagement should be part of a positive culture of engagement with clinical staff on a range of risk management issues.

Such actions can help trusts to secure risk management level increases, and the findings of the empirical analysis which confirms that such increases are associated with lower numbers of new claims should act as a further incentive for trusts to seek such increases i.e. it confirms a linkage between risk management processes and improved patient safety – therefore, a risk management increase is likely to confer an improved reputation on a successful trust.

10.4.3 Implications for the NHSLA

As the organisation which administers the risk management programme to NHS trusts, the findings of this study are also of key interest to the NHSLA. It currently offers generous discounts to trusts for achieving higher risk management levels and while this is a strong incentive for trusts, it has not succeeded in getting the majority of trusts to improve their risk management levels to date. Based on a review of the empirical findings, one would recommend that:

(i) A scheme of financial support to assist trusts which have not achieved foundation trust status be considered – it is clear that non FTs frequently lack the surplus finance needed to drive risk

management level applications (indeed, they are disallowed from retaining surpluses until they succeed in becoming an FT) and without some intervention to assist trusts in this regard, they are likely to continue to prioritise other areas above NHSLA risk management level assessments. Given that this study confirms that higher risk management levels are associated with lower numbers of clinical negligence claims, offering such support to trusts would have a longer-term payoff to the NHSLA in the form of reduced clinical negligence payments in future years.

(ii) The restrictions on trusts which have been involved in merger activity be reconsidered. Given that its is in the NHSLA's interest for trusts to progress to higher risk management levels, the current arrangement which effectively penalise trusts for engaging in restructuring activity should be reconsidered – for example, perhaps allow trusts which have merged their activities to achieve higher risk management levels in a shorter timeframe compared to what currently exists.

(iii) Consider increasing the incentives for trusts to progress beyond risk management level one. The exploratory interview with the NHSLA risk manager confirmed that the organisation is aware that it is much more difficult to progress from level one level two than it is from level two to level three as a change management process is already underway at level two and '*it is part of a natural journey*' to progress to level three. The findings of this study suggest that achieving risk management level two or higher leads to an approximate 10% reduction in new claims – therefore, it is in the NHSLA's own interest to see trusts achieve risk management level increases. Potential incentives here include:

(a) Review the current arrangement whereby trusts which apply for an increase can end up with a decrease - this may actually be a deterrent to trusts seeking an increase in the first place. The NHSLA risk manager confirmed in her interview that such a policy can create fear for trusts seeking risk management level increases, and it is clear that risk averse trusts will avoid seeking risk management level increases which they may be capable of achieving simply to avoid the risk of a risk management level decrease.

(b) Increase the discount percentages for trusts who manage to improve their risk management level – the current discount is 10% on one's CNST contribution and this could be extended to 15% on a trial basis.

(c) Consider penalty clauses for trusts which fail to progress beyond risk management level one over say a five year period. It is noticeable from the reviewed literature that when trusts were instructed that they had to achieve risk management level one to be members of the CNST scheme, they all managed to achieve this level; this implies that some penalty clauses which make risk management increases mandatory may be a more effective approach than the current voluntary incentives for trusts.

(iv) Consider amending the existing incentives for risk management level increases for specialist trusts. Such trusts are typically small in size and have been found in this study to be statistically associated with lower closed claim values. While such trusts are less likely to face high-value claims, a review of the specialist trust data showed that 48% of such trusts are still at risk management level one - this suggests that a large proportion of such trusts are capable of progressing to risk management level two but choose not to do so – a possible explanation is that the percentage discount on such trusts' CNST contribution is not worth much in cash terms as they have a relatively low CNST contribution to start with (due to the low claim levels for such trusts). If this is the case, a revised arrangement such as a minimum cash discount for a risk management level increase should be considered by the NHSLA to incentivise these trusts to seek risk management level increases.

(v) Consider amending the approach to claims management resolution in the London region. Trusts operating in this higher cost region relative to the remainder of acute trusts were found to have significantly higher claim values relative to trusts in other regions. While this may simply be a result of claimants not pursuing small value claims in this region (due to the proportionately higher legal costs), priority should also be given to alternative approaches to dispute resolution such as apologies and mediation in this region (to reduce its high incidence of high-value claims).

Overall, it is shown here that the results of this study have many potential implications for the NHSLA; most of these follow from the key finding that risk management processes are significantly associated with lower numbers of clinical negligence claims, and consist of ways to further incentivise trusts to progress to higher risk management levels.

10.5 Recommendations for Further Research

A number of opportunities for further research have become apparent during the course of, and upon completion, of this study.

(i) A logical extension to the analysis undertaken in this study would be to continue the study of risk management processes and clinical negligence claims up to 2012; the current study was restricted to claims data up to the end of 2008, and it would be of clear interest to trusts and the NHSLA to learn if the conclusions to this study persist in the years 2009 to 2011. Such a follow-up study is also warranted as Table 1.2 in the introduction chapter highlighted that the number and value of clinical claims rose steadily in the period 2008 to 2011 – reversing a number of declines in the years up to 2008. Having concluded this study with a broad conclusion that improvements in risk management processes have contributed to clinical negligence improvements in the period 2002-2007, it is natural to investigate the extent to which such processes have contributed to the subsequent increases in these variables.

(ii) There may be merit in conducting a follow-up qualitative study of the findings to this study with a focus group of NHS trust managers and NHSLA personnel – such a study could be used to confirm the empirical findings to this study and discuss any apparent contradictions (such as the finding that foundation trusts are associated with higher closed claim values). Such a study would serve to triangulate the empirical results – such an approach can be viewed as a strategy that adds rigor, breadth, complexity, richness, and depth to an inquiry (Denzin and Lincoln, 2003).

(iii) Given the pivotal role which foundation trust status plays for NHS trusts seeking risk management level increases and / or reductions in their clinical negligence claims, consideration should be given to conducting a study of the factors which facilitate trusts achieving FT status and the factors which mitigate against achieving such status. Such a study could adopt a similar approach to the current study of initially eliciting opinions via exploratory interviews with relevant trust personnel before proceeding to empirical analysis.

(iv) The current study has been limited to acute trusts, and data is available to extend this study to other types of NHS organisation such as mental health trusts, care trusts, primary care trusts, and ambulance trusts. All of these organisations are offered the same incentives (in terms of percentage discounts on their CNST contributions) for achieving higher risk management levels, and it would be interesting to explore whether these incentives are having a similar impact on clinical negligence claims for these organisations.

(v) While the exploratory interviews did offer important insights on the factors which enable trusts to achieve higher risk management levels, just one of the trust managers interviewed came from a trust which had not achieved a risk management increase (Nottingham University Hospitals NHS Trust). Therefore, scope exists to examine other trusts of this nature to assess if there are additional barriers restricting trusts from achieving higher risk management levels.

(vi) The exploratory interviews and a review of relevant literature clearly identify engagement with clinical staff and an innovative culture as key ingredients of successful risk management level applications; therefore consideration could be given to involving clinical staff in a future qualitative investigation of risk management levels – with a view to ascertaining what factors facilitate and which factors mitigate against involvement in a risk management application. However, it should be acknowledged that eliciting the involvement of doctors in such a study may prove challenging.

In summary, this extensive study has opened up a plethora of research opportunities to further analyse the relationship between risk management processes and clinical negligence claims in NHS trusts.

10.6 Limitations of the Research

There are a number of limitations inherent within this research. While these have already been addressed in previous chapters, this stage of the thesis represents a timely opportunity for these to be restated.

(i) In relation to the exploratory interviews, a number of limitations have already been outlined in section 5.7 – chief among these was the emphasis on trusts which secured risk management level increases despite the fact that many trusts did not change their risk management level over the time period of this study. In addition, there are limitations attached to using telephone interviews as a method of data collection, and while efforts were made to assure respondents on the confidentiality of replies, the possibility exists that such concerns may have led to some information not being made available to the author;

(ii) In relation to the quantitative analysis in chapters seven, eight and nine, the following limitations must be acknowledged:

(a) Reliability of Individual Claims Data – Figure 6.2 in chapter six showed that significant differences exist in the numbers of new claims reported by the NHSLA (NHSLA, 2011a) and those obtained from an individual database of claims up to the end of 2008. Such differences are attributed to different dates being used to aggregate the relevant claims over this period and preference is given to the individual claims data for reasons outlined in chapter siz; however, it must be acknowledged that the findings of this study assume that the individual claims data is an accurate representation of the new claims being notified to the NHSLA over the period 2002-2009;

(b) Limited time period - the empirical chapters assess the impact of various covariates on risk management levels (chapter seven), new claim numbers (chapter eight) and closed claim values (chapter nine). In this regard, the time period to assess such effects in this study is limited by the fact that risk management levels only originated in 2001, and that the individual claims data / financial data is only available to the end of 2008 (this is discussed further in chapter six).

(c) Effect of consolidations within the NHS trust sector - as indicated in chapter two, the period since 2001 has seen much merger activity within the NHS, and this meant that full records for trusts which merged during the 2002-2009 period will not be available. This will limit the ability to analyse the effect of changes in covariates on the dependent variable for such trusts;

(d) Data limitations – a number of covariates were hypothesised in chapters seven, eight and nine to impact on the relevant dependent variable (e.g. a lead person in charge of an NHSLA risk management assessment, and the availability of funding arrangements such as legal aid) but suitable measures / proxies could not be sourced to include these variables as covariates.

(iii) The author has been singularly responsible for undertaking all aspects of this study under the direction of his research supervisors, and as such, has been subject to the limitations of time and personal resources. Had an option of working in collaboration with other researchers been available, additional data such as additional exploratory interviews would have been collected. As a result, this research has risked exposure to the preconceptions, personal and professional values and potential biases that the author may have brought to the process. Every effort has been made to negate such effects through careful and systematic planning and execution of the study; however, it is appropriate to acknowledge this as a limitation of this study;

(iv) In conducting a study exclusively on NHS acute trusts, the research has potentially limited the scope to generalise the findings to other types of NHS organisation and to healthcare organisations in other countries;

10.7 Chapter Summary

This chapter has presented a range of conclusions which have been drawn from this research study. It also offered a number of recommendations for theory, practice and for further research in the area, while at the same time acknowledging the limitations inherent within the research exercise itself. It has also highlighted the contribution of this study on a number of fronts in terms of knowledge and understanding of the effects of risk management processes on clinical negligence claims in NHS trusts.

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APPENDIX ONE

RISK STANDARD VARIABLES AVAILABLE AT WWW.NHSLA.COM

CNST General Level
Date of CNST General Assessment

CNST General: Level 1: Standard 1 : Learning from Experience

CNST General: Level 1: Standard 2 : Response to Major Clinical Incidents

CNST General: Level 1: Standard 3 : Advice and Consent

CNST General: Level 1: Standard 4 : Health Records

CNST General: Level 1: Standard 5 : Induction, Training and Competence

CNST General: Level 1: Standard 6 : Implementation of Clinical Risk Management

CNST General: Level 1: Standard 7 : Clinical Care

Note that the same seven standards are also available at levels two and three respectively.

Date of NHSLA Acute Assessment

NHSLA Acute Level

NHSLA Acute: Level 1: Standard 1 : Governance

NHSLA Acute: Level 1: Standard 2 : Competent & Capable Workforce

NHSLA Acute: Level 1: Standard 3 : Safe Environment

NHSLA Acute: Level 1: Standard 4 : Clinical Care

NHSLA Acute: Level 1: Standard 5 : Learning from Experience

Note that the same five standards are also available at levels two and three respectively.

Date of CNST Maternity Assessment

CNST Maternity Level

CNST Maternity: Level 1: Standard 1 : Organisation

CNST Maternity: Level 1: Standard 2 : Learning from Experience

CNST Maternity: Level 1: Standard 3 : Communication

CNST Maternity: Level 1: Standard 4 : Clinical Care

CNST Maternity: Level 1: Standard 5 : Induction, Training and Competence

CNST Maternity: Level 1: Standard 6 : Health Records

CNST Maternity: Level 1: Standard 7 : Implementation of Clinical Risk Management

CNST Maternity: Level 1: Standard 8 : Staffing Levels

Note that the same eight standards are also available at levels two and three respectively.

Date of Ambulance Assessment

Ambulance Level

Ambulance Level 1: Criterion 1: Corporate and Individual Accountability for Managing Risk

Ambulance Level 1: Criterion 2: Risk Management Strategy

Ambulance Level 1: Criterion 3: Risk Management Organisational Structure

Ambulance Level 1: Criterion 4: Incident Reporting and Management

Ambulance Level 1: Criterion 5: Complaints and Claims Reporting and Management

Ambulance Level 1: Criterion 6: Procedures to Assist in the Management of Clinical Risk

Ambulance Level 1: Criterion 7: Clinical Care

Ambulance Level 1: Criterion 8: Risk Management Process

Ambulance Level 1: Criterion 9: Induction and Risk Management Training

Ambulance Level 1: Criterion 10: Employee Competence

Ambulance Level 1: Criterion 11: Independent Assurance

Note that the same eleven standards are also available at levels two and three respectively.

Date of CNST MH & LD Assessment

CNST MH & LD Level

CNST MH & LD: Level 1: Standard 1 : Learning from Experience

CNST MH & LD: Level 1: Standard 2 : Response to Serious Incidents involving / relating to Service Users

CNST MH & LD: Level 1: Standard 3 : Communication between Professionals and Service Users

CNST MH & LD: Level 1: Standard 4 : Clinical Information and the Care Record

CNST MH & LD: Level 1: Standard 5 : Induction and Staff Procedures

CNST MH & LD: Level 1: Standard 6 : Training

CNST MH & LD: Level 1: Standard 7 : Care Processes

CNST MH & LD: Level 1: Standard 8 : Communication between Professionals involved in the Care of

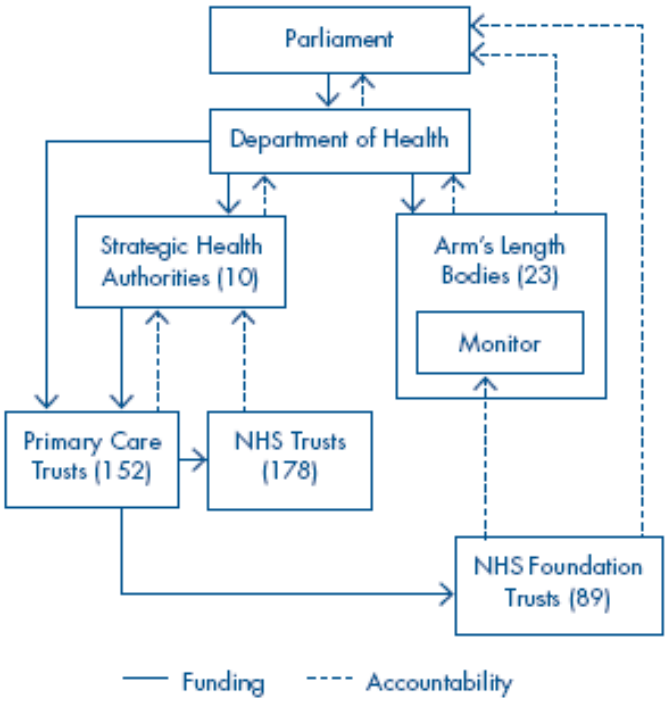
Note that the same eight standards are also available at levels two and three respectively.

PCT Level

Date of PCT Assessment

APPENDIX TWO

FUNDING AND ACCOUNTABILITY RELATIONSHIPS IN THE NHS



Source: National Audit Office (2008)

APPENDIX THREE

Sample Interview Guide for Exploratory Interview with Trust Financial Managers

1. *Initial Queries on Background Details*
   - Nature of trust (foundation, mental health, ambulance etc)
   - Risk Standards levels across various areas (maternity, ambulance etc
     (+ trends in risk standards in recent years)
   - General details on financial variables in recent years
     (will have Laing & Buisson financial data and just confirming this / getting additional details)
   - General details on claims levels in recent years
   - General details on clinical negligence contributions made
     (extent of experience and merit ratings achieved)

2. *Queries in relation to the Objectives and Governance Arrangements*
   - importance of financial goals (breakeven, profitability)
   - importance of financial goals vs other goals such as high quality care
   - does the trust have objectives in relation to risk management standards
   - are any budgets set aside in any given year for risk management practices
   - does the trust have objectives in relation to claims, and are there target levels of clinical negligence payments to be achieved?
   - describe the governance arrangements at the trust
   - comment on the extent to which you feel the governance arrangements create the right incentives for the organisation's objectives to be achieved

3. *Linkage of Risk Standards to Claims & Financial Variables*
   - extent to which it is viewed as being due to mandatory risk practices / general culture of risk behavior in the trust
   - opinion on extent to which risk standard changes in trust in recent years were due to deliberate actions to improve standards or due to staff just behaving in their normal way
   - Are risk standard level(s) reviewed regularly at management level
     (if so, does the trust have a strategy on how to improve risk level(s)?
     - has a cost benefit analysis ever been conducted on potential investments to improve risk management standards?
   - Assessment of how important financial variables are to risk levels in trust
     (do you feel current risk levels are a result of discretionary expenditure on good risk management practices / processes)
     (do you feel investments to improve risk standards which should lead to reduced claims and premiums are good value?)
     (Are financially stronger trusts are those with the best risk standards?)
   - Are investments in risk management considered on a financial basis?
     (do you compute the expected cash flows associated with these such as the initial outlay versus the benefits in terms of premium discounts / reduced claims – this would enable an NPV type analysis)

APPENDIX FOUR

Trusts With Risk Management Level Increases 2006-2009

Trust	2006/2007 Level	2007/2008 Level	2008/2009 Level
Aintree University Hospitals NHS Foundation Trust	1	2	2
Basingstoke and North Hampshire NHS Foundation Trust	1	2	2
Birmingham Women's Health Care NHS Trust	1	2	2
Blackpool, Fylde and Wyre Hospitals NHS Trust	1	1	2
Brighton and Sussex University Hospitals NHS Trust	1	2	2
Burton Hospitals NHS Trust	1	1	2
Camden and Islington NHS Foundation Trust	1	1	2
Central Manchester and Manchester Childrens University Hospitals NHS Trust	1	1	2
Christie Hospital NHS Foundation Trust	2	3	3
County Durham & Darlington NHS Foundation Trust	1	1	2
Ealing Hospital NHS Trust	1	2	2
East & North Hertfordshire NHS Trust	1	2	2
East Cheshire NHS Trust	1	2	2
East Lancashire Hospitals NHS Trust	1	2	2
George Eliot Hospital NHS Trust	1	2	2
Heatherwood & Wexham Park Hospitals NHS Trust	2	2	3
Mid Cheshire Hospitals NHS Foundation Trust	1	2	2
North Tees and Hartlepool NHS Trust	1	2	2
Northumbria Healthcare NHS Foundation Trust	1	2	2
Peterborough and Stamford Hospitals NHS Foundation Trust	1	1	2
Poole Hospital NHS Foundation Trust	1	2	2
Salford Royal NHS Foundation Trust	2	3	3
Stockport NHS Foundation Trust	2	3	3
Tameside Hospital NHS Foundation Trust	2	3	3
Tameside Hospital NHS Foundation Trust	2	2	3
The Mid Cheshire Hospitals NHS Trust	1	1	2
The Royal Bournemouth & Christchurch Hospitals NHS Foundation Trust	1	1	2
The Royal National Hospital For Rheumatic Diseases NHS Foundation Trust	2	2	3
Trafford Healthcare NHS Trust	1	1	2
University College London Hospitals NHS Foundation Trust	1	1	2
University Hospital of South Manchester NHS Foundation Trust	2	3	3

APPENDIX FIVE

SAMPLE LETTER SENT REQUESTING EXPLORATORY INTERVIEW WITH TRUST MANAGER

School of Business,

Waterford Institute of Technology,

Cork Road,

Waterford,

Ireland.

30th November 2009

Trust Name

Trust Address

Dear XXX,

I am a part-time PHD student at the Business School of the University of Nottingham, and am currently in year four of a six year programme. The research project I am undertaking is 'The Impact of Financial Variables on Risk Management and Claims Management within the NHS', and this research is being supervised by Professor Paul Fenn and Dr. Dev Vencappa of Nottingham University Business School. This research is concerned with an analysis of data from NHS hospital trusts on financial performance, CNST risk management standards and negligence claims as obtained from the NHSLA and from the Centre for Risk and Insurance Studies at Nottingham University Business School (a letter from Professor Fenn is attached with further details).

I would be grateful if you would agree to participate in a small number of exploratory interviews which I wish to conduct with key decision-takers in NHS trusts prior to undertaking the analysis. The purpose of these interviews is to improve my understanding of the process by which NHS trust management

determines policy in relation to improving CNST risk management standards. As I believe your own organisation did improve its CNST risk management standard from Level 1 to Level 2 in 2008/09, I was hoping to meet with people in your trust who were involved in the process which led to this improvement. While I am based in Ireland, I am willing to complete these interviews at short notice at a date and venue that suits at your end.

The information collected from these interviews will be treated in the strictest confidence and will be mainly used to clarify issues for the subsequent data analysis. The identity of the interviewees and trust can also be omitted from the results produced from all interviews if requested.

I would very much appreciate your co-operation to take part in this phase of my PhD research. I am hoping to conduct these interviews before the end of 2009 but will be available in early 2010 if this suits better at your end. I have included a reply form with a stamped addressed envelope which you will hopefully complete – this asks you to indicate suitable interview times if you are willing to be involved in this research (If it suits better, this information can be emailed to be at the address below).

Thanking you in advance,

_____

Tom Egan
Lecturer in Statistics
Waterford Institute of Technology
Tel: +353 51 302426
Email: tegan@wit.ie

APPENDIX SIX

SUPPORTING LETTER ATTACHED TO REQUESTS FOR EXPLORARORY INTERVIEWS

Our reference

Your reference

Direct line/e-mail

Business School

Jubilee Campus
Wollaton Road
Nottingham
NG8 1BB
Tel: +44 (0) 115 846 6666
Fax: +44 (0) 115 846 6667
http://www.nottingham.ac.uk/ub

Dear Director of Finance,

Financial performance, risk management standards and negligence claims in NHS hospital trusts

I am writing in support of the request made to you by Tom Egan for a short interview in relation to the above research project, which he is undertaking for his PhD under my supervision. His thesis will explore the interrelationships between measures of NHS trust financial performance, CNST risk management standards as assessed by the NHSLA, and the frequency and cost of clinical negligence claims against hospital trusts. As part of this objective, he is hoping to investigate the planning process by which trusts commit financial resources in order to improve their CNST risk management standards, hence his request for an interview with you and/or your colleagues who were involved in this process. I believe his findings will be of general interest, and he will no doubt be willing to provide feedback on these at a future stage. I should emphasise that all interview material will be treated as confidential and that individual trusts will not be identifiable in Tom's thesis or any subsequent publications. I do hope you can find time to help with this research.

Yours sincerely,

Professor Paul Fenn
Head of Industrial Economics
Nottingham University Business School
Nottingham NG8 1BB

APPENDIX SEVEN

INTERVIEW GUIDE FOR EXPLORATORY INTERVIEW WITH NHSLA RISK TRUST MANAGER

1. Having introduced myself and my research area, I would like to see what Alison's views are of the findings in the eight exploratory interviews – and I am happy to initially address any queries which she may have having had a look through the summary findings.

2. I would then hope to follow up some issues with her myself which can also help in clarifying some assumptions for my panel data findings (which I am also happy to share later this year with Alison if it is of interest). These can be addressed in any particular order and are as follows:

   (a) Would she feel that these eight views of trusts which have achieved risk level increases would be representative of all other trusts that you know to have achieved risk level increases in recent years?

   (b) The interviews do suggest that trusts seek risk level improvements for reputational more than for financial reasons – would you have expected this outcome?

   (c) From the viewpoint of the NHSLA, what is the main purpose of the financial discounts which are offered for obtaining higher NHSLA risk levels – they do act as an incentive for trusts to achieve higher levels but what is the return to the NHSLA from offering such discounts?

   (d) Do you agree that higher NHSLA risk levels should impact on claim levels and claim values in future years?

   (e) Given that there are strong financial incentives available for achieving higher NHSLA risk levels, why do you feel that of the 26 acute trust risk levels on the NHSLA website (at Feb 2011), almost half (12) of them are still at level 1 – what are the key barriers holding trusts back from achieving higher levels?

   (f) Would she agree that having a good financial position puts a trust in a much better position to achieve a risk level increase?

   (g) My own view from talking to the interviewees was that they found the process of seeking a risk level increase to be arduous, and that they were slow to be convinced by the merits of all that they had to do to seek an increase; however, this attitude did soften afterwards as they began to appreciate what the NHSLA was seeking when putting all of the various standards for each levels in place. Do you feel there is a slow process to convince trusts of the benefits of higher risk levels, and that this message may not get through at all to many trusts?

(h) Some interviewees refer to the issue of an NHSLA risk level four being introduced – is this likely in the near future?

(i) When trusts state that they feel the main benefits of a risk level increase are reputational, what do you understand the reputational benefits to be? Is there a reputational benefit from having a lower claims experience vis-à-vis other trusts?

(j) An alternative view of the NHS risk level system (which is drawn from insurance literature) is that it simply acts as a classification system for the NHSLA to rank trusts – the idea here is that the NHSLA needs a kite mark to rank trusts into for (as an example) high quality, medium quality and low quality categories, and that risk levels are there to reflect quality levels rather than to incentivise trusts to make risk level improvements. What is your opinion of such a view?

APPENDIX EIGHT

FINANCIAL VARIABLES IN LAING & BUISSON DATA

Balance Sheet Variables	Cash Flow Variables	Income and Expenditure Variables
Intangible Assets	Net Cash from Operating Activities	Income from SHAs
Land	Net Interest / Investment Payments	Income from GPFHs
Buildings & Dwellings	Net Cash from Capital Expenditure	Income from NHS Trusts
Plant & Equipment exc. IT	Dividends Paid	Income from Primary Care Trusts
Information Technology	Net Cash Flow Before Financing	Income from Foundation Trusts
Assets Under Contruction	Loans Repaid	Income from Local Authorities
Total Fixed Assets	Other Capital Receipts	Income from DoH
Stocks & Work in Progress	Capital Element of Finance Leases	Other NHS Income
NHS Debtors	Cash transferred from/to other NHS Bodies	Income from Core Activities
Other Debtors	Cash transferred to Foundation Trust	Other Income
Long-term Debtors	Net Cash Inflow	Total Income
Investment	Increase / Decrease in Cash	Directors' Costs
Bank & Cash Balances	Total Clinical Expenses	Staff costs
Total Current Assets	Total General Expenses	Transport Costs
NHS Creditors	Total Non-Pay Revenue	Bad debts Costs
PDC Dividend	Total Revenue	Depreciation & Amortisation
Other Creditors £:000		Auditors Fees
Net Current Assets		Clinical Negligence Expenses
Total Assets less Current Liabilities		Other Expenses
Long-Term Creditors		Total Expenditure
Provisions		Operating Surplus
Total Net Assets		Surplus before Interest
Public Dividend Capital		Surplus for the year
Revaluation Reserve		Retained Surplus for the year

APPENDIX NINE

HOSPITAL ACTIVITIES AVAILABLE IN HES DATA

Accident & Emergency	Immunopathology
Anaesthetics	Infectious Diseases
Audiological Medicine	Medical Microbiology
Blood Transfusion	Medical Oncology
Cardiology	Medical Ophthamology
Cardiothoracic Surgery	Mental Handicap
Chemical Pathology	Mental Illness
Child & Adolescent Psychiatry	Nephrology
Clinical Genetics	Neurology
Clinical Immunology & Allergy	Neurosurgery
Clinical Neuro-Physiology	Nuclear Medicine
Clinical Oncology, Alias Radiotherapy	Obstetrics For Patients Using A Hospital Bed
Clinical Pharmacology	Old Age Psychiatry
Clinical Physiology	Ophthalmology
Community Medicine	Oral Surgery
Dental Medicine	Orthodontics
Dermatology	Paediatric Dentistry
Ear, Nose & Throat	Paediatric Neurology
Endocrinology	Paediatric Surgery
Forensic Psychiatry	Paediatrics
Gastroenterology	Palliative Medicine
General Medicine	Plastic Surgery
General Pathology	Psychotherapy
General Practice - With Maternity Function	Radiology
General Surgery	Rehabilitation
Genito-Urinary Medicine	Restorative Dentistry
Geriatric Medicine	Rheumatology
Gp - Other Than Maternity	Thoracic Medicine
Gynaecology	Trauma & Orthopaedics
Haematology	Unknown
Histopathology	Urology

APPENDIX TEN

AMENDMENTS TO INDIVIDUAL CLAIMS DATABASE

The amendments made to the iInitial File of 85,096 claims (received in June 2009) were as follows:

1. Removal of negative aues for claim value variables - in each case, the original negative value was replaced by a blank value i.e. all other claim details were retained.

2. Amendment of Trust Names to reflect Name Changes / Trust Mergers – in total 46 changes were made.

3. Insertion of 17,084 closed financial year values – of the 72,280 closed claims, 15,204 were settled below the excess (pre-2002) with no closing date or damaged reached date. Of the remainder, 40,092 had a closing date while 17,804 do not. However, these 17,084 cases do have a damaged reached data and this date has been inserted as the closing date to allow collapsing by closing date for all closed claims.

4. Claim Deletions – a total of 374 claims were deleted as these could not be linked to any particular trust or PCT. This reduced the overall number of claims from 85,096 to 84,722 claims.

5. Removal of Claims Relating to Dissolved Health Authorities and Strategic Health Authorities - in total, 10,587 claims were deleted with this set of amendments, and this left 87,422-10,587 = 74,135 claims from which the subsequent collapsing was performed

APPENDIX ELEVEN

CONSOLIDATIONS WITHIN NHS TRUST SECTOR

Note that the amalgamated or consolidated trust is shown first and the trusts which merged / dissolved to form this larger organisation are indented underneath. The year column refers to the year when the relevant consolidation took place.

No.	Trust Description	Year
1	Barking, Havering & Redbridge Hospitals NHS Trust	2001
	Havering Hospitals NHS Trust	2001
	Redbridge Healthcare NHS Trust	2001
	BHB Community Health Care (dissolved)	2001
2	Barnet Enfield & Haringey Mental Health NHS Trust	2001
	Barnet Community Healthcare NHS Trust (dissolved)	2001
	Enfield Community Care NHS Trust (dissolved)	2001
	Haringey Healthcare NHS Trust (dissolved)	2001
3	Basingstoke and North Hampshire NHS Foundation Trust	2007
	North Hampshire Hospitals NHS Trust	2007
4	Berkshire Healthcare NHS Trust	2001
	East Berkshire Community Health NHS Trust (dissolved)	2001
	East Berkshire NHS Trust	2001
	West Berkshire Priority Care Service NHS Trust (dissolved)	2001
5	Birmingham & Solihull Mental Health NHS Trust	2003
	Northern Birmingham Mental Health Trust (Dissolved)	2003
	South Birmingham Mental Health NHS Trust (Dissolved)	2003
6	Blackpool, Fylde & Wyre Hospitals NHS Trust	2002
	Blackpool Wyre & Fylde Comm Health Services (Dissolved)	2002
	Blackpool Victoria Hospital NHS Trust (Dissolved)	2002
7	Bolton, Salford & Trafford Mental Health NHS Trust	2003
	Mental Health Services of Salford NHS Trust	2003
8	Bradford District Care NHS Trust	2002
	Bradford Community Health NHS Trust (Dissolved)	2002
9	Brighton & Sussex University Hospitals NHS Trust	2002
	Brighton Health Care NHS Trust (Dissolved)	2002
	Mid Sussex NHS Trust (Dissolved)	2002

No.	Trust Description	Year
10	Buckinghamshire Hospitals NHS Trust	2003
	Stoke Mandeville Hospital NHS Trust (Dissolved)	2003
	South Buckinghamshire NHS Trust (Dissolved)	2003
11	Calderdale & Huddersfield NHS Trust	2001
	Calderdale Healthcare NHS Trust	2001
	Huddersfield NHS Trust (dissolved)	2001
12	Cambridge University Hospitals NHS Foundation Trust	2004
	Addenbrooke's NHS Trust	2004
13	Cambridgeshire & Peterborough MH Partnership NHS Trust	2002
	Lifespan Healthcare Cambridge NHS Trust (Dissolved)	2002
	North West Anglia Healthcare NHS Trust (Dissolved)	2002
14	Central Manchester & Manchester Children's University Hospitals	2001
	Central Manchester Healthcare NHS Trust (dissolved)	2001
	Manchester Children's Hospital NHS Trust (dissolved)	2001
15	Central & N W London MH NHST	2002
	Brent Kensington Chelsea & Westminister MH NHS Trust	2002
	Harrow & Hillingdon Healthcare NHS Trust (dissolved)	2002
16	Cheshire & Wirral Partnership NHS Trust	2002
	Cheshire Community Health Care Trust (Dissolved)	2002
	Wirral & West Cheshire Comm Healthcare NHST (Dissolved)	2002
17	County Durham & Darlington Acute Hospitals NHS Trust	2002
	North Durham Healthcare NHS Trust	2002
	South Durham Health Care NHS Trust (Dissolved)	2002
18	Derbyshire Mental Health Services NHS Trust	2002
	North Derbyshire Community Healthcare NHS Trust	2002
	Southern Derbyshire Mental Health NHS Trust	2002
	CHS Southern Derbyshire NHS Trust	2001
19	Devon Partnership NHS Trust	2001
	Exeter & District Comm Health Service NHS Trust (dissolved)	2001
20	Doncaster & Bassetlaw Hospitals NHS Foundation Trust	2001
	Doncaster Royal & Montagu Hospital Trust (dissolved)	2001
	Bassetlaw Hospital & Community Services NHST (dissolved)	2001
21	East Lancashire Hospitals NHS Trust	2003
	Blackburn Hyndburn & Ribble Valley Health Care NHST	2003
	Burnley Health Care NHS Trust (Dissolved)	2003

No.	Trust Description	Year
22	East Midlands Ambulance Service NHS Trust	2006
	Lincolnshire Ambulance & Health Transport Service NHST	2006
	Two Shires Ambulance NHS Trust	2006
23	East of England Ambulance Service NHS Trust	2007
	Bedfordshire & Hertfordshire Ambulance & Paramedic Services	2007
	East Anglian Ambulance NHS Trust	2007
	Essex Ambulance Service NHS Trust	2007
24	East Sussex Hospitals NHS Trust	2002
	Eastbourne Hospitals NHS Trust (Dissolved)	2002
	Hastings & Rother NHS Trust (Dissolved)	2002
	Eastbourne & County Healthcare NHS Trust	2002
25	Gloucestershire Hospitals NHS Foundation Trust	2002
	East Gloucestershire NHS Trust (Dissolved)	2002
	Gloucestershire Royal NHS Trust (Dissolved)	2002
26	Great Western Ambulance Service NHS Trust	2006
	Avon Ambulance NHS Trust	2006
	Gloucestershire Ambulance Service NHS Trust	2006
	Wiltshire Ambulance Service NHS Trust	2006
27	Heart of England NHS Foundation Trust	2005
	Birmingham Heartlands & Solihull NHS Trust	2005
	Good Hope Hospital NHS Trust	2007
28	Hertfordshire Partnership NHS Trust	2001
	Horizon NHS Trust	2001
	West Hertfordshire Community Health NHS Trust	2001
	Hertfordshire Partnership NHS Trust	2001
29	Imperial College Healthcare NHS Trust	2007
	Hammersmith Hospitals NHS Trust	2007
	St Mary's NHS Trust	2007
30	Kent and Medway NHS and Social Care Partnership Trust	2006
	East Kent Community NHS Trust	2006
	West Kent NHS & Social Care Trust	2002
	Invicta Community Care NHS Trust	2002
	Thames Gateway NHS Trust (Dissolved)	2002
31	Lancashire Care NHS Trust	2002
	Communicare NHS Trust (Dissolved)	2002
	Guild Community Healthcare NHS Trust (Dissolved)	2002

No.	Trust Description	Year
32	Lancashire Teaching Hospitals NHS Foundation Trust	2002
	Chorley & South Ribble NHS Trust (Dissolved)	2002
	Preston Acute Hospitals NHS Trust (Dissolved)	2002
33	Lincolnshire Partnership NHS Trust	2001
	Lincoln District Healthcare NHS Trust	2001
	South Lincolnshire Healthcare NHS Trust (dissolved)	2001
34	Mersey Care NHS Trust	2002
	North Mersey Community NHS Trust (Dissolved)	2002
35	Mid Yorkshire Hospitals NHS Trust	2002
	Dewsbury Health Care NHS Trust (Dissolved)	2002
	Pinderfields And Pontefract Hospitals NHS Trust (Dissolved)	2002
36	North Cheshire Hospitals NHS Trust (now Warrington and Halton	2001
	Halton General Hospital NHS Trust (dissolved)	2001
	Warrington Hospital NHS Trust (dissolved)	2001
37	North Cumbria Acute Services NHS Trust	2001
	Carlisle Hospitals NHS Trust	2001
	West Cumbria Healthcare NHS Trust	2001
	North Lakeland Healthcare NHS Trust (dissolved)	2001
38	North Essex Mental Health Partnership NHS Trust	2001
	Essex & Hertfordshire Community NHS Trust (dissolved)	2001
	North East Essex Mental Health NHS Trust (dissolved)	2001
	Mid Essex Community & Mental Health NHS Trust (Dissolved)	2001
39	Northern Lincolnshire & Goole Hospitals NHS Trust	2001
	North East Lincolnshire NHS Trust (dissolved)	2001
	Scunthorpe And Goole Hospitals NHS Trust (dissolved)	2001
40	North West Ambulance Service NHS Trust	2006
	Cumbria Ambulance Service NHS Trust	2006
	Greater Manchester Ambulance Service NHS Trust	2006
	Lancashire Ambulance NHS Trust	2006
	Mersey Regional Ambulance NHS Trust	2006
41	Northamptonshire Healthcare NHS Trust	2001
	Northampton Community Healthcare NHS Trust	2001
	Rockingham Forest NHS Trust (dissolved)	2001

No.	Trust Description	Year
42	Northumberland, Tyne and Wear NHS Trust	2006
	Newcastle, North Tyneside & Northumberland Mental Health NHS	2001
	Newcastle City Health NHS Trust	2001
	Northumberland Mental Health NHS Trust	2001
	South Of Tyne & Wearside Mental Health NHS Trust	2002
	Priority Healthcare Wearside NHS Trust (Dissolved)	2002
	Northgate & Prudhoe NHS Trust	2006
43	Nottingham University Hospitals NHS Trust	2001
	Queen's Medical Centre Nottingham University Hospital NHS Trust	2001
	Nottingham City Hospital NHS Trust	2001
44	Nottinghamshire Healthcare NHS Trust	2001
	Central Nottinghamshire NHS Trust	2001
45	Oxfordshire and Buckinghamshire Mental Health NHS Foundation	2008
	Buckinghamshire Mental Health NHS Trust	2001
	Aylesbury Vale Community Healthcare NHST (dissolved)	2001
	Milton Keynes Community Health NHS Trust	2001
	Oxfordshire Mental Healthcare NHS Trust	2008
46	Papworth Hospital NHS Trust	2002
	Parkside Health (London) (Dissolved)	2002
	Riverside Community Health Care NHS Trust (Dissolved)	2002
47	Pennine Acute Hospitals NHS Trust	2002
	Bury Health Care NHS Trust (Dissolved)	2002
	North Manchester Healthcare NHS Trust (Dissolved)	2002
	Oldham NHS Trust (Dissolved)	2002
	Rochdale Healthcare NHS Trust (Dissolved)	2002
48	Rotherham, Doncaster and South Humber MH NHS Found Trust	2007
	Doncaster & South Humber Healthcare NHS Trust	2002
	Rotherham Priority Health Trust (Dissolved)	2002
49	Sandwell & West Birmingham Hospitals NHS Trust	2002
	Sandwell Healthcare NHS Trust (Dissolved)	2002
	City Hospital NHS Trust (Birmingham) (Dissolved)	2002
50	Sandwell Mental Health NHS & Social Care Trust	2003
	Black Country Mental Health NHS Trust	2003
51	Sheffield Teaching Hospitals NHS Foundation Trust	2001
	Central Sheffield University Hospitals NHST (dissolved)	2001
	Northern General Hospital NHS Trust (dissolved)	2001

No.	Trust Description	Year
52	Shrewsbury & Telford Hospital NHS Trust	2003
	Royal Shrewsbury Hospitals NHS Trust (dissolved)	2003
	Princess Royal Hospital NHS Trust (Dissolved)	2003
53	South Central Ambulance Service NHS Trust	2006
	Hampshire Ambulance Service NHS Trust	2006
	Oxfordshire Ambulance NHS Trust	2006
	Royal Berkshire Ambulance NHS Trust	2006
54	South East Coast Ambulance Service NHS Trust	2006
	Kent Ambulance NHS Trust	2006
	Surrey Ambulance Service NHS Trust	2006
	Sussex Ambulance Service NHS Trust	2006
55	South London Healthcare NHS Trust	2009
	Bromley Hospitals NHS Trust	2009
	Queen Mary's Sidcup NHS Trust	2009
	Queen Elizabeth Hospital NHS Trust	2009
56	South Staffordshire and Shropshire Healthcare NHS Foundation Trust	2007
	South Staffordshire Healthcare NHS Trust	2001
	First Community NHS Trust	2001
	Foundation NHS Trust	2001
	Premier Health NHS Trust	2001
57	South Tees Hospitals NHS Trust	2002
	Northallerton Health Services NHS Trust (Dissolved)	2002
58	South West Ambulance Service NHS Trust	2006
	Dorset Ambulance NHS Trust	2006
	Westcountry Ambulance Services NHS Trust	2006
59	South West Yorkshire Mental Health NHST	2002
	Wakefield & Pontefract Community Health NHS Trust	2002
60	Surrey & Borders Partnership NHS Trust	2005
	Surrey Hampshire Borders NHS Trust	2005
	North Hampshire, Loddon Community NHS Trust	2005
	Surrey Oaklands NHS Trust	2005
	North West Surrey Mental Health Partnership NHS Trust	2002
	Bournewood Community & Mental Health NHS Trust	2002

No.	Trust Description	Year
61	Sussex Partnership NHS Trust	2006
	East Sussex County Healthcare NHS Trust	2006
	West Sussex Health & Social Care Trust	2002
	Sussex Weald & Downs NHST (Dissolved)	2002
	Worthing Priority Care NHS Trust (Dissolved)	2002
62	Tees, Esk and Wear Valleys NHS Trust	2006
	County Durham & Darlington Priority Services NHS Trust	2006
	Tees & North East Yorkshire NHS Trust	2006
63	West London Mental Health NHS Trust	2001
	Ealing, Hammersmith And Fulham Mental Health NHS Trust	2001
	Hounslow & Spelthorne Community & Mental Health NHS Trust	2001
64	West Midlands Ambulance Service NHS Trust	2006
	Hereford & Worcester Ambulance Service NHS Trust	2006
	Coventry & Warwickshire Ambulance Service NHS Trust	2004
	Coventry Healthcare NHS Trust (Dissolved)	2004
	Warwickshire Ambulance Service NHS Trust	2004
	Staffordshire Ambulance Service NHS Trust	2007
65	Whipps Cross University Hospital NHS Trust	2001
	Forest Healthcare NHS Trust (dissolved)	2001
66	Wrightington, Wigan & Leigh NHS Trust	2001
	Wrightington Hospital NHS Trust (dissolved)	2001
	Wigan & Leigh Health Services NHS Trust	2001
67	Yorkshire Ambulance Service NHS Trust	2006
	South Yorkshire Ambulance Service NHS Trust	2006
	West Yorkshire Metropolitan Ambulance Service NHS Trust	2006
	Tees, East & North Yorkshire Ambulance Service NHS Trust	2006

APPENDIX TWELVE

Timing of NHS Trust Mergers

Year	Number of Mergers
2001/2002	24
2002/2003	24
2003/2004	6
2004/2005	2
2005/2006	2
2006/2007	13
2007/2008	7
2008/2009	1
Total	79

APPENDIX THIRTEEN

Use of Threshold Parameters to Compute Probabilities of Various Risk Management Levels

The threshold parameters *a* and *b* (known as cut1 and cut2) in Table 7.4 state the following about the three possible risk management levels (y):

Pooled Model	*Panel Data Model*
$y_i = 1$ if $y^*_i \leq 2.976$	$y_i = 1$ if $y^*_i \leq -0.675$
$y_i = 2$ if $2.976 \leq y^*_i \leq 4.536$	$y_i = 2$ if $-0.675 \leq y^*_i \leq 2.380$
$y_i = 3$ if $y^*_i \geq 4.536$	$y_i = 3$ if $y^*_i \geq 2.380$

These can be used to compute the probability of levels one to three for known values of the covariates.

APPENDIX FOURTEEN

Histograms of Average Closed Claim Values 2002-2008