Developing a safety culture: The unintended consequence of a 'one size fits all' policy

Suellen Allen

A thesis submitted in accordance with the requirements for admission to the Degree of Doctor of Philosophy

Faculty of Nursing, Midwifery and Health
University of Technology Sydney

2009

CERTIFICATE OF AUTHORSHIP/ORIGINALITY

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that this thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition I certify that, all information sources and literature used are indicated in the thesis.

Signature of Candidate

TABLE OF CONTENTS

List of Tables

List of Figures

ACKNOWLEDGEMENTS

I have been very fortunate with the generous contribution and support of so many people during my candidature. Completing this PhD has not been a sole effort on my part but the contribution of these people who require acknowledgement.

First and foremost are my two wonderful supervisors, Professor Caroline Homer and Professor Mary Chiarella. Caroline and Mary provided expert supervision, guidance and often much patience during my candidature. They have challenged and encouraged me to be brave and think outside the box to see what this thesis was really about when they both knew from an early stage, it was about policy. They provided many hours of their time helping me design this study, making sense of and clarifying my findings, and when I gave them words to read, they gave me expert feedback in record time. Their expert guidance, editorial support and regularly asking the 'so what' question has helped me shape and strengthen this thesis. I am extremely grateful and have been privileged to have Caroline and Mary as my supervisors.

Caroline Homer also gave me a job the Centre for Midwifery, Child and Family Health at UTS for the period of my candidature. Whilst at the Centre, I was given the time, space and support to learn how to do research, and to complete my PhD. I am very appreciative of this support and the opportunity to be part of the Centre.

The Centre is a unique place with some of the most influential midwives in Australia. These midwives, Professors Pat Brodie, Maralyn Fourer, Nicky Leap, and Lin Lock provided me with their expert guidance and support through the group supervision model. Individually they always had the time to listen to my many thoughts as I worked through my design and analysis. Thank you all.

Priya Nair also from the Centre has always been available to help with any of my editing and formatting problems. Priya has generously provided her time and expertise with conference presentations and the final formatting of this thesis. I am very appreciative of her support.

My fellow Higher Degree Research students and friends, Rachel Smith, Ali Teate, Joanne Gray, Katie Sullivan and Jane Raymond have travelled this journey with me. They were always willing to share their knowledge or a reference, provide support, advice and most of all, their friendship. Special acknowledgement goes to Ali Teate my fellow Centre buddy. Ali has been a rock, a true friend and helped me maintain my sanity during these three caffeine-infused years. Thank you for always being there.

Professors Robyn Gallagher, Christine Duffield, Catherine Fowler, Marg Fry, Judith Donahue, Jackie Crisp, and Doug Elliott from the Faculty of Nursing Midwifery and Health at UTS were always available to spend time talking through a methodological or interpretation issue. Their contribution has added depth to this thesis.

I wish to acknowledge the NSW Midwives Association and the Vice Chancellor's Scholarship Fund for providing financial scholarships to present my research at the International Confederation of Midwives in Glasgow and the International Forum of Safety and Quality in Health Care in Paris.

Professor Jane Sandall provided me with a visiting research fellow position at the Florence Nightingale School of Nursing and Midwifery, Kings College London in the final stages of data analysis. This time was extremely beneficial and enabled me to test my findings and interpretations in the international context.

Ann Kinnear, Jane Raymond, Vanessa Clements and Frankie Turner generously gave me time and space in their homes to write up much of this thesis. I am very appreciative of their generosity. Writing this thesis has been a long and at times isolating endeavour, my four-legged friends; Coco, Benny, Bob, Ed and Poppy kept me company and offered much needed respite during the long hours in front of the computer.

My parents, June and Fred and brother Paul Bagnall, have been unwavering in their love, support and the belief that I would finish this thesis. I am blessed with your love.

David Allen has been a constant presence throughout my entire career and has repeated this during my PhD. David has been constant in his support and understanding which has made this journey possible.

Finally, I wish to acknowledge the midwives, doctors, health professionals and policy makers who gave their time to participate in this study. I hope I have done justice to your stories.

PEER REVIEWED PUBLICATIONS AND CONFERENCE PRESENTATIONS FROM THIS RESEARCH

A number of conference presentations and a peer-reviewed publication have resulted from this research.

Peer reviewed publication

Allen S, Homer C, and Chiarella M. (2008). Understanding the safety culture in Australian maternity services: Abstract International Forum on Quality and Safety in Health Care April 2008, Paris, France. *Safety and Quality in Health Care*, 17, E1.

Conference Presentations

Allen S, Homer C, Understanding safety culture in maternity services, a window to improving safety in maternity care. *Change Champions Improving the Delivery of Maternity Care: Sharing the Lessons Learnt,* Perth, February 2009.

Allen S, Homer C, Chiarella M. Understanding the safety culture in Australian maternity services. *International Forum on Quality and Safety in Health Care*, Paris, April 2008.

Allen S, Homer C. Understanding the safety culture in an Australian maternity service. *International Confederation of Midwives*, Glasgow, June 2008.

Allen S, Homer C. Understanding the safety culture in a maternity service. *15th Biennial Conference Australian College of Midwives*, Canberra, September 2007.

Allen S, Homer C, Chiarella M. Understanding the safety culture of a maternity service. *5th Australasian Conference on Safety and Quality in Health Care*, Brisbane 2006. (Poster)

ACRONYMS AND GLOSSARY

Acronyms

ACSQHC	Australian Council for Safety and Quality in Health Care
AHMC	Australian Health Ministers Conference
AHS	Area Health Service
AIHW	Australian Institute of Health and Welfare
CEC	NSW Clinical Excellence Commission
DoH	NSW Department of Health
ICE	Institute of Clinical Excellence
IIMS	Incident Information Management System
NSW	New South Wales
PSCQP	Patient Safety and Clinical Quality Program
RCA	Root Cause Analysis
RIB	Reportable Incident Brief
SAC	Severity Assessment Code
SAQ	Safety Attitudes Questionnaire
SCS	Safety Climate Scale
SIP	Safety Improvement Program
UK	United Kingdom
USA	United States of America
UTS	University of Technology Sydney
VMO	Visiting Medical Officer

Glossary of terms and definitions

For the purpose of this thesis the following terms and definitions apply:

Access block	Access block relates to overcrowding in emergency departments and where the length of stay of an admitted hospital patient in the emergency department is greater than eight hours (ACEM, 2004).
Adverse events	'An injury resulting from a medical intervention not due to the underlying condition of the patient' (Kohn, Corrigan, & Donaldson, 2001p.4).
Antenatal period	The period before giving birth.

Area Health Service	Corporations with a role in the provision of the planning, delivery and coordination of NSW public health services within their geographical service boundaries. These services are provided in the acute and community settings. Area Health Services are accountable to the NSW Department of Health.
Blame	**'**To hold at fault' (Runciman, 2006, p. S42).
Closing the loop	Processes by which institutions and individuals learn from mistakes and take action to prevent similar events in the future (Department of Health UK, 2000a).
Error	'Unintentionally being wrong in conduct or judgement. Errors may occur by doing the wrong thing (Commission) or by failing to do the right thing (omission)' (Runciman, 2006, p. S42).
Iatrogenic injury	Injury **'**arising from or associated with health care rather than an underlying disease or injury' (Runciman, 2006, p. S42).
Near miss	'Incidents which have the potential to result in harm but have not caused actual harm' (NSW Health, 2006c).
Patient Safety	'Is the avoidance, prevention and amelioration of adverse outcomes or injury from the process of heath care' (Vincent, Taylor-Adams, & Stanhope, 1998).
Quality	The degree to which health services increase the likelihood of desired outcomes and are consistent with the current professional knowledge (IOM, 2001).
Role Delineation	The classification used for NSW public hospitals to determine the level of staff experience profile, support services and minimum safety standards required for these services. The delineation also identifies the level of clinical complexity and acuity of services undertaken at each service (NSW Health, 2002).

Safety	'Freedom from hazard' (Runciman, 2006, p. S42).
Safety culture	**'**A product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of an organisation's health and safety management' (Sexton, Helmreich et al., 2006).
Safety culture domain	The domains or dimensions that are considered to be an important influence on patient safety culture.
Sentinel Event	Events in which death or serious harm to a patient has occurred (ACSQHC, 2005d)**.**

ABSTRACT

Developing a safety culture: The unintended consequence of a 'one size fits all' policy.

Background

Adverse events in maternity care are relatively common but often avoidable. Evidence suggests it is necessary to understand the safety culture of an organisation to make improvements to patient safety. The safety domains that are thought to influence safety culture in health care include: Safety Climate; Teamwork; Working Conditions; Perceptions of Management; Job Satisfaction; and Stress Recognition. Little is known about the safety culture in the Australian maternity setting, which was the impetus for this Study. This thesis reports an examination of the safety culture in a maternity service in New South Wales (NSW).

Setting

The Study took place in one maternity service located in two public hospitals in NSW, Australia. Concurrently, both hospitals were undergoing an organisational restructure.

Design

This mixed method research study used a concurrent triangulation design and included two Studies. The Policy Study explored the policy context in which the maternity service was situated; and, the Service Study examined the safety culture within the maternity service.

Data collection included:

- A policy audit and chronological mapping of the key policies influencing safety culture within the maternity service.
- Safety culture surveys, the Safety Attitudes Questionnaire and Safety Climate Scale (59/210, 28% response rate) that measured the following six safety culture domains; Safety climate; Teamwork climate; Job Satisfaction; Perceptions of management; Stress recognition and Working conditions (Sexton et al., 2004).
- Semi-structured interviews (15) with key maternity, clinical governance and policy stakeholders.

Results

The safety culture was found to be lacking across all six safety domains. The key finding was that the overarching policy context created unintended consequences for the maternity service and adversely influenced their capacity to have a positive safety culture. These unintended consequences reduced their available infrastructure and capacity to respond to adverse events;

and created a lack of leadership at all levels to drive the safety and quality agenda. The safety culture was also influenced by inadequate communication during the escalation of care; inadequate supervision of junior medical staff; difficulty ensuring the right staffing and skill mix, and low staff morale.

Conclusion

The safety culture in this maternity setting was complex, context-specific but importantly, influenced by the broader policy context in which it was situated. This Study provides evidence that the policy context needs to be included as a seventh safety culture domain in health care. This Study has demonstrated the importance of policy on the capacity to ensure patient safety.

Implications

The policy context has not been previously identified as being important when addressing the safety culture in health care. Considering the influence of the policy context in relation to safety culture is an important step to develop strategies to improve patient safety in other settings. This is an area for future research.

CHAPTER 1: INTRODUCTION

This chapter presents an overview of and the motivation for, undertaking this Study; the research questions, aims and objectives; and also orients the reader to the context in which the Study was conducted. A précis of the organisation of this thesis is also provided.

1.1 My motivation for undertaking the Study

As a midwife working in the NSW Public Hospital system and as a policy analyst in the NSW Department of Health, my professional work has focused on improving maternity care. I have been exposed to the patient safety agenda at clinical, jurisdictional and political levels. This patient safety agenda developed as a result of growing concerns about adverse outcomes for patients in health care and aimed to make changes to health services to reduce the number of adverse events and improve health outcomes for patients.

As a policy analyst, I was involved in the examination and analysis of serious adverse event reports from maternity services in NSW public hospitals. These serious adverse event reports, or Reportable Incident Briefs as they are known in NSW, were the result of the NSW Health Patient Safety and Clinical Quality Program introduced in 2004 (NSW Health, 2004c). This analytical experience provided an insight into the issues and the impact of adverse events for women and their babies in NSW public hospital maternity services. The types of incidents and factors associated with adverse events in maternity services were often similar, as were the factors associated with adverse events in other areas across the NSW health system (NSW Health, 2005c, 2006c). I thought that gaining a deeper understanding of the reasons why adverse events occur in maternity services may provide solutions for their reduction. Thus I decided to focus my PhD on patient safety in maternity care.

My assumptions at the beginning of this Study were that the NSW state policy response that is articulated in the NSW Patient Safety and Clinical Quality Program (NSW Health, 2004c)[1] was a robust platform to learn from adverse events. This policy direction and aims would ultimately "close the learning loop" (Department of Health UK, 2000a) to identify solutions to reduce the number of maternity-related adverse events in NSW. These assumptions were firmly based on my work as an insider to the policy field and where I was involved in some of the early work in developing maternity policy, often in the form of Policy Directives[2] for

[1] The NSW Patient Safety and Clinical Quality Program will be described in detail in Chapter 5.

[2] NSW Department of Health Policy Directives are the method for communicating material requiring mandatory compliance and implementation by the NSW public health system.

problems identified in adverse event reports. This work influenced my early stance, positioning and focus in relation to this Study. This positioning would alter during the course of the PhD as the results challenged my assumptions.

I questioned my assumptions that the NSW Patient Safety and Clinical Quality Program could address adverse events as I examined the patient safety literature and made observations in the clinical setting. The literature, to be discussed in detail in Chapter 2, identified that health systems in general have often failed to learn from previous adverse events. Furthermore, health systems are likely to continue repeating these errors unless patient safety initiatives and research are focused towards the underlying contributing factors. The literature indicates that these underlying factors are collectively known as an organisation's safety culture (Helmreich, 2000). Factors influencing safety culture include: Teamwork, Safety Climate, Perception of Management, Stress Recognition, Job Satisfaction and Working Conditions.

It was evident that the measurement and subsequent improvement of safety culture were being adopted and encouraged internationally as a broad strategy to identify solutions to improve patient safety at the clinical unit level (Flin, 2007; Hindle, Braithwaite, & Iedema, 2006; NPSA, 2004). There was only limited evidence that the measurement of safety culture at the ward or clinical unit level had resulted in improvements in safety culture. Whilst the results of these few international studies were promising (Pronovost et al., 2005), it was unclear if this process was either generalisable or offered a practical method in the clinical maternity setting. There is little knowledge about the safety culture in the Australian maternity setting.

1.2 Background to the Study

The measurement of the safety culture and the subsequent development and implementation of patient safety improvement strategies in a maternity service in NSW was the initial research plan for this thesis. However, early challenges in gaining ongoing local stakeholder engagement and their lack of capacity to support this Study indicated that this plan was premature.

The early challenges in obtaining engagement and support for the study related to a concurrent organisational-wide restructure which encompassed the study setting. This restructure resulted in changes to, and the displacement of, key local stakeholders shortly after the Study commenced. The changes to leadership at the study site meant a period of instability for the quality and safety infrastructure of the service and the staff. During this time, the maternity service became one service located at two hospitals under one divisional structure -'two

hospitals under one service'. These changes were identified by local maternity stakeholders, my supervisors and myself as significant challenges to the original planned Study.

The need to have strong internal leadership and provide executive support to the Study was important but proved to be difficult to achieve during the restructure transition period. The second challenge was undertaking such a Study during a time of instability where the Study was not a priority for either the new management or the maternity health professionals.

It was apparent that the original plan for the Study would not work as it was predicated on local capacity for engagement. The focus was to understand the safety culture within the study site and improve the culture. However, external factors, such as the organisational restructure, had a significant influence on the study site. These factors were part of a broader policy context. It was apparent there was a need to revise the study and include additional research questions to provide a more in-depth understanding of the safety culture, including the influence of the broader policy context before improvement could even be suggested. This understanding would provide new knowledge about the influence, barriers and challenges to improving the safety culture in this maternity setting and was the impetus for the Study. The next section introduces the research approach undertaken for this Study. This approach will be further described in Chapters 3, 4, 5 and 6 of the thesis.

1.3. Research questions

The research questions for the Study are as follows:

1. What is the safety culture in one maternity service in New South Wales?
2. What are the policy contexts in which the study is situated?
3. What are the barriers and challenges to improving the safety culture in this setting?
4. Can understanding this culture assist in the identification of strategies to improve the safety and quality of maternity care in this setting?

1.3.1 The two Studies

The thesis is divided into two Studies: The Policy Study and the Service Study.

The Policy Study explores the policy context in which the study sites are situated. The Service Study examines the safety culture within the maternity service in which the study was conducted. These Studies address the following aims and objectives.

1.3.2 Aim of the Study

The aim was to identify the safety culture in one Australian maternity service in New South Wales (NSW) including; the influence of the policy context; and, the challenges and barriers to improving the safety culture in this setting.

1.3.3 Objectives

The objectives of the Service Study were to describe the safety culture at the study sites by:

- Measuring the safety culture scores by undertaking safety culture surveys; and,
- Undertaking interviews with key stakeholders.

The objective of the Policy Study was to describe the policy context and its potential to influence the safety culture in which the study sites were situated by:

- Undertaking an audit and chronological mapping of the development of the key policies influencing safety culture within the study sites.

The overall objective of both Studies was to identify the safety culture within the maternity service including the influence, barriers and challenges to improving the safety culture.

1.4 The Context

This section provides a brief overview about the organisational, geographical and policy context in which this research took place. This will also provide an understanding about maternity care in Australia and NSW and an introduction to the role of government in improving the quality and safety of health care in Australia. Many of these issues are explored in more depth through the thesis.

1.4.1 NSW Public Health System

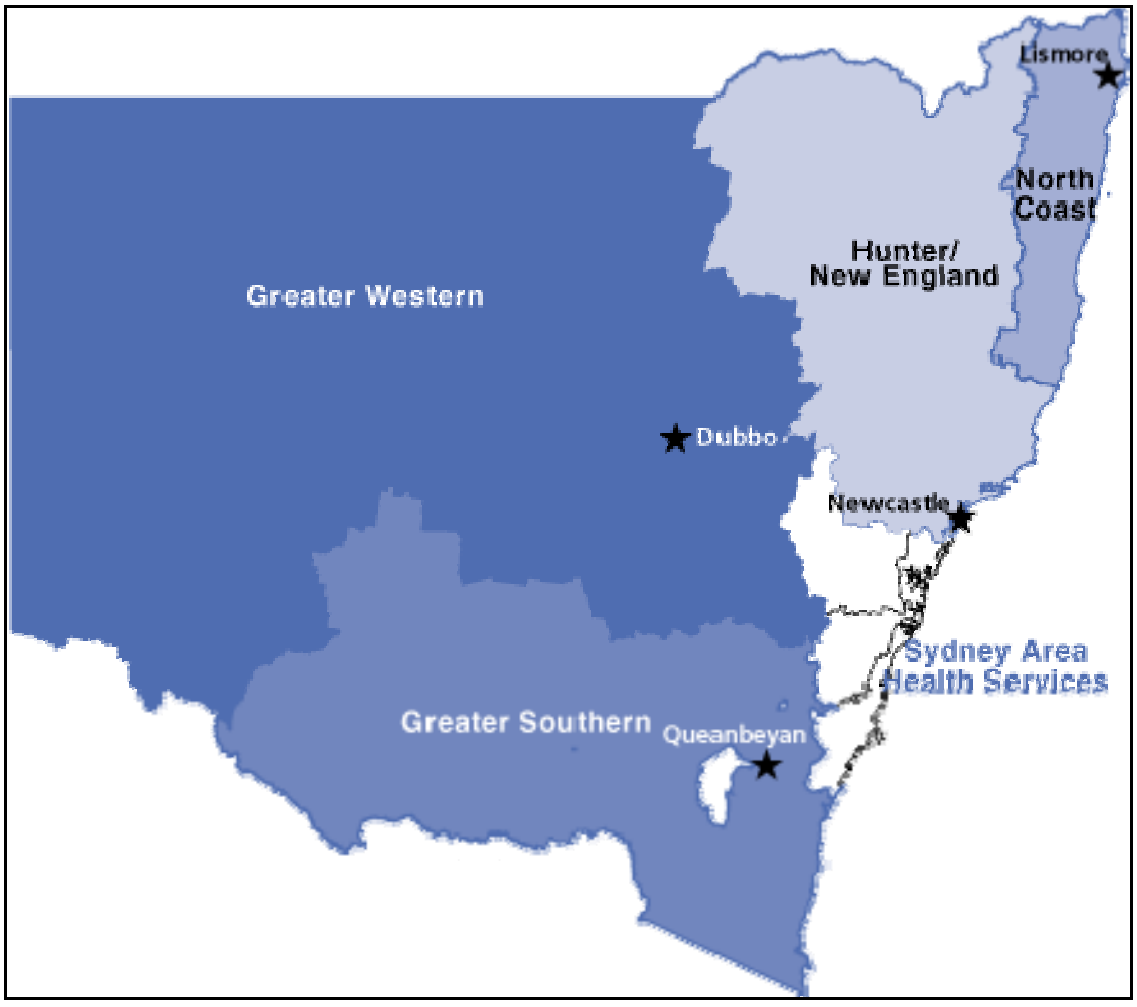
NSW Health is the public health provider in the State of New South Wales, Australia. NSW Health includes the NSW Department of Health and Public Health Organisations consisting of eight Area Health Services (AHS) and four statutory corporations which are legal entities within the NSW health system. These services are recognised under the NSW Health Services Act *(New South Wales Government, 1997).* Prior to the restructure of the geographical boundaries of the service in 2005, there were 17 Area Health Services (AHS).

Each AHS has a role in the provision of the planning, delivery and coordination of health services within their geographical service boundaries. These services are provided in the acute and community settings The four statutory corporations are the Justice Health Services, the

Ambulance Service of NSW, the Children's Hospital at Westmead and the NSW Clinical Excellence Commission.

The NSW Department of Health, known colloquially as 'the Department', has the over-arching role to ensure that the community of NSW is provided with the 'best possible health care' (NSW Government, 2007). The Department also supports the NSW Minister for Health in the portfolio's executive and statutory role. The Department monitors the performance of the health system. The Department makes recommendations regarding the funding of health services, management of public health units, development of policy and the regulation of private hospitals. The geographical distribution of NSW Area Health Services (AHS) is illustrated below (Figures 1 and 2).

Figure 1: Map of NSW Health Area Health Services



Source: NSW Department of Health Website. 2008

Figure 2: NSW Health Sydney (Metropolitan) Area Health Services

Source: NSW Department of Health Website. 2008

This Study was conducted in one of the four AHS located in the metropolitan region of Sydney. This AHS has a local population of 1.16 million people living within its geographical boundaries. The AHS is divided into three integrated geographical networks. These networks are divided into 12 Clinical Streams across 22 health facilities. For the purposes of confidentiality and privacy the exact AHS is not named in the thesis.

1.4.2 Maternity Care in Australia and NSW

Maternity care in Australia is provided throughout pregnancy, birth and postnatal periods and involves both the woman and her unborn/newborn child. Care is provided over a prolonged period, on multiple occasions, within the acute hospital setting and in the community. Care is

often shared between multiple health professionals from disciplines such as midwifery, obstetrics, paediatrics, nursing, neonatology and allied health.

Maternity care in Australia is provided in both the public and private health systems. Approximately 70% of Australian women access maternity care through the public system and 30% through the private health system (Laws & Hilder, 2008). Pregnant women are high users of health care in Australia with 277,436 women giving birth to 282,169 babies in 2006 (Laws & Hilder, 2008) and 311,764 public hospital inpatient admissions per year (AIHW, 2008). The demographic profile and statistics for maternity services in Australia is listed in Table 1.

Maternity care in NSW is provided in approximately one hundred public hospitals across NSW. These hospitals provide a range of services to women and their babies ranging from highly specialised complex obstetric and neonatal care in tertiary level hospitals to postnatal care only in some rural and remote hospitals. NSW has the highest number of births per year, 91,313 in 2006 of all the Australian states and territories (Laws & Hilder, 2008) (Table 1). Maternity care and adverse events will be discussed in more detail later in the thesis.

Table 1: A comparison of Australian and NSW Maternity demographics and birth outcomes

*Maternity Statistics 2006**	*Australia*	*NSW*
Births		
Women giving birth	277,436	91,303
Babies born	282,169	92,768
Age profile		
>35 years	21.6%	21.6%
<20 years	4.3%	3.8%
20 -34 years	74.3%	74.5%
Aboriginal and Torres Strait Islander (ATSI)		
ATSI	10,183 (3.7%)	2,610 (2.9%)
Non ATSI	266,628 (96.1%)	88,165 (96.6%)
Place of birth		
Hospital	269,835 (97.3%)	88,844 (97.3%)
Birth Centre	5,460 (2%)	1,870 (2%)
Planned homebirth	708 (0.7%)	125 (0.1%)
Public hospital admissions	311,764	
Onset of labour		
Spontaneous labour	56.6%	58.2%
Induced labour	25.1%	24.7%
No labour	18.3%	17%
Birth type		
Spontaneous vaginal	161,111 (58.1%)	55,171 (60.4%)
Caesarean section	85,378 (30.8%)	85,378 (30.8%)
Instrumental	9,218 (10.1%)	29,632 (7.6%)
Breech	365 (0.4%)	1086 (0.4%)
Outcomes		
Live births	280,078	92,176
Perinatal deaths	2907	815
(per 1000 births)	(8.8)	(10.3)
Birth weights		
Mean birth weight	3379g	3370g
Birth weight <1500g	1.1%	0.9%
Birth weight<2500g	6.4%	6%

Source: AIHW Australia's Mothers and Babies 2006 (Laws & Hilder, 2008) *2006 latest published data

This section provided the structural and geographical organisational context in which the Study is located. The following section briefly introduces the policy context in Australia generally and NSW specifically.

1.4.3 The role of government policy in safety and quality in health care

Improving the quality and safety of health care has been articulated in Australian national and state health policies over the last 15 years (Fletcher, 2000). These policies have sought to identify and rectify issues in order to improve patient safety in the health system. Government intervention in this area has resulted in the commissioning of a number of studies, taskforces and reports to inform policy. These interventions are discussed in depth in the policy study in Chapter 5 of the thesis. The NSW Health Patient Safety and Clinical Quality Program (NSW Department of Health, 2005a) is one example of a policy developed in response to government intervention which aims to improve patient safety, in this case, in the NSW public hospital system. This program aims to improve patient safety by using a systematic approach to address the safety culture and provides the overarching strategic policy framework for the management of patient safety within which this Study is situated.

1.4.3.1 NSW Health Patient Safety and Clinical Quality Program

The NSW Patient Safety and Quality Program was introduced in 2004 and provides the strategic policy framework and plan for the management of clinical governance in NSW public health facilities. The implementation of the program resulted in the creation of new Clinical Governance Units headed by senior directors of clinical governance in each of the eight AHS. The role of the NSW Department of Health, in relation to this program, is the development and issuing of policies relating to patient safety and clinical quality including the determination of standards that all public health organisations should achieve (NSW Health, 2005b). This policy will be discussed in detail in Chapter 5 of this thesis.

The next section provides an overview of the structure of the thesis.

1.5 Organisation of the thesis

The thesis consists of seven chapters.

Chapter 1 has presented the motivation to undertake and the background to the Study; the research questions, aims and objectives; the context in which the Study took place; and an overview of the thesis. Chapter 2 presents a literature review relevant to the two studies in the thesis: the Service Study and the Policy Study.

Chapters 3 and 4 present the methodological approaches and method. Chapter 3 describes the methodological approaches including the philosophical assumptions and theoretical frameworks which underpinned the approach and design. Chapter 4 presents the method undertaken for the Service Study and the Policy Study. The chapter describes the study design, setting for the Study, ethical considerations, data collection methods, and an overview of data analysis methods.

Chapters 5 and 6 present the results of the two Studies. In Chapter 5 the results of the Policy Study includes the chronological mapping of the policies that provided the policy context within the study sites. In Chapters 6 the results of Service Study include the local site data collected from surveys and interviews.

Chapter 7 presents the discussion of the triangulation of the results of the two Studies. The results of this triangulation are presented to answer the research questions and describe the safety culture at the study sites. This discussion will include the challenges and barriers that were identified as barriers to developing a positive safety culture in this setting. This will also include the conclusion, which discusses the significance of the Study.

This chapter has provided an introduction to this Study through an overview of the motivation to undertake this Study; the research questions, aims and objectives; an explanation of the context; and organisation of the thesis. The following chapter presents a review of the literature relating to the research area addressed in the Services Study and the Policy Study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter reviews and discusses the relevant literature related to the research area addressed in the Service Study and the Policy Study. Literature relevant to each Study is presented separately. The Safety Study review provides an overview of the current literature and gaps in knowledge which led to the development of this study. An exploration of the international and national literature regarding the issue of adverse events in health care and, more specifically, in maternity care is provided. The health systems' past and current response to adverse events in the health system and literature that focuses on the safety culture of an organisation will be discussed. Finally, the evidence regarding the 'safety culture domains' which are considered to influence safety culture will be considered. The Policy Study review discusses the development of policy and briefly explores selected concepts and debates surrounding policy development, in particular, the use of a theoretical policy cycle model.

2.2 Method

An intensive review of the literature using the following keywords: midwifery; maternity; obstetrics; clinical risk management; adverse events; quality and safety; patient safety and policy was conducted using online search engines including OVID and databases, CINAHL, MEDLINE and Cochrane. In addition, national and international government reports, publications, and data collections relating to government policy and quality and safety initiatives were sourced.

2.3 Literature review: The Service Study

In the past decade, quality and safety initiatives in health care have focused on improving patient safety. A number of reports and public inquiries into failures in health services have directed this focus (ACSQHC, 2002a; Barraclough, 2003; Barraclough & Birch, 2006; Department of Health UK, 2002; Walker, 2004a). The release of the *Quality in Australian Health Care Study* (Wilson et al., 1995) and the publication *To Err is Human* in the USA (Kohn et al., 2001) were particularly instrumental in informing the public about the problem of adverse events in health care.

2.3.1 Adverse events in health care

Adverse events resulting in patient harm are recognised as common, and almost inevitable, factors in health care (Kohn et al., 2001; Wilson et al., 1995). It has been estimated that for every adverse event there is a significantly greater number of 'near miss' incidents (Department

of Health UK, 2000b). Near miss incidents are those which have the potential to result in harm but have not caused actual harm (NSW Health, 2006c). The rate of near misses has been difficult to measure due to the absence, until recently, of accurate reporting systems and data about these events in Australia (NSW Heath, 2005; Spigelman & Swan, 2005). Adverse events have implications for both patients and health systems (Zhan & Miller, 2003). Implications for the health system include additional costs related to extended length of stays in hospital and increased demand on the health workforce and resources.

2.3.2 Incidence of adverse events

International reports and studies in the last ten years have attempted to measure the extent of adverse events in health care. In the United Kingdom (UK) it was reported that approximately 850,000 adverse events (or 10% of all inpatient admissions per year) occur in the health system (Department of Health UK, 2000b). In the USA, an adverse event rate of between 2.9 to 3.7% of all hospitalisations has been reported (Kohn et al., 2001). A recent systematic review including 74,485 patients, in eight studies from the USA, UK, Australia, Canada and New Zealand reporting in-hospital adverse event rates has attempted to quantify the incidence of adverse events (de Vries, Ramrattan, Smorenburg, Gourma, & Boermeester, 2008). These authors reported an hospital in-patient adverse event incidence rate of 9.2% with a preventability rate of 43.5% for the studies included in their review (de Vries et al., 2008). The health care costs related to adverse events in the USA have been estimated at $US8 to $US14.5 billion (Kohn et al., 2001).

Similar issues exist in Australia. In 1995, it was estimated that 16.6% of all hospital inpatient episodes in Australia resulted in adverse events, with at least half of these being preventable (Wilson et al., 1995). Runciman and Moller compared the rates reported by Wilson et al, with the lower rates of 3.7% reported in a USA study (Brennan et al., 1991) to understand why the Australian rate was significantly higher (Runciman & Moller, 2001) . The variation in the rates between the two studies was reported to relate to differences in definition, reporting and classifications of adverse events in each study (Runciman & Moller, 2001). As such, they concluded that the rates were not directly comparable and did not provide evidence of differences about the level of safety of health care in each country. Runciman and Moller concluded that 10% of all admissions in the acute Australian hospitals resulted in iatrogenic injury associated with preventable adverse events. A more recent review of the Australian situation has suggested the inpatient adverse event rate is still likely to be around 16% (Wilson & Van Der Weyden, 2005). Adverse event rates of 10-16% provide evidence that a significant number of patients in the Australian health care system are still at risk of an adverse event.

It has been estimated that iatrogenic injury resulting from adverse events in the Australian acute hospital system resulted in a direct medical cost of $A2 billion (Runciman & Moller, 2001). A study in one Australian state (Victoria) calculated the cost of adverse events in the public health system to be approximately $A511 million annually. This equates to approximately 15.7% of the annual inpatient budget in this state (Ehsani, Jackson, & Duckett, 2006). These results demonstrate that avoidable adverse events have a significant impact on health budgets. A similar situation is likely to apply throughout Australia and includes maternity care.

2.3.3 Adverse events in maternity services

Australian and international literature indicates that adverse events in the hospital setting (including maternity care) continue to be a significant problem (Australian Commission on Safety and Quality in Health Care, 2008b; NSW Health, 2006b, 2008b; O'Neill et al., 2008). These problems cause significant harm to patients and have a negative impact on the health system (Australian Commission on Safety and Quality in Health Care, 2008b; Ehsani et al., 2006). Obstetrics was the most frequently reported (18%) speciality of all medical litigation claims in Australia in 2005 (AIHW, 2006). Obstetric related litigation claims accounted for 50% of all litigation bills paid for by the National Health Service in the UK (Ashcroft, 2003) The implications of financial and personal impact of adverse events on the health system and patients provide a compelling argument for addressing this issue.

Adverse events occur in maternity care as in all other health services. Reported avoidable adverse events in maternity care feature prominently in national and international incident and morbidity and mortality data collections (Department of Health UK, 2000c; Joint Commission American Health Organizations, 2005; Lewis, 2007; MCHRC, 1998; NSW Health, 2005c, 2006c). In maternity care, adverse events resulting in morbidity can often involve two people: the woman and her unborn and/or newborn baby (O'Neill et al., 2008) and the outcomes of these events can result in long-term morbidity for both women and babies.

The incidence of adverse events resulting in morbidity for women and babies in maternity care is difficult to compare across international data collections due to differences in classifications and reporting systems (O'Neill et al., 2008; Penney & Brace, 2007; Smith & Dixon, 2007; Smith, Dixon, & Page, 2009). In the UK, the incidence of adverse events has been reported according to the severity of harm caused. In 2007, there were approximately 63,000 maternity related adverse events reported in the UK where the majority, 66% caused no harm, 21% resulted in low harm, and 1.5% resulted in severe harm to mothers or babies (O'Neill et al., 2008). A number of countries, such as Australia and the USA, focus their national reports on the incidence of the most serious or sentinel events leading to death or serious harm rather than the

events causing less harm or the potential for harm (Australian Institute of Health and Welfare and The Australian Commission on Quality and Safety in Health Care, 2007; Joint Commission of American Health Organizations, 2008). In the USA between 1995 and 2008, there were 78 (1.3%) maternal deaths reported out of 5901 health care related sentinel events reported across 22 categories (Joint Commission of American Health Organizations, 2008). In Australia, between 2004 and 2005 there were five (12.3%) maternal deaths or severe morbidity related to labour and delivery reported out of 130 health care related sentinel events across seven categories (Australian Institute of Health and Welfare and The Australian Commission on Quality and Safety in Health Care, 2007). The Australian sentinel events included both maternal deaths and severe morbidity whereas the USA only reported maternal deaths. The Australian data was the first national report of sentinel events and covered only seven categories compared to 22 reported in the USA. These differences may indicate a reason for the difference in rates between the two countries. The variation in data sets highlight the difficulty in drawing comparisons between the incidence of maternal mortality and severe morbidity resulting from adverse events internationally.

Maternal mortality in Western countries, such as the UK and Australia, is a relatively rare event (Australian Institute of Health and Welfare and The Australian Commission on Quality and Safety in Health Care, 2007; Lewis, 2004, 2007; O'Neill et al., 2008; Smith & Dixon, 2007). Whilst rare, the review of cases leading to maternal and perinatal death have identified that there are often a number of preventable factors associated with these deaths. These preventable factors are often associated with adverse events (Acolet, Springett, & Golightly, 2008; Joint Commission of American Health Organizations, 2005; Lewis, 2004, 2007; NSW Health, 2006c, 2007, 2008b; NSW Heath, 2005).

There are three common categories of preventable factors associated with adverse events in maternity care (Simpson, 2003). These categories broadly include: failure to recognise the severity or existence of a problem; failure to pass on important clinical information to a more senior clinician; and, delay in taking appropriate action resulting in failure to rescue either the mother and/or baby (Lewis, 2004, 2007; MCHRC, 1998; O'Neill et al., 2008; Simpson, 2005; Wilson & Symon, 2002) Adverse events in maternity care may contain one or all of these categories.

As an example, adverse events resulting from a failure to recognise the severity or the existence of a problem have been reported during the assessment of fetal wellbeing in labour. These events often include the misdiagnosis of fetal heart rate patterns and failure to recognise the

signs of fetal distress (Acolet et al., 2008; Joint Commission of American Health Organizations, 2005; NSW Health, 2007; Simpson, 2003; Wilson & Symon, 2002). Failure to accurately assess maternal and/or the fetal status in the antenatal and intrapartum periods are often reported in this category. Failure to recognise preeclampsia; prematurity and/or restricted fetal growth; hyperstimulation during induction of labour; the risk of uterine rupture; and postpartum haemorrhage are also documented as preventable factors associated with adverse events (Simpson, 2003, 2005).

Adverse events resulting from a failure to recognise and make an accurate assessment have been reported to be related to a lack of skills, knowledge and the supervision of junior midwives and doctors (O'Neill et al., 2008; Simpson, 2003). This often results in a failure to report the change, deterioration or correct diagnosis in the condition to a senior member of staff allowing for timely management of the problem (Simpson, 2003). This delay means a failure to respond or rescue the woman or baby. For example, delay in initiating an assisted birth or caesarean section; responding to a postpartum haemorrhage; or, to a shoulder dystocia (Simpson, 2003) may lead to preventable adverse events. These adverse events are often associated with communication problems.

Communication failures between maternity health professionals have been identified as the most common causal factor contributing to adverse events in maternal and perinatal health (ACSQHC, 2002a; Department of Health UK, 2000a; Joint Commission of American Health Organizations, 2008; Lewis, 2004, 2007; MCHRC, 1998; NSW Health, 2006b, 2006c, 2007, 2008b; NSW Heath, 2005; O'Neill et al., 2008). These factors often relate to failures in communication between midwives, obstetricians and teams. Communication is an important component in patient safety culture and will be discussed in more depth through the thesis.

As outlined in the introduction, in Australia, 277,436 women gave birth to 282,169 babies in 2006 (Laws & Hilder, 2008) and there were 311,764 public hospital inpatient admissions associated with childbirth in 2007 (AIHW, 2008). The large number of women accessing maternity care in Australia indicates that a substantial number of these women and their babies are potentially at risk of adverse events (NSW Health, 2006c; Wilson et al., 1995).

In NSW, adverse events in the maternity setting are one of the most commonly reported of all the clinical specialities in the NSW public hospitals (NSW Health, 2006c, 2007, 2008b; NSW Heath, 2005). In 2007, serious maternal and perinatal adverse events represented 21% of all adverse events reported in the category of clinical management in NSW public hospitals (NSW

Health, 2008b). The nature of adverse events reported in NSW relate to problems associated with: transfer of care or information between maternity health care professionals; fetal assessment and monitoring in labour; identification and management of intrapartum events such as shoulder dystocia, management of postpartum haemorrhage and induction of labour; and the identification of babies prior to breastfeeding (NSW Health, 2006c, 2007, 2008b). Once again, communication problems were a common factor associated with these adverse events.

The types of adverse events in NSW and their causes are similar to those identified in the previously mentioned international and Australian incident report collections and maternal and perinatal morbidity reviews. Despite this knowledge, there would seem to be limited progress in identifying specific strategies to address this situation in maternity services prior to the commencement of this study (NSW Health, 2005c, 2006c). This study was originally planned to address those specific strategic changes but changed in the initial phases as the policy issues became evident.

2.3.4 Health system response to adverse events

Recent patient safety initiatives in Australia have responded to adverse events through the development of incident reporting systems (Barraclough & Birch, 2006; NSW Heath, 2005; Runciman, 2002) and such systems have been widely adopted around the country. The *NSW Patient Safety and Clinical Quality Program* is an example of such a system. The program aims to develop a safety culture through a culture of reporting and review and analysis of incidents to facilitate a systems response to actual and potential adverse events in NSW public health services (NSW Health, 2005).

Despite the widespread introduction of the incident reporting systems and a number of patient safety initiatives, it is not clear whether specific overall improvements have occurred (Barraclough & Birch, 2006). This lack of progress has been identified in a comprehensive literature review of the patient safety literature (Hindle et al., 2006). There is already sufficient information about adverse events from incident reports and other sources about the causes of adverse events that would assist in risk minimisation strategies rather than reconfirm already known trends through incident reporting (Department of Health UK, 2000a; Wilson & Van Der Weyden, 2005). These authors suggest that, rather than continuing to count adverse events or focusing on single issues related to individual events, patient safety strategies should address the identified underlying factors or problems which lead to adverse events. This process is often called ‘closing the learning loop’ (Department of Health UK, 2000a).

‘Closing the learning loop’ is a term that describes the processes by which institutions and individuals learn from mistakes and take action to prevent similar events in the future (Department of Health UK, 2000a). The re-occurrence of adverse events in health care suggests that this process is missing. It is important to consider the health systems’ past responses to adverse events, in order to understand the barriers to health systems closing the learning loop.

Health systems in general have traditionally had a reactive approach to managing adverse events. This approach has focused on blame rather than a more systematic approach to the contributing factors (ACSQHC, 2002a; Department of Health UK, 2000a, 2002; Wilson & Symon, 2002). Blame cultures often result in health professionals being held accountable and responsible as individuals for errors or events. In blame cultures, individuals often do not identify, admit or speak out about problems or errors in the fear that they will suffer professionally or financially (NSW Parliament Legislative Council, 2004; Vincent, 2003; Walker, 2004a). Health systems, such as NSW Health, have previously been less than willing to accept or take a systemic approach to reports about adverse events when made (ACSQHC, 2002a; NSW Parliament Legislative Council, 2004; Walker, 2004a). Attributing blame to individuals as a response to adverse events has been questioned in a number of recent public reviews of Australian health services (ACSQHC, 2002a; Walker, 2004a). These reviews, discussed in more detail later, identified multi-factorial, organisational and human factors leading to poor outcomes rather than individual failures (NSW Legislative Council, 2007). These reviews recommended that a systemic approach rather than one of blame should be used to respond to adverse events.

There needs to be a culture in the health care environment which accepts that errors occur, in order for patient safety programs to be effective (Australian Commission on Safety and Quality in Health Care, 2008b; Australian Council for Safety and Quality and the National Institute of Clinical Studies, 2004; Berwick, 2003; Department of Health UK, 2000a; NPSA, 2004). The development of safety cultures that include a non-blame approach to the reporting of error underpins current international and Australian quality and patient safety strategies and agendas (ACSQHC, 2002b; Australian Commission on Safety and Quality in Health Care, 2008b; Barraclough, 2001; Barraclough & Birch, 2006; NPSA, 2004; NSW Health, 2004c). Whilst there is a strong policy agenda internationally and nationally to improve safety culture in the health setting, there is limited information about what might be achieved and how (Kohn et al., 2001; NPSA, 2004; Pronovost & Sexton, 2005).

Arguably there is a need to change the safety culture in order to facilitate the improvements sought by the Australian quality and patient safety agendas (Australian Commission on Safety and Quality in Health Care, 2008b; Barraclough, 2001; Barraclough & Birch, 2006; Westabrook et al., 2006). There is limited evidence that the cultural changes required for patient safety programs to be successful have occurred in NSW. The limited progress in improving safety culture in the health setting has been suggested to be based on beliefs that culture is a complex phenomenon which is difficult to conceptualise and more difficult to change as a conscious management initiative (Harris & Ogbonna, 2002). Whilst culture is complex, it is postulated that, under certain organisational conditions, culture can be manipulated (Harris & Ogbonna, 2002). As such, it is important to understand the culture in order to change it. Developing an understanding about the complex factors and influences on safety culture may provide insight into developing strategies to improve the safety culture in a given health setting.

Safety culture is thought not to be dependent on a single factor or component but rather is the 'dynamic interaction' within a complex system (Wilson & Holt. 2001). There are multiple systemic, organisational and personal factors that influence patient safety in an organisation. These factors, often called the culture of an organisation, result in small problems being taken for granted, normalised or ignored, making correction difficult (Edmondson, 2004). The accumulation of seemingly small near misses or adverse events is likely to lead to more serious adverse events occurring. The culture of an organisation, or the attitudes and beliefs of those health professionals within it, will influence its ability to respond to adverse events. This is also known as the safety culture of the organisation.

2.3.5 Safety Culture

There are many variations in the interpretations and definitions of safety culture. Some define safety culture as a sub-facet of organisational culture that affects the attitudes and behaviours of members with regard to the health and safety performance of an organisation (Cooper, 2000; Kirk, Parker, Claridge, Esmail, & Marshall, 2007). Safety culture is also defined as 'a product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of an organisation's health and safety management' (Sexton, Helmreich et al., 2006).

A common interpretation of culture is 'the way things are done around here' (Pronovost & Sexton, 2005, p. 231). Positive safety cultures in health care were identified to include strong leadership to drive the safety culture and a strong management commitment where safety is made the key priority for the organisation (Hindle et al., 2006; NPSA, 2004; Perry, 2002).

Leadership and management commitment in this context was considered to be important as their actions and attitudes are thought to influence the perceptions, attitudes and behaviours of staff in the organisation towards safety culture (Flin, 2007). Organisations with positive safety cultures have: staff who are constantly aware that things can go wrong; have an acknowledgement at all levels of the organisation that mistakes occur; and a strong organisational commitment and ability to learn and take action to prevent their reoccurrence (NPSA, 2004). Improving safety culture in the health care setting is a key strategy being implemented internationally and in Australia to improve patient safety in health care (Flin, 2007; Kohn et al., 2001; NPSA, 2004; NSW Department of Health, 2005a; Pronovost & Sexton, 2005). This strategy often involves the measurement of safety culture and the development of interventions to improve the culture in an attempt to improve patient safety (Kirk et al., 2007).

Patient safety culture in health care is thought to be influenced by a number of factors collectively described as safety culture dimensions or domains[3] (Flin, Burns, Mearns, Yule, & Robertson, 2006; Kirk, 2005; Kirk et al., 2007; NPSA, 2004; Sexton, Helmreich et al., 2006; Sexton et al., 2004; Singla, Kitch, Weissman, & Campbell, 2006). Safety culture dimensions have been demonstrated to include concrete and abstract characteristics (Zohar, 2000 and Parker, 2007). The concrete aspects are thought to be important for promoting positive safety cultures. Safety culture domains are broadly reported to include organisational, work environment, team and staff factors (Hindle et al., 2006; Vincent et al., 2000). There is no agreed classification or definition describing these patient safety culture domains in the literature (Singla et al., 2006). A number of reviews of existing patient safety culture surveys conducted by various authors has resulted in views about the fundamental domains influencing patient safety culture (Flin, 2005, Singla, 2006, Colla, 2005, Fleming , 2009). Singla et al undertook and extensive review of the literature and existing patient safety culture surveys to identify the domains assessed across the reviewed surveys and their usability and validity of surveys (Singla et al, 2006). In their review 23 separate domains of patient safety culture considered to be important factors influencing patient safety were identified (Singla et al., 2006). The authors suggest that a number of these domains overlap and a after seeking expert consensus from patient safety experts re-classification included the following dimensions; management and supervision; safety systems; risk; work pressure; competence; procedures and rules; teamwork; communication; organisational learning; feedback and communication; beliefs about the cause of errors and adverse events; job satisfaction and overall perception of safety (Singla et al., 2006).

[3] In this thesis the term domains will be used.

Earlier reviews of patient safety culture surveys also suggested a variation in the classification of patient safety culture domains (Flin et al, 2006; Colla et al, 2005). Whilst there is reported variation of the classification of safety culture domains Fleming and Wenzell (2009) assert that the collective review of patient safety culture surveys suggest there are five fundamental domains of patient safety culture. These five domains collectively incorporate the following factors, leadership; safety systems and risk perception; job demands; organisational reporting; Teamwork, communication and feedback, physical resources and safety attitudes (Fleming and Wentzell, 2009; Flin et al, 2006; Singla et al , 2006; Colla et al , 2005).

Singla et al (2006) suggest that the fundamental domains of safety culture are often combined when safety culture is assessed. Sexton and colleagues postulate that there are six patient safety culture related domains in the health care setting, (1) Safety Climate; (2) Teamwork climate; (3) Job Satisfaction; (4) Perceptions of Management; (5) Stress Recognition and (6) Working Conditions (Sexton et al., 2004). These are the six safety culture domains that will be used in this thesis. The evidence to support these safety culture domains, which influence safety culture, is discussed in the next section.

2.3.6 Safety culture domains

The six safety culture domains will be described in this section.

(1) Safety Climate domain

The Safety Climate domain of an organisation includes the factors relating to the strength and proactive commitment towards patient safety (Sexton, Helmreich et al., 2006). The notion of strength includes the way patient safety issues and adverse events are reported, managed and responded to. Commitment relates to the attitudes of the leaders within the organisation towards patient safety. A strong commitment toward patient safety by the leaders of an organisation is integral to the safety culture of a service (Barraclough, 2003; Edmondson, 2004; McFerran, Nunes, Pucci, & Zuniga, 2005; Pronovost & Sexton, 2005). It has been argued that leaders of a service should drive the patient safety process, in order to make sustained culture changes to improve safety (DeJoy, 2005). In positive Safety Climates, the service should be driven by a priority commitment towards patient safety and improving quality rather than by other organisational concerns such as budgets (Edmondson, 2004). This commitment and the ability to sustain a safety culture requires strong leadership (Barraclough, 2003; Pronovost et al., 2005). Leadership commitment includes the way management and leaders of health services convey, receive and respond to messages about patient safety to staff, and the creation of the

systems and environments where staff are encouraged to report adverse events. Important aspects of positive Safety Climates are the proactive response of the management and feedback to staff about the actions taken in response to reported safety issues. A lack of action in response to reported adverse events and failure to feedback to staff has been identified as a precursor to staff normalising these events and no longer reporting (Edmondson, 2004; NSW Parliament Legislative Council, 2004). This can adversely influence the prevailing Safety Climate.

(2) Teamwork domain

The Teamwork domain is considered to be the level and quality of collaboration and communication between health care professionals working in the same clinical environment (Sexton et al., 2004). The quality of collaboration between health care professionals working as team members in the same clinical environment is thought to be influenced by a number of factors. These factors include: the experience of team members; familiarity and trust between team members; professional beliefs; role and job in an organisation; and perception of collaboration. (Sexton, Holzmueller et al., 2006; Zwarenstein & Bryant, 2000). The extent to which these factors impact on the quality of collaboration between team members varies from setting to setting. Studies in the USA have identified that characteristics of cohesive teams include those where health professionals: can predict a colleague's responses in emergencies; are familiar with their colleagues; and feel that their contributions are valued and welcomed (Sexton, Holzmueller et al., 2006). Conversely, teams that are less cohesive have health professionals who believe that they have poor collaboration or communication with colleagues (Sexton, Holzmueller et al., 2006). Variations in the perception of the quality of collaboration between different professional groups working in the same team have been reported (Sexton, Holzmueller et al., 2006; Sexton, Thomas, & Helmreich, 2000). Differences in perceptions about the level of collaboration between health professionals is a barrier to cohesive teamwork (Sexton, Holzmueller et al., 2006).

The quality of collaboration between team members is likely to influence the prevailing patient safety culture and the increased incidence of adverse events. Poor teamwork is a common factor associated with adverse events (Barraclough & Birch, 2006). In the maternity setting, poor teamwork has been identified as a factor jeopardising patient safety (King's Fund, 2008). The need to identify strategies to improve teamwork has been identified as an important factor to improving patient safety (Hindle et al., 2006; Leigh, Long, & Barraclough, 2004; Sexton, Holzmueller et al., 2006). Understanding the beliefs and attitudes of health professionals within teams about the factors influencing teamwork is likely to be an important a first step to identify strategies to improve teamwork in a given clinical setting (Sexton, Holzmueller et al., 2006).

(3) Job Satisfaction domain

The Job Satisfaction domain relates to factors influencing staff morale, enjoyment and job satisfaction, and autonomy in work practice (Sexton et al., 2004). Maintaining a satisfied workforce and subsequently adequate levels of staff are identified as important factors in achieving good patient outcomes and a positive safety culture (Duffield, Roche et al., 2007). High satisfaction rates reported by nurses in the USA working in labour and delivery units were linked to positive safety culture scores (Sexton, Holzmueller et al., 2006). A number of factors are likely to influence job satisfaction in a positive or negative way.

Inadequate staffing, resulting in burnout in nurses, has been linked to patient mortality (Aiken, Clarke, Cheung, Sloane, & Silber, 2003; Tourangeau, Giovanetti, Tu, & Wood, 2002). Burnout is a job-related syndrome which includes emotional exhaustion, depersonalisation and a lack of personal accomplishment (Maslach, Jackson, & Leiter, 1996). Factors which are known to influence burnout relate to a lack of control, work overload, limited resources to accomplish work and undertaking tasks which are in conflict with the individual's values and beliefs. The reported result of burnout for nurses is cynicism, detachment from work and emotional exhaustion. Burnout is considered to be a mediating mechanism between nurses and patient safety (Laschinger & Leiter, 2006). Similar factors resulting in burnout, such as lack of autonomy and ability to control work schedule, have been identified in specific models of care in midwifery (Sandall, 1997).

(4) Perception of Management domain

The Perception of Management domain includes factors relating to the management of staffing, equipment and leadership. The role of clinician managers has been identified as being essential to the development of patient safety strategies (Harris, 2006). Clinician managers have important roles and responsibilities in providing safe systems of care to secure safe outcomes for patients in the clinical setting (Braithwaite et al., 2004). Management decisions related to staffing and the availability of equipment are thought to be important in relation to ensuring a safety culture (Nunes & McFerran, 2005; Sexton, Holzmueller et al., 2006).

The work of clinician managers in the health setting in Australia has been identified as being 'fragmented, discontinuous and unpredictable' (Braithwaite et al., 2004) This work results in clinical managers being 'busy and reactive' and a 'perpetual juggler or reactive puppet' (Braithwaite et al., 2004). Braithwaite identified that clinical managers had jobs that were pressurised and characterised by persuasion and negotiation rather than command and control.

Their role is complex, with responsibilities which focus on inputs, such as people and money, rather than the system and processes of health care in their units or patient outcomes (Braithwaite et al., 2004; Duffield, Roche et al., 2007). According to Braithwaite and others quality and safety activities are not the first priority of clinical managers.

If managers are to lead the quality and safety process, the presence of these factors in relation to the manager's role and the complexity and fragmentation of their jobs present potential challenges to patient safety strategies (Duffield, Roche et al., 2007). Understanding the attitudes and beliefs of clinicians and managers about their role of management and the role of these managers in the maternity setting is important in order to understand the safety culture of the maternity service.

(5) Stress Recognition domain

The Stress Recognition domain relates to health professionals' recognition and acceptance about the influence of stressors on their ability to respond in the clinical setting. These stressors include the influence of stress and fatigue. Fatigue in health professionals is linked to longer working hours. There is evidence of a link between extended shifts of greater than 24 hours and increased rates of medical error in a cohort of interns in the USA (Landrigan et al., 2004). Extended working hours and their link to fatigue and consequently the impairment of performance have resulted in a reduction of working hours in other industries such as aviation (Sexton et al., 2000) . Whilst efforts to reduce working hours for doctors have been promoted, an audit conducted by the Australian Medical Association has reported that doctors, including those in obstetrics, worked extended shifts of up to 39 hours. Of the 550 doctors across specialties and experience surveyed, 51% reported working at levels considered as a significant risk, and 21% at levels considered as high risk (Australian Medical Association, 2006). The reasons for health professionals working extended hours is postulated to be linked to the prevailing cultures within health care organisations where there is a lack of recognition about the effects of fatigue in relation to error. This culture is also thought to act as a barrier to medical officers speaking up, even when they recognise they are fatigued (ACSQHC, 2005c).

(6) Working Conditions domain

The Working Conditions domain relates to factors such as training, supervision and disciplinary policies. These factors are likely to be relevant in all clinical settings, including maternity. A key finding in the Inquiry into The King Edward Memorial Hospital which focused on maternity care, was a lack of adequate clinical supervision that resulted in junior medical officers undertaking unsupervised interventions for which they were not adequately skilled

(ACSQHC, 2002a). Failure to recognise and respond to problems associated with fetal monitoring has been cited as a common precursor to adverse events involving the fetus or newborn babies (ACSQHC, 2002a; Department of Health UK, 2000c; MCHRC, 1998; Miller, 2005; Simpson, 2005). A lack of skills and training is likely to be a reason for this problem (ACSQHC, 2002a; Department of Health UK, 2000c; MCHRC, 1998; Miller, 2005; Simpson, 2005). The quality of Working Conditions are probably different in each clinical setting, but any deficits in the levels of appropriate supervision or training will have implications for the safety of maternity care. Knowledge about working conditions is important in relation to the development of positive safety cultures.

The factors included in each of the six safety culture domains are summarised below (Table 2).

Table 2 Summary of factors included in the six safety culture domains

Safety culture domain	Factors included in safety culture domain
Safety Climate	Strength toward: - Recognition of error - Reporting adverse events - Response/management of adverse events - Feedback to staff regarding actions Leadership commitment to patient safety
Teamwork	Level of teamwork: - Quality of collaboration between health professionals - Quality of communication between health professionals Role Experience Trust
Job Satisfaction	Staff morale Job enjoyment Autonomy over work practice
Perception of Management	Management decisions related to: - Staffing - Equipment - Leadership
Stress Recognition	Recognition of the influence of: - Fatigue on error - Long working hours on error - Over confidence on error
Working Conditions	Level of supervision of junior staff Training for staff Disciplinary policy

2.3.7 Implications of understanding safety culture in maternity care

There is a substantial body of evidence about the contributing factors to adverse events in maternity care (ACSQHC, 2002a; Department of Health UK, 2000a; JCAHO, 2005; Lewis, 2004; MCHRC, 1998; NSW Health, 2006c; NSW Heath, 2005; O'Neill et al., 2008). However, there is limited knowledge about the culture of maternity services in Australia in which these events occur. Furthermore, there is little understanding about ways to reduce error and improve safety. The factors or safety culture domains that influence the safety culture in other health settings are also likely to influence the maternity setting.

2.3.8 Lessons from Aviation

The aviation industry provides examples of strategies that improve reliability and ultimately, safety. Reliability has been created through a culture of strong leadership; values; a commitment to quality; teamwork; clear communication and non-hierarchical structures, creating a no blame culture to reporting and feedback (Helmreich, 2000). These elements are all included in the Cockpit Resource Management (CRM) (Wiener, Kanki, & Helmreich, 1993). CRM focuses on improving air safety by providing training to enhance aircrew performance. CRM was developed from an understanding of aviation employees' attitudes, beliefs, perceptions and abilities to recognise, respond and communicate in actual or potential error situations. Experience in the aviation industry suggests that assessing and understanding the attitudes of frontline workers towards teamwork and the safety culture are powerful strategies to diagnose and improve safety (Helmreich & Merritt, 2001).

There is some debate about the generalisability of learning from other industries (such as aviation) to health (Hindle et al., 2006). These relate to the differences such as the environment of an airplane cockpit being ordered but individual patients often being unpredictable (Colla, Bracken, Kinney, & Weeks, 2005; Flin et al., 2006). Airline passengers fly during scheduled flights but patients are not always scheduled (ACSQHC, 2005c). Notwithstanding these debates, the (former) Australian Council for Safety and Quality in Health Care acknowledged that many of the lessons from aviation were applicable in the Australian health setting (ACSQHC, 2004).

2.3.9 Measuring safety culture

Understanding health workers beliefs and attitudes about the safety culture in which they work is recognised to be one strategy to improve health service reliability and safety (Flin, 2007; Hindle et al., 2006; Sexton et al., 2000). Undertaking reviews of the safety culture have been recommended as a patient safety strategy (Hindle et al., 2006; Kirk, 2005; NPSA, 2004). Safety culture or climate surveys are seen as one way for health systems to be able to examine the

safety culture by identifying the strengths or weaknesses in a clinical area (Flin, 2007). The identification of weaknesses then assists in developing patient safety improvement interventions (Sexton & Thomas, 2003a). Safety culture surveys are reported to be a useful way of evaluating patient safety interventions (Pronovost & Sexton, 2005; Sexton, Holzmueller et al., 2006).

Safety culture surveys provide a snapshot of the Safety Climate measured during one period of time (Pronovost & Sexton, 2005; Sexton, Holzmueller et al., 2006). As such, the use of safety culture surveys are limited and have been found to provide only superficial understanding about aspects of an organisations safety culture (Kirk et al., 2007). When measuring the culture, said to be the underlying determinants of the climate, a more qualitative research approach is required (Sexton, Holzmueller et al., 2006). In addition to safety culture surveys, it is recommended that qualitative research be undertaken to examine the human factor components of cultures (Braithwaite, Westbrook et al., 2005; Flin, 2007; Kirk et al., 2007). Qualitative methods are required to diagnose the safety culture accurately and to identify specific interventions (Flin et al., 2006; Perneger, 2006).

A number of surveys have been developed which aim to quantitatively measure the safety culture of an organisation or clinical unit (Colla et al., 2005; Singla et al., 2006). Surveys were originally developed in the aviation and mining industries and adapted to the health care setting (Flin, 2007; Singla et al., 2006). These surveys measure a range of safety culture dimensions or domains. Reviews of existing quantitative safety culture surveys reported a variation in the quality and validity of some surveys (Colla et al., 2005; Singla et al., 2006). Specifically, a number of surveys lacked theoretical underpinning in their development or often examined different or unique domains of culture. In addition, some surveys have not demonstrated sound psychometric properties (Colla et al., 2005; Singla et al., 2006). The choice of a survey to measure safety cultures should include the ability to demonstrate reliability and validity (Flin et al., 2006; Pronovost & Sexton, 2005). Surveys should also be selected for the specific purpose of the research and, if possible, be previously tested in a similar clinical setting (Colla et al., 2005). The issues of measurement and validity were considered in the selection of appropriate survey instruments for this Study. This will be discussed in more detail in Chapter 4.

2.4 A gap in knowledge

The review of literature for The Service Study has identified that avoidable adverse events continue to be a problem in maternity care. There is evidence for the need to reduce these events but there has been limited progress in the development of successful reduction strategies. Understanding the safety culture of a clinical area may be an appropriate method to develop

strategies to improve safety and reduce adverse events. There was no knowledge about the safety culture in maternity services in NSW or about the effectiveness of understanding safety culture as a strategy to improve safety culture in the NSW maternity setting. This gap in knowledge facilitated the development of research questions one, three and four in this thesis which focused on understanding the safety culture at the study site.

The following section presents a review of the literature pertaining to the development of policy which provides the literature background for The Policy Study.

2.5 Literature review: The Policy Study

This section presents an overview of the development of policy. This includes a brief commentary about selected concepts and debates surrounding policy development, in particular, the use of a theoretical policy cycle model. The Australian Policy Cycle is one such model which will be discussed, including the reason for its selection as a theoretical framework to guide the method of analysis used in this thesis (Bridgman & Davis, 2000) .

The systems and processes in place at the study sites in relation to patient safety are the results of national and state policy directions. It is important to understand the policy process in order to identify how the specific policies that influenced this study were developed. The following section provides information about some of the concepts and theory behind the policy process.

2.5.1 What is policy?

Policy has multiple meanings and definitions depending on the context in which it is being considered or applied. Policy is not a concrete or a specific phenomenon (Hill, 2005), rather it is the end result of a course of action or inaction involving multiple players within a specified situation (Jenkins, 1978).

Policy is described as a purposive course of action in the pursuit of goals (Colebatch, 1998). A common interpretation of this pursuit is that policy is therefore often what governments do or do not do to solve problems or issues (Althaus, Bridgman, & Davis, 2007; Colebatch, 2006). As such, policy and policy agendas are often an expression of the political will of the government of the day (Althaus et al., 2007). The identification of a compelling issue or problem alone does not automatically result in government policy intervention, unless there is a political imperative driving it (Barraclough & Gardner, 2008). Policy also provides an understanding about how things are governed (Althaus et al., 2007).

Policy can take multiple forms. For example, it can take the form of planned actions or a statement by a high level of authority on how to handle sets of recurring circumstances. In government administrations, policy often establishes the framework for making decisions 'where a discretion is often made under legislation' (Edwards, 2000). The prevailing meaning of policy in this context implies the existence of authority, expertise and order (Colebatch, 1998). In Australia, the various Commonwealth, State and Territory governments exercise the authority for public policy agendas.

2.5.2 The policy process

There is general agreement in the literature that policy is developed via a process (Althaus et al., 2007; Barraclough & Gardner, 2008; Colebatch, 2006; Howlett & Ramesh, 2003; Matheson, 2000). However, there is much contention about the specific process in which policy is developed (Bridgman & Davis, 2000; Colebatch, 2006; Kingdon, 1995; Matheson, 2006). A common position taken is that the policy process is complex which means it is not linear; but rather it is unordered, disjointed and context dependent. In this way, policy development does not follow a prescribed path, making it difficult to predict or identify the process *per se* (Barraclough & Gardner, 2008; Colebatch, 2006). Alternatively, there are other authors who advocate that, whilst there is variation on the specific steps undertaken in the policy process, there are common stages which ultimately lead to policy development. These common stages are articulated in a number of conceptual and theoretical frameworks (Bridgman & Davis, 2000; Colebatch, 2006; Howlett & Ramesh, 2003). Conceptual policy frameworks are thought to provide insight into how the policy process might work (Barraclough & Gardner, 2008). The following section will briefly explore two examples of such frameworks.

2.5.3 Vertical and horizontal dimensions framework

The first of the frameworks to be discussed is that of vertical and horizontal policy dimensions. Colebatch asserts that the process of policy making is dependent on which perspective the policy is approached from, either within the vertical or the horizontal dimension (Colebatch, 1998, 2006).

The vertical dimension of policy making relates to the decision or approval of a course of action from an authorised decision maker, for example by the Minister of Health or the Parliamentary Cabinet. This course of action is transmitted to subordinate officials, such as public servants in the Department of Health, who then translate and implement the policy objective, often as a statute or directive (Colebatch, 1998). Matheson (2000) describes the vertical dimension as being the relations of 'command and obedience' and flows through 'Government to Cabinet and

from Ministers to their Departments' (Matheson, 2000). The vertical dimension is also described as the 'top down bottom up approach' (Matheson, 2000).

New legislation will often be developed or amended in order to facilitate or give effect to policy initiatives. In this case, the delegation of work to subordinates provides the top down approach and the upward provision of advice is the bottom up approach. The result of these dimensions is policy outcomes which are hierarchically generated (Matheson, 2000). This perspective can focus policy analysis on both actions and decisions (Hill, 2005) . Edwards (2000) suggests there is also a bottom up approach to policy making where Public Service Officers suggest the need for new policy development or amendment of existing policies where there is a need for adjustment (Edwards, 2000). The adjustment of existing policies is also known as incrementalism (Althaus et al., 2007).

The horizontal dimension of policy considers the relationships or linkages that exist outside the vertical line. These relationships include the different organisations and participants who have interests in the policy issue being considered. This dimension recognises that the process of policy development exists within and outside of organisations. Effective relationships in the horizontal dimension require cooperation, negotiation and interaction between the participants (Colebatch, 2006). For example, NSW Health will release a consultation paper about the future policy for maternity services in NSW in 2009. This consultation aims to seek the views of health professionals, consumers and other stakeholders prior to its release as a policy (NSW Health, 2008). The outcome of this process will inform the development of the future maternity policy and is a working example of the horizontal dimension of policy development (NSW Health, 2008a).

The horizontal dimension, also referred to as policy coordination, includes activities to ensure consistency of policy, avoid duplication and resolve conflicts (Matheson, 2000). These activities are often facilitated through processes of 'persuasion, negotiation and bargaining' (Colebatch, 2006). These processes will often include other agencies, levels of government, internal participants and outside non-government participants, occurring through formal and informal mechanisms (Colebatch, 1998; Matheson, 2000). In Australia, these mechanisms include policy coordination activities such as formal consultative procedures in committees, and between inter-government agencies and lower level agencies within state and federal governments (Davis, 1993). The relationships between outsider interest groups and the public service are often actioned through formal and informal structures such as advisory committees and personal contact (Davis, 1993).

There is recognition that both vertical and horizontal dimensions exist in policy development inside and outside of government (Colebatch, 1998; Matheson, 2000). Vertically generated policies enable the development of policy in line with government objectives and, at times, enable the implementation of unpopular decisions (Matheson, 2000). However, these policies may be harder to implement due to insufficient cooperation in their development (Matheson, 2000). Policies developed within the horizontal dimension allow for a diversity of opinions and stakeholder interests, often making these policies easier to implement (Colebatch, 1998). The diversity of viewpoints to be considered can also result in the development of inconsistent policy and the slower process may not be in line with election cycles (Matheson, 2000). The coexistence of these two dimensions can create ambiguity and structural tension in the policy process (Colebatch, 1998). This tension is created by the need to develop clear objectives at the same time as considering and including all the participants.

Matheson (2000) contends that Australian Governments[4] (Federal and state) have strengthened the vertical dimension at the expense of the horizontal dimension in policy development. This has resulted in a tendency toward increasing technical expertise and centralised structures that are interested in identifying solutions to issues, thus negating the need for consultation or debate (Walter, 1996).

2.5.4 The policy cycle

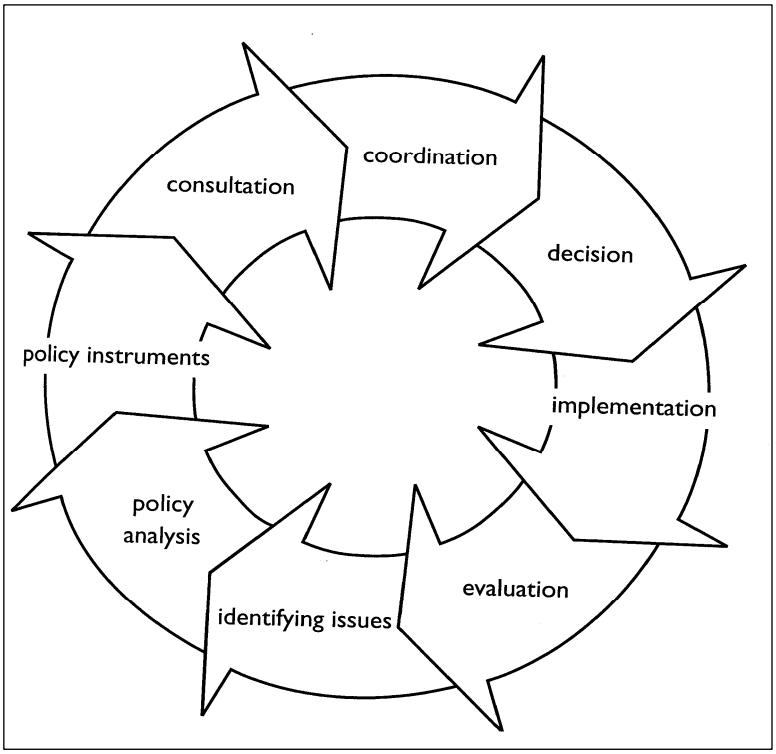
The vertical and horizontal dimensions provide different ways of describing the broad process of policy development. There are also a number of theoretical models, which break policy making into steps or components. Policy models allow sense to be made of the complicated policy process (Barraclough & Gardner, 2008). Common policy models use a cyclical approach in order to identify and describe the process of policy making (Althaus et al., 2007; Bridgman & Davis, 2000; Howlett & Ramesh, 2003). Whilst there are variations in these types of models, they are all based on the premise that policy is developed using a staged, problem solving approach. These approaches also recognise that there are a range of actors or institutions involved in the development of new policies (Howard, 2005). A policy cycle process is one way to examine the process.

[4] The Australian government includes both Federal and State Governments and is based on the Westminster System developed in the UK. Within the Westminster system, the Public Service implement the policies of the government (Edwards, 2000). The policy developed by Public Service Departments must be consistent with, and not override that of, the government (Edwards, 2000).

Bridgman and Davis assert that ‘A policy cycle brings a system and rhythm to a world that might otherwise appear chaotic and unordered’ (Bridgman & Davis, 2000, p. 23). These authors contend that some order must come out of the interaction between the political and policy administrative worlds if viable policy is to be produced (Bridgman & Davis, 2000). Order, in this sense, is facilitated via alternative routes where each player has a defined role and responsibilities for channelling policy ideas along a recognised sequence (Bridgman & Davis, 2000).

A policy cycle has been developed with special consideration for the Australian policy context that breaks the policy process into eight steps (Figure 3) (Althaus et al., 2007). The Australian government is based on the Westminster System developed in the UK. As such, the policy cycle has steps which are likely to be similar in other international policy contexts using the Westminster System of Government. The Australian Policy cycle is comprised of eight stages (Figure 3). These stages commence with the identification of issues and conclude with the evaluation of the policy. This cycle uses a standard sequence of steps and tasks which attempt to capture important features of policy making, at the same time as recognising the multiple players (Althaus et al., 2007). A description of each stage of the policy cycle is presented in Chapter 3 and therefore will not be discussed in detail here.

Figure 3: The Australian Policy Cycle



Source: Althaus, Bridgman & Davis, 2007.

It seems evident from the literature that the policy process is complex, involving multiple players, and does not necessarily follow a linear path (Althaus et al., 2007; Bridgman & Davis, 2000; Howlett & Ramesh, 2003). These authors point out that, in reality, this non-linear process can result in the steps of the policy cycle not being consistently followed. In this case, they suggest there may be a series of small loops or cycles undertaken (Althaus et al., 2007). The political process can also disrupt the logical linear process.

Policy processes, such as that illustrated in the Australian Policy Cycle, assume an ordered sequential policy approach (Barraclough & Gardner, 2008). The sequential policy cycle approach has been criticised as being unrealistic in the often complex world of policy making, where there is a gap between theory and reality (Barraclough & Gardner, 2008; Colebatch, 1998, 2006; Everett, 2003). That is, in the real world policy is rarely developed in the ordered theoretical sequence proposed by the policy cycle (Barraclough & Gardner, 2008; Colebatch, 1998, 2006; Everett, 2003). As such, these authors question the practical use of a policy cycle which is at odds with reality, as it creates unrealistic expectations of the policy making process (Barraclough & Gardner, 2008; Colebatch, 2006; Everett, 2003). Howard (2005) further asserts that new policy development rarely starts with a clean slate and often involves existing policies being modified or over-turned. This approach of policy making is thought to take a more unplanned, reactive and incremental approach (Barraclough & Gardner, 2008). However, there is some support for the use of the policy cycle as a model for the analysis of policy development (Howard, 2005).

Howard found that, whilst there is support for the policy cycle as a model, it may be of limited value in its practical application and should not be taken as a prescriptive model (Howard, 2005). Howard undertook a small descriptive study which explored Australian senior policy officers' beliefs about good policy development and the connection between the Australian Policy Cycle model and policy making practices. The study included nine in-depth interviews with policy officers working in various Australian government agencies. Participants were shown the Australian Policy Cycle and asked comment about their policy making experience in relation to stages of the Policy Cycle (Howard, 205). Howard's participants highlighted that, depending on the context of the issue, such as being in a pre-election time, politically risky components of the cycle may be skipped or de-emphasised (Howard, 2005). In the light of political imperatives, short cuts in the cycle are often made. Howard asserts that short-cuts often result in the exclusion or de-emphasising of the evaluation stage of the policy cycle as it does not 'further the interests of the political executive' in the same ways as the 'kudos' often associated with the announcement of and implementation stages of the policy cycle (Howard,

2005). The time constraints of policy development were found to be a limiting factor on the ability to consult with stakeholders i.e. in the horizontal dimension. Howard's findings suggests that the policy cycle is not likely to be used in situations 'where there are time constraints or governments are likely to reveal their own values' (Howard, 2005). In this case, the solution to problems may take precedence over the problems that the policy is attempting to address and where it is easy to lose sight of the policy objective because the policy is far removed from the original intention (Althaus et al., 2007). These policy objectives as such, are at risk of being overtaken by unintended consequences and side effects which may not be realised until after policy implementation or evaluation (Althaus et al., 2007; Kingdon, 1995). The resulting effect can further dilute the policy effect or in some cases result in the creation of new problems (Althaus et al., 2007; Kingdon, 1995). The unintended consequences, or the creation of new unforeseen problems as a result of policy implementation, are a possible outcome which should be considered during the evaluation stage of the policy cycle (Barraclough & Gardner, 2008).

The authors of the Australian policy cycle acknowledge the validity of their critics but assert that it is possible to seek 'patterns among chaotic environments by providing analytical tools' (Althaus et al., 2007) Further, 'good' policy should include basic elements of the cycle even though they do not always follow or include all of the Policy Cycle components. They argue that the usefulness of their cycle allows for the analysis of what should constitute 'good' policy development (Althaus et al., 2007). The policy cycle allows complex phenomena to be disaggregated into manageable steps enabling different issues and needs to be focused on in each phase (Bridgman & Davis, 2000).

Notwithstanding these criticisms, the Australian Policy Cycle (Bridgman & Davis, 2000) was identified as an appropriate theoretical framework to map the policy process in the Policy Study. The application of the Australian Policy Cycle as a theoretical framework for the Policy Study is discussed in Chapter 3.

2.6 Conclusion

This chapter has presented a review of the literature which provides evidence for the Studies of this thesis. The next chapter discusses the methodological approaches and theoretical frameworks which underpinned the Studies.

CHAPTER 3: METHODOLOGICAL APPROACHES

3.1 Introduction

The previous two chapters introduced the background, context and literature to support the development of the two Studies in this thesis. This chapter provides the detail about the philosophical underpinnings and theoretical frameworks which influenced the way the Study was constructed. Pragmatism will be introduced as the philosophical assumption as it influenced the choice of a mixed method research study. Two theoretical frameworks, (1) the Threat and Error Management Model and, (2) the Australian Policy Cycle, provided a theoretical basis for the Study design. The Threat and Error Management Model provided the basis and process for the exploration and examination of the safety culture at the study sites in the Service Study. The Australian Policy Cycle provided a theoretical framework articulating the dimensions and process of making policy which lead to the policy context explored in Policy Study. The following section discusses pragmatism and these theoretical approaches.

3.2 Pragmatism and mixed method research

This Study used a mixed method research methodology. Mixed method research has been described as the third methodological paradigm (Cresswell & Plano Clarke, 2007; Tashakkori & Teddlie, 2003). As a methodology, mixed method research is a mixture of quantitative and qualitative approaches which are often driven by philosophical assumptions such as pragmatism.

Pragmatism is the most common philosophical assumption on which mixed method research studies base their knowledge claims (Cresswell, 2003). It is underpinned by a practical and applied research philosophy where knowledge claims include problem-centred, pluralistic and consequence-oriented studies (Cresswell, 2003; Tashakkori & Teddlie, 2003). Pragmatism supports the inclusion of both quantitative and qualitative research methods within a single study. In mixed methods research with a pragmatic philosophy, the importance of the research question dictates the inclusion of these methods and design of the study rather than the philosophical paradigm underlying either method (Tashakkori & Teddlie, 2003). The philosophical assumptions of pragmatism resonate well with the research questions in this thesis which required a problem-centred and mixed method research approach in order to unravel the complexity required to understand the safety culture in the maternity setting. The mixed method research approach in this Study included two theoretical frameworks to assist in unravelling this complexity. The two theoretical frameworks which provided the basis for the design of this mixed methods study are presented in the following section.

3.3 The Threat and Error Management Model

A number of approaches have been developed to explore patient safety (Thomas & Houston, 2005). These approaches explore patient safety within an investigative framework by concentrating on the areas of causality of error and error prevention (Thomas & Houston, 2005). A number of these approaches have evolved from the Human Factor Sciences which examine the interface between humans, complex systems, technology, tools and automation (Thomas & Houston, 2005). The Threat and Error Management Model is one such Human Factors Science (Helmreich, 2000).

The Threat and Error Management Model was originally developed in aviation. It considers the behavioural dynamics between individuals and groups in relation to error and provides a process for the identification of strategies to reduce error within systems and cultures (Helmreich, 2000). The model is based on the premise that both system and human factors contribute to errors. The model provides a framework to analyse the cause of error, the effectiveness of mitigation strategies and the avoidance of future error. Specifically, the model focuses on the interface between individual and team behaviours and organisational components which contribute to patient safety, that make up the safety culture. The model is divided into two components: (1) Threats and (2) Threat management strategies and error management.

The threat component includes the identification of latent and overt threats that lead to error. Latent threats are the factors, such as national, organisational and professional cultures, that influence the clinical environment. Overt threats are environmental, organisational, individual, professional, team and patient factors, which exist in the clinical environment. The threat management strategies and error management component includes the development of specific strategies and interventions to address the threats in the clinical environment.

The Threat and Error Management Model can be applied using a six step process (Helmreich, 2000). The first two steps involve the identification of the threats to the clinical setting by undertaking a detailed history and examination of the organisational and staff norms, organisational and clinical environment. This examination, which can be facilitated by the use of safety culture surveys and interviews, ultimately provides a diagnosis of the safety culture in the environment and identifies potential threats to patient safety. The first two stages of this model provided the framework to identify the safety culture and potential safety interventions and answer the first research question in this thesis.

The Threat and Error Management Model is applied using the following six step process (Helmreich, 2000):

1. *History and examination.*
2. *Diagnosis.*
3. *Dealing with latent factors.*
4. *Providing formal training in teamwork, the nature of error, and in limitation of human performance.*
5. *Providing feedback and reinforcement.*
6. *Making error management and ongoing organisational commitment through recurrent training and data collection.*

In this Study, only steps one and two of the model were utilised. These relate to the identification of the safety culture and any potential areas requiring improvement. The remaining four steps (3-6) relate to the development and implementation of these strategies. It was not possible to include steps three to six in this Study due to a lack of engagement and capacity of local stakeholders to participate at the study site. However the development of an understanding of the safety culture is an important first step and stages one and two of the Threat and Error Management Model provided a theoretical framework for investigating the safety culture as follows:

1. *History and examination*: Relates to knowledge about the organisational and staff norms. In this Study, history and examination included the examination of the safety culture at the study sites using safety culture surveys.

2. *Diagnosis*: Relates to knowledge about the clinical and organisational environment and factors leading to adverse events and near miss incidents. In this study, the diagnosis occurred through an analysis of the safety culture surveys and identification of any areas requiring improvement. In addition, qualitative data including interviews and the examination of the policy context and clinical governance structures within the study sites provided additional information for a more comprehensive description and diagnosis of the safety culture.

The Threat and Error Management Model provided the theoretical framework for the identification of the safety culture at the study site. A second theoretical framework, the Australian Policy Cycle was used as a framework to understand the policy context.

3.4 The Australian Policy Cycle

The Australian Policy Cycle (Bridgman & Davis, 2000) was the theoretical framework used to provide a lens through which to view the analysis and interpretation of the overarching policy context. The literature review presented in the previous chapter explored the theory and debates surrounding the policy cycle as a method to understand and analyse the policy making process.

The Australian Policy Cycle comprises eight stages. These stages commence with the identification of issues and conclude with the evaluation of the policy. The eight stages are described below:

1. Identification of issues

   The identification of new issues includes recognising problems or the need to adjust an existing policy. These issues are raised either from within the political sphere, through government or by interest groups and through the media.

2. Policy analysis

   In the policy analysis stage, policy officers within the public service provide information to the decision maker (politician/bureaucrat) about the issue. This information then enables an informed judgement about whether potential actions or interventions are required or not. Policy analysis often dominates the work of public servants and takes the form of briefing notes and discussion papers. Forms of policy analysis can also include inquiries or reviews.

3. Policy instruments

   If government intervention is likely, policy analysis progresses to the development of policy instruments which take the form of strategic plans, policy directives and legislation.

4. Consultation

   The consultation stage of the cycle often includes consultation with other government departments, non-government organisations and professional groups to test the idea, improve the policy proposal and seek support for the solution.

5. Coordination

   If funding is required, coordination is the process of sourcing the funds, either internally or externally. This stage may also be subject to approval by Treasury[5] who hold the funding sources.

6. Decision

   A decision is ultimately made whether or not to introduce the policy. This is based on the quality and detail of the advice to carry the solution through to an ultimate decision. For policy decisions that have wider impact or implications, final judgement often ends with the Minister of the particular Department or Cabinet

7. Implementation

   In this stage, the approved policy is implemented either through legislation, program or policy in pursuit of the agreed solutions to the issue.

8. Evaluation

   Evaluation is an important component of assessing the success of the policy. Evaluation is essential in the policy cycle and would usually occur at the end of the policy implementation (Bridgman & Davis, 2000).

The Australian Policy cycle is a description of policy making that assists in making sense of policy development (Bridgman & Davis, 2000). The Australian Policy Cycle was chosen as an appropriate theoretical framework to map and analyse the development of the Planning Better Health and Patient Safety and Clinical Quality Program Policies (NSW Health, 2004a, 2004c) which provided the policy context at the study sites. Whilst it was recognised there were some limitations to using the Policy Cycle, the application of a theoretical approach to identify the presence or absence of various stages of the policy development was important. The way in which the Australian Policy Cycle was applied in the Policy Study is discussed in the next chapter.

[5] The Treasury is the financial management arm of the NSW Government. The Treasury has a role in the; provision of advice regarding state financial management policy to the NSW Government and the Treasurer; and, makes the payment of various grants and policy initiatives (New South Wales Government, 2009).

CHAPTER 4: DESIGN AND METHOD

4.1 Introduction

This chapter describes the mixed method research design adopted for this Study. Data were collected through safety culture surveys, semi structured interviews, field notes and an audit of relevant policy related to quality and safety. This chapter discusses the reasons for choosing the research design, highlights the ethical considerations and describes the procedures for data collection and analysis.

4.2 Study design

4.2.1 Mixed method research

This Study used a mixed method research design. Mixed method research is an approach which includes both qualitative and quantitative data collection simultaneously or sequentially to explore complex research questions (Cresswell, 2003; Cresswell & Plano Clarke, 2007; Tashakkori & Teddlie, 2003).

Mixed method research has been described as both a methodology and as a method of inquiry (Cresswell & Plano Clarke, 2007). As a methodology, it is a mixture of quantitative and qualitative approaches which are driven by philosophical assumptions including pragmatism. The previous chapter briefly presented pragmatism as the philosophical assumption which underpinned the choice of mixed method research in this Study. The following section discusses mixed method research as a method of inquiry and how this method was used in this Study.

In mixed method research, a combination of qualitative and quantitative data are collected within a study (Cresswell & Plano Clarke, 2007). The use and triangulation of both forms of data aim to achieve a better understanding of the research problem (Cresswell & Plano Clarke, 2007). Mixed method research is more able to answer complex research questions (Cresswell, 2003) such as those posed in patient safety research (Brown et al., 2008).

4.2.2 Patient safety and mixed method research

The use of a mixed method approach in patient safety research has been based on its ability to contextualise findings in complex settings (Brown et al., 2008; Pronovost & Sexton, 2005). This contextualisation is achieved by the combination of qualitative and quantitative methods which, when the data are triangulated, contributes to explain findings and develop theory (Brown et al., 2008). The strength of using a mixed method approach is based on the triangulation and

corroboration of the data findings (Brown et al., 2008). Corroboration in this context relates to the conclusions of one research type being reinforced through corroboration with data from another research paradigm. Corroboration results in strength and credibility of findings, and a greater understanding of the issue. Triangulation relates to the converging of quantitative and qualitative data to either compare or contrast the findings or to, expand or validate findings from each data collection method (Cresswell & Plano Clarke, 2007). The triangulation of qualitative and quantitative data is thought to add strength to findings and also to ensure that inferences from only one type of data are not made hastily if there is conflict with the results from another research type. This understanding enables the researcher to elaborate and explain the results (Brown et al., 2008).

There is support for mixed method research as a research approach relevant to patient safety and social science research (Brown et al., 2008; Cresswell, 2003; Cresswell & Plano Clarke, 2007; Tashakkori & Teddlie, 2003). There is also criticism about the validity of mixed method research as a true research paradigm. The next section outlines the basis for these criticisms.

4.2.3 Criticisms of mixed method research

Mixed method research has been advocated by some researchers as a third methodological paradigm alongside quantitative and qualitative research (Tashakkori & Teddlie, 2003). However, mixing quantitative and qualitative methods within a single study, has drawn criticism from a number of writers (Cresswell & Plano Clarke, 2007; Morse, 1991; Tashakkori & Teddlie, 2003) The basis of these criticisms relates to:

- A lack of common definitions in mixed method research;
- The reasons why mixed method research is utilised;
- The foundation of mixed method research;
- The structure of mixed method design;
- Problems with drawing inferences with mixed method research;
- Logistical issues associated with mixed methods research (Tashakkori & Teddlie, 2003).

However, the advocates of mixed method research support its place as a new and legitimate research paradigm (Cresswell & Plano Clarke, 2007; Tashakkori & Teddlie, 2003). These claims are based on a long documented history of successful mixed method research being conducted without explicit use of the title ‘mixed method research’ (Tashakkori & Teddlie, 2003). There is recognition from mixed method researchers that there is often confusion related to the interpretation of what constitutes a proper mixed method research designs, as terms such

as multi-methods, mixed approach and mixed method research are often confused (Cresswell & Plano Clarke, 2007; Tashakkori & Teddlie, 2003). These authors suggest a way to address the criticisms raised above, is to ensure that mixed method research studies use similar nomenclature and identifiable designs (Cresswell, 2003). There are a number of types of mixed method research designs, which can be identified according to the particular process and sequence of data collection and analysis used. The next section outlines the criteria used to determine the appropriate process and sequence to be used when designing a mixed method research study.

4.2.4 Mixed method research design criteria

Mixed method research studies require that the process of data collection and criteria for data analysis be clearly identified (Cresswell, 2003). The process used is dependent on the research design and question. The design requires consideration of three components: (1) implementation; (2) priority and theoretical perspective; and, (4) integration (Cresswell, 2003). These processes and their relevance to this Study are discussed in the next section.

(1) Implementation

The implementation component requires that quantitative or qualitative data be collected concurrently or sequentially (Cresswell, 2003). Concurrent is used when the timing of data collection is not dependent on the results of either set of data. Sequential is used when one set of data is required to inform the subsequent data to be collected. This Study used concurrent collection of both quantitative and qualitative data. Concurrent data collection was appropriate as the sequence of data collection did not influence either data set.

(2) Priority and theoretical perspectives

The priority component relates to the relative weighting or emphasis of either the quantitative or qualitative approach to answer the research question (Cresswell & Plano Clarke, 2007). This weighting can be either equal or leaned to one approach. Weighting is also dependent on the theoretical perspective of the study (Cresswell, 2003; Morse, 1991). In this Study the theoretical perspective is pragmatism. When this theoretical perspective is pragmatism, the priority of data could be either equal or unequal (Morse, 1991). In this Study, which takes a pragmatic perspective, the priority of the quantitative, survey data and qualitative, interview and policy audit data were equal with each other.

(3) Integration

The integration or mixing of data may occur during the data collection, data analysis, or interpretation stage or in a combination of these stages (Cresswell, 2003). When data are integrated at analysis and interpretation stages it is known as triangulation. In this Study, triangulation occurred at the interpretation stage of the Study.

The components which were used in this Study fit the criteria of a concurrent triangulation design which is the most common mixed method design (Cresswell & Plano Clarke, 2007; Morse, 1991).

4.2.5 Concurrent triangulation design

Concurrent triangulation designs in mixed method studies are used to cross validate, confirm or corroborate findings. The use of both quantitative and qualitative methods in a single study offsets the limitations of each method (Cresswell & Plano Clarke, 2007). There is concurrent data collection, both quantitative and qualitative data have equal priority and the analysis and results are integrated during the interpretation phase (Cresswell, 2003). The triangulation of this Study's survey and interview data and the policy audit enabled a rich description of the safety culture. Triangulation added strength to the overall results of the Study, as each method complements and adds to the other. Reliance on a single method of data would have provided a limited picture of the safety culture. The concurrent triangulation design used for this Study is described in Table 3.

Table 3: Study design

	Service Study		Policy Study
Data collection and analysis	Site A	Site B	Policy Context
Implementation Concurrent Data collection	January 2007 - September 2007	August 2007- January 2008	November 2007 - February 2008
Quantitative Data (QUAN)			
Safety culture surveys 1. Safety Attitude Questionnaire	X	X	
2. Safety Culture Scale	X	X	
Qualitative data (QUAL) • Semi structured Interviews	X	X	
• Field visits/ notes	X	X	
• Policy Audit			X
Priority • Data Analysis	QUAN = QUAL	QUAN = QUAL	QUAL
Integration • Interpretation of data	Triangulation	Triangulation	Triangulation with the Service Study

Describes the Study design and data collection sequence. Quantitative data (QUAN) Quantitative data (QUAL) collected had equal priority.

The methods of data collection for the surveys and interviews are presented in the next section. The results of the surveys and interviews are reported and analysed in Chapter 6. The results of the Policy Study are reported in Chapter 5. The results from both Studies are triangulated and discussed in relation to the research questions posed in the thesis in Chapter 7. The next section describes the setting where the Study took place.

4.2.6 Setting

The location of the Study was a practical decision based on a number of factors. The first was my ability to gain access to an appropriate maternity service. The second related to a belief that my knowledge about the structure and policy framework[6] of NSW maternity services would be

[6] The terms 'structure and policy framework' relate to the structure, size, location, service and role delineation under which public maternity services operate in NSW. These services are also classified according to role delineation criteria. These criteria identify the level of service provision, acuity, levels of staff expertise and the clinical support services requirements (NSW Health, 2002).

an asset during the Study. Given only one site would be (initially) included in the Study it was important that this service had characteristics that were essentially typical of maternity services in the Sydney metropolitan area. Whilst it is acknowledged that there would be individual contextual differences from location to location, factors such as level of service, delineation[7] and number of births were important. A service which catered for the majority of women with the exception of those with the most complex needs would fit these criteria. A number of such maternity units are located in metropolitan Sydney.

The selection of an appropriate study site should ideally be the one which is likely to demonstrate the phenomenon under investigation, but the decision is often based on what is accessible (Silverman, 2005, p. 132). Access is more likely to be an issue in student-led research where there is limited time to collect data and funding to support the study (Silverman, 2005). This access is often dependent on existing employment or 'insider' relationships or with the student's university (Silverman, 2005). Access is also often predicated on the goodwill of individuals at the study site in addition to these existing relationships.

The selection of a site for this Study was one which fitted the criteria of location and service delineation. Most importantly, there was also an interest and willingness for the Study to be conducted on-site and it was welcomed by the senior maternity service managers, probably as a result of pre-existing relationships and previous research collaboration with the university.

The Study was initially designed to be conducted at a single site maternity service allowing for an in-depth assessment. However, it was known prior to the commencement of the Study that structural-changes to the organisation of the study site were likely to occur. These changes, which also occurred across the whole of NSW, mean that the existing 17 Area Health Services (AHS) were restructured into eight new AHS (NSW Health, 2004a). With respect to the Study, the restructure resulted in two metropolitan AHS amalgamating. This required significant reorganisation of clinical services into area clinical streams and smaller divisions within new governance structures. At the study site, this resulted in the maternity service amalgamating with a second maternity service from another facility located eight kilometres away. The end

---

Public maternity services in NSW are classified according to role delineation criteria. These criteria identify the level of service provision, acuity, levels of staff expertise and the clinical support services requirements. Maternity services are delineated from level 1 providing postnatal services only through to level 6 providing care for women with the most complex pregnancies (NSW Health, 2002).

result was defined by the Department of Health as one maternity service located at two separate hospital sites under one divisional structure.

This new divisional structure came into being shortly after the commencement of the Study. A decision was made then to include the second site into the Study. The rationale for this decision was that the two services were now one and there was interest from the divisional management of the service for the second site to be included in the study. The measurement of the safety culture was possible at both sites. The data generated would assist to describe the safety culture of the new amalgamated service and facilitate the identification of intervention strategies at both sites.

The Study therefore took place at one maternity service located across two metropolitan public hospitals in Sydney, Australia, Sites A and B. Sites A and B are located in the same Area Health Service in Sydney. The maternity service at Sites A and B operates as one service within the same clinical division for management and support services.

Site A

The maternity service at site A is located in a principal referral public hospital located in metropolitan Sydney. The maternity service provides care for a range of pregnant women from those with normal pregnancies to those with selected high risk factors. The service is classified as a Level Five maternity service according to the NSW Role Delineation for Health Service Guidelines[8] (NSW Health, 2002)

Site A has 36 maternity beds, 18 postnatal and 10 antenatal, six labour and birth rooms, a two room birth centre, eight cot special care nursery[9], a day assessment service, outpatient service clinic, outreach antenatal services located in at two sites within the community and access to operating theatres in the general section of the hospital. In 2005, there were 2,304 births including 1,457 (63%) vaginal births, 299 (13%) instrumental deliveries and 548 (24%) caesarean sections at this site (Centre for Epidemiology and Research NSW Department of Health, 2007). These details are listed in Table 4.

[8] A level 5 maternity service in NSW has the following characteristics:
Provides care for women with normal pregnancies to those with selected high risk factors greater than 32 weeks gestation. Level five maternity services are supported by midwives, midwifery educators/ consultants, 24 hour obstetric, paediatric, anaesthetic on call services and onsite accredited medical practitioners. Level five maternity services have special care neonatal nurseries capable of the provision of short-term complex care of neonates (NSW, Health 2002).

[9] A Special Care Nursery provides care to babies >32 weeks gestation including short term complex care and include incubators, oxygen therapy, cardio respiratory monitoring and intravenous therapy.

Site A operates a number of models of care including traditional maternity care[10], midwifery led models of care, specialist obstetric services and shared antenatal care.

There were 111 midwives, including midwifery managers, midwifery educators, midwife consultants and student midwives, five consultant obstetricians, one obstetric staff specialist, six obstetric registrars and residents, one paediatricians, four paediatric registrars and six residents working within the maternity service of Site A at the time of the Study (Table 4). Most midwives and nurses worked on a rotational variable 38-hour a week roster. The exception to this was midwives working in the Birth Centre and in continuity of care models who worked on an on- call basis and were paid through an annualised salary agreement[11]. Midwifery managers, educators and consultants worked Monday to Friday on daytime shifts. There was after hours management coverage for the maternity service provided through the general hospital nursing administration. The medical officers were both registrars and residents of varying levels of obstetric training from year one to year six. Medical officers worked on a rotational roster covering the day and evening shifts and on-call shifts overnight. All staff, with the exception of the consultant obstetricians and paediatricians were employees of the public health service. Consultant obstetricians were employed on a contractual basis as Visiting Medical Officers (VMO). VMOs provide consultant care to public women and babies often on an on-call basis in addition to their private practices.

[10] Traditional maternity care comprises of hospital-based services provided by a range of different midwives, obstetricians and doctors during the antenatal, intrapartum and postnatal periods.

[11] Annualised salary is an agreement between midwives working in caseload midwifery programs and the NSW Nurses Association which allows for alteration of the normal award wage based on 38 hour week to accommodated midwives working in caseload midwifery models.

Table 4: Study site details

	Site A	**Site B**
Service delineation level	Level five	Level four
Total births in 2005[12]	2304 births	1046 births
Vaginal births	1457 (63%)	697 (66%)
Instrumental deliveries	299 (13%)	122 (12%)
Caesarean section	548 (24%)	227 (22%)
Beds (total)	32	18
• Postnatal (P/N)	18	18 (P/N & A/N)
• Antenatal (A/N)	10	
• Labour and birth rooms	6	5
• Birth centre rooms	2	0
• Day assessment unit	1	0
• Special care nursery	8	4
Models of Care		
• Traditional maternity care	Yes	Yes
• Specialist obstetric	Yes	
• Shared GP antenatal	Yes	Yes
Midwifery led models	Yes	Yes
• Continuity of midwifery care	Yes	No
• Antenatal clinics	Yes	Yes
Staff		
Midwives [13]	111	49
Obstetric		
• Consultant (VMO)	5	4
• Staff Specialists	1	1
• Registrar/Resident Medical Officer	7	6
Paediatric		
• Consultant (VMO)	1	4
• Registrar/Resident Medical Officer	10	6
Others	0	6

Site B

The maternity service at Site B is located in a district hospital in the suburbs of metropolitan Sydney. The maternity service provides care for women with normal pregnancies through to those with moderate risk factors. The service is designated as a level four maternity service[14]

[12]2005 Birth statistics were the latest published statistics available (Centre for Epidemiology and research NSW Health, 2007).

[13] Includes, midwives, midwifery managers, educators, consultant and student midwives.

[14] Level four maternity units had the following characteristics: Provide care for women with normal pregnancies to those with moderate risk factors. Level four maternity services in NSW are supported by midwives and have access to midwifery educators, 24 hour obstetric, paediatric, anaesthetic on call support and onsite.

(NSW Health, 2002). Site B is located eight kilometres and approximately fifteen minutes driving time from Site A.

Site B has 18 maternity beds which are designated postnatal and antenatal, five delivery rooms, four cot special care nursery, outpatient service clinic, and access to operating theatres in the general section of the hospital. In 2005, there were 1046 births including 697 (66%) vaginal births, 122 (12%) instrumental deliveries and 227 (22%) caesarean sections at this site (Centre for Epidemiology and Research NSW Department of Health, 2007). Site B has traditional maternity models of care, midwifery-led antenatal clinics and shared antenatal care between general practitioners and hospital services. There were 49 midwives, including midwifery managers, midwifery educators, student midwives and enrolled nurse, five obstetricians, of whom one was an obstetric staff specialist[15], six registrars and residents, four paediatricians, and six paediatric registrars and residents and six allied health professionals at the time of the Study. The staff worked similar patterns to those in Site A. The details for Site B are also provided in Table 4.

4.2.7 Gaining access to the study sites – engagement

Prior to the commencement of the study, a number of strategies were undertaken to seek access, engagement and executive support for the project. Eliciting support from leaders for this type of study has been reported to improve: response rates; local engagement; and later ownership of any improvements or interventions (Sexton & Thomas, 2003a). The engagement strategies were targeted in the following order at the three levels of administration within the sites; these are divisional, executive and unit levels. These strategies are discussed below.

(1) Divisional Level

Site A

An initial meeting was held with the Nursing and Patient Services Manager[16] and the obstetric staff specialist of the maternity service Division (Site A) in November 2006. The purpose of this meeting was to seek the participation of their maternity service in the Study. At the meeting staff from Site A stated they were happy to participate in the Study. The Obstetric Director of the Division was not at this meeting but gave verbal approval through the Staff Specialist for the Study to be conducted.

[15] Obstetric Staff Specialist – is a fully qualified obstetrician employed fulltime by the AHS and has a clinical, teaching and leadership role within the service.

[16] Nursing and Patient Services Manager – is the midwifery manager of the Division for both sites where the study took place.

Site B

A meeting with the Nursing and Patient Services Manager for both sites discussed the inclusion of Site B into the Study in April 2007. It was agreed that Site B should also be included due to the recent amalgamation of services between Site A and Site B.

(2) Executive level

Site A

A meeting between myself, the Nursing and Patient Services Manager and the Acting Director of Clinical Governance[17] at Site A occurred in November 2006. This meeting aimed to introduce the Study and obtain executive support. The Acting Director of Clinical Governance[18] agreed to provide executive support for the Study.

Site B

A meeting in July 2007 was held between the Director of Nursing Site B, Nursing and Patient Services Manager and myself to introduce and seek support for the Study. There was agreement that the study could also include Site B. Written permission was also sought and granted from the Medical Director of the hospital at Site B.

(3) Maternity unit level

Site A

Two meetings were held at unit level at Site A. The first was held in November 2006 with the senior midwifery managers, educators and consultants within the maternity service to introduce the Study and seek their support. The second meeting was held the same month with the Site A Quality Committee, my research/thesis supervisor and myself to seek the committee's support to act as the steering group for the project. There was general agreement for the project. However there was concern at this time that this group was not in a position to support this activity as there was no longer a designated quality manager to organise and drive the Quality Committee.

[17] Directors of Clinical Governance – are fulltime senior clinicians who are the Director of AHS Clinical Governance Units. They are responsible for the implementation of safety and quality structures and policies and ensuring a coordinated and efficient approach to clinical governance activities in NSW Area Health Services.

[18] The Director of Clinical Governance position at site A would become and AHS based position with the restructure of Clinical Governance Units. This is discussed in more detail in the Policy Study (Chapter 5).

Site B

A meeting was held with maternity service managers and myself in July 2007 to introduce the study. There was positive support for the study to be undertaken. There was also interest raised about the results at Site A suggesting a potential competitive nature between the two services that had recently merged.

4.2.8 Ethical considerations

Approval for the Study to be conducted at both sites was obtained from the Area Health Service Research Ethics Committee (Approval number: 06/83 Homer) and from the University of Technology Sydney Human Ethics Committees (Clearance number: UTS HREC REF NO.2006-249R) (Appendix 1). There were a number of ethical considerations which were identified in the design of this Study. These considerations related to issues of consent, risks to participants, confidentiality and data storage.

4.2.8.1 Consent

Survey respondents and interview participants were asked to provide written consent prior to participating in the Study. Meetings were held at each site for the Service Study to introduce and provide explanations about the Study. Written information and contact numbers for myself and research supervisors were provided. Participants were able to choose not to participate or to withdraw at any time. Participants were made aware that this would jeopardise neither their employment nor their relationship with their manager, the hospital or the Area Health Service.

4.2.8.2 Risk to participants

There were a number of potential risks which had to be considered in this Study including:

- Completing the survey or participating in interviews may have raised issues that could have caused distress to respondents or participants. In the event that participants became distressed, arrangements were in place to stop the interview and provide contact details of available counselling and support services. This situation did not occur during the Study.
- There was the potential that issues requiring further examination may have been uncovered during the survey and interviews. For example, participants may have disclosed safety issues relating to adverse events or incidents that had occurred and that required further action outside the scope of the Study. In the event of this situation occurring, ethics approval had been granted for me to identify to the participant that I had to step out of my role as a researcher because there was an issue of safety to address. Such safety issues, if

raised, were to be forwarded to the Clinical Governance Unit. This situation did not occur during the Study.

- Potential participant concern relating to their employee status and participation in the Study. All participants were assured that participation in the Study was independent from their line managers and that the invitation to participate was independent of their work. Further assurance was provided that no feedback was to be given regarding their participation or otherwise to their line managers.

4.2.8.3 Confidentiality

Maintaining respondent, participant, hospital and AHS confidentiality and identity was a priority in this study. Confidentiality was facilitated in the following ways:

- Surveys were de-identified with respect to participant names and returned to sealed drop boxes, in sealed return envelopes.
- Any identifying information was stored separate to the survey data. Interview participants were not identified in transcripts.
- Any information which could identify members of staff or patients, either participants or non-participants has either been removed or a pseudonym used to protect confidentiality.
- Any documents, references or data that name or identify either hospital where the study took place have been removed. A footnote is provided in the thesis when this occurs.

The issue of confidentiality is discussed in more detail in later sections of this chapter (4.3.7, 4.3.8.1 and 4.5.5).

4.2.8.4 Data storage

The data for the Study were stored securely to ensure maximum privacy for participants, reliability and retrievability of data. Data were stored in secure cabinets and on password-protected computer files in the Centre for Midwifery, Child and Family Health (CMCFH) UTS. Only I, as the primary researcher, have access to the primary data. After seven years, the data will be appropriately destroyed in accordance with the National Health and Medical Research Council's National Statement on Ethical Conduct in Research Involving Humans (National Health and Medical Research Council, 2007).

4.3 Service Study – local site data

The following section describes the method undertaken to examine the safety culture at the study sites. This will include the method used to collect the quantitative and qualitative data.

Quantitative data collection

4.3.1 Participants

The survey sample consisted of maternity health professionals working within the maternity service at the two study sites who volunteered and consented to participate in the Study. They included, midwives, obstetricians, paediatricians, registrars, resident medical officers, midwifery unit managers and student midwives.

4.3.2 Exclusion criteria

Agency and casually[19] employed midwifery staff were excluded from the Study. These exclusion criteria were to ensure that participants had adequate exposure to the study sites to provide accurate responses.

4.3.3 Selection criteria

Eligible participants were identified through staff rosters provided by midwifery unit managers[20] at each site following ethics approval. This information provided details about the number, location and names of maternity health professionals working at both sites.

4.3.4 Recruitment

The Study commenced in January 2007. Seven information meetings were held at Site A between February and April 2007 and two at Site B between July and August 2007 to introduce and provide explanations to the potential sample about this study. The information meetings aimed to have the dual purpose of providing information about the study and engaging the health professionals' interest in the study. Regular site visits were also conducted to provide information and to recruit participants. Additional strategies were implemented in an attempt to increase recruitment rates. These included, regular visits to clinical areas prior to midwifery handover; Midwifery Unit Managers promoting the study during staff meetings; and, posters encouraging participation placed in staff tearooms, changing rooms and clinical areas encouraging participation in the survey.

[19] Agency midwives are employed on a shift by shift basis through a recruitment agency. Casual midwives are employed by the hospital on a casual basis and not part of the permanent establishment of staff. Only eligible midwives who were part of the permanent staff establishment were included in the study. Midwifery Unit Managers at each site provided me with lists of all eligible midwives for the study. This also included student midwives with clinical placement at the study sites and enrolled in either the Bachelor of Midwifery or Graduate Diploma Midwifery programmes.

[20] Midwifery Unit Managers are classified as Nurse Unit Managers in the NSW State Award. For the purposes of this thesis the term Midwifery Unit Managers will be used.

4.3.5 Sample size

The sample size for the survey was calculated on the following assumptions:

Site A

- There were 135 staff working at Site A.

  Midwifery/managers/consultants/educators/students = 111, medical staff registrar /resident (obstetric/ paediatric) = 17, VMO/Staff specialists (Obstetrics/Paediatrics) = 7
- The 65-80% response rate reported by the authors who developed and validated the original survey (Sexton & Thomas, 2003a; Sexton et al., 2004);
- A preferred response rate of at least 60%.

Based on these assumptions, and a planned 60% response rate, it was estimated that approximately 81 maternity health professionals would need to complete the surveys.

Site B

- There were 76 staff working at Site B:

  Midwifery/managers/educators/students/enrolled nurse = 49, medical staff registrar /resident (obstetric/ paediatric) = 12, VMO/Staff specialists (Obstetrics/Paediatrics) = 9

  Others = 6
- The 65-80% response rate achieved by the authors of the original survey (Sexton & Thomas, 2003b; Sexton et al., 2004);
- A preferred response rate of at least 60%.

Based on these assumptions and a planned 60% response rate, it was estimated that approximately 46 maternity health professionals would need to complete surveys.

4.3.6 Data collection

Safety culture assessment surveys

The Safety Attitudes Questionnaire (labour and delivery version) and the Safety Climate Scale were used to measure the safety culture at the study sites. The surveys were chosen following a review of the literature. This review identified that there were many surveys developed to measure safety culture in the health care setting (Colla et al., 2005; Singla et al., 2006). Published reviews of safety culture surveys in health care reported a wide variation in the quality, theoretical development or validation of psychometric properties (Colla et al., 2005; Flin, 2007; Singla et al., 2006). In addition, there was a wide variation of the factors and safety domains assessed in various surveys. There is no consensus about which factors or domains are the most important influences on safety culture. Singla et al (2006), suggest that there are 23

identifiable factors or domains measured in safety culture surveys considered to be important to patient safety. There were no surveys which measured all of these factors, however the Safety Attitudes Questionnaire measured the most factors (19/23) within six safety domains of all surveys reviewed (Singla et al., 2006). No literature was identified that suggested the policy context should also be considered when examining the safety culture. No single safety culture survey was singled out as being appropriate for all applications (Colla et al., 2005; Flin, 2007; Singla et al., 2006). The overarching view seemed to be that selection of a safety culture survey instrument should be guided by the particular situation, context and purpose the safety culture is being measured (Colla et al., 2005; Singla et al., 2006).

The Safety Attitudes Questionnaire is the refinement of a safety culture survey widely used in the commercial aviation industry and adapted to the health care setting. This survey (FMAQ) measured airline crew's attitudes about factors known to be associated with airline accidents including, teamwork, leadership, performance, communication and collaboration (Sexton et al, 2006). The Intensive Care Management Attitudes Questionnaire (ICMAQ) was the first adaptation of the aviation survey, and retained 25% of the FMAQ items which demonstrated utility in relation to subjects covered and factor loadings of the survey in the healthcare setting. New items were added to ICMAQ using a process of expert consensus and a risk assessment and quality model framework. The new items in the survey later included in the Safety Attitudes Questionnaire were evaluated, tested and refined through pilot testing and exploratory factor analysis with 10,843 participants across 203 sites in the United States, 103 sites in the United Kingdom, and 20 sites in New Zealand. The analysis confirmed that the Safety Attitudes Questionnaire with 60 items had sound psychometric properties to assess health professionals attitudes about the six safety culture domains included in the survey.

The final version of the survey the Safety Attitudes Questionnaire included six safety culture domains and has been adapted to a number of clinical environments including labour and delivery (Sexton et al, 2006). The labour and delivery version was adapted after a process of literature review and expert consensus where no additional items were identified and terminology was modified to reflect the clinical setting (Sexton et al, 2006).

The Safety Attitudes Questionnaire (SAQ) and Safety Climate Scale (SCS) were chosen based on the following criteria identified in the literature.

- The SAQ and the SCS were validated for use in the health setting and the SAQ in the labour and delivery settings (Sexton & Thomas, 2003b; Sexton et al., 2004); (Sexton et al, 2006);
- The SAQ measures the health professionals attitudes about the six safety culture domains which influence the safety of a clinical environment (Sexton et al., 2004);
- the SAQ measured the most factors identified as being important to patient safety (19/23) within the six safety culture domains of all surveys reviewed in the literature (Singla et al., 2006); and,
- Both survey instruments have sound psychometric properties (Sexton, Helmreich et al., 2006; Sexton et al., 2004).

Minor modifications of the demographic descriptions in terms of language and terminology were required to adapt the survey tools for Australia. Permission was obtained from the authors to use and modify the surveys in this study. Copies of the SAQ and SCS are included in Appendix 4.

The SAQ measures health professionals attitudes about the following six safety culture domains: (1) Safety Climate; (2) Teamwork; (3) Stress Recognition; (4) Perception of Management; (5) Job Satisfaction; and, (6) Working Conditions (Sexton, Helmreich et al., 2006; Sexton et al., 2004). The SCS measures the Safety climate domain. The surveys are self administered and completed anonymously. The surveys consist of 66 and 19 questions respectively. Each survey also includes demographic items. The SAQ also includes questions about collaboration and communication and open-ended questions about how patient safety could be improved in that clinical setting. Both surveys are scored according to a Likert scale from strongly disagree (scored as one), slightly disagree (two), neutral (three), agree slightly (four), agree strongly (five) and not applicable (not scored). Each question is assigned a mean score. The mean score is also represented on a zero to 100-point scale.

The questions in the SAQ and the SCS relating to the Safety Climate Domain are the same. Both surveys were included as a way to cross check the consistency of responses across each survey for the Safety climate domain.

4.3.7 Consent

Participants were informed that their participation in either the survey or interviews was voluntary. Information sheets about the study, anonymity and confidentiality were provided to

all survey participants during the information sessions and in the survey information packages. These are attached as Appendix 2.

4.3.8 Survey administration

The survey administration was replicated using standardised methods recommended by the original authors. This was replicated to increase the chance of duplicating the authors' response rates. The administration method was as follows:

1. During planned meetings: A survey package (containing the survey, a covering letter, sharpened pencil and an envelope) was provided to the respondents at meetings at the study sites. I collected any completed sealed envelopes at the end of the meeting. This method is reported to generate a 90% response rate (Sexton & Thomas, 2003a).

2. By hand: The survey package was handed to maternity health professionals at the study sites who did not attend the planned meetings. Respondents were requested to return completed surveys to a designated secure drop boxes located in the staff workstation or tearoom at each site. This method is reported to generate a 60-70% response rate (Sexton & Thomas, 2003a).

3. Through internal hospital mail: Maternity health professionals who did not attend planned meetings at Site A and all eligible staff at Site B were sent a personally addressed survey package through internal mail or to their staff mailbox and requested to return completed surveys to a designated secure drop box on site. The option of returning the completed survey via reply paid mail was given to visiting medical staff (VMO). This method is reported to generate the lowest response rate (35-45%) (Sexton & Thomas, 2003a).

4.3.8.1 Survey administration – identification

All consent forms were assigned an ID number (in pencil). All survey forms were assigned a corresponding ID number; names of participants did not appear on the survey form. When surveys were returned they were cross checked with the ID number on consent forms to ensure that the participant had consented prior to entering their data. I was the only person with access to these data. Once consent was confirmed, the ID number on the consent form was erased. Survey data were then entered onto the Excel database using the ID number only. This ensured participant confidentiality. Completed survey information and consent forms were stored separately in a locked filing cabinet.

4.4 Data Analysis

Data were analysed using the following process adapted from Cresswell, Plano and Clarke (2007).

4.4.1 Preparing data for analysis

I collected all the completed survey forms during numerous site visits to each of the sites during the survey administration period.

4.4.2 Coding data by assigning codes

All completed surveys were recorded against survey identification numbers used in the recruitment process. Identification numbers on surveys were cross checked with identification numbers on consent forms.

4.4.3 Data entry

Prior to data entry, all returned surveys were checked for question completion and or omissions. One returned survey had not been completed. This survey was not included in the overall data. Information regarding missing data on surveys is detailed in the Chapter 6.

All survey data items for the SCS and the SAQ which included a Likert scale response or demographic information were entered onto a separate Excel-based tool adapted from one developed by the survey authors (Sexton & Thomas, 2003b; Sexton et al., 2004). There was a separate database for each of the survey site responses to allow for a baseline measurement. Responses from both sites were then combined after initial analysis was completed at site level. This process is described further below. Open-ended questions on the SAQ were entered verbatim onto a Word document.

4.4.4 Analysing the data

All Likert scale data were analysed to identify the mean scores according to the standardised method developed by the original authors of both surveys (Sexton et al., 2004). Data from each site were analysed at safety culture domain and item levels. Sub-group analysis was also conducted, including the identification of mean scores by professional group, experience in position and age levels. The results for each site were compared for similarities before being combined and analysed to identify the safety culture and safety culture domain scores for the entire service.

Open-ended questions from the completed SAQ surveys were analysed using Template Analysis method (King, 2008). A preliminary template using the six safety culture domains was used for this process. Each response was then reviewed and assigned a code and then assigned to one of the six safety culture domains. Each of these coded responses were reviewed and similar responses were combined into a sub theme. Further detail regarding Template Analysis as an analysis method is provided later in this chapter. The template used for the analysis of the SAQ is explained in the next chapter.

4.4.5 Outcome measures

The outcome measures for the surveys was the overall mean score (level of agreement) about the safety culture domains. The final scores can be either positive or negative. A positive safety culture score is considered to be a mean score greater than 75 points out of 100 points[21]. Each of the six safety culture domains were scored in the same way. Any of the safety culture domains scoring less than 75 points were not considered as positive safety cultures (Sexton & Thomas, 2003a). Any safety domains scoring less than 75 would be considered appropriate for possible patient safety improvement interventions. In order to calculate this score, data analysis was required at individual item and safety culture domain level. The results of the survey will be discussed in Chapter 6.

This section described the process undertaken to measure the safety culture using validated surveys at each of the study sites. The process was adapted from one reported by the survey authors. The replication of standardised methods, such as this, are common in quantitative research to attempt to replicate similar response rates, ensure consistent data analysis methods and generate reliable and potentially comparable results (Hansen, 2006). The measurement of safety culture provides a snapshot of the safety culture at the time of the survey. Additional information is required through qualitative methods to provide a richer description of the safety culture. In this study, this detail was provided through interviews conducted with key stakeholders relevant to the study. The following section discusses the qualitative method of enquiry undertaken in this Study (Service Study).

4.5 Qualitative – data collection

Qualitative data in particular are appropriate where a researcher wishes to understand issues and their relationship to their social context (Cresswell, 2003). Qualitative data were collected via

[21] All survey questions are scored from one to five. Each question has a possible score of five. Each question is assigned a mean score. Mean scores for questions pertaining to each safety domain are combined and an overall mean score assigned. The mean score for each domain is then converted to a 100 point scale. Scores greater than 75 are considered positive safety culture domains (Sexton et al, 2006)

semi structured one to one interviews with key stakeholders. The process used to collect and analyse these interviews is described below.

4.5.1 Sample

Purposive sampling includes the selection of certain research subjects or events by researchers (Burns & Grove, 2005). This study used purposive sampling. This is appropriate as the sample for qualitative research should be one which provides a selection of 'information rich cases to provide full and sophisticated understanding of the study under investigation' (Patton, 2002; Rice & Ezzy, 1999).

I used a critical case sampling approach for participant selection. Critical case sampling is a form of purposive sampling whereby cases are selected which are thought to be likely to provide the most information enabling the development of the knowledge (Hansen, 2006; Patton, 1990). The rationale for using critical case sampling was to ensure individuals who had the most experience and knowledge about the infrastructure, processes and issues related to safety culture at the study sites were interviewed. The individuals most likely to have this knowledge were those in key management and leadership positions. These were identified as being the midwifery unit managers, educators, midwifery consultants and obstetric staff specialists.

Eleven interviews with key stakeholders who met the critical case sample criteria and represented the majority of such positions in place across the study sites were conducted. This was with the exception of two individuals who were unable to participate due to unavailability. One individual also declined to an invitation to participate. All of the interviewees also reported that they had completed surveys as well.

After preliminary analysis the sample was extended to include interviews with four policy makers from the NSW Department of Health and clinical governance stakeholders from the AHS. The four participants had an area or state-wide perspective over policy issues which impacted directly on the study site. The purpose of including these participants was to check the importance of emerging data findings particularly in relation to policy issues. This provided additional information to confirm and elaborate on emerging findings (Patton, 1987). The number and role classification of participants interviewed is provided in Table 5.

Table 5: List of interview participants

Classification of role	Number interviewed
Midwifery manager/unit manager	7
Midwifery educator/consultant	3
Obstetrician	1
Clinical governance	2
Policy maker	2
Total	15

4.5.2 Semi structured interviews

Semi structured interviews were chosen to collect the data as they enable the interviewer to obtain an in-depth understanding of an issue. Questions asked during semi structured interviews act as a guide for topic areas, however the interviewer is not bound to ask the same question in the same way in each interview (Hansen, 2006). Likewise, the interviewer may ask further questions to clarify a point. New or expanded questions may be asked in subsequent interviews as new information emerges (Hansen, 2006). This flexibility to ask new questions was important in this study as new issues emerged.

Interviews were conducted on a one to one basis between each participant and myself in a range of venues selected by the participants. Venues included participant's offices, coffee shops and offices at the Centre for Midwifery, Child and Family Health, UTS. The interviews ranged in length from thirty-five minutes to ninety-five minutes.

Consent was obtained from all participants prior to commencing the interview. The process for obtaining consent included a request to record the interview. Participants were informed that all interviews would be transcribed and that their identity would remain anonymous in transcripts, thesis and any publications. All participants who were approached provided consent.

Each interview commenced with a brief overview of the study and the planned interview. Participants were informed that they could request that the interview be stopped or recording paused at any time. There were two occasions where pausing the interview was requested. On one occasion, a participant was telling a real life story and on another, providing information about an organisational concern. At the conclusion of these responses I provided a summary of my interpretation of the issue the participant raised without the specific detail. I then asked the participant if this was a correct interpretation of their response. If they confirmed it was correct I asked if the participant would consent to that interpretation being included in the transcripts. On

both occasions the participants agreed to this. All interviews were recorded via a digital voice recorder. Interviews were downloaded via computer software programs onto a password secured computer.

All interview participants were assigned an ID number prior to interview[22]. Only the ID number was used on interview transcripts and during analysis. This procedure was implemented to ensure confidentiality of the participants. Any names used in interviews were deleted or, if necessary, a pseudonym used if there were a risk that the participant or individual could be identified. Lists of participant IDs were kept in a separate location to interview data files to protect confidentiality.

A question guide was used for each interview. The questions focused broadly on the following areas:

- The identification of the incident management, quality and safety activities undertaken within the study sites. This information was specifically sought to identify and describe the safety climate domain.
- The key issues which were impacting on the safety of the maternity service at each of the study sites.
- Ways to improve the safety of the maternity service.

The question guides were used to focus the interview. However, the questions were not rigidly followed allowing me as the researcher to explore interesting and unexpected avenues which arose during interviews.

The question guides for the policy stakeholder interviews were focused on the same areas but took a broader policy and state-wide view. The purpose was to identify the broader policy context rather than that at the study site. Copies of the question guides used for the interviews are in Appendix 5.

4.5.3 Field notes

Observational and other qualitative data such as informal interviews and field notes were also collected to map and describe the quality and safety processes at the study site. These data assisted in collaborating with the interview data providing a richer description to describe the context in which the study is being undertaken.

[22] Identification numbers 1 - 17 were assigned to interview participants. Two participants (ID 4 and ID 12) did not participate in interviews due to unavailability and were not included in the data.

Data were also collected via field notes during recruitment to the study and at meetings and during site visits. Field notes are a useful way to describe impressions and things of interest observed during field visits (Hansen, 2006). Data from field notes were also used to provide verification (Cresswell, 2003) or credibility (Bradbury-Jones, 2007) to support where appropriate, the fit between the experiences of the respondents and my representation of them.

4.5.4 Feedback

Two feedback meetings were conducted with a representative sample of leaders and key stakeholders within the study sites. This allowed for discussion and 'checking back' with these stakeholders regarding the results of the safety culture surveys and initial emerging themes from the interviews. This is a process which has been shown to be useful in patient safety intervention literature (Hindle et al., 2006; Nunes & McFerran, 2005; Pronovost et al., 2005). The key stakeholders agreed that the initial themes were correct.

4.6 Data analysis

The following section discusses the procedure used to analyse the interview data.

4.6.1 Preparing data for analysis

All 15 interviews were transcribed verbatim. Three of the interviews were initially transcribed by an independent contracted transcriber then checked for accuracy by myself. All audio and computer files were returned to me once transcription was complete. The transcriber signed a confidentiality agreement. I transcribed the remaining 13 interviews which included one re-transcription of the total 15 interviews conducted. This enabled me to ensure the accuracy of the transcription and also to familiarise myself with the data in its original form prior to data analysis. All transcripts were entered into Microsoft Word documents.

4.6.2 Exploring the data

Each interview was read in hard copy a number of times prior to commencing data analysis. Initial impressions arising from the data were recorded in the margins of the transcripts. These impressions related to early thoughts about the presence of the safety culture domains in the data. The next step was to develop a qualitative coding template to assist with data analysis. The development of this template will be discussed in the following section.

4.6.3 Analysing the data

The method used to analyse the data was Template Analysis (King, 2008). Template Analysis is a method for undertaking thematic analysis of qualitative data. Template Analysis involves the

use of a coding template which is developed and refined during the process of data analysis. The purpose of the template is to identify and summarise the themes which the researcher believes are likely to be important in the data and relevant to the research question (King, 2008). The template allows the data to be organised in a hierarchical fashion under overarching broad themes through to narrower subset themes. The Template Analysis technique is as follows:

1. Define preliminary themes and codes thought to be relevant to the research question.
2. Transcription of, and familiarisation with, the interview data.
3. Undertake initial coding of data on a small sample of data by attaching codes to sections of data which include the preliminary themes. Modify themes or devise new themes in the presence of data which do not fit with the preliminary themes. Develop an initial template by grouping themes into higher level codes which describe the broader themes in the data.
4. Code the full data set using the template. Continue to modify and refine the versions of the template when new data emerge that do not fit with existing themes, until a final template is developed which helps to explain the data.
5. Undertake quality check during the template refining process to ensure the analysis is not distorted by assumptions or preconceptions of the researcher (King, 2008).

In this study, an initial template was tested on a sample of seven interview transcripts. Initial templates usually include a number of preliminary themes which are thought to be relevant to the research question (King, 2008). The preliminary themes used were the six safety culture domains. The rationale for using the safety culture domains were that the purpose of the interviews were to identify the safety culture in the study sites. The preliminary template used in this study is illustrated in Table 6.

Table 6: Preliminary template - version 1

Number	Preliminary Themes
1.	Safety Climate
2.	Teamwork
3.	Working Conditions
4.	Perceptions of Management
5.	Stress Recognition
6.	Job Satisfaction

The inclusion of preliminary themes which are present in the literature is identified as an acceptable starting point in qualitative analysis provided the analysis is not restricted to these themes should new themes emerge (Cresswell & Plano Clarke, 2007; Gribch, 2007).

Codes were then applied to the themes. The preliminary themes assisted with initial coding of the transcripts. The coding process involved attaching labels to certain accounts found in transcripts which related to the themes. In this way, narrower sub themes emerged from the coding process which were added to the template. A process of refining the template was then undertaken. The result of this refining process was a second version of the template and is illustrated in Appendix 9.

The template refining process often includes the development of new themes arising from the data or the removal of redundant themes if there are insufficient data to support their inclusion. Refining the template during the process of analysis is an important component of ensuring the quality of analysis. This is important in qualitative analysis to ensure that the analysis is not restricted to preconceived assumptions or limited by the preliminary themes (Cresswell & Plano Clarke, 2007; Gribch, 2007).

At this stage of analysis, the template [version two] was put aside and all of the transcripts were re-coded without the use of the template themes. This process consisted of the newly coded sections of the transcripts being placed on ‘post it’ notes and then categorised according to emerging theme and sub-themes. This process was used to identify the existence of any additional themes emerging from the data which were not present in the template. In addition, these themes were also checked by my two supervisors for accuracy and appropriateness. This process acted as a quality activity to ensure that the data analysis was not too closed or restricted by the preliminary themes through the template process.

On completion of this activity the ‘post it’ note themes and sub-themes were compared with those from template version two. The template was then modified to reflect this final analysis. The results of the analysis and the final themes identified are discussed in Chapter 6.

4.7 Reflexivity

I had a professional relationship with some of the senior maternity managers at the study site whilst I was a policy analyst in my previous role. I was not known to the majority of the maternity health professionals at the study site. I had anticipated, perhaps naively, that as a clinician who had worked elsewhere in NSW, I would be able to position myself collaboratively

as an ‘insider’ to undertake field research. ‘Insider’ researchers are often described as belonging to the group under study (Bonner & Tolhurst, 2002). However, as I was a fulltime PhD student, and not employed at this site, I was positioned as an ‘outsider’ to the clinical setting. ‘Outsider’ researchers are described as studying groups in which they do not belong (Bonner & Tolhurst, 2002) As an ‘outsider’ I had limited my free access to some of the clinical areas or ‘inner sanctums’ such as the wards, inpatient rooms, tearooms, clinical treatment rooms and staff stations in which clinicians were located. My status as an outsider was something I had not anticipated. This would become an important factor in my ability to engage fully with the maternity health professionals in the clinical setting, both to promote the Study and assist with recruitment rates of the survey component.

Previously, my work as a clinician allowed me access to the very inner sanctums which I was to feel I was intruding in whilst undertaking my field work. Furthermore, as a policy advisor I had been accustomed to entry into clinical areas and engagement with staff in such areas as a privilege in this position. As a student and an outsider to this clinical environment this access was no longer present. Being an outsider had two implications for the study: difficulty engaging with clinicians and a lack of authority to support and drive the Study.

An example of this difficulty was during the field work component of the Study. Permission was given by the midwifery managers to visit each clinical area regularly at staff handover time to try and recruit to the study and to check the survey boxes which were located in staff tearooms and staff offices. I did this on a number of occasions by trying to ‘hang around’ the clinical areas. However, whilst hanging around I often found that even at the time around handover, the midwives whom I was trying to recruit were either in the rooms with women or busy entering information onto the computer. As an outsider I was unable to enter the restricted clinical areas or assist staff clinically where opportunistic recruitment may have been able to take place. This resulted in the only opportunity to engage the staff being during meal breaks which felt intrusive and difficult. These factors acted as a disincentive to facilitate and at times to pursue recruitment to the Study.

I had met some of the interview participants from the study sites during my previous role working at NSW Department of Health. I met all the other interview participants during the introductory sessions to introduce the study.

I was also known to all of the policy and clinical governance interview participants with the exception of one participant. With respect to these participants, my existing relationship, having worked in the field of policy and undertaking research in the area of safety and quality

positioned me as an 'insider' to the policy context. This positioning had the following influences on this aspect of the Study:

- My insider status to the policy context allowed me to identify and secure direct access to the people with the most knowledge about the policy context in which the study was situated. This access may not have been available to researchers positioned as outsiders.

- My insider positioning may have also had a positive influence on the relationship between myself as the researcher and the participants' willingness to answer sensitive questions around policy decisions. It is likely that I was able to obtain more detail and probe more deeply than a researcher positioned as an outsider may have been able to probe.

- My previous knowledge and assumptions about the policy issues surrounding the issue being investigated is likely to have influenced my line of questioning to these participants to some extent.

Positioning as an insider may have influenced my approach of questions and analysis of this data. As an insider it is impossible not to draw some conclusions based on previous experiences. I have attempted to address this issue by ensuring that all data from the participants was considered and that the process for developing and identifying themes was based on a sound theoretical approach. Further, quality measures used to ensure rigour of the results was the triangulation of all the study data sources to support or dismiss the presence of these themes in the results and my supervisors' important role in cross checking these assumptions.

This section has described the method undertaken for the Services Study. The next section describes the method undertaken for the Policy Study.

4.8 Policy Study - policy audit

This section sets out the method undertaken for the Policy Study. This included a review of relevant national and state policy statements and documents relating to the drivers of the NSW Health Patient Safety and Clinical Quality Program (PSCQP) and the Planning Better Health Policy. The Australian Policy Cycle was used as a basis to identify, where possible, the stages in the policy development process.

4.8.1 Selection strategy

The selection of the policies and relevant documents used in this study was guided by the following factors:

- Data arising from qualitative interviews

  Data from interviews at the study sites indicated that the presence of factors other than those associated with the Patient Safety and Clinical Quality Program, such as the organisational restructure of the health service, were influencing the safety culture. These factors are the result of the implementation of the health reform agenda in NSW, Planning Better Health (NSW Health, 2004a). This directed the selection strategy to include relevant documents related to this policy.

- Literature review

  The literature review undertaken at the commencement of this thesis identified landmark reports such as the Quality in Australian Health Care Study (Wilson et al., 1995). These studies and reports were early drivers of the patient safety and quality agendas in Australia. The literature review identified the response by Australian and NSW Governments to these reports in the last five to ten years. This knowledge directed the initial timeline and search strategy used to identify relevant documents for this study's policy mapping exercise.

- Direction of my academic supervisors

  Discussions with my supervisors in relation to the emerging themes from the data relating to the impact of the organisational restructure directed the inclusion and search strategy to be used in the mapping exercise. This direction was facilitated in the following ways:

  - One supervisor was an insider during the development of the NSW Health Planning Better Health reform agenda. At the time she was an active participant at executive advisory level in NSW clinical governance structures, such as the Institute of Clinical Excellence. This knowledge assisted in identifying key documents for review to inform the mapping exercise.

  - One supervisor had previous knowledge and experience regarding the history of the local clinical governance structure at the study sites prior to and after the commencement of the study. This knowledge assisted in focusing the review of documentation of policies and reports.

- Personal knowledge

  In a previous role, I was a policy analyst in the NSW Department of Health. This experience gave me insider knowledge of the policy making process in NSW. In addition, I have experience analysing data from the NSW Incident Information Monitoring System.[23] This knowledge greatly influenced the selection of documents and facilitated knowledge about documents available on the NSW Department of Health website.

  I was working at the NSW Department of Health whilst undertaking part of this study. During this time, I was responsible for the review and analysis of maternity reportable incidents and assisting in the early drafting of a maternity clinical governance policy for NSW Health facilities. This role gave me access to the recent lessons about adverse events in NSW maternity facilities and also to the plans for future clinical governance structures in these facilities. This knowledge exposed me to NSW Health's future strategic policy plans to manage adverse events. I was aware that this knowledge could alter my reflexivity to the policy audit and influence the analysis I was undertaking for this study. For this reason, I made the decision that the policy mapping exercise should be limited up to August 2007 covering the period when the data were collected at the study sites. Limiting the audit to this time period would only consider the policy context present at that time of the study. This would ensure that the analysis would not be influenced by my knowledge about any future policy plans or work the Department of Health had to progress the Safety and Quality Agenda in maternity services in NSW.

  I acknowledge that that my policy experience has influenced my reflexivity and this research. The analysis and conclusions I draw from this exercise will in part reflect my knowledge and experience as an insider to the policy making process. Someone without this experience may have developed different conclusions. I have addressed this issue by ensuring that the analysis and conclusions I have drawn are supported by documentary evidence. In addition, the triangulation of the findings of this Study (Policy Study) with the results from the Service Study provide further support for the conclusions I draw in the final chapter.

[23] The Incident Information Management System (IIMS) is the computer incident reporting system introduced in all NSW Health public hospitals in 2005.

4.8.2 Access strategy

The strategies used to access the documents and data for this study are described in the following section. The majority of the policy documents, annual reports, media statements and Hansard used in this study are available in the public domain. Documents were obtained through searches on the following government websites: Commonwealth Government; NSW Health; Clinical Excellence Commission (CEC);[24] Institute of Clinical Excellence (ICE);[25] and the public Internet. Documents that were not available electronically were obtained through the NSW Department of Health Library.

The search strategy commenced with the NSW Health Patient Safety and Clinical Quality Program policy (NSW Department of Health, 2005a). Related Policy Directives[26] and publications were then sourced through the NSW Department of Health website. A title search was undertaken of all Policy Directives (Circulars pre 2005), Guidelines[27] and publications released for the period 2003 – 2007 relating to safety, quality, clinical governance, Area Health Services and Planning Better Health. All documents with direct applicability to the Planning Better Health Policy and specifically the Patient Safety and Clinical Quality Program were accessed and considered in the mapping exercise.

Reports of formal commissioned inquiries, reviews, annual reports, media statements and communiqués on the public record with relevance to the Planning Better Health and the Patient Safety and Clinical Quality Program were identified and accessed.

The NSW Parliament Hansard[28] website for the Legislative Council and Legislative Assembly was searched. Hansard transcripts were reviewed for the period 2003 - 2006 using the key

[24] The Clinical Excellence Commission (CEC) is a statutory health corporation established as part of the NSW Patient Safety and Clinical Quality Program. The CEC mission is to 'build confidence in healthcare in NSW by making it safer for patients and a more rewarding workplace'.

[25] The Institute of Clinical Excellence (ICE) was a statutory health corporation established to assist NSW Health with a mission 'to change health care across NSW to make it safer and better for patients' by providing better, training, systems and research to improve patient outcomes (Institute of Clinical Excellence, 2001).

[26] NSW Department of Health Policy Directives are the method of communicating material requiring mandatory compliance and implementation by the NSW public health system. Prior to 2005, this material was communicated via a circular system not requiring compliance.

[27] NSW Department of Health Guidelines provides guidance and advice to the NSW public health system but do not require compliance.

[28] Hansard is the official record of the proceedings of the NSW Parliament. These records are available on a public website, http://www.parliament.nsw.gov.au/prod/web/common.nsf/V3HHBHome.

words of health, maternity, and Area Health Services. Relevant full transcripts were downloaded and reviewed to identify political drivers, actions and legislative reforms related to the Patient Safety and Clinical Quality Program and Planning Better Health Policy.

4.8.3 Document organisation

All documents were read prior being categorised into national, state and Area Health Service order, then listed chronologically. The reason for including and organising the data in national, state and area levels in this study was based on data arising from the study sites. These data identified the influence of previous quality and safety policies within the study sites. Policy development rarely starts with a clean slate and is often as a result of the reorganisation of previous policies into new priorities and consideration of other priorities such as the national agendas (Matheson, 2000). It was important to understand the national agendas and policy context and any influence this agenda may have had on the development of the State policy context in NSW. The mapping exercise included a chronological history and mapping of the policy context that was present prior to the implementation of the Patient Safety and Clinical Quality Program in 2005 (NSW Health, 2004c). The national and state patient safety agendas were then examined to identify their influence in driving the current patient safety agendas in NSW.

4.8.4 Mapping exercise

Once the documents were organised, a mapping exercise to identify the policy context in which the study site was situated was undertaken. All documents reviewed related to the development and implementation of The NSW Health Planning Better Health Policy (NSW Health, 2004a) including the Patient Safety And Clinical Quality Program (NSW Health, 2004c). Key events relating to policy development were listed chronologically. Each event at state and area level[29] was then categorised, where possible, using the Australian Policy Cycle.

4.8.5 Analysis of the implementation of the Planning Better Health Policy and Patient Safety and Clinical Quality Program within the Area Health Service

Finally the implementation of the Patient Safety And Clinical Quality Program and restructure components of the Planning Better Health Policy were analysed at Area Health Service level This exercise identified the policy context and potential impact of the each of the policies at the

[29] The national data were mapped chronologically but not categorised using the Policy Cycle. The rationale for not using the policy cycle was that the national policy agenda was used to identify the influence on the State policy agenda. As such the identification of the specific components of the policy cycle at national level were not necessary.

study sites. The results are then triangulated with those from the Service Study and presented in the discussion Chapter 7.

4.9 Conclusion

This chapter described the overall research strategy adopted for this mixed method research study. Data were collected in the Service Study through safety culture surveys, semi-structured interviews, field notes, and in the Policy Study through a policy mapping and audit. This chapter has discussed the reasons for choosing the research design, ethical considerations and described the procedures used for data collection and analysis of the two studies which make up this thesis. The following two chapters present the results of each of these studies.

The results of the studies are presented in the opposite order to the way in which they were conducted. That is, the Policy Study will be presented first. This is done deliberately in order to situate the results in the policy context prior to presenting the site data results (the Service Study). This was highlighted in Chapter 1, when it was identified that there was a need to understand the influence of the broader policy context as a first step before the safety culture at the study site could be fully understood. The basis of this influence was the focus of the Policy Study presented in the following chapter.

CHAPTER 5: RESULTS - THE POLICY STUDY

5.1 Introduction

This chapter presents the results of the Policy Study, which explores the policy context in which the study sites were situated. The rationale for undertaking this study was to understand if and how the policy context influenced the safety culture at the study sites. The results of the Policy Study are deliberately presented before the Service Study in order to orient the reader to the policy context in which the study was located. This is important in order to understand the results presented in the Service Study. The Australian Policy Cycle (Bridgman & Davis, 2000) was used as a theoretical framework to guide the mapping and analysis of the policy development at state and AHS levels. This chapter addresses the following research question: What are the policy contexts in which the study sites are situated? This chapter is divided into the following sections: results of the mapping exercise identifying the policy context and analysis and discussion of the impact of this policy context on the study sites.

5.2 Mapping exercise

The mapping exercise provided both a timeline of events and assisted to identify the drivers and key events for the development of the policy agenda and the subsequent resulting policies. The NSW Health Planning Better Health Policy including the Patient Safety and Clinical Quality Program (NSW Health, 2004a, 2004c).

The policy development is provided at national, state and AHS levels. The rationale for including the policy development at these levels is the need to understand the drivers leading to the development of the policy context at the study sites. It was important to consider the influence of the national quality and safety agendas to identify the influence they had on the direction of the local policy context.

5.2.1 Key events chronological timeline in the development of a national safety and quality agenda

This chronological map presents a list of the key events which led to the development of the national safety and quality policy agenda. The map also includes a summary of the key events leading to the development of the national agenda (Table 7). The chronological map is then followed by a detailed discussion about the drivers and key events identified in the mapping exercise (Section 5.2.1.1.). This format of summary of key events followed by discussion is also used to present data from NSW and the AHS.

Table 7: Chronological timeline mapping the development of the national safety and quality agenda

Timeline	Event	Purpose /Outcome
1991	Review of Professional Indemnity Arrangements for Health Care Professionals (Tito Report) (Tito, 1995).	Commissioned by Australian Health Ministers Council (AHMC) to examine the arrangements in relation to compensation, patient misadventure and professional indemnity.
1993	Quality in Australian Health Care Study (QAHCS) commissioned.	Funded by AHMC to identify information about the rate and cost of preventable adverse outcomes to answer questions from the Tito Report.
1995	Quality in Australian Health Care Study released.	Study reports 16% of patients admitted to hospital are victims of adverse events approximately 50% of incidents are avoidable (Wilson et al., 1995).
1996	National Taskforce on Quality in Australian Health Care commissioned.	Commissioned to consider the QAHCS results and provide a report to AHMC with recommendations for implementation.
1996	Publication of National Taskforce on Quality in Australian Health Care Final Report.	Report included ten health care safety and quality principles and 56 recommendations to ensure a successful, coherent strategy to improve patient safety and the quality of Australian health care (Australian Health Ministers Advisory Council, 1996).
1998	National Expert Advisory Group on Safety & Quality in Australian Health Care established.	Established to provide additional advice to AHMC on how to improve the quality and safety of Australian health care services.
1999	Interim Report of Expert Advisory Group: Commitment to quality enhancement endorsed. Final Report of Expert Advisory Group: Implementing Safety and Quality Enhancement in Health Care released.	(National Expert Advisory Group on Safety and Quality in Australian Health Care, 1999).

Timeline	Event	Purpose /Outcome
1999 - 2000	Inquiries into poor outcomes into King Edward Memorial Hospital (KEMH) Western Australia commissioned by the Western Australian Government (ACSQHC, 2002a; Douglas, Robinson, & Fahy, 2001).[30]	Commissioned in response to adverse media reports about poor outcomes for women and babies at KEMH.
2000	Australian Council for Quality and Safety in Health Care (ACQSHC) established by AHMC.	Established to lead a national approach to improve the safety and quality of health care and minimise the effects of errors. The Council reported to the Australian Health Ministers annually.
2000	Douglas Report released- Inquiry into Obstetrics and Gynaecological Services at King Edward Memorial Hospital (KEMH) (Douglas et al., 2001).	Report identified inadequate supervision of junior medical officers by consultants and a culture at clinical and management level which accepted this practice resulting in failure to respond appropriately to concerns about levels of supervision. The Inquiry resulted in 237 recommendations to address these system issues.
2002	ACQSHC released the Safety Through Action Improving Patient Safety in Australia Third Report to the AHMC and Lessons from the Inquiry into Obstetrics at King Edward Memorial Hospital (ACSQHC, 2002a).	The report recognised the need for cultural change, inquiry, open disclosure and better systems to be built to improve patient safety and quality.
2004	All State and Territory Ministers agreed to report sentinel events publically and review systems in each state (Australian Department of Health & Ageing, 2004).	Agreement resulted in a national annual report of sentinel events and all States introducing incident reporting systems.

[30] This was a not a national review as it occurred in one state, Western Australia. However, this review was considered to be a national driver from the NSW perspective so was included in this mapping exercise.

Timeline	Event	Purpose /Outcome
2005	AHMC commissioned National Arrangements for Safety and Quality in Health Care in Australia (Morley Report).	Report recommends the need for a new national governance arrangements are required to lead agenda for Safety and Quality, including national reporting of performance and mandate to implement changes.
2005[31]	Australian Council for Quality and Safety in Health Care succeeded by a new Commission, the Australian Commission on Safety and Quality in Health Care.	Established to further work of ACQSHC and increase focus on reporting national performance and action policy intentions of AHMC.

[31] The mapping of the chronological development of the national safety and quality agenda did not include activities after 2005 as exercise was aimed at identifying the influence of the national policy on the development of the NSW Patient Safety and Clinical Quality Program and Planning Better Health program implemented in 2005.

5.2.1.1 National agenda drivers and identifying the issues

Table 7 presented a summary of the key events leading to the development of the national policy agenda to improve safety and quality in Australian Health Care. The next section discusses the development of this agenda in more detail.

The key principles of the Australian health system are to provide equitable, efficient and quality health care (Healy, Sharman, & Lokuge, 2006). Improving the quality and safety of health care has been an area articulated in Australian national and state policy over the last 15 years (Fletcher, 2000). This focus has sought to identify and rectify issues influencing patient safety in the health system. Government intervention has resulted in the commissioning of numerous studies, taskforces and reports to inform policy solutions.

Early evidence of federal government intervention was the commissioning of the National Review of Professional Indemnity Arrangements for Health Care Professionals by the Federal Minister for Health in 1991 (Tito, 1995). This review was driven by an environment of perceived increasing litigation for health professionals (Bloomberg, 1996; Tito, 1995). The review examined the existing arrangements relating to patient misadventure and professional indemnity. It identified a lack of information about the rate and cost of preventable adverse outcomes in Australian health care and recommended a study be undertaken to investigate this issue. This precipitated the Australian Health Ministers commissioning the Quality in Australian Health Care Study (QAHCS) through a federal grant in 1993. This study was a replication of a seminal study known as the *Harvard Study* which investigated adverse events in health care in the United States (Brennan et al., 1991).

The QAHCS study was published in 1995 (Wilson et al., 1995). The findings identified that approximately 16% of patients admitted to Australian hospitals experienced unplanned adverse events. It estimated that approximately 50% of these incidents were avoidable. A summary of the study results were announced in the Federal Parliament and sensationalised by the media prior to their release in peer-reviewed journals (Swan, 1997; Van de Weyden, 1995). This approach drew criticism particularly from the medical profession. Criticism in a number of professional journals related to the medical profession being unable to appraise critically or even be alerted to the research findings prior to their public release (Van de Weyden, 1995). Concern was also expressed about the methodology and results of the study, for example, the subjectivity of certain questions in the survey used and the inclusion of patients with existing co-morbidities (Milgate, 2003; Van de Weyden, 1995). Notwithstanding these critiques, the QAHCS is recognised today as a landmark study both nationally and internationally.

The identification of the extent of the problem relating to adverse events in health care and the associated media exposure provided political drivers to seek a policy solution (Fletcher, 2000). In 1996, The National Taskforce on Quality in Australian Health Care was the first of a number of expert groups commissioned by the Australian Health Ministers Conference to consider this issue. In 1997, The National Taskforce provided a report to the Australian Federal, State and Territory Health Ministers with recommendations to consider strategies to reduce adverse events (Australian Health Ministers Advisory Council, 1996).

In 1998 a new group, the National Expert Advisory Group on Safety and Quality in Australian Health Care, was established to provide additional advice to Australian Health Ministers Conference about how to improve the quality and safety of Australian health care. The Advisory Group released their findings as an interim report in 1998 and a final report "Implementing Safety and Quality Enhancement in Health Care" in 1999 (National Expert Advisory Group on Safety and Quality in Australian Health Care, 1999). Ten areas for action were identified. These recognised the need for a systematic approach and included: improved communication; learning from adverse events; mechanisms for the investigation and learning from incidents and near misses; increased focus on accreditation mechanisms and education; and training relating to quality improvement and patient safety (National Expert Advisory Group on Safety and Quality in Australian Health Care, 1999).

In 2000, the first of a number of national and international hospital crises resulting in poor patient outcomes were reported in the media. In the UK this included the Inquiry into Children's Heart Surgery at Bristol Royal Infirmary (Department of Health UK, 2002) In Australia, this included the King Edward Memorial Hospital (KEMH). The KEMH inquiry identified the presence of a number of clinical, management and administrative problems which led to poor outcomes for women and babies at the hospital.[32] Both these reports raised public awareness of the safety and quality issues and acted as another driver to the Federal government, who were already seeking solutions to improving the safety of heath care for patients.

The media has been identified as a powerful player and driver in the policy making process. Their role has been described as a '*de facto* opposition' and 'a self proclaimed watchdog' for

[32] King Edward Memorial Hospital (KEMH) is Western Australia's only tertiary obstetric and gynaecology hospital providing care to the most complex cases. An Inquiry into Obstetric and Gynaecological services at KEMH identified that a number of clinical, administrative and management issues were present that contributed to poor outcomes for women and babies. Specifically, inadequate supervision of junior medical officers by consultants during the care of the most complex cases was cited as a key problem. This issue was exacerbated by a culture at clinical and management level which accepted this practice resulting in failure to respond appropriately to concerns about levels of supervision. The inquiry resulted in 237 recommendations to address these system issues (Douglas et al 2001).

public interest (Althaus et al., 2007). Their increasing involvement in the policy process has promoted politics as an entertainment medium (Althaus et al., 2007). The media often takes an active role in structuring the political agenda in providing the government and other interested parties with a public medium of communication and influence.

The release of the Report of the Inquiry into Obstetrics and Gynaecological Services at King Edward Memorial Hospital (ACSQHC, 2002a; Douglas et al., 2001) identified the existence of systemic issues that resulted in the poor outcomes at KEMH. This report highlighted the need to address systemic issues, rather than the prevailing response prior to this time of targeting and blaming individual error (ACSQHC, 2002a).

As a consequence of the recommendations of the National Advisory Group on Safety and Quality in Australian Health Care in 1999, the Australian Council for Safety and Quality in Health Care (ACSQHC) was established by the Australian Health Ministers Conference in 2000 (Australian Health Ministers Advisory Council, 1999). The Australian Health Ministers Conference communiqués conveyed an expectation that the new ACSQHC would produce firm solutions to tackle the problem of safety and quality in health care. The role of ACQSHC was to take the lead in raising awareness and developing a national approach to improve the safety and quality of health care. The ACSQHC acted as an advisory committee reporting to the Australian Health Ministers Conference annually until 2006. The work plan of the ACSQHC was built on successive learning through collaborative work with clinicians and funded research with the aim to develop a capacity for cultural change (ACSQHC, 2005a). This included inquiry, open disclosure and the development of better systems to be built to improve patient safety and quality (ACSQHC, 2005a). An example of national standards developed by the ACSQHC included the National Framework for Open Disclosure[33] (ACSQHC, 2003, 2005b). The National Standards for Open Disclosure were endorsed by the Australian Health Ministers in July 2003 with a plan for implementing and evaluating a pilot program in 2005 (Australian Commission on Safety and Quality in Health Care, 2008a). The Open Disclosure Standards were then piloted in 40 facilities across Australia. An evaluation of this pilot was undertaken in 2007, prior to planning a national roll out of the program (Australian Commission on Safety and Quality in Health Care, 2008a).

[33] National Framework for Open Disclosure was developed by the Australian Council for Safety and Quality in Health Care to provide public and private hospitals with a set of national Open Disclosure Standards about how to express regret and apologise to patients and their families after an adverse event in health care (ACSQHC, 2003).

Whilst the Open Disclosure standards were endorsed to be adopted nationally, there are other examples of the work of the ACSQHC which were not adopted despite endorsement. Failure by the health system to adopt activities from the Australian Council for Safety and Quality in Health Care has been thought to be due to a lack of visibility, mandate, authority and resources to administer initiatives (ACSQHC, 2005a).

The National Patient Safety Education Framework (the Framework) developed by the ACQSHC is a salient example of non-implementation (ACSQHC, 2005b). The Framework is an evidence-based guideline based on learning from adverse events which includes extensive educational recommendations for health services to improve patient safety. The Framework was validated by a number of internationally recognised experts in the area. The ACSQHC expected that the Framework would be taken up by the tertiary and health sectors. Whilst this was the expectation, the ACSQHC did not have the mandate to ensure implementation into the tertiary and health sectors. The Framework is a valuable resource to health services and education providers but its profile and visibility was and remains very low. This lack of profile of the Framework at the time of undertaking my study is highlighted by its location on the Australian Commission on Safety and Quality in Health Care website. The website identifies the Framework only as a previous project developed by the ACSQHC. As such, the Australian Commission on Safety and Quality in Health Care did not make available any hard copies of this document. Public access to the document is still available electronically. The lack of visibility of the Framework and lack of mandate of the ACSQHC to enforce implementation in the tertiary and health sectors creates the risk of the resource not being accessible or implemented at the local level. This is one example of the inability of ACSQHC to mandate recommendations to the system. This lack of the power to mandate was a recognised barrier to progressing the national quality and safety agenda (Paterson, 2005).

For the most part, the work of the ACSQHC meant that policy makers and health administrators were aware of the safety agenda and it paved the way for system change. However, it was also recognised that system change would require national implementation by those with the resources and mandate to achieve this goal. In 2006, the Council was succeeded by a new organisation called the Australian Commission on Safety and Quality in Health Care. This succession was recommended in the government commissioned report, *National Arrangements for Safety and Quality in Health Care in Australia* (Australian Health Ministers' Conference, 2006; Paterson, 2005) which identified the need to have an organisation with a clearly articulated role and with the mandate to implement system change. The Report, which focused on a review of the coordination, leadership and governance of national safety and quality

improvement activities, recommended that the performance of the health system should also be measured and reported publically. The new Australian Commission on Safety and Quality in Health Care was established to continue the work of the ACSQHC and to broaden their focus to measuring and public reporting of hospital performance. The Australian Commission on Safety and Quality in Health Care has identified their role to 'give effect to the policy intentions of the Australian Health Ministers by developing work plans to meet the Ministers' requirements'. This is to be achieved by providing leadership, coordination of knowledge dissemination, providing strategic advice and reporting performance of the health system (ACQSHC 2008). The Australian Commission on Safety and Quality in Health Care would also develop expert consultation advisory groups to consult and progress their work plan.

The role of the Australian Commission on Safety and Quality in Health Care was to act as a policy development instrument meeting the commitments made by all state and territory Ministers, who agreed in 2004 to a national reporting system for serious sentinel events (Australian Department of Health & Ageing, 2004). At the same time, there was an agreement that each State would review their existing arrangements with regard to patient safety and quality mechanisms. The national safety and quality agenda that was being progressed also included a greater focus on reporting and monitoring hospital performance. The purpose of these commitments was to support the delivery of high quality and safe health care (Australian Department of Health & Ageing, 2004).

There is evidence of progress being made with regard to developing national reports of sentinel events, with the first national report being published in 2007 (Australian Institute of Health and Welfare and The Australian Commission on Quality and Safety in Health Care, 2007). However, in the transition from the ACSQHC to Australian Commission on Safety and Quality in Health Care in 2006-2007, a number of the ACSQHC projects have not been actively progressed to date. This lack of, or delay in, progress may be the result of the transition between organisations or a reprioritisation by the government to a focus on reporting adverse events.

As with all previous expert advisory groups, ACHSQC and Australian Commission on Safety and Quality in Health Care work plans and reports required the endorsement of the Australian Health Ministers Conference. This endorsement was required prior to allocation of funding or the implementation of recommendations. This process demonstrates the presence of the vertical dimensions of the policy process setting the safety and quality agenda. In this case, the Australian Health Ministers Conference has ultimate authority over the final approach taken in policy development. There is also evidence of some horizontal dimensions with the inclusion of

technical experts and consultation of stakeholders in some of the projects undertaken by the ACSQHC and the Australian Commission on Safety and Quality in Health Care. The NSW Ministerial commitment to progress an approach to reporting adverse events and review of quality and safety activities would subsequently act as a driver to influence the focus of the safety and quality policy agenda being developed by the government in NSW.

This section has presented the chronological development of the national quality and safety agenda and the subsequent policy context. This information is important as it provides the background to national policy drivers which may have had an influence on the development of the NSW policy context in which the study took place. The next section presents the state policies in NSW.

5.2.2 Mapping NSW policy development

This section presents the results of the mapping of the key events which led to the development of the Patient Safety and Clinical Quality Program and Planning Better Health Policies in NSW (NSW Department of Health, 2005a; NSW Health, 2004a). These policies were identified as the policy context within the study sites. Table 8 presents the summary of chronological timelines that are located within the identifiable components of the Policy Cycle. A detailed description of the Table follows.

Table 8: Chronological timeline mapping the development of the NSW Patient Safety and Clinical Quality Program and Planning Better Health Policy

Timeline	Event	Purpose/ outcome	Policy cycle stage[34]
1999	NSW Ministerial Advisory Committee on Quality in Health Care and the State Continuous Improvement Committee established to work with NSW Health.	With a focus on work to develop a coordinated approach to monitoring and managing the quality of health care.	Identifying issues Policy Analysis
1999	NSW Health Framework for Managing the Quality of Health Services released (NSW Department of Health, 1999).	Recommended a framework for managing quality to be applied in NSW Health facilities but did not require AHS compliance.	Policy Instrument
2000	The NSW Health Council Report and the NSW Ministerial Advisory Committee on Health Services in Small Towns Report released (NSW Health, 2000; NSW Ministerial Advisory Committee on Health Services in Small Towns, 2000).	Reports recommended a collaborative response required to improve quality and safety of health care.	Identifying issues Policy Analysis
2001	Government Action Plan (GAP) implemented (NSW Health, 2001).	Was a coordinated clinician led plan with multiple projects focusing on improving the quality of health care. There were no maternity specific projects.	Consultation Coordination Implementation
2001	A Quality branch within NSW Department of Health was established.[35]	A dedicated Branch to progress quality and safety agenda within NSW Department of Health was established as a result of GAP.	Policy instrument

[34] A diagram and explanation describing the Stages of the Policy Cycle are on page 31.

[35] The NSW Department of Health was organised into four Divisions each with a number of Branches. The Quality Branch was one such Branch.

Timeline	Event	Purpose/ outcome	Policy cycle stage[34]
2001	Institute of Clinical Excellence (ICE) established.	ICE was established to 'provide better systems, better training and better research' to be achieved through the development of clinical projects in a number of 'high priority clinical areas' identified through the use of the breakthrough collaborative model involving clinicians. There was no specific focus on maternity care.	Decision Consultation Implementation
2002	Campbelltown and Camden Hospitals crisis raised in the Media.	Multiple media reports of poor outcomes for patients in these hospitals. Inquires into these hospitals were announced by the NSW Minister for Health.	Identifying issues
2003	Committees for surgical and anaesthetics deaths becomes responsibility of the Institute of Clinical Excellence.	To ensure lessons from these committees are considered and inform priority focus. The Maternal and Perinatal Committee remained within the Quality and Safety Branch limiting ICEs focus about maternity-related deaths.	Policy instrument
2003 (September)	Independent Pricing Regulatory Tribunal (IPART) Health Services Report released (IPART, 2003).	Report Recommendations included: Patient safety with care and governance improved by 'revamping' the Institute Of Clinical Excellence to the Clinical Excellence Commission; more coordinated clinician involvement in planning; streamlining administration and reducing identified areas of duplication between The Department of Health and AHS; and, recommended that AHS boundaries remain unchanged in the medium term.	Evaluation Identifying issues Policy analysis
2003 (October)	Interim Health Care Complaints Report into Camden and Campbelltown Hospitals released.	NSW Minister for Health announced he is appalled by the results of the reports. Extensive media coverage and response from Government opposition calling for action.	Identifying issues

Timeline	Event	Purpose/ outcome	Policy cycle stage[34]
2003 (October)	Barraclough Review of Camden and Campbelltown Hospitals released.	Review identifies shortcomings in leadership, safety and quality governance, safety culture, and attitude to reporting of incidents. Interim area-wide executive and governance team appointed. This structure would become blue print for Clinical Governance in NSW.	Identifying issues Policy analysis
2003 (December)	Safety Improvement Program (SIP) established by Institute of Clinical Excellence and NSW Department of Health.	SIP introduces a standardised approach to the identification and rectification of system wide issues in order to improve the overall safety of health care. Implementation supported by education for clinicians. This replaced the old incident reporting system.	Decision Implementation
2004 (January)	Special Commission of Inquiry into Campbelltown and Camden Hospitals (Walker Inquiry) announced.	To examine the adequacy of the Health Care Complaints Commission response to Camden and Campbelltown allegations and to propose improvements to the health system.	Identifying issues Policy instrument
2004 (March)	Interim Report Special Commission of Inquiry into Camden and Campbelltown Hospitals (Walker Report) released (Walker, 2004b).	Interim reports find the Health Care Complaints Commission (HCCC) failed to act properly in assessing allegations against clinicians. Recommendations include proposed amendments to the HCCC Act.	Identifying issues Policy analysis
2004 (April)	Review of Area Health Service (AHS) boundaries and reforms announced.	Plan to reduce staff at NSW Department of Health and non-clinical service duplication in AHS announced. Savings to be redirected to frontline clinical services. Announced as a result of IPART recommendations even though IPART did not recommend this in the medium term.	Policy instrument Coordination Decision (Planning Better Health cycle)
2004 (June)	Second Interim Report Special Commission of Inquiry into Camden and Campbelltown Hospitals (Walker Report) released.	NSW Minister for Health foreshadowed final report recommendations would ensure 'health system has the most rigorous quality and safety systems for patients'(Parliament of NSW Website (Hansard), 2004a).	Identifying issues Policy analysis

Timeline	Event	Purpose/ outcome	Policy cycle stage[34]
2004 (June)	Funding for Clinical Excellence Commission (CEC) announced.	$10 million was committed for 2004-05 to develop evidence-based programs and to establish the Clinical Excellence Commission. This was part of the Government's four year $55 million commitment to deliver safe, accessible health services (NSW Department of Health, 2004b).	Decision
2004 (June)	Sustainable Access Plan announced.	To reduce unnecessary delays and to improve access and care for patients in response to access block in emergency departments.	Policy instrument (Planning Better Health cycle)
2004 (July)	Planning Better Health policy announced (NSW Department of Health, 2004d).	Included the merging of seventeen Area Health Services into eight larger areas. Efficiencies were to be achieved through the reduction of administration positions and the funds being redirected to frontline health care. Aims of the program included: • Improving quality care and patient safety - CEC, Clinical Governance Units and new Incident Information Management System • Improving patient access to public health services - Sustainable Access Plan • Improving efficiencies and reducing the cost of health administration -AHS amalgamations	Policy instrument
2004 (September)	Legislation reform Bills tabled in response to Walker Inquiry into Campbelltown and Camden Hospitals (Parliament of NSW Website (Hansard), 2004b).	• Health Legislation Amendment (Complaints) Bill 2004. • Health Registration Legislation Amendment Bill 2004 • The Nurses and Midwives Amendment (Performance Assessment) Bill 2004.	Policy instrument

Timeline	Event	Purpose/ outcome	Policy cycle stage[34]
2004 (October)	The NSW Governor signs the order for the amalgamation of seventeen AHS into eight new AHS.	Provides approval to restructure health service boundaries.	Policy instrument
2004 (November)	NSW Health Services Amendment Bill (Reforms) passed in Legislative Council[36].	Legislation sanctioned the consolidation of the existing seventeen AHS into eight new areas.	Policy instrument (Planning Better Health cycle)
2004 (November)	Appointment of CEO for the Clinical Excellence Commission.	To implement the Clinical Excellence Commission.	Implementation
2005 (January)	Planning Better Health implemented.	New Area Health Service boundaries are operational.	Implementation
2005 (April)	New Central Governance structures at NSW Health established. Heath Care Advisory Council (HCAC) established . 11 Health Priority Taskforces including one for Maternal and Perinatal established.	HCAC includes clinician and consumers members to provide expert advice about strategic development and direction of NSW Health Services. The Health Priority Taskforces were established to undertake strategic planning and provide advice to the HCAC. Maternal and perinatal issues were now considered in whole of health strategic planning.	Implementation

[36] The NSW Legislative Council is the Upper House of the NSW Parliament. The Council has a role in the review of proposed and existing laws and the policies of the executive government.

Timeline	Event	Purpose/ outcome	Policy cycle stage[34]
2005 (Feb)	All NSW Health Circulars were rescinded or reclassified as Policy Directives.	350 Policy Directives were released all requiring mandatory compliance in AHS.	Policy instrument
2005 (Feb)	Incident Management program reissued as a Policy Directive.	Introduces the Incident Information Management System (IIMS) Policy Directive. Is reissued with changes three times between 2005 -2007 as the system matures.	Policy instrument
2005 (May)	Framework for Managing Quality of Health Services in NSW reissued as a Policy Directive	Framework requires mandatory compliance in all AHS.	Policy instrument
2005 (July)	Patient Safety and Clinical Quality Program and Implementation Plan released.	Patient Safety and Clinical Quality Program Policy Directive to be implemented in all NSW Health Facilities. The Clinical Governance Units were charged with the rollout of the program in all AHS. Clinical Excellence Commission to monitor roll out. Safety Improvement Program now included in Patient Safety And Clinical Quality Program.	Implementation
2005 (Aug)	Evaluation of the Safety Improvement Program in NSW: Overview of Studies released (Braithwaite, Travaglia et al., 2005).	Safety Improvement Program is identified to have been helpful moving from a blame culture; recognises the importance to feedback lessons and evidence about end results of RCAs[37]; and, resource issues for managers using IIMS identified.	Evaluation
2006	First Report of the NSW Health Incident Management Program (NSW Health, 2005c).	Report overview of adverse events reported on the Incident Information Management System	

[37] Root Cause Analysis (RCA) is the procedure used to identify the factors and root causes which contribute to a serious clinical incident and make recommendations to prevent a similar incident reoccurring (NSW Department of Health, 2007b).

Timeline	Event	Purpose/ outcome	Policy cycle stage[34]
2007	NSW Health Policy Implementation Group established.	The group established to review the implementation of state-wide polices relating to safety and quality. Barriers to implementation were identified as, policy volume, lack of accountability, resources and training to implement policies. The lack of framework for sustainable policy implementation identified by the group as a barrier to implementation.	Evaluation Policy analysis Policy instrument
2007	NSW State Plan is released (NSW Government, 2007).	The plan provides the NSW Government's strategic plan for services. Identified that health consuming 27% of the State budget, with costs expected to rise. The Plan indicated potential future health service realignments and investment strategies. Planning Better Health policy is identified as a successful strategy to manage fiscal reform.	Policy instrument

5.2.2.1 NSW early policy context - Developing a safety and quality policy agenda

At an early stage of the national agenda development (pre 1999), the NSW government was already taking the lead towards a focus of improving quality in health care. In line with the national approach, state taskforces and expert committees provided technical advice to the NSW Minister for Health. The role of such groups was to provide a mechanism for expert advice and recommendations which, if acceptable, could be translated into tangible policy solutions in the policy development process (Althaus et al., 2007; Matheson, 2000). The NSW government's position of focusing improving quality in health care may have been further facilitated by the inclusion of an expert Chair, Dr Wilson, to the NSW Ministerial Advisory Committee on Quality in Health Care. Dr Wilson had earlier been the lead researcher on the Quality in Australian Health Care Study (Wilson et al., 1995).

In 1999, the NSW Minister for Health established the NSW Ministerial Advisory Committee on Quality in Health Care and the State Continuous Improvement Committees. The NSW Ministerial Advisory Committee on Quality in Health Care and the State Continuous Improvement Committees in consultation with the NSW Department of Health, worked to develop a coordinated approach to monitoring and managing the quality of health care. Recommendations from the NSW Ministerial Advisory Committee on Quality in Health Care and the State Continuous Improvement Committees acted to identify issues, provide policy advice and develop policy instruments through the involvement of the Department of Health. Policy instruments included, probably most importantly, the development of *The NSW Health Framework for Managing the Quality of Health Services* (The Quality Framework) (NSW Department of Health, 1999). The Quality Framework was intended to provide a blueprint for the NSW Department of Health to develop processes and systems to manage quality and was based on the following six key dimensions:

1. Safety.
2. Effectiveness.
3. Appropriateness.
4. Consumer participation.
5. Access.
6. Efficiency.

In addition, five cross sectional dimensions were also identified:

1. Competence.
2. Information management.
3. Continuity of care.
4. Education and training for quality.
5. Accreditation.

The six dimensions of the Quality Framework have been widely accepted within the NSW Department of Health as they express a set of common principles articulated in a number of policy and strategic documents reviewed during this thesis (NSW Department of Health, 2000, 2003b, 2005a). Support for the six dimensions is demonstrated through their uptake in the Patient Safety and Clinical Quality Program (NSW Department of Health, 2005a) and in the NSW Department of Health maternity strategic policy direction documents (NSW Department of Health, 2000, 2003b). These documents clearly articulate the need to include the six dimensions of quality in the development of a system approach to service delivery. However, they did not mandate their inclusion. The Quality Framework was initially released as a publication and did not require NSW public health services to implement it. It would not be until 2005 that the Quality Framework was issued as a Policy Directive[38] which required implementation in NSW public health services. The lack of status or mandate of policies has been identified as a barrier to implementation of innovations (Greenhalgh, Robert, Bate, Macfarlane, & Kyriakidou, 2005; NSW Health Policy Implementation Group, 2007).

In addition to work being undertaken by the NSW Department of Health, advisory committees continued to be the most common strategy employed to develop policy responses. For example, in 2000, The NSW Health Council Report and the NSW Ministerial Advisory Committee on Health Services in Small Towns included recommendations for a collaborative government approach to dealing with safety and quality issues (NSW Health, 2000; NSW Ministerial Advisory Committee on Health Services in Small Towns, 2000). The NSW Government established the Government Action Plan (GAP) in 2001 as a major policy initiative to develop a collaborative clinician plan of action to address the recommendations of the two advisory committees (NSW Health, 2000, 2001).

[38] NSW Department of Health Policy Directives are the method of communicating material requiring mandatory compliance and implementation by the NSW public health system.

The Government Action Plan was implemented as a coordinated clinician-led health reform strategy consisting of multiple projects including a focus on improved quality of health care (NSW Health, 2001). The Government Action Plan targeted education and training for health professionals; the management of change; integration of care across professional; health care boundaries; and research as areas for action (NSW Health, 2001). It was a recommendation of the GAP working groups that, in order to achieve these aims, there needed to be a dedicated institute to progress this work. As a consequence, the Institute of Clinical Excellence was formed as a statutory corporation under the NSW Health Service Act in 2001 to progress this agenda (Institute of Clinical Excellence, 2001).

The goal of Institute of Clinical Excellence was the provision of better systems, training and research (Institute of Clinical Excellence, 2001). The Board of the Institute of Clinical Excellence identified their mission as 'to change health care across NSW to make it safer and better for patients'. These objectives were to be achieved through a number of strategies including championing the Clinical Improvement Program and learning lessons from across the health system. Another role of the Institute of Clinical Excellence was the provision of education and training to support quality improvement projects. All projects were underpinned by the six dimensions of quality and safety espoused in the NSW Framework for Managing Quality in Health Services (NSW Department of Health, 1999).

The strategic goals of the Institute of Clinical Excellence were to be achieved through clinical projects in a number of 'high priority clinical areas'. These were identified through the use of the Breakthrough Collaborative Model and were in line with those being developed nationally and internationally (Institute of Clinical Excellence, 2001). The high priority clinical areas were:

- Inappropriate use of blood products;
- Pressure ulcers;
- Health care acquired infections;
- Postoperative complications and deaths;
- Adverse drug events;
- Acute care of stroke and coronary syndromes; and
- Falls.

The high priority areas mostly focused on projects relevant to the acute general hospital setting. With the exception of projects relating to blood products and, to a certain extent, infections, these priority areas had limited applicability to the maternity setting. The trend toward developing safety improvement activities that focused on the acute general hospital setting was identified in a number of documents in this audit. The lack of inclusion of maternity-specific strategies may have been due to the policy focus developed through GAP and the Break Through Collaborative model and the limited profile of maternity related issues within the Institute of Clinical Excellence at that time.

In 2003, the NSW Department of Health commissioned a strategic review of the operation of all committees managed and supported by the NSW Department of Health with focused on patient outcomes and quality. This was precipitated by an increasing focus of attention towards improving quality and safety in health care by the NSW Department of Health in response to issues raised in the Camden and Campbelltown Inquiries[39] (Clinical Excellence Commission, 2008). This review recommended combining two of the three Ministerially appointed committees[40] who reviewed and made recommendations about hospital-related deaths with existing NSW quality and safety initiatives. This was an early attempt to bring together some of the lessons learnt and collected by multiple groups. These recommendations were implemented in 2004 with the committees reviewing anaesthetic and surgical deaths being moved from the NSW Department of Health to the Institute of Clinical Excellence (Clinical Excellence Commission, 2008). The peak committee reviewing maternal deaths (the Maternal and Perinatal Committee) was not included in the review and remained at the Department of Health. Anecdotal evidence (personal knowledge) suggests that the decision to keep the Maternal and Perinatal Committee within the Department of Health was based on the need to progress other work done by the Committee. The Committee had a role in strategic planning and policy development for maternity services in addition to reviewing maternal deaths. Moving this Committee to the Institute of Clinical Excellence would have resulted in a reduction of personnel to work on other maternity-related activities at the time. This decision may have

[39] Campbelltown and Camden Hospitals were located in the south western area of metropolitan Sydney. Campbelltown was a large hospital providing care to moderately complex patients and Camden was a smaller hospital providing care to low to moderately complicated patients. Poor patient outcomes at both hospitals were reported to the Minister for Health by nurses working at each hospital after failing to get a response from local hospital management. This precipitated the government commissioning a number of Inquiries of the events at both hospitals. These Inquiries are discussed further in section 5.2.2.4.

[40] There were three Committees whose members were mostly senior clinicians appointed by the Minister for Health and afforded Statutory Privileges. Two committees reviewed patient deaths in hospitals and deaths occurring after an anaesthetic or surgical operation. The third Committee had a role in reviewing and classifying all maternal deaths which occurred during pregnancy and up to one year after pregnancy.

resulted in limiting the focus and profile of maternity-related issues by the Institute of Clinical Excellence at this time.

Between 2001 and 2004, the Institute of Clinical Excellence (Institute of Clinical Excellence, 2005) developed a number of projects with a focus on developing a systematic response to engaging clinicians in participating in safety and quality issues. For example a project focused on improving the access of patients through acute hospitals by improving processes of care for emergency and elective surgical patients and complex medical patients. This project, the Patient Flow and Safety Collaborative, engaged clinicians across 36 NSW Health facilities using the Break Through Collaborative Model (Institute of Clinical Excellence, 2005).

The Break Through Collaborative Model included the provision of education and training programs about the principles and practices of patient safety (Institute of Clinical Excellence, 2001). Another initiative progressed through the Institute of Clinical Excellence, which further progressed the NSW patient and safety agenda, was the Safety Improvement Program which is discussed below.

5.2.2.2 Safety Improvement Program

The Safety Improvement Program, announced in 2002, was a collaborative effort between the NSW Department of Health and the Institute Of Clinical Excellence. The Program aimed to provide acute hospital services in NSW with a comprehensive standardised approach to the identification and rectification of system-wide issues in order to improve the overall safety of health care. It was implemented as a mandated policy circular in December 2003 across all NSW Area Health Services. This reporting system replaced the existing incident reporting system which notified the Department of Health of events which may lead to litigation or result in external attention from the media (NSW Department of Health, 1997). The Safety Improvement Program was an incident management system consisting of Reportable Incident Briefs[41] (RIB) and the investigation of serious incidents through Root Cause Analysis (RCA)[42]. The Safety Improvement Program was the first stage of a significant policy shift which moved away from reporting for notification to a broader incident management approach (NSW Department of Health, 2003a).

[41] Reportable Incident Briefs (RIB) are the reporting method for NSW public hospitals for defined clinical and corporate health care incidents to the NSW Department of Health (NSW Department of Health, 2007b).

[42] Root Cause Analysis (RCA) is the procedure used to identify the factors, root causes which contribute to a serious clinical incident and make to recommendations to prevent incident reoccurrence (NSW Department of Health, 2007b).

The Safety Improvement Program was modelled on the Veteran Affairs program in the USA and used a severity assessment coding system to classify adverse events[43] (NSW Department of Health, 2003a). The Reportable Incident Briefs system replaced existing reporting processes and included an on-line reporting system. This system would later be replaced by a more comprehensive incident information management system (IIMS) in 2005 (NSW Department of Health, 2006). The introduction of the Safety Improvement Program was supported by a training program by the Institute of Clinical Excellence which instructed selected clinicians on how to use the Severity Assessment Code system and undertake Root Cause Analysis. This program was intended to complement the other clinician engagement initiatives being implemented by the Institute of Clinical Excellence to maximise clinician engagement in safety and quality activities (ICE, 2004). Implementation of the Incident Monitoring System and education programs were completed by the end of 2003. The Safety Improvement Program was externally evaluated between 2004 - 2006 (Braithwaite, Travaglia et al., 2005). The aim of the evaluation was to assess the extent to which the Safety Improvement Program would 'make health care better and safer' (Braithwaite, Travaglia et al., 2005).

The evaluation identified that the Safety Improvement Program was an important initiative for cultural change and the identification of system vulnerabilities. The implementation of the incident reporting system had resulted in a state-wide response which had included the development of a number of policy and practice changes. These changes included the feedback of information about patient safety issues from the Department of Health to individual AHSs through a Safety Alert Broadcast system. The Safety Alerts related to adverse events involving breastfeeding, retained objects and equipment. The evaluation also highlighted that there were gaps between recommendations and the implementation of actions arising from root cause analysis (RCA). The RCA process was identified as being labour and time intensive and a number of recommendations arising from individual RCAs were not implemented. The evaluation of the Safety Improvement Program was the final stage of this early policy cycle which started four years earlier to provide a policy solution for a coordinated approach to monitoring and managing the quality of health care. A new policy cycle would continue to build on this work but was refocused to respond to a number of inquiries and reports. The following section discusses the new policy cycle resulting in the development of the Patient Safety and Clinical Quality program and how it merged to be included in the Planning Better Health policy.

[43] Severity Assessment Code (SAC) is an incident based numerical scoring system which identifies consequence, likelihood of reoccurrence and actual or potential risk of the incident (NSW Department of Health, 2007b).

5.2.2.3 Merging of policy cycles - Developing the Patient Safety and Clinical Quality Program and Planning Better Health Policy Agenda

The evaluation of the Safety Improvement Program and other policy drivers, such as a number of independent and government initiated inquiries, will be discussed in the following section. The inquiries discussed are the Inquiry into Campbelltown and Camden Hospitals and the Independent Pricing and Regulatory Tribunal into Health Services Report (IPART). These activities provide evidence that a new safety and quality policy cycle commenced that built on the existing safety and quality policy agenda. This new safety and quality policy cycle would later merge with the health reform agenda policy cycle and result in the development of two sets of fairly radical reforms: the Patient Safety and Clinical Quality Program (PSCQP) and Planning Better Health Policy reforms.

5.2.2.4 Inquiries and reports driving the policy agenda

In 2003, two inquiries provided the impetus to direct the policy agenda to refocus on improving the safety and quality of health care in NSW. These were the Inquiry into Campbelltown and Camden Hospitals and the Independent Pricing and Regulatory Tribunal Health Services Report (IPART).

The Inquiry into Campbelltown and Camden Hospitals

Concerns regarding poor patient outcomes at Campbelltown and Camden Hospitals[44] were first raised in the media in 2002. The issue raised a great deal of attention and provoked significant political pressure from the Government Opposition (Parliament of NSW Website (Hansard), 2003b, 2003c, 2004a; Pollard, 2004a). This attention acted as a driver for the government to seek a policy solution. Successive reviews and Inquiries were commissioned to identify the underlying issues at Campbelltown and Camden Hospitals as the pressure continued. A review was initially undertaken in 2003 by Professor Bruce Barraclough, an expert in quality and safety and the then Chairman of both the Australian Council for Safety and Quality in Health Care and the Board of the Institute of Clinical Excellence (Parliament of NSW Website (Hansard), 2003b). This review identified shortcomings in leadership, and the need for an area-wide plan to address workforce, human service policies and improvement of a patient-centred, safety-focused culture. A subsequent Special Commission of Inquiry headed by Brett Walker QC (the

[44] Campbelltown and Camden Hospitals were located in the south western area of metropolitan Sydney. Campbelltown was a large hospital providing care to moderately complex patients and Camden was a smaller hospital providing care to low to moderately complicated patients. Poor patient outcomes at both hospitals were reported to the Minister for Health by nurses working at each hospital after failing to get a response from local hospital management. This precipitated the government commissioning a number of Inquiries of the events at both hospitals.

Walker Inquiry), in response to continued pressure from the opposition and the media, proposed further improvements to that system (Parliament of NSW Website (Hansard), 2003a, 2004a; Walker, 2004a). In anticipation of the recommendations of the Walker Inquiry, the NSW Minister for Health announced that these recommendations would ensure 'our health system has the most rigorous quality and safety systems for patients' (Parliament of NSW Website (Hansard), 2004a). In response to the recommendations from the Walker Inquiry the NSW Government announced three Legislative Reform Bills to manage serious complaints in health care. These bills included the power to: refer professionals to professional registration boards; expedite complaints processes; give complainants protection and provide notification to practitioners who are the subject of complaints (Walker, 2004a).

At the same time, a comprehensive evaluation of the NSW Health system's performance against its strategic goals was being undertaken. This was seen to provide a policy opportunity to develop a solution to the issues at Camden and Campbelltown Hospitals. The evaluation was being conducted by the Independent Pricing and Regulatory Tribunal (IPART) and was entitled the Health Services Report review. This is described in more detail below.

Independent Pricing and Regulatory Tribunal Health Service Report (IPART)

Commissioned by the Director General of Health in 2002, under the *Independent Pricing and Regulatory Tribunal (IPART) Act 1992*, the Independent Pricing and Regulatory Tribunal Health Services Report reviewed NSW Health's performance against its four strategic goals: healthier people; quality health care; fair access; and, better value (IPART, 2003). The IPART review fulfilled the policy evaluation stage of the and earlier policy cycle as it reviewed the outcomes of the NSW Health policy reform agenda that were implemented in 1998. Evaluation is the last component of a health reform policy cycle. The IPART review also identified new issues, thus starting the health reform policy cycle again (IPART, 2003).

IPART found that, as was the case in its last review in 1998, there continued to be blurring of boundaries between the responsibilities of the NSW Department of Health and Area Health Services. The IPART recommended that the NSW Department of Health should focus on the role of strategic planning and stop micro managing the AHSs (IPART, 2003).

The structural reforms implemented as a result of the Government Action Plan (GAP) had created too many new structures and clinician-led groups with planning and funding responsibilities. These multiple structures had created duplication and conflict between these groups and the Department of Health in service planning (IPART, 2003). IPART was also

critical of the Department of Health's priorities for funding as they were directed towards improving the efficiency and effectiveness of acute care services, rather than focusing on developing community and population-based programs. This criticism was in context of the strategies for reducing hospital bed access block[45] and hospital waiting lists. Access block and waiting lists were key issues being raised in the media (Pollard, 2004b) and in the political arena at this time.

IPART indicated that clinical governance was the least developed of the governance structures in the NSW Health system. The Report recommended that improved clinical governance should include the promotion of clinical guidelines for clinical care and the monitoring of performance. Improving quality and patient safety was identified as a priority for all levels of the health system. IPART recommended that the Institute of Clinical Excellence (ICE) be transformed into the Clinical Excellence Commission (CEC). This recommendation was based on the need for a better resourced institute with the ability to take a stronger role in the development of guidelines and to monitor and audit Area Health Service compliance on quality activities. The development of guidelines and quality systems should include and be developed by leading clinicians (IPART, 2003).

Overall recommendations made by the IPART for health reform included: the clarification and rationalisation of roles between the Department of Health and AHS; rationalisation of corporate services; single workforce planning; increased clinician involvement; creation of new advisory governance structures centrally and in the AHS to include consumer involvement; and the creation of the Clinical Excellence Commission (IPART, 2003).

IPART also considered the number of existing AHS in NSW[46] and their geographic boundaries and the pros and cons of amalgamation. Whilst there were potential benefits in reviewing boundaries, they concluded that it would be unwise to 'undertake a large scale review of boundaries while the reforms it has recommended are being implemented'(IPART, 2003, p. 9).

IPART's conclusions in 2003 were based on the fact that the health system had already undergone major reforms since 2000 and that that the reforms currently being recommended by the Independent Pricing and Regulatory Tribunal would create further change. The addition of an AHS review of boundaries was predicted to be 'disruptive, negate some of the gains to be

14 Access block relates to overcrowding in emergency departments and where the length of stay of an admitted hospital patient in the emergency department is greater than eight hours (ACEM, 2004).

[46] In 2004, there were 17 Area Health Services in New South Wales.

made in other parts of the system' (IPART, 2003, p. 9). IPART suggested that it was highly desirable to have a 'degree of certainty in the overall framework (IPART, 2003) . None the less, within seven months, the NSW Minister for Health announced the existing 17 AHS would be amalgamated into eight larger area health services (NSW Department of Health, 2004d).

The findings and recommendations made by the Independent Pricing and Regulatory Tribunal in relation to improving patient safety and quality in health care were in line with those recommended in the Campbelltown and Camden Inquiries. It was evident from the review of documents that the two policy cycles were merged into one to create a comprehensive policy response to Safety and Quality resulting in the NSW Health reform agenda named, Planning Better Health in 2004 (NSW Health, 2004a).

5.2.2.5 Planning Better Health Policy

The Planning Better Health Policy was announced by the NSW Minister for Health in July 2004 (NSW Department of Health, 2004d; NSW Health, 2004a) and included a number of reforms with the following objectives:

- Improving the quality of care and patient safety;
- Improving patient access to public health services;
- Ensuring the health workforce matches demand for health services;
- Improving efficiencies;
- Improving the health of the population of NSW; and
- Improving efficiencies and reducing the cost of health administration.

These reforms were announced as a consequence of the IPART review with the aim to deliver a more efficient heath system (IPART, 2003; NSW Department of Health, 2004d). Despite the advice from IPART in relation to avoiding a restructure, a number of these aims were intended to be realised through the merging of the 17 existing AHS into eight. The efficiencies were to be achieved through a potential reduction of administration positions, with the $100 million of savings redirected to 'frontline health' care (NSW Department of Health, 2004d). Drivers for the health reform were said to include an increased demand on the health services resulting from an aging population, patient access issues and increasing costs of treatment.

The existing AHS structure were said to create artificial barriers between service networks, resulting in difficulties in achieving consistency with quality and patient safety standards. The aim of this new policy, Planning Better Health, was to create a more efficient system by reducing administration inefficiencies and duplication. The priorities of the health reform

package were to be achieved through the implementation of a number of initiatives including some for quality and safety and others to improve efficiency (NSW Health, 2004a).These are described below.

- Improving quality of care and safety

  The Clinical Excellence Commission would be established, replacing the Institute of Clinical Excellence, with a key role in delivering the Government's commitment to delivering safe, accessible services. The Clinical Excellence Commission would have a key role in guiding system-wide improvements and reform with powers to conduct state-wide audits of hospitals. The engagement of expert teams to address quality issues was also a role of the Clinical Excellence Commission (NSW Department of Health, 2004a).

  The Clinical Excellence Commission would be one component of the new Patient Safety and Clinical Quality Program (NSW Health, 2004c). This program replaced the Safety Improvement Program. The Patient Safety and Clinical Quality Program was implemented as a Policy Directive in July 2005 (NSW Department of Health, 2005a). It provided a framework for the systematic identification, reporting and management of events and risks. The Patient Safety and Clinical Quality Program included: an openness to error; an obligation to act; accountability; developing a just culture; appropriate prioritisation of action and teamwork (NSW Health, 2005). The principles were similar to those identified in the Safety Improvement Program. However the new policy was to be supported by a stronger governance structure to implement the objectives of the policy. This support included the development of Clinical Governance Units in each Area Health Service and the Clinical Excellence Commission. The Clinical Governance Units were charged with the implementation of the Patient Safety and Clinical Quality Program in all AHS. The Clinical Excellence Commission would assess the implementation of the program (NSW Department of Health, 2005a, 2005b).

- Improving patient access to public health services

  Improving patient access would be progressed through a number of programs contained within the Sustainable Access Plan (NSW Health, 2004b). These programs aimed to address seasonal needs for additional beds and strategies to reduce patient bed block in major city Emergency Departments. Funding of A$57 million from 2005 was also to be allocated to improving hospital elective surgery waiting lists, improving efficiencies and reducing the cost of administration.

- Improving efficiencies and reducing the cost of health administration

  The improvement of efficiencies and reducing the cost of health administration would be progressed through the restructure of the Area Health Services to come into effect on 1 January 2005. A number of legislative changes to the NSW *Health Services Act* were required to progress this reform (NSW Department of Health, 2004c; Parliament of NSW Website (Hansard), 2004b).

In addition to these wide ranging health reforms, the need to ensure the containment of health costs continued to be the NSW Government's policy agenda focus, as identified in the NSW State Health Plan (2007). The plan, which provides the strategic focus for all NSW health services for ten years, identified a long-term goal to have a health system which maintains financial sustainability whilst meeting the health needs of the population. The State Plan identified that the NSW health system is the largest expense for the NSW State budget consuming 27% of the budget. With the exception of education, no other government portfolio consumed more than 8% of the NSW State Budget (Garling, 2009). With costs expected to rise, this burden will be a continuing challenge for the Government with 'difficult decisions' foreshadowed (NSW Government, 2007). These decisions relate to service realignments and investment strategies indicating the possibility of further future reform. The example of reinvesting savings from the rationalisation of 'backroom processes and support services' to clinical services implemented with Planning Better Health was highlighted as a successful strategy for fiscal reform. There has been a consistent thread in this mapping exercise: that efficiency, safety and quality will be improved by moving resources to the 'frontline' (NSW Department of Health, 2004d; NSW Government, 2007; NSW Health, 2006a). There is very limited documentation available about the impact of this type of reform from a 'grassroots' perspective and part of the reason for undertaking this policy review is to provide a policy background for this thesis. The following section considers the implementation of the Planning Better Health Policy in the AHS in which the study is situated.

5.2.3 Mapping implementation of Planning Better Health and Patient Safety and Clinical Quality Policy at Area Health Service level

This section presents the results of the mapping of the implementation of the Patient Safety and Clinical Quality Program and Planning Better Health Policies in the AHS where the study was situated. Table 9 presents the chronological timeline. This timeline helps to establish knowledge about the policy context that was present within the study sites. The text following the table explains the chronology in more depth.

.

Table 9: Chronological timeline mapping the implementation of the Planning Better Health Policy and Patient Safety and Clinical Quality Program at AHS level

Timeline	Event	Purpose/Outcome	Policy cycle stage
2005 (Jan)	Amalgamation of two AHS[47].	A larger AHS with 1.16 million residents and 22 major health facilities was created.	Implementation
2005	Streamlining of administration positions over a period of 2 years.	Employees were displaced as a result of restructure to be deployed or given voluntary redundancy.	Implementation
2005	Corporate Governance Framework released	The AHS Chief Executive's accountabilities in relation to corporate and clinical governance were identified. Clinicians and managers were also responsible for quality activities including their individual clinical performance.	Policy instrument
2005	AHS Clinical Governance Units established.	Implementation of AHS network Clinical Governance Units, old facility based structures were moved to Area-based units. This resulted in recruitment to positions and restructure of the existing systems.	Implementation
2006	Integrated service networks established	AHS divided into three clinical networks with 12 Clinical Streams.	Implementation
2006	Clinical Governance key indicators for monitoring performance are identified. Indicators relate to acute general hospital and patient access targets. There are no specific quality and safety indicators for maternity.	Targets include: • Patient falls • Medication errors • Infections	Policy instrument
2006	Central Area hospital network established.	Integration of maternity units at Site A and Site B into one service across two sites.	Implementation

[47] Names of the two AHS removed for confidentiality purposes.

Timeline	Event	Purpose/Outcome	Policy cycle stage
2006	All Clinical Streams to develop Area wide protocols.	The protocols to be appropriate to role delineation and access to enhanced better practice models of midwifery care.	Implementation Evaluation
2006	AHS annual report identified a saving of $12.5 million resulting from the amalgamation and reduction of administrative and clinical services across the entire AHS.	Funds were redirected to increase the numbers of nurses and doctors in order to meet the increasing medical and surgical demand in frontline clinical services. No detail that the redistribution included maternity services although probably implicit.	Implementation
2006	AHS reports the successful implementation the Patient Safety and Clinical Quality Program requirements set by the NSW Department of Health for the financial year.	Systems to monitor and manage the reporting of incidents via IIMS are in place. The presence of processes to feedback and respond to these incidents are not identified in the report.	Implementation
2006	AHS reports key areas of improvements as a result of Incident Information Management System notifications and analysis. Areas of improvement have, and will continue to	Areas of improvement have, and will continue to focus on falls, hospital acquired infections, transfer of care and medication errors.	Implementation
2007	A New Direction for AHS Health Service Strategic plan Towards 2010 released.[48]	Future plan with a focus on quality and safety, providing patients with ready access to safe and satisfactory journeys through NSW health services making the most effective use of the finite resources available and mange costs, services and infrastructure effectively – articulates State Health Plan.	Policy instrument
2007	Priority focus of quality and safety activities on the acute setting, limited direct maternity applicability.	Future priorities include falls, medication errors and infections.	Policy instrument

[48] Name of AHS removed for confidentiality purposes

5.2.3.1 Area Health Service policy context - Implementation of the Planning Better Health and Patient Safety and Clinical Quality Program policies

The chronological timeline of the implementation of The Planning Better Health Policy and the Patient Safety Programs within the AHS provided the local policy context for the study sites. The next section discusses the implementation of each of these policies to provide an in-depth account of the policy context in which the study site was situated.

5.2.3.2 The Organisational Restructure

In January 2005, the implementation of the AHS merger program was commenced. With respect to the study site, this resulted in two adjoining AHS merging. The new AHS had a local population of 1.16 million people [AHS annual report, 2006].[49]

The new AHS was realigned into integrated services divided into three clinical networks within 12 Clinical Streams across 22 hospital facilities. Maternity services were included in one of these Streams. Site A and Site B were allocated to a Network and in 2006, these sites were integrated into one service. The Stream (where the study took place)[50] was required to develop AHS wide protocols appropriate to role delineation[51] of all facilities [AHS strategic plan, 2006].[52]

It was anticipated that the restructure would result in the streamlining of administration positions over a period of two years. Employees displaced as a result of restructure were to be deployed or offered voluntary redundancy packages (NSW Health, 2004). By 2006, the reconfigurations within the AHS were reported have resulted in $12.5 million savings from administrative savings and the amalgamation of corporate services. These savings were reported to have been redirected to increase the numbers of nurses and doctors to meet the increasing medical and surgical demand [AHS annual report, 2006].[53] It is not clear if this also included maternity services as midwives are often invisible and referred to as nurses in such policy documents in Australia.

---

[49] Reference removed for the purpose of confidentiality.

[50] Stream name removed for the purpose of confidentiality

[51] Role delineation is the classification used for NSW Public hospitals to determine the level of staff experience profile, support services and minimum safety standards required for these services. The delineation also identifies the level of clinical complexity and acuity of services undertaken at each service (NSW Health, 2002).

[52] Reference removed for the purpose of confidentiality.

[53] Reference removed for the purpose of confidentiality.

5.2.3.3 Impact of the Restructure

There was no evidence found of a formal evaluation of the AHS merger component of the Planning Better Health Policy. Evidence was found that provided a picture of the number of major organisational changes at all levels associated with the restructure within the AHS. One source was media releases identifying the start of the new AHS and changes to leadership through key executive appointments (NSW Health Media, 2005). Annual Reports at both State and AHS-level provided basic profile data about the changes to the new organisation structures and new priorities for the AHS. Documentation was not available relating to the number, location or types of positions which were realigned or made redundant in this restructure. Organisational charts of the new structures at Clinical Governance or hospital level were not available to identify and analyse the direct impact of the changes in administrative and support roles. For this reason, the direct impact of the restructure policy on the study site cannot be verified through documentation alone. This makes the Service Study even more important.

The mapping exercise provided evidence that the implementation of the restructure component of Planning Better Health resulted in major reorganisation of previous structures at State, AHS and hospital levels, including the maternity services and the Clinical Governance areas. The changes implemented over two years created local transition instability in areas where positions were being reorganised. Organisational instability and reduced efficiency resulting from major health service restructure have been reported in Australia and in the United Kingdom (Braithwaite, Westbrook, Hindle, Iedema, & Black, 2006; Fulop et al., 2002). In addition, the instability occurring as a result of the recruitment of staff and the restructure involved major organisational changes. These changes are likely to have had an impact on capacity, particularly at management level. For example, the AHS network approach has required the development of new guidelines. The merging of maternity services at Sites B and A and the transfer of women with complex needs to Site A is likely to have created a larger service and demand. In terms of efficiencies and budget priorities, the AHS Strategic Plan identified that one of the long term goals was to have a health system which maintained financial sustainability whilst meeting the health needs. The priorities identified in the chronological timeline seemed to have minimal direct application to maternity services (NSW Government, 2007) [AHS Strategic Plan, 2006][54]**.** This section has provided evidence about how the implementation of the restructure component of the Planning Better Health Policy created a policy context that could influence the AHS and study sites. The next section considers the implementation of the Patient Safety and Clinical Quality Program at AHS level.

[54] Reference removed for the purpose of confidentiality.

5.2.3.4 Patient Safety and Clinical Quality Program (PSCQP) Implementation

Claims relating to the successful implementation of the requirements of the Patient Safety and Clinical Quality Program in 2005/2006 were found in AHS annual reports [AHS annual report, 2006][55]. The implementation of the Patient Safety and Clinical Quality Program was reported to include the creation of the AHS network Clinical Governance Units [AHS annual report, 2006[56]]. The AHS reported that systems to monitor and manage the reporting of incidents via Incident Information Management System (IIMS) were in place. However there was no documentation to describe processes for feedback or what responses were made to these reported incidents [AHS Annual Report, 2006].

In the new organisational structure, Clinical Stream Directors were responsible for ensuring patient safety and clinical quality in the various specialities, for example, in the Clinical Stream where the study was situated. AHS Clinical Governance Units were identified to be working at executive level with the Stream Directors to ensure effective auditing and support clinical management, decision making and the improvement of clinical data. Stream Directors were AHS-based positions held by senior medical clinicians. This structure indicates a continued focus on monitoring and reporting with each clinical stream area being responsible for local clinical management and response [AHS, annual report, 2006][57].

The external evaluation of the IIMS provided information about the extent of support Clinical Governance Units were providing around the state (Travaglia & Braithwaite, 2006). The evaluation of the IIMS in the state identified that the level of support provided by Clinical Governance Units across AHS and facility levels was variable. This support ranged from patient safety managers actively presenting data to some divisions or clinical units at one end of the spectrum, to having a completely 'hands off' approach at the other. This 'hands off' approach was alleged to have the intent of supporting nursing unit managers to take on the role of managing their own data. The evaluation reported that much of the learning generated from the IIMS data was being taken on at hospital or ward level as the impetus to do this had been 'pushed down' on the basis that responsibility for safety needed to be delegated to unit level (Travaglia & Braithwaite, 2006, p. 9). Whilst the evaluation highlighted the need for local learning to take place, it also identified that the ability to generate reports about local incidents was impeded by the functionality of the IIMS database. The level at which learning from incident reporting was taking place at hospital and ward level was dependent on local middle

[55] Reference removed for the purpose of confidentiality.

[56] Reference removed for the purpose of confidentiality.

[57] Reference removed for the purpose of confidentiality.

management and staff commitment (Travaglia & Braithwaite, 2006). The staff in Clinical Governance Units were experiencing resource issues surrounding the need to support and educate nursing unit managers to use the IIMS system as a learning tool (Travaglia & Braithwaite, 2006).

The AHS strategic plan identified a focus towards a number of quality and safety improvement strategies which did not have direct implications for maternity services [AHS Strategic Plan, 2006][58]. These areas related to projects addressing falls, medication errors and infections. It is likely that the Clinical Governance Units and Clinical Practice Improvement Units would be required to prioritise their effort and support resources towards projects with this focus. This could limit their capacity to provide support to quality and safety initiatives in maternity services as they were not a priority focus area.

Clinical Governance Units were given set performance targets relating to the completion of Root Cause Analysis, recommendations and Audits. The evaluation of the IIMS program indicated that clinical ward units were taking on a greater role in this area (Travaglia & Braithwaite, 2006). In the presence of variable support from Clinical Governance units and a concurrent expectation that quality and safety work would be progressed locally, it is likely this would result in an increased workload for the midwifery unit managers at the study sites.

This section described the impact of the implementation of the Patient Safety and Clinical Quality Program within the Planning Better Health Policy. There was a focus toward monitoring; reporting and investigating serious incidents; a policy intent for managers at unit level to undertake a greater role in incident management; the reorganisation of the Clinical Governance Units away from facilities-based to an Area Health Service-base. The focus of Clinical Governance Unit resources was toward AHS targets and priorities and not directly relating to maternity services. The next section will consider the implementation of the final component of the Planning Better Health Policy the Sustainable Access Program.

5.2.3.5 Sustainable Access Program implementation

The Sustainable Access program consisted of two components, one of which was the Clinical Services Redesign Program (NSW Health, 2004b). The Clinical Services Redesign program was introduced as a component of the overall Planning Better Health Policy in October 2005 (NSW Health, 2005a). The program provided tools and expert advice to redesign services to

[58] Reference removed for the purpose of confidentiality.

assist health services to achieve their target performance indicators set by NSW Health. These target performance indicators included: access block rates [59] of less than 20% (O'Connell, Ben-Tovim, McCaughan, Szwarcbord, & McGrath, 2008) and compliance with elective surgery waiting list targets. The program has an emphasis on improving 'access, quality and effective resource utilisation (NSW Health, 2005a). Progress is reported monthly to the NSW Minister for Health, Director General of Health and the Sustainable Access Health Priority Taskforce. AHS Chief Executives were required to sign annual performance agreements which outlined time frames and milestones for achieving agreed targets. This structure ensured AHSs have accountability and compliance. Agreed targets would then be set at hospital and Stream levels (NSW Health, 2005a). AHSs were funded to establish clinical redesign units to ensure targets are met and are responsible for funding the projects developed through the Redesign Program. AHSs were to fund the costs of the redesign and to meet targets through normal funding mechanisms, savings from amalgamations, and realignment of priorities for resources as well as through internal efficiencies. Future funding for individual AHS was performance-based. This process was in all probability bound to result in AHS prioritising work to meet targets, specifically to improve waiting times in emergency departments and avoidable admissions. These targets have limited direct relevance to maternity services as maternity was not identified as a priority area and was unlikely to benefit in the short term from reinvestment strategies. The need for internal efficiency strategies to fund clinical redesign may have had an impact on maternity service streams and facilities. An evaluation component was identified as a component of the Clinical Redesign Program but there was no evidence to suggest it was being conducted that could be found at the time of undertaking the mapping exercise (NSW Health, 2005a).

5.3 Conclusion

The Policy Study has identified the history and drivers at national, state and AHS-level leading to the policy context present at the study sites. The mapping exercise has answered the second research question by identifying and describing the policy context in which the study sites are situated. The mapping exercise has identified a number of outcomes from the implementation of the Planning Better Health and Patient Safety and Clinical Quality Program which have potentially influenced the study sites.

The mapping study has identified that the implementation of the policies has introduced large-scale change, in relation to organisational, workforce and reporting requirements at State, AHS

[59] Access block relates to overcrowding in emergency departments and where the length of stay of an admitted hospital patient in the emergency department is greater than eight hours (ACEM, 2004).

and clinical unit level. These changes occurred over a prolonged period of time and created a lengthy period of instability with respect to recruitment and the development of new structures. The Patient Safety and Clinical Quality Program implemented a new monitoring system for adverse events with incident reporting requirements changing fairly frequently as the program matured. The maturation of the Patient Safety and Clinical Quality Program resulted in a proliferation of new and revised Policy Directives which required implementation. The governance structures supporting clinical units moved from a hospital to an AHS-base, potentially impacting on the level of support at hospital level.

The Australian Policy Cycle identified the drivers and processes undertaken to develop these policies. The Australian Policy Cycle was limited to some extent in identifying each stage of policy development. This limitation however, has confirmed the policy process is not always either sequential or complete. The mapping exercise using the policy cycle was able to identify certain stages of the policy cycle, but not how or why the policy decisions were ultimately made during those stages. These components of the cycle are undertaken within the realm of the public service and government and therefore the documents may not be in the public domain.

Whilst there were limitations in using the Policy Cycle as a theoretical framework, it was useful to identify how and why the separate policy cycles were merged together to form ‘a one size fits all policy’, Planning Better Health. The results of this Policy Study has provided a description and evidence that the policy context created with the implementation of this ‘one size fits all’ policy is likely to have had unintended consequence for study sites safety culture.

This study has addressed the research question:
What are the policy contexts in which the study sites are situated?

The next chapter will present the results of the Service Study which examines the safety culture within the Study Sites.

CHAPTER 6: RESULTS - THE SERVICE STUDY

6.1 Introduction

This chapter presents the results of the safety culture surveys and the semi structured interviews. The results from the survey and the interviews are initially presented. The results are then presented by each of the safety culture domains to provide an in depth description of the site safety culture.

6.2 Survey results

This section presents the results of the Safety Attitudes Questionnaire and the Safety Climate Scale, the instruments which were used to measure safety culture and safety climate.

6.2.1 Data collection

A total of 59 out of 210 (28%) surveys were returned, 38 out of 134 (28%) at Site A and 21 out of 76 (29%) at Site B. The different methods of distributing the surveys met with varying response rates. The highest response rates of 100% were generated when surveys were handed directly to individuals at Site A. The second highest response rates of 92% were generated when surveys were administered during meetings with allocated time to complete the surveys. When time was not allocated during meetings to complete surveys the response rate was 24%. The lowest response rate, (11% for Site A and 29% Site B), occurred when surveys were personally addressed and mailed to individuals. Further details regarding the administration and response rates for the surveys are provided in Table 10.

Table 10: Surveys - Safety Attitude Questionnaire and Safety Climate Scale: Administration method and response rates.

Administration method	Occasions[60]	Administered n = 210	Surveys returned	%
Site A				
Planned meeting with time allocated to complete survey	1	n = 14	n = 13	92
Planned meeting without time allocated to complete survey	6	n = 72	n = 17	24
Handed directly to individuals	3	n = 3	n = 3	100
Survey packages addressed to individuals and mailed or placed in pigeon holes	45	n = 45	n = 5	11
Total for Site A		*n = 134*	*n = 38*	
Site B				
Survey packages addressed to individuals and mailed or placed in pigeon holes	76	76	n =21	29
Total for Site B	*n = 76*	*n = 76*	*n = 21*	
Total for both Sites		n = 210	n = 59	29

6.2.2 Participant Demographics

The majority of the 59 respondents (n = 42 (71%)) were midwives. There were five (8%) obstetric registrars or resident medical officers and three (5%) obstetric staff specialists. There were no obstetric or paediatric Visiting Medical Officers. Table 11 provides further detail of the respondent response rates by professional group.

[60] Occasions denotes the number of instances this administration method was used

Table 11: Safety Attitude Questionnaire and Safety Climate Scale surveys: Participants and response rate by professional group by site and combined.

Professional Group	Number of surveys administered by professional group		Participant response rate by professional group n=59 (%)		
	Site A n	Site B n	Site A n	Site B n	Both Sites n (%)
Midwives#	97	44	26	16	42 (71%)
Midwifery unit managers/ Midwifery managers	5	4	3	2	5 (8%)
Student midwives	7	2	3	1	4 (7%)
Obstetric Registrars/Resident medical officers	7	6	4	1	5 (8%)
Obstetrician/ Staff specialist	7	5	2	1	3 (5%)
Paediatrician/Staff specialist	1	4	0	0	0 (0%)
Paediatric Registrars/Resident medical officers	10	6	0	0	0 (0%)
Others	0	4	0	0	0 (0%)
Total	134	76	38	21	59 (28%)

#values include one enrolled nurse who was included with the midwives to ensure confidentiality.

The age, experience, years in speciality and working conditions profile were similar across both sites, particularly for midwife participants. The average age was 40 years (SD 10.4); most were experienced with an average of 12.2 years (SD 9.1) working in the speciality and worked mostly (63%) variable[61] shifts. Table 12 provides more detail of the demographic characteristics of participants for the total sample. The demographic data for the participants at each site were similar. In view of the fact that the participant sample was small, the demographics of participants was similar and that both sites were part of the same maternity service, the results from each service were combined. Combining the data also ensured the confidentiality for

[61] Variable shifts include a combination of morning, evening and night shifts.

participants from certain professional groups who were small in numbers. Further detail regarding the participant demographics from each site can be found in Appendix 6.

Table 12: Participant demographics combined for both sites.

Participants by professional group	Sample n =59 [%]	Years experience in speciality (SD)	Years worked in this hospital (SD)	Usual shift worked [%]	Mean age in years (SD)	Gender [%]
Midwives #	42[71]	12.2 (9.1)	9.1 (7.3)	D [23] E [5] N [9] V [63]	40 (10.4)	F 42 [100]
Midwifery unit managers/ Midwifery managers	5 [9]	18 (6.4)	10.3 (8.3)	D [80] N/I [20]	46.3 (7.8)	F 5 [100]
Student midwives	4 [7]	0.9 (0.3)	2.8 (2)	V [100]	28.8 (5.9)	F 3 [75] N/I 1 [25]
Registrars/ Resident medical officers	5 [8]	3.4 (4.9)	2.5 (2.4)	D [20] V [80]	30.8 (5.7)	M 2 [40] F 3 [60]
Obstetrician/ Staff specialist	3 [5]	11 (9)	1(0)	V [67] N/I [33]	48 (7)	M 2 [67] N/I 1 [33]
Total	59 [100]	11.1 (9.2)	8 (7.2)	D [28] E [3] N [7] V [62]	39.3 (10.5)	F 53 [90] M 4 [7] N/I 3 [5]

Values given as n (%) mean (SD). Shifts worked given as, day shift = D, evening shift = E, night shift = N, variable shifts = V, not identified = N/I. Gender given as, female = F, male = M. # Only one enrolled nurse was in the sample and was included in the midwives group to ensure anonymity.

The results of the safety culture domains are presented in the next section.

6.2.3 Safety culture survey

The six safety culture domains are measured by the Safety Attitudes Questionnaire (SAQ) and Safety Climate Scale (SCS) measures the Safety Climate domain. The safety culture domain score is the mean score of all questions in the survey that measure that domain. Scores above four are considered a positive safety score. The mean safety domain score is also converted to a 0 -100 point score. Safety culture domain scores of less than 75 points are considered not to be positive safety culture scores and would be considered appropriate for improvement.

6.2.3.1 Safety Attitudes Questionnaire

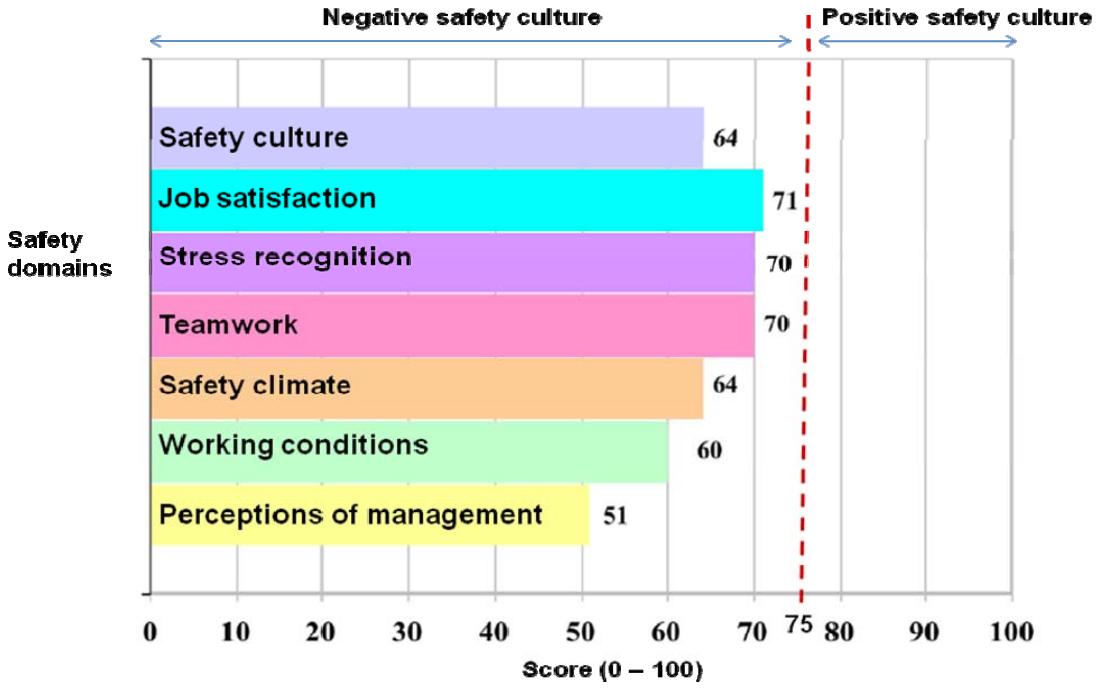
All the safety culture domains at each site with the exception of the Job satisfaction domain (Site A) and the Stress recognition domain (Site A) had a mean score below 4, and a 100 point score below 75 (Table 13). The safety culture score (100 point) for the combined sites was 64. These results are not indicative of a positive safety culture. The Job Satisfaction domain scored the highest with a score (100 point) of 71 at the combined sites. The Perception of Management domain was the lowest scoring domain at the combined sites 51. The Safety Climate domain also had a low score of 64 (Figure 4). Table 13 provides further detail of these results across both sites.

Table 13: Safety Attitudes Questionnaire scores measuring safety culture domains for both sites.

Safety Domain	Site A Mean (SD)	Site B Mean (SD)	Both Sites Mean (SD)	Site A 100 point score	Site B 100 point score	Both Sites 100 point score
Safety Climate	3.6 (1.1)	3.4 (1.3)	3.5 (1.3)	66	60	64
Teamwork	3.7 (1.2)	3.6 (1.1)	3.7 (1.1)	72	65	70
Stress Recognition	4 (1.2)	3.5 (1.2)	3.8 (1.2)	74	62	70
Perception of Management	3.1 (1.2)	2.9 (1.2)	3 (1.2)	54	45	51
Job Satisfaction	4 (1)	3.7 (1.3)	3.9 (1.1)	76	66	71
Working Conditions	3.5 (1.1)	3.2 (1.2)	3.4 (1.2)	63	54	60
Safety culture	3.6 (0.3)	3.4 (0.3)	3.6 (7.7)	65	59	64

Values represent the mean (SD), and the 100 point score for the responses to the items in the Safety Attitudes Questionnaire measuring each safety culture domain. The safety culture score is the mean score of all the safety culture domains combined.

Figure 4: Results of the Safety Attitudes Questionnaire by safety culture domains for both sites.



6.2.3.2 Safety Climate Scale Survey

The Safety Attitudes Questionnaire and the Safety Climate Scale have nine questions in common which measure the safety climate domain. The Safety Climate Scale was administered as a cross check for consistency with the Safety Attitudes Questionnaire to identify any differences between the responses for the common questions in each survey instrument.

The Safety Climate domain scores were very similar at both sites ranging from 3.9 (SD 0.70) at Site A to 3.8 (0.70 SD) at Site B. The combined 100 point score of 72 indicated that the Safety climate was not positive (Table 14).

Table 14: Safety Climate Scale scores for both sites.

Safety Climate Domain	Mean (SD)	100 point score
Site A	3.9 (0.70)	74
Site B	3.8 (0.70)	70
Both Sites	3.9 (0.69)	72

Values represent the mean score of the items on the Safety Climate Scale questionnaire measuring the safety climate domain.

There was a difference between the Safety Attitudes Questionnaire and the Safety Climate Scale survey scores for the Safety Climate domain (Table 15). The Safety Attitudes Questionnaire mean was lower at 3.5 (1.3 SD) compared with 3.9 (0.7 SD) in the Safety Climate Scale survey. It is unclear why these results are different given the two surveys were administered together and answered at the same time.

Table 15: Comparison of results between the Safety Attitudes Questionnaire and Safety Climate Scale for the Safety Climate Domain at both sites.

	Safety Attitudes Questionnaire (SD)	Safety Climate Scale (SD)
Site A - 100 point score	66	74
Site B - 100 point score	60	70
Both sites - 100 point score	64	72
Site A - mean	3.6 (1.1)	3.9 (0.7)
Site B - mean	3.4 (1.3)	3.8 (0.7)
Both sites - mean	3.5 (1.3)	3.9 (0.7)

Due to the small sample size it was not reasonable to report whether the difference in results was statistically significant. The reason for the differences is due to a difference in the size and focus of each survey. The Safety Climate Scale was shorter and questions only addressed the safety climate domain, whilst the Safety Attitudes Questionnaire had more questions and took longer to complete. The purpose of using both surveys was not to test the validity of each survey as there was significant literature to indicate the original authors had already done this (Sexton et al 2003; Sexton et al, 2004). One reason for using both surveys was to examine the usefulness in measuring the safety culture in the clinical setting as a strategy to identify areas for safety improvement. The difference in results between the two tools highlights that reliance on survey data alone in the absence of other forms data to should be viewed with caution.

6.2.3.3 Responses to open ended questions about improving patient safety for both sites

There were three open-ended questions in the Safety Attitudes Questionnaire which enabled the participants to make recommendations for improving patient safety at the study sites. Written comments were provided by 68% of the respondents (40/59). The number of recommendations made by respondents to improve safety ranged from one to three recommendations.

Each of the recommendations was analysed using Template Analysis (King, 2008) with the six safety culture domains as the template. A detailed explanation of this technique was provided in Chapter Four. Open-ended responses were coded and grouped where possible, into the six safety culture domains. Criteria for this allocation was based on the factors that each safety domain assessed as developed by the original survey authors (Sexton et al., 2004). An example of the template used for the analysis is in Appendix 7. The result are presented as a summarised list of the aggregated recommendations provided by the survey participants for improving patient safety at both sites (Table 16). Further detail about these results are discussed later in this chapter.

Table 16: SAQ open-ended responses for recommendations to improve safety at combined sites.

Safety Domain	100 point score [62]	Recommended responses for improving patient safety
Safety Climate	64	Develop quality management infrastructure for: 1. Review 2. Monitoring 3. Response to incidents Improve incident reporting Improve feedback
Teamwork	70	Undertake simulations Undertake obstetric drills Improve communication Undertake handover teaching Enhancing documentation
Stress Recognition	70	Reduce cycle of night shift Handover when tired Improve staffing to reduce workload Reduce paperwork Reduce computer time
Perception of Management	51	Have adequate equipment Have adequate/ more staffing Improve skill mix
Job Satisfaction	71	Improving staff morale Develop continuity of carer models
Working Conditions	60	Improve supervision of junior medical/midwifery staff Visiting Medical Officer presence onsite Improve orientation/ support processes Ward rounds

[62] All survey questions are scored from one to five. Each question has a possible score of five. Each question is assigned a mean score. Mean scores for questions pertaining to each safety domain are combined and an overall mean score assigned. The mean score for each domain is then converted to a 100 point scale. Scores greater than 75 are considered positive safety culture domains.

The quality of collaboration and communication experienced

The SAQ asked respondents to describe the quality of collaboration and communication they have experienced with a range of sixteen health professional categories. There were five response options ranging from very low, low, adequate, high, very high to not applicable. Due to the small numbers of respondents in each professional group in the sample it was not possible to undertake in-depth analysis within each of the health professional categories listed. Rather, data were analysed using the whole respondent population (n=59) to obtain a mean of the level of collaboration and communication with each professional group. The quality of collaboration and communication with all professionals was reported to be higher with midwives (76%), residents and registrars (70%), and lower with obstetricians (54%), and paediatricians (50%) (Table 17).

Table 17: Description of the quality of collaboration and communication experienced at both sites.

Quality of collaboration and communication of all participants with:	No. of responses n=59	Mean	Score 100 point
All heath professionals	59	3.4	59
Midwives	57	4	76
Registrar/Resident medical officers	52	3.8	70
Student midwives	53	3.8	70
Nurse managers/ Nurse unit managers[63]	55	3.6	66
Registered nurses	40	3.6	66
Anaesthetist	41	3.6	65
Social workers	54	3.5	63
Others	13	3.5	63
Enrolled nurses	36	3.4	60
Special care nursery personnel	19	3.3	56
Obstetricians	57	3	54
Technicians	51	3	53
Nurse practitioners	18	3	51
Paediatricians	52	3	50
Neonatologists	29	2.7	43
Perinataologists	27	2.7	43

[63] Nurse Managers and Nurse Unit Managers in this Study are also midwives who manage midwives. They are referred to as Midwifery Managers/Midwifery Unit Managers throughout the thesis.

6.2.4 Limitation of study results

This section provided an overview of the safety culture and the six safety culture domains. When undertaking safety culture surveys, a response rate 60% is desirable. In this study, the response rate of the overall sample was 29%. In view of the small sample size and limited participation of obstetric and no paediatric medical officers, caution needs to be exercised when interpreting these results in isolation from the qualitative results. The data from the interviews provide further insight to the safety culture at the study sites which would not have been evident with surveys alone. The next section discusses the themes from the analysis of interviews.

6.3 Results - Interviews

Fifteen interviews were conducted, eleven with key stakeholders at the study sites and four with stakeholders in policy and clinical governance positions who had a state wide perspective over policy issues which impacted directly on the study site[64]. A breakdown of the number and role classification of participants interviewed is provided in Table 18 below.

Table 18: Interview participants by classification of role

Classification of role	Number interviewed
Midwifery manager/unit manager	7
Midwifery educator/consultant	3
Obstetrician	1
Clinical governance officer	2
Policy maker	2
Total	15

Template Analysis (King, 2008) was used to analyse the interviews. The following section presents overall themes which emerged from this analysis. Examples of the various versions of the templates developed during analysis of the data is in Appendix 7. The final template listing all of the themes arising from the interviews is presented in Table 19.

[64] Eleven interviewees were key stakeholders who met the critical case sample criteria representing the majority of such positions across the study sites. An additional two individuals were unable to participate due to unavailability. One individual also declined an invitation to participate. The sample was extended to include interviews with four policy makers from the NSW Department of Health and clinical governance stakeholders from the AHS. These four participants had an area or state-wide perspective over policy issues which impacted directly on the study site. The purpose of including these participants was to check the importance of emerging data findings particularly in relation to policy issues. This provided additional information to confirm and elaborate on emerging findings (Patton, 1987).

The results of the interviews will be presented for each of the domains in combination with the survey results themes in the next section. The analysis of the interview data confirmed the presence of the six safety culture domains with sub themes, and I included a new theme – the Policy Context. The policy context theme was identified as being distinct from the previously recognised safety culture domains.

Table 19: Interview themes identified by template analysis

NO.	THEME (Based on safety culture domains)	SUB THEME (Level 1)	SUB THEME (Level 2)
1.	**SAFETY CLIMATE**	In the past	A robust system Having infrastructure Being valued
		The present	The organisational restructure In a transition Not closing the loop Not feeling valued
		Barriers to the Incident Information Management System (IIMS)	Barriers to reporting Not on the radar
2.	**TEAMWORK**	Need for communication	Handover Escalation
3.	**PERCEPTIONS OF MANAGEMENT**	Ensuring a safe unit	Adequate staffing Skill mix Acuity Adequate equipment
4.	**WORKING CONDITIONS**	Lacking supervision	Junior staff VMO model

NO.	THEME (Based on safety culture domains)	SUB THEME (Level 1)	SUB THEME (Level 2)
5.	**JOB SATISFACTION**	Low morale	
6.	**STRESS RECOGNITION**	Working longer	Doing double shifts Being on call
7.	**POLICY CONTEXT**	The restructure	Impact
		Patient Safety and Clinical Quality Program	Micro-managing/ mandating A mortality focus No one leading quality and safety
		Competing policies and priorities	Planning Better Health Maternity is not a priority

6.4 Results of surveys and interviews by domain level

The previous section presented the overall findings from the Service Study. The next section discusses the results of the Service Study in more detail with a focus on the themes according to each safety culture domain, and includes the new theme, *the Policy Context*. Both the survey and interview results are discussed together to assist in providing a description of the safety culture. Whilst results for each domain will be presented, there is a greater focus on the three safety culture domains, (Safety Climate, Perceptions of Management and Working Conditions) which scored the lowest in the surveys and were the key themes identified in the interviews. This discussion specifically focuses on the challenges that were identified as potential barriers to improving the safety culture at the study sites.

6.4.1 Safety Climate domain

As described in Chapter 2, the safety climate domain of an organisation relates to two issues: the strength; and the proactive commitment towards patient safety. The strength includes the way patient safety issues and adverse events are reported, managed and responded to. The proactive commitment relates to the attitudes of the leaders within the organisation to patient safety. The Safety climate domain included the local implementation of the NSW Health Patient Safety and Clinical Quality Program. A key objective of this policy, discussed earlier in Chapters 2 and 5, is the development of positive safety cultures in NSW public hospitals. Gaining an understanding about how this objective takes shape at the study sites was important. The interviews undertaken for this study included a specific focus on this issue.

6.4.1.1 Survey Results

The Safety Climate domain was measured with a mean score of 3.5 (SD 1.2) and a 100 point score of 64 (Table 20).

Table 20: Safety Attitudes Questionnaire results for Safety Climate domain combined sites.

Safety Domain	Mean (SD)	100 point score	Recommended responses for improving patient safety
Safety Climate	3.5 (1.3)	64	Develop quality management infrastructure for: 1. Review 2. Monitoring 3. Response to incidents Improve incident reporting Improve feedback

The Safety Climate domain was measured by eight questions which examined how medical errors are handled, discussed and responded to and the level of feedback that clinicians receive. There was general agreement (73%) that medical errors were handled appropriately and there

was a high level of agreement about where to direct questions about patient safety concerns (81%); and encouragement for clinicians to report patient safety concerns (81%). This indicates a positive attitude toward reporting errors (Table 21). In contrast, 27% of participants agreed that it was difficult to discuss errors and only 54% of participants agreed that the culture of the environment made it possible to learn from errors. These results indicate a less positive culture towards the recognition of and response to errors (Table 21).

Table 21: Safety Attitudes Questionnaire for questions measuring Safety Climate domain

Safety Climate	Overall Mean Per item	%Respondents who Agee	% Respondents who disagree
I would feel safe being treated here as a patient*	4.3	84%	7%
Medical errors are handled appropriately in this clinical area	4.0	73%	5%
I receive appropriate feedback about my performance	3.3	53%	27%
In this clinical area it is difficult to discuss errors	2.6	27%	49%
I am encouraged by my colleagues to report any patient safety concerns I may have	4.2	81%	4%
The culture in this clinical area makes it easy to learn from the errors of others	3.7	54%	15%
I know the proper channels to direct questions regarding patient safety in this clinical area	4.1	81%	5%
Personnel frequently disregard rules or guidelines (e.g. Hand washing, treatment, protocols/clinical pathways, etc) that are established for this clinical area	2.1	20%	73%

This table provides general descriptive information at item level (Likert scale: 1= Disagree Strongly, 2=Disagree Slightly, 3= Neutral, 4=Agree Slightly, 5=Agree Strongly); Overall mean; Overall percentage Agree (Minimum Agree- Maximum Agree); Overall percentage Disagree (Minimum Disagree- Maximum Disagree).

*There were 3% participant data missing for this question. There were no data missing for the remaining questions in the Safety Climate domain.

The less than positive culture toward incident reporting and learning from errors was further supported by responses to open ended questions about how to improve patient safety. A number of these respondents recommended that infrastructure be developed to improve the process of review, response, monitoring, reporting and feedback for incident reporting (Table 20). The focus of these recommendations on the development of infrastructure for a quality management system relate directly to components of the Patient Safety and Clinical Quality Program (NSW Health, 2004c).

The importance of having infrastructure to undertake quality and safety activities, particularly for incident management and reporting, were some of the key themes that arose in participant interviews. These themes that arose from participant interviews will now be discussed in detail.

6.4.1.2 Interview results

There were three main themes identified in the participant interviews for the Safety Climate domain. These were *in the past*; *the present*; and, *the incident management information system*'. Each of these themes had a number of sub themes (Table 19).

6.4.1.2.1 In the past

The theme *in the past* emerged from a number of interviews where participants made a clear distinction between the systems previously in place for incident management and quality and safety activities to those present at the time of the study. *In the past* included the period prior to the amalgamation of the two study sites into one service and the organisational restructure. This theme included three sub themes that is: a robust system; having infrastructure; and being valued.

A robust system

Participants described a seven-year history leading to the development of an incident management and quality system (the system) within the Division.[65] This system included a number of components including the establishment of a trigger based[66] incident reporting and management system. This system was innovative for that time as it predated the implementation of the Patient Safety and Clinical Quality Program (NSW Health, 2004c) as described by one participant:

[65] Prior to the organisational restructure, the hospital where Site A located was divided into three separate divisions. One Division included the maternity service where the study took place. In this section the Division refers to the Division which included the study maternity service.

[66] A list of maternity specific incidents and outcomes which were required to be reported were included on a 'trigger list' to prompt clinicians to report.

[We] started with our adverse event reporting that was before IIMS (ID 8)[67].

We've always had an incident reporting system (ID 1).

The system was described as being, *well established (ID 6), responsive and robust (ID 8).* The responsiveness and robustness was based on the presence of processes and infrastructure to facilitate incident reporting, the review of these incidents and timely response to any issues that required attention. This process was often referred to by participants as 'closing the loop', for example:

We would discuss them [incident reports] and closed the loop (ID 3).

We looked at those [incident reports] on a regular basis and dealt with them in a timely manner (ID7).

Participants placed a great emphasis on the importance of being able to respond to incidents and issues in a timely manner to close the loop. It was identified that the past system was able to respond in this way due to the presence of infrastructure, which was established by the Division to support this work.

Having infrastructure

Infrastructure, to support the incident management and safety and quality activities at the study sites, was highlighted as an essential component to the success of the system established in the past. One participant said:

Our system was well established and had been working well … we weren't just collecting data, we were responding to it … it was a very robust system but dependent on having infrastructure (ID 8).

The infrastructure that participants referred to included a quality committee of senior managers and clinicians within the Division; a dedicated position to oversee, coordinate and lead the quality activities, and support from the leaders of the hospital based Clinical Practice Improvement Unit (CPIU)[68]. This was highlighted by the following comments:

[67] Each participant is identified by an ID code to maintain confidentiality.

[68] The Clinical Practice Improvement Unit was based at the hospital and would later become an area based Clinical Governance Unit

We had a risk management committee and a quality committee that met regularly to look at incidents (ID 1).

The Quality Manager would set the meetings up … provide us with all the information, collect the data and details of those incidents and where we were travelling with responses to those and she managed the bi-monthly meetings (ID 7).

Initially we started doing it with the manager of CPIU[69]. We could send things that involved other departments or Divisions. We'd just send them to her and she would follow them up and come back to us with a response (ID 8).

The participants identified that the motivation to develop this system at that time was driven by a number of interested clinicians from within the Division and from the CPIU within the hospital. These interested clinicians were said to be motivated to develop an incident management and quality system after undertaking a number of quality audits. For example:

I think it was purely the interest of people involved … who were interested in that particular area, so it was very much individually driven rather than coming from the organisation (ID 8).

Sometimes these things are based on the individual … and their commitment (ID 5).

This latter quote highlights a perception raised by a number of the participants that developing and running incident management systems and undertaking quality and safety activities was dependent on individuals with the interest and capacity to do this work rather than being directed by an organisational commitment. These interested clinicians were often identified as needing to *lead* (ID 16), *drive* (ID 6) or *do* (ID 8) these activities both within the Division and at clinical governance level. Two participants said:

It's not possible to take a systematic approach to quality and safety if you don't have someone to do it (ID 8).

I [senior manager] need someone on the ground to help drive that (ID 6).

[69] CPIU – Clinical Practice Improvement Unit was the name of the hospital based clinical governance unit prior to the organisational restructure.

Participants at Site A identified that the system was supported by developing a specific role for a Quality Manager to drive and run these activities. This role was made possible by using a nurse manager position which had become vacant after a previous organisational restructure at Site A. Participants identified that:

> *The role [quality manger] was the senior nurse manager role, it came about as a result of the restructure many years ago but got the title of quality manager (ID 6).*

> *Her [quality manager] role was specific to that service (ID 7).*

The quality manager position was not replicated in any other Divisions at Site A and had occurred historically due to the hospital being organised into separate clinical Divisions at the time. Maternity services were included in one of these Divisions. Participants suggested that this Divisional approach was thought to allow the management a certain amount of freedom to develop new systems and create new positions. They explained that:

> *There was a very segregated approach to managing each Division. Divisions previously were very independent … in that everyone could do their own thing (ID 9).*

> *Site A was so Divisionalised that every Division was very self sufficient … they just got on and did their own business and almost ran their own little hospital within a hospital. I think now we are seeing some problems because we had become so Divisionalised, whereas we are trying to get a more organised culture that some things will be centralised (ID 6).*

Participants suggested that the Divisional structure became problematic when the organisational restructure and introduction of the Patient Safety And Clinical Quality Program changed hospital-based clinical governance arrangements from a facility base to a centralised AHS approach. This issue is discussed in more detail later in the theme, *the Present*.

The development of an incident management system at Site A prior to the establishment of the Patient Safety And Clinical Quality Program demonstrated that there was a pre-existing safety culture within the Division. Participants suggested that this safety culture was fostered by encouraging maternity staff to report adverse incidents and then to respond to these reports, for example:

> *The system of adverse event reporting was promulgated throughout the Division and every area got a list of adverse events and we really encouraged people to report them, we wanted people to over report rather than under report … started collating the feedback from that (ID 8).*

> *We had even in an embryonic way, a good safety culture, people reported. I think we had a just culture … some of the things that were reported and dealt with, we looked after the staff (ID 16).*

There was evidence that this culture was accepted and valued by a number of the participants in the way they spoke positively about being proud of the system in place at that time, for example:

> *We had a fantastic system* (ID 1).

> *I think we were doing it pretty flawlessly before. I think our system was a good model* (ID 8).

Participants identified that the pride they had for the system was also associated with the recognition the Division had received for this innovative work from the executive management of the hospital. This sense of pride is discussed in the next theme *being valued.*

Being Valued

Participants related their sense of pride for the system they had established to being valued for this work by the hospital organisation. For example:

> *Women's and Children's [Division] was always leading the way in terms of clinical governance and I was certainly very proud of that* (ID 6).

> *It [the system] had received recognition from this prior to the outcome of its work* (ID 7).

The perception of being valued resulted in a positive attitude about the work of the Division. The issue of being valued is discussed again in a later theme *the present.* The theme, *in the past* provides a description of an established and innovative system to manage incident management and safety and quality and activities which were driven by interested individuals. Infrastructure was developed to support the system and there was evidence that the work of the Division was

recognised and valued for its innovative approach. This theme is important as it provides contextual background to the safety climate in the past at study Site A, in particular. Participants described a very different safety climate that was present during the period the study was conducted. This description is included in the theme *the present* and is presented in the next section.

6.4.1.2.2 The present

The theme, *the present* was seen to be when participants made a clear distinction between the systems to manage quality and safety activities (the system) in the past to those present at the time of the study. *The present* was identified as the time after the organisational restructure and amalgamation of the two study sites into one service and the introduction of the Patient Safety and Clinical Quality Program. This theme included four sub themes, *the organisational restructure; being in a transition; not closing the loop* and*; not feeling valued*. These themes provide a description of the safety climate in place during the study and the participants' perceptions about this domain. The four sub themes are described below.

The organisational restructure

The theme *the organisational restructure* was identified through the significant number of changes experienced at both sites, as a consequence of the organisational restructure. This included the introduction of the new computer based Incident Information Management System (IIMS) introduced as part of the Patient Safety and Clinical Quality Program. These changes specifically related to the infrastructure to support the incident management and quality and safety activities. These organisational changes occurred within the Division and at the CPIU as a result of the organisational restructure. The first of these changes was the deletion of the Quality Manager's role at Site A, for example:

> *At the end of last year we did have quality and safety meetings and we don't have them any more since the quality manager has left (ID 5).*

The deletion of the Quality Manager's position was thought to have had a significant impact on the existing system in place to manage and support IIMS and other safety and quality related activities. This impact was thought to have adversely affected the capacity to be responsive to adverse incidents at the study sites, as highlighted by the following quotes:

> *It (system) has basically ceased to exist when they got rid of the Quality Manager last year (ID8).*

> *We had a really good system in place … you know this person* [Quality Manager] *that was responsible for it, was doing a really good job, yes she had capacity to do it because of the nature of her job but, … it was working really well, they took her position away and now we're in a mess (ID6).*

The deletion of the Quality Manager position resulted from a reorganisation of a number of midwifery and management roles at the time of the restructure. This resulted in the creation of new clinical streams[70] and the amalgamation of the two sites into one service. In the restructure, participants reported that a number of senior midwifery manager positions at both sites were 'spilled' and managers became *displaced* (ID 6) whilst recruitment into the new clinical stream took place. There was a move to centralise a number of the safety and quality related functions in the Quality Manager's role. Participants viewed that these changes had more of an impact on Site A than Site B with respect to the restructure: They said:

> *Site A was more affected than Site B with it* [the restructure] (*ID 6).*

> *Getting to grips with the total restructure and … she* [Midwifery manager] *acknowledges the huge impact (ID 2).*

The impact was greater at Site A due to a high dependence on the Quality Manager's position to manage the safety and quality activities and the new IIMS system. The CPIU had previously provided support to coordinate safety and quality activities at Site B. Participants at both sites identified that they had expected an increased level of support from the Clinical Governance Unit particularly after the deletion of the Quality Manager's role. This expectation was based on the fact that the new area based Clinical Governance Units were charged with the responsibility of supporting the implementation and activities of the Patient Safety and Clinical Quality Program and would take on the roles deleted within the facilities. It was the participants' view however, that there had been a reduction, rather than an increase, in the level of support from Clinical Governance Units (CGU) as positions were also deleted in the CGU service:

> *With the restructure our clinical governance unit has now closed and it's gone to an area thing … we don't get quite the same input we used to (ID 10).*

---

[70] The reorganisation of the Area Health Service where the study took place included a realignment of clinical services into integrated services divided into three clinical networks within 12 Clinical Streams across 22 health facilities. Maternity services at Site A and Site B were included into one of these Streams.

We had a really big team and a big approach and then they changed the system…we went from twelve down to six people and not just to do Site A, but Site B and the other part of the area as well (ID 9).[71]

I think we thought we'd get some help from the Clinical Governance Department in the hospital but that doesn't seem to be happening (ID 1).

Participants identified that, in addition to a reduced workforce in the new Clinical Governance Units, they were unable to provide support at that time as they were also in a transition period and, *still sorting themselves out ... the systems still aren't in place (ID 6).* The changes to the levels of Clinical Governance Unit support from a hospital-based system to an area based were viewed as problematic, as there was a perception of having a reduced capacity to maintain the IIMS system and progress the implementation of the Patient Safety and Clinical Quality Program and consequently maintain a safety culture. For example:

You can't do quality unless you have people at the coalface doing quality and you can't centralise that to an area base unit, it's ludicrous (ID 8).

Participants also suggested that, in the transition from the CPIU to the Clinical Governance Units, the Division had been forgotten by the AHS. This was thought to be due to a view that the maternity service within the Division was not seen as an acute service and not a priority area requiring support. It was suggested that this related to a lack of recognition about what a maternity service was. This lack of recognition was thought to result in maternity receiving reduced support from the Clinical Governance Units:

I think they sort of forgot about Women's and Children's [Division] *(ID 6).*

I think generally there is very little recognition of the differences of maternity with the rest of the hospital (ID 10).

I think Women's and Children's is still seen as a bit of a … you know, not necessarily part of the acute, mind you we have had dreadful things happen so it's interesting, we just don't seem to have the profile (ID 6.)

[71] Name of hospitals removed from confidentiality purposes.

The lack of profile for maternity services in relation to receiving support from the Clinical Governance Units was also thought to be related to a focus on supporting government priorities that focused on the acute hospital setting.

In a transition

The theme *in a transition* described the state of transition between the previous system and the establishment of a new system to support incident management (IIMS) and safety and quality activities. Participants used phrases like:

> [We] *were in a transition* (ID 5)

> … *till we get the new structure sorted* (ID 13).

A number of participants identified that they were *very concerned, and* worried in the transition period as there was no longer *a formal system* (ID 5) in place to be responsive to incident management. This concern was related to a perception that the system had fallen over after the restructure, for example:

> *Someone left and the whole thing fell over (ID 6).*

> *Not having the formalised process of reviewing so that sort of impacts … it's almost like just holding everything in at the moment. I feel like things are going to explode … you can only stay on top of the quality and safety for so long (ID5).*

These quotes support the notion that incident management activities were something that needed regular attention otherwise the system could *fall over* (ID 6). The solution to keep 'on top' of these activities was that the roles of the previous Quality Manager at Site A and the Clinical Practice Improvement Unit at Site B were *devolved down* (ID 8), *metered out (ID 7)* and *dished out* (ID 5) to the midwifery unit managers. These roles were added to their existing roles. A common perception raised by participants in response to the reduction of support and infrastructure to do safety and quality work was that it had *fallen on them* (ID 1) to do this work and it had *to be absorbed* (ID 3) into their normal jobs. They said:

> *Cause it's something else to do … and in a small unit … it falls on the same people (ID11).*

> *It seems to have fallen on my* [manager] *shoulders (ID 1).*

Participants suggested that new work pressures had been created for the midwifery unit managers when they took on the extra responsibility for incident management. This additional work pressure was as a result of the other competing roles that these managers had running busy clinical units on a day to day basis and trying to be responsive to incident management. This was highlighted in the following quotes:

> *Finding the time to do everything at the moment, that's interesting (ID 2).*

> *You've got to have time to sit down and be actually doing it* [incident management] *but when you are running a busy unit, being pulled in multiple directions and their* [managers] *day goes extremely fast* (ID 7).

> *Clinicians, no matter how hard they try, are not going to be able to manage their data or analyse it or get involved in quality projects. They are looking after patients, there's a presence needed in the hospital to manage the administrative side of, running the, of administering the quality policy procedures quality agenda* [sic] *for busy clinicians that's gone (ID 16).*

This last quote highlights the changes in responsibility for incident management from dedicated staff and the Clinical Practice Improvement Unit to midwifery unit managers, this issue was seen as problematic. This will be discussed further in the *closing the loop* theme later in the chapter.

These quotes highlight the increase in workload that the midwifery managers took on after the restructure of positions. It was their view that the increase in workload was a direct result in the decreased support that resulted from the organisational restructure. These quotes also provide some insight into the midwifery managers' concerns about the increasing workload, the complexity of their roles and their ability to do all of these tasks. Whilst there was concern about the increased workload, participants recognised that managing safety and quality activities was their responsibility:

> *I think everyone is responsible for it we can't escape from that fact* (ID 7).

> *It's our role to ensure safety and quality is implemented … you would be negligent as a manager, it's actually come down to the individual manager (ID 2).*

These comments do suggest a perception that, incident management was an additional burden to the midwifery unit managers and often not the first priority in their day as articulated below:

> *I sometimes wonder whether or not this sort of thing is as much a priority as it probably once was, certainly the day to day management of the unit does take precedence over such things (ID 7).*

> *Everyone seems to be doing so much more, so something's going to be left out (ID 5).*

These quotes provide insight into concerns raised by participants that that the demands of running a busy maternity service had resulted in incident management being managed in a less systematic way than in the past. Participants identified that this approach often resulted in incidents no longer being followed up or *not closing the loop*.

Not closing the loop

Closing the loop was identified by participants as the process of reporting, analysing, managing and providing the feedback from the outcomes of adverse incidents. This theme was evident when participants identified that these processes were no longer happening in a systematic way, in essence, not closing the loop. Participants highlighted that, at the time of the study, incident management particularly related to the IIMS system was now being dealt with in a *haphazard* and *ad hoc way* (ID 7). This was suggested to be in part due to the time constraints discussed earlier but also because the managers were unfamiliar with the process involved in incident management so *things take longer* (ID 3). Participants suggested that following up incidents individually at unit level rather than taking a whole of Division coordinated approach often meant they were unaware of other similar incidents in other areas. This approach was seen as duplicating effort and was not time efficient. This lack of a coordinated response was thought often to result in incidents not being followed up, analysed, managed and fed back appropriately. In this way there was *no closing of the loop*, as identified by a number of participants:

> *Unfortunately we don't have from IIMS at the moment any feedback from the big picture. You don't know what's happening from medical [other areas of the hospital] what's been actioned and unfortunately that's happened with the restructure and the changing of peoples' roles (ID2).*

> *I don't know that there is really a tight system, have we started actioning it, as in closing the loop, really following up on things (ID 6).*

I don't know, there is never any closing the loop as it were, feedback (ID15).

A number of participants highlighted that an important component *of closing the loop* was providing feedback to the clinical staff on the ground about the outcome of incident reports and incident management. Providing feedback was thought to be important to engage staff and to reassure staff they were being heard. They said:

You have to close the loop I think and if you don't close the loop and feedback to the staff then you are not going to get the reports for sure (ID 11).

[It] Is important as staff feel there's an outcome and are influencing change, they are listening to what they are saying (ID 10).

Participants suggested providing feedback about the outcome of incidents that had occurred was an important strategy to facilitate change such as in practice when this was required. It was suggested that staff were more likely to make changes to practice if they understood the reason for it:

If people understand why you are making change to practice, one they are more likely to do it, but they are going to embrace it as well because they can see a reason behind it (ID10).

There was evidence that some processes, such as a weekly forum for midwives and doctors to discuss clinical management, were still functioning at Site A but not Site B. This informal forum was described as being *well entrenched* (ID 7) and an opportunity to examine cases and identify practice changes. The function of the forum was not to feedback all the reported incidents rather it was described by a participant as a selection *of interesting cases* (ID 15). Participants also identified that there had been attempts to communicate policy changes to staff via email, communication books and sometimes on a one-to-one basis. The success of communicating this way was questioned by some participants as there was no guarantee that the staff would read or change their practice based on this communication only. One participant said:

It's not adherence to policy as such but changes are made to a policy for a reason, I find it frustrating to get staff to be actually reading these changes, it's really difficult (ID 2).

Despite these systems, a number of participants felt that there was no longer adequate feedback to clinical staff in response to the outcomes of incident management. A number of participants identified that, despite reporting incidents, there never seemed to be *closing the loop* with feedback. This lack of feedback about reported incidents was described by some participants as, the '*great big ether'* (ID 10) or '*the black computer hole'* (ID 15) as described below:

> *IIMS is great, you put in your report but it just goes into the great big ether and nothing really happens with it (ID 10).*

> *Without feedback forget it! If you can't guarantee feedback in a regular fashion … don't even bother to collect the data. If you can't do the feedback bit because it goes into a black hole in their minds and they are absolutely right (ID16).*

Participants said the lack of feedback was a disincentive to make the effort to report adverse events, as they perceived their efforts were not valued, or worthwhile. This was particularly said to be the case when midwives had a number of competing work priorities as articulated in the following quote:

> *Staff who are on the grass roots level who are stressed after a difficult shift, a fresh stillbirth and emotional time, staff phoning in sick will think, it's worth that extra ten minutes to fill out one of these forms because something is going to be done or we are going to get some feedback but, if it just goes into a black computer hole and nobody gives you any feedback then you know, people are not going to do it (ID 15).*

These quotes provide insight into a change in the culture of reporting errors at the study sites. A positive culture toward reporting is an important factor towards having a positive safety climate. This change in culture was not interpreted to be due to a lack of encouragement or acceptance about reporting error rather it was due to limitations in the systems' capacity to respond to incident reports. A number of participants questioned the priority placed on incident management and safety and quality activities within the organisation. Participants questioned the level of commitment and felt that the organisation no longer valued these activities. *not feeling valued* is the next sub theme.

Not feeling valued

Participants perceived that the previous work that the Division had undertaken to develop a responsive incident management system and safety culture was no longer valued by the organisation. They reported:

> *We had our systems and it worked very well … I think we lead the way and got kudos for that, and then it was almost like, well what was that worth … the position went and we are in a hole (ID6).*

> *Everything has worked well here for a number of years so all the areas got brought up to scratch … there is not really any commitment from a level, its hard to see how it will happen really (ID 8).*

Participants identified that perceived lack of commitment to provide support had *devalued what they were doing (ID 6).* Participants often used the example that the reduced or deleted infrastructure which were seen *to be vital roles (ID 7)* to progress the safety agenda and create positive safety cultures provided support for the *not feeling valued* theme. It was also suggested that when the organisation is perceived as not valuing these activities it can result in these staff not behaving in a way to way that is conducive to creating positive safety cultures as highlighted by the following quote:

> *It's not valued [Safety culture] and that not valued cuts across not only the message it cuts across the sorts of behaviours and attitudes that make up a quality culture in a hospital. It's a behaviour that's you know, that their not valued behaviours and attitudes that we could associate with quality and safety culture, are not valued so people stop doing them (ID16).*

In summary, the theme *in the present* highlighted changes to the infrastructure to support incident management and safety and quality activities at Division and Clinical Governance Unit levels. As a consequence of these changes, incident management and safety and quality activities were not managed in a systematic way and this had resulted in a perception of not closing the loop. Participants questioned the organisational commitment and value placed on undertaking safety and quality activities and the development of a positive safety culture.

6.4.1.2.3 Barriers to the Incident Information Management System

The third theme was, *Barriers to the Incident Information Management System* (IIMS). IIMS was introduced as the incident reporting and management system component of the Patient

Safety and Clinical Quality Program. This theme emerged when participants described specific processes of incident reporting at the study sites. Incident reporting and management is one component of having a safety climate. The survey data identified the need to improve processes for incident reporting and interview data provided evidence of the barriers to incident reporting. These are presented in two sub themes, *barriers to reporting* and *not on the radar*. These provide insight into why participants suggested that incident reporting needed to be improved.

Barriers to reporting

The first sub theme was *barriers to reporting*. One barrier to reporting on the IIMS system was a general lack of awareness by the staff about what should be reported. There seems to be limited guidance within the IIMS policy about what constitutes a maternity reportable incident as highlighted in the following quote;

> *I don't think there is really a good notion of what an IIMS is and that is an area that we really need to look at, actually what are reportable incidents (ID 10).*

This lack of awareness about what constituted a reportable incident was thought to have created a situation where clinicians tended to report minor incidents rather than the more serious incidents, for example:

> *I think it could probably be used more often than it is and I do find that ... some times that the less important things are reported than the more important things (ID 3).*

Participants suggested that there needed to be a system similar to what was used in the past where a trigger list reminded clinicians when a maternity-related incident report should be completed. This trigger list was no longer used with the IIMS system. There was also a suggestion that the IIMS system should be used as a notification system to the hospital administration when there were issues of increased patient acuity and when there were no inpatient beds, both which have the potential to impact adversely on the women using the service. For example:

> *You know women having to wait for beds, for example if the delivery suite is busy and there aren't enough beds for them so they have to wait in the corridor, that's not satisfactory. I think we should fill out an IIMS form for that. And the management knows perhaps that we are booking too many women, or we can't deal with the capacity of the women that are using the service (ID 15).*

Using the IIMS as a notification warning system when the service was too busy recognised the potential of an unsafe situation. Another theme related to barriers to reporting incidents on the IIMS. These barriers often related to using the IIMS itself. These barriers related to technical difficulties while entering and saving reports and the restrictiveness of reporting maternity related incidents, for example:

> *It's the reporting functionality within IIMS itself* [that] *it is not great (ID 17).*

The technical difficulties with using the IIMS system were highlighted as reasons for not entering or completing incident reports, for example:

> *Sometimes the more important things … may tend to get missed on the computer system cause I've seen girls [midwives] out there that have half put it* [the report] *in and then they can't save it and then say, 'I can't be bothered' doing it again (ID 3).*

In addition to these types of technical difficulties identified in the quotes above, the limitations of the available fields and limited flexibility to document maternity related incidents were highlighted as a further barrier to midwives reporting on the IIMS. One participant said:

> *There are certain fields that are compulsory. Sometimes the fields don't really fit with what you want to write. You perhaps want to write a story and you have a broad categorisation like a clinical incident that was either fetal or maternal and in actual fact it might have been a bit of both, but it is all very much drop down boxes (ID 15).*

The technical difficulties with the IIMS system were highlighted as an issue for midwifery unit managers who were required to generate monthly reports at unit level to identify any trends with incidents:

> *All the data is available to the managers and it can be easily extracted but sometimes they need help with developing the tools to do that, and the current tools within IIMS are a bit clunky but we're are working very much on making the reporting much easier particularly for frontline managers because the intention is that they will do it on a weekly basis (ID 17).*

This quote highlights not only the technical difficulties the midwifery managers faced with generating local IIMS reports for incident management, but that they also needed help to be able

do this. It was suggested that this help should have been available from the Clinical Governance Units but was not available, as highlighted by:

> *With the restructure our clinical governance unit has now closed and it's gone to an Area thing … we don't get quite the same input we used to (ID 10).*

> *I think we thought we'd get some help from the clinical governance department in the hospital but that doesn't seem to be happening (ID 1).*

These quotes support the view discussed in the theme *not closing the loop* that managing the requirements of IIMS was now the responsibility of the midwifery unit managers. The midwifery managers experienced other barriers in trying to manage the requirements of the IIMS system. These relate to technical problems with the system and a lack of support from the Clinical Governance Units resulting in these activities taking longer. These barriers were in addition to the time pressures and competing priorities that these midwifery unit managers had to manage on a daily basis. The presence of these barriers were some of the reasons 'the loop' could no longer be closed for incident management at the study sites.

Another barrier to incident reporting was that entering IIMS reports was not seen as a priority and was *not on the radar* of the staff particularly the midwives. This was also a barrier to incident reporting at the study sites.

Not on the Radar

A number of participants suggested that one reason midwives may not report incidents on the IIMS system was that they just *don't think [about] IIMS* (ID 13), as it, *wasn't on their radar* (ID 14). This was thought to relate to the fact that whilst most midwives were very aware of their responsibility *for the safety of their patients* (ID 3*)* and *obligation to provide a safe service* (ID 15), when it came to their responsibility to report incidents, there was a lack of awareness of their role. This was illustrated where a midwife who said *am I responsible for that as well?* (ID 3). Some of the participants suggested that there was also a perception from the midwives that incident reporting was the role of the managers:

> *They don't see it as a problem that needs to go through an official system to be addressed so they think that by telling me that that is an OK thing and that's my responsibility to address it* (ID 13).

The midwifery unit manager participants identified that they have a role in reviewing all IIMS reports from their clinical unit and verifying the assigned severity codes (SAC)[72]. This role was highlighted as a potential barrier to midwives' reporting incidents. This barrier was related to the fact that midwives may not report some incidents due to a perception that they may be labelled as:

> *Complaining or, … unable to manage the shift or manage the workload. Therefore, if they are constantly putting in IIMS forms then the manager will think that they are not fit to run the shift* (ID 15).

Reporting to direct frontline managers was seen to have potentially *disciplinary* (ID 10) consequences for the midwives who report incidents. The perception of potential disciplinary consequences acting as a barrier to reporting incidents was also thought to be in part due to a perception of a blame culture where, *if you put the IIMS in then it must be your fault (ID 13).*

Conclusion

The results presented under the Safety Climate domain provided a description of the past Safety Climate at Site A being perceived as robust, responsive and valued by the organisation. There was also evidence of an emerging safety culture. This was in contrast to the safety climate perceived to be present at the time of the study which was no longer seen as being responsive or closing the loop on incident management and not perceived as being valued by the organisation. The safety climate was adversely influenced by a number of factors. These included the organisational restructure resulting in reduced capacity to support incident management and safety and quality activities at the Division and Clinical Governance Unit. The results from the interviews support the safety climate score of 64 recorded in the participant Safety Attitudes Questionnaire. The interviews also provided further insight to external factors which were influencing the Safety Climate domain such as the organisational restructure and the Patient Safety and Clinical Quality Program that were not apparent in the survey alone.

[72] Severity Assessment Codes is a matrix system in the IIMS system to classify the severity of an adverse incident. Scores range from 1 being the most severe to 4 being the least severe. The SAC matrix is calculated by staff when they report the incident into the IIMS system. The SAC score is then verified by the unit manager. All SAC 1 incidents sent directly to the NSW Department of Health and require a Root Cause Analysis investigation.

6.4.2 Teamwork domain

The next section presents the results of the second domain of the safety culture, Teamwork. The Teamwork domain is considered to be the level and quality of collaboration and communication between health professionals working in the same clinical environment (Sexton et al., 2004).

6.4.2.1 Survey Results

The Teamwork domain had a mean score of 3.7 (SD 1.1) and 100 point score of 70 points. It was one of the higher scoring domains (Table 22).

Table 22: Safety Attitudes Questionnaire results for the Teamwork domain combined sites

Safety Domain	Mean (SD)	100 point score	Recommended responses for improving patient safety
Teamwork	3.7 (1.1)	70	Simulations Obstetric drills Improved communication Handover teaching Enhancing documentation

The Teamwork domain was measured by six questions. There were high levels of agreement that midwife input was valued (80%); that physicians and midwives work well together as a well coordinated team (71%) and it was easy for personnel to ask questions when they do not understand something (85%). These results indicate high levels of collaboration and teamwork. However, there were low but notable levels of agreement that it was difficult to speak up if they perceived a problem with a patient (25%) (Table 23).

Table 23: Safety Attitudes Questionnaire for questions measuring the Teamwork domain

Teamwork	Mean	Overall percentage agree	Overall percentage disagree
Midwife/nurse input is well received in this clinical area	4.2	80	5
In this clinical area, it is difficult to speak up if I perceive a problem with patient care	2.5	25	59
*Disagreements here are resolved appropriately (i.e. not who is right but what is best for the patient)	3.7	62	10
I have the support I need from other personnel to care for patients	3.8	66	10
It is easy for personnel in this clinical area to ask questions when there is something that they do not understand	4.1	85	3
The physicians and midwives/nurse here work together as a well- coordinated team	3.8	71	15

This table provides general descriptive information at item level (Likert scale: 1= Disagree Strongly, 2=Disagree Slightly, 3= Neutral, 4=Agree Slightly, 5=Agree Strongly); overall mean; Overall percentage Agree (Minimum Agree - Maximum Agree); Overall percentage Disagree (Minimum Disagree - Maximum Disagree).

*There were 3% participant data missing for this question. There were no data missing for the remaining questions in the Teamwork domain.

Discussion regarding patient-related problems mostly occurs during handover, consultation and escalation between midwives, resident medical officers and obstetricians. The results of the quality of experience of communication and collaboration questions with these health professionals were presented in Table 17. These results included, higher levels of collaboration and communication with midwives (76%); residents and registrars (70%); and lower levels of collaboration and communication with obstetricians (54%); and paediatricians (50%). This finding was supported by responses to the open ended questions about how patient safety could be improved. A number of respondents recommended improving handover and communication between clinicians, clinical scenario simulation and obstetric drills to improve teamwork and response to emergency situations (Table 22). Communication, specifically during handover and escalation, was a key theme.

6.*4.2.2 Interview Results*

Need for communication

The need for communication was the main theme that emerged from the interviews in relation to Teamwork. This communication related to perceived problems with handover between teams and the escalation of problems relating to the care of women and their babies between midwifery, junior medical and obstetric staff. One participant said:

> *We don't hand [over] patients over very well between teams particularly in big hospitals. We don't hand over responsibility well from one shift to the next, also in maternity in between teams so patients fall between the gaps (ID 9).*

This quote highlights a general perception that failure to hand over appropriately has the potential to result in poor outcomes for women and babies. This issue was thought to be of particular significance in maternity services as one participant said:

> *When something goes wrong in maternity its absolutely disastrous for mums and bubs (ID 17).*

This quote highlights a view raised by a number of other participants of the need for consultation or escalation to an obstetrician when a woman's clinical condition changes. Recognition of when to consult and the availability of supervision for junior medical officers is presented later under the Working conditions domain. Participants identified that there were issues relating to a lack of process about when to escalate. It was suggested that often there were limited protocols about when escalation to obstetricians should occur, for example:

> *These just absolutely no standard and then when you do actually find there's a problem how do you escalate that, so that's common across all clinical disciplines and would have an applicability to maternity* (ID 17).

> *We don't have good escalation communication protocols … they are too scared to ring the doctors and VMOs let alone the nurses (ID 9).*

These quotes highlighted that escalation was a problem at the study sites. The last quote highlights a view that fear was a reason for not escalating problems to consultants (VMO). One participant suggested this fear was related to a perception that junior doctors were not coping:

This is the age-old problem, you have a very junior doctor who doesn't want to call a consultant [VMO]… because of their career… they don't want the consultant [VMO] to know that they can't cope … and it's the same problem with the registrars as well (ID10).

It was suggested that reluctance to go over the heads of the registrars was also a factor for midwives not escalating to VMOs. Fear in this case was related to a perceived position of authority the obstetric VMOs had in the clinical setting. This resulted in a lack of familiarity with the consultant where the midwives felt comfortable to pick up the phone and call, for example:

I think its an unwritten rule more than anything else that a midwife could ring the consultant on [for the day] if they thought there was an issue … but it happens rarely and [the midwives] are quite reluctant to go above the heads of the registrars (ID 10).

I don't know, maybe fear that the senior doctors are held in high esteem. Perhaps these things happen at night-time, evenings … fear, fear and culture I suppose, and that there's not an equal partnership … and the senior clinicians are not coming in so it's hard. It's hard that if you don't see them on a regular basis that you can pick up the phone and phone them and ask them to come (ID 15).

Teamwork and good communication are often associated with clinicians who are familiar and trust each other. The quote highlights a lack of onsite obstetric VMO presence at the study sites. This lack of onsite presence was suggested to be a reason why the midwives and the obstetricians were not familiar with each other's work and this has acted as a barrier to good communication and timely escalation. A lack of VMO presence within the study sites, particularly the labour and birth areas, was also identified as a barrier to supervision and decision support. Another view was that midwives should be more confident with their clinical assessments and more assertive in the way they communicate with the obstetric staff who are not on site, for example:

Communication can be improved, sometimes I think it's the interprofessional communication … I would like to see midwives' voices [be] more prominent … the midwives are looking after these women and they sometimes know more than the doctor who just breezes in or is on the telephone (ID 10).

This quote also highlights a lack of onsite medical presence which may impede communication between team members and decisions about clinical care within the team at the study sites. The issue of teamwork, specifically in situations of obstetric emergency, was being addressed across the study sites in response to a number of adverse incidents. This took the form of developing an escalation protocol and having mandatory annual obstetric emergency drill training for all midwives. This approach indicates that there had been a response to the outcomes of some previous adverse incident reports through, *Get*[ting] *all staff through* [mandatory training] *every year to improve the skills and teamwork of the staff (ID 13)*. It was not clear if the medical staff were also undertaking this training.

This section presented the results of the theme *need for communication* which highlighted barriers to communication and escalation of care when problems arise. The barriers to communication were identified as fear and a lack of familiarity between team members. This concludes the Teamwork domain. The following section presents the Perceptions of Management domain.

6.4.3 Perceptions of Management

Perceptions of Management relates to management decisions and actions related to staffing, acuity and equipment.

6*.4.3.1 Survey results*

The Perception of Management domain had a mean score of 3 (SD 1.2) and a 100 point score of 51 (Table 24). This domain was the lowest scoring of all domains.

Table 24: Safety Attitudes Questionnaire results for the Perceptions of Management domain

Safety Domain	Mean (SD)	100 point score	Recommended responses for improving patient safety
Perception of Management	3 (1.2)	51	Adequate equipment Adequate/ more staffing Improve skill mix

The Perceptions of Management domain was measured by four questions. There was a low level of agreement that the hospital administration supported clinicians in their daily work (28%) and that the clinical area was staffed adequately to handle patient numbers (24%). However, almost two thirds of participants agreed that the hospital did not knowingly compromise the safety of patients (60%). There was a negative perception about management decisions related to the adequacy of staffing and support in the clinical areas (Table 25).

Table 25: Safety Attitudes Questionnaire measuring the Perceptions of Management domain

Perception of Management	Mean	Overall percentage agree	Overall percentage disagree
Hospital administration supports my daily efforts	2.9	28	35
Hospital management does not knowingly compromise the safety of patients	3.6	60	19
The level of staffing in this clinical area are sufficient to handle the number of patients	2.4	24	68
I am provided with adequate, timely information about events in the hospital that might affect my work	3.3	46	22

This table provides general descriptive information at item level (Likert scale: 1= Disagree Strongly, 2=Disagree Slightly, 3= Neutral, 4=Agree Slightly, 5=Agree Strongly); Overall mean; Overall percentage Agree (Minimum Agree- Maximum Agree); Overall percentage Disagree (Minimum Disagree-Maximum Disagree).

The negative perception toward management was further supported in the open-ended responses about how safety could be improved. A number of respondents recommended increasing the staffing levels and improving the staff skill mix in the clinical areas to improve safety (Table 24). Similar themes were identified in participant interviews.

6.4.3.2 Interview results

A key theme from the interview data in the Perceptions of Management domain was, *ensuring a safe unit*.

6.4.3.2.1 Ensuring a safe unit

Participants identified that providing adequate staffing levels with the appropriate skill mix in response to rising acuity were all essential components to ensure a safe maternity unit. *Ensuring a safe unit* was conceptualised by one participant in the following way:

> *The proper systems in place [to provide a safe service]. We are providing a service, so you have to have the proper systems in place to provide the service, and that means adequate staffing, experienced staff, medical cover that we require, and the things we need to do our jobs I think they are the things that are important (ID 11).*

This quote highlighted the importance of ensuring adequate levels of experienced midwifery and medical staff to provide safe levels of staffing for the maternity service. This combination

of staff was often referred to as the right skill mix and was an important component of a safe and quality service, for example:

> *I guess the quality and safety thing is all about the skill mix thing (ID 5).*

Participants identified that ensuring the safe unit was the responsibility of the midwifery unit managers. Ensuring adequate staffing and the right skill mix was presented as an ongoing challenge to providing the safe service at the study sites. These challenges were suggested to be due to the presence of an increased level of acuity [complexity of cases] in response to the two sites amalgamating, and an overall increase in birth numbers. Participants said:

> *Staffing impacts on safety and quality because you have got a lot of woman dependency [increased complexity of cases] or a lot of caesareans (ID 2).*

> *Acuity is higher we are getting higher risk patients coming from Site B … our birth rate is increasing but our staffing numbers are staying the same, we are having trouble trying to get a safe roster (ID 5).*

The last quote highlights the changes to the complexity of cases being taken on at Site A after the amalgamation with Site B. This increased complexity also corresponded to an overall increase in births experienced across the state at that time, without an increase in staffing levels. The concerns with trying to get a safe roster was thought also to be compounded by a number of vacancies within the service at the time of the study, for example:

> *I don't have the staff, I am eight full time equivalents down [midwives] and of course that goes into doing the allocations[73] and making sure all the areas are covered (ID 5).*

There were attempts to recruit into these vacant positions but the process for recruitment was slow and there was an overall shortage of experienced midwives available. The lack of available experienced midwives to fill positions had meant a greater number of newly graduated midwives were recruited. Whilst these midwives were welcomed, there were concerns raised that their lack of experience meant they needed clinical support from more experienced midwives. The need for this support restricted their flexibility when it came to rostering the right skill mix each shift as articulated by two participants in the following quotes:

---

[73] Allocations relate to the rostering of midwifery staff to each clinical area for each shift.

There are so many new graduates that are rotating through … I can only absorb so many less experienced midwives (ID 5).

We are struggling to get a good skill mix all the time (ID 6).

The concern with ensuring the right skill mix was because they felt less experienced midwives may fail to recognise situations which had the potential for adverse incidents to occur:

Not that incidents have been related to skill mix but sometimes [it's]'*by the grace of god we go'. Subtle things can get missed, not through negligence, but 'they don't know what they don't know* (ID 10).

The unpredictable nature of maternity services was also identified as a challenge when it came to providing a safe roster. As acuity increased during the day, there was need to roster extra staff or engage casual staff at short notice, for example:

Acuity and staffing levels in maternity are very unplanned and your staffing levels are very graded in this economic climate [budget constraints] (ID 2).

It was often difficult to employ casual staff due to budget restraints. The midwifery managers identified that providing a safe midwifery roster meant negotiating with the other midwifery unit managers in maternity to get the right skill mix on a daily basis, for example:

We can negotiate, so managing the right skill mix is a big thing I think for quality and safety (ID5).

We'll do a bit of a juggle… do a bit of a swap with some negotiation (ID3).

Doing a bit of wheeling and dealing at the moment (ID 5).

Negotiation was a regular activity for the midwifery unit managers and often very time consuming. This issue once again highlights a recurring theme across a number of domains identifying the complexity of and time pressures on the midwifery unit manager's role to ensure a safe service.

An additional role identified in the interviews was the midwifery manager's role in ensuring the appropriateness of the medical cover by junior resident and registrar staff after hours. Whist the

roster for medical staff was the responsibility of the medical administration, participants identified that a lack of a coordinated approach to rostering often resulted in inexperienced or limited medical cover overnight. This was seen as being:

> *Unsafe to have that sort of cover for our women and … babies* (ID 11).

In such situations, the midwifery managers organised alternative arrangements for medical cover or ensured more experienced midwifery staff were on the shift as in the example below:

> *We got a resident that was rostered for overnight with no paediatric resus [resuscitation] at all so he was on for the hospital for paediatric cover. He's a fairly senior resident and sensible enough to come [to me] in the morning and say, guess what they have done to me? So we were able to rectify what we could during the day. We rang the VMO and said this is the case and we went upstairs and talked to medical admin [administration] and tried to sort it out that way. There was nothing we could do at that stage I actually went to check to see if there was a resident in A&E [Accident and Emergency] that had some level of paediatric and there was, and in that case I checked my staffing to see what I've got on the floor as far as midwives that were covering* [rostered on] *special care nursery (ID 11).*

This quote provides further evidence of the wide scope of the midwifery manager's role to ensure a safe unit, not only for midwives but for medical staff as well.

This section has described the challenges including, increasing acuity, birth rates, staff vacancies and deceased skill mix which create barriers to ensuring adequate and safe staffing for the study sites. These challenges help to provide some understanding about the reasons for the poor safety domain scores in the Perception of Management domain. The following section discusses the next domain Working Conditions.

6.*4.4 Working Conditions domain*

The Working Condition domain relates to factors such as staff training, levels of supervision and disciplinary policies.

6.4.4.1 Survey results

The Working Conditions domain had a mean score of 3.4 (SD 1.2) and a 100 point score of 60. It was the second lowest scoring domain (Table 26).

Table 26: Safety Attitudes Questionnaire results for the Working Conditions domain

Safety culture domain	Mean (SD)	100 point score	Recommended responses for improving patient safety
Working Conditions	3.4 (1.2)	60	Improve supervision of junior staff by educators and consultant medical staff VMO presence onsite Improve orientation Ward rounds Improve support processes

The working Conditions domain was measured in four questions. There was a low level of agreement that the hospital did a good job training new personnel (59%) and that trainees were supervised appropriately in the clinical area (55%). There was also a low level of agreement that the hospital dealt constructively with problem physicians and employees (29%). These results indicate a negative culture towards supervision and training (Table 27).

Table 27: Safety Attitudes Questionnaire for questions measuring Working Conditions domain

Working Conditions domain questions	Mean	Percentage agree	Percentage disagree
This hospital does a good job of training new personnel	3.5	59	24
All the necessary information for diagnostic and therapeutic decisions is routinely available to me	3.8	70	9
This hospital deals constructively with problem employees and physicians*	2.9	29	26
Trainees in my discipline are adequately supervised*	3.4	55	29

This table provides general descriptive information at question level' (Likert scale: 1= Disagree Strongly, 2=Disagree Slightly, 3= Neutral, 4=Agree Slightly, 5=Agree Strongly); Overall mean; Overall percentage Agree (Minimum Agree- Maximum Agree); Overall percentage Disagree (Minimum Disagree- Maximum Disagree)

*There were 2% participant data missing for these questions. There were no data missing for the remaining questions in the working conditions domain.

The negative attitude toward training and supervision of junior medical staff and student midwives was further supported by responses to the open-ended questions about how patient safety could be improved. A number of respondents recommended that improving the supervision and support for junior medical staff and student midwives would be by increasing the onsite presence of Visiting Medical Officers (VMO), in particular, and access to midwifery educators (Table 26). Supervision of junior medical staff and the role of the VMO were also identified as themes in the interview data presented in the section below.

6.4.4.2 Interview results

The lack of adequate supervision was the main theme from the interviews in the Working Conditions domain. There was a sub theme relating to the organisation of senior medical staff, that is VMO which was commonly raised in association with supervision.

Lacking supervision

The theme supervision was related to a perception that, at both sites there was, *a lack of supervision from senior clinicians (ID 15)* evidenced by the following quotes:

> *If you ask me the biggest risks in the hospital is poor supervision of JMOs [Junior Medical Officers] … once the sun goes down that hospital is a scary place, we don't supervise them, they're inadequately resourced in terms of decision support, policy and procedures of what to do out of hours (ID 9).*

> *A lack of supervision from senior clinicians is evident I think there's no pre-empting or anticipating and sort of management plans in place, it's a case of get on with it and call me if you get unstuck (ID 15).*

These quotes reflect a concern raised by a number of participants that, in the maternity setting, a lack of appropriate clinical supervision can result in junior medical officers (JMO) coming *unstuck* (ID 15). Becoming 'unstuck', specifically related to a perception that VMOs did not discuss labour management plans in the event that a woman required medical intervention which the junior medical officers could refer to:

> *I think that junior doctors should be supported with plans in place as we know labours can carry on and on and on. Are you going to put syntocinon up in four hours or what are you going to do? But, I think if there is nobody to refer to they tend to muddle on, when they are coming unstuck they will call and then rarely do the bosses* [VMO] *come in (ID 1).*

> *I don't see consultants* [VMO] *making plans pre-empting problems asking what they are going to do and it tends to be 'give us a shout' and give advice down the telephone instead of coming in (ID 15).*

These quotes highlight another concern that was often raised by participants that, supervision and clinical advice was given over the phone or they were encouraged to *give us a shout*

(ID 15) rather than the VMO being present in the clinical areas to provide advice in person. In the birthing areas, the perceived lack of onsite senior VMO presence was seen by a number of participants as limiting the ability to provide timely care to women in labour, for example:

> *A clinical situation escalating so quickly that there's not time to get on the phone or that the consultant [VMO] actually needs to be onsite rather than on the end of the phone and getting them to come in and actually care for the woman in that situation is difficult (ID 1).*

This quote highlights a concern that at times getting some VMOs to come in to the hospital when they were on call for the maternity service was difficult. However, some participants suggested that this was not a problem with all VMOs rather, that it was dependent on the individual:

> *It depends on who it is if they [will] come in (ID 5).*

> *We have some doctors who are far more available than other doctors. I think it's a huge problem (ID 10).*

A number of participants suggested that this problem related to a lack of understanding by some VMOs about what their responsibilities and roles were in relation to supervision of junior medical staff and consultation for women and babies whilst on-call, for example one participant said:

> *A lot of the VMOs are on call and they don't believe they have to come in ... it's this complete lack of understanding or it hasn't been articulated to them (ID 17).*

A number of participants suggested that the lack of VMO presence was related to time pressures and competing priorities of their private practices. VMOs were contracted to provide consultation services in addition to their own private practices. There was also a view that VMOs perceived their role as giving advice rather than being present as highlighted below:

> *[They are] In private practice running private clinics in private hospitals and they are [also] VMOs, Visiting Medical Officers and that when they are on-call they are hoping that they are just there for consultation and advice giving. I think that is how they see themselves (ID 15).*

Another view raised was the way in which VMOs were employed in NSW. This is as *contractors* providing an on-call consultant service on a roster system. This was seen to be a contributing factor to their limited supervision of junior medical staff. As contractors, *the VMOs have very little contact with the actual hospital* (ID 8) and were, *only in the hospital for a very short time* (ID 10) during the course of a day. The VMOs had limited contact or responsibility with the day-to-day activities of the maternity service or the training of junior medical officers. These factors, in combination with competing priorities of their busy private practices, were also thought to contribute to a lack of engagement and commitment to the organisation:

> *These people [VMOs] are supposed to be providing leadership … when in point of actual fact they are just focused on their own private practice and they don't see an alliance or commitment to the organisation so I think that's a huge gap (ID 17).*

The way in which clinical supervision is provided though the contractual on-call agreement with VMOs seems to create an additional barrier to the development of a positive working climate in the study sites. A limitation of this study is that there was little opportunity get the views of the VMOs at the study sites, as they were invited, but chose not to participate, in either the survey or the interviews. Whilst this limitation is acknowledged, there was a strong theme that the VMO model in relation to supervision of junior medical staff and the presence of these doctors in the clinical setting was challenging. This was identified to have the potential to impact on the safety of care for women in this setting.

This section has discussed the results of the Working Conditions domain. Supervision of junior medical staff was identified as being problematic in relation to clinical care. The need for supervision of junior medical staff and midwives for that matter relates to their levels of experience and skills. Skill mix was a key theme identified in the Perception of Management theme and was discussed earlier.

6.*4.5 Job Satisfaction domain*

The following section presents the results from the Job Satisfaction domain. The Job Satisfaction domain relates to issues influencing staff morale, enjoyment and job satisfaction, and autonomy in work practice.

6.4.5.1 Survey results

The Job Satisfaction domain had a mean score of 3.9 (SD 1.1) and a 100 point score of 71. The Job satisfaction domain was the highest scoring domain (Table 28).

Table 28: Safety Attitudes Questionnaire results for the Job Satisfaction domain

Safety Domain	Mean (SD)	100 point score	Recommended responses for improving patient safety
Job Satisfaction	3.9 (1.1)	71	Improving staff morale Develop continuity of carer models

The Job Satisfaction domain was measured by five questions. There were high levels of agreement that, respondents liked their jobs (97%) and, the hospital was a good place to work (87%). In contrast, there was a low rate of agreement that morale was high at the study sites (31%) (Table 29). These results indicate that, whilst respondents liked their jobs, staff morale was low. Survey participants recommended that improving staff morale was a strategy to improve patient safety at the study sites (Table 28).

Table 29: Safety Attitudes Questionnaire questions measuring Job Satisfaction domain

Questions measuring Job Satisfaction domain	Mean	Overall percentage agree	Overall percentage disagree
I like my job	4.6	97	0
Working at this hospital is like being part of a large family	3.5	60	17
This hospital is a good place to work	4.2	86	14
I am proud to work at this hospital*	4.3	91	3
Morale in this area is high	2.8	31	36

This table provides general descriptive information at item level (Likert scale: 1= Disagree Strongly, 2=Disagree Slightly, 3= Neutral, 4=Agree Slightly, 5=Agree Strongly); Overall mean; Overall percentage Agree (Minimum Agree - Maximum Agree by clinical area); Overall percentage Disagree (Minimum Disagree - Maximum Disagree).

*There were 2% participant data missing for this question. There were no data missing for the remaining questions in the Job Satisfaction domain.

6.4.5.2 Interview results

The next section presents the interview data for the Job Satisfaction domain. One key theme, *Morale* with the staff working in the study sites was identified in the interview data and is presented below.

6*.4.5.2.1 Morale*

The theme *morale* emerged when a number of participants identified the importance of staff morale and its association with job satisfaction. Low staff morale was identified a number of times in situations where midwives were asked to rotate to other clinical areas where they were

less familiar or less experienced. For example, a participant described the case of one midwife who had resigned stating the reason for her leaving was:

> *Very unhappy about it, she likes working in a certain area (ID3).*

The rotation of midwives to other clinical areas was identified as a *big push to make it easier to cover the roster* (ID 11) by the *management, who liked all staff to rotate to each area (ID3*). Whilst the rotation of midwifery staff was identified as a strategy to overcome staff shortages and ensure adequate staff cover, midwifery managers were perceived by midwives as being *not the most popular person in the world* (ID 13) and midwives *were not happy about it [rotating]* (ID3). These quotes support the notion that morale in this clinical environment was associated with a lack of control about work schedule. Work schedule, particularly in the presence of staff shortages, busy shifts and midwives working longer shifts, was another factor identified. These factors were thought to influence the midwives' morale and their willingness to participate in safety and quality activities as demonstrated by the following quote:

> *I encourage people to do K2*[74] *but sometimes that's hard you know, it gets busy and there isn't enough time and you know morale is not the best and some people don't care, you know. I suppose its hard saying that but, you know what I mean sometimes it's the hardest thing to get people to come along even to come to in-services you know … cause people are working double shifts and … morale's low (ID 11).*

Interview participants recognised having high staff morale where they are *on top of things* (ID 11) as an important factor for patient safety, for example:

> *I think it is very important for safety, you've got high morale and people are on top of things and you want to come to work and you want to enjoy each others company and help each other (ID 11).*

The results presented in this section have demonstrated that, whilst participants generally liked their jobs and thought the hospital was a good place to work, low levels of staff morale were present. The factors identified which influenced the low levels of morale were related to lack of control in the work environment, busy schedules and to a certain extent adequate staffing levels at the study sites.

[74] K2 is an online self directed training program for maternity staff focusing on electronic fetal welfare assessment

Work schedules and adequate staffing were found to influence the morale of staff in the Job Satisfaction domain, and they were also presented as factors influencing the Perception of Management domain discussed previously.

6.4.6 Stress Recognition domain

The following section presents the Stress Recognition domain. Stress Recognition relates to the acknowledgement of the influence of stressors on performance, such as the influence of stress and fatigue on a health professional's ability to respond in the clinical environment.

6.4.6.1 Survey results

The Stress Recognition domain had a mean score of 3.8 (SD 1.2) and a 100 point score of 70 (Table 30). The Stress Recognition domain was the second highest scoring of all domains.

Table 30: Safety Attitudes Questionnaire results for the Stress Recognition domain

Safety culture domain	Mean (SD)	100 point score	Recommended responses for improving patient safety
Stress Recognition	3.8 (1.2)	70	Reduce cycle of night shift Handover when tired Improve staffing to reduce workload Reduce paperwork Reduce computer time

The Stress Recognition domain was measured by four questions. There were high levels of agreement that respondents recognised their performance was impaired with excessive workload (78%) and that they were less effective when fatigued (83%). In contrast however, there was a low rate of agreement that fatigue impaired performance during an emergency situation (49%) (Table 31). These results indicate that, whilst respondents recognised the effects of fatigue and workload on performance, they did not agree fatigue affected performance in an emergency.

Table 31: Safety Attitudes Questionnaire for questions measuring Stress Recognition domain

Stress Recognition	Mean	Overall percentage agree	Overall percentage disagree
*Fatigue impairs my performance during emergency situations (e.g. emergency resuscitation, haemorrhaging)	2.9	49	41
When my workload becomes excessive, my performance is impaired	4.1	78	10
I am less effective at work when fatigued	4.2	83	17
I am more likely to make errors in tense or hostile situations	3.9	73	10

This table provides general descriptive information at item level (Likert scale: 1= Disagree Strongly, 2=Disagree Slightly, 3= Neutral, 4=Agree Slightly, 5=Agree Strongly); Percentage missing data; overall mean; Overall percentage Agree (Minimum Agree- Maximum Agree); Overall percentage Disagree (Minimum Disagree- Maximum Disagree)

*There were 2% participant data missing for this question. There were no data missing for the remaining questions in the Stress Recognition domain.

Survey participants recommended improving staffing levels, reducing cycles of night shift and handing over care when tired as strategies to reduce fatigue and improve patient safety (Table 30). Improving staffing levels in order to reduce cycles of night shift was consistent with theme in the interview data presented below.

6.4.6.2 Interview results

Working longer was a theme that emerged from the interview data as participants identified they were often required to work longer hours or double shifts or be on call in order to provide safe levels of staffing. This theme relates closely to the themes presented in the Job Satisfaction domain where morale was influenced by working patterns. The *working longer* theme differs somewhat as it focuses on the impact on the midwives when they are required to work longer, for example:

> *People are working double shifts and … morale is low (ID12).*

Participants suggested that working longer shifts was in response to the need to ensure safe staffing of the roster when there were already staff vacancies and sick leave needed to be covered. This was a theme presented earlier in the Perception of Management domain. However, participants recognised that when staff were required to work longer and they were

tired there was recognition that this situation could lead to safety issues and adverse incidents, for example:

> *Budget is a problem in that we are over-budget for staff because of sick leave because we can't get the staff so they do doubles [double shifts] and things which again is a problem. There hasn't been incidents of people being tired, but there could be (ID 13).*

This quote also highlights the reoccurring problem faced by midwifery managers who reported spending a great deal of their working time and energy focusing on providing a safe roster. Whilst the Stress Recognition domain essentially focuses on the impact of fatigue on clinicians' ability to respond to error, there was evidence that fatigue was also a factor for the midwifery managers at the study sites. This related to the midwifery managers' ability to be responsive in their role to provide a safe unit and undertake incident management activities, for example one participant said,

> *Cause at the moment I feel like you are just keeping it afloat but I'm not getting into any development [strategies to respond to incidents] or anything like that you just are keeping it going. You know, we all take so much work home (ID 5).*

Because of staff shortages and the need to ensure a safe roster the midwives were required at times to work double shifts. This was thought to create the potential for adverse events to occur. The next section presents the results of the new Policy Context domain.

6.4.7 Policy Context domain

This section presents the results of the new Policy Context domain. Participants identified a number of themes which were closely associated with, but not fitting within the Safety climate domain. That is, the themes have a focus that was much broader than the factors considered in the Safety Climate domain. These themes related to the broader policy context that influenced the safety culture at the study sites. This was an unexpected finding of this study and is a new finding in this field.

The broader policy context was not identified in the literature search undertaken for this study as a major influence on safety culture which should be considered. The Policy Study has oriented the reader to the policy context within which the study was situated. The following section presents further evidence of the influence of the policy context on the study sites safety culture. These results provide support for the argument made in this thesis that there is a new seventh safety culture domain called the *Policy Context.*

The themes identified from the interviews in this new domain were: *The Patient Safety and Clinical Quality Program; the restructure; and competing policies and priorities*. The theme Patient Safety and Clinical Quality Program with the sub themes, *micro-managing and mandating and a mortality focus* are presented in the next section.

6.4.7.1 The Patient Safety and Clinical Quality Program

As discussed earlier, the Patient Safety and Clinical Quality Program provided the local policy context for managing safety and quality activities at the study sites. The Patient Safety and Clinical Quality Program was introduced as a state-wide policy in 2005 with the following purpose, as described by one participant:

> *The establishment of a state-wide incident management program and in the broader sense it wasn't just putting in an information system it was how you actually engage with staff to reporting incidents to managing at local level to feed up to a state level how you get the learnings coming* (ID 17).

This quote highlights the broader objectives of the Patient Safety and Clinical Quality Program. These objectives were not only to introduce an incident management program, but also to develop a responsive system which would learn from the factors that contributed to past adverse incidents and subsequently improve the safety culture within health services. It was common during the interviews for participants only to identify the IIMS component of the Patient Safety and Clinical Quality Program. This may have indicated a lack of general awareness about the broader objectives of the policy at the study site level.

The purpose of implementing the Patient Safety and Clinical Quality Program was identified by a number of participants as a way in which the NSW Department of Health could get some *uniformity* (ID 9) into the incident reporting and ensure appropriate incident investigations were undertaken, highlighted by the following quote,

> *Was a way to measure and monitor, a chance to get some uniformity because we all saw Camden and Campbelltown [Hospitals] and everyone thought by the grace of god … it's pretty much happening at every hospital in the state at the time (ID 9).*

This quote provided insight to the contextual background present prior to the time the Patient Safety and Clinical Quality Program was implemented. The reference in this quote to Camden and Campbelltown related to the inquiries into services at Camden and Campbelltown

hospitals[75]. The Patient Safety and Clinical Quality Program was implemented soon after the results of the Inquiry were released. The perceived approach to the implementation of Patient Safety and Clinical Quality Program is the subject of the sub theme discussed in the following section. These themes are relevant to this study as they help to provide an understanding about participant perceptions of the policy context present at the study sites. The next section discusses the sub theme *micro-managing and mandating*.

Micro-managing and mandating

A number of participants referred to the Camden and Campbelltown Inquiries as the catalyst for the way in which the NSW Department of Health decided that patient safety activities should be managed. One participant suggested that the Department of Health had resorted to a micro-management approach over NSW AHS as a way of preventing a repeat of the Camden and Campbelltown crisis elsewhere in NSW:

> *The Campbelltown Camden affair was the turning point, in terms of the politicians had a decision and the bureaucracy had a decision whether they were going to let the Area Health Services take responsibility, or whether they were going to micro-manage and they've micro managed which is their biggest mistake (ID 16).*

This quote highlights a perception that the development of the Patient Safety and Clinical Quality Program policies was both politically and bureaucratically driven. This resulted in the Department of Health taking overarching responsibility for the approach and processes for the management of patient safety in the NSW health system. This notion of the Department of Health micro-managing these processes was often raised by participants as being *mandated (ID 9)* externally about what and how to report and manage adverse incidents, as expressed in the following quotes:

> *It's a state- wide on-line system, so it was sort of directed from above that we bring it in (ID 1).*

> *If there was an adverse event, say for arguments sake in the delivery suite, well we're mandated to record that almost immediately into the IIMS system (ID 7).*

[75] The Camden and Campbelltown Hospital crisis and subsequent Inquiry was discussed in more detail in the Policy Study, Chapter 5.

> *The Department* [of Health] *changed and all the policies became policy directives and this is what you must have! Introduction of the RCA … those types of system based approach we had put in place because we were being mandated by the Government so we had to (ID 9).*

> *Its not just a policy its legislation in the Health Administration Act ... they have changed the legislation its got to be a RCA! (ID 9).*

The last quote highlights the legal requirement that all SAC 1 events (a serious incident usually involving a patient death) be investigated via Root Cause Analysis (RCA). Some participants identified that at times, there seemed to be a trend that some incidents were being ranked as SAC1 so that a RCA was undertaken as an opportunity to review the incident and make recommendations, for example:

> *There is a notion from Area and NSW Health, we'll just make it a SAC 1 and then it gives them an opportunity to go in there and review and make recommendations (ID 9).*

This quote highlights a lack of consistency or a *grey area* when assigning SAC codes to reportable incidents in the maternity service. These grey areas were thought to be particularly evident in the events that led to a death. The following quote provides an example of this dilemma:

> *A large group of senior people looked at the issue and couldn't agree across the table if it [an incident involving the death of a baby] was a SAC 1* (ID 10).

Some participants suggested that, the lack of clarity about which deaths should be classified as a SAC1 and being mandated to investigate the case could create *potential stress* (ID 10) or anxiety for the clinicians involved, one participant said:

> *I think from the clinicians' point of view at times they feel that a patient death and adverse outcomes that they know intimately well are being dictated to them from the outside … and that can create some anxiety (ID 9).*

Clinicians stress and anxiety was also thought to be associated with a: *Perception from staff that we have failed to prevent the death of a patient* (ID 10).

These quotes present the analysis of participant perceptions' about how the NSW Department of Health and the State Government were micro-managing the focus of the Patient Safety and Clinical Quality Program by mandating the processes to be implemented at the study site. The Patient Safety And Clinical Quality Program has a particular focus on investigating adverse events leading to patient death. This focus was raised by a number of participants and is the next theme.

A mortality focus

The Patient Safety and Clinical Quality Program includes a priority focus towards incident reporting and the investigation of serious incidents resulting in the death of a mother or baby. *A mortality focus* was identified as participants raised concerns about the benefit to the system that mostly focused on reporting and investigating serious incidents leading to mortality rather than incidents resulting in morbidity. One participant suggested:

> *The top level bureaucrats who look after the politicians, particularly in this day and age where the media is so prevalent, that when people die like Vanessa Anderson[76], absolutely tragic but that's where the attention is. So the attention is on the deaths, not the morbidity! (ID 16).*

This quote raises a concern voiced by a number of participants that understanding what contributed to patients deaths was important but, they were unlikely to occur in the same way again, one participant suggested:

> *Its almost aligning of the stars, we put all our energy and resources into reviewing that incident and that incident will probably never ever happen again (ID 9).*

By focusing resources and priority toward reporting and investigating rare events, participants identified that there was limited benefit to the system in learning new information which could be applied to the clinical setting, for example:

> *The majority of the RCAs we get good information but the same things come out of every single one (ID 9).*

[76] The reference to Vanessa Anderson relates to a case where a teenager died in a public hospital after being treated for a head injury sustained after being struck by a golf ball. This case lead to a major inquiry into the treating hospital.

There is no evidence to show that reporting incidents, quantifying incidents, there has been no impact at all on improving safety for patients, absolutely none! (ID 16).

These quotes highlight a perception that the current system, which focuses effort on reporting, monitoring and investigating rare events, was not impacting on improving patient outcomes. It was suggested that, there would be more benefit in focusing effort on incidents leading to patient morbidity and near misses [cases that have the potential for serious harm] as articulated in the following quotes:

There is a focus on mortality when morbidity is much more of a b…dy problem than mortality, that's where we should be looking as well (ID 16).

We know we can learn just as much from near misses (ID 10).

That is what we should be reporting [near misses], as that is where we can shut the gate before the horse bolts! (ID 9).

The quotes above provide insight into the views of some participants that the focus of the current Patient Safety and Clinical Quality Program on investigating rare serious events was having a limited impact on improving patient safety, for example:

I think it [SAC 1 incidents[77]] has drawn attention away from the lower level ones that happen all the time and just waiting for the big one to happen (ID 16).

Other participants highlighted that a large amount of resources were required to report, monitor and investigate these SAC 1 incidents at the study sites. The need for infrastructure to support and implement the objectives of the Patient Safety and Clinical Quality Program at clinical level was discussed previously in the Safety climate domain. A theme which emerged from that discussion was the influence of the organisational restructure on the capacity to implement the Patient Safety and Clinical Quality Program at the study site. The organisational restructure was also identified in this new Policy Context domain. As with a number of other themes presented

[77] Severity Assessment Codes is a matrix system in the IIMS system to classify the severity of an adverse incident. Scores range from one being the most severe to four being the least severe. The SAC matrix is calculated by staff when they report the incident into the IIMS system. The SAC sore is then verified by the unit manager. All SAC 1 incidents sent directly to the NSW Department of Health and require a Root Cause Analysis investigation.

in previous domains it is common for themes overlap into other domains, as safety domains do not occur in isolation to one another. The next section discusses the restructure theme, specifically participant perceptions about the relationship between the organisational restructure and the impact on the Patient Safety and Clinical Quality Program.

6.4.7.2 The restructure

The restructure as a theme emerged as participants often identified the restructure as a factor influencing their capacity to implement the Patient Safety and Clinical Quality Program. This theme was discussed in some detail in the Safety Climate domain (6.4.1.2.2.) and in Chapter Five. The theme *the restructure* and the sub theme *no-one leading safety and quality* provides a description of perceptions about how the restructure component of the Planning Better Health policy influenced the study sites. One of these influences was the length of time it took to establish the new organisational structure across the AHS. One participant said:

> *It [the restructure] happened 18 months ago and the AHS*[78] [study site AHS] *is still sorting out (ID 17).*

The 'sorting out' referred to in this quote was the length of time it was taking to establish the new organisational structure across the AHS. The delay in establishing the new organisational structure including the recruitment of staff to leadership and management positions across the AHS at executive, middle management and divisional levels. This had delayed the implementation of programs associated with the Patient Safety and Clinical Quality Program, as suggested by one participant:

> *It is the time it takes to recover from the restructure with a lot of programs behind* (ID 17).

Some participants also suggested that a number of activities required in the Patient Safety and Clinical Quality Program were behind due to the major changes to the organisation in the Clinical Governance Units, who had a reduced capacity to provide leadership and support to safety and quality activities of each clinical unit. This support was of particular importance to the study site after the Quality Manager position was deleted and there was an expectation that Clinical Governance Units would be able to fill that gap as identified in the following quotes:

[78] Name of AHS removed for confidentiality purposes.

> *We thought we would get some help from the Clinical Governance Unit but that doesn't seem to be happening* (ID 1).

This quote highlights a problem with obtaining support from the Clinical Governance Units. Participants suggested the reasons for the Clinical Governance Units' lack of capacity to support clinical units such as the study site was due to the fact that as an area based service, they had a larger area to support but their staffing had been reduced. One participant said:

> *We had a really good team and a big approach and then they changed the system … we went from twelve people down to six, not just to do Site A but at Site B and the other section of the area as well*[79]*. What we loved about our unit was, we could get in there and implement change, it worked well, how can you do that with half the people? (ID 9)*

This quote highlights a concern raised by some participants that, as a result of the restructure and the changes to the sizes of the Clinical Governance Units they now had reduced their capacity to make and implement changes to improve safety and quality. Participants suggested that another consequence of the changes to the structure of the Clinical Governance Units, was a reduction of senior clinical governance staff based in hospitals and there was no longer anyone leading quality and safety agenda. This is the next theme.

No one leading quality and safety

A second sub theme which emerged from participant interviews was that there was no one leading quality and safety agenda at hospital facility level or at Divisional level within the study site. The lack of leadership or someone to drive safety and quality agenda at Divisional level was discussed earlier in the Safety Climate domain. The theme to be discussed in this section relates to the lack of leadership at facility level, specifically within the Clinical Governance Units.

Participants identified that strong leadership was an essential component to progress the quality and safety agenda within an organisation at all levels. The role of leadership was described by a number of participants as being to provide *visibility*, to *lead by example* and *to hold the line* as articulated below,

> *My job was to hold the line on quality and safety issues, sitting in rooms with cranky doctors. I held the line you had to know that you had the authority to hold the line on some things (ID 16).*

[79] Name of hospitals removed for confidentiality purposes.

'Holding the line' was perceived by this participant as being important in an environment with senior doctors who were not necessarily happy an outsider questioning or examining their clinical practice. An important dimension of leadership in progressing the safety and quality agenda was that leaders needed to have authority or a mandate. It was suggested that, this authority no longer existed at facility level when the Directors of Clinical Practice Improvement Units were replaced by junior patient safety officers. These patient safety officers were said to *lack clout* (ID 16) and the confidence to hold the line as suggested below,

> *The amalgamations happened and the Area Health Services, which are far too big for anyone to manage properly, and they started the Clinical Governance Units they put patient safety managers in who have no clout (ID 16).*

This quote highlights reasons for this lack of authority and ability to lead safety and quality activities was also influenced by a reduced presence at facility level. This reduced presence was a direct result of reducing the number of the staff when Clinical Practice Improvement Units moved to Clinical Governance Units at the study sites, for example one participant said:

> *From a structural point of view it's bureaucratised quality and safety it's been bureaucratised, and on the ground staff the local staff have been stripped bare, there's nobody left there … there's nobody there running or leading the quality agenda (ID 16).*

This quote highlights the fact that clinicians see the need for someone to drive and lead the safety and quality activities within the hospitals, but since the restructure they believe there was no one doing so.

6.4.7.3 Competing policies and priorities

The third theme in this domain was, *competing policies and priorities*. This theme was identified when it was suggested that there were other government policies and priority areas competing with the Patient Safety and Clinical Quality Program for the same resources. These policies related to the government's priority to improve access to hospital emergency departments and reduce surgical waiting lists. It was the perception of some participants that the main government priority at the time of the study was to improve hospital access:

> *It's [the government priority] access, its those things that are much more easy to manage, it's your waiting lists (ID 17).*

I think it's the big priority for the government in terms of waiting times in the emergency department (ID 9).

I'm sure the clinicians you have spoken to have talked about the bottom line, it's access block (ID 16).

The use of terms such as the *bottom line* (ID 16) and *big priority* (ID 9) give an indication of the perception of the importance and priority of these policies at the time of the study. It was suggested by one participant that financial pressures and, to a certain extent, the politics of the day dictated that improving patient access was a key priority:

No it's [priority focus] transient, it's different before the election and it's different after an election, it can be governed by politics. There is little doubt at the moment, towards the end of the financial year, it's absolutely the financial pressures … there is a huge focus on patient access (ID 9).

Priorities were governed by political priority, such as, reducing access block through the clinical redesign program. Prioritising the clinical redesign program had resulted in a competition for the same resources previously used to undertake quality and safety activities at Department of Health level. This had reduced the overall capacity to undertake safety and quality activities within the state and at area clinical governance unit level as highlighted below:

I think the Division has really divided the effort in some ways which means someone is going to lose out. So the resources that are available to clinical governance units and quality and safety is obviously less than if it were a combined effort (ID 17).

This quote suggests that the resources available to clinical governance units at AHS level had been reduced by the implementation of the Clinical Redesign Program. One participant suggested that Clinical Governance Unit budgets was also an ongoing potential source of funding other policy priorities:

The Directors of Clinical Governance are constantly talking about every time they [executive] are looking for a bit of money it comes out of clinical governance, a lot of them have lost staff and it's a constant battle to find their money and to keep their money so it's a bit like quality and safety is the soft target (ID 17).

This quote highlights a further concern that safety and quality activities, such as the Patient Safety and Clinical Quality Program, are not seen to be as much of a priority for the executive of AHS and are competing for resources due to redistributing funds to other priorities. Participants also identified another consequence of the refocus of priorities and reduction in resources for infrastructure to support the study sites was that maternity was not seen as a priority area for the AHS.

Maternity is not a priority

This section presents the final theme of the policy context domain. Participants felt that the maternity service did not receive the same level of support or focus from the Clinical Governance Unit as they did not have the same profile as the acute part of the hospital, for example:

> *I think Women's and Children's is seen as a bit of … not necessarily part of the acute, mind you we have dreadful things happen so it's interesting, we just don't seem to have the profile* (ID 6).

The lack of profile was suggested to work in two ways. Firstly, participants suggested that there was a lack of recognition about what maternity services are and the need for a different approach from that used in the acute parts of the hospital. For example, one participant said:

> *It's about lumping us in* [with the rest of the hospital] *without really having an understanding about what we do* (ID10).

Secondly, this lack of understanding or lack of profile for maternity services meant at times that priority programs developed through the Patient Safety and Clinical Quality Program were not useful or relevant to the maternity service, for example:

> *It's not relevant to us and what is relevant to us in not relevant to the rest of the hospital … midwives often just get tacked on at the end* (ID10).

This quote related to training for all clinical staff around falls prevention which was a priority of the AHS, but not relevant in maternity services where patient falls are uncommon. Once again, this lack of recognition was due to a lack of profile about the differences between maternity services and the acute sections of the hospital. The lack of profile for the Division was also thought to have resulted in a reduction of support from the Clinical Governance Units as one participant suggested:

I think they sort of forgot about Women's and Children's [Division] (ID 10).

This section has presented the themes which emerged from participants relating to the new Policy Context domain. The results also provides evidence of how participants perceived the broader policies introduced as part of the Planning Better Health had influenced a new domain I called the Policy Context domain and ultimately the safety culture at the study site. These themes provide support for the Policy Context as a seventh safety culture domain. This issue will be further explored in the next chapter (Chapter 7) where the results of the Policy Study and the Service Study are triangulated.

6.5 Conclusion

This chapter has presented the results of the safety culture surveys and the semi-structured interviews collected in the Service Study. The results of the survey identified that all of the safety culture domains scored poorly across both sites and could be improved. Participants suggested strategies to improve the safety culture of the maternity service. These strategies supported the presence of the themes which emerged from the interviews. The key themes were: a reduction in infrastructure and capacity to support incident management activities; transitional instability resulting from the organisational restructure; and a lack of leadership to run the safety and quality agenda. Other themes identified related to the need to: communicate during the escalation of care; have the right staffing and skill mix; improve supervision of junior medical staff and improve morale.

A key finding of this study was the identification of a new seventh safety culture domain the Policy Context that influenced the safety culture. The results presented in the Service Study have demonstrated a level of convergence between the survey and the interviews. This convergence adds strength to the overall interpretation made for each of the safety culture domains. This is an important factor in a mixed method research study.

The results of the Service Study were limited by a low 29% response rate to the survey. Due to the low response rate, the survey results cannot be interpreted as a stand-alone measurement or description of the safety culture within the study sites. However, the survey results were never meant to stand-alone but were to assist in the overall measurement and description of the safety culture when triangulated with data from the interviews and the results of the Policy Study.

The extent to which the results of Services Study and Policy Study converge to corroborate the claim that Policy Context is a new safety domain influenced the safety culture is discussed in Chapter 7.

CHAPTER 7: DISCUSSION

7.1 Introduction

This final chapter sets out the major findings, implications and conclusions of this thesis. In addition the results of the two studies will be brought together through triangulation in order to address the research questions posed in the thesis. The chapter is structured around the following research questions:

1. What is the safety culture in one maternity service in NSW?
2. What is the policy context in which the study sites are situated?[80]
3. What are the barriers and challenges to improving the safety culture in this setting?
4. Can understanding this culture assist in the identification of strategies to improve the safety and quality of maternity care in this setting?

In answering these questions, I will also argue that the major finding of this thesis showed that the existing safety culture within the study setting was adversely influenced by the 'one size fits all' policy platform. I will argue that this policy platform, which was aimed at improving efficiency, patient access and safety and quality in the acute sector of the system, created unintended consequences for the maternity service. These unintended consequences effectively turned the maternity services' responsive safety culture to one without the capacity to function. This argument will support the claim that the Policy Context is an important influence on safety culture and consequently on improving patient safety in this setting.

7.2 What is the safety culture in one maternity service in NSW?

The major initial question posed by the thesis was, what is the safety culture in one maternity service in NSW? The question is addressed through the triangulation of the results of the Services and Policy Studies. This section includes a discussion about the major finding of this study, that is, the influence of the Policy Context on the maternity service safety culture within the study sites. This discussion situates the Policy Context as an over-arching safety culture domain, in order to present and discuss the other domains of the safety culture identified in the maternity setting and examined in this thesis.

The Services Study examined the safety culture in one maternity service in NSW. This study found that the safety culture within the maternity service was complex, perceived to be negative

[80] Question 2 was addressed in the Policy Study in Chapter 5.

and influenced by a number of inter-related factors present in the maternity unit clinical setting. These factors were presented as themes using the six safety culture domains examined during the Services Study. A key finding of this thesis was that factors external to the local context had an overarching influence on the maternity service safety culture. This external influence was the Policy Context which makes a new safety culture domain named in this thesis as the policy context. The Policy Context as a domain that influences safety culture has not previously been described in the literature. However it was clearly a significant influence on the safety culture at the study site.

The Policy and Services Studies independently highlighted that the Policy Context was able to influence, and perceived to be influencing, the leadership, infrastructure and safety culture in that setting. In the next section of this chapter I will merge the two Studies in order to describe and discuss the new Policy Context domain and how it was found to be influencing the safety culture within the maternity service.

7.2.1 The Policy Context domain – triangulation of the two Studies

The results of the two studies were triangulated (Cresswell & Plano Clarke, 2007) and summarised in order to identify the extent to which the findings from the two studies converge and support the claim that the Policy Context influenced the safety culture in this setting (Table 32). This process supports the major finding of this study that the Policy Context is a new overarching safety culture domain. Table 32 summarises the results of the Policy Study and interprets of the impact of the implementation of each of the key policies on the study sites. These results are corroborated with the themes identified from the interviews in the Services Study. The implications of the influence of the Policy Context domain on the maternity service safety culture are discussed after Table 32.

Table 32: Triangulation matrix – Policy and Service Studies results of the influence of the Planning Better Health and Patient Safety and Clinical Quality Programs on the study sites

Policy Study Results Planning Better Health	Policy implementation outcome	Policy influence on study site	Corroborating themes from the Service Study
1. Restructure of AHS			
Restructure of organisational structures	- Merging of two AHS	- Large scale change - Transitional instability	Policy Context domain - Competing policies and priorities
Three new networks and 12 Clinical Streams created	- Study site joins one network - New Stream - Stream director appointed - Need to develop AHS policies	- New organisational structure - Larger area - Stream Director in AHS based leadership position - Improved consistency/quality of policies	Policy Context domain - The restructure Safety Climate domain - The restructure
Merging of maternity services	- Site A and B maternity services merge	- Larger Division to manage - Increased demand and acuity - Increased workload	Perception of Management domain - Ensuring a safe unit - Higher acuity
Workforce reorganisation into new organisational structure	- Management positions spilled/ recruitment over two years - Staff redundancies to administration/support positions	- Centralising leadership positions - Transitional leadership instability within maternity service and Clinical Governance Units - Increased role scope - Clinical Governance Units with reduced infrastructure and capacity to support	Policy Context domain - No one leading safety and quality - Maternity not a priority Safety Climate domain - The restructure - Not closing the loop - Not feeling valued

Policy Study Results Planning Better Health	Policy implementation outcome	Policy influence on study site	Corroborating themes from the Service Study
Commitment to redistribute savings to frontline clinical services	- $12.5M to fund nurses and doctors to improve emergency waiting times and surgical waiting lists	- Maternity not identified as a frontline clinical service	Policy Context domain - Maternity not a priority - Competing policies and priorities
Realignment of clinical priorities with redistribution strategies	- Redistribution of funds to: - Emergency care - Surgical waiting lists	- Maternity not an identified clinical priority area for budget redistribution	Policy Context domain - Maternity not a priority - Competing policies and priorities
2. Sustainable Access Program			
Focus on improving patient access to inpatient beds	- Performance targets to improve access to patient beds	- No maternity related targets	Policy Context domain - Maternity not a priority - Competing policies and priorities
3. Clinical Redesign Program			
To improve patient journey, improve access and improve waiting lists	- AHS Clinical Redesign Units - Chief Executives required to only approve target priority projects - Targets attached to Chief Executive performance agreements - Budgets prioritisation towards: - Avoidable hospital admissions - Surgical waiting lists - AHS funding attached to achieving priority targets/reinvestment strategies	- Initially only priority projects approved - Incentive to only approve priority targets - Maternity not identified as a priority target despite some maternity admissions being potentially avoidable - Reinvestment strategies unlikely to benefit maternity. May influence overall maternity budget	Policy Context domain - Maternity not a priority - Competing policies and priorities

Policy Study Results Planning Better Health	Policy implementation outcome	Policy influence on study site	Corroborating themes from the Service Study
4. Patient Safety and Clinical Quality Program			
Introduction of new Clinical Governance structure and system to improve safety culture and patient safety	Area Clinical Governance Units (CGU) established - Area Directors of CGU - Patient Safety Officers at facilities - Reorganisation from facility to area - Recruitment to positions - Reduction in position numbers - Area safety improvement strategies and targets linked to improvement priorities in line with State strategies focusing on: - Falls - Medication errors - Infections - Performance targets to be met: - RCA- completions, recommendations - Audits	- CGU no longer facility based - Decreased support - Patient Safety Officers - Decreased authority/leadership - Potentially reduced support to the maternity - Reduced capacity to support - Transition instability - CGU focus resources on priority improvement areas - Reduced CGU support to non priority areas such as maternity - Priorities have limited direct relevance to the maternity service - Increased unit role for incident reporting/ management - Increased reporting with decreased infrastructure	Policy Context domain - The restructure - No one leading safety and quality - Maternity not a priority Safety Climate domain - The restructure - Not closing the loop - Not valued - Barriers to reporting Policy Context domain - Micromanaging and mandating - A mortality focus - No one leading safety and quality - The restructure
Incident Information Monitoring System (IIMS)	- Changes to IIMS platform - Technical difficulties with reporting - Increased reporting requirements to be managed at unit level - Numerous Policy Directives issued and reissued as IIMS matures	- Difficulties with reporting - Need to learn new system - Increased workload for midwifery unit managers without CGU support - Increased resources required to implement	Policy Context domain - Micromanaging and mandating Safety Climate domain - The restructure - Not closing the loop - Barriers to the IIMS

Table 32 summarises the four policies introduced concurrently by the NSW Government as a major policy reform agenda called Planning Better Health. These policies were described in detail in Chapter 5. Planning Better Health consisted of four key policies, three addressed the health reform agenda and the fourth, the Patient Safety and Clinical Quality Program aimed to improve patient safety. Each policy had an influence on the safety culture within the study setting.

7.2.1.1 Impact of the policy reform agenda - unintended consequences

The policy context created by the reform agenda component of Planning Better Health adversely influenced the safety culture within the study site. Data from the Policy Study presented in the first two columns (Table 32) summarise the policy objectives and outcomes of the reform agenda. A key objective of the organisational restructure was to improve efficiency through the reduction and centralisation of administration and support roles. Savings generated from the restructure of AHS were redistributed to fund frontline clinical services. The redistribution of funds aimed to improve patient access to emergency departments, improve patient journeys within the health system and reduce surgical waiting lists. These policy reforms were progressed through the coordinated implementation of three policies of the Planning Better Health Program, (1) the restructure of NSW AHS, (2) the Sustainable Access Plan and (3) the Clinical Redesign Program.

The NSW Department of Health ensured AHS compliance with the policy objectives of the reform agenda through priority-based targets linked to both AHS and Chief Executive performance agreements. The targets ensured that resources, funding and programs within AHS would be prioritised towards increasing nursing and medical staff in acute frontline emergency departments and surgical and medical inpatient services. Clinical redesign programs would initially only focus on reducing access block and improve surgical waiting lists. This priority focus did not include any specific targets for maternity services. Maternity services were not identified as a front-line service and consequently were unlikely to benefit from the reinvestment strategies achieved as a result of this reform. This claim was supported in the interview theme that emerged, *competing policies and priorities,* where participants identified that the key priority for the AHS at that time was to address access block. Maternity services were not seen as acute services and often not seen as a priority by the AHS as seen in the *maternity is not a priorit*y theme. The organisational commitment to prioritise resources towards the problem of access block was seen as one of the ways in which Planning Better Health had an adverse influence on the safety culture within the maternity service. In positive safety cultures, management and organisational commitment requires that safety be the key

priority rather than a budget or productivity issue (Flin, 2007; NPSA, 2004). However, in this study, improving patient access was the key priority, and there were incentives built into the health reform policy requiring Chief Executives and their organisations to meet government targets. These requirements were interpreted as a barrier to improving the safety culture in the maternity service. This was also seen be at odds with the overall objectives of the Patient Safety and Clinical Quality Program introduced under the same policy which required a priority focus toward improving the safety culture in order to improve patient safety. This issue will be explored later in this section.

Both the Policy and Services Studies (as displayed in Table 32) identified that, rather than benefiting from the reform agenda, the policy context created through the implementation of the restructure component of Planning Better Health had an adverse impact on the safety culture at the study sites. This impact related to major changes and disruptions to the organisational structure, infrastructure, lack of leadership and perceptions about the organisational commitment to improving safety culture within the study sites. This is explored below.

7.2.1.2 Impact of the restructure

The restructure component of Planning Better Health was identified in the Service and Policy Studies as a key contributing factor to the lack of infrastructure. This infrastructure was needed to support the incident management requirements of the Patient Safety and Clinical Quality Program at both Clinical Governance Unit and clinical unit levels. At Clinical Governance Unit level, infrastructure was reduced when two AHS merged, creating a larger AHS for the Unit to manage. Concurrently, hospital-based Clinical Practice Improvement Units were moved to AHS based Clinical Governance Units. There was a reduction in the number of staff in the new AHS Clinical Governance Units after the restructure. The reduction in staff reduced the capacity to support quality and safety activities, particularly incident management at clinical unit level. Interview data confirmed this reduction in support. Participants also indicated that the move to AHS-based Clinical Governance Units would also result in changes to the leadership structure, impacting on the available leadership to drive and lead safety and quality related activities at hospital level.

Within the maternity service, both Studies identified that the policy context created by the restructure reduced infrastructure in a number of ways. These included the merging of the two maternity services into one service, creating a larger service in a new organisational structure. As a consequence, a number of midwifery manager positions were spilled whilst recruitment into the new positions took place. This occurred at the same time that management positions

across the AHS, including those in the Clinical Governance Units, were being reorganised. Recruitment activities occurred over a period of two years. Whilst evidence was found that recruitment was completed within the executive levels of the organisation, a number of the midwifery management positions and those within in the AHS Clinical Governance Units had not been filled permanently. In the interim, participants reported a period of transitional instability and disruption to the leadership across the Division, within the maternity service and at Clinical Governance Unit level.

The Services Study showed that the instability and disruption created within the Clinical Governance Unit, in particular, reduced their capacity to support maternity service incident management activities. Infrastructure was further reduced in the maternity service when the Quality Manager whose role was to lead and drive safety and quality activities was made redundant as a result of the restructure. The various parts of the Quality Manager's role were divided up and added to the midwifery managers' already busy roles. As a result, available capacity and infrastructure to undertake the requirements of the Patient Safety and Clinical Quality Program were further reduced. The increasing scope in the role of nursing and midwifery unit managers in the context of complex clinical work environments has been reported in NSW (Duffield, Roche et al., 2007). Duffield et al found that nursing unit managers play a critical role in managing the increasing complexity of the clinical work environment to ensure positive outcomes for patients. However, the nursing unit manager is dependent on human resources such as adequate staffing levels with the appropriate skill mix plus institutional and data support that recognises this complexity in order to ensure a safe working environment. In contrast, the human resources available to the midwifery unit managers in this study were reduced at a time when the complexity of the work environment was increased.

The merging of the two maternity services resulted in increased demand, where more women with complex pregnancies and births were being cared for at Site A. Concurrently, there was an increase in births, including caesarean sections, further increasing the workload and pressure within the maternity service. This demand was not matched by an increase in midwifery staffing. This was considered to have created a challenge to ensure a safe maternity service in the presence of existing vacancies on the midwifery roster. These vacancies had not been filled, partly due to budget constraints, slow recruitment processes and a general shortage of experienced midwives to recruit. Concerns about the ability to provide safe maternity services in the presence of increased demand, rising caesarean rates and midwifery workforce shortages has also been reported in the United Kingdom (Curtis, Ball, & Kirkham, 2006). English midwifery managers reported that midwives were regularly stretched to cover existing

vacancies and cope with the increasing workload in hospital maternity units. This increased workload was the result of woman dependence due to rising complexity from epidural rates and caesarean sections, thus creating additional pressure on the system. English midwifery managers reported they were 'managing on the margins of safety' (Curtis et al., 2006, p. 102). It is acknowledged that the human resource infrastructure that was available to the maternity service in my study was also influenced by factors other than the restructure. However, the merging of the two services created additional demand on a workforce already under pressure. Midwifery unit managers spent considerable time negotiating with other midwifery unit managers to ensure there was adequate staffing in the maternity units. This was often the midwifery unit manager's daily priority, leaving limited time to be responsive to the incident management requirements for which they were now also responsible.

The Policy Study and interview data showed there was a policy intent within the Patient Safety and Clinical Quality Program for nursing and midwifery unit managers to take on a greater role in the management of incident report data and trending of their unit data. However, interview data highlighted this was often difficult due to technical problems within the IIMS. This finding is supported by the evaluation of the Incident Information Management System (IIMS) (Travaglia & Braithwaite, 2006) which found technical problems with the reporting function of IIMS, made this a time-consuming and often difficult task. As a consequence of the restructure, it was expected that the Clinical Governance Units would provide reporting assistance to the maternity service to bridge the gap left from the removal of the quality manager's position. This study demonstrates that Clinical Governance Units lacked the infrastructure to support this activity.

Available support for the maternity service from the Clinical Governance Units was also likely to have been reduced when they were required to focus their effort on the AHS target areas, such as falls and medication errors, which did not have a maternity focus. The restructure adversely influenced the Clinical Governance Unit's infrastructure and capacity to implement and support the objectives of the Patient Safety and Clinical Quality Program. This in turn reduced infrastructure and capacity within the maternity service to meet the incident management requirements of the Patient Safety and Clinical Quality Program. In this way, the safety culture, particularly the Safety Climate, in the maternity service was adversely impacted by a policy reform agenda which was never intended to focus directly on the maternity service.

A further consequence of the Policy Context created by the Planning Better Health policy was the reduction in leadership to drive the safety and quality agenda. The reduction in leadership

was exacerbated when the director of the local Clinical Practice Improvement Unit was moved to an AHS-based position and replaced by a less senior Patient Safety Officer. These officers were considered by interviewees to lack the authority to provide the leadership required to drive and lead the safety and quality agenda within the hospital. Local maternity level leadership was further diminished when the Quality Manager's position was made redundant. This position was highlighted by participants as being integral to lead the safety and quality agenda. There was an overall perception that there was no longer anyone 'leading' safety and quality within the hospital or the maternity service. This perception was thought to be one of the reasons for the negative safety culture. The lack of infrastructure and leadership will be raised again later in the chapter as a key barrier to improving the safety culture. The next section will briefly discuss the findings of this study in relation to the impact of health service restructure reported in the literature.

Restructuring health services in an attempt to improve efficiency, productivity and quality of care is a common strategy employed internationally and in Australia (Aiken, Clarke, & Sloane, 2000; Braithwaite, 2007; Braithwaite, Westbrook, Hindle, Iedema, & Black, 2006; Duffield, Kearin, Johnston, & Leonard, 2007; Fulop et al., 2002; Phillips & Hughes, 2008). As in the restructure that was occurring during this study, health services mergers in the UK were driven by political imperatives to generate internal savings. These savings were to be reapplied to patient services, ensuring the maintenance of quality and the right amount of services in light of new policy imperatives (Fulop et al., 2002). Fulop et al reported that these mergers resulted in delays and disruptions to the health service for periods of up to two years (Fulop et al., 2002). These disruptions were attributed to a loss of managerial focus during the transition phase. In this study participants similarly reported that progress of the implementation of safety and quality programs was delayed within the maternity service and in Clinical Governance Units during the transition phase of the restructure. Restructuring of health services was not found to have resulted in the expected efficiencies or savings in the UK context (Fulop et al., 2002). Braithwaite et al reported similar findings in their study examining the outcome, in terms of improved efficiency, of restructuring hospitals in NSW. Their findings concluded that making structural changes to hospitals does not improve efficiency, rather it may be decreased (Braithwaite et al., 2006).

There are often a number of unintended consequences to health services as a result of restructuring that creates additional pressure on the system, which can in turn result in a reduction in staff morale, and uncertainty and bewilderment during the period of change (Braithwaite, 2007; Duffield, Kearin et al., 2007; Fulop et al., 2002; Schofield & Earnest, 2006).

The restructure of this study's setting created additional pressures on the maternity service with respect to the reduction in infrastructure and leadership. Participants also reported that the changes to infrastructure meant that safety and quality activities were no longer considered a priority in the maternity setting and not valued by the organisation. The increased workload demands of the maternity service had resulted in reduced morale. Negative consequences such as reduced morale in the nursing workforce have been reported due to restructures of health services in Canada and Australia (Baumann et al., 2001; Duffield & O'Brien - Pallas, 2002). Despite there being evidence of negative consequences from health service restructure for nursing staff, Duffield et al contend there is little account taken of these impacts in organisations (Duffield, Kearin et al., 2007). In my study the restructure quite definitely had an impact on the staff within the maternity service. These factors have in turn had an adverse influence on the perception of the safety culture within the maternity service.

This section has described how each of the policies implemented under the Planning Better Health had a negative influence on the safety culture within the study sites. Both the restructuring component of Planning Better Health, and to a lesser extent, the Clinical Redesign Program resulted in unintended adverse consequences. The unintended consequences meant less infrastructure to support components of the Patient Safety and Clinical Quality program and a lack of leadership to drive the safety and quality agenda with the maternity service being not seen as a priority area. The new domain I have identified and named the Policy Context domain was found to act as an over-arching safety domain influencing all of the safety domains, but in particular the Safety Climate domain. This finding is significant. Improving the safety culture in the health care setting is seen as a key strategy to improve patient safety nationally and internationally. Safety culture is influenced by a number of domains which are important to patient safety (Colla, Bracken, Kinney, & Weeks, 2005; Flin, 2007; Flin, Burns, Mearns, Yule, & Robertson, 2006; Pronovost & Sexton, 2005; Singla, Kitch, Weissman, & Campbell, 2006). There is limited agreement about which domains are the most important influence on patient safety or how they should be improved (Pronovost & Sexton, 2005; Singla et al., 2006). This study shows that the Policy Context should be considered as an important influence on safety culture. The next section describes the other domains of the safety culture at the study sites and includes the Policy Context domain.

7.2.2 The safety culture within the maternity service

This section triangulates the results from the Service Study in order to describe and summarise the safety culture present within the study sites. These results merge safety culture scores with corresponding themes identified in participant interviews, and suggested ways that patient

safety could be improved. The factors influencing these safety domains and their linkage to other domains is also illustrated. An interpretation of the resulting barriers and challenges to the safety culture is also included (Table 33). This exercise provides evidence of the convergence of the survey and interview findings in the study. A detailed description follows the Table summary.

Table 33: Triangulation summary of survey and interview results and including the Policy Context domain from the Service Study.

Safety Domain	100 point score	Interview themes	Influencing factors	Interpretation of the barriers and challenges to the safety culture	Recommended responses for improving patient safety
Policy Context	N/A	- Micro-managing and mandating - A mortality focus - No one leading safety and quality - Competing policies and priorities - Maternity not a priority	- reduction in size of CGU, reduced capacity to support, reduction in leadership positions, no clout, no one driving safety and quality, not seen as a priority area	- Lack of infrastructure to support maternity services - Lack of leadership to drive - Maternity not a priority area	Not assessed in survey
Safety Climate	64	In the past - A robust system In the present - Not closing the loop - The restructure - Feeling not valued Barriers to the IIMS - Not on the radar	- Having infrastructure - Emerging safety culture - Link to Policy Context domain - Loss of quality manager position - Reduced support from CGU - Increased role for MUM - Perception safety and quality not valued by the organisation - Technical difficulties with reporting - Not maternity specific - Not seen as a priority	- Early enabler to safety culture - Reduced infrastructure - No longer responsive to incident management activities - Lack of feedback to staff - Safety and quality not perceived as a priority - reduced incident reporting - Influence of policy context - Eroding safety culture	- Improve incident reporting - Improve feedback - Develop infrastructure for incident management • Review • Monitoring • Response to incidents

Safety Domain	100 point score	Interview themes	Influencing factors	Recommended responses for improving patient safety	Interpretation of the barriers and challenges to the safety culture
Perception of Management	51	Ensuring a safe unit - Lack of adequate staffing - Getting the right skill-mix - Higher acuity	- Midwife shortages - Lack of experienced staff - Difficulties recruiting - Budget constraints - Merging two sites - Increased births/complexity - Linked to Policy Context Domain	- Ensure adequate staffing - Improve skill mix	- Difficulty ensuring a safe unit - Recruitment difficulties - Staffing budget not matched to demand
Stress Recognition	70	Working longer	- Staff vacancies - Working double shifts - Being on call -Linked to Perceptions of Management domain	- Reduce cycle of night shift - Handover when tired - Improve staffing to reduce workload - Reduce computer time	- Staff fatigue a risk for patient safety
Job Satisfaction	71	Low morale	Midwives lack of control over: - Work schedules - Work environment - Linked to Perceptions of Management domain	- Improving staff morale	Low morale is not conducive to positive safety culture
Teamwork	70	Need for communication - During hand over - Escalation of care	- Fear - A lack of familiarity between midwives, junior medical officers, and VMOs - Linked to Working Conditions	- Improve communication - Handover teaching - Enhance documentation - Simulation training - Obstetric drills	- Inadequate communication between maternity staff - Not all functioning as a team

Safety Domain	100 point score	Interview themes	Influencing factors	Recommended responses for improving patient safety	Interpretation of the barriers and challenges to the safety culture
Working Conditions	60	Lacking supervision - Junior medical officers	Visiting Medical Officer model - Limited involvement/ engagement - Limited presence onsite - Lack of management plans during labour - Linked to Teamwork domain	- Improve JMO supervision - VMO presence onsite in birthing suite - Improve orientation - Undertake ward rounds	- Inadequate JMO supervision - Contracted VMO supervision - Potential risk for women and babies

Source: SAQ and semi structured interviews Service Study

Table 33 provides a summary of the results previously discussed in detail in Chapter 6 but includes the new Policy Context domain. Examining the safety culture in its entirety is necessary as the safety culture illustrated in Table 33 is clearly not made up of seven discrete domains, rather the culture consists of linkages between certain domains. These linkages demonstrate the complexity of the safety culture in this setting. In this study, there were four links identified between the safety domains. These links were responsible for the negative safety culture identified at the study sites (described in Table 33). These linkages in Figure 5 highlight four points:

1. The Policy Context domain was identified as an over-arching safety domain influencing the safety culture within the maternity service.

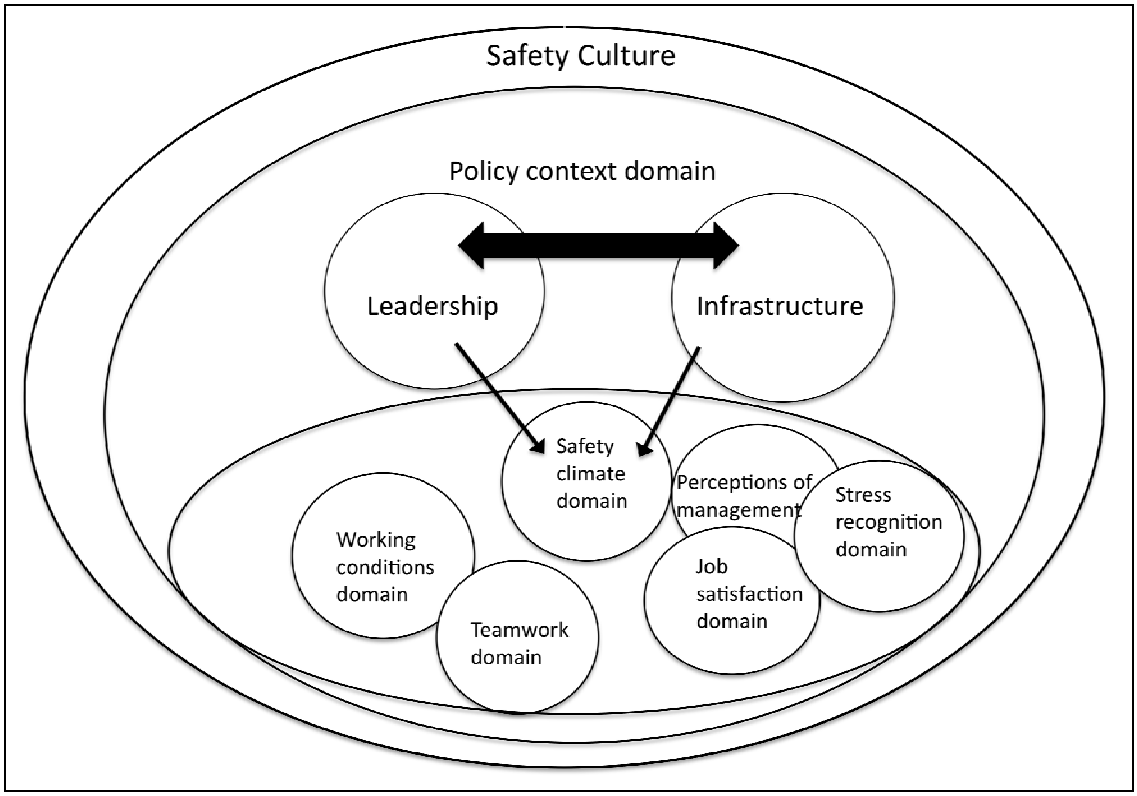
2. The Safety Climate and the Policy Context domain were linked by: the lack of infrastructure to support incident management activities; a lack of leadership to drive the safety and quality agenda; and the perception that developing a safety culture was not perceived as a priority for the organisation.

3. The Perception of Management, Job Satisfaction and Stress Recognition domains linked to describe difficulties in ensuring a safe maternity service.

4. The Working Conditions and the Teamwork domains were linked with respect to the level and quality of collaboration, communication between the midwives, junior medical staff and visiting medical officers; and the supervision of junior medical staff.

The safety culture identified during the study and described in Table 33 including these linkages are conceptualised in the model below (Figure 5).

Figure 5: Model of safety culture identified at the study sites with seven safety culture domains



7.2.2.1 Linkage between the Policy Context domain and the Safety Climate domain

The Policy Context acted as an over-arching influence on the safety culture within the maternity service in the study. This section further highlights how the Policy Context influenced the Safety Climate domain.

This was a maternity service with a negative safety culture across all domains including the Safety Climate domain. Participant interviews identified a negative Safety Climate domain that was not responsive to incident management activities, including a lack of feedback to staff regarding reported adverse events. This was found to be influenced by a reduction in infrastructure, capacity and leadership to support incident management activities, in addition to technical difficulties to both enter and generate reports. This resulted in a reduced motivation amongst the midwives to report adverse events. The capacity and infrastructure to be responsive to incident management was also reduced due to the impact of transitional instability resulting from the organisational restructure. The lack of infrastructure and leadership resulted in a perception that a safety culture was not valued by the organisation. This ultimately resulted in the erosion of a previously positive safety culture.

Earlier studies have found that important components of positive safety cultures in heath care include strong leadership and a strong management commitment where safety is a key priority for the organisation (Hindle, Braithwaite, & Iedema, 2006; NPSA, 2004; Perry, 2002). Leadership and management commitment are considered to be important as their actions and attitudes are thought to influence the perceptions, attitudes and behaviours of staff in the organisation towards safety culture (Flin, 2007). Organisations with positive safety cultures have: staff who are aware that things can go wrong; acknowledge that mistakes occur; and have commitment and an ability to learn and take action to prevent recurrence (NPSA, 2004). An important component of developing a positive safety culture in organisations is the ability to recognise, respond, feedback and learn from adverse events, referred to as 'closing the loop' (Benn et al., 2009; Department of Health UK, 2000; NPSA, 2004). The ability to 'close the loop' is considered to depend on the strength of the safety climate (NPSA, 2004; NSW Department of Health, 2005; Sexton, Helmreich et al., 2006). In this study the Safety Climate was not strong and the staff felt they were often unable to 'close the loop'.

The inability to 'close the loop' has been the subject of a number of inquiries investigating NSW Health acute hospitals and services before and during this study. The impetus for these inquiries was based on poor patient outcomes in NSW Health facilities and the objective in each has been to make system improvements (Garling, 2008; NSW Department of Health, 2007; NSW Legislative Council, 2007). One of these inquiries into a major Sydney teaching hospital found evidence of years of organisational and system issues contributing to poor outcomes. Clinicians who participated in the inquiry highlighted the devastating impact that a failure of the organisation to act on lessons learned from incident management had on clinicians' morale and their continued willingness to participate in safety improvement programs (NSW Legislative Council, 2007). Clinicians claimed that there was a need for a change in culture within the organisation that would demonstrate a commitment to becoming responsive to the lessons learned from adverse events incident reports, rather than just implementing more policies (NSW Legislative Council, 2007).

The Patient Safety and Clinical Quality Program essentially aimed to develop a positive safety culture in NSW Hospitals. One of the key strategies to achieve this objective was the establishment of a responsive incident management program which would enable the health system to learn from and respond to reports generated from the system (NSW Department of Health, 2005). This study has shown that the objective of developing a positive safety culture with a responsive incident management program had not occurred in this maternity setting. Instead, the policy context was seen by the participants to have acted as the over-arching

influence on this aspect of the declining safety culture and had an adverse influence on the Safety Climate domain.

7.2.2.2 The linkage between the Perception of Management, Job Satisfaction and Stress Recognition domains - ensuring a safe unit

Table 33 shows a negative safety culture across the Perceptions of Management, Job Satisfaction and Stress Recognition domains. The interaction between the factors influencing each of these domains created difficulty in ensuring a safe unit. This difficulty was associated with a work environment with vacancies on the midwifery roster and an environment where there was a shortage of experienced midwives and a delay in recruitment processes due to budget restraints.

The increased workload and acuity was attributed to the merging of the two maternity services was discussed earlier. This increased workload was not matched with an increase in staffing. Participants reported concerns about their ability to provide safe levels of staffing at times. As a strategy to manage this situation, in this study, midwifery unit managers were often required to spend additional time daily negotiating and juggling the roster to ensure there were the right numbers of skilled midwifery staff to cover the roster. Ensuring the right skill mix of experienced midwives was important to ensure the appropriate levels of supervision for less experienced midwives.

The strategy used to ensure the right number of staff with the right skill mix resulted in some midwives rotating to other clinical areas; working longer shifts; or being on call for the maternity service. A number of participants identified that some midwives had perceived this strategy reduced their control over their work environment and work schedules. This was thought to result in low morale among some midwives. The interaction of these factors provides an explanation for the negative scores across the three domains considered in this section. This interpretation is supported by the recommendations provided by respondents in the surveys to ensure adequate staffing and improve the skill mix in order to reduce the cycle of night duty and improve staff morale.

The interaction of the factors linking the three domains provides insight into the complex and important role the midwifery managers have in ensuring a safe service in this setting. Managing the complexity of the clinical work environment in NSW hospitals to ensure a safe service and positive patient outcomes takes a skilled nursing unit manager (Duffield, Roche et al., 2007). The skills and roles of a nursing unit manager have been identified by as complex and often requiring skills of persuasion and negotiation in a context where they have limited control

(Braithwaite et al., 2004). In my study, participants reported having limited control over not only their workload, but also the increased demand of the service and the ability to recruit midwives in an environment of workforce shortages and budget restraints. English midwifery managers have described this situation as being asked to 'reconcile irreconcilable service demands' in a situation where they have limited ability to control their environment (Curtis et al., 2006, p. 100).

Similar to the findings of this thesis, Duffield and colleagues reported that the important factors to providing safe patient care were related to nurses' control and autonomy over their work environment (Duffield, Roche et al., 2007). Job satisfaction was also associated with a nurses work environment. Satisfaction, in this context, has an important influence on patient safety (Duffield, Roche et al., 2007). Whilst this study provided insight into some aspects of job satisfaction, particularly staff morale, further research is required to understand their relationship between the other factors, such as the relationship between patient safety and work autonomy and/or burnout associated with midwives' job satisfaction (Sandall, 1997).

7.2.2.3 The linkage between the Working Conditions and the Teamwork domains

The summary at Table 33 provides evidence of a safety culture where there is a perception of poor communication and collaboration between the midwives, junior medical staff and visiting medical staff, particularly in the presence of problems and the need to escalate care to VMOs. Problems with escalating care were perceived to be related to a lack of familiarity between members of the maternity team. A lack of familiarity and trust has been cited as a barrier to communication in the USA between midwives/obstetric nurses (Sexton, Holzmueller et al., 2006). There is no documented evidence regarding the level of perceived teamwork and collaboration in Australia maternity settings. The Australian College of Midwives (ACM) submission to the Safe Staffing Taskforce Consultation, which considered the impact of staffing variables and their subsequent impact on patient safety, provides some insight into the issue of collaboration within the maternity setting. The ACM identified the existence of a general lack of respect by some obstetricians for the skills, experience and clinical judgment of midwives with respect to their negotiation of care for women. Effective collaboration between midwives and obstetricians is often dependent on the midwife's relationship with the particular obstetrician rostered or on call on the day. Similar findings were reported in this study (Chapter 6). The ACM identified this lack of collaboration as a barrier to safe and effective maternity care (ACSQHC, 2005).

Poor teamwork is a common factor associated with adverse events (Barraclough & Birch, 2006). In the maternity setting, poor teamwork has been identified as a factor jeopardising

patient safety (O'Neill et al., 2008). Poor teamwork in this case was associated with the fact that maternity personnel do not always function or train as teams (O'Neill et al., 2008). Similarly, my participants reported working infrequently with VMOs, thereby creating a situation where they were unfamiliar with each other and rarely worked as a team, increasing the potential for poor communication. The limited presence of VMOs on the labour ward was also considered to be a factor in the amount of supervision provided to junior medical officers. Supervision provided by VMOs was perceived to be influenced by their lack of involvement and engagement in the hospital resulting from their contractual - on call employment status and the competing demands of private practice. The perception of the quality of communication between teams and the inadequate levels of supervision were thought to create a situation where junior medical staff may fail to recognise or escalate care when problems arose.

The way in which clinical supervision is provided, though a contractual on-call agreement with VMOs, seems to create an additional barrier to the development of a positive Working Climate in the study settings. There was limited opportunity to get the views of the VMOs at the study sites; they were invited but chose not to participate in either the survey or the interviews. Whilst this is a limitation, there was a strong theme that the VMO model in relation to supervision of junior medical staff and the presence of these doctors in the clinical setting was challenging. This was identified to have the potential to impact on the safety of care for women in this setting. Failure to collaborate or work as a team resulting in poor communication has been regularly identified as a situation which precipitates error and risks safety in maternity care (ACSQHC, 2002; Department of Health UK, 2000; JCAHO, 2005; Lewis, 2004; MCHRC, 1998; NSW Health, 2006a, 2006b, 2007, 2008; NSW Heath, 2005; O'Neill et al., 2008)

A number of these factors, such as the need to improve poor communication in the maternity care team and the lack of adequate supervision of junior medical officers, are significant barriers which must be addressed to improve the safety culture in this setting. Poor supervision of junior medical officers has been frequently cited as a barrier to patient safety and consequently to positive safety cultures (Douglas, Robinson, & Fahy, 2001; Garling, 2008). Recently in NSW, findings from a Special Commission of Inquiry into the NSW Acute Care Services in Public Hospitals has recommended measures to increase the consultant medical officers' role and accountability for the supervision of junior medical officers (Garling, 2008). These recommendations will have applicability to this maternity service in this study and, if implemented, are likely to improve the safety culture in this area.

This section has described the safety culture present in the study sites, which answers the major question of the thesis. The safety culture was found to be negative, complex, and influenced to

some extent by inter-related factors present in the local maternity service. More importantly, the Policy Context, far from achieving its stated aim of improving the safety culture, created barriers and challenges to improving the safety culture in this setting. Having described the safety culture, the second question of the thesis sought to identify if understanding this culture could assist in identifying strategies to improve the safety culture. This will be discussed in the next section.

7.3 Can understanding this culture assist in the identification of strategies to improve the safety culture of maternity care in this setting?

This second question was posed in response to the trend in Australia and internationally to measure safety culture in order to develop a strategy to identify interventions to improve patient safety (Flin, 2007; Kohn, Corrigan, & Donaldson, 2001; NPSA, 2004; NSW Department of Health, 2005; Pronovost & Sexton, 2005).

The Safety Attitudes Questionnaire used in this study is designed as a stand-alone tool to measure safety culture within the maternity setting. This study was limited by a poor 29% response rate to the survey and the results from the survey alone were unable to measure or identify the safety culture at the study sites. Whilst this study never set out to only measure safety culture via survey, the inability to achieve a desired 60% response rate in this setting highlight limitations of using safety culture surveys in isolation as a strategy to improve safety culture. The use of safety culture surveys alone to measure the study sites' safety culture would not have identified the influence of the policy context, a major finding of the study. Safety culture surveys, including the Safety Attitudes Questionnaire used in this study, examine the safety culture at clinical level, but do not capture the Policy Context. Failure to consider the Policy this Context would not have enabled the interactions between the policy context, the resulting safety culture and the barriers to improving this culture to be identified. This finding leads me to argue that the use of safety culture surveys as the only method of assessing safety culture is of limited value in identifying strategies to improve the safety culture. The findings of this thesis supported the use of a mixed method research approach to identify the key barriers and challenges which must be addressed prior to improving the culture. The barriers and challenges to improving the safety culture in the maternity setting are discussed in the final question of this thesis in the next section.

7.4 What are the barriers and challenges to improving the safety culture in this setting?

The description of the safety culture highlighted a number of barriers that create challenges for the maternity service safety culture. Significantly, there were three key barriers and challenges considered to be the most important factors to be addressed in this setting. These barriers are:

1. A lack of leadership to drive the safety and quality agenda within the service;
2. A lack of infrastructure to support the activities required to develop a positive safety culture; and,
3. A perception that improving the safety culture is not valued by the organisation.

These barriers, like so many of the factors related to safety culture identified in this study, are inter-related and are considered collectively as a challenge to improving the safety culture in this setting. Reviewing the definition of safety culture provides a useful way to understand the significance of these barriers.

As highlighted earlier, safety culture is defined in a number of ways including, 'a product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation's health and safety management' (Sexton, Helmreich et al., 2006). This definition indicates the importance of the values, perceptions and commitment to positive safety culture in the health care setting. As such, improving safety culture must be focused on instilling and promulgating the values and behaviour that are conducive to positive cultures. In this study there was a perception that a safety culture was not valued by the organisation. This perception is a fundamental barrier to the development of positive safety cultures within the study site. This perception was related to an absence of leadership role models promulgating the priority and importance of a safety culture within the organisation, an absence brought about by the decreased infrastructure. These concepts are briefly explored.

No one leading safety and quality was a theme identified from participant interviews and explored in Chapter 6. This theme highlighted the fact that there had been, within the clinical setting for the study, a history of interested individuals with the capacity to lead quality and safety activities, particularly relating to incident management. These individuals led by example and by *holding the line* (ID 16). These individuals were able to undertake these roles when the local maternity service and Clinical Practice Improvement Units provided resources to develop the infrastructure to lead the safety and quality agenda in this setting.

When the positions of those individuals leading the quality and safety activities were either deleted, centralised to be AHS-based positions or replaced with Patient Safety Officers with less authority, there was no longer seen to be anyone leading or driving the safety and quality agenda. The changes to local leadership and infrastructure arrangements in response to other organisational priorities were viewed by participants as the organisation not valuing or being

committed to these activities. The absence of leadership at all levels, to prioritise the organisational commitment to patient safety, and the lack of infrastructure to support the incident management activity to move from reporting to learning from adverse events, meant that safety culture would not be able to improve in this setting. To summarise, the enablers to improve the safety culture in this setting include:

1. Adequate infrastructure – Both human and technical to provide the capacity to undertake the activities required to develop a positive safety culture;
2. Leadership commitment to infrastructure and developing a safety culture;
3. Consideration of the Policy Context.

7.5 Discussion

This thesis describes the safety culture in a maternity service in NSW, Australia. The safety culture in this setting was based on data derived from safety culture surveys and participant interviews. This study was limited by a number of factors, including the early decision to redesign the study to include the Policy Study and the small quantitative sample size.

An early plan for this thesis was to measure the safety culture and use this information to develop and test interventions to improve the safety culture in the study settling. It became apparent early in the study that factors present at the study site combined with a lack of local stakeholder capacity to support this approach would make that type of study impossible. Whilst the need to change the original plan and redesign of the study could be seen as a limitation, I argue that it has been a strength. This study has provided new knowledge about the influence of the broader Policy Context on local safety culture. Understanding this influence is an important first step, prior to developing strategies to improve the safety culture. The original study would not have considered this influence and would have limited the focus of interventions to improve the safety culture.

The small sample size of survey respondents is a limitation. It is not clear how representative the results are of the safety culture in the study setting. Those participants who responded to the surveys were likely to be the ones with the most motivation and passion about improving the safety culture in this setting or those who had the most negative things to say. The low response rate to the survey may have been due to many reasons including a lack of time, or may indicate the prevailing negative attitude toward the safety culture. The results of the survey reflect the views of the respondents who chose to participate in this study and firm conclusions from the measurement of safety culture cannot be drawn from these findings alone. Notwithstanding these limitations, the findings and conclusions drawn from this study are not based on the

quantitative sample alone. The survey data has not provided the complete picture of the safety culture in this setting, as it was triangulated with interview data.

I expected the interview participants to talk mostly about the known domains of safety culture in the maternity setting. Surprisingly, they did not. What they talked about most was the impact of a policy, which in theory was designed to improve the safety culture but in fact adversely influenced it. I did not need a larger sample to confirm this finding. There was clearly data saturation reporting that the Policy Context was a huge issue with regard to local safety culture. What the interviews did not provide was the detail and evidence about how this could be the case. This detail was provided by the Policy Study which illustrated how the maternity service was marginalised with the implementation of a policy reform agenda by focusing on improving patient access and waiting lists in the acute areas of the hospital at the same time as trying to improve quality and safety across the health system.

The findings of this study show that the introduction of the 'one size fits all' systems improvement policy resulted in a misguided attempt to fix something that was not broken that is, the safety culture in the maternity service. In doing so, this policy adversely impacted on what was a 'good' safety culture and had the opposite effect of reversing this. It is acknowledged that this was not the policy intention. Furthermore, the focus of the reform agenda was never meant to be the maternity service, rather it was to improve patient access in other acute care parts of the system.

The intent of the policy was to address the issue of improving patient access and patient safety: I would contend it was an over-reaction. The government basically set out to address too many issues simultaneously. These issues were related to the need to find solutions to the increasing cost of health care in NSW, the increasing problem of access block in the acute area of public hospitals and the lack of public confidence in the health system after the Camden and Campbelltown Hospitals crisis. The impetus to find solutions to these problems was also driven politically through the media. This response resulted in the government looking for solutions that were in fact already in train. As a result they packaged up and implemented two policies which had an objective to improve certain aspects of the health service, but were fundamentally opposed to each other.

In implementing the policies together as a 'one size fits all' policy, the government ignored a wealth of advice from a series of well-informed sources. This advice included an admonition not to restructure the AHS boundaries at the same time as implementing major clinical governance reforms as this would create too much change and uncertainty, but they did.

Secondly, the NSW Health Department was told not to micro-manage the AHSs. However, the implementation of Policy Directives tied to performance targets to ensure government priorities were met, resulted precisely in significant micro-management. Finally, the government failed to respond to the lessons emerging from the quality and safety agenda that strong leadership is critical to the development of safety cultures. The increased size of AHS and the centralisation of Clinical Governance Units resulting from the restructure policy effectively moved existing strong leadership further away from the clinical setting. Instead of improving the safety culture in the study setting the 'one size fits all' policy did the opposite and reversed a good culture.

The packaging of a 'one size fits all policy' was partly designed to silence the media and the political opposition by showing that the government was doing something to address the problem. However, this study has shown the impact of such a policy on the local safety culture. Whilst it could be argued that policy to improve safety and quality had to start somewhere, the counter argument is that, in this maternity setting, they had already established a robust system and were not starting from scratch. In this setting, the maternity service was on the crest of the wave created by an earlier safety and quality agenda. The leaders and clinicians in this service were convinced and motivated to improve patient safety; they were early adopters.

Alternatively, is could be said that the maternity service had gone off on its own in the early days and developed a clinical governance system. Then when the rest of the health system caught up, they resisted adopting to the centralised system developed with the implementation of the Patient Safety and Clinical Quality Program. This argument could have merit if the Patient Safety and Clinical Quality Program had been able to deliver the promised infrastructure and leadership through the new Clinical Governance Units to the maternity service. This thesis has clearly shown this was not the case and the maternity service was disadvantaged by the implementation of *Planning Better Health* (NSW Health, 2004). The implementation of the *Planning Better Health* policy made it impossible for this maternity service to be able to function and maintain their safety culture in the new system because the reform agenda rationalised the very services designed to improve safety and quality by taking their infrastructure and leadership away.

Policy may often seem like a blunt instrument that has little effect on local issues. The bottom line is that implementation of policy can result in unintended consequences unless local environments are considered in the implementation. This thesis has demonstrated the unintended consequences of implementing a major health reform across the system when components of these policies are intended to focus on only certain parts of the system. There must be a better way to implement policies. The design of policy has to be sufficiently flexible

to respond to existing conditions. Some would argue that policy has to start somewhere. That may be the case, but there needs to be ways to ensure that the intended objectives of the policy are met but that the unintended consequences do not tip the balance away from those objectives.

In addition, if policy is to be implemented there needs to be consideration of the capacity to implement at the clinical level. This thesis has demonstrated the maternity setting is under pressure, and the midwifery unit managers in particular, are over-stretched and do not have the capacity to do more. There are a number of policies being developed in response to the lessons learnt from adverse events in NSW. The recent release of the NSW Department of Health Policy Directive aimed at developing a risk management program for maternity services is a good example (NSW Department of Health, 2009). This policy includes new and additional processes, including a nominated clinician to oversee risk management activities to ensure the regular investigation and review and feedback of adverse events takes place. Compliance with the Policy Directive requires each maternity service to report regular progress and action taken to their AHS and to the NSW Department of Health. Such a policy has the potential to address a number of issues raised in this thesis, but will be dependent on the provision of additional and sustainable infrastructure to meet the mandatory requirements. As this study has demonstrated, without dedicated infrastructure in a service already under pressure, it is hard to see how these important policy objectives will be met. The provision of adequate infrastructure to support safety culture within maternity services will also be important as NSW Health embarks on a new round of health reforms resulting from the many recommendations from the Garling Inquiry (Garling, 2008).

There can be no ‘one size fits all policy’. There needs to be local implementation and careful assessment of what already exists and the requisite capacity, infrastructure and resources provided within the system before we change things. When designing a ‘one size fits all policy’ as was the case in this study, implementation has to be sufficiently sensitive not to throw out the good with the bad.

7.5.1 Significance

The findings of this thesis support the use of a mixed method research approach to examine the safety culture in the maternity setting. This study examined the safety culture in one service based across two settings. This culture is specific to this service and cannot be generalised to others, as culture will vary. However, a number of the findings in this study have resonance with those cited in the literature. In particular, the need to improve communication across teams and improve supervision are commonly cited as issues impacting on patient safety (ACSQHC, 2002; Department of Health UK, 2000; Douglas et al., 2001; Garling, 2008; JCAHO, 2005;

Lewis, 2004; MCHRC, 1998; NSW Health, 2006a, 2006b, 2007, 2008; NSW Heath, 2005; O'Neill et al., 2008). The clinical work environment in relation to skill mix, working hours and job satisfaction have been reported in the literature to be linked to patient outcomes (Aiken, Clarke, Cheung, Sloane, & Silber, 2003; Duffield, Roche et al., 2007; Laschinger & Leiter, 2006; Tourangeau, Giovanetti, Tu, & Wood, 2002). The importance of leadership and a strong organisational commitment to improve safety culture is also identified in the literature (Hindle et al., 2006; NPSA, 2004; Perry, 2002).

This study has identified the presence of a number of well documented factors considered to be an influence on the safety culture and patient safety in other heath settings. In this case, is reasonable to assume that the influence of the policy context is likely to also be a factor which would influence the safety culture in other health care settings. As such, the Policy Context should be examined when considering safety culture as a strategy to develop interventions to improve the safety culture. This is an area where future research could be undertaken.

7.6 Conclusion

The thesis has presented a mixed method research study, which examined and described the safety culture in one maternity service in New South Wales, Australia. The description of the safety culture in this setting was developed through two studies, the Policy and the Services Studies. The Policy Study included an audit and chronological mapping of the development of the key policies influencing safety culture within the maternity service. The Policy Study described the Policy Context at the study sites. The Services Study included the measurement of the six safety culture domains through culture surveys and examined the safety culture through semi-structured interviews. These data were triangulated with the results of the Policy Study in order to: interpret and describe the safety culture present within the maternity service; identify the influence of policy in this context; and identify the barriers and challenges to improving the safety culture in this setting.

The safety culture in the maternity setting was negative across all six-safety culture domains examined. The safety culture was found to have reduced infrastructure and capacity to support incident management activities required to improve it. This was influenced by instability resulting from an organisational restructure. There was a lack of leadership at all levels to drive the safety and quality agenda and a perception that improving the safety culture was neither a priority nor was it valued by the organisation. The safety culture was also influenced by the need to improve communication between midwives, junior medical staff and visiting medical officers during the escalation of care and inadequate supervision of junior medical staff. Finally the safety culture was also influenced by the difficulty in ensuring there was always the right

number of staff with the right skill mix. This often resulted in midwives needing to work longer, thus increasing the risk of fatigue, potential adverse events and low staff morale.

The safety culture found in the maternity service was complex and influenced by a number of interrelated factors. A key finding of this study was the overarching influence the policy context created by a four-policy reform agenda, implemented under the single platform of 'Planning Better Health', had on the safety culture in the maternity service. Three of the policies in particular were found to have created unintended consequences for the maternity service. These consequences effectively reduced their available infrastructure and capacity to be responsive to incident management and resulted in a lack of leadership at all levels to drive the safety and quality agenda. These changes resulted in a perception within the maternity service that improving the safety culture was no longer a priority or valued by the organisation. This resulted in the erosion of a safety culture which was reported to be developing prior to the implementation of the one size fits all policy, the Planning Better Health Program.

The key finding of this study was that the Policy Context in this setting needs to be identified as a new seventh safety culture domain. The Policy Context has not previously been identified as an important factor when considering safety culture. It would not have been possible to describe the complexity of the safety culture or identify the barriers to improving the safety culture in this setting without also considering the influence of the Policy Context.

Evidence was presented which described and supported the adverse consequences of the policy context on the safety culture in this setting, supporting the presence of the Policy Context as a new safety culture domain. Considering the influence of the Policy Context when examining safety culture in the health setting may be an important step needed to develop sustainable strategies to improve the safety culture and improving patient safety in other settings. This is a critical area for future research.

REFERENCES

ACEM. (2004). *Access block and overcrowding in emergency departments*. Melbourne: Australasian College of Emergency Medicine.

Acolet, D., Springett, A., & Golightly, S. (2008). *Confidential Enquiry into Maternal and Child Health (CEMACH) Perinatal Mortality 2006, England, Wales and Northern Ireland*. London: CEMACH.

ACSQHC. (2002a). *Lessons from the Inquiry into Obstetrics and Gynaecology Services at King Edward Memorial Hospital 1990-2000*. Canberra: Australian Council for Safety and Quality in Health Care.

ACSQHC. (2002b). *Safety Through Action: Improving Patient Safety in Australia*. Canberra: Commonwealth of Australia.

ACSQHC. (2003). *National health care open disclosure standards*. Canberra: Australian Council for Safety and Quality in Health Care.

ACSQHC. (2004). *Setting the Human factor standards for health care: Do lessons from aviation apply? A report on the human factors in healthcare workshop* Paper presented at the Sixth International Australian Aviation Psychology Symposium, December 2003, Sydney.

ACSQHC. (2005a). *Achieving safety and quality improvements in health care. Sixth report to the Australian health ministers' conference. Canberra*. Canberra: Australian Council for Safety and Quality in Health Care.

ACSQHC. (2005b). *National Patient Safety Framework*. Canberra: Australian Council for Safety and Quality in Health Care.

ACSQHC. (2005c). *Safe staffing consultation report*. Canberra: Australian Council for Safety and Quality in Health Care.

ACSQHC. (2005d). Sentinel events Retrieved 20 June, 2007, from http://www.safetyandquality.gov.au/internet/safety/publishing.nsf/Content/6A2AB719D72945A4CA2571C5001E5610/$File/sentnlevnt31305.pdf

AIHW. (2006). *Medical indemnity national data collection: Public sector 2004 - 2005. AIHW cat.no. HSE 42*. Canberra: Australian Institute of Health and Welfare.

AIHW. (2008). *Australian Hospital Statistics 2006-2007* Canberra: Australian Institute of Health and Welfare.

Aiken, l., Clarke, S., Cheung, R., Sloane, D., & Silber, J. (2003). Educational levels of hospital nurses and surgical patient mortality. *Journal of the American Medical Association, 290*(12), 1617-1623.

Aiken, l., Clarke, S., & Sloane, D. (2000). Hospital Restructuring: Does It Adversely Affect Care and Outcomes? *Journal of Nursing Administration, 30*(10), 457 - 465.

Althaus, C., Bridgman, P., & Davis, G. (2007). *The Australian Policy Handbook* (4th ed.). Crows Nest: Allen & Unwin.

Ashcroft, B. (2003). *Report for the National Patient Safety Agency: Summary of findings from the root cause analysis of 37 adverse events and near misses in obstetrics. From research carried out at 7 maternity units in North West of England*. London: National Patient Safety Agency.

Australian Commission on Safety and Quality in Health Care. (2008a). Evaluation of the pilot of the national open disclosure standards. Retrieved 15/08/08, from http://www.safetyandquality.org/internet/safety/publishing.nsf/Content/PriorityProgram-02_PilotNODstd

Australian Commission on Safety and Quality in Health Care. (2008b). *Windows into safety and quality in health care 2008.* Sydney: Australian Commission for Safety and Quality in Health Care.

Australian Council for Safety and Quality and the National Institute of Clinical Studies. (2004). *Charting the safety and quality of healthcare in Australia*. Canberra: Australian Council for Safety and Quality.

Australian Department of Health & Ageing. (2004). Joint communiqué, Health ministers agree to reform agenda. Media statement. Retrieved March 2006, from www.health.gov.au/internet/wcms/publishing.nsf/content/health-medicare/-yr2004-jointcom-jc001.htn.

Australian Health Ministers Advisory Council. (1996). *The final report of the taskforce on quality in Australian health care*. Canberra: Commonwealth Government.

Australian Health Ministers Advisory Council. (1999). AHMC communique: New national council will oversee safety and quality in Australia's health care system. Retrieved 31/12/08, 2008, from http://www.health.gov.au/internet/main/publishing.nsf/Content/health-mediarel-yr1999-mw-hmc2.htm

Australian Health Ministers' Conference. (2006). Health Ministers announce key positions for the Australian Commission on safety and quality in health care. *Australian Health Ministers' Conference* Retrieved 31/12/08, from www.safetyandquality.gov.au/communications/mediakey.pdf

Australian Institute of Health and Welfare and The Australian Commission on Quality and Safety in Health Care. (2007). *Sentinel events in public hospitals 2004 - 2005*. Canberra: AIHW.

Australian Medical Association. (2006). *AMA safe hours audit 2006*. ACT: Australian Medical Association.

Barraclough, B. (2001). Safety and quality in Australian health care: making progress. *Medical Journal of Australia, 174*, 612-616.

Barraclough, B. (2003, July 11-13). *Advancing the patient safety agenda: an Australian perspective.* Paper presented at the Improving Quality of Health Care in the United States and the United Kingdom: strategies for change and action, Penny Hill Park, Bagshot, England.

Barraclough, B., & Birch, J. (2006). Health care safety and quality: Where have we been and where are we going? *The Medical Journal of Australia, 184*(10 Suppl), S48 - S50.

Barraclough, S., & Gardner, H. (2008). *Analysing health policy: A problem-oriented approach.* Sydney: Elsevier.

Baumann, A., Giovannetti, P., O'Brien - Pallas, L., Mallettee, C., Deber, R., Blythe, J., et al. (2001). Healthcare restructuring: the impact of job change. *Canadian Journal of Nursing Leadership, 14*(1), 14 - 20.

Benn, J., Koutantji, M., Wallace, L., Spurgeon, P., Healy, A., & Vincent, C. (2009). Feedback and incident reporting: information and action to improve patient safety. *Quality and Safety in Health Care, 18*, 11 - 21.

Berwick, D. (2003). Errors today and errors tomorrow. *New England Journal of Medicine, 348*(25), 2570-2573.

Bloomberg, C. (1996). The professional indemnity review. What did it accomplish? *Medical Journal of Australia, 164*(502).

Bonner, A., & Tolhurst, G. (2002). Insider - outsider perspectives of participant observation. *Nurse Researcher, 9*(4), 7 - 19.

Bradbury-Jones, C. (2007). Enhancing rigour in qualitative health research: Exploring subjectivity through Peshkin's I's. *Journal of Advanced Nursing, 59*(3), 290 - 298.

Braithwaite, J. (2007). How to restructure-proof your health service. *British Medical Journal, 335*(99).

Braithwaite, J., Finnegan, T., Graham, E., Degeling, P., Hindle, D., & Westabrook, M. (2004). How important are quality and safety for clinical managers? Evidence from triangulated studies. *Clinical Governance, 9*(1), 34-41.

Braithwaite, J., Travaglia, J., Mallock, N., Iedema, R., Westbrook, M., Long, D., et al. (2005). *Evaluation of the safety improvement program in New South Wales: Overview of studies*. Sydney: Centre for Clinical Governance in Health, University of New South Wales.

Braithwaite, J., Westbrook, M., Hindle, D., Iedema, R., & Black, D. (2006). Does restructuring hospitals result in greater efficiency? - An empirical test using diachronic data. *Health Services Management Research, 19*(1), 1-12.

Braithwaite, J., Westbrook, M., Iedema, R., Mallock, N., Forsyth, R., & Zhang, K. (2005). A tale of two hospitals: Assessing cultural landscapes and compositions. *Social Science & Medicine, 60*, 1149 - 1162.

Brennan, T., Leape, L., Laird, N., Hebert, L., Localio, A., Lawthers, A., et al. (1991). Incidence of adverse events and negligence in hospitalized patients. Results of the Harvard Medical Practice Study I. *New England Journal of Medicine, 324*(6), 370-376.

Bridgman, P., & Davis, G. (2000). *The Australian Policy Handbook* (2nd ed.). Sydney: Allen & Unwin.

Brown, C., Hofer, T., Johal, A., Thomson, R., Nicholl, J., Franklin, B., et al. (2008). An epistemology of patient safety research: A framework for study design and interpretation. part 4. One size does not fit all. *Quality and Safety in Health Care, 17*, 178 - 181.

Burns, N., & Grove, S. K. (2005). *The Practice of Nursing Research Conduct, Critique, and Utilization* (5th edition ed.). St Louis: Elsevier Saunders.

Centre for Epidemiology and Research NSW Department of Health. (2007). *New South Wales Mothers and Babies 2005*. Retrieved. from http://www.health.nsw.gov.au/pubs/2007/pdf/mdc05.pdf.

Clinical Excellence Commission. (2008). Special Committees. Retrieved 08/04/08, 2008, from http://www.cec.health.nsw.gov.au/specialcomms.html

Colebatch, H. (1998). *Policy* (First ed.). Buckingham: Open University Press.

Colebatch, H. (Ed.). (2006). *Beyond the Policy Cycle The Policy Process in Australia*. Crows Nest: Allen & Unwin.

Colla, J., Bracken, A., Kinney, L., & Weeks, W. (2005). Measuring patient safety climate: A review of surveys. *Quality and Safety in Health Care, 14*(5), 364 - 366.

Cooper, M. D. (2000). Towards a model of safety culture. *Safety Science, 36*(2), 111-136.

Cresswell, J. (2003). *Research design: Qualitative, quantitative and mixed methods approaches*. Thousand Oaks, California: Sage Publications.

Cresswell, J., & Plano Clarke, V. (2007). *Designing and conducting mixed methods research*. Thousand Oaks: Sage.

Curtis, P., Ball, L., & Kirkham, M. (2006). Management and morale: challenges in contemporary maternity care. *British Journal of Midwifery, 14*(2), 100 -103.

Davis, G. (1993). *Public policy in Australia* (2nd ed.). Sydney: Allen & Unwin.

de Vries, E., Ramrattan, M., Smorenburg, S., Gourma, D., & Boermeester, M. (2008). The incidence and nature of in-hospital adverse events: a systematic review. *Quality and Safety in Health Care, 17*, 216 - 223.

DeJoy, D. M. (2005). Behaviour change versus culture change: Divergent approaches to managing workplace safety. *Safety Science, 43*(2), 105-129.

Department of Health UK. (2000a). *An organisation with a memory report of an expert group on learning from adverse events in the NHS chaired by the Chief Medical Officer*. London: The Stationary Office.

Department of Health UK. (2000b). *An organisation with a memory report of an expert group on learning from adverse events in the NHS chaired by the Chief Medical Officer*. London: The Stationary Office.

Department of Health UK. (2000c). *Confidential Enquiry into Stillbirths and Deaths in Infancy (CESDI) Seventh Report*. London: Department of Health.

Department of Health UK. (2002). *Learning from Bristol: The DH response to the report of the public inquiry into children's heart surgery at the Bristol Royal Infirmary 1984-1995*. London: Department of Health

Douglas, N., Robinson, J., & Fahy, K. (2001). *Inquiry into obstetric and gynaecological services at King Edward Memorial Hospital final report 1990 -2000 Vol 1*.

Duffield, C., Kearin, M., Johnston, J., & Leonard, J. (2007). The impact of hospital restructuring on the nursing workforce. *Australian Journal of Advanced Nursing, 24*(3), 42-46.

Duffield, C., & O'Brien - Pallas, L. (2002). The nursing workforce in Canada and Australia: two sides of the same coin. *Australian Health Review, 25*(2), 136 - 144.

Duffield, C., Roche, M., O'Brien - Pallas, L., Aisbett, C., King, M., Aisbett, K., et al. (2007). *Glueing it together: Nurses, their work environment and patient safety, Final report* Retrieved. from http://www.health.nsw.gov.au/pubs/2007/pdf/nwr_report.pdf.

Edmondson, A. C. (2004). Learning from failure in health care: frequent opportunities, pervasive barriers. *Quality and Safety in Health Care, 13*(supplement 2), 3-9.

Edwards, G. (2000). Clarifying the role of policy. *Australian Journal of Public Administration, 59*(2), 109 -114.

Ehsani, J. P., Jackson, T., & Duckett, S. J. (2006). The incidence and cost of adverse events in Victorian hospitals 2003–04. *The Medical Journal of Australia, 184* (11), 551-555.

Everett, S. (2003). 'The policy cycle'. democratic process or rational paradigm revisited?'. *Australian Journal of Public Administration, 62*(2), 65 -70.

Fletcher, M. (2000). *The Quality of Australian Health Care: Current issues and future directions*. Canberra: Commonwealth Department of Health and Aged Care.

Flin, R. (2007). Measuring safety culture in health care: A case for accurate diagnosis. *Safety Science, 45*(6), 551 - 562.

Flin, R., Burns, C., Mearns, K., Yule, S., & Robertson, E. (2006). Measuring safety climate in healthcare. *Quality and Safety in Health Care, 15*(2), 109-115.

Fulop, N., Protopsaltis, G., Hutchings, A., King, A., Allen, P., Normand, C., et al. (2002). Process and impact of mergers of NHS trusts: multicentre case study and management cost analysis. *British Medical Journal, 325*(246).

Garling, P. (2008). *Final Report of the Special Commission of Inquiry Acute Care Services in NSW Public Hospitals: Overview*. Sydney: NSW Government.

Garling, P. (2009). *Sharing Caring in a Time of Budget Insufficency - Is there and Ethical Reform Paradigm?* Paper presented at the Centre for Health Governance, Law and Ethics Oration 2009.

Greenhalgh, T., Robert, G., Bate, P., Macfarlane, F., & Kyriakidou, O. (2005). *Diffusion of Innovations in Health Service Organisations*. Massachusetts: Blackwell Publishing Limited.

Gribch, C. (2007). *Qualitative data analysis an introduction*. Thousand Oaks: Sage Publications.

Hansen, E. (2006). *Successful qualitative health research: a practical introduction*. Sydney: Allen & Unwin.

Harris, L., & Ogbonna, E. (2002). The unintended consequences of culture interventions; a study of unexpected outcomes. *British Journal of Management, 13*(1).

Harris, M. (2006). *Managing Health Services* (2nd ed.). Sydney: Mosby.

Healy, J., Sharman, E., & Lokuge, B. (2006). *Australia: Health systems review health systems in transition* (Vol. 8). Cornwall: WHO European Observation on Health Systems and Policy.

Helmreich, R. (2000). On error management: Lessons from aviation. *British Medical Journal, 320*, 781-785

Helmreich, R., & Merritt, A. (2001). *Culture at Work in Aviation and Medicine: National, Organisational and Professional Influences*. Ashgate: Aldershot.

Hill, M. (2005). *The Public Policy Process* (Fourth ed.). Essex: Pearson Education Limited.

Hindle, D., Braithwaite, J., & Iedema, R. (2006). *Patient safety research: A review of the technical literature*. Sydney: Centre for Clinical Governance Research, University of New South Wales.

Howard, C. (2005). The policy cycle: A modern post-machiavellian policy making? *Australian Journal of Public Administration, 64*(3 -13), 65 -70.

Howlett, M., & Ramesh, M. (2003). *Studying public policy: Policy cycles and policy subsystems*. Ontario: Oxford University Press.

Institute of Clinical Excellence. (2001). *Institute of Clinical Excellence Corporate Plan*. Retrieved 22/11/07. from http://www5.health.nsw.gov.au/ice/corporate.htm.

Institute of Clinical Excellence. (2005). *Institute of Clinical Excellence strategic plan*. Sydney: Institute of Clinical Excellence.

IPART. (2003). *NSW Health Focusing on Patient Care: Independent Pricing and Regulatory Tribunal of NSW*. Retrieved 31/12/08. from http://www.health.nsw.gov.au/pubs/2003/pdf/ipart_health_report.pdf.

JCAHO. (2005). Joint Commission on Accreditation of Healthcare Organizations Sentinel Events Statistics.

Jenkins, W. (1978). *Policy analysis*. London: Martin Robertson.

Joint Commission American Health Organizations. (2005). Sentinel Event Statistics. Retrieved March, 2006, from www.jcaho.org/accredited+organisations/sentinel+events/sentinel+events+statistics.htm

Joint Commission of American Health Organizations. (2005). Sentinel event alert: Preventing infant death and injury during delivery. *Joint Commission of American Health Organizations, 2009*(30).

Joint Commission of American Health Organizations. (2008). Sentinel event statistics as of December 31, 2008. Retrieved 100409, from http://www.jointcommission.org/SentinelEvents/Statistics/

King, N. (2008). Template analysis. Retrieved 22/08/08, 2008, from http://www.hud.ac.uk/hhs/research/template_analysis/

King's Fund. (2008). *Safe births everybody's business: An independent inquiry into the safety of maternity services in England*. Retrieved. from http://www.kingsfund.org.uk/current_projects/maternity_services_inquiry/index.html.

Kingdon, J. (1995). *Agendas, alternatives and public policy* (2nd ed.). New York: HarperCollins College Publishers.

Kirk, S. (2005). Safety culture an overview. *Safer Health Care* Retrieved 18/07/06, 2006, from www.saferhealthcare.org.uk/IHI/Topics/SafetyCulture/WhatWeKnow/

Kirk, S., Parker, D., Claridge, T., Esmail, A., & Marshall, M. (2007). Patient safety culture in primary care: Developing a theoretical framework for practical use. *Quality and Safety in Health Care, 16*(4), 313 - 320.

Kohn, L., Corrigan, J., & Donaldson, M. (Eds.). (2001). *To err is human: Building a safer health care system*. Washington: Institute of Medicine: National Academy Press.

Landrigan, C., Rothschild, J., Cronin, J., Kaushal, R., Burdick, E., Katz, J., et al. (2004). Effect of reducing intern's work hours on serious medical errors in intensive care units. *New England Journal of Medicine, 351*(18), 1838 - 1848.

Laschinger, S. H. K., & Leiter, M. P. (2006). The impact of nursing work environments on patient safety outcomes. *Journal of Nursing Administration, 36*(5), 259-267.

Laws, P., & Hilder, L. (2008). *Australia's mothers and babies* (Vol. 22). Sydney: AIHW National Perinatal Statistics Unit.

Leigh, J., Long, P., & Barraclough, B. (2004). The Clinical Support System Program: supporting system-wide improvement. *Medical Journal of Australia, 180*(10 suppl), S101-S103.

Lewis, G. (2004). *Why mothers die. The Sixth Report of the Confidential Enquires into Maternal Deaths in the United Kingdom, 2000-2002* London: RCOG Press.

Lewis, G. (2007). *The Confidential Enquiry into Maternal and Child Health (CEMACH). Saving mother's lives: Reviewing maternal deaths to make motherhood safer 2003 - 2005. The Seventh Report on Confidential Enquiries into Maternal Deaths in the United Kingdom*. London: CEMACH.

Maslach, C., Jackson, S., & Leiter, M. (1996). *Maslach Burnout Inventory Manual* (3rd ed.). Palo Alto, California: Consulting Psychologists Press.

Matheson, C. (2000). Policy formation in Australian Government: Vertical and horizontal axes. *Journal of Public Administration, 59*(2), 44 -55.

Matheson, C. (2006). *Understanding the policy process: An organizational perspective.* Paper presented at the Public Policy Network Conference, Adelaide.

McFerran, S., Nunes, J., Pucci, D., & Zuniga, A. (2005). Perinatal patient safety project: A multicenter approach to improve performance reliability at Kaiser Permanente. *Journal of Perinatal and Neonatal Nursing, 19*(1), 37-45.

MCHRC. (1998). *Confidential Enquiry into Stillbirths and Deaths in Infancy. Fifth Report.* London: Maternal & Child Health Research Consortium,.

Milgate, S. (2003). Quality in Australian Health Care Study Examined or Exposed? *Australian Doctors Fund* Retrieved 08/02/08, from http://www.adf.com.au/archive.php?doc_id=98

Miller, L. A. (2005). System error in intrapartum electronic fetal monitoring: A case review. *Journal of Midwifery & Women's Health, 50*(6), 507-516.

Morse, J. (1991). Approaches to qualitative - quantitative methodological triangulation. *Nursing Research, 40*(1), 120 -123.

National Expert Advisory Group on Safety and Quality in Australian Health Care. (1999). *Implementing safety and quality enhancement in health care. Final report to health ministers*. Canberra: Commonwealth Department of Health and Family Services.

National Health and Medical Research Council. (2007). *National Statement on Ethical Conduct in Human Research*. Canberra: Australian Government.

New South Wales Health Services Act 1997, (1997).

New South Wales Government. (2009). New South Wales Government, The Treasury, Office of Financial Management. Retrieved 07/01/09, 2009, from http://www.treasury.nsw.gov.au/organisation/who

NPSA. (2004). *Seven steps to patient safety: the full reference guide*. London: National Patient Safety Agency.

NSW Department of Health. (1997). *Circular 97/58 Incidents reportable to the Department of Health*. Retrieved 31/12/08. from http://www.health.nsw.gov.au/archive/cib/circulars/1997/cir97-58.pdf.

NSW Department of Health. (1999). *A framework for managing the quality of health services in NSW*. Sydney: NSW Department of Health.

NSW Department of Health. (2000). *NSW framework for maternity services*. Sydney: NSW Department of Health.

NSW Department of Health. (2003a). *Circular 2003/88 reportable incident briefs*. Retrieved 31/12/08. from http://www.health.nsw.gov.au/archive/cib/circulars/2003/cir2003-88.pdf.

NSW Department of Health. (2003b). *Models of maternity service provision across NSW: Progressing implementation of the NSW framework for maternity services*. Sydney: NSW Department of Health.

NSW Department of Health. (2004a). $10 million for Clinical Excellence and Patient Safety Retrieved 04/04/08, 2008, from http://www.health.nsw.gov.au/news/2004/20040622_24.html

NSW Department of Health. (2004b, 24 August). $55 million enhancement for patient safety and clinical quality launched. from http://www.health.nsw.gov.au/news/2004/20040824_01.html

NSW Department of Health. (2004c). Health reforms pass Upper House. Retrieved 04/04/08, 2008, from http://www.health.nsw.gov.au/news/2004/20041119_00.html

NSW Department of Health. (2004d). Planning Better Health – Minister announces reform of the NSW Health system Retrieved 04/04, 2008, from http://www.health.nsw.gov.au/news/2004/20040727_00.html

NSW Department of Health. (2005a). *Policy Directive PD2005_608 Patient Safety and Clinical Quality Program* Retrieved 31/12/08. from http://www.health.nsw.gov.au/policies/pd/2005/PD2005_608.html.

NSW Department of Health. (2005b). *Policy Directive PD2005_ 609 Implementation of the Patient Safety and Clinical Quality Program*. Retrieved 31/12/08. from http://www.health.nsw.gov.au/policies/pd/2005/PD2005_609.html.

NSW Department of Health. (2006). *Policy Directive PD2006_030 Incident Management*. Retrieved 31/12/08. from http://www.health.nsw.gov.au/policies/pd/2007/PD2007_061.html.

NSW Department of Health. (2007a). Inquiry into miscarriage at Royal North Shore Hospital. Retrieved 06/08/08

NSW Department of Health. (2007b). *Policy Directive PD2007_061 Incident Management*. Retrieved. from http://www.health.nsw.gov.au/policies/pd/2007/PD2007_061.html.

NSW Department of Health. (2009). *PD2009_003 Maternity - clinical risk management program*. Retrieved 100409. from http://www.health.nsw.gov.au/policies/pd/2009/pdf/PD2009_003.pdf.

NSW Government. (2007). *A new direction for NSW State Health Plan towards 2010*. Sydney: NSW Department of Health.

NSW Health. (2000). *NSW Health Council: A better health system for NSW*. Sydney: NSW Department of Health.

NSW Health. (2001). *Summary Government Action Plan for Health: Working as a team*. Sydney: NSW Department of Health.

NSW Health. (2002). *Guide to the Role Delineation of Health Services*. Sydney: NSW Department of Health.

NSW Health. (2004a). *Planning Better Health*. Sydney: NSW Department of Health.

NSW Health. (2004b). *Sustainable Access Plan*. Sydney: NSW Department of Health.

NSW Health. (2004c). *The NSW Patient Safety and Clinical Quality Program*. Sydney: NSW Health Department.

NSW Health. (2005a). *Clinical services redesign program: Redesigning a better patient journey*. Sydney: NSW Department of Health.

NSW Health. (2005b). *Corporate governance and accountability compendium for NSW Health*. Sydney: NSW Department of Health.

NSW Health. (2005c). *Patient Safety and Clinical Quality Program. First report on incident management in the NSW public health system 2003-2004*. Sydney: NSW Department of Health.

NSW Health. (2006a). *NSW Department of Health Annual Report 2005 - 2006*. Sydney: NSW Department of Health.

NSW Health. (2006b). *NSW Health Patient Safety and Clinical Quality Program: Third report on incident management in the NSW Public Health System 2005 - 2006*. Sydney: NSW Department of Health.

NSW Health. (2006c). *Patient Safety and Clinical Quality Program. Second report on incident management in the NSW public health system 2004-2005*. Sydney: NSW Department of Health.

NSW Health. (2007). *NSW Health incident management in the NSW public health system 2007 January to June*. Sydney.

NSW Health. (2008a). A new direction for maternity services: Towards 2012 [Electronic Version]. *NSW Health HCAC Newsletter*, 16. Retrieved 06/01/09, from http://www.health.nsw.gov.au/pubs/2008/pdf/hcac_newsletter.pdf

NSW Health. (2008b). *NSW Health Incident management in the NSW public health system 2007 July to December*. Sydney.

NSW Health Policy Implementation Group. (2007). *Policy implementation group working minutes, Wed 1 August 2007*. Retrieved. from www.health.nsw.gov.au/quality/pirg/pdf/sep_meeting.pdf.

NSW Heath. (2005). *Patient Safety and Clinical Quality Program. First report on incident management in the NSW public health system 2003-2004*. Sydney: NSW Department of Health.

NSW Legislative Council. (2007). *Legislative Council Joint Select Committee Inquiry into Royal North Shore Hospital*. Sydney: NSW Government.

NSW Ministerial Advisory Committee on Health Services in Small Towns. (2000). *Report to the NSW Minister for Health - A framework for change*. Sydney: NSW Health.

NSW Parliament Legislative Council. (2004). *Complaints handling within NSW Health: Report of the General Purpose Standing Committee*. Sydney: NSW Parliament Legislative Council.

Nunes, J., & McFerran, S. (2005). The perinatal patient safety project: New can be great. *The Permanente Journal, 9*(1), 25-27.

O'Connell, T., Ben-Tovim, D., McCaughan, B., Szwarcbord, M., & McGrath, K. (2008). Health services under siege: the case for clinical process redesign. *Medical Journal of Australia, 188*(6), S9 - S13.

O'Neill, O., Thompson, A., Vincent, C., Macfarlane, A., Page, L., & Penn, Z. (2008). *Safe births everybody's business: An independent inquiry into the safety of maternity services in England*. London: The King's Fund.

Parliament of NSW Website (Hansard). (2003a). Legislative Assembly 4 September 2003 Full Day Hansard Transcript, Camden and Campbelltown Hospitals Inquiry Second Interim Report, Item 10 of 37, pg9407. Retrieved 05/04, 2008, from http://www.parliament.nsw.gov.au/prod/web/common.nsf/V3HHBHome

Parliament of NSW Website (Hansard). (2003b). Legislative Assembly 16 September 2003, Full Day Hansard Transcript Camden and Campbelltown clinical malpractice allegations, 3327.

Parliament of NSW Website (Hansard). (2003c). Legislative Assembly 17 September 2003, Full Day Hansard Transcript Camden and Campbelltown Hospitals Emergency

Departments, 3475. Retrieved 05/04, 2008, from http://www.parliament.nsw.gov.au/prod/web/common.nsf/V3HHBHome

Parliament of NSW Website (Hansard). (2004a). Legislative Assembly 2 June 2004, Full Day Hansard Transcript Camden and Campbelltown hospitals special commission of inquiry second interim report, 9407.

Parliament of NSW Website (Hansard). (2004b). Legislative Assembly 19 October 2004 Full Day Hansard Transcript, Health Legislation Bill, pg18953. Retrieved 05/04, 2008, from http://www.parliament.nsw.gov.au/prod/web/common.nsf/V3HHBHome

Paterson, R. (2005). *Report of the review of the governance arrangements for safety and quality in health care*. Canberra: Australian Health Ministers' Conference.

Patton, M. (1987). *How to use qualitative methods in evaluation*. Newbury Park, London: Sage Publications.

Patton, M. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury park, California: Sage.

Patton, M. (2002). *Qualitative evaluation and research methods* (Third ed.). Thousand Oaks, California: Sage Publications.

Penney, G., & Brace, V. (2007). Near miss audits in obstetrics. *Current Opinion in Obstetrics and Gynaecology, 19*(2), 145 - 150.

Perneger, T. (2006). A research agenda for patient safety. *International Journal for Quality in Health Care, 18*(1), 1-3.

Perry, S. (2002). Profiles in patient safety: organizational barriers to patient safety. *Academic Emergency Medicine, 9*(8), 848 - 850.

Phillips, P., & Hughes, C. (2008). Clinical process redesign - can the leopard change its spots? *Medical Journal of Australia, 188*(6), S7 - S8.

Pollard, R. (2004a, 8 June). Health system in sick bay. *Sydney Morning Herald*, from http://www.smh.com.au/articles/2004/06/07/1086460233501.html

Pollard, R. (2004b, 28 June). Seeing red on health. *Sydney Morning Herald*, pp. 12 -13. Retrieved 09/03/09, from http://www.smh.com.au/articles/2004/01/09/1073437467498.html

Pronovost, P., & Sexton, B. (2005). Assessing safety culture: guidelines and recommendations. *Quality and Safety in Health Care, 14*(4), 231-233.

Pronovost, P., Weast, B., Rosenstein, B., Sexton, J., Holzmueller, C., Paine, L., et al. (2005). Implementing and validating a comprehensive unit-based safety program. *Journal of Patient Safety, Volume 1*(1), pp 33-40.

Rice, P., & Ezzy, D. (1999). *Qualitative research methods: a health focus*. Melbourne: Oxford University Press.

Runciman, W. (2006). The safety and quality of health care: Where are we now? Shared meanings preferred terms and definitions for safety and quality concepts. *Medical Journal of Australia, 184*(10), S41- S43.

Runciman, W., & Moller, J. (2001). *Iatrogenic injury in Australia*. Canberra: Commonwealth Department of Aged Care.

Runciman, W. B. (2002). Lessons from the Australian Patient Safety Foundation: setting up a national patient safety surveillance system--is this the right model?. *Quality & Safety in Health Care, 11*(3), 246-251.

Sandall, J. (1997). Midwives burnout and continuity of care. *British Journal of Midwifery, 5*(2), 106 -111.

Schofield, D., & Earnest, A. (2006). Demographic change and the future demand for public hospital care in Australia. *Australian Health Review, 30*, 507 - 515.

Sexton, B., Helmreich, R., Neilands, T., Rowan, K., Vella, K., Boyden, J., et al. (2006). The Safety Attitudes Questionnaire: psychometric properties, benchmarking data and emerging research. *BMC Health Services Research, 6*(44), 1-10.

Sexton, B., Holzmueller, C., Pronovost, P., Thomas, E., McFerran, J., Nunes, J., et al. (2006). Variation in caregiver perceptions of teamwork climate in labor and delivery units. *Journal of Perinatology, 26*(8), 463-470.

Sexton, B., & Thomas, E. (2003a). *The safety attitudes questionnaire (SAQ) guidelines for administration. Technical report 03-02*. Houston: The University of Texas Center of Excellence for Patient Safety Research and Practice.

Sexton, B., & Thomas, E. (2003b). *The safety climate survey: Psychometric and benchmarking properties. Technical Report 03-03.* Houston: The University of Texas Center of Excellence for Patient Safety Research and Practice.

Sexton, B., Thomas, E., & Helmreich, R. (2000). Error, stress, and teamwork in medicine and aviation: cross sectional surveys. *British Medical Journal, 320*(7237), 745-749.

Sexton, B., Thomas, E., Helmreich, R., Neilands, T., Rowan, K., Vella, K., et al. (2004). *Frontline assessment of healthcare culture: Safety attitudes questionnaire norms and psychometric properties. Technical Report 04-01*. Houston: The University of Texas Center of Excellence for Patient Safety Research and Practice. AHRQ Grant1PO1HS1154401.

Silverman, D. (2005). *Doing Qualitative Research* (Second ed.). London: Sage.

Simpson, K. (2003). Common areas of litigation related to care during labour and birth: Recommendations to promote patient safety and decrease exposure. *The Journal of Perinatal & Neonatal Nursing, 17*(2), 110-125.

Simpson, K. (2005). Failure to rescue: implications for evaluating quality of care during labour and birth. *Journal of Perinatal & Neonatal Nursing, 19i1*, p24(13).

Singla, A., Kitch, B., Weissman, J., & Campbell, E. (2006). Assessing patient safety culture. A review and synthesis of the measurement tools. *Journal of Patient Safety, 2*(3), 105 - 115.

Smith, A., & Dixon, A. (2007). *The safety of maternity services in England*. London: The Kings Fund.

Smith, A., Dixon, A., & Page, L. (2009). Health-care professionals' views about safety in maternity services: a qualitative study. *Midwifery, 25*, 21-31.

Spigelman, A., & Swan, J. (2005). Review of the Australian incident monitoring system. *Australian & New Zealand Journal of Surgery, 75*, 657-661.

Swan, N. (Writer) (1997). The quality of Australian health care [radio interview], *Health Report*. Australia: ABC.

Tashakkori, A., & Teddlie, C. (Eds.). (2003). *Handbook of mixed methods in social and behavioural research*. Thousand Oaks, California: Sage Publishing.

Thomas, M., B. , & Houston, S. (2005). Theoretical approaches for investigating patient safety. *Clinical Nurse Specialist: The Journal of Advanced Nursing Practice, 19*(3), 129-134.

Tito, F. (1995). *Review of professional indemnity arrangements for health professionals. Final report compensation and professional indemnity in health care*. Canberra: Commonwealth Department of Human Services and Health.

Tourangeau, A. E., Giovanetti, P., Tu, J. V., & Wood, M. (2002). Nursing related determinants of 30-day mortality for hospitalized patients. *Canadian Journal of Nursing Research, 33*(4), 71-88.

Travaglia, J., & Braithwaite, J. (2006). *Evaluation of the incident information management system in New South Wales: Study number: 8 - review of the dissemination of lessons learned*. Sydney: Centre for Clinical Governance in Health, University of New South Wales.

Van de Weyden, M. (1995). Politics and Publishing. *Medical Journal of Australia, 163*, 453 - 454.

Vincent, C. (2003). Patient safety: Understanding and responding to adverse events. *New England Journal of Medicine, 348*(13), 1051-1056.

Vincent, C., Taylor-Adams, S., Chapman, E., Hewett, D., Prior, S., Strange, P., et al. (2000). How to investigate and analyse clinical incidents: Clinical risk unit and association of litigation and risk management protocol. *British Medical Journal, 320*, 777-781.

Vincent, C., Taylor-Adams, S., & Stanhope, N. (1998). Framework for analysing risk and safety in clinical medicine. *British Medical Journal, 316*, 1154-1157.

Walker, B. (2004a). *Final Report of the Special Commission of Inquiry into Campbelltown and Camden Hospitals*. Sydney: Special Commission of Inquiry into Campbelltown and Camden Hospitals.

Walker, B. (2004b). *Interim Report of the Special Commission of Inquiry into Campbelltown and Camden Hospitals*. Sydney: Special Commission of Inquiry into Campbelltown and Camden Hospitals.

Walter, J. (1996). *Tunnel vision: The failure of political imagination*. Sydney: Allen & Unwin.

Westabrook, M., Braithwaite, J., Travaglia, J., Long, D., Jorm, C., & Iedema, R. (2006). Promoting safety longer - term responses of three health professional groups to a safety improvement programme. *International Journal of Health Care Quality Assurance, 20*(7), 555 - 571.

Wiener, E., Kanki, B., & Helmreich, R. (1993). *Cockpit Resource Management*. San Diego: Academic Press.

Wilson, J., & Symon, A. (2002). *Clinical risk management in midwifery the right to a perfect baby?* Oxford: Butterworh - Heinmann.

Wilson, R., Runciman, W., Gibberd, R., Harrison, B., Newby, L., & Hamilton, J. (1995). The Quality in Australian Health Care Study. *Medical Journal of Australia, 163*(9), 458-471.

Wilson, R., & Van Der Weyden, M. (2005). The safety of Australian healthcare: 10 years after QAHCS. We need a patient safety initiative that captures the imagination of politicians, professionals and the public. *Medical Journal of Australia, 182*(6), 260-261.

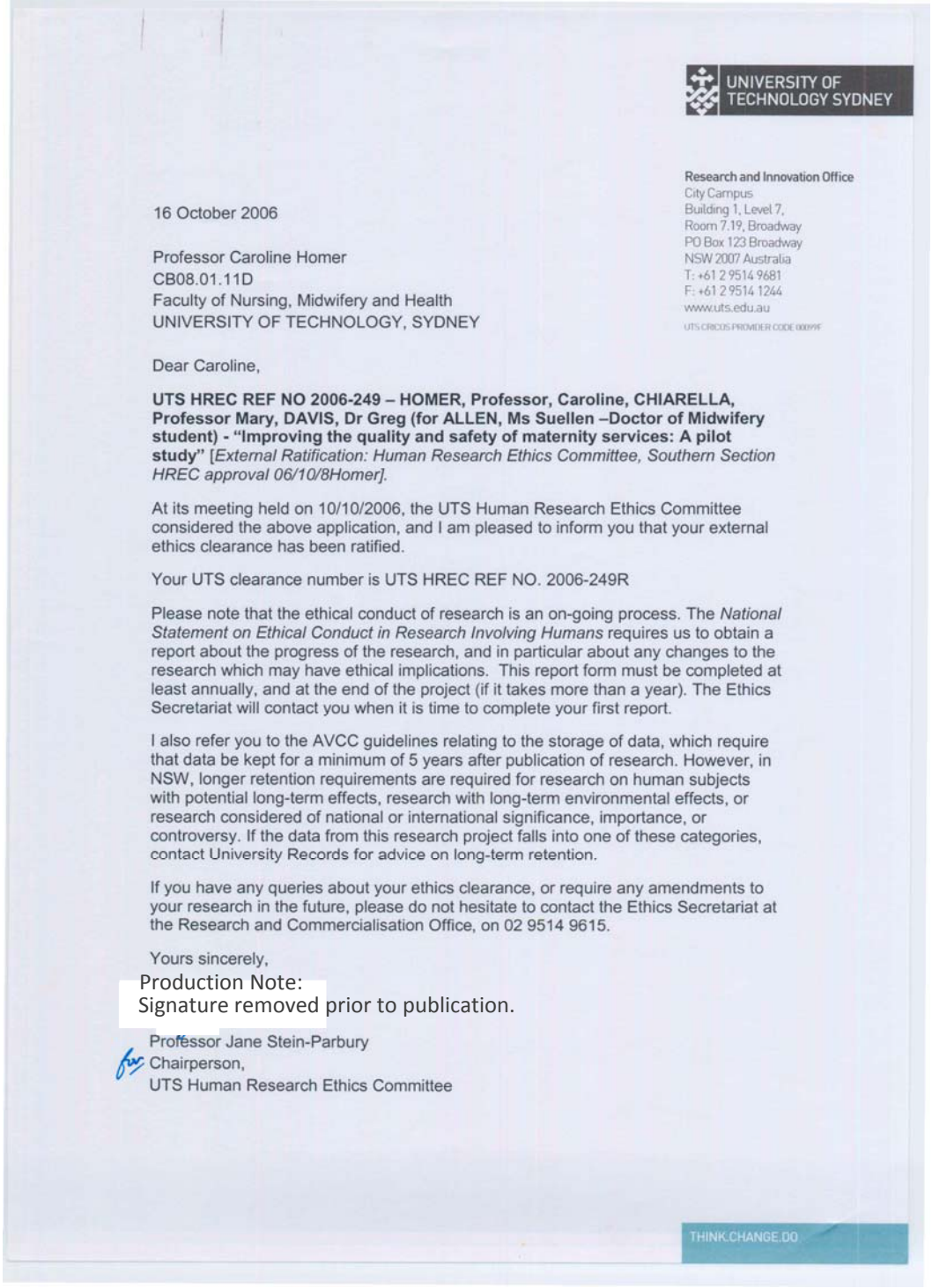
Zhan, C., & Miller, M. (2003). Excessive length of stay, charges and mortality attributable to medical injuries during hospitalisation *Journal of American Medical Association, 290*(14), 1868-1874.

Zwarenstein, & Bryant, W. (2000). Interventions to promote collaboration between nurses and doctors (review). *The Cochrane Database of Systematic Reviews, 2000*(2), 1-11.

APPENDICES

Appendix One: Ethical Approvals

University of Technology Sydney Human Research Ethics Approval



UNIVERSITY OF TECHNOLOGY SYDNEY

Research and Innovation Office
City Campus
Building 1, Level 7,
Room 7.19, Broadway
PO Box 123 Broadway
NSW 2007 Australia
T: +61 2 9514 9681
F: +61 2 9514 1244
www.uts.edu.au
UTS CRICOS PROVIDER CODE 00099F

16 October 2006

Professor Caroline Homer
CB08.01.11D
Faculty of Nursing, Midwifery and Health
UNIVERSITY OF TECHNOLOGY, SYDNEY

Dear Caroline,

UTS HREC REF NO 2006-249 – HOMER, Professor, Caroline, CHIARELLA, Professor Mary, DAVIS, Dr Greg (for ALLEN, Ms Suellen –Doctor of Midwifery student) - "Improving the quality and safety of maternity services: A pilot study" [*External Ratification: Human Research Ethics Committee, Southern Section HREC approval 06/10/8Homer].*

At its meeting held on 10/10/2006, the UTS Human Research Ethics Committee considered the above application, and I am pleased to inform you that your external ethics clearance has been ratified.

Your UTS clearance number is UTS HREC REF NO. 2006-249R

Please note that the ethical conduct of research is an on-going process. The *National Statement on Ethical Conduct in Research Involving Humans* requires us to obtain a report about the progress of the research, and in particular about any changes to the research which may have ethical implications. This report form must be completed at least annually, and at the end of the project (if it takes more than a year). The Ethics Secretariat will contact you when it is time to complete your first report.

I also refer you to the AVCC guidelines relating to the storage of data, which require that data be kept for a minimum of 5 years after publication of research. However, in NSW, longer retention requirements are required for research on human subjects with potential long-term effects, research with long-term environmental effects, or research considered of national or international significance, importance, or controversy. If the data from this research project falls into one of these categories, contact University Records for advice on long-term retention.

If you have any queries about your ethics clearance, or require any amendments to your research in the future, please do not hesitate to contact the Ethics Secretariat at the Research and Commercialisation Office, on 02 9514 9615.

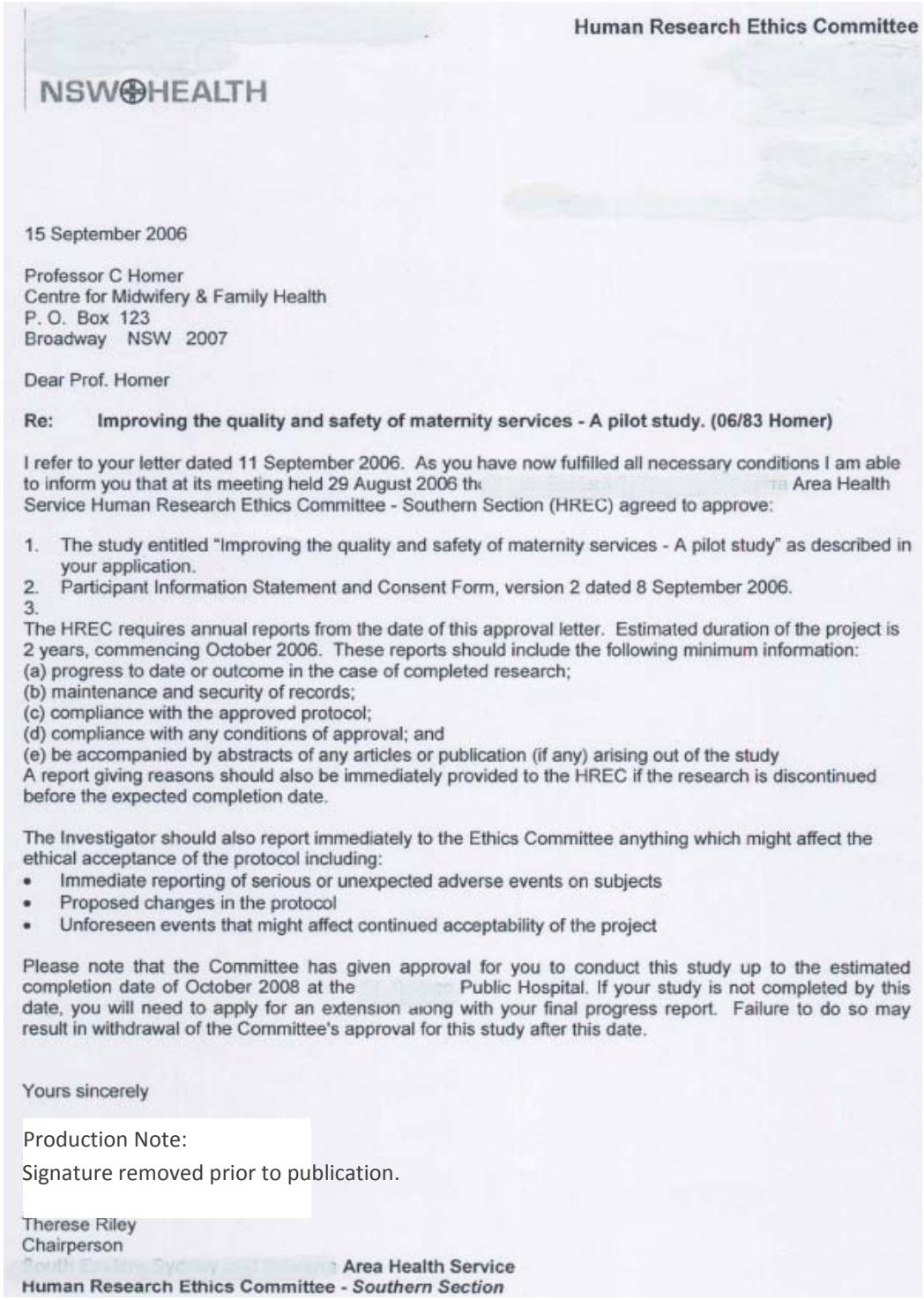
Yours sincerely,

Production Note:
Signature removed prior to publication.

Professor Jane Stein-Parbury
Chairperson,
UTS Human Research Ethics Committee

THINK.CHANGE.DO

AHS[81] Human Research Ethics Committee Approval for Site A



Human Research Ethics Committee

NSW HEALTH

15 September 2006

Professor C Homer
Centre for Midwifery & Family Health
P. O. Box 123
Broadway NSW 2007

Dear Prof. Homer

Re: Improving the quality and safety of maternity services - A pilot study. (06/83 Homer)

I refer to your letter dated 11 September 2006. As you have now fulfilled all necessary conditions I am able to inform you that at its meeting held 29 August 2006 th[illegible] Area Health Service Human Research Ethics Committee - Southern Section (HREC) agreed to approve:

1. The study entitled "Improving the quality and safety of maternity services - A pilot study" as described in your application.
2. Participant Information Statement and Consent Form, version 2 dated 8 September 2006.
3.

The HREC requires annual reports from the date of this approval letter. Estimated duration of the project is 2 years, commencing October 2006. These reports should include the following minimum information:
(a) progress to date or outcome in the case of completed research;
(b) maintenance and security of records;
(c) compliance with the approved protocol;
(d) compliance with any conditions of approval; and
(e) be accompanied by abstracts of any articles or publication (if any) arising out of the study
A report giving reasons should also be immediately provided to the HREC if the research is discontinued before the expected completion date.

The Investigator should also report immediately to the Ethics Committee anything which might affect the ethical acceptance of the protocol including:

- Immediate reporting of serious or unexpected adverse events on subjects
- Proposed changes in the protocol
- Unforeseen events that might affect continued acceptability of the project

Please note that the Committee has given approval for you to conduct this study up to the estimated completion date of October 2008 at the Public Hospital. If your study is not completed by this date, you will need to apply for an extension along with your final progress report. Failure to do so may result in withdrawal of the Committee's approval for this study after this date.

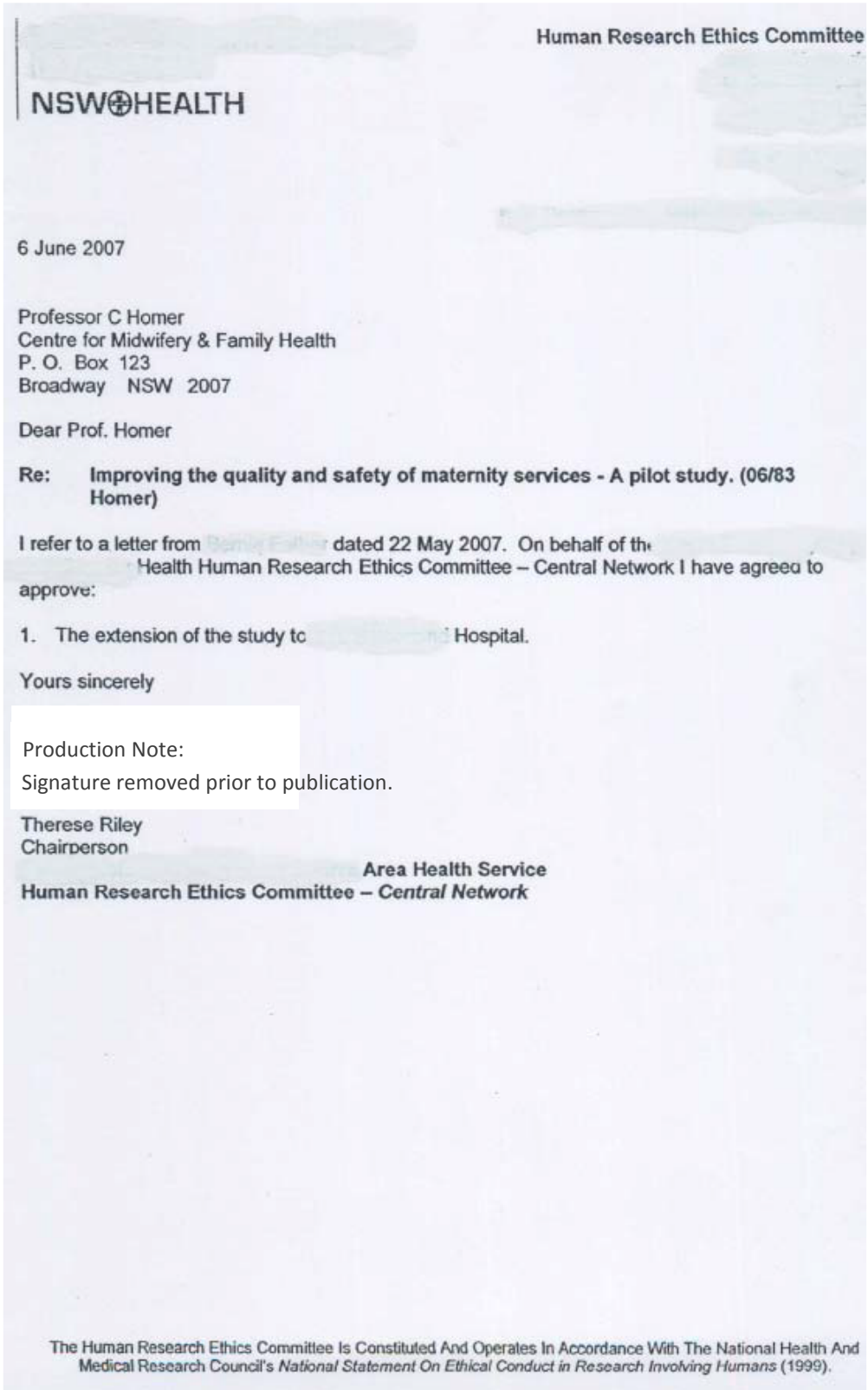
Yours sincerely

Production Note:
Signature removed prior to publication.

Therese Riley
Chairperson
Area Health Service
Human Research Ethics Committee - *Southern Section*

[81] Name of the AHS and Hospital removed for confidentiality purposes.

AHS Human Research Ethics Committee Approval for Site B[82]



Human Research Ethics Committee

NSW HEALTH

6 June 2007

Professor C Homer
Centre for Midwifery & Family Health
P. O. Box 123
Broadway NSW 2007

Dear Prof. Homer

Re: Improving the quality and safety of maternity services - A pilot study. (06/83 Homer)

I refer to a letter from dated 22 May 2007. On behalf of the Health Human Research Ethics Committee – Central Network I have agreed to approve:

1. The extension of the study to Hospital.

Yours sincerely

Production Note:
Signature removed prior to publication.

Therese Riley
Chairperson

Area Health Service
Human Research Ethics Committee – *Central Network*

The Human Research Ethics Committee Is Constituted And Operates In Accordance With The National Health And Medical Research Council's *National Statement On Ethical Conduct in Research Involving Humans* (1999).

[82] Name of AHS and Hospital removed for confidentiality purposes.

Appendix Two: Survey / interview/ participant information for Site A and Site B

INFORMATION LETTER

Improving the quality and safety of maternity services: A pilot study
(HREC APPROVAL NUMBER 06/83 Homer)

WHO IS DOING THE RESEARCH?

My name is Suellen Allen and I am a Doctoral student at UTS. My supervisors are Professor Caroline Homer at the Centre for Midwifery and Family Health and Professor Mary Chiarella at the Centre for Health Service Management at the University of Technology Sydney. [redacted] from the Division of Women's and Children's Health is also a researcher on this study.

WHAT IS THIS RESEARCH ABOUT?

This study aims to better understand the safety culture with the organisation and to develop ways to improve patient safety. The study will explore the attitudes and beliefs of maternity health professionals within the Division of Women's and Children's Health using a safety culture survey. The survey will examine individual, systemic and organisational elements known to influence safety culture.

The results of the survey will be presented back to the staff within the Division of Women's and Children's Health. A series of focus groups and interviews will also be conducted with staff. Both the survey results and the focus group discussions and interview will provide information to develop specific strategies that will improve patient safety. These strategies will be implemented over a 12 months period and will be supported by the research team. The safety survey will then be repeated to determine if any improvements have occurred.

IF I SAY YES, WHAT WILL IT INVOLVE?

Your participation in this research will involve completing two surveys and possibly being invited to participate in a focus group with a number of other health professionals or an individual interview. The aim of the first survey is to identify the safety culture within the Division of Women's and Children's Health. The second survey will reassess the safety culture after the safety improvement strategies have been implemented. The focus groups and interviews will discuss the findings of the survey and develop specific safety improvement strategies.

The survey will take approximately 15 minutes to complete. The focus groups and interviews will take no longer than one hour. These will be tape-recorded. Hand-written notes will be taken during the focus group. No identifying information will be kept about you.

ARE THERE ANY RISKS?

It is possible that completing the survey or participating in the focus groups may raise issues that could cause some distress. Should this occur, we will encourage you to seek support from available counseling or support services. We will provide the contact details of these supports. Confidentiality will be maintained at all times. In addition, should any issues arise within the focus groups which cause distress, the group would be stopped by the researcher and interactions continued on a one to one basis.

WHY HAVE I BEEN ASKED?

You have been asked to be part of this study because you are a maternity health professional working at [redacted] Hospital Division of Women's and Children's Health.

DO I HAVE TO SAY YES?

You don't have to say yes. Participation in this project is voluntary. The study is independent from line mangers, the invitation is independent of work and that no feedback will be given to your work/line managers if you decide not to participate.

WHAT WILL HAPPEN IF I SAY NO?

Nothing. I will thank you for your time so far and won't contact you about this research again.

IF I SAY YES, CAN I CHANGE MY MIND LATER?

You can change your mind at any time without giving a reason. I will ask you to sign a revocation of consent form. I will thank you for your time so far and won't contact you about this study again. Withdrawing from the study will not result in any consequences to you or in any way change my relationship with the hospital, employer or your manager.

WHAT IF I HAVE CONCERNS OR A COMPLAINT?

If you have concerns about the research that you think I or my supervisors can help you with, please feel free to contact us on 9514 4834. If you would like to talk to someone who is not connected with the research, you may contact the Research Ethics committee on 9350 3968, and quote this number *(HREC* 06/83 Homer *Approval Number).*

Appendix Three: Participant consent forms

UNIVERSITY OF TECHNOLOGY SYDNEY

PARTICIPANT (HEALTH CARE PROVIDER) CONSENT

Improving the quality and safety of maternity services: A pilot study
(HREC APPROVAL NUMBER 06/83 Homer)

I _____ agree to participate in the research project, Improving the quality and safety of maternity services: A pilot study (*the HREC approval reference number: 06/83 Homer)* being conducted by Professor Caroline Homer and Professor Mary Chiarella at the Centres for Midwifery, Child and Family Health and Health Services Management at the University of Technology Sydney (telephone 9514 4834) and [redacted] of the Division of Women's and Children's Health. Suellen Allen is studying for her Doctor of Midwifery degree and is also working on this study.

I understand that the purpose of this study is to generate knowledge about the safety culture and information on useful and effective strategies to improve the safety of maternity services. The study will explore the attitudes and beliefs of maternity health professionals at [redacted] Hospital using a safety culture survey. The survey will examine individual, systemic and organisational elements known to influence safety culture. The hospital will be assisted to develop specific strategies through focus groups that will improve safety. Strategies will be implemented over 12 months supported by the research team. The safety survey will be repeated to determine if any improvements have occurred.

I understand that my participation in this research will involve completing two surveys and possibly participating in a focus group with a number of other maternity health professionals. The first survey will identify the safety culture within the Division of Women's and Children's Health. The second survey will reassess the safety culture after the safety improvement strategies have been implemented. The focus group and interviews will discuss the findings of the survey and develop specific safety improvement strategies. The survey will take approximately 15 minutes to complete. The focus groups should take no longer than one hour. The focus groups will be tape-recorded. Hand-written notes will also be taken during the focus group. I understand that information collected from the survey is anonymous and no identifying information will be kept about me.

I am aware that I can contact Caroline Homer, Mary Chiarella and Suellen Allen (telephone: 9514 4841) or [redacted] if I have any concerns about the research. I also understand that I am free to withdraw my participation from this research project at any time I wish, without consequences, and without giving a reason. Withdrawing from the study will not in any way change my relationship with the hospital, employer or my manager. The study is independent from my line mangers and no feedback will be given to my line managers if I do not participate.

I agree that the research team, Caroline Homer, Mary Chiarella, [redacted] and Suellen Allen, have answered all my questions fully and clearly.

I agree that the research data gathered from this project may be published in a form that does not identify me in any way.

_____ ____/____/____
Signature (participant)

_____ ____/____/____
Signature (researcher or delegate)

NOTE:
This study has been approved by the [redacted] Area Health Service Human Research Ethics Committee. If you have any complaints or reservations about any aspect of your participation in this research which you cannot resolve with the researcher, you may contact the Ethics Committee through the Research Ethics Committee-Southern Section, [redacted] and quote HREC reference number. Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.

UNIVERSITY OF TECHNOLOGY SYDNEY

REVOCATION OF CONSENT

Improving the quality and safety of maternity services: A pilot study
(HREC APPROVAL NUMBER 06/83 Homer)

I hereby wish to **WITHDRAW** my consent to participate in the research project described above and understand that [redacted] Hospital has previously agreed that such a withdrawal WILL NOT jeopardize my employment or relationship with the [redacted] Hospital, my employer or manager.

_____ ____/____/____
Signature

_____
Please PRINT Name

The section for Revocation of Consent should be forwarded to
Professor Caroline Homer
Centre for Midwifery, Child and Family Health
University of Technology Sydney
P.O Box 123
Broadway, NSW 2007.

Appendix Four: Safety Climate Scale Survey and Safety Attitudes Questionnaire

SAFETY CLIMATE SURVEY

Marking Instructions:	Use a pencil only. Erase cleanly any mark you wish to change Correct mark (■) Incorrect Marks ☑ ☒ ⊡

Part 1. Please answer the following items with respect to your specific unit or clinical area. Choose your responses using the scale below:

A	B	C	D	E	X
Disagree Strongly	**Disagree Slightly**	**Neutral**	**Agree Slightly**	**Agree Strongly**	**Not Applicable**

1	The culture of this clinical area makes it easy to learn from the mistakes of others	(A)	(B)	(C)	(D)	(E)	(X)
2	Medical errors are handled appropriately in this clinical area	(A)	(B)	(C)	(D)	(E)	(X)
3	The senior leaders in my hospital listen to me and care about my concerns	(A)	(B)	(C)	(D)	(E)	(X)
4	The physician and midwifery/nurse leaders in my area listen to me and care about my concerns	(A)	(B)	(C)	(D)	(E)	(X)
5	Leadership is driving us to be a safety-centered institution	(A)	(B)	(C)	(D)	(E)	(X)
6	My suggestions about safety would be acted upon if I expressed them to management	(A)	(B)	(C)	(D)	(E)	(X)
7	Management/Leadership does not knowingly compromise safety concerns for productivity	(A)	(B)	(C)	(D)	(E)	(X)
8	I am encouraged by my colleagues to report any patient safety concerns I may have	(A)	(B)	(C)	(D)	(E)	(X)
9	I know the proper channels to direct questions regarding patient safety	(A)	(B)	(C)	(D)	(E)	(X)
10	I receive appropriate feedback about my performance	(A)	(B)	(C)	(D)	(E)	(X)
11	I would feel safe being treated here as a patient	(A)	(B)	(C)	(D)	(E)	(X)
12	Briefing personnel before the start of a shift (i.e. to plan for possible contingencies) is an important part of patient safety	(A)	(B)	(C)	(D)	(E)	(X)
13	Briefings are common here	(A)	(B)	(C)	(D)	(E)	(X)
14	I am satisfied with availability of clinical leadership. (Please respond to all three): Doctor	(A)	(B)	(C)	(D)	(E)	(X)
	Midwifery/Nursing	(A)	(B)	(C)	(D)	(E)	(X)
	Pharmacy	(A)	(B)	(C)	(D)	(E)	(X)
15	This institution is doing more for patient safety now, than it did one year ago.	(A)	(B)	(C)	(D)	(E)	(X)
16	I believe that most adverse events occur as a result of multiple system failures, and are not attributable to one individual's actions.	(A)	(B)	(C)	(D)	(E)	(X)
17	The personnel in this clinical area take responsibility for patient safety.	(A)	(B)	(C)	(D)	(E)	(X)
18	Personnel frequently disregard rules or guidelines that are established for this clinical area.	(A)	(B)	(C)	(D)	(E)	(X)
19	Patient safety is constantly reinforced as the priority in this clinical area.	(A)	(B)	(C)	(D)	(E)	(X)

Have you ever completed this survey before? ☐ **Yes** ☐ **No** ☐ **Don't Know**

BACKGROUND INFORMATION

Today's Date:
Month **Year**

☐ Consultant
☐ Dietician
☐ Nurse Manager/Nurse unit manager
☐ Enrolled Nurse
☐ Technicians (e.g. ECG, Lab, Radiology)
☐ Midwife/ RN / Student midwife
☐ Fellow Physician
☐ Support Associate
☐ Medical Administrator
☐ Physio/OT/Speech Therapist
☐ Resident/ Registrar
☐ Pharmacists
☐ Other: _____

Experience in position:

☐ less than 6 months ☐ 6 to 11 months ☐ 1 to 2 yrs ☐ 3 to 7 yrs ☐ 8 to 12 yrs ☐ 13 to 20 yrs ☐ 21 or over

Experience in speciality:

☐ less than 6 months ☐ 6 to 11 months ☐ 1 to 2 yrs ☐ 3 to 7 yrs ☐ 8 to 12 yrs ☐ 13 to 20 yrs ☐ 21 or over

Experience in organisation:

☐ less than 6 months ☐ 6 to 11 months ☐ 1 to 2 yrs ☐ 3 to 7 yrs ☐ 8 to 12 yrs ☐ 13 to 20 yrs ☐ 21 or over

Age: ☐ less than 30 ☐ 30 to 34 ☐ 35 to 39 ☐ 40 to 44 ☐ 45 or over

Unit (please write in title and/or location): _____

Thank you for completing the questionnaire – your time and participation are greatly appreciated.

PLEASE RETURN COMPLETED SURVEY TO SURVEY BOX IN STAFF TEAROOM OR VIA MAIL IN PREPAID ENVELOPE

SAFETY ATTITUDES QUESTIONNAIRE (MATERNITY VERSION)

Marking Instructions:	Use a pencil only. Erase cleanly any mark you wish to change Correct mark (■) Incorrect Marks ☑ ☒ ⊡

A	B	C	D	E	X
Very Low	**Low**	**Adequate**	**High**	**Very High**	**Not Applicable**

Use the scale above to describe the quality of collaboration and communication you have experienced with:

1	Obstetricians	(A)	(B)	(C)	(D)	(E)	(X)
2	Perinatologists	(A)	(B)	(C)	(D)	(E)	(X)
3	Midwives	(A)	(B)	(C)	(D)	(E)	(X)
4	Paediatricians	(A)	(B)	(C)	(D)	(E)	(X)
5	Neonatologists	(A)	(B)	(C)	(D)	(E)	(X)
6	Anaesthetists	(A)	(B)	(C)	(D)	(E)	(X)
7	Other	(A)	(B)	(C)	(D)	(E)	(X)
8	Resident /Registrars	(A)	(B)	(C)	(D)	(E)	(X)

9	Nurse Practitioners	(A)	(B)	(C)	(D)	(E)	(X)
10	NICU Personnel	(A)	(B)	(C)	(D)	(E)	(X)
11	Registered Nurses	(A)	(B)	(C)	(D)	(E)	(X)
12	Enrolled Nurses	(A)	(B)	(C)	(D)	(E)	(X)
13	Student midwives	(A)	(B)	(C)	(D)	(E)	(X)
14	Technicians (Lab, ECG, Radiology)	(A)	(B)	(C)	(D)	(E)	(X)
15	Nurse Managers / Nurse Unit Managers	(A)	(B)	(C)	(D)	(E)	(X)
16	Social workers	(A)	(B)	(C)	(D)	(E)	(X)

Please answer the following items with respect to your specific unit or clinical area (AN, PN, L & Birth, OT, SCN, NICU, etc.). Mark your response using the scale below:

A	B	C	D	E	x
Disagree Strongly	**Disagree Slightly**	**Neutral**	**Agree Slightly**	**Agree Strongly**	**Not Applicable**

1	High levels of workload are common in this clinical area.	(A)	(B)	(C)	(D)	(E)	(X)
2	I like my job.	(A)	(B)	(C)	(D)	(E)	(X)
3	Midwife/Nurse input is well received in this clinical area.	(A)	(B)	(C)	(D)	(E)	(X)
4	I would feel safe being treated here as a patient.	(A)	(B)	(C)	(D)	(E)	(X)
5	Medical errors* are handled appropriately in this clinical area.	(A)	(B)	(C)	(D)	(E)	(X)
6	This hospital does a good job of training new personnel.	(A)	(B)	(C)	(D)	(E)	(X)
7	All the necessary information for diagnostic and therapeutic decisions is routinely available to me.	(A)	(B)	(C)	(D)	(E)	(X)
8	Working in this hospital is like being part of a large family.	(A)	(B)	(C)	(D)	(E)	(X)
9	The administration of this hospital is doing a good job.	(A)	(B)	(C)	(D)	(E)	(X)
10	Hospital administration supports my daily efforts.	(A)	(B)	(C)	(D)	(E)	(X)
11	I receive appropriate feedback about my performance.	(A)	(B)	(C)	(D)	(E)	(X)
12	In this clinical area, it is difficult to discuss errors.	(A)	(B)	(C)	(D)	(E)	(X)
13	Briefing other personnel before a procedure is important for patient safety.	(A)	(B)	(C)	(D)	(E)	(X)
14	Briefings are common in this clinical area.	(A)	(B)	(C)	(D)	(E)	(X)
15	This hospital is a good place to work.	(A)	(B)	(C)	(D)	(E)	(X)
16	Fatigue impairs my performance during emergency situations (e.g. emergency resuscitation, haemorrhaging).	(A)	(B)	(C)	(D)	(E)	(X)
17	Hospital management does not knowingly compromise the safety of patients.	(A)	(B)	(C)	(D)	(E)	(X)
18	The levels of staffing in this clinical area are sufficient to handle the number of patients.	(A)	(B)	(C)	(D)	(E)	(X)
19	Decision making in this clinical area utilises input from relevant personnel.	(A)	(B)	(C)	(D)	(E)	(X)
20	I am encouraged by my colleagues to report any patient safety concerns I may have.	(A)	(B)	(C)	(D)	(E)	(X)
21	The culture in this clinical area makes it easy to learn from the errors of others.	(A)	(B)	(C)	(D)	(E)	(X)
22	This hospital deals constructively with problem physicians and employees.	(A)	(B)	(C)	(D)	(E)	(X)
23	The medical equipment in this clinical area is adequate.	(A)	(B)	(C)	(D)	(E)	(X)
24	In this clinical area, it is difficult to speak up if I perceive a problem with patient care.	(A)	(B)	(C)	(D)	(E)	(X)
25	When my workload becomes excessive, my performance is impaired.	(A)	(B)	(C)	(D)	(E)	(X)
26	I am provided with adequate, timely information about events in the hospital that might affect my work.	(A)	(B)	(C)	(D)	(E)	(X)
27	I have seen others make errors that had the potential to harm patients.	(A)	(B)	(C)	(D)	(E)	(X)
28	I know the proper channels to direct questions regarding patient safety in this clinical area.	(A)	(B)	(C)	(D)	(E)	(X)
29	I am proud to work at this hospital.	(A)	(B)	(C)	(D)	(E)	(X)
30	Disagreements here are resolved appropriately (i.e. not *who* is right but *what* is best for the patient).	(A)	(B)	(C)	(D)	(E)	(X)
31	I am less effective at work when fatigued.	(A)	(B)	(C)	(D)	(E)	(X)

* Medical error is defined as any mistake in the delivery of care, by any healthcare professional, regardless of outcome.

PTO

PLEASE RETURN COMPLETED SURVEY TO SURVEY BOX IN STAFF TEAROOM OR VIA MAIL IN PREPAID ENVELOPE

32	I am more likely to make errors in tense of hostile situations.	(A)	(B)	(C)	(D)	(E)	(X)
33	Stress from personal problems adversely affects my performance.	(A)	(B)	(C)	(D)	(E)	(X)
34	I have the support I need from other personnel to care for patients.	(A)	(B)	(C)	(D)	(E)	(X)
35	It is easy for personnel in this clinical area to ask questions when there is something that they do not understand.	(A)	(B)	(C)	(D)	(E)	(X)
36	Disruptions in the continuity of care (e.g. shift changes, patient transfers, etc.) can be detrimental to patient safety.	(A)	(B)	(C)	(D)	(E)	(X)
37	During emergencies, I can predict what other personnel are going to do next.	(A)	(B)	(C)	(D)	(E)	(X)
38	The physicians and midwives/nurses here work together as a well-coordinated team.	(A)	(B)	(C)	(D)	(E)	(X)
39	I am frequently unable to express disagreement with Consultants/ staff specialists.	(A)	(B)	(C)	(D)	(E)	(X)
40	Truly professional personnel can leave personal problems behind when working.	(A)	(B)	(C)	(D)	(E)	(X)
41	Morale in this unit/clinical area is high.	(A)	(B)	(C)	(D)	(E)	(X)
42	Trainees in my discipline are adequately supervised.	(A)	(B)	(C)	(D)	(E)	(X)
43	I know the first and last names of all the personnel I worked with during my last shift.	(A)	(B)	(C)	(D)	(E)	(X)
44	I have made errors that had the potential to harm patients.	(A)	(B)	(C)	(D)	(E)	(X)
45	Consultants/staff specialists in this clinical area are doing a good job.	(A)	(B)	(C)	(D)	(E)	(X)
46	All the personnel in my clinical area take responsibility for patient safety.	(A)	(B)	(C)	(D)	(E)	(X)
47	I fell fatigued when I get up in the morning and have to face another day on the job.	(A)	(B)	(C)	(D)	(E)	(X)
48	Patient safety is constantly reinforced as the priority in this clinical area.	(A)	(B)	(C)	(D)	(E)	(X)
49	I feel burned out from my work.	(A)	(B)	(C)	(D)	(E)	(X)
50	Important issues are well communicated at shift changes.	(A)	(B)	(C)	(D)	(E)	(X)
51	There is widespread adherence to clinical guidelines and evidence-based criteria regarding patient safety here.	(A)	(B)	(C)	(D)	(E)	(X)
52	I feel frustrated by my job.	(A)	(B)	(C)	(D)	(E)	(X)
53	I feel I am working too hard on my job.	(A)	(B)	(C)	(D)	(E)	(X)
54	Information obtained through incident reports is used to make patient care safer in this clinical area.	(A)	(B)	(C)	(D)	(E)	(X)
55	Personnel frequently disregard rules or guidelines (e.g. hand washing, treatment protocols/clinical pathways, etc) that are established for this clinical area.	(A)	(B)	(C)	(D)	(E)	(X)
56	The Consultant obstetrician should be formally in charge of the Labour or Delivery staff during the procedure.	(A)	(B)	(C)	(D)	(E)	(X)
57	Communication breakdowns which lead to delays in starting surgical procedures are common.	(A)	(B)	(C)	(D)	(E)	(X)
58	Have you ever completed this survey before?	☐ Yes		☐ No		☐ Don't Know	

BACKGROUND INFORMATION

Position: (mark your position)

☐ Obstetrician
☐ NICU Personnel
☐ Paediatrician
☐ Student Midwife
☐ Other
☐ Resident/ Registrar
☐ Nurse Practitioner
☐ Midwife
☐ Enrolled Nurse
☐ Anaesthetist
☐ Nurse Manager/ Nurse Unit Manager
☐ Social worker
☐ Perinatologist
☐ Registered Nurse
☐ Neonatologist
☐ Technician (Lab, ECG, Radiology)

How many years of experience do you have in this speciality? __ __

How many years have you worked at this hospital? __ __ **Current age** __ __

Usual shift ☐ Days ☐ Evenings ☐ Nights ☐ Variable Shifts

Job Status ☐ Full time ☐ Part time ☐ Agency ☐ Contract

Gender: ☐ Male ☐ Female

COMMENTS: What are your top three recommendations for improving patient safety in this clinical area?

1._____

2. _____

3. _____

If more room for comments is needed, please provide your response on a separate sheet of paper.

Thank you for completing the questionnaire – your time and participation are greatly appreciated.

PLEASE RETURN COMPLETED SURVEY TO SURVEY BOX IN STAFF TEAROOM OR VIA MAIL IN PREPAID ENVELOPE

Appendix Five: Interview guidelines

Service Study interview guideline – maternity participants

1. Tell me about the systems which are in place to monitor and manage quality and safety within the division
2. What governs these processes
3. Who is responsible for quality and safety in the Division?
4. Have there been any changes to this arrangement?
5. As a manager what is your role in managing Quality and safety issues
6. How are adverse events managed in the unit
7. What are your thoughts about this
8. What do you think are the keys issues which impact on quality and safety in the division
9. The survey has asked for recommendations for improvement for patient safety. What do would you recommend for the Division?
10. Do you have anything further to add?

Service Study interview guidelines - Clinical Governance and Policy participants

1. Tell me about your experience /role in clinical governance/ Policy
2. What is the safety agenda
3. What is driving this agenda
4. What are the aims of this agenda?
5. What is the reality of this at the clinical level?
6. What do you think are the keys challenges
7. What are you thoughts about the new organisational structure and the patient safety agenda
8. Systems in place
9. Do you think there has been any improvement?
10. What do you understand by the term patient safety
11. What do you think are the keys factors which impact on quality and safety in the clinical setting
12. Do you have anything further to add?

Appendix Six: Survey result tables, Site A and Site B

Table 34: Safety Attitudes Questionnaire respondent demographics Site A

Participant by professional Group	Sample n=59 [%]	Years experience in speciality (SD)	Years Worked in hospital (SD)	Usual Shift Worked [%]	Mean age in years (SD)	Gender [%]
Midwives	25 [66]	12.4 (9)	8.3(7)	D [32] E [4] N [4] V [64]	38.1 (9.7)	F 25 [100]
Midwifery Unit Managers/ Midwifery Managers	4 [11]	19 (8.7)	12.7 (8.3)	D [100]	51.5 (6.4)	F 3 [100]
Student Midwives	3 [8]	1 (0)	2 (1.7)	V [100]	28 (7)	F 2 [67] N/I 1 [33]
Registrars/ Resident Medical Officers	4 [11]	1.2 (4.9)	2.5 (2.4)	D [20] V [80]	30.8 (5.7)	F 3 [75] M 1 [25]
Obstetrician/ Staff Specialist	2 [5]	15.5 (9)	1(0)	V [67] N/I [33]	45.4 (7.8)	M 2 [100]
Total sample	38 [100]	11 (9.3)	7.3 (6.7)	D [32] E [3] N [3] V [62]	37.55 (10.1)	F 33 [87] M 3 [8] N/I 2 [5]

Values given as n (%) mean (SD).Shifts worked given as, day shift =D, evening shift=E, night shift=N, variable shifts=V, not identified =N/I. Gender given as, female=F, male=M.

Table 35: Safety Attitudes Questionnaire sample respondent demographics Site B

Participant by professional group	Sample n = 21 [%]	Years Experience in speciality (SD)	Years worked in hospital (SD)	Usual Shift Worked [%]	Mean Age in years (SD)	Gender [%]
Midwives	15 (71)	12.7 (9.8)	10.9 (8)	D [6] E [6] N [19] V [69]	44.2 (11.5)	F 15 [100]
Midwifery Unit Managers/ Midwifery Managers	2 [10]	16.5 (2.1)	6.8 (7.4)	D [50]	41 (5.7)	F 2 [100]
Student midwives	1[5]	0.5 (0)	5 (0)	V [100]	31 (0)	F 1 [100]
Enrolled nurse	1 [5]	4 (0)	5 (0)	D [100]	37 (0)	F 1 [100]
Registrars/Resident Medical Officers	1[5]	N/A	N/A	V [100]	N/A	M 1 [20]
Obstetrician/ Staff Specialist	1[5]	2 (0)	1 (0)	D [100]	53 (0)	M 1 [100]
Total sample	21 [100]	11.4 (9.1)	9.3 (7.7)	D [22] E [5] N [14] V [59]	43 (10.7)	F 19 [90] M 2 [10]

Values given as n (%) mean (SD).Shifts worked given as, day shift =D, evening shift=E, night shift=N, variable shifts=V, not identified =N/I. Gender given as, female=F, male=M.

Table 36: Safety Attitudes Questionnaire scores measuring safety culture domains at Site A

Safety Culture Domain	Mean (SD)	100 point score
Safety Climate	3.6 (1.1)	66
Teamwork	3.7 (1.1)	72
Stress Recognition	4 (1.2)	74
Perception of Management	3.1 (1.2)	54
Job Satisfaction	4 (1)	76
Working Conditions	3.5 (1.1)	63
Safety Culture score	3.62	65

Values represent the mean (SD), and the 100 point score for the responses to the items in the Safety Attitudes Questionnaire measuring each safety culture domain. The safety culture score is the mean score of all the safety culture domains combined.

Table 37: Safety Attitudes Questionnaire scores measuring safety culture domains for Site B

Safety Domain	Mean (SD)	100 point score
Safety Climate	3.4 (1.3)	60
Teamwork	3.6 (1.1)	65
Stress Recognition	3.5 (1.2)	62
Perception of Management	2.9 (1.2)	45
Job Satisfaction	3.7 (1.3)	66
Working Conditions	3.2 (1.2)	54
Safety Culture score	3.4	

Values represent the mean (SD), and the 100 point score for the responses to the items in the Safety Attitudes Questionnaire measuring each safety culture domain. The safety culture score is the mean score of all the safety culture domains combined.

Table 38: Safety Attitudes Questionnaire description of the quality of collaboration and communication experienced at Site A

Quality of collaboration and communication of all respondents with	No. of responses n=38	Mean	Score
All heath professionals	38	3.6	64
Obstetricians	37	3.3	57
Perinataologists	18	2.9	49
Midwives	37	4.2	80
Paediatricians	34	3.5	62
Neonatologists	21	2.8	45
Anaesthetist	32	4	75
Others	6	3.3	58
Resident/Registrars	33	3.9	71
Nurse practitioners	12	3.1	52
NICU personnel	13	3.5	62
Registered nurses	24	3.7	67
Enrolled nurses	19	3.3	58
Student midwives	35	4.1	78
Technicians	33	3.	51
Nurse managers/ Nurse unit managers	36	4.	76
Social workers	35	3.8	70

Table 39: Safety Attitudes Questionnaire description of the quality of collaboration and communication experienced at Site B

Quality of collaboration and communication of all respondents with	No. of responses n = 21	Mean	100 point score
All health professionals	21	3.3	57
Obstetricians	20	3	50
Perinatalogists	9	2.4	36
Midwives	20	3.9	72
Paediatricians	18	2.6	39
Neonatologists	8	2.6	40
Anaesthetist	19	3.2	55
Others	7	3.7	68
Resident/Registrars	19	3.7	68
Nurse practitioners	6	3	50
NICU personnel	6	3	50
Registered nurses	16	3.6	64
Enrolled nurses	17	3.4	62
Student midwives	18	3.5	62
Technicians	18	3.2	54
Nurse managers/ Nurse unit managers	19	3.2	55
Social workers	19	3.2	55

Table 40: Template used for analysis of open-ended responses in the Safety Attitudes Questionnaire for recommendations to improve safety

Preliminary Themes	Codes
1. Teamwork	Teamwork Collaboration Communication Trust Role Experience
2. Safety Climate	Error management Incident reporting Error acknowledgement Feedback Safety Leadership Communication
3. Job Satisfaction	Morale Autonomy Burnout Enjoyment Satisfaction
4. Perception of Management	Management decisions Staffing Equipment Leadership
5. Stress Recognition	Influence and recognition of fatigue on error Working hours Over confidence
6. Working Conditions	Training Supervision Disciplinary policy

Table 41: Safety Attitudes Questionnaire open-ended responses for recommendations to improve safety at Site A

Safety Domain	100 point score	Recommended responses for improving patient safety
Safety Climate	66	Develop quality management infrastructure for: 1. Review 2. Monitoring 3. Response to incidents Improve incident reporting
Teamwork	72	Simulations Obstetric drills Improved communication Handover teaching Enhancing documentation
Stress Recognition	74	Reduce cycle of night shift Handover when tired Improve staffing to reduce workload Reduce paperwork Reduce computer time
Perception of Management	54	Adequate equipment Adequate staffing
Job Satisfaction	76	Improving staff morale Develop continuity of carer models
Working Conditions	63	Improve supervision of junior staff by Educators and consultants Improve orientation Ward rounds Improve support processes

Table 42: Safety Attitudes Questionnaire open-ended responses for recommendations to improve safety at Site B

Safety Domain	100 point score	Recommended responses for improving patient safety
Safety Climate	60	Improve feedback Act on recommendations Suggestions are listened to
Teamwork	65	Improve communication
Stress Recognition	62	Acuity Decease double shifts Ensure meals breaks
Perception of Management	45	More staff Improve skill mix Roster more night shift
Job Satisfaction	66	Develop continuity models of care
Working Conditions	54	Improve supervision of junior staff VMO presence More education support

Appendix Seven: Version two of the results of template analysis from semi structured interviews

Table 43: Version two template analysis from the Service Study semi-structured interviews

NO.	THEMES (Based on safety culture domains)	SUB THEME (Level 1)	SUB THEMES (Level 2)
1	**SAFETY CLIMATE**	Quality and safety activities/systems	
		• In the Past	Robust system • Coordinated response • Act quickly • Closed the loop • Recognition • Individually driven Support • Unit based • Facility based • Responsibility
		• Present –post restructure	Restructure • Downsizing • Centralising • Competing priorities • Personalising the restructure Consequences of restructure • Quality Manager • Loss of knowledge • Under pressure • Time pressure • In a transition

NO.	THEMES (Based on safety culture domains)	SUB THEME (Level 1)	SUB THEMES (Level 2)
			• Opportunities Clinical governance • Restructure • Downsizing • Centralizing • Lack of maternity profile/priority • Forgotten/ left out
		• In the future	• Amalgamation • Opportunities
		Policy – Incident reporting	Patient safety and clinical quality program • Aims • Perception about • Closing the gate after the horse has bolted • Not learning anything new • Mandated by the Department IIMS • Reporting • Barriers to reporting • Mandated from outside • Sentinel events SAC 1 • SAC scoring • Learn to use the Data Feedback ▪ Lack of feedback

NO.	THEMES (Based on safety culture domains)	SUB THEME (Level 1)	SUB THEMES (Level 2)
			▪ Process to ▪ Not closing the loop
2	**TEAMWORK**	Communication	Handover • Between medicine and midwifery • Between teams • Across specialties • Escalation plans • Communication, consultation guidelines for escalation Strategies to improve • Obstetric Drill/ Obstetric Emergencies Training Documentation • Documentation education
3	**WORKING CONDITIONS**	Supervision	Supervision-lack of • Junior medical officers • Student midwives Strategies • Improve supervision and communication
		Training	Orientation • RMO/REG • Improve orientation for RMO/REG

NO.	THEMES (Based on safety culture domains)	SUB THEME (Level 1)	SUB THEMES (Level 2)
4.	**PERCEPTIONS OF MANAGEMENT**	Staffing	Adequate staffing Skill mix • Midwives • Medical officers Acuity • Increased acuity • Acuity/Skill mix (interconnected)
		Management decisions	Adequate staffing
		Equipment /Resources	Equipment • Adequate • Working
		Leadership	Acting Transition Change
5.	**STRESS RECOGNITION**	Working hours	• Double shifts • Just hanging on • On call
6.	**JOB SATISFACTION**	Morale	• Burnout • Enjoyment • Satisfaction
		Autonomy	Models of care