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

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

CERTIFICATE OF AUTHORSHIP/ORIGINALITY	i
List of Tables	vi
List of Figures	vii
ACKNOWLEDGEMENTS	viii
PEER REVIEWED PUBLICATIONS AND CONFERENCE PRESENTATIONS FRO	M THIS
RESEARCH	x
Peer reviewed publication	x
Conference Presentations	x
ACRONYMS AND GLOSSARY	xi
Acronyms	xi
Glossary of terms and definitions	xi
ABSTRACT	xiv
CHAPTER 1: INTRODUCTION	1
1.1 My motivation for undertaking the Study	1
1.2 Background to the Study	2
1.3. Research questions	3
1.3.1 The two Studies	3
1.3.2 Aim of the Study	4
1.3.3 Objectives	4
1.4 The Context	4
1.4.1 NSW Public Health System	4
1.4.2 Maternity Care in Australia and NSW	6
1.4.3 The role of government policy in safety and quality in health care	9
1.5 Organisation of the thesis	10
CHAPTER 2: LITERATURE REVIEW	11
2.1 Introduction	11
2.2 Method	11
2.3 Literature review: The Service Study	11
2.3.1 Adverse events in health care	11
2.3.2 Incidence of adverse events	12
2.3.3 Adverse events in maternity services	13
2.3.4 Health system response to adverse events	16
2.3.5 Safety Culture	18
2.3.6 Safety culture domains	20
2.3.7 Implications of understanding safety culture in maternity care	25

2.3.8 Lessons from Aviation	25
2.3.9 Measuring safety culture	25
2.4 A gap in knowledge	26
2.5 Literature review: The Policy Study	27
2.5.1 What is policy?	27
2.5.2 The policy process	28
2.5.3 Vertical and horizontal dimensions framework	28
2.5.4 The policy cycle	30
2.6 Conclusion	33
CHAPTER 3: METHODOLOGICAL APPROACHES	34
3.1 Introduction	34
3.2 Pragmatism and mixed method research	34
3.3 The Threat and Error Management Model	35
3.4 The Australian Policy Cycle	37
CHAPTER 4: DESIGN AND METHOD	39
4.1 Introduction	39
4.2 Study design	39
4.2.1 Mixed method research	39
4.2.2 Patient safety and mixed method research	39
4.2.3 Criticisms of mixed method research	40
4.2.4 Mixed method research design criteria	41
4.2.5 Concurrent triangulation design	42
4.2.6 Setting	43
4.2.7 Gaining access to the study sites – engagement	48
4.2.8 Ethical considerations	50
4.3 Service Study – local site data	51
Quantitative data collection	52
4.3.1 Participants	52
4.3.2 Exclusion criteria	52
4.3.3 Selection criteria	52
4.3.4 Recruitment	52
4.3.5 Sample size	53
4.3.6 Data collection	53
4.3.7 Consent	55
4.3.8 Survey administration	56
4 4 Data Analysis	57

4.4.1 Preparing data for analysis	57
4.4.2 Coding data by assigning codes	57
4.4.3 Data entry	57
4.4.4 Analysing the data	57
4.4.5 Outcome measures	58
4.5 Qualitative – data collection	58
4.5.1 Sample	59
4.5.2 Semi structured interviews	60
4.5.3 Field notes	61
4.5.4 Feedback	62
4.6 Data analysis	62
4.6.1 Preparing data for analysis	62
4.6.2 Exploring the data	62
4.6.3 Analysing the data	62
4.7 Reflexivity	64
4.8 Policy Study - policy audit	66
4.8.1 Selection strategy	67
4.8.2 Access strategy	69
4.8.3 Document organisation	70
4.8.4 Mapping exercise	70
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	70
4.9 Conclusion	71
CHAPTER 5: RESULTS - THE POLICY STUDY	72
5.1 Introduction	72
5.2 Mapping exercise	72
5.2.1 Key events chronological timeline in the development of a national s	safety and
quality agenda	72
5.2.2 Mapping NSW policy development	81
5.2.3 Mapping implementation of Planning Better Health and Patient Safe	ty and
Clinical Quality Policy at Area Health Service level	100
5.3 Conclusion	107
CHAPTER 6: RESULTS - THE SERVICE STUDY	109
6.1 Introduction	109
6.2 Survey results	109
6.2.1 Data collection	109

	6.2.2 Participant Demographics	110
	6.2.3 Safety culture survey	113
	6.2.4 Limitation of study results	118
	6.3 Results - Interviews	118
	6.4 Results of surveys and interviews by domain level	. 122
	6.4.1 Safety Climate domain	122
	6.4.2 Teamwork domain	142
	6.4.3 Perceptions of Management	146
	6.4.4 Working Conditions domain	150
	6.4.5 Job Satisfaction domain	154
	6.4.6 Stress Recognition domain	157
	6.4.7 Policy Context domain	159
	6.5 Conclusion	170
C	HAPTER 7: DISCUSSION	171
	7.1 Introduction	171
	7.2 What is the safety culture in one maternity service in NSW?	171
	7.2.1 The Policy Context domain – triangulation of the two Studies	172
	7.2.2 The safety culture within the maternity service	181
	7.3 Can understanding this culture assist in the identification of strategies to improve the	
	safety culture of maternity care in this setting?	192
	7.4 What are the barriers and challenges to improving the safety culture in this setting?	192
	7.5 Discussion.	194
	7.5.1 Significance	197
	7.6 Conclusion	198
R	EFERENCES	200
A	PPENDICES	215
	Appendix One: Ethical Approvals	215
	Appendix Two: Survey / interview/ participant information for Site A and Site B	218
	Appendix Three: Participant consent forms	. 220
	Appendix Four: Safety Climate Scale Survey and Safety Attitudes Questionnaire	222
	Appendix Five: Interview guidelines	225
	Appendix Six: Survey result tables, Site A and Site B	226
	Appendix Seven: Version two of the results of template analysis from semi structured	
	interviews.	233

List of Tables

Table 1: A comparison of Australian and NSW Maternity demographics and birth outcome	s 8
Table 2 Summary of factors included in the six safety culture domains	24
Table 3: Study design	43
Table 4: Study site details	47
Table 5: List of interview participants	60
Table 6: Preliminary template - version 1	63
Table 7: Chronological timeline mapping the development of the national safety and quality	y
agenda	73
Table 8: Chronological timeline mapping the development of the NSW Patient Safety and	
Clinical Quality Program and Planning Better Health Policy	82
Table 9: Chronological timeline mapping the implementation of the Planning Better Health	l
Policy and Patient Safety and Clinical Quality Program at AHS level	101
Table 10: Surveys - Safety Attitude Questionnaire and Safety Climate Scale: Administration	n
method and response rates.	110
Table 11: Safety Attitude Questionnaire and Safety Climate Scale surveys: Participants and	i
response rate by professional group by site and combined.	111
Table 12: Participant demographics combined for both sites.	112
Table 13: Safety Attitudes Questionnaire scores measuring safety culture domains for both	
sites	113
Table 14: Safety Climate Scale scores for both sites.	114
Table 15: Comparison of results between the Safety Attitudes Questionnaire and Safety Cli	imate
Scale for the Safety Climate Domain at both sites.	115
Table 16: SAQ open-ended responses for recommendations to improve safety at combined	
sites	116
Table 17: Description of the quality of collaboration and communication experienced at bo	th
sites	117
Table 18: Interview participants by classification of role	118
Table 19: Interview themes identified by template analysis	120
Table 20: Safety Attitudes Questionnaire results for Safety Climate domain combined sites	122
Table 21: Safety Attitudes Questionnaire for questions measuring Safety Climate domain	123
Table 22: Safety Attitudes Questionnaire results for the Teamwork domain combined sites	142
Table 23: Safety Attitudes Questionnaire for questions measuring the Teamwork domain	143
Table 24: Safety Attitudes Questionnaire results for the Perceptions of Management domai	n 146
Table 25: Safety Attitudes Questionnaire measuring the Perceptions of Management domain	in 147
Table 26: Safety Attitudes Questionnaire results for the Working Conditions domain	151

Table 27: Safety Attitudes Questionnaire for questions measuring Working Conditions	
domain	. 151
Table 28: Safety Attitudes Questionnaire results for the Job Satisfaction domain	. 155
Table 29: Safety Attitudes Questionnaire questions measuring Job Satisfaction domain	. 155
Table 30: Safety Attitudes Questionnaire results for the Stress Recognition domain	. 157
Table 31: Safety Attitudes Questionnaire for questions measuring Stress Recognition	
domain	. 158
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	. 173
Table 33: Triangulation summary of survey and interview results and including the Policy	
Context domain from the Service Study.	. 183
Table 34: Safety Attitudes Questionnaire respondent demographics Site A	. 226
Table 35: Safety Attitudes Questionnaire sample respondent demographics Site B	. 227
Table 36: Safety Attitudes Questionnaire scores measuring safety culture domains at Site A	. 228
Table 37: Safety Attitudes Questionnaire scores measuring safety culture domains for Site I	3228
Table 38: Safety Attitudes Questionnaire description of the quality of collaboration and	
communication experienced at Site A	. 229
Table 39: Safety Attitudes Questionnaire description of the quality of collaboration and	
communication experienced at Site B	. 230
Table 40: Template used for analysis of open-ended responses in the Safety Attitudes	
Questionnaire for recommendations to improve safety	. 231
Table 41: Safety Attitudes Questionnaire open-ended responses for recommendations to	
improve safety at Site A	. 232
Table 42: Safety Attitudes Questionnaire open-ended responses for recommendations to	
improve safety at Site B	. 232
Table 43: Version two template analysis from the Service Study semi-structured interviews	. 233
List of Figures	
Figure 1: Map of NSW Health Area Health Services	5
Figure 2: NSW Health Sydney (Metropolitan) Area Health Services	6
Figure 3: The Australian Policy Cycle	31
Figure 4: Results of the Safety Attitudes Questionnaire by safety culture domains for both	
sites	. 114
Figure 5: Model of safety culture identified at the study sites with seven safety culture	
domains	187

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.