

DEVELOPING A SYSTEM RESILIENCE APPROACH TO THE IMPROVEMENT OF PATIENT SAFETY IN NHS HOSPITALS

Submitted by

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Abstract

The objective of this thesis is to explore how a systems approach can be used to provide an insight into patient safety in NHS hospitals in England. Healthcare delivers considerable benefits yet there remains a relatively high rate of harm and death for patients through adverse events occurring during the process of treatment. The extant patient safety literature acknowledges the influence of organisational or system factors on patient safety. However, the literature is weak in explaining how system factors affect patient safety. To provide an insight into the interactions within healthcare systems, this research explores the characteristics of NHS hospitals, regarded as complex socio-technical systems, using concepts from resilience, systems, accident and social theory.

A theoretical Safe Working Envelope (SWE) model (Rasmussen, 1997) is developed and contextualised for use in the NHS. The case study field work was carried out in two NHS hospitals during consecutive winter months at times of high demand for inpatient services. A third case study uses secondary data about patient safety failures in the Mid Staffordshire NHS Foundation Trust.

The original SWE model has three failure boundaries. The model is developed by introducing an additional boundary to take account of Government targets. Social theory and system dynamics are used to include the dialectic feedback of social actors and the dynamics of workload. The model depicts the competing pressures, constraints and the workload associated with the need to meet the financial, target, staff workload and patient safety requirements. Three interacting construct sets are explored. These are the constraints within which the system operates, the pressures from the context, and the system dynamics of demand, capacity and decision making. Insights into system behaviours of the hospitals are derived from examining the construct set interactions. The proposition is made that there are five system behaviour archetypes which create the conditions that influence patient safety. The archetypes are derived from the system dynamics and in particular the relationship between reinforcing and balancing feedback loops. The five archetypes are safe practice, drift, tip, collapse and transition towards failure. As hospitals become overcrowded the complexity increases and the reinforcing feedback loops dominate the system and potentially increase the risk to patients. An element of risk arises from staff normalising to the drift in standards of care.

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Table of Contents

Title Page	1
Abstract.....	2
Acknowledgements	3
Table of Contents	4
Publications.....	9
List of Figures	9
List of Tables	12
Abbreviations	15
Glossary	16
Chapter 1 - Introduction	18
1.1 Introduction.....	18
1.2 Context of the research	18
1.3 Scope of the research.....	20
1.4 Research aims and objectives	23
1.5 Significance of the study	25
1.6 Organisation of the thesis	26
1.6.1 Chapter 2 – Patient Safety and Systems Thinking	28
1.6.2 Chapter 3 – Developing a system resilience approach	28
1.6.3 Chapter 4 – Research philosophy, design and methodology	28
1.6.4 Chapter 5 – Developing the Conceptual Model	29
1.6.5 Chapter 6 – Investigating the Boundaries of the Safe Working Envelope ...	30
1.6.6 Chapter 7 – Investigating the Gradient and Operating Point.....	30
1.6.7 Chapter 8 – Investigating the Structure and Feedback	31
1.6.8 Chapter 9 - Discussion.....	31
1.6.9 Chapter 10 - Conclusions, Implications and Limitations	31
Chapter 2 – Patient Safety and Systems Thinking	33
2.1 Introduction.....	33
2.2 Patient Safety – the influence of the ‘system’	33
2.3 System models in the patient safety literature	38
2.4 Systems Thinking.....	41
2.4.1 What is a system?	41
2.4.2 System Dynamics	43
2.4.3 Decision Making	47

2.4.4	Summary of systems thinking contribution	48
2.5	Summary	49
Chapter 3 – Developing a system resilience approach		51
3.1	Introduction	51
3.2	Concepts from Accident Theory	51
3.3	Resilience	57
3.3.1	Resilience Engineering and the Safe Working Envelope	61
3.4	Synthesis of Resilience and Accident Theory	72
3.5	Summary	73
3.6	The research objective	74
Chapter 4 - Philosophical Assumptions and Methodology		76
4.1	Introduction	76
4.2	Philosophical Reflexivity	76
4.2.1	The nature of social science and management research	77
4.2.2	The Pragmatic-Critical Realist approach	81
4.2.2.1	Appropriateness of the pragmatic-critical realism	83
4.2.3	Structure / Agent debate	85
4.2.4	Summary of philosophical assumptions	86
4.3	Philosophical assumptions in the current literature	87
4.4	The research design and methodology	88
4.4.1	Research design	89
4.4.2	Justification for the use of case study design	91
4.4.2.1	Judging the quality of case studies	91
4.4.2.2	The Unit of analysis	94
4.4.3.1	Selection and justification of the case studies	94
4.5	Research methods	96
4.5.1	Analysis of Documents	99
4.5.2	Semi-structured interviews	100
4.5.3	Non-participant observation	102
4.5.4	Descriptive statistics	102
4.5.5	Questionnaire	103
4.5.6	Causal Loop Diagrams (CLD)	103
4.5.7	Stock Flow Diagrams (SFD)	104
4.6	Ethical issues	104
4.7	Reflexivity	106
4.8	Summary	107

Chapter 5 - Contextualising the Conceptual Model	109
5.1 Introduction.....	109
5.1 Developing the conceptual model.....	110
5.1.1 Synthesising the literature.....	110
5.2 Contextualising the Safe Working Envelope model.....	113
5.2.1 Policy Context.....	114
5.2.2 Extant literature on targets and performance	116
5.2.3 Developing the model.....	117
5.3 Applying the model.....	125
5.4 Summary.....	128
Chapter 6 – Investigating the Boundaries of a Safe Working Envelope ..	129
6.1 Introduction.....	129
6.2 Staff views on the priorities of the boundaries	133
6.3 Patient Safety Boundary	135
6.4 Unacceptable Workload Boundary	144
6.5 Financial Failure Boundary	150
6.6 Target Failure Boundary.....	155
6.7 Summary.....	162
Chapter 7 – Investigating the Gradients and Operating Point	166
7.1 Introduction.....	166
7.2 Event one – Norovirus.....	168
7.2.1 Response.....	170
The next section provides evidence of the actions taken in response to the pressures exerted by the different gradient pushing the OP away from breaching the failure boundaries.	171
7.2.1.1 <i>Opening additional inpatient beds</i>	171
7.2.1.2 <i>Increasing the rate of medical outliers</i>	172
7.2.1.3 <i>Implications for the patients</i>	173
7.2.1.4 <i>Keeping ED flowing</i>	176
7.2.1.5 <i>Not cancelling elective patients</i>	177
7.2.1.6 <i>Staff workload</i>	179
7.2.2 The Operating Point and Gradient dimensions	181
7.3 Event two – post Christmas surge in emergency admissions.....	184
7.3.1 Response- staff workload and patient safety	187
7.3.2 Response – decision making hierarchy	188
7.3.3 Consequence – shifting the safety failure marginal zone boundary.....	189
7.3.4 Analysis of event two	191

7.4	Event three – the flow of emergency patients on one day.....	195
7.4.1	The flow of patients.....	196
7.4.2	Implications for patients	198
7.5	Summary.....	202
7.5.1	Operating Point	202
7.5.2	Gradients.....	203
Chapter 8 – Investigating the Structure and Feedback.....		206
8.1	Introduction.....	206
8.2	The planned design of the structure	207
8.3	Factors that affect the planned stock flow design	210
8.4	Tipping from loose to tight coupling.....	217
8.5	Increasing the rate of flow out of the medical wards	221
8.6	Conceptual analysis.....	231
8.6.1	‘Structure’	231
8.6.2	‘Feedback’.....	231
8.6.3	Implications on the OP	233
8.7	Summary.....	234
Chapter 9 – Discussion.....		235
9.1	Introduction.....	235
9.2	The development of the Safe Working Envelope model.....	235
9.2.1	Key points from the literature	236
9.2.2	Insights about the constructs and dimensions of the SWE v3 model.....	238
9.2.3	Resilience – the buffer of adaptive capacity	243
9.3	Characteristics of the case study hospitals.....	245
9.3.1	Insights into system archetypes.....	245
9.3	System archetypes that may influence patient safety	247
9.3.1	One – Safe Practice	247
9.3.2	Two – Drift towards Failure	247
9.3.3	Three – Tip towards Failure.....	249
9.3.4	Four – Collapse towards Failure	251
9.3.5	Five – Transition towards Failure	252
9.4	Proposals for improvement.....	253
9.5	Summary of the contribution to knowledge	255
9.6	Summary.....	257
Chapter 10 - Conclusions, Implications and Limitations.....		258
10.1	Introduction.....	258
10.2	Summary of Conclusions.....	258

10.2.1	Conclusions about safe working envelope model	258
10.2.2	Conclusions about the systemic characteristics influence on patient safety 260	
10.3	Implications.....	262
10.3.1	Implications for theory	262
10.3.2	Implications for policy.....	264
10.3.3	Implications for practice	265
10.3.4	Contribution to knowledge	267
10.4	Limitations of the research.....	268
10.5	Further research.....	270
10.5.1	System Behaviours	270
10.5.2	Operational and patient safety management	271
10.5.3	Development of the model.....	271
	References.....	273

Appendices

Appendix 2.1:	Conventions of System Dynamic Models	289
Appendix 4.1:	Documents and Statistical data collected	292
Appendix 4.2:	Research Protocol	297
Appendix 4.3:	List of Interviewees	299
Appendix 4.4:	Interviewee Questionnaire	301
Appendix 4.5:	Information about the research	302
Appendix 4.6:	Consent Form	304
Appendix 4.7:	Ethical Approval	305
Appendix 5.1:	Summary of key points from NHS Operating Framework Documents (2006/07 – 2009/10)	310
Appendix 5.2:	Results of Content Analysis	318
Appendix 6.1:	Extracts from Filed Notebooks	320
Appendix 6.2:	Extracts from coded data	324
Appendix 6.3:	Questionnaire results	360
Appendix 7.1:	Examples of Daily bed information	362
Appendix 8.1	Admission and discharge graphs	365

Publications

Publication 1:	Patient safety: a casualty of target success?	370
Publication 2:	System resilience and patient safety during a bed crisis in an NHS hospital in England	387
Publication 3:	Rebellion against the ‘normal’ to improve safety for patients	398
Publication 4:	Safety, systems, complexity, and resilience: What makes organizations safe?	408

List of Figures

Figure 1.1:	Outline approach of the thesis	22
Figure 1.2:	Overview of research process and chapter content	27
Figure 3.1:	Reason’s Swiss Cheese model (Reason, 1997)	52
Figure 3.2:	Blunt and sharp end of an organisation	53
Figure 3.3:	Two views of ‘resilience’	58

Figure 3.4:	Safe working envelope model	63
Figure 3.5:	Gradients of pressure on the operating point	66
Figure 3.6:	Counter gradient to hold the operating point in safe position	66
Figure 4.1:	Assumptions about the nature of social science	77
Figure 4.2:	Two axis framework depicting schools of management research	80
Figure 4.3:	High level overview of empirical research process	89
Figure 5.1:	Safe Working Envelope (v2) model developed from synthesis of the literature	113
Figure 5.2:	The four boundary SWE for NHS hospitals	118
Figure 5.3:	Four boundary SWE with gradients	119
Figure 5.4	SWE set within the wider context of stakeholder influences	121
Figure 5.5:	Four boundary SWE with SD diagrams to depict system 'structure' within the envelope	122
Figure 5.6:	Basic stock flow diagram of the emergency medical patient pathway into and through a NHS hospital	123
Figure 5.7:	Basic stock flow diagram of the emergency medical patient pathway into and through a NHS hospital with diversion flow from MAU to ED	124
Figure 5.8:	Causal Loop Diagram showing the relationship of the emergency medical patients rate of arrival to a hospital system	125
Figure 5.9	Combination and interaction of construct sets depicted by the SWE model	126
Figure 6.1	Combination and interaction of construct sets depicted by the SWE model	130
Figure 6.2:	Coding hierarchy for 'Safe Working Envelope'	130
Figure 6.3:	Coding hierarchy for 'Actual Design' theme	131
Figure 6.4:	Coding hierarchy for 'Rich Pictures'	131
Figure 6.5:	Relationship of themes to SWE (v3) model	132
Figure 6.6:	Movement of the marginal zone boundary for control of MRSA and C.Diff	137
Figure 6.7:	Movement of the marginal zone boundary for inpatient patient falls	139
Figure 6.8:	Location of the marginal zone boundary for nurses and	146

doctors

Figure 6.9:	The SWE with boundaries dimensions	164
Figure 7.1	Combination and interaction of construct sets depicted by the SWE model	166
Figure 7.2:	The OP breaching the patient safety failure boundary due to the rapid spread of the Norovirus in CS 1	169
Figure 7.3	Movement of the OP following the outbreak of the Norovirus	171
Figure 7.4:	Statistical Process Control Chart - Medical outliers before, during and after sickness virus	175
Figure 7.5:	Elective Admissions 2008 Before, During and After Sickness Virus and 2007 over same period	178
Figure 7.6:	Event one – SWE (v3) with operating point and actions and consequences associated with gradients from each boundary	183
Figure 7.7:	CS 1 Predicted emergency medical admission with control limits with actual admissions Dec 08 – Jan 09	186
Figure 7.8:	Number of medical outliers by day May 08 – Feb 09	186
Figure 7.9:	CS 1 Shifting the marginal zone boundary outwards	192
Figure 7.10:	Event two – SWE (v3) with operating point and actions and consequences associated with gradients from each boundary	194
Figure 8.1	Combination and interaction of construct sets depicted by the SWE model	206
Figure 8.2:	CS 1 Elective Inpatient Admissions, Plan vs Actual, Apr 08 – Sept 09	208
Figure 8.3:	CS 1 Emergency (Non-Elective) Inpatient Admissions, Plan vs Actual, April 08 – Sept 09	209
Figure 8.4:	The planned stock and flow of surgical and medical patients in CS 1	210
Figure 8.5:	CS 1 Daily medical admissions and discharges Dec 08 – Jan 09	211
Figure 8.6:	CS 1 Monday Median Elective and Emergency Admissions vs Discharges by Hour of the Day 2006-07	212
Figure 8.7:	CS 1 Friday Median Elective and Emergency Admissions vs Discharges by Hour of the Day 2006-07	212
Figure 8.8:	CS 1 Variation between Elective and Emergency Admissions vs Discharges April 06 – March 07	213

Figure 8.9:	CS 1 31 Bed Acute Medical Ward: ‘Enhanced’ Occupancy (number of patients on ward per day) in October 2008	215
Figure 8.10:	CS 1 31 Bed Acute Medical Ward: Midnight and ‘Enhanced’ Percentage by day - October 2008	215
Figure 8.11:	Changes (depicted in red) to the planned design of the stock and flow of surgical and medical patients in CS 1 and 2 when medical wards are full	218
Figure 8.12:	CLD of reinforcing loops created in situation where medical ward occupancy is too high to absorb variation in demand. (Stocks in boxes)	219
Figure 8.13:	CLD with balancing loops of increasing rate of flow out of medical wards	222
Figure 8.14:	CS 1 Number of Medical Outliers Dec – June 2006-2009	224
Figure 8.15:	CS 2 Number of Outliers Jan 09 – Jan 10 (with missing data points)	224
Figure 8.16:	CS 1 Length of Stay of Medical Patients by Discharge Ward	225
Figure 8.17:	Reinforcing feedback loops generated by ‘medical outliers’	227
Figure 8.18:	Feedback loops generated by transfer of medical patients to surgical wards	230
Figure 9.1:	The constructs of the SWE v3 model	242
Figure 9.2	Overview of the system characteristics and behaviour archetypes	246

List of Tables

Table 1.1:	The contrast between human error and system vulnerability to failure	21
Table 2.1	Overview of main themes in the patient safety literature	35
Table 2.2	Variety of ‘system’ concepts found in the literature	37
Table 3.1:	Dimensions of the SWE constructs	71
Table 4.1:	Categorising the implications for research of the four paradigms	79
Table 4.2:	Case study tactics to meet the four design tests	92

Table 4.3:	Summary of sources of data and data collection methods	97
Table 4.4:	Summary of data sources and their application to themes	98
Table 4.5:	Summary of data sources used to establish the characteristics of the SWE constructs	98
Table 4.6:	Case study 1 number of interviewees by profession and embedded level in the hospital	101
Table 4.7:	Case study 2 number of interviewees by profession and embedded level in the hospital	101
Table 5.1:	Mean scores by boundary type from content analysis of Department of Health ‘Operating Frameworks’ for the NHS in England 2006/07 – 2009/2010	115
Table 6.1:	Dimensions of the SWE ‘boundaries’ constructs derived from literature	132
Table 6.2:	CS 1 - Ranking of the highest priority for different organisational levels	133
Table 6.3:	CS 2 - Ranking of the highest priority for different organisational levels	133
Table 6.4:	Dimensions of the SWE ‘Patient safety failure boundary’ construct with examples from the data	143
Table 6.5:	Dimensions of the SWE ‘Unacceptable workload boundary’ construct with examples from the data	150
Table 6.6:	Dimensions of the SWE ‘Financial failure boundary’ construct with examples from the data	155
Table 6.7:	Dimensions of the SWE ‘Financial failure boundary’ construct with examples from the data	162
Table 7.1:	Dimensions of the SWE ‘operating point’ and ‘gradients’ constructs derived from literature	167
Table 7.2:	Summary of the dimensions of the ‘operating point’ during Event 1	184
Table 7.3:	Summary of the dimensions of the ‘gradients’ during Event 1	184
Table 7.4:	Medical Emergency Admissions and Medical Outliers (29 th Dec 2008 – 14 th Jan, 2009)	185
Table 7.5:	Summary of the dimensions of the ‘operating point’ during	195

the surge in demand event

Table 7.6:	Summary of the dimensions of the ‘gradients’ during the surge in demand event	195
Table 7.7:	Summary of the dimensions of the ‘operating point’ during Event 3	201
Table 7.8:	Summary of the dimensions of the ‘gradients’ during Event 3	201
Table 8.1:	Explanation of loops 5 – 9 in Figure 8.16	228-9
Table 8.2:	Dimensions of the ‘structure’ and ‘feedback’ constructs of the SWE (v3)	232
Table 9.1:	Concepts from accident theory and their relationship to the SWE v3 model constructs.	238
Table 9.2:	Summary of the contribution to knowledge from the development of the SWE model	240-1
Table 9.3	Measurable indicators of the constructs to provide an insight into state of resilience of a hospital	244