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

Submitted by

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I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

…… (Signature)

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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