Chapter 18
The SHEEP Model:
Applying Near Miss Analysis

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ABSTRACT

This chapter explains the development of a model, titled "SHEEP," to identify quality and safety factors relating to near misses. The model allows frequency of risk factors and their impact to be analysed at departmental or institutional levels, which enables a structured focusing of resources at an organisational level.

INTRODUCTION

As history unfolds, it seems often to be the case that only following a crisis that we gather sufficient inertia to set about initiating change. We suspect, and hope, that the Mid Staffordshire Report (QC, February 2013) will be one such turning point in healthcare. We wish to help initiate the new ideal of a 'learning culture with continuous improvement'.

While we invest large amounts of time and effort in investigating serious incidents, the learning points from near misses are often lost (Jeffs, Berta, Lingard, & Baker, 2012). The literature suggests near misses are ignored, covered up, lost in the reporting system or that some sort of quick fix is applied (Jeffs et al., 2012). In addition, the term 'near miss' is somewhat of a misnomer as nearly missing something implies hitting it. In

this chapter, we would like to propose a new term the 'nearly event'. This parallels more closely the nomenclature that includes 'never events'.

Currently we are not capturing the organisational learning from these 'nearly events'. Despite the undisputed frequency of medical errors, the methods of investigation are of varying standard and are often incomplete. With current investigation methods, there is little certainty that all the 'Reason-esque' layers of cheese (Reason, 2000) will have been identified. In other settings, Gawande (Gawande, 2007, 2010) and others (Hales, Terblanche, Fowler, & Sibbald, 2008) have shown us the benefits of a checklist rather then relying on the unprompted memory recall of the human mind. This checklist approach has not previously been applied to error investigation.

We propose the use of a new methodology linked to a factor model with the acronym SHEEP (Rosenorn-Lanng, 2014) that can be used to identify organisational learning actions from 'nearly events'. The frequency of risk factors and their impact can be analysed at a departmental or institutional level. This enables focusing of scarce resources in a cost effective manner at an organisational level, rather than knee jerk lurches of money and effort in an uncoordinated manner.

We believe that the structured factor model approach to 'nearly event' analysis will result in a fuller understanding of the multiple contributing factors. In particular, it will enhance patient safety by promoting better recall and understanding of specific human factors which are always present, but often ignored. The tool allows focused, solution-based allocation of resources to target problem areas (including attitudes, behaviours and culture) at local or organisational level (the latter via trend analysis). We believe the inclusion of human factors training routinely within a healthcare setting will deliver part of the essential culture change suggested in the Francis Report (QC, February 2013).

THE CONTEXT

The model is influenced by three contextual elements:

Limitations of Current Methods of Error Investigation in Nearly Events

The deployment of Root Cause Analysis (RCA), mini Root Cause Analysis, the 'quick fix', the 'reporting and black hole' phenomenon, denial, apathy and alas even the 'cover up' are among the current methods of error management (Jeffs et al., 2012). There is rarely time for RCA on nearly events. Even if an RCA is initiated, the standard of the output depends on the experience and training of those conducting the investigation. In health-

care, our investigative processes lag behind the rigour employed in the airline industry and other high reliability organisations, although attempts to bridge this gap are emerging (Bosma, Veen, & Roukema, 2011; Spiess, 2011).

RCAs are often seen in health use as 'uncontrolled case studies' (G, 2005) that provide a narrative report of interviews. RCAs in healthcare often lack the consistency applied in business RCAs using statistical 6 Sigma methods and other RCA tools such as interrelationship diagrams and reality trees (Dogget) to qualify and quantify potential causes (Carroll J, 2002). They are impacted by hindsight bias where obvious conclusions may be drawn when all the facts are present (AM, 2005) and imply there was one of few root causes rather than many combinations (Vincent, 2004). The focus on one-off initiatives (Wu AW, 2008) rarely link to, or use, other RCA evidence. RCA also fails to systematically include human factors, such as feelings and human dispositions, that often drive error impacting decisions (Wald H, 2001). Incorporating human factors in this way initiates safety positive culture change in line with key recommendations in the Francis Report (QC, February 2013) (1.152,1.176,1.180,1.184,1.185, 1.196).

Ignorance of the Discipline of Human Factors and Ergonomics within Healthcare

Whilst the Medical Protection Society rates human factors as responsible for 80% of litigation, these same human factors do not feature as fully in the action plans of how to remedy situations. RCA rarely includes human factors in its solution approach. Our model addresses this issue by enabling elicitation of these often ignored human factors within a framework. Whilst 'human factors' are well embedded within other industries such as aviation, it has been slow to be adopted into healthcare. The SHEL model (Edwards 1972, International Civil Aviation Organisation) and its derivative the

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