

How Do District Health Boards Respond To and Use the Serious and Sentinel Events Report?

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ABSTRACT

This thesis focuses on serious and sentinel event reporting in New Zealand. It considers how District Health Boards (DHBs) utilise the Serious and Sentinel Events (SSE) report, which is produced by the Health Quality and Safety Commission (HQSC) to improve quality and patient safety within DHBs.

Preventing adverse events is of vital importance not only to patients entering into the healthcare system but also to the healthcare industry as SSEs negatively impact on the reputation of a hospital and its clinicians. Adverse events also have economic consequences. Multiple factors influence the occurrence of adverse events and they are discussed within this thesis.

Using a qualitative research design, this study involved interviewing a range of health care professionals across 20 DHBs. The Chief Executives of the DHBs recommended the expert participants for interview. The qualitative software package QSR Nvivo10 was employed to organise and sort the transcribed data thematically.

This study suggests that DHBs have a limited response to the report. The limited response is in part a consequence of how SSEs are reported to the HQSC and issues surrounding the collation of information.

Findings suggest that quality improvement efforts across the 20 DHBs are variable. National alert systems are used internationally in relation to adverse events in healthcare. It was good to see one development in response to the SSE report, is that some DHBs have now taken to sending out alerts of serious adverse events themselves.

The SSE report has the potential to be a very useful tool in addressing SSEs. However, this qualitative study suggests that the report is underutilised and consequently some of this potential is lost. An emergent issue was a perception amongst participants that the report had limited value. Value was measured in terms of utility for internal operations, a perceived loss of value because of a lack of supporting documentation and disinterest in the occurrence of SSEs among the other DHBs.

This research has highlighted important limitations in the utility of the SSEs report and provides the opportunity to explore how future reporting and reports might be improved. It is possible that the participants have understated the value of the report. However, it remains that recording SSEs plays an important role with respect to monitoring and awareness of health care quality and safety and transparency with respect to outcomes within and across DHBs in New Zealand. Ultimately, too, this data source can allow reflection and improvements in the provision of quality and safe care for patients throughout New Zealand.

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LIST of ABBREVIATIONS

ACC – Accident Compensation Corporation
ACHS – Australian Council on Healthcare Standards
ACSQHC – Australian Commission on Safety and Quality in Healthcare
AHB – Area Health Board
AIMS – Australian Incident Management System
APSF – Australian patient Safety Foundation
CEO – Chief Executive Officer
CHE – Crown Health Enterprise
CMO – Chief Medical Officer
COO – Chief Operating Officer
CQC – Care Quality Commission
DHB – District Health Board
DON – Director of Nursing
HHS – Health and Hospital Services
HIC – Health Improvement Committee
HQSC – Health Quality and Safety Commission
IHI – Institute for Healthcare Improvement
IOM – Institute of Medicine
JCAHO – Joint Commission on the Accreditation of Healthcare Organisation
MOH – Ministry of Health
NGO – Non-government Organisation
NHS – National Health System
NPSA – National Patient Safety Agency
NRLS – National Reporting and Learning System
NZQHS – New Zealand Quality in Healthcare Study
QAHCS – Quality in Australian Healthcare Study
QIC – Quality Improvement Committee
RCA – Root Cause Analysis
SAC – Severity Assessment Code
SIMS – Serious Incident Management System
SSE – Serious and Sentinel Event

1 INTRODUCTION

Throughout the developed world quality and patient safety has emerged as a top priority on health policy agendas. Research has demonstrated that adverse events resulting in permanent disability and death occur in our public hospitals frequently. A 2002 study of New Zealand public hospitals found 12.9% of hospital admissions resulted in an adverse event occurring (Davis et al., 2002). Internationally, developed countries are facing similar issues concerning serious adverse events. Results reported in the 1991 Harvard Medical Practice Study, which reviewed medical records in New York State showed that 3.7% of patients hospitalised in 1984 had suffered an adverse event (Brennan et al., 1991). The 1995 Quality of Australia Health Care Study found that 16.6% of admissions resulted in preventable adverse events (Wilson et al., 1995). Adverse events in British hospitals have shown that 10.8% of patients experience an adverse event when receiving medical treatment (Vincent, 2001). Not surprisingly, given these research findings, there is a growing concern over preventable adverse events in developed countries.

Doctors' performance is critical to the quality of care that patients receive. However, the comprehensiveness of the surrounding management systems and processes also play an integral role in the quality of care and patient outcomes (Chamberlain, 2008). The New Zealand SSEs report plays a vital role in providing document transparency and therefore an opportunity for the public to be aware of any issues of care that are substandard or resulting in suboptimal outcomes for patients. DHBs run on a decentralised model. Maintaining service continuity is an evident problem in the 20 DHBs canvassed in this study. While patient outcomes should be a priority in any healthcare setting, there are a number of other reasons why we should be concerned about the level of adverse events occurring in our hospitals and the ability of our DHBs to respond. Some of these issues have been raised in a recent report on health professionals' views of quality and safety (Gauld and Hornsburgh, 2012a) and include:

- Studies show high rates of medical error and harm amongst hospitalised patients often with significant long term consequences
- Error results in substantial costs to the health care system as well as to the patient and clinicians
- Quality lapses and patient harm affect public confidence in health care services and professionals

- Methods of professional regulation have not necessarily ensured a high quality and safe professional work place
- Quality improvement can lead to efficiency gains, better patient and staff experience and satisfaction and reduced costs
- Many of today's most pressing health care problems – associated with chronic disease and multi-morbidity, ageing populations and fragmentation of health care delivery systems – require new ways of working to ensure the best quality of services and improved health outcomes.

It is not a trivial strategy in the international context to try to improve incident reporting and subsequent management of incidents detected. The analysis of incidents can provide information on which to base policy and practice decisions likely to reduce future occurrences. Aggregated data on multiple incidents has the potential to help identify patterns, trends and categories of incidents for follow up, thus potentially creating opportunities for systems improvements. It is for these reasons that the Health Quality and Safety Commission from 2010 continued the work of the Health Improvement Committee (HIC) in the national reporting of SSEs.

The SSE report is an open document in which details of SSEs are published. The HQSC aims to provide transparency of SSEs with the intention that this demonstrates to the public that these events are a matter of public record, open to debate and there is a will to learn from them. In addition, the SSEs reported and responses to them will ideally strengthen public trust in DHBs and their public hospitals.

Adverse events do not inevitably signal poor quality of care, nor does their absence necessarily indicate good quality of care (Brennan et al., 1991). Often the occurrence of adverse events boils down to faults in management systems within the organisation and more often than not similar incidents are occurring at other DHB organisations. Each DHB is run independently of each other. It might be assumed that the SSE report can serve as a means to improve systems for DHBs and that having comparative data might help DHBs learn from each other. This is an assumption, however, as there is no current evidence or research in this field. This study attempts to address this and to explore how DHBs use and respond to the SSEs report and whether the report is utilised to improve quality and patient safety in their organisation.

1.1 Thesis Overview

This thesis comprises six chapters. Chapter two provides a review of the literature in this field. There is a wide body of research, which explores adverse events in public hospitals, and issues of health care quality. This chapter considers critically what is meant by health care quality and how the management of adverse events influences the quality of care given in public health care systems. This is followed by a consideration of the mechanisms that lead to serious adverse events occurring, the types of reporting systems that are utilized within the healthcare industry and the consequences of serious adverse events when they do occur. The second part of Chapter two looks more specifically at the structure of the New Zealand Health System, the occurrence of adverse events in New Zealand and the placement of the HQSC. The final part of this chapter focuses on how serious adverse events are reported by our international counterparts, specifically in Australia, the United Kingdom, and the United States of America in contrast to New Zealand's approach.

Chapter three outlines the study design, method, and research process. Detailing the key research question, this chapter then considers why a qualitative approach was chosen, the interview method employed, the interview schedule construction and implementation at the time of the interview and the process adopted for the analysis of data.

Chapter four presents the results of this research. This section is divided into five parts. These are consistent with the research objectives and are as follows: (1) DHB responses to the serious and sentinel event report; (2) the use of the report and its perceived value; (3) DHB approaches to dealing with adverse events; (4) DHBs efforts to work together to prevent adverse events; and, lastly, (5) if improving quality is a priority for their organisation. Chapter five concludes with a discussion of the overall results.

Chapter six is the final chapter of the thesis and explores the implication of the results of this study and how health care quality might be improved or assisted by the SSEs reporting processes and report.

2 LITERATURE REVIEW

This chapter reviews the literature surrounding medical error. Firstly, the definition of health care quality will be discussed. This is followed by a consideration of the literature addressing why adverse events occur. The next section of the chapter explores how events are reported and the different types of reporting systems followed by the after-effects and implications of an adverse event and its impact on the patient, physician, and wider family. Moving from this body of research, the chapter then provides a brief review of the structure of New Zealand's health system and the organisation of DHBs. The chapter addresses how medical error has influenced New Zealand. This chapter also discusses the establishment and role of the HQSC. This section also addresses the concepts of open disclosure, incident reporting, the Severity Assessment Code (SAC) and root cause analysis. Following this is a comparison of incident management systems and the occurrence of SSEs in Australia, the United Kingdom, and the United States of America. These three developed countries have been chosen to explore whether New Zealand's approach to serious adverse events differs. The chapter then concludes with an overview of sources that organisations can use to help improve quality and patient safety.

2.1 Health Care Quality

Health care quality is a contested concept. The definition of health care quality is dependent on who's point of view you are looking at it from; clinician, patient, family or funder (Seddon, 2003). Quality issues have been documented for decades but it was not until the landmark report from the Institute of Medicine (IOM) in 2000, 'To Err is Human' that quality issues in the US health system attracted increasing media attention. The report documented between 44,000 and 98,000 deaths per year from medical mismanagement. These findings provoked other countries to consider harm and mismanagement in their own health systems and to explore issues relating to quality in health care systems. In addition, these findings also highlighted the need to define exactly what health care quality is.

The 'To Err is Human' report from the IOM listed 6 dimensions of quality:

- Safety and the avoidance of patient injuries

- Having a patient centred, responsive and receptive approach to the individual patient's preferences, needs and values:
- Provision of care in a timely manner, with the reduction of delays and ensuring access to care:
- Equity in that the same quality of care should be provided to all, regardless of ethnicity, gender, geographic location or ability to pay:
- Effectiveness, avoiding the overuse and underuse of ineffective therapies and misuse of therapies ensuring that service delivery is based on sound scientific knowledge:
- Efficiency, making sure to avoid waste and make the best use of services.

These six dimensions demonstrate that 'quality' is multifaceted, involves multiple health care providers, and ultimately affects all components of the health care system. Taking these dimensions the IOM then compressed the multiple dimensions and defined health care quality as:

“The degree to which health services for individuals and populations increases the likelihood of desired health outcomes and are consistent with current professional knowledge”

(Institute of Medicine, 2001)

This definition has since become the most quoted and applied definition of healthcare quality (Institute of Medicine, 2001). Yet, as some researchers make clear, what quality means to the individual is dependent on where they sit in the patient's health care journey. As Seddon (2006) observes from the clinicians and clinical teams point of view the most important dimensions of quality are safety and effectiveness.

2.2 What causes Mistakes to Happen in Healthcare?

Many researchers have carried out research into the underlying causes of medical errors. What is known is that medical errors are not isolated problems (Canadian Health Services Research Foundation, 2006). They have underlying systemic causes and can occur in all stages in the process of care, from diagnosis, to treatment and preventive care. (Canadian Health Services Research Foundation, 2006, Institute of Medicine, 2001). Research has demonstrated that working in complex, stressful environments such as hospitals can make people prone to making mistakes (Canadian Health Services Research Foundation, 2006, Sexton et al., 2000). Working in the field of medicine calls for the ability to be able to multi-

task, but research tells us that the human brain is not capable of keeping more than a few pieces of information accurate at any one time (Sexton et al., 2000, Canadian Health Services Research Foundation, 2006). When healthcare workers must monitor many pieces of equipment in surgery or fill in several medication orders within a short time period, there is a risk of information overload, which in turn may lead to the occurrence of an error (Sexton et al., 2000, Canadian Health Services Research Foundation, 2006). This is made worse when staff are tired and overworked or when services are understaffed (Canadian Health Services Research Foundation, 2006, Sexton et al., 2000). Physical aspects of health also contribute to mistakes: For example, handwritten prescriptions are often hard to read, especially when they contain similar names or codes.

The literature identifies that medical errors occur in many different forms (Leape et al., 1993, Runciman et al., 2006). Leape (1993) and Runciman (2006) both discuss that medical errors generally can be categorised into four main types of errors). These are Diagnostic, Treatment, Preventive, and 'Other'. Diagnostic errors include errors in the delay of diagnosis, the failure to employ indicated tests, use of outmoded tests or therapy and the failure to act on results of monitoring or testing (Leape et al., 1993, Runciman et al., 2006). An example of diagnostic errors can be seen by the research conducted by McGlynn et al (2003). This research showed that the quality of health care delivered to adults in the United States was suboptimal and included 24% of patients who had diabetes, 68% with coronary artery disease and 61% with myocardial infarction had not received the proper follow up tests or the recommended care within the appropriate time frames (McGlynn et al., 2003). Treatment errors include the error in the performance of an operation or the procedure of test, errors in the administering of treatment, errors in the dose or method of using a drug, avoidable delay in treatment or in responding to an abnormal test and inappropriate care (Leape et al., 1993). An example of treatment error can be seen in wrong site surgery. In 2010 the Independent reported a story of a baby that had 90% of her bladder and both ureters removed instead of the hernia that she was undergoing the operation for (Pilling, 2010). The incorrect administration of medication to patients is also a common occurrence. Davis et al (2003) demonstrated that over one third of adverse events in hospitals are drug related and highly preventable (Davis et al., 2003). Preventive errors include the failure to provide prophylactic treatment and the inadequate monitoring or follow up of treatment (Leape et al., 1993). Errors that fall into the 'Other' category include system failures such as failure in communication and failures in equipment (Leape et al., 1993)

2.3 Event Reporting

Reporting within an organisation and externally allows for events to be shared and lessons learned so that others can avoid the same mishaps (Leape, 2002, Braithwaite et al., 2010). When adverse events occur in hospitals they should be reported to administration and a full investigation of the incident should occur (Braithwaite et al., 2010, Leape, 2002, Health Quality and Safety Commission, 2012d). This investigation, usually in the form of Root Cause Analysis (RCA) or alternative method should uncover the causes leading to the event and also highlight prevention methods to ensure that the same kind of adverse event does not recur (Leape, 2002). A problem that governments, policy makers, and healthcare organisations have to grapple with is the idea of mandatory reporting vs. voluntary reporting. In an ideal world mandatory reporting would be the gold standard for the healthcare industry (Leape, 2002, Panesar, 2009). This is because:

“Mandatory reporting would allow a truly comprehensive picture of the patient safety landscape to emerge and help improve healthcare professional’s sense of accountability”

(Panesar, 2009, p.256)

Literature has shown that voluntary reporting systems can be flawed in that they do not capture all incident data and are often too generic with information, which makes it hard to perform RCA (Allan and Judith, 2005). SSEs are often not reported when voluntary reporting systems are in place (Allan and Judith, 2005). However the ‘To Err is Human’ report suggests that voluntary reporting systems can play an essential role in understanding the factors that contribute to adverse events occurring and can help to ensure that health care organisations, through the frequent communication surrounding emerging concerns and improved safety initiatives, maintain a focus on patient safety issues (Institute of Medicine, 2000)

Research conducted by Leape (2002) suggested the idea of healthcare organisations reporting to an external body could lead to improved safety in multiple ways. Firstly, an outside external body has the ability to collate adverse event information and use this to send out alerts about new hazards, such as a complication with a specific drug. Secondly, new methods developed within a single organisation to prevent errors can be disseminated and sent out to others. Thirdly, by having one central repository can allow for trends and hazards to be noticed so attention can be brought to them. Fourthly, from a central analysis point, recommended ‘best practice’ for everyone can be developed and distributed. Leape suggests these objectives are achievable with either a voluntary or mandatory reporting system (Leape,

2002). There have been a number of reasons identified as to why reporting may not be occurring and these include: (i) lack of feedback given to staff; (ii) time constraints; (iii) fear of shame, blame and litigation or professional censure; and (iv) peer disapproval and unsatisfactory processes (Sari et al., 2007, Leape, 2002{Heard, 2012 #131, Evans et al., 2006). The consideration of a voluntary reporting system along with the development of a patient safety culture may help alleviate some of the underlying concerns that prevent reporting.

Multiple studies have focussed on the accuracy of adverse event reporting (Institute of Medicine, 2000, Sari et al., 2007). When patient charts are reviewed against local reporting systems it has been observed that under-reporting is common, thus reporting the scale and severity of patient safety incidents is not accurately being addressed (Sari et al., 2007). In a review of the Australian incident monitoring system it was found in one facility, staff were reporting less than 5% of all events into the database (Allan and Judith, 2005). This does raise questions about the purpose of reporting and, if unreliable, it's utility. However, the rates of reporting have gradually increased over the years, as has been shown in the USA, NHS, Australia, and New Zealand (Sari et al., 2007, Leape, 2002, Allan and Judith, 2005, Health Quality and Safety Commission, 2012a).

2.4 Consequences of Medical Errors

Recording mistakes is important in terms of being able to improve systems to prevent unintentional harm to patients whilst in hospital, but also because it constitutes a significant economic cost to health care systems. Adverse events in the New York health care system cost US\$161 million in 1989, the Australian government estimated costs at over AU\$900 million in 1995 and Britain estimated over £2400 per adverse event (Brown et al., 2002, Vincent, 2001). Brown et al reviewed the relationship between cost and adverse events collected from the New Zealand Quality in Healthcare study (NZQHS) in 2002. They found the total cost of adverse events was over NZ\$ 1.6 billion (Brown et al., 2002). All health care costs per individual were found to be NZ\$10,264. This was made up of an average bed day cost of NZ\$9766 (Brown et al., 2002). For all events deemed preventable the cost per individual was NZ\$11, 024 (Brown et al., 2002). The need to eliminate this 'waste' within the healthcare system and get better value for money has been a major driver of quality improvement (Seddon, 2003). Evidence from Baker (2012) suggested that achieving high quality safe care without the increase in long-term costs requires the redesign of existing

systems of care. He goes on to say that “improvement starts with identifying waste and focusing on value” (Baker, 2012).

The extra cost from medical errors is spent on such things as having to repeat diagnostic tests or dealing with adverse drug events. This is money that is now unavailable for other purposes. In the United States purchasers and patients pay for errors when insurance costs and co-payments are inflated by services that would not have been necessary, had the proper care been provided (Institute of Medicine, 2000). Sometimes it is not as simple as talking about errors in dollar terms as not all costs can be directly measured. Medical errors have indirect costs such as a loss of patient trust in the system and diminished satisfaction by both patients and health professionals (Brown et al., 2002, Institute of Medicine, 2001). Patients who experience longer hospital stays or permanent disability because of errors pay with physical and psychological discomfort (Brown et al., 2002, Institute of Medicine, 2001). Healthcare professionals may have a loss of morale and frustration at not being able to provide the best care possible, while employers and society pay in terms of lost worker productivity, reduced school attendance by children and lower levels of population health status (Institute of Medicine, 2000). While it is much harder to put a dollar value on these indirect costs, a study conducted in Colorado and Utah estimated that the total cost which was made up of lost income, lost household production, disability and health care costs to be US\$662 million (Thomas et al., 1999). It was shown that US\$308 million (47% of total) was spent on preventable medical errors (Thomas et al., 1999).

Research conducted by James and Savitz (2011) showed that robust quality improvement efforts not only result in improved patient outcomes but also reduce overall costs (James and Savitz, 2011). The integrated healthcare delivery system, Intermountain is it a network of 23 hospitals and 160 clinics across Utah and Idaho. The organisation has demonstrated that improvements in clinical quality lower the cost of care delivery (James and Savitz, 2011). The introduction of specific initiatives such as the Intermountain elective induction protocol reduced health care costs by \$50 million per year. Another initiative relating to pulmonary illness showed a reduction in the cost of care by 25 percent. Combined, this evidence demonstrates quality improvement reduced costs.

2.5 New Zealand's Health System

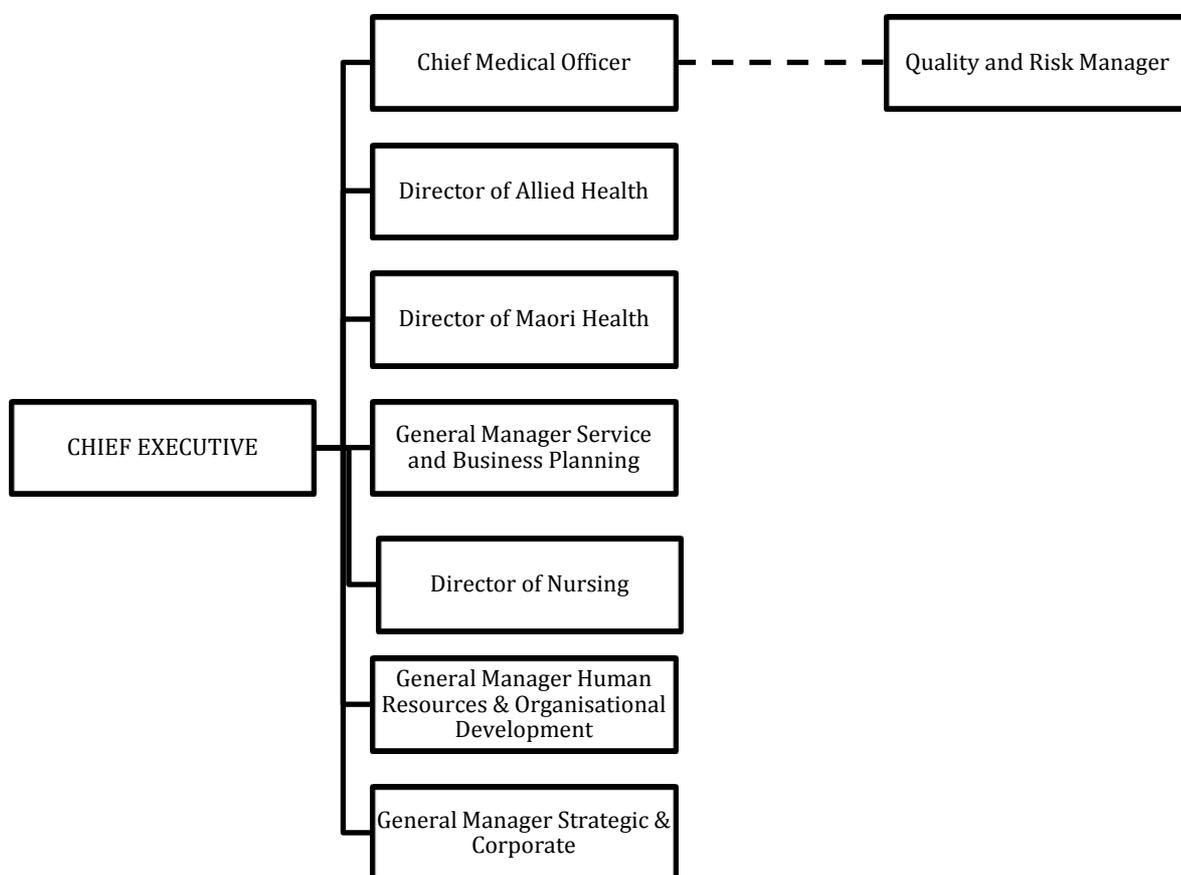
The focus of this thesis is on SSEs and how DHBs use current data and knowledge from the SSE report to prevent such incidents from occurring. In order to understand how DHBs are working to improve quality and safety it is important to understand the New Zealand health care system.

New Zealand's health system is renowned worldwide for being one of the most restructured health systems in the world. Since the late-1980s, New Zealand has had four major transformations that have directly related to changes in governance. In the 1980s, there was the Area Health Board (AHB) system. This system began its establishment in 1983 but was voluntary so regions transitioned in their own time (Gauld, 2003b). By 1989, all 14 AHBs had been implemented. Evidence now suggests that this system was not illogical. However, in 1990 under a new National government the AHB system was seen as inadequate and was abolished and replaced by decentralised internal market model (Gauld, 2003b). AHBs were restructured into Crown Health Enterprises (CHEs) (Barnett and Barnett, 2004, Gauld, 2003b). The government was a sole shareholder. These changes were met with public haste, which resulted in draw back from the commercial, decentralised model (Barnett and Barnett, 2004). In 1996/7 CHEs were renamed Hospital and Health Services (HHSs) and community representatives were introduced as representation on boards (Barnett and Barnett, 2004). The last major restructuring took place in 2000 under the newly elected Helen Clarke-lead Labour government, where 21 DHBs were introduced. The DHBs were required to fund and provide directly, or arrange for the indirect provision of, health services for geographically defined populations (Cumming et al., 2004). DHBs are governed by boards of up to 11 members, of which seven are elected by the local community and the remaining board members and the chair being appointed by the Minister of Health (Cumming et al., 2004). In 2011, the National party was re-elected into government and have chosen to stick with the current system with the only major change being that Southland and Otago DHBs have been amalgamated into one DHB.

The organisational structures of each DHB are slightly different from each other. Within each DHB quality and patient safety teams work on differing levels depending on their allocated place within the organisational structure. Some DHBs have quality and patient safety representation at the executive level as opposed to reporting to the executive level and answering to a team above, as can be seen in Figure 1. Evidence shows that change is better

made when a team or individual is pushing for that change from a position higher in an organisation, known as the ‘top down’ approach where change begins with the Chief Executive Officer (CEO) and moves progressively ‘down’ the organisational hierarchy (Bigda-Peyton, 2010). Often when working under team leaders, information can be filtered as it moves up to the appropriate levels. This approach is known as the ‘bottom up’ strategy. The information that is trying to get to the top of an organisation may lack significance to leaders and can be viewed as unimportant or not significant to the organisation’s key strategic goals and thus ignored (Bigda-Peyton, 2010).

Figure 1: Basic Organisational Structure of DHBs



This ‘top down – bottom up’ approach ties in with the emerging idea of clinical governance and has become increasingly incorporated into healthcare organisations. In 2006, the Institute for Healthcare Improvement (IHI) launched its 5 Million Lives Campaign, which aimed to protect patients from five million incidents of medical harm in the United States between 2006 and 2008 (Conway, 2008). The IHI has a focus on engaging governing boards to engage in quality and safety. The IHI recommend that “boards should spend 25% of their time in

activities related to quality and safety, overseeing the effective execution of a plan to achieve their aims to reduce harm, just as they oversee finance” (Conway, 2008). They also suggest that they should meet with at least one patient that has experienced serious harm from the organisation, or a family member within the previous year (Conway, 2008). Multiple hospitals in the United States have now reorganised their governance structures to ensure that quality is at the top of the agenda (Gauld, 2009a). However, in New Zealand this idea is still being embraced (Gauld, 2009b).

In 2009, a Ministerial Task group on Clinical Leadership was convened by the Minister of Health to:

- Describe how we can establish strong clinical leadership and governance in the health system;
- Describe and develop aspects of leadership required for good clinical governance;
- Develop examples of how process for clinical governance can be established.

The group published the report ‘In Good Hands – transforming clinical governance in New Zealand’ (Ministerial Task Group on Clinical Leadership, February 2009) in which six standards were listed that were seen to be essential to developing effective governance in healthcare.

1. DHB Boards must establish governance structures which ensure effective partnership of clinical and corporate management;
2. The Chief Executive must enable strong clinical leadership and decision making throughout the organisation;
3. DHB governance will promote and support clinical leadership and clinical governance at every level of the organisation;
4. Clinical leadership must cover the whole patient journey, including horizontal integration across the sector and across primary and secondary/tertiary services;
5. Clinical leadership must include the whole spectrum from inherent through to peer-elect to clinician-management appointment;
6. DHBs and the health system must identify actual and potential clinical leaders and foster and support the development of clinical leadership at all levels.

The 'In Good Hands report' supports the development of clinical governance. Implementation of clinical governance aims to improve quality and safety and therefore relates to this thesis. However, this thesis will not focus on clinical governance but it is important to recognise that other improvement processes are taking place at the same time as endeavouring to improve quality and patient safety in our public hospitals.

Governance and management positions also raise concerns surrounding who is best qualified to fill these roles, clinician based or non-clinician based (McKinsey and Company, 2010). The 2010 report from McKinsey and Company shows, but does not prove causality, that there is a strong correlation between measures of management and hospital performance, which suggests that management really does matter for patient outcomes (McKinsey and Company, 2010). The report does not include details about management practices in New Zealand but does compare management practices across the USA, Sweden, Germany, Canada, Italy, and France. The report, which is consistent with other studies, demonstrates that clinically trained managers have an increased understanding and credibility and better communication skills than non-clinical managers (McKinsey and Company, 2010). The report specified five factors that account for much of the variation across different hospital management practices. These are competition, skills, scale, autonomy and ownership type. Goodall (2011), however, does not agree that physicians make better management leaders. Her research focuses on hospital CEOs, the likelihood of them being a physician and whether they had physician leaders or professional managers. The research was cross sectional in design so does have some limiting factors but nonetheless demonstrated physicians disproportionately manage the highest performing hospitals in the USA (Goodall, 2011).

New Zealand is unique in its nature of elected boards. DHB elections are held in conjunction with council (local city and regional) and local community board elections. There has been increasing debate surrounding accountability and attributes that elected members bring to the board and its performance outcomes (Laugesen and Gauld, 2012). There is limited evidence that shows how boards that have non-clinical members perform, however, there is some evidence, which suggest they have limited understanding of issues such as quality and patient safety (Laugesen and Gauld, 2012, McKinsey and Company, 2010, Conway, 2008). As 'the five million lives' campaign highlighted in the past, boards have assumed that their main responsibility is reaching financial targets, lay management of the hospital and that the responsibility of patient care lies in the hands of clinical staff - not the board (Institute for Healthcare Improvement, 2011). However, the IHI points out a large proportion of

accountability for quality and patient safety lies in the boardroom (Institute for Healthcare Improvement, 2011).

Funding for each DHB is based on regional population size. Consequently, the different resource allocations mean that larger DHBs have more resources to improve quality and reduce risks that lead to medical errors being made. Although this leaves smaller DHBs with viability and delivery issues typical of smaller configurations and importantly the associated need to obtain services from other DHBs, it can also mean that the structure of smaller DHBs is less complex. Potentially this allows for smaller DHBs to keep ahead of a broader range of responsibilities, providing a better basis for a timely and coordinated management response to issues (Adam, 2003). The amalgamation of Southland DHB and Otago DHB in 2010 was underpinned by this understanding and motivated by the idea that the amalgamation would ultimately enable better service continuity throughout the region.

2.6 Understanding Medical Error in New Zealand

The concern, which now surrounds medical error in New Zealand, first emerged in 1972 with the release of the first report that used a standardised, epidemiological approach to measuring error in the Dunedin public hospital. This study measured adverse drug reactions among 9000 admissions to the hospital in the early 1970s (Smidt, 1972). It was found that three out of every 100 patients suffered an adverse reaction that resulted in morbidity or death (Smidt, 1972, Davis et al., 2001b). In 1987, a major malpractice scandal drew attention to medical error. It was revealed multiple women diagnosed with cervical cancer in situ at a leading women's hospital had been part of a clinical trial without their knowledge or consent, with some of these women not receiving appropriate treatment (Paterson, 2001, Paterson, 2002). The scandal prompted an enquiry and ultimately lead to the development of a Code of Patients' Rights (emphasizing a patient's right to informed consent), the appointment of a health and disability commissioner (ombudsman) to investigate patient's complaints, publicly funded patient advocates and the creation of national research ethics committees (Paterson, 2002).

While useful research had been carried out since this time it has been argued that no generic epidemiological data has been collected which would enable the assessment of adverse events within our public hospitals (Davis et al., 2001b). In response to this, Davis et al (2001) conducted a pilot study in Auckland, which demonstrated that 10% of admissions to

Auckland hospitals were associated with adverse events and 7.7% of these adverse events were related to inadequate health care management (Davis et al., 2001a). A year later the NZQHS (2002) study suggested the overall rate of adverse events was 12.9% of admissions to hospitals with 35% of these deemed highly preventable (Paterson, 2002).

The delivery and quality of health services has improved over the years with developments in technology and infrastructure such as information technology (IT), but there is still much progress to be made (Seddon et al., 2006b, Gauld, 2009a). The establishment of the Quality Improvement Committee (QIC) in 2005 prompted serious consideration of SSEs occurring in New Zealand public hospitals. In the first report clinical management incidents made up the highest proportion of serious events with 76% of sentinel events being related to clinical management issues and 42% of serious events (Quality Improvement Committee, 2008). The next largest category of events was medication errors, being 10% of sentinel events and 23% of serious events (Quality Improvement Committee, 2008). The QIC made ground-breaking work with the development of reporting SSEs by enabling a means for the sharing of adverse events from New Zealand public hospitals. The Health and Disability Commissioner has highlighted the importance of open disclosure in several reports into complaints from patients since 2003. The importance of these comments have been recognised by DHBs and health practitioners.

Open Disclosure is defined by Flemons and McRae (2012) as the:

“Imparting of information, by healthcare workers (and in some situations, healthcare organizations) to patients or their significant others, pertaining to any healthcare event affecting (or liable to affect) patients interests”

Whereas reporting an adverse event is

“An activity where information is shared with appropriate responsible individuals or organisations for the purposes of system improvement”
(Flemons and McRae, 2012).

Open disclosure is a key part of the process of care. Often after the release of the SSE report, the media has an outpouring of stories about quality and patient safety issues. For example, The Your Weekender Magazine (The Press, Christchurch 2012) published a three-page article addressing the issues and implications for families when they are not informed about the health care of love ones (Macdonald, 2012).

Studies focusing on open disclosure demonstrate the reasons why some events are not disclosed in hospitals (Ghalandarpoorattar et al., 2012, Matlow et al., 2006{Hannawa, 2011 #158), (Eaves-Leanos and Dunn, 2012). In many countries fear of a lawsuit is a major obstacle behind disclosing an event, followed by fear of decreased patients' trust, fear of family members emotional reaction and fear of losing professional reputation (Ghalandarpoorattar et al., 2012, Gallagher et al., 2007, Hannawa, 2011, Eaves-Leanos and Dunn, 2012). New Zealand is unique in that health care professionals do not face the fear of litigation because of the Accident Compensation Corporation (ACC). ACC is a no fault insurance scheme that covers the cost of rehabilitative medical care and compensation for lost earning related to an accident. The scheme covers compensation for medical misadventure, or work, traffic and other person injuries (Paterson, 2002). However the other factors mentioned above relating to the prevention of open disclosure still exist in New Zealand, which means there is a need to develop a professional environment that is safer to provide emotional and professional support to encourage an environment where error disclosure can occur (Health and Disability Commissioner, 2009).

District Health Boards report events on a voluntary basis. The data collected in the first SSE report was unlikely to reflect the actual levels of medical error occurring in our health system, but it was the beginning of what the organisation was trying to achieve: full disclosure of all adverse events occurring that could be prevented (Quality Improvement Committee, 2008, Health Quality and Safety Commission, 2012a). The 2010/11 SSE report revealed "DHBs with the largest number of events reported and details about events perhaps reflect better local systems for reporting and investigating events and may also have a superior safety culture" (Health Quality and Safety Commission, 2012a p.3). "A low rate of reporting may indicate under reporting and under investigation of events or, conversely, a very well developed risk management programme" (Health Quality and Safety Commission, 2012a p.3). The QIC went on to produce two more reports in 2007 and 2008. With each came an increase in the number of SSEs occurring and also an increase in reporting in other categories such as falls and suicides. Changing the culture of an organisation takes a lot of investment from employees and is a challenge that not only DHBs, but also other health organisations internationally, are facing. The culture within an organisation plays a key role in the level of quality that is provided in an organisation (Gauld, 2003a, Woodward, 2005, Lucian Leape Institute, 2003 , Paterson-Brown, 2011, Leape and Berwick, 2000a).

In 2010, it was believed that greater strengthening of the health sector was needed and the QIC was absorbed into the newly established Health Quality and Safety Commission (HQSC). This is a stand-alone Crown Agency. The HQSC continued with the production of the SSE report. In the 2009/10 report, 33 percent of events (73 incidents) were classified as sentinel and in the latest report, 2010/11, 60 sentinel events occurred (19% of events) (Health Quality and Safety Commission, 2012a). Falls make up the largest category in both events with clinical management errors the next. These clinical management errors make up 29 percent of total SSEs (108 incidents), this is followed by medication errors was 25 incidents (7 %) of events (Health Quality and Safety Commission, 2012a).

The report has evolved considerably since it was first published in 2005 by the QIC. It is divided into three main categories: falls, clinical management, and medication errors. The report previously to the 2010/11 release included out-patient suicides, but the Commission now considers these events are quite different from other events reported, as the report has always been focused on incidents that have an identifiable cause and are for the most part preventable. The Commission has decided that it will work with mental health professionals to develop appropriate methods for evaluating and reflecting on intentional death (Health Quality and Safety Commission, 2012a). The bulk of the serious and sentinel events report is providing examples of improvements in quality and safety. Which could be a positive move toward improving the patient's treatment journey (Leape et al., 2009).

The focus on serious and sentinel events through the HQSC has led to the refining of the definition of what actually constitutes a SSE. The definitions are explicitly laid out in the report and are as follows:

- An adverse event is a health care event causing patient harm that is not related to the natural course of a patient's illness or underlying condition;
- A serious event is one which requires significant additional treatment but is not life threatening and has not resulted in a major loss of function;
- A sentinel adverse event is one in which the event is life threatening or has led to an unanticipated death or major loss of function.

These definitions are used by DHBs in conjunction with the Severity Assessment Code (SAC) and Root Cause Analysis (RCA) to help determine the severity of the event (Health Quality and Safety Commission, 2012a).

2.6.1 *The Severity Assessment Code:*

Serious and sentinel events are the events at the tip of the iceberg, so, to determine the priority of an event when it occurs, DHBs use the SAC. A score is determined by rating the consequences of the incident and its likelihood of occurrence. Based on this a numerical rating is allocated to every incident, 1,2,3 or 4 with 1 being most serious to 4 being least serious (See appendix to view the SAC). When an event is SAC rated a 1 it then goes into the process of RCA.

2.6.2 *Root Cause Analysis:*

RCA is a technique used to answer the question of why an adverse event occurred (National District Health Board Quality and Risk Managers Group, 2012, Wolf and Hughes, 2008). The RCA process is not unique to the healthcare setting but is used frequently as a problem-solving tool by many organisations. The HQSC underlines the RCA process as the most appropriate formal process of investigation designed to identify the root causes of adverse events (National District Health Board Quality and Risk Managers Group, 2012, Wolf and Hughes, 2008). The RCA process seeks to identify the origin of a problem and uses a set of specific steps to find the primary cause of a problem. These steps include:

- 1: determine what happened;
- 2: determine why it happened;
- 3: figure out what to do to reduce the likelihood that it will happen again.

RCA assumes that systems and events are interrelated so an action in one area triggers an action in another and so on (National District Health Board Quality and Risk Managers Group, 2012). By tracing these actions, it enables the investigators to establish where the problem started and how it developed into a SSE. RCA identifies three basic causes for a medical error and these are not dissimilar to causes of medical error identified by Leape and Runciman in *section 2.2*, hence any potential overlap (Smits, 2010):

- 1: Physical causes- this is where material items failed in some way (for example, a piece of medical equipment failed to do its job);

2: Human causes - people did something wrong, or did not do something that was needed. Human causes commonly lead to physical causes (for example, a clinician incorrectly sets up a piece of medical equipment, resulting in that piece of equipment failing);

3: Organizational causes - a system, process, or policy that people use to make decisions or do their work, is faulty (for example, one person was responsible for double checking the medical equipment was set up, and everybody assumed someone else had double checked its set up).

By focusing at these three types of causes, we can investigate the negative effects, find hidden flaws in the system, and discover specific actions that contributed to the problem. This process usually results in more than one root cause being found. In 2009/10, the HQSC provided national training. This was called the "New Zealand Incident Management System: A National Approach to the Management of Health Care Incidents". The National Quality and Risk Managers then decided to develop a guidebook to help standardize the process of RCA investigation used by the 20 DHBs (Health Quality and Safety Commission, 2012a). Although the HQSC promotes the use of the RCA methodology, it is recognised that individual DHBs do things in a variety of ways.

2.7 Incident reporting systems in Australia, United Kingdom and the United States of America

The following sections consider how SSEs are managed in other developed countries. An overview of sentinel event management systems can be found in Table 1.

2.7.1 Australia:

In 1987, the Australian Patient Safety Foundation (APSF) was established as a non-profit organisation. The aims of the APSF were “promoting, organising, funding, conducting research into and establishing mechanisms for advancing patient safety” (Runciman, 2002). From the APSF the Australian Incident Management System (AIMS) evolved (Runciman, 2002). This was a national voluntary, anonymous reporting system for use across the public health system (Runciman, 2002, Spigelman and Swan, 2005). The AIMS system also enables it to be used by specific specialties such as anaesthesia, intensive care and emergency medicine for reporting (Spigelman and Swan, 2005, Runciman, 2002, Allan and Judith, 2005).

The information reported is then fed into the central system by coordinating medical specialists (Allan and Judith, 2005).

Australia has not been without its scandals in healthcare (McLean and Walsh, 2003, Faunce and Bolsin, 2004). The Quality in Australian Health Care Study (QAHCS) was commissioned in 1995 (Wilson et al., 1995). This study focused on the prevalence of adverse events in acute care hospitals across the country. It found that around 16% of admissions were associated with an adverse event. Based on this figure around 25 people each day die from preventable adverse events and another 22 suffer preventable permanent disability (Wilson et al., 1995, Van Der Weyden, 2005).

The Australian Commission on Safety and Quality in Health Care (ACSQHC) is a government agency, which was established by the Commonwealth with the support of State and Territory governments to take over the role of the Australian Council on Safety and Quality in Health Care, which was abolished in 2006. The ACSQHC now sets the standards, coordinates, and leads national improvements in safety and quality across the Australian health care system. Several projects that have had an impact in the industry and health professional's roles in quality and safety have been led by the ACSQHC. These include:

“Improving clinical handover, reducing healthcare –associated infections with strategies such as stronger compliance with hygiene procedures and work to recognise and respond to clinical deterioration of patients and so reduce adverse outcomes”

(Duckett and Willcox, 2011).

Furthermore, advisory bodies have been developed in each state and territory (Wilson and Van Der Weyden, 2005). This has enabled the incorporation of many patient safety programmes to be built into local hospital practices (Wilson and Van Der Weyden, 2005). Efforts to improve patient safety and quality and prevent adverse events from occurring in hospitals have also included the use of accreditation. Accreditation involved demonstrating systematic quality management processes are in place (Duckett and Willcox, 2011). This includes having processes and procedures available to analyse adverse events, for example, Root Cause Analysis. The major accreditation agency, Australian Council on Healthcare Standards (ACHS) works on a four-year cycle and involves two external reviews (Duckett and Willcox, 2011). This is similar to New Zealand where accreditation takes place every three years (Ministry of Health, 2012, Medical Council of New Zealand, 2011). The accreditation process in Australia is done by survey in which standards are measured across

three key areas: clinical, support and corporate (Duckett and Willcox, 2011). From the survey recommendations are put forward about future improvements that need to be made, a similar process is followed in New Zealand. If satisfactory performance is found a full 4-year accreditation will be awarded. A one-year conditional accreditation may be given if there are improvements that need to be addressed. Duckett et al (2011) found of the “454 health care organisations that had organisation wide accreditation surveys over the 2007-2008 year, 94% were given full four-year accreditation, 6% were given one-year accreditation and fewer than 1% (1 organisation) were given no accreditation” (Duckett and Willcox, 2011). This accreditation process, along with a well-managed incident management system, has led the way in reducing the possibility of an adverse event occurring.

Table 1: Comparison of Sentinel Event Incident Reporting Systems

Country	Name	Date Started	Voluntary/ Mandatory	Organisation	Aims	Coverage
New Zealand	SSE	2005	Voluntary	HQSC	Improve quality, safety, and experience of care. Improve health and equity for all populations. Better value for public health system resource.	National
Australia	AIMS	1998	Voluntary	APSF	Collect, classify, analyse, manage and draw lessons from things that go wrong in healthcare	National
United Kingdom	SIRL	2010	Mandatory	CQC	Provides a nationally consistent definition of a serious incident that requires investigation. Clarifies roles and responsibilities. Provides guidelines to ensure that all incidents are reported to relevant bodies to ensure full investigation of learning and events	England and Wales
United States of America	The Sentinel Events Database	1995	Partly Mandatory	JCAHO	Increase general knowledge about sentinel events, their causes and strategies for prevention	National

2.7.2 *United Kingdom:*

In 1948, the United Kingdom developed the foundations for the current health system called the National Health Service (NHS). This health system acts as the central umbrella in which all health services are provided free at point of delivery to all citizens. Health care spending in the NHS was estimated to be 8.7% of GDP in 2008 (Klein, 2012). The National Patient Safety

Agency (NPSA) was established in 2001. Prior to the NPSA there were multiple systems responsible for data collection of patient safety incidents, so the NPSA's role was to develop a centralized national system (Gauld, 2009a). Restructuring changes more recently have the functions and expertise of the NPSA transferred to the NHS Commissioning Board Special Health Authority. Reporting of adverse events continues to the National Reporting and Learning System (NRLS) however, the NHS Commissioning Board Special Health Authority now utilise the data in the NRLS to analyse risk, drive learning and improve patient safety.

The NRLS for England and Wales was established and rolled out over 2003 (Hutchinson, 2009). The NRLS is a voluntary anonymised reporting system. Physicians or trusts can report an incident by entering data into a web based open access system or alternatively submit an anonymised report from an individual organisation's local risk management system. The NRLS works by extracting information from existing risk management systems (Katikireddi, 2004). Evidence shows that the NRLS database is now the largest of its kind in the world and has now received over three million reports, which not surprisingly were, and continue to be, unevenly distributed across all staff categories with the majority being reported by nurses (Panesar, 2009, Johnson, 2003), (Hutchinson, 2009).

Multiple studies show that the rate of adverse events in the NHS is around 10% of hospital admissions with one third attributing to permanent disability or death (Vincent, 2001), (Ker, 2011, Sari et al., 2007). In the financial year 2009-2010 the cost to the NHS from compensation payment for clinical negligence was over £780 million (Ker, 2011).

Like other health systems around world, the NHS has grown and developed over time. In 2010, the NHS developed a framework known as 'Reporting and Learning from Serious Incidents Requiring Investigation'. This framework was to set ways for building on the national reporting and learning system in which the outcome was to develop a consolidated serious incident management system. Unlike New Zealand where each DHB has a DHB specific reporting system, under this framework there is one single reporting system, the National Serious Incident Management System (SIMS) that is overseen by the NPSA. The Framework outlines the criteria for determining if an incident is serious:

- Unexpected or avoidable death or severe harm of one or more patients, staff or members of the public;

- A “never event” - all never events are defined as serious incidents although not all never events necessarily result in severe harm or death. (See appendix for never events);
- A scenario that prevents, or threatens to prevent, an organisation’s ability to continue to deliver healthcare services, including data loss, property damage;
- Incidents in population programmes like screening and immunization where harm potentially may extend to a large population;
- Allegations, or incidents, of physical abuse and sexual assault or abuse; and/or
- Loss of confidence in the service, adverse media coverage or public concerns about healthcare or an organisation.

Since 2010, it has been mandatory to report all serious patient safety incidents to the Care Quality Commission (CQC) as part of the CQC registration process. When serious events are reported to the NRLS, they are passed on to the CQC (Keenan, 2013). There have been barriers to reporting and these are consistent with those discussed in the literature, including fear of shame and blame and loss of patient trust (Pinto et al., 2012).

In essence, the NPSA maintains a similar role to that of the HQSC in New Zealand. Although the HQSC only receives SSEs from local DHB reporting systems, the NPSA receives all event information from local reporting trusts.

2.7.3 *United States of America:*

The United States of America (USA) has developed several types of reporting systems that have been administered from state government or non-government organisations (NGOs) (Cheng et al., 2011). On the national level there are four voluntary systems run by NGOs and also a series of mandatory reporting systems, which are run by state departments (Leape, 2002). However, there is only one organisation that addresses sentinel events.

The Joint Commission on Accreditation of Healthcare Organisations (JCAHO) is a non-profit organisation, which accredits health care organisations and programmes across the USA. As part of their accreditation process it reviews an organisation’s sentinel events (Joint Commission, 2012). JCAHO’s sentinel events database was established in 1995 and is partly mandatory (Cheng et al., 2011). ‘Partly mandatory’ means that hospitals are encouraged but not required to report any sentinel event meeting the criteria to JCAHO. There are different

policies for different organisation types: Ambulatory health care, behavioural health care, critical access hospital, home care, hospital, laboratory services, long-term care, office-based surgery, disease-specific care. This discussion will focus on the use of hospital sentinel event policy and procedures as a comparison. Like New Zealand, Australia and the United Kingdom, the Commission may be made aware of a sentinel event by another third party such as the patient, family, employee, an accreditation surveyor or the media (Joint Commission, 2012). If the Joint Commission finds out via a third party, the hospital is required to conduct an RCA (Leape, 2002).

JCAHO define a sentinel event as “an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof”. The goals of the JCAHO are broadly the same as the HQSC, AIMS, and NPSA. They include (Joint Commission, 2012):

1. To have a positive impact in improving patient care, treatment and services and preventing sentinel events;
2. To focus the attention of a hospital that has experienced a sentinel event on understanding the factors that contributed to the event and on changing the hospital’s culture, systems and processes to reduce the probability of such an event in the future;
3. To increase the general knowledge about sentinel events, their contributing factors and strategies for prevention;
4. To maintain the confidence of the public and accredited hospitals in the accreditation process.

The sentinel events database aims to achieve goal number 3. This database collates information on sentinel event data, root cause data, and risk reduction data. The idea is that the data collected will form the basis for error prevention advice that is sent out to hospitals by a Sentinel Event Alert and other media. Hospital response to a sentinel event is how the accreditation process is affected. If the RCA process and recommendations are found to be insufficient or there is a refusal to carry out an RCA investigation, accreditation may not be re-awarded (Leape, 2002, Joint Commission, 2012)

2.8 Sources of Information for and Approaches to Quality Improvement

There are numerous resources that can be used by DHBs to help in improvement efforts of quality and patient safety. A description of some of the organisations that feature most strongly in the literature follows.

2.8.1 Ko Awatea:

Ko Awatea is the Centre for Health System Innovation and Improvement at Counties Manukau DHB. Ko Awatea aim to improve value for money and manage changes that are needed to keep up with the growing nature of healthcare improvement within the current tight financial circumstances (Ko Awatea, 2013a).

Ko Awatea has partnerships with the larger international organisations; the Institute for Healthcare Improvement, NHS (Wales) and Better Value Healthcare (Ko Awatea, 2013a). As well as having these international relationships, Ko Awatea has three educational partners, which is a joint venture between Auckland University of Technology (AUT), Manukau Institute of Technology and the University of Auckland (Ko Awatea, 2013a). With these educational partners the organisation has the Centre for Education and Innovation, the Health System Improvement Team and three centres of excellence; Centre for Workforce and Leadership Capability, Centre for Quality Improvement, and the Centre for Research, Knowledge and Information Management (Ko Awatea, 2013a).

The services that Ko Awatea provides are not only for Counties Manukau DHBs they are also available to be utilised by community healthcare providers and other DHBs (Ko Awatea, 2013a). The organisation provides clinical training sessions and learning and development workshops to clinical, non-clinical and students (Ko Awatea, 2013a). Professional development courses focused on quality improvement and leadership are also provided through the partnership with the IHI (Ko Awatea, 2013a). Ko Awatea also has the privilege of hosting the Asia Pacific (APAC) forum on Quality Improvement in Healthcare annually. The forum brings together organisations from all over the region sharing lessons from local and regional organisations to international examples of what is being done to improve healthcare (Ko Awatea, 2013b).

2.8.2 *Communio:*

Communio is a private organisation that works across New Zealand and Australia providing practical health care and human services solutions. They work in collaboration with governments, organisations and individuals to improve health care and human services (Communio, 2013). They offer a range of services including:

- Quality improvement and patient safety support;
- Organisational review and development;
- Service and program evaluations;
- Community engagement and capacity building;
- Business support;
- Provide services around mortality management, involving the care of family, management of deceased and their personal valuables, and the death certificates and referrals to the coroner. Mortality management previous has been called bereavement care services and Communio has been supplying this service to Counties Manukau DHB since 1995.

2.8.3 *The Health Roundtable:*

In 1995, The Health Roundtable was established as a non-profit organisation by Bill Kricker (CEO of The Alfred Hospital) and John Youngman (CEO of Princess Alexandra Hospital). The organisation was developed with the aim to:

- Provide opportunities for health executives to learn how to achieve Best Practice in their organisation;
- Collect, analyse and publish information comparing organisations and identifying ways to improve operational practices;
- Promote interstate and international collaboration and networking amongst health organisation executives.

The role that the Roundtable plays is to make members aware of the differences in operational practices rather than to mandate specific changes (The Health Round Table, 2008). The organisation provides assistance for members to learn how to implement specific innovations if they choose to implement them. The information collected via the Health Roundtable is not

made public, but is freely available to members of the organisation (The Health Round Table, 2008). The Health Roundtable, like Communio, works across both New Zealand and Australia. They currently have 83 health service organisations as members with a total of 137 facilities providing current data for comparative analysis. All 20 DHBs are members and included in this with information from 26 hospital sites being contributed to the organisation (The Health Round Table, 2008).

Health Roundtable has a number of programmes with an improvement focus. There is a patient safety improvement group, which meets annually to compare practices and process indicators. They list their key objective as spreading innovative practices to reduce adverse events quickly (The Health Round Table, 2008). Members of this improvement group are able to compare data on risk and adverse events, develop appropriate action plans, and compare ideas for patient safety improvements. There is also a benchmarking programme that allows members to compare current practices within their organisation with other member health organisations. It allows for the identification of innovative practices at other health organisations and allows for sharing through peers for service improvement (The Health Round Table, 2008).

2.8.4 The Institute for Healthcare Improvement:

The Institute for Healthcare Improvement (IHI) is also a non-profit organisation, which currently assists in leading improvement of health care throughout the world. The Institute was founded in 1991 and is based in the United States (Institute for Healthcare Improvement, 2013, The Health Round Table, 2008). The IHI aims to be a catalyst for change, cultivating innovative concepts for improving patient care and implementing programmes for putting those ideas into action (Institute for Healthcare Improvement, 2013, The Health Round Table, 2008).

Worldwide there are thousands of healthcare providers who participate in the IHI's improvement programmes, which by many are considered to be ground-breaking via their initiatives having the ability to be a catalyst for change and their innovative concepts for improved patient care (The Health Round Table, 2008, Institute for Healthcare Improvement, 2013). They have a staff of more than 60 who maintain relationships with over 200 faculty members (The Health Round Table, 2008, Institute for Healthcare Improvement, 2013). The IHI offers comprehensive products and services that facilitate demonstrable improvement in

health care organisations. Their goal is to close the gap between what is known to be the best care and the care that is actually delivered (Institute for Healthcare Improvement, 2013).

The Health Quality and Safety Commission have an affiliation with the IHI and provide opportunities for employees of DHBs to attend some of their initiative functions. The Global Trigger Tool programme was developed by the IHI and its use is being promoted by the HQSC. The Global Trigger Tool programme takes an alternant approach to reporting error (Griffin and Resar, 2009). Instead of relying on voluntary reporting, the programme analyses random samples of patient records searching for, ‘triggers’ that indicate an error has been made (Griffin and Resar, 2009). The programme is currently in its implementation stages with DHBs, however, internationally the information that is gained by this approach has then be used to improve the quality and safety of services provided (Health Quality and Safety Commission, 2013).

2.8.5 *Six Sigma:*

Sigma Quality Improvement is another type of quality improvement initiative. Originally developed by Motorola in the 1980s as a set of strategies, techniques and tools for process improvement for the manufacturing and business industry (Loay and Camille, 2003). The theory behind Six Sigma has gradually developed in the health care industry. The initiatives that Six Sigma employ focus on direct care delivery, administration support, and financial administration. Sehwill and Deyong (2003) discuss how the application of DMAIC (define, measure, analyse, improve and control) is a process that works well in any service line or process that can furnish measurable response variables. The Six Sigma process produces better operational efficiency, improved cost effectiveness, and higher processes of quality. The initiatives derived from Six Sigma begin as a means to improve internal processes in organisations but end up as future indicators of performance and growth (Loay and Camille, 2003).

2.8.6 *Conclusion*

Externally sourcing improvement processes from organisations such as the IHI comes at a financial cost to organisations. If the financial resources are available then out sourcing such initiatives is a productive move to ensure continuous quality improvement and patient safety. In New Zealand, the HQSC has been able to break some of those barriers between the

corporation's and individual DHBs, enabling DHBs the opportunities to have these resources as a viable option in their improvement processes.

2.9 Conclusion

This chapter has reviewed the range of literature surrounding adverse events internationally and in New Zealand. Consideration has been given to why SSEs occur, the consequences of them occurring and identified methods of reporting adverse events and how this information may lead to improved quality and patient safety in our hospitals. The annual SSE report provides a public summary of significant events and over time enables trends to be observed. The literature illustrated that there are many different causes of incidents and often it does not come down solely to the performance of the healthcare staff but to wider organisational systems and the procedures and processes that those systems put in place. This chapter has also canvassed methods employed by other countries looking at how they deal with serious adverse events along with alternative sources that healthcare organisations are able to utilise for their quality improvement efforts. This comparative literature demonstrates that similar methods are employed for reporting serious adverse events. However, there are variances, brought about by unique system and cultural factors and the methods employed for collecting and collating the data. New Zealand has been unique in the development of the Health Quality and Safety Commission and its role of collating the serious and sentinel data and publishing this in an open report.

What is lacking in the literature is information on how countries use the information produced from doing a sentinel event review. There is so much information being fed into these systems and recommendations on prevention methods being made, but is it just too much for healthcare organisations to grapple with? New Zealand is no exception. We have 20 very different and separate DHBs reporting SSEs to the HQSC. They currently collate the information and develop a report. There is next to no information about how or if DHBs use the information that is produced in the SSE report to improve quality and safety in healthcare. From the literature and the 2010/11 SSEs a number of concerns have emerged in the performance of the SSE report and its ability to effect change and improve quality and patient safety in our public hospitals. The following questions have been developed to find answers to this lack of information. These are:

1. How do DHBs respond to the SSEs report?

2. Is the Serious and Sentinel events report used as a basis of quality improvement and what is its perceived value?
3. Is there any convergence or variation in approaches to adverse events across District Health Boards?
4. Is improvement of quality and patient safety a collaborative approach or are District Health Boards working independently?
5. Is improving quality a priority in healthcare organisations?

It is for this reason that the study described in this thesis looks at how and if New Zealand DHBs use the SSE report to improve quality and patient safety.

3 METHODS

This chapter outlines the research methodology for carrying out this research. First, the methods for conducting a literature review will be described. Secondly, the design of the study and recruitment of participants and interviews will be explained. Thirdly, methods involved in the data analysis will be discussed.

3.1 Methods for searching the Literature and Policy

A review of the literature was conducted with the objective of defining adverse events. A search across databases Ovid, Scopus and Google Scholar using a key word search (“medical accident” OR “medical event” OR “medical error” OR “adverse event” OR “medical misadventure” OR “event reporting” OR “incident reporting”) was performed to gain an insight into the history of adverse events and why they occur and their consequences in health care settings.

Bibliographies of articles found to be relevant to the study were reviewed for any articles that may have been missed through database searches. Any articles that were deemed relevant were looked up individually using the University of Otago database, Summon. To ensure that a thorough analysis of information was found, journals including the *New Zealand Medical Journal* and the *British Medical Journal: Quality and Safety* were also searched individually for relevant data.

The next phase of this analysis was to conduct a review of other countries’ reporting systems to determine where New Zealand is placed in the reporting of SSEs. In order to do this, a thorough search was conducted over database systems of Scopus, Ovid, and Google Scholar. The following key word searches used to do this were: “incident reporting system” OR “incident reporting management” OR “adverse event reporting” OR “adverse event management” OR “adverse event monitoring” OR “incident monitoring system”. This search was restricted to the countries, Australia, the United Kingdom, and the United States. It was also important to look at current policies in place for sentinel event reporting. Policies were found by searching through the government websites of New Zealand, Australia, United Kingdom, and the United States of America. These countries were selected because they are

English speaking and considered to have developed healthcare systems comparable to New Zealand.

3.2 Methods for study design

An exploratory qualitative study was undertaken to review the response of the DHBs to SSE report following the February release of the 2010/11 report by the HQSC.

The objectives of this study were to seek the answers to the following:

1. How do DHBs respond to the SSE report?
2. Is the SSE report being used as a quality improvement tool and what is its perceived value?
3. Is there any convergence or variation in approaches to adverse events across DHBs?
4. Is improvement of quality and patient safety a collaborative approach or are DHBs working independently?
5. Is improving quality and patient safety a priority in our healthcare organisations?

3.2.1 Ethics:

The University of Otago has two categories of ethics approval, A and B (Wooliscroft and Watkins, 2011). As this study does not seek any personal information, human tissue, physical or psychological stress, safety concerns, conflicts, involve minors, deception or being conducted out of the country, the research therefore falls under Category B requirements. An application was submitted prior to research interviews. Category B ethics approval was granted from the University of Otago in May 2012 (See appendix for full copy of application and approval).

3.2.2 Participant Selection:

Based on the aims of this study, individuals of interest are those employed by each DHB with a leadership role in quality and patient safety. These staff ideally have responsibilities for ensuring quality and patient safety within the organisation, including the reporting of SSEs and implementing changes to organisational processes. In order to achieve this, discussions with Dr Janice Wilson, the CEO of the HQSC were carried out. On my behalf, Dr Wilson sent out a letter to the CEO of each DHB introducing the research (see appendix). It was intended

that this letter would demonstrate to DHBs that the HQSC endorsed this study and recognised that it would be beneficial to healthcare improvement. Another letter, including an information sheet then followed from myself, asking each DHB CEO to recommend an appropriate person within their DHB to be interviewed (see appendix). Following a series of follow up calls, all 20 DHBs agreed to participate in the study and put forward someone in the organisation to be interviewed.

In some DHBs, contact details for multiple people were recommended. Each recommended individual was contacted by telephone. In some instances, I was passed to a more suitable individual. In total 26 people from the 20 DHBs were interviewed.

3.2.3 Interviews:

To answer the objectives of this study, the 2010/11 SSE report along with key literature was analysed to generate with a set of questions that would form the basis of the interviews. The interviews were semi-structured to allow discussion to proceed based on the participant's responses. Before the interview commenced, informed consent from the participant was obtained and permission was sought to tape-record the interview. Participants were informed at this stage that the entire interview was confidential and all efforts would be made to ensure that each participant would remain anonymous. Participants were also informed that their participation was voluntary and at any stage during the interview, they were free to withdraw without any disadvantage. Areas that were covered in the interview included:

- Participants' background information, how long they had worked in healthcare and been in the area of quality and patient safety;
- Processes that are in place surrounding the reporting of SSEs, who was involved in these processes and were they supported by policy;
- The response and use of the SSE report; how was the report distributed in the organisation and who read it;
- Are their wider influences in the organisations that influence adverse events and their reporting, how reporting of SSEs is supported.

For a full copy of the semi-structured interview questions, see appendix.

During the interviews, if new themes arose outside of the pre-determined questions, the semi structured nature allowed for these to be explored further (Pope and Mays, 2008). Some

interviews were conducted in person but due to fiscal constraints, other interviews were conducted over the phone. Interviews were tape recorded and then transcribed verbatim. The original recordings have been kept in a secure place for the purpose of validating original data if required.

3.3 Methods for Data Analysis

The nature of qualitative interviews and wide scope involved in serious and sentinel events processes covered by the semi-structured questions generated a wealth of material. The length of transcripts ranged from 8-28 pages or from 3000 – 14000 words of text per interview. In total, there were 136,610 words of data. To assist in the organisation and analysis of this data, transcripts were imported into the qualitative data analysis programme, NVivo 10 (QSR International, 2012). The exploratory nature of this research and the assistance of NVivo 10 allowed for iterative thematic coding of interview data (Pope and Mays, 2008) using a general inductive approach (Thomas, 2006, Pope and Mays, 2008).

The primary purpose of the general inductive approach is described by Thomas (2006) as “allowing research findings to emerge from frequent, dominant or significant themes inherent in the raw data, without the restraints imposed by structured methodologies such as grounded theory, phenomenology and discourse analysis” (Thomas, 2006). One method that is consistent with the general inductive approach is thematic analysis (Thomas, 2006, Liamputtong, 2013). It allows for the “grouping of data into themes, and examines all cases in the study to make sure that all the manifestations of each theme have been accounted for and compared” (Pope and Mays, 2008).

To carry out the analysis, the researcher initially familiarised herself with the data by reading and then re-reading the data that she had personally transcribed. Initial codes were generated in relation to topics discussed in the interview questions. Themes were then assembled by collating codes into preliminary themes. This organised the data by making connections between a major category and its sub category enabling the recognition of themes within the data (Liamputtong, 2013). From here all data that was related to the provisional themes was gathered together. The next phase of analysis ensured that all interviews were re-analysed to ensure that examples of each theme had not only been accounted for and compared but also that the themes were relevant to the codes derived from the initial data set (Pope and Mays, 2008, Liamputtong, 2013).

The findings from the data analysis can be considered reliable due to the dependability of the data analysis process as supported by the iterative nature and then compared back to the findings to check for consistency (Thomas, 2006). It became apparent during the coding there was key information that provided information of context in which SSEs took place. This information has allowed for further insight on the use of the SSE report, how it is perceived and used as an improvement tool. The themes that were utilised to answer each objective are discussed in the following results chapter.

4 RESULTS

In this chapter, the findings from the data analysis will be described. Firstly, general background information about participants and their jobs will be outlined in part one of this chapter. This will be followed by a five-part summary of the questions that were developed from the literature review. Part two ascertains how DHBs respond to the SSE report. Part three reviews how the SSE report is being used as a quality improvement tool and what is its perceived value in helping to improve quality and patient safety. Part four identifies whether there are any convergences or variations in approaches to adverse events across DHBs. This section covers how DHBs are reporting events including if there are any factors that prevent an event from being reported. Open disclosure is also discussed in this section as well as interviewee's views on using the SAC. Part five analyses if improvement of quality and patient safety is a collaborative approach or whether DHBs are working independently. Lastly, part six explores to what degree is improving quality and patient safety a priority in healthcare organisations. In this section, the ways in which DHBs are working together outside of the HQSC and the SSE report are examined. This is followed by a short conclusion.

4.1 Background Information

In total 26 individuals from the 20 different DHB organisations were interviewed. In some instances when using the contact given by the Chief Executive, I was redirected to other individuals, as they were considered more suitable. Table 3 shows the role of each individual interviewed for this study. There was some difficulty in obtaining interviews with some DHBs as they took several months to reply or to nominate a candidate to be interviewed. The first letters outlining the study were sent out on in May 2012 and the last interview was conducted in October 2012. The results of the coding scheme discussed in chapter 3 are presented in Table 2.

Table 2: Coded Nodes from Nvivo10

Name of Node	Sources	References	Name of Node	Sources	References
-Job Description	21	25	-Electronic reporting system	18	22
-Length in Job Role	14	16	-Paper system comments	6	6
-Background	12	14	-Alternative reporting options	2	2
-Additional Comments re Job Role	1	1	-Number of incidents	12	12
-Position in organisation	20	28	-Benefits of electronic reporting	3	3
-Information Filtration	13	15	-Recognition of near misses	9	10
-Transparency	4	4	-Developing an electronic system	3	3
-SAC	20	26	-RCA recommendations	2	2
-Changing SAC ratings	10	12	-RCA efficiency	9	11
-Reporting events	20	21	-Redesigning care processes examples	9	9
-Feelings	3	4	-Reoccurrence of same error	4	4
-Accuracy of reporting	4	4	-Alternative methods	3	3
-Use of Report	18	23	-Expansion of recommendations of wider level	1	1
-Collaboration with other DHBs	18	23	-Who's reporting	7	7
-DHB Culture	20	31	-Feelings	1	1
-Resources	20	20	-Auditing	7	9
-Emotional response to financial issues	2	2	-Risk Management	20	21
-Training and education	13	21	-Response to Report	17	19
-HQSC possible improvements	9	10	-Other DHBs event info	16	18
-External Influence	21	21	-Feedback	16	16
-Cost	5	5	-Open Disclosure	18	19
-Reports Value	14	22	-OD prevention	19	22
-Negative	3	3	-Additional Comments	11	17
-Positive	4	5	-Complaints	2	2
-Subjective feelings	1	1	-Media Influence	3	3
-Knowledge of Currant Quality Initiatives	15	15	Support	10	10

Job descriptions and positions of the participants in the organisation varied depending on the organisational structure of the DHB in which they were employed. Of the 26 interviews, 14 were conducted in person. At five DHBs, multiple people were recommended to partake in interviews and thus 11 individuals were interviewed across these DHBs. Eight of these 11 interviews were conducted in pairs with both participants answering the questions concurrently. The length of interviews ranged from 30 minutes to 90 minutes with the average interview being 47 minutes. Specific job titles varied but for purposes of this study were grouped into six identifiable categories (Table 3). 12 of the interviewees reported straight to the Chief Executive, one was the Chief Executive and the remaining 13 interviewees reported to superiors who were one or two levels below the Chief Executive. The time interviewees had been in their current positions ranged from 3 months up to 11 years. The vocational training of participants was relatively evenly split between participants. 11 interviewees had a physician background, 11 had a nursing background, and one had an allied health background and two an administrative background.

Table 3: Grouped Job Titles of Participants.	
Number of DHBs	Job Title
5	Chief Medical Officer
3	Director of Nursing
14	Quality and Risk Manager
1	Chief Executive
1	Medical Director
2	General Manager of Clinical Governance

As there were multiple job positions, there was the opportunity to find out how the interviewees felt they were able to effect change based on their position in the organisation. Interviewees responded that they felt quality and patient safety roles belonged at the executive level and this was the best position for such a role to be:

“Sitting at the executive level is essential”

- *Quality and Risk Manager*

“It’s an exceptionally good level to sit and actually one of the reasons why I came here. Because of where the position sits you can influence change especially for quality and safety particularly in this area from a

global perspective, not necessarily on the floor but my staff take it down to the floor”

- *Quality and Risk Manager*

“Absolutely I agree with the IHI where they say quality should be at the top of every board agenda, number one safety should be there and it should be, umm, the quality team has got to be a member of the top team and have a say at the level of the executive leadership team and umm, the board’s got to be shown by the top and I absolutely believe that that has to happen if you want to get quality safety culture in an organisation, you have to have the leadership”

- *Quality and Risk Manager*

In saying this though, those who sat lower felt they did have strong working relationships with senior staff and that the appropriate information was passed on when it was needed to be:

“There is a strong feeling that it should be at an executive level, but I say that with reservation because I have access to all people that I need to in the organisation. So although I may not report at the executive level I have the ability to access people, or if I feel there is a need to run something by them or make contact relating to any aspect of quality and risk, I can access them readily”

- *Quality and Risk Manager*

“Personally it is my belief that it needs to sit at the executive management team level in terms of having some teeth to get things done. Having said that because it is a small organisation I actually have really good support from the executive management team and really easy access to them. My office is in the cooperate offices so it’s really easy to go, I have the ability to influence change rather than the authority to make it happen if you know what I mean”

- *Quality and Risk Manager*

The following quotations highlight some of the difficulties implementing change that are faced by staff working in various levels of management. For those that sit at the executive level I was interested to see if they had tried to achieve the same sort of targets in a job that sat at a lower level. A number responded that they had found their ability to bring about change to improve quality and patient safety in such a role in their previous job position difficult.

“I have worked elsewhere trying to do the same sort of job and its very hard to get traction and you can’t effect change from underneath and umm, one thing that I do is I actually make sure quality and risk

and safety issues are on the agenda and visible to the executive team and umm, I'll field it at risk committees so I have quite a high profile in terms of being able to push what I want to change. So yes I have tried in a manager's position sitting under a COO and it was very difficult to actually get past the dollars"

- *Quality and Risk Manager*

"Yes and there is too many people to go through to actually effect change or to umm I suppose convince the organisation that there are risks around some of this work whereas when you are on the board, at the executive table you can clearly say this is the risk and this is what we are thinking about"

- *Quality and Risk Manager*

"From a quality perspective absolutely. At the previous DHB I worked at I reported to the director above me who sat on the executive and it was much more challenging to get things done because you were that step lower down"

- *General Manager for Clinical Governance*

4.2 How do District Health Boards respond to the Serious and Sentinel Events Report?

The interpretation of this question was taken in a variety of ways from participants. The most common responses were that their DHB in which they work responded by ensuring that the report has been distributed widely throughout organisation and by making time to review what quality improvement activity had be implemented. Some quotes identifying common responses between participants follow:

"From our point of view once we respond to on-going issues, like we go back and try to make sure that the recommendations were carried out are still going. What we do is every month we have a SAC1 and 2 committee that meet and review all of the SAC1 and 2 reports that have been done and what you find sometimes when folks do the report they might have 30 recommendations and well that is just ridiculous you can't do that so what you find if you categorise it into 3 or 4 more encumbering recommendations it becomes much easier to actually initiate and actually much easier to monitor and make sure they are being undertaken"

- *Chief Medical Officer*

"I think, well I could be biased, but I think that we respond very well. I think the organisation is really committed to not hiding things. I think we have been extremely open in how we have reported them, not only to the family but to the Commission as well"

- *Quality and Risk manager*

“It gets distributed really widely, we talk about where there might be differences and whether it is worth making contact somewhere if there is something we are struggling with”

- *Quality and Risk Manager*

“When the report comes out it is taken to the senior leadership team so everybody gets to see the information that the HQSC produce, its put up around the organisation, the quality people will talk about it with their parts of the organisation and discuss it across management. So there is a dissipation of information across the organisation and my predecessor will review the whole report in its entirety and look at what learning will come out of that and then she will take it to executive and say here are some things that we could look at and then we capture this in our action database and follow those through”

-*General Manager for Clinical Governance*

“Well we already know our own information, because we have already provided it and I guess it is quite typical to be comparing how we are doing with other DHBs, having said that you don’t know whether you have got less or more events because you have actually had less or more or whether it is to do with the reporting and capturing of adverse events”

- *Chief Medical Officer*

4.3 Is the SSE report being used as a Quality Improvement Tool and what is its Perceived Value?

There were mixed responses to the question on whether or not the SSE report can be used as a basis of improving quality and patient safety however the majority of DHBs reported that they did use the report as a basis of improving quality and patient safety:

“You would be silly not to. I mean yea you have to really, it’s the ethical grounds that if you know that somebody has an issue that you could probably have a similar issue with, then you would be silly not to”

-*General Manager of Clinical Governance*

“It certainly informs our decision making at the clinical board as to what we should be concentrating on, so yes it does”

- *Director of Nursing*

“Aspects of it I would say we analyse and say yes that’s a trigger for improvement opportunity”

- *Quality and Risk Manager*

However, three DHBs reported that they did not use the SSE report as a basis of improving quality and patient safety. Their thoughts are reflected in the following quotes:

“No, probably the SEE report helps us to understand where we sit nationally and will sometimes help us identify if there is a DHB that has had similar things for us to talk to”

- *Quality and Risk Manager*

“Probably not yet. I don’t think we are sharing enough depth in them because people, we all, we all have similar events and not many are that different actually. What you don’t see in the report in the format that it is in now is say for example if I had an incident where a certain drug is mistaken for another drug and it’s given and the patient dies, and I learn another DHB had a similar event, I want to be able to go somewhere where I can see not only the story but actually the recommendations in place. I don’t want to reinvent the wheel, so there needs to be enough information in the national report”

- *Director of Nursing*

“Probably not so much improving it. We use the recommendations from the report to improve the system itself. It helps us to trend so we can see where our incidents are occurring”

-*General Manager of Clinical Governance*

Multiple DHBs also reflected that they may use the report but it was not a core component of their quality improvement efforts:

“Well we do, but it does not drive what we do”

- *Director of Nursing*

“Look, it informs one component of what we do but it’s not a major one. We would not use the national reporting system to bring about change. For one thing, it only comes out once a year, so why would you wait for an annual report. We would actually just get on with existing networks to just get on and do that”

- *Chief Medical Officer*

“We are with or without it. We are doing it as business as usual anyways but specifically in relation to the report it’s distributed throughout the organisation, directorates and clinical governance meetings table it and discuss it and I also look at it as an analysis oversight point of view and report on that”

- *Quality and Risk Manager*

Using the SSE report as a quality improvement tool also came down to the report’s perceived value and whether or not interviewees saw the report as a valuable tool in the quality

improvement sector. Again, there were mixed responses about how valuable the report was though a majority suggested they did find it useful. The most valuable part of the report was recognised to be the case study section of the report:

“I think it is useful, it’s got the falls and pressure injuries and that sort of stuff on the agenda”

- *Director of Nursing*

“I find the case study stuff the most valuable and see where we stand nationally, but that tends to raise more questions than answers”

- *Quality and Risk Manager*

“Absolutely, it’s starting to get to the point where we can start to use it as a proper quality improvement tool and other things to like I mentioned the benefits of taking away the scariness for most DHBs and the staff around the whole issue of the SSE”

- *Quality and Risk Manager*

It was also noted that the interviews reflected that the report is more valuable to the public than it is to them as a quality improvement tool.

“I think it is valuable for New Zealanders to know what’s occurring in the healthcare system. The point is valuable, but I think from the hospital point of view it’s all too, I suppose more interesting for us to know what else is occurring elsewhere in the DHB and what numbers of events they are having. We really can’t compare very well but it is interesting if they have had deaths and where they have occurred”

- *Quality and Risk Manager*

“I think that it is humanising hospitals. I think from a public perspective it is putting it out there saying actually we do get things wrong from time to time, but we are trying to reduce the times that those sorts of events are occurring. And I think that it raises the profiles for staff to actually say you know your best has to be your best every single day of the week you can’t you know when patient care is at the forefront you have to make sure that you are on your game all the time and the minimum is not good enough”

- *Quality and Risk Manager*

“I think it has served a very good purpose and I think that we need to continue on being open with the public about reporting these things and letting them know what’s going on in the hospitals. How we do that, I think there are other ways of doing that, I think it doesn’t need to be so centrally driven and a lot of DHBs have full reports of the RCA in board reports and put them up on their websites now”

- *Chief Executive*

“I think the principle was to give the public an assurance that the DHB treated events seriously and that they do something about them. It was also to reduce a number of individual IOAs DHBs were experiencing, and to that point I think it has achieved it”

- *Quality and Risk Manager*

A few responses reflected they did not find the report to be of any value.

“Not of great value, just because it is not detailed enough”

- *Chief Medical Officer*

“Not particularly, I’m not a great fan of incident reporting itself, it doesn’t drive quality improvement greatly, its not a major driver of quality improvement. There are much better drivers of quality improvement like clinical audit and so incident reporting is just one component in terms of its public profile compared to all the other work that is going on that’s actually important”

- *Chief Medical Officer*

“Other than trending, I don’t think that it has been useful to be honest”

- *Director of Nursing*

Being able to use the report as a quality improvement tool requires that events in the SSE report are used on a wider scale and other DHBs are able to learn from adverse events that have not only happened in their organisation but at other DHBs as well. The information provided in the SSE report is minimal in regards to how an event happened and the recommendations that are made with the aim of preventing the adverse event from occurring again. Interviewees were asked whether they could ‘use the report to change anything in their own systems as a result of events in other DHB’s?’

“No, not at this point”

- *Quality and Risk Manager*

“Not locally, the information is very limited, but I guess we will see what happens this year when we are responsible for the release at the DHB level”

- *Chief Medical Officer*

“Off the top of my head, no I am not aware of anything we have done specifically here to make changes at this stage”

- *Quality and Risk Manager*

“No not particularly because there are not a lot of common themes with all these events. You usually find it has been a breakdown of or not following guidelines or protocols that are already in place. If someone makes a misdiagnosis, all you can do is make people, or ask people, to be a lot more aware of that particular condition, but any system that is full of human beings at some time will fail. We will never get a 100% perfect system but also the information has got to be totally anonymised, it’s got no third party information in it and by the time that is taken out its actually quite brief and not particularly helpful”

- *Chief Medical Officer*

One of the DHBs who reported that they were not able to change anything based on other DHB events also brought up that taking other people’s solutions is not always the best step forward. Two other participants similarly mentioned this. Participants also discussed that they felt there was no mechanism in place to see if other DHBs had had similar events and their recommendations regarding this. These comments can be seen respectively in the following quotes:

“I think that we are probably a little bit low on picking up on those things. I think you have to be a little bit careful about picking up other people’s solutions and dumping it in your own organisation because you actually need to work through it with the clinicians for them to accept that this is a good way to work. So you need to work through the process and I’m not saying that we shouldn’t take good ideas and use them but there is still quite a long process to go through to get it embedded into the organisation”

- *Quality and Risk Manager*

“What’s really essential going forward is that we don’t reinvent the wheel 20 times but we make sensible enough decisions that one size does not fit all because what may be absolutely required at a tertiary level hospital might not be appropriate at a very small DHB”

- *Quality and Risk Manager*

“No that’s the biggest weakness really. If I have a problem, I do not want to spend hours hunting around looking for something, looking through every reference. I think if I was to ring or email the Commission and say, look we have had this incident, who else has had one similar. Somewhere there has got to be somewhere you can go to umm be influenced because health traditionally are very poor at sharing”

- *Director of Nursing*

“We would need more information, the Ministry or the Commission is seeing them all it would help if they would go look we are noticing

that same sort of issue let's drill in to this a do it a bit better and open up the conversation. I don't think reading them and we go 'oh my lord' and sometimes we go 'by the grace of god that could be us' but I'm not sure at this stage we could change anything unless it's opened up for us"

-Director of Nursing

4.4 Is there any Convergence or Similarity in Approaches to Adverse Events across DHBs?

The policies and procedures that are set out for DHBs by the Ministry of Health and the HQSC seem to be followed quite closely by all 20 DHBs in regards to reporting of a SSE, disclosing the event and the use of the SAC matrix. In terms of reporting of events, all 20 DHB health boards had a reportable events system. At the time of interviewing 9 DHBs were using paper based reporting systems, 10 were using electronic reporting systems and 1 DHB was using electronic reporting in one hospital site and paper based system at another hospital site. Between the 11 sites using an electronic system, not all were using the same system. Risk Man, Risk Pro, and R L Solutions¹ were the most common incident reporting systems identified in use. In terms of how the paper based systems worked, each DHB had their own system for filling out the event forms. DHBs that had a paper-based system were questioned whether there was any delay between the filling out of the form and when it was delivered to the appropriate person such as the quality team in the organisation. The following quotes represent their answers to this:

“Well as far as we know, we don't know the ones that we never see, you know what I mean, but we get a reasonable number of incidents reported for the size of the organisation and yet they get to the right people”

- General Manager of Clinical Governance

“We have a system of Duplicates. So the system is they write up the report and they put the duplicate straight in the envelope and within 24hrs it comes straight to us and we have SAC assessed it. The reporting mechanism is paper based but in fact we have improved our

¹Risk Man is a Total Information Management System that manages incidents, risks, complaints, quality, ISO Standards, OH&S, workplace claims etc. Based in Australia and can be found at <http://www.riskman.net.au/Home>
R L Solutions is a global software and service company that provide systems for patient feedback, incident reporting, and risk management and infection surveillance. http://www.rlsolutions.com/Our_Story.aspx
Risk Pro is another organisation that offers solutions such as incident analysis under its Occupational and Health Safety and Risk Management programmes.
<http://www.riskpro.com.au/>

level of reporting and our visibility of the incidents much better than three years ago by sending it directly to us on a daily basis”

- *Quality and Risk Manager*

“Yes, there can be a delay of sometimes 1-2 weeks before the form is filled out”

- *Director of Nursing*

“Yes it could be 2-3 days, generally that when I’ll know, I’ll get a call from someone saying look there has just been a serious event, expect an incident report in the next couple of days. So I can already put the call to the team and say who would be interested in the RCA or we call this Tap Root SAC1 investigation”

- *Quality and Risk Manager*

“No, no difficulties at all. Our DHB reports probably the most in the country. We don’t believe we have got a problem”

- *Chief Medical Officer*

When these DHB were asked about developing an electronic reporting system, three reported their intentions:

“I would hope so in the next 12 months”

-*Director of Nursing*

“We are currently in the middle of implementing a new electronic reporting system, Risk Man”

- *Quality and Risk Manager*

“We hope to”

-*Chief Medical Officer*

Interviewees raised various issues with the SSE reporting process but suggested that the physical system (electronic or paper based) did not affect the actual reporting of events:

“Many years ago we said if it’s so hard to fill out the paper work, why don’t you just lift the phone and leave a message. And people didn’t do that either, so there will always be some people that report and some people that don’t”

- *Director of Nursing*

It was also found that interviewees described that events tend to be reported more by nurses than by physicians:

“If I was going to make sweeping generalizations, doctors tend to report far fewer incidents than nurses do because they don’t see it as an incident, its part of what they do. Sometimes they fix it and carry on, that’s the mentality of physicians, that’s why they are clinicians, because they fix people”

- *General Manager of Clinical Governance*

“Nurses are very good at reporting and to some extent the allied professional group, doctors are not so good at doing so, but we are probably getting some improvement there and its part to do with culture”

- *Chief Medical Officer*

“I’m sure this would be the same elsewhere, that nurses are always more comfortable to fill out an incident report form than doctors and umm that is something that I would like to see change I think that doctors see completing the incident report as making a complaint and I don’t see it that way. To me it’s ceasing an opportunity”

- *Chief Medical Officer*

Some reasoning behind why this might be the case is described by the following two quotes:

“In a surgical procedure there are always risks, for example when you are performing a caesarean section it is very easy to cut the bladder and it’s a risk that may happen to every surgeon performing a C-section. However, they consider it to be exactly that, a risk and when this does happen they don’t consider it to be an incident. Whereas for the general run of the mill staff it would be considered absolutely that, you did not intend that to happen, you did not want that to happen but it did therefore it is an incident. However, they look at it quite differently and say it is a complication, it is a risk. So we need to have those discussions about will we consider that to be an incident that needs to be reported”

- *Quality and Risk Manager*

“When you tell a patient they have got x percent chance of perforating the bowl during a colonoscopy, is that an incident or a complication? Doctors sometimes struggle with this. When they go wrong are they an incident or a complication of trying to do your best for the person despite the risks. That’s mind set stuff, what you have actually got to say to them is that it’s not about you as a clinician it’s about the patient and the subsequent harm they suffer due to the extra treatment they need and even if you tell them it’s likely to happen, they still see it as undesirable or harmful”

- *Director of Nursing*

Another interesting finding was the average number of incidents reported between the DHBs. When looking at larger DHBs, (defined for this purpose with a population greater than

200,000 people), the average number of events reported on a monthly basis was 700 compared to smaller DHBs (with a population of less than 200,000 people) with 220 incidents a month. This included all incidents that were SAC rated 1-4. Even though this seems to be a high rate of reports, the 2011/12 SSE report which was released during the analysis of this data shows that the rate of adverse events in relation to DHB size is within the expected parameters (Health Quality and Safety Commission, 2012b).

Reporting of adverse events was affected by multiple factors. Multiple interviewees felt that one of the most important factors that prevented reporting events was the voluntary nature of the reporting system. Other common influences that related to the number of adverse events reported included organisational culture, lack of feedback, recognition of incident itself, fear of repercussions, job title, and time constraints. The following quotes demonstrate participants' discussion around reporting of adverse events.

“I think there are lots of things that potentially prevent events being reported and that's down to personalities, loyalties, down to individuals not wanting to be blamed or you know being seen to be dobbing in their colleagues”

- *Quality and Risk Manager*

“They rely on a voluntary reporting system and umm we rely on our staff to fill in an incident form that gets logged into our electronic data base”

- *Quality and Risk Manager*

“As you are presumably aware the vast majority of incidents don't get reported, reporting is a very poor way of actually trying to establish any idea of the rate of frequency of incidents you need to do audits to actually establish that. Umm so, the kinds of this that actually trigger voluntary reporting tend to be driven very much by the consequences of the incident. So an incident that has more serious consequences is more likely to be reported, but that might not be the most important incident to report because sometimes everyday incidents that have minor impact are still things because they are common are actually really important to do something about and also certain kinds of people are in the habit of reporting”

- *Chief Medical Officer*

“Reporting incident wise, there are factors that prevent it from happening and that's the same in any environment where you have a voluntary reporting system. Mostly fear within people that 'I've done something wrong, not really fear of retribution that they have done something wrong it's just ohh god I've done something wrong, and

people actually say then that's fine. That has more effect on the near misses. Some people such as doctors may not see it as an incident. So yea there is sort of fear, the retribution and blame possibly, although we work really hard not to, there is still that fear of getting told off sort of thing"

- *General Manager of Clinical Governance*

Comments were made regarding the lack of feedback about what happens once an event has been reported:

"When I first got here people would think that nothing would happen so what's the use of writing a report. Now we have got a process where they get all the reports back monthly and they actually see things that are happening. So they are starting to think that it is a useful process"

- *Quality and Risk Manager*

"I think it is important that people actually get feedback and that the fact that they are reporting stuff and it's going into a black hole and nothing happens or gets done can discourage people from continuing to report"

- *Chief Medical Officer*

Recognising when an adverse event happens or identifiable risks associated with adverse events is very important to improving quality and patient safety. The following quote was made in regard to the aforementioned and points out the importance of staff being able to pick up on incorrect processes that lead to an adverse event occurring.

"I think some people don't recognise the potential for danger so their understanding of risk is quite low in some particular areas. I see everything that goes wrong as an incident I don't think there are any near misses. There are incidents, some without harm, and some with harm and so everything should be reported"

- *Quality and Risk Manager*

Organisational culture also played an important role but this will be discussed in more detail in section 5.6 *is improving quality a priority in healthcare organisations?* Once an adverse event has been reported, the SAC is used to scale the adverse event. Interviewees were asked whether they or staff found any difficulties in scaling adverse events using the SAC. Whilst interviews were being conducted, the 'likelihood section' of the SAC was being reviewed by the HQSC. This was reflected in the interviewee's responses:

“We are still having a debate with the Commission about this. I would say majority of the sector thinks the likelihood section should be in it and they took it out against our advice”

- *Chief Executive*

“The last talks we had in May we had strong talks that it was not going to work if they didn’t have the likelihood in it and we agreed originally to have it in but they put it up without it. Without the likelihood it is not effective and it didn’t capture things like fractured neck femurs”

- *Quality and Risk Manager*

“The SAC rating you will be aware got changed last year and again I was involved in the consultation process around reviewing it. I think that umm the modified version is easier to use than the one before. I think it’s easier enough to use but there are always some that are not particularly straight forward to classify but that would be no matter what categorisation system you used probably”

- *Chief Medical Officer*

The confusion of scaling events has led to two DHBs to employ an alternative system in rating the severity of an adverse event. As per normal ground floor staff report the incident but do not put a level of severity on it. Management staff utilise the SAC and determine the severity of an incident once it has been notified to them. The following quotes are from these two DHBs:

“Well our clinicians don’t for that very reason, it is very difficult. I rate them myself along with a number of my team. They come through to me electronically first and we rate them and then they go out to the teams. So we are rating them every day. We have chosen to do it that way cause there was too much variability when staff were doing it. Also the staff would be very passionate about a decision and say well I believe that to be a SAC2 and not be able to look at it as objectively and when we changed the rating they got very frustrated and couldn’t understand why, even though it got explained and then we found that staff actually didn’t complete the form because, what’s the point when it’s going to get changed anyway?”

- *Quality and Risk Manager*

“The SAC scoring is done by the CEA and the clinical leaders. It’s not done when the adverse event is reported but our incident management system came with a severity assessment field box, that was from minor to major and if a major event is reported there is an automatic

alert that goes to the managers and the CEA and based on that and discussion we have afterwards the SAC will be scored”

- *Quality and Risk Manager*

General reasons for staff having difficulties with using the SAC matrix included; there is not 100% clarity as to what is ‘likely’, ‘near likely’ or ‘most likely’ and its level of seriousness, new employees into the organisation, confusion with the scale when using other systems such as Risk Pro, and not being able to use the matrix as a bench marking tool as it is dependent on a voluntary reporting system. However, the consensus (12 responses) believes there is no difficulty in using the SAC. One concern from participants, who did report and did not report problems with using the SAC, was having to change SAC ratings once they have been submitted into the incident reporting system. When there are difficulties in understanding and using the SAC matrix more often or not SAC rating would have to be either downgraded or up graded. The following quotes reflect why this occurs:

“There is always discussion around the level of seriousness most of the time and that because there is not one level of seriousness so as soon as you put a whole lot of smart bright people in a room with different perspectives and say you can choose from these four things there will be different perspectives. So sometimes we have quite strong debate and sometimes we have absolute clear agreement, and I wouldn’t expect anything different”

- *Quality and Risk Manager*

“I would say often things are downgraded because people will fill out a report at 3am and they will be angry and now says it’s a SAC2 but when you look at the classification system it’s actually a SAC4. So I’m not saying we have SAC1s and 2s every two weeks but certainly the reports come through and I would be surprised if it wasn’t the same at other DHBs”

- *Chief Medical Officer*

“If somebody falls and appears not to have hurt themselves and then a day later decides they cannot walk properly and they have got a fracture that has been missed, so it changes doesn’t it, they are fluid things. I don’t think it matters too much, you have got to have some sort of rating and consistency of measurement but I think we get too hung up about it and I think for clinicians the main thing is A) they treat their patients and B) they report it”

- *Director of Nursing*

“Quite often an incident can be horrible for the staff member. You know maybe if somebody was drunk and got very angry and rampaged through the emergency department, for staff concerned it

was horrible and it's frustrating probably and a lot of mess and they might score that as a SAC1 because for them it was really horrible but actually, what happened, nothing other than really a mess. For this reason we have a SAC scoring committee because we were getting so many incident reports coming though scored as SAC1s and 2s, they meet every Monday morning and review all the incidents that have come in. for the instances above the score would be reviewed and downgraded. The staff would be informed of that and their manager so to try and assist their understanding and that has helped a lot"

- *Director of Nursing*

"Your initial rating might be a 2 but afterwards you might find that there was nothing that could have been prevented so therefore no real harm was caused to the patient therefore it could be downgraded to a 3"

- *Quality and Risk Manager*

An important part of the incident reporting process is open disclosure. All 20 DHBs reported having open disclosure policies in place with most of the DHB offering open disclosure training courses during the initiation phase of employment into the organisation. DHBs all had appropriate procedures in place if open disclosure was found not to have occurred. All 20 participants also commented on aspects they felt might prevent a physician from disclosing an event. These include factors such as how serious the physician feels the incident is, fear of repercussions, fear of telling family that you have killed or harmed their family member, anxiety about whether telling them is going to cause more harm to their mental state than needs to be caused and staff feeling threatened. Some of these factors are discussed in the following quotes:

"I think we are pretty good here but as you could say the same sort of things as reporting, people will have that fear of ohh God I've got to go and tell somebody, particularly with sentinel events that I've just killed your husband and that's really difficult. The staff need to be supported around it, we can't just be in the situation where we go off you go, just go and do it, they need to have systems and processes in place to say here's a good way of doing it maybe"

- *General Manager of Clinical Governance*

"Well I'm sure people are frightened, frightened to say it and they are frightened of what people will say, they keep hoping that it will go away in their heads but you know we got to talk and escalate these things so people get the right answers. I think fear is a big one"

- *Director of Nursing*

"Anxiety more than anything else, anxiety around how to do it. The other thing that prevents people from telling people is also, where you are going to cause harm by telling people, are you going to cause

trauma. For example if you think your mother died peacefully on a ward and we have to tell you that we made an error and gave her a medication and she was pretty much dying anyway, you know of her pneumonia, she may have been palliative when the error was made, still the best practise, the right thing to do, the ethical thing to do is to tell you, but is that going to traumatise you. So you can imagine that's a really difficult unpleasant situation for everybody to be in but my role is to support and facilitate that process"

- *Quality and Risk Manager*

Although interviewees mentioned these factors that may prevent an incident from being disclosed, a number of DHBs felt that there was nothing that prevented information from being disclosed to employee or patient and that over time disclosure has improved vastly:

"No we actually ask people that every now and then, we have nobody come back and say they are afraid to disclose"

- *Quality and Risk Manager*

"I don't think so, I think if you asked the question three or four years ago I think the answer would have been yes in some circumstances due to fear in regards to bad publicity, blaming and that sort of thing, but I think that we have moved on considerably in the last 3-4 years. I think the programme that goes on not that is organised by the HQSC around the national release of the SAC1s and 2s has helped an awful lot. I think it is in its 5th year now and I think that has laid the fears of a lot of staff around open disclosure and open reporting and all this sort of thing. So that's been one of the real benefits of having the national release of data"

- *Quality and Risk Manager*

"No, we don't not disclose, it's our duty to disclose"

- *Chief Medical Officer*

"I don't think so as far as I'm aware. There shouldn't be if something has happened people are informed as much as possible"

- *Quality and Risk Manager*

"I think that there is the acknowledgment of having missed something, it's hard to take ownership of some things more than others, and I also think hopefully less so these days than previously the fear of being made a scape goat for events. Most but not all events would have occurred because of a series of factors in the system have allowed them to happen or not prevented them from happening, rather than a particular individual may have made the mistake. I think that the new national system that has come on board and the training that it has with that and the people who have been through a SSE investigation, can actually see that it is about the system and identifying the issues rather than laying blame with people. Ideally that will alleviate that fear"

- *Chief Medical Officer*

“No because the principle is that we have a duty to disclose, so we work on that principle all the time”

- *Quality and Risk Manager*

“I think there is fear but it still not as bad as other countries because ACC plays a big role here, as where in other countries like Australia or America you would be sued as an individual although hospital insurance or your own covers that. It’s still a bit mind blowing the worst that can happen to you here unless they are found to be really unsafe and struck off down the track, they may get a black marking from the HDC. I have forgotten what they call it, when you get noted and it goes on record but it is very unlikely that someone will take a civil suit against them”

- *Director of Nursing*

Upon examining these three areas of adverse events, reporting the event, SAC rating the event and disclosing the event, there was no substantial variations in approaches to each of these three stages between the 20 DHBs.

4.5 Is improvement of Quality and Patient Safety a Collaborative Approach or are DHBs Working Independently?

The results of the interviews showed 11 out of 20 DHBs did not use the report and 16 out of 20 did not use other DHBs SSE information as part of their quality improvement efforts. Despite this, a number of DHBs seem to be finding ways for working together to improve quality and patient safety outside of the HQSC. The most evident method is through the mention of national meetings between occupational groups such as the national quality and risk managers meeting or the national directors of nursing, midwifery and the national chief medical officers meeting. These meetings were remarked to be an important part of sharing of information about the occurrence and response to SSEs at other DHBs. Another finding was that some DHBs appear to have taken a strong leadership role on sharing adverse event information. This is done via an email where DHBs are sent a memo outlining an adverse event that has occurred as a warning to make sure it does not happen elsewhere.

“The quality and patient safety manager is a member of the midland regional forum where we are trying to coordinate a little bit more and she is a member of the national forum as well. So at those forums we share events and we share issues and we share results/remedies”

- *General Manager for Governance and Quality*

“Yes a lot of work is done regionally or through our national groups. I am connected with all 20 DHBs, we meet regularly and have telephone conferences and have email discussions around all kinds of things with the other quality and risk managers throughout New Zealand”

- *Quality and Risk Manager*

“We might get a notification through the quality and risk managers meeting that something had happened and you should be aware of this and or they might have an example say a specific issue around a medication or radiology they might send out a notifications saying hey guys do you know about this”

- *Quality and Risk Manager*

“We hear quite a bit through networks, my manager for quality and safety she goes to the national meetings, they share there, and I belong to the national DON group. So more on that level, there does not really seem to be a relationship with the commission yet but it takes time to build those connections, first you have got to build relationships and then learning from those people”

- *Director of Nursing*

If an interviewee did express that there was collaboration with other DHB regarding adverse events, the researcher then asked whether they shared their own recommendations and adverse event information with other DHBs. The majority (17 out of 20 DHBs), that is 85% responded that they did not directly share their event information with other DHBs:

“No not directly, because they are not out of this world events. As I have said they are not incidents such as I have inadvertently killed somebody in surgery or we have chopped the wrong leg off or done the wrong results for the wrong patient, they are not deeply unexpected, you know what I mean and the falls tend to be in older people who are trying to rehabilitate”

- *General Manager for Clinical Governance*

“Not at this stage, but one of the issues that the clinical governance group here is going to be looking at in the future is the possibility of some of the services doing that themselves”

- *Quality and Risk Manager*

“Ad hoc-ly, probably more specifically to a service so for example if something happened in neurology here we may send it to neurology in Waikato if they were involved in the incident”

- *Quality and Risk Manager*

“The reality is that if a DHB has an incident of any kind that signals to them that there may be a single issue that needs that other DHBs in the county need to know about, we certainly don’t worry about the national report to do that. We do not see the national report as a ways to achieve that. Instead what we would do, there are a number of mechanisms. There is Med Safe for example, say there was an equipment issue, you know if we discover there is a problem with umm say the writing on a syringe that make it easy for staff to make an error then we would notify med safe of that and they would send out a national alert or there are national alerting systems that we would use, or we would just send an email out ourselves. So I might send an email to all the other CMOs in the country or the quality manager might send an email to all the other quality managers saying look, we have had this incident, we discovered this particular root cause, this is important and we think you guys probably need to address the same issue we have had here”

- *Chief Medical Officer*

“Umm we have once but I think it was about three years ago and we haven’t since then”

- *Quality and Risk Manager*

Capital and Coast (CCDHB) have been identified as the DHB most likely to inform other DHBs of notifications relating to adverse events:

“You may or may not have seen CCDHB have released learning reports from their DHB and have circulated them through the commission and to other DHBs. At least 3 in the last 6 months and each of those have been taken very seriously”

- *Quality and Risk Manager*

“Capital and Coast are very good at sending out learning’s, they started the process of it, but otherwise it tends to come up in discussions at the quality and risk managers meetings”

- *General Manager of Clinical Governance*

Although multiple DHBs report receiving alerts of incidents from CCDHB, one DHB reports not receiving any information about adverse events except from the HQSC annual release of the SSE report:

“No not at this time, I thought that was the idea of reporting initially, rather than it be an annual thing, you would get an email come through saying this has happened here, it could happen to you, do you want to have a quick look at it, you know”

- *Director of Nursing*

CCDHB are leading the way with alerting other DHBs of adverse events that could potentially affect them, however for this to be effective DHBs must use this information to make changes and improve services to prevent the same kind of adverse event from occurring. According to interviewee responses, these alerts from CCDHB are making an impact by ensuring the appropriate people are aware of what potential dangers are occurring elsewhere:

“A recent medication alert that I received I sent onto pharmacy and they looked at their system and said no it wasn’t a problem because we have got this check in place and this check in place so we don’t feel it would be an issue here”

- *Quality and Risk Manager*

“Capital and Coast have sent around a couple of learning’s that they have developed as a consequence of an adverse event, there was one recently and certainly our relevant departments here have got hold of that, so I’ll be chasing up with those departments to see if they have actually changed anything related to that. But currently I’m not aware of anything specifically done here to make changes”

- *Quality and Risk Manager*

“Recently we have had a couple of learning’s that have happened at other DHBs and they have been kind enough to send out there learning’s because that is what we have been trying to encourage doing and its umm, I sent it onto our CMO and he’s sent it onto all of his senior medical officers just to inform them to be aware that this sort of thing can happen”

- *Quality and Risk Manager*

4.6 Is Improving Quality a Priority in Healthcare Organisations?

The idea of culture was brought up in many of the interviews. In response to this, interviewees were asked their opinion on their organisations culture and if improving quality and patient safety played a major role in the organisation. Words used to describe organisation culture included, improving, fiscally aware, good, very focused, very strong, just culture, changing and caring. A sample of quotes follow showing interviewees views regarding their organisational culture:

“Generally I think it’s quite a good culture, we are patient focused, and it’s improved. It wasn’t always that way. Our new CE he’s been in the job just under a year but he had been here for a while. Every day we talk about the patient, patient needs, it is totally, what we are here for. So I mean from that perspective I think it’s a change for us,

previously before we were just driven by targets and the Minister wanting this target and that target you know"

- *Director of Nursing*

"Umm, not at all good. There are a few problems I think. 1) I don't think the clinicians have been very well engaged with the management team, I don't think that the clinicians see that everybody is working to the same aim or should be so people have not worked together as effectively as they should have done and evidently, that has a negative impact. 2) In terms of seeing quality and safety as the absolute front runner key thing that we should all be focused on, I think it would be fair to say that neither clinicians nor managers feel that way and in fact you know when I come to give my quality report to the board when I first got here I got a five minute slot at the end of a two hour meeting that was mostly about performance, that horrified me. When I was at my old job overseas I was the first item on the agenda and talked for over an hour"

- *Chief Medical Officer*

"I have heard other people describe it as having a really growing positivity towards change"

- *Quality and Risk Manager*

"I think we are heading in a good evolving space. There is no question that we have got a CEO, we have got directors of nursing, CMO, all those crowds who are quality and safety minded. Our CEO will always bring up our zero harm target here, that's what's it all about"

- *Medical Director of Patient Safety*

"I think we are a changing organisation at the moment. I think we have a real culture of caring as an organisation and why we are here and quite genuine and umm yea there are areas that we could improve on but they are the good parts of them"

- *Quality and Risk Manager*

In multiple conversations about DHB culture, the issue of financial constraints was brought up. Eleven participants brought up the idea that financial drivers take precedence over quality improvement and patient safety. Some DHBs had opposing views to this. The following quotes represent a sample from each of these viewpoints:

"Financial constraint is huge at the moment in the DHB because the CEO has been very clear that savings need to be made in the financial year for the infrastructure required going forward. For this new infrastructure, the CEO wanted bankable money and so there have been financial drive and there are equal drives going forward but it cannot be at the cost of quality. There still has to be quality so it makes life hard to retain resources in quality and risk and I am

required to reduce my budget, my budget has been cut quite severely this year and is going to be cut severely again next year and it's not impacting on resources. I am finding it very hard, withstanding that I am still required to comply with the requirements at a local and a national level for reporting"

- *Quality and Risk Manager*

"A little bit but not very much. We have been through phases where it's been important and it was very destructive. But I think for the last 18 months - 2 years it's probably been quite good for us. The finances it's been, we have kind of moved away from finances and targets to the patient which is really what you want"

- *Director of Nursing*

"I think in the past there was a huge financial, it was all about finances. I would say since the directorate of patient safety and clinical effectiveness has been around and that is probably just over 2 years now, I think the focus has significantly changed"

- *Quality and Risk Manager*

"We have got a good commitment to safety, but the dollars are there, I mean you can't move away from the dollars but they do not dominate like they use to. We very actively talking about our general manager of finance being the quality champion and we have involved her in incident reviews groups so she is a member of the group that reviews our incidents. So you can't hide in an office as a finance person and not be aware of the human reality"

- *Medical Director of Patient Safety*

"I think that finances can override some aspect of quality but they will not override patient safety aspects"

- *Quality and Risk Manager*

The board of each DHB plays a vital role in governance and setting of priorities throughout their region. Greater focus on the financial side of the organisation rather than on quality improvement and improving patient safety was brought up during the interviews. Each interviewee was asked their opinion on what they thought the focus of their DHB board is. Financial aspects appeared to outweigh improvement efforts. Concerning fiscal constraints, participants said the following:

"We are driving down costs, that's a given we need to do that. We do have a very strong emerging culture of quality. Finance leads the agenda, more than 80% of agenda would be on the financial side of things"

- *Quality and Risk Manager*

“Yes financials is certainly a big focus particularly for a DHB that is in deficit and there is a big push from the minister to get it to break-even point, so yes there is huge pressure for us”

- *Quality and Risk Manager*

“The main focus at board meetings is finances, they defiantly override patient safety and quality”

- *Director of Nursing*

“The main focus at board meetings would be money but that does not override patient safety and quality improvement it just means that somebody has to champion those portfolios or needs for the organisation”

- *Chief Medical Officer*

However, there was recognition of the importance of quality improvement and patient safety by some interviewees as the quotes below illustrate:

“By virtue of my appointment, I have got a clinical background, that to me is the DHB demonstrating the quality and safety is really important and does see I think in my view that the organisation does recognise that quality and safety is if not more important than financials and especially from our CEO level that if we get our quality and safety right we will get our finances right cause internationally it shows this. I think more recently that the DHB is moving into a state, which is fantastic. I would say our biggest challenge is having on the ground floor level among our clinicians, nursing and medical staff, I wouldn't say we haven't got a high performing patient safety culture yet but we hope to get there one day. I think we have got a long way to go there but I think the leadership at the top level is great and they recognise that it's extremely important”

- *Quality and Risk Manager*

“Ohh no financials don't override patient safety, in fact it is well recognised that reducing harm saves/reduces waste and there for saves money so in fact there is a financial imperative to engage quality and safety”

- *Chief Medical Officer*

Quality improvement initiatives are being developed and promoted by multiple organisations (Ko Awatea, 2013a, Institute for Healthcare Improvement, 2013, The Health Round Table, 2008). Highlighted in the annual release of the SSE report is the HQSCs important role in the promotion of new initiatives to improve quality and safety (Health Quality and Safety Commission, 2012a). DHBs were asked how and where they learn of initiatives and if the HQSC would be their first source for new information. There were mixed responses to this

but one significant finding was that the national meetings that the quality and risk managers and directors of nursing attend seem to play a key role in the sharing of quality improvement initiatives. This can be seen in the following set of quotes:

“I would say it’s probably from the literature and the fact that there is an awful lot of people in healthcare who know an awful lot and know each other. Umm so, the Commission brings some but word of mouth and national get together and senior managers across the organisation will bring different things, bring it together to the SLT, and say I heard about this. I know people doing that so its general collegial working I think that raises a lot of it”

- *General Manager of Clinical Governance*

“The SSE report would be a minuscule source of information for us or knowledge for us. Lots of sources for us, we have got a clinical director of quality and a whole quality unit. They scan the literature, all of our staff, all clinical staff would be involved in reading international literature. People attend conferences”

- *Chief Medical Officer*

“I think that it is multifaceted, it comes from staff receiving email notifications, going to conferences, national meetings and there is much discussion in the DHB about how we can do it, when we can do and what funds are allocated. The commission seems to be inundating you with fortnightly newsletter and the monthly newsletter, my concern is I feel like I am on a treadmill sometimes with all this stuff that is coming in and I all most need time every weekend to sit and read. I usually use part of my weekend coping with all the reading that comes in”

- *Quality and Risk Manager*

“For me personally it is probably the HQSC combined for me with places like the quality and risk managers group. I get a lot of information through there. Our DON gets a lot of information through the nursing channels and for her it’s probably with the required meetings with other DONs around the place and because again we are a small organisation the regular contact between those of us in several positions we hear from several sources really”

- *Quality and Risk Manager*

“Depends who is driving the initiatives as far as who is bringing them into the organisation there are all sorts of people who bring them in. The quality and patient safety team do, the clinicians will bring their own, the nurses, allied health, everybody brings them in from everywhere. The SSE report does not play a huge part of telling you which initiatives are out there because basically the SSE reporting programme captures when we have got it wrong, the quality initiatives capture where we want to be better. So one may trigger the other but not necessarily”

- *General Manager for Clinical Governance*

“IHI, conferences, national meetings, we wouldn’t go to the HQSC”
- *Quality and Risk Manager*

Also, found to be important is whether DHBs are seeking outside advice from any external parties in order to improve quality and patient safety. From the data collected key external advisors in the quality improvement sector seem to be the IHI, Health Roundtable, Communio, and Chorus. Only three DHBs said they had a direct affiliation with one or more of these organisations:

“We do have a contractual relationship, Ko Awatea has a contract with the IHI. Communio is another group we sometimes get in for training and we have also used the Cognitive Institute for training in the past”
- *Chief Medical Officer*

“We are members of the IHI business health excellent group. We have several contractors who work for us who are specifically related to sigma quality improvement. We utilise their benchmarking, we use a lot of their programmes”
- *Quality and Risk Manager*

“At the moment we are going through the global trigger training with the IHI, that’s a 5am start and to our credit 9 staff from across the organisation turn up for it in their own time. We are also working with Health Round Table through our certification programme and we also use the Commission and the Ministry for various quality frameworks and things like that”
- *Quality and Risk Manager*

Interviewees were more likely to be personally affiliated with organisations such as the IHI than the DHB itself or use their resources through the HQSC:

“Well I am a member of the IHI so I log on to the website occasionally. Umm I get regular feedback from the HQSC, so they are updating it all the time on national priorities and what is happening throughout the country. So they are the two that I use”
- *Chief Medical officer*

“Not the DHB per se but we have been taking part of the trainings that have become available to us through the HQSC. So for instance as part of the CLAB programme I sent our infection control nurse up to Auckland to attend the innovation and quality improvement science or

something like that, so yea we have been to some of their sessions on consumer participation and things like that in the past as well”

- *Quality and Risk Manager*

Financial reasons were raised as a major factor limiting access to external advice on quality improvement and patient safety:

“Probably not because they are quite expensive and from a resource point of view, we would rather put the money into training our own staff than paying professional affiliations”

- *General Manager for Clinical Governance*

“No not if it was costing a lot cause you know the budget is quite tight. We are looking to save money really and become more efficient”

- *Quality and Risk Manager*

“Only if somebody gave me the money and I could see the benefit and prove it. It’s disappointing to be in a financial climate where to be told that we can’t go and do professional development or it gets incredibly challenged and then to go and have an internal to New Zealand offers in partnership with IHI, that \$1500-2000 dollars for one staff member to attend or \$7000 for one staff member to attend, you know that certainly works in the commercial world of health, private sector, United States but doesn’t work in a publicly funded small country”

- *Quality and Risk Manager*

“There would be no financial benefit to be part of these external groups because it’s extremely expensive. I think the CE may have accepted that we may need to bring in some external consultant to do some training in patient management, quality improvement and improvement science methodology but ultimately we would want to be a self-sufficient organisation cause that is clearly more financially viable”

- *Chief Medical Officer*

“There used to be a time when a lot of money was spent on bringing in outside experts, they came in took out money, went away and nothing changed. We need to deal with our inside expertise and then be careful about where we spend our dollars on outside experts”

- *Medical Director of Patient Safety*

All participants suggested their DHB have some sort of education and training programmes in place to ensure staff had the opportunities for professional development but it was also an area that many participants felt was not developed enough. From the interview data, most

training opportunities were provided at the orientation stage of employment as part of the induction into the organisation. Responses related to training in incident reporting, including the recognition of near misses and open disclosure were:

“We do encourage reporting, it’s covered in orientation and study days and there are some workshops that are run around quality improvement and it’s always mentioned there”

- *Director of Nursing*

“Back in the day the Quality Improvement Committee did some root cause training, however we were the only DHB that did not receive that training and the reason for this was there was a H1N1 outbreak during our scheduled time to receive the training but we couldn’t pull our staff that were due to take that training and then there was no time left so we missed out completely. We managed to get a folder of resources and that was it. But upon saying that we have had a variety of training in my time here from various places such as the Ministry of Health who developed some standards in 2000 and there was a lady that come out and did some RCA training, so we have got staff going through that but we did miss out on that training and now it needs to be determined about the sustainability of that”

- *Quality and Risk Manager*

“There are seminars run a few times a year. We don’t force anyone to participate but we advertise them”

- *Chief Medical Officer*

“In the event training and in the investigation training that we run in the DHB we cover RCA training. This occurs every 6 months and is open to all staff in the DHB but primarily it is clinical leaders and team leaders that attended but currently we have no training in place for open disclosure and that is something that I am working on”

- *Quality and Risk Manager*

4.7 Conclusion

This chapter has outlined the results found in this study. Five questions were identified in the literature review as important to understand in an effort to examine how and if DHBs use the SSE report to improve quality and patient safety. In part one, employment details of participants was detailed. The influence that each participant felt they had on being able to make change happen from their current job position in the organisation was also detailed. Interviewees suggested that the quality role should sit at the highest level in the organisation. Part two assessed how DHBs responded to the report and found the most common answer to this was that they ensured that the report was circulated throughout the DHB. Part three examined if the report was being used as a quality improvement tool and its perceived value.

There was a mixed response to this question with some interview responses saying they did use the SSE report as a tool to improve quality and others disagreeing. It was found that other DHBs' event information could not be used to prevent the same sort of adverse event from occurring due to the anonymised nature of the reports and therefore lack of information provided. The interview data showed that the report was perceived to be more valuable to the public than to DHBs itself. Part four looked at how DHBs responded to the adverse events. There were no significant differences in approaches when looking at reporting, open disclosure, and the use of the SAC. Part five discussed if DHBs were working together or independently. By making use of the local and national meetings and via sending out email alerts of adverse or potential adverse events DHBs are making ways for sharing of information out side of the SSE report and the HQSC. In Part six, the priority of improving quality within the DHB was examined. This was examined by assessing how participants viewed their organisation culture and how financial aspects affected quality improvement efforts. Also discovered was that the HQSC plays a limited role in the initiation of new quality improvement initiatives. The use of external quality advice was investigated and although the use of these resources were used by some of the larger DHBs, external advice was either used through personal affiliations or provided through the HQSC due to it being otherwise unattainable because of financial limitations for DHBs. The provision of professional development was considered a priority in the improvement of patient safety and quality though not frequently available. This area needs development for the majority of DHBs.

These results have shown there are multiple factors that affect quality improvement and patient safety efforts in New Zealand DHBs and that the SSE report plays a minor role in these efforts. The use of the report might be limited however, it has opened up other ways for DHBs to collaborate with each other about adverse events. These issues will be discussed further in the following chapter.

5 DISCUSSION

This thesis is about how DHBs respond to and use the SSE report produced by the HQSC. It compares participants' responses from the 20 DHBs to questions relating to the usability of the SSE report. This chapter also considers methodological issues.

In the previous chapter the principal finding about the objective of this study as reported by interviewees was that the use of and response to the SSE report is limited. Along with the principal finding, there were also a number of key findings that will be further explored in the following chapter.

5.1 DHBs' Responses to the Serious and Sentinel Events Report

The SSE report is unique to New Zealand. Chapter one looked at how SSE reporting occurs in Australia, United Kingdom, and the United States of America. Each of these countries has variable approaches to reporting SSEs, which will briefly be recapped here. The United States of America has a number of adverse event reporting systems and one SSE reporting system that are run by the JCAHO. This system is partly mandatory in respect to receiving accreditation from the JCAHO. Once the JCAHO receives the information it is entered into the SSE database and sends out sentinel event alerts to other hospitals and the media. In the United Kingdom there is one mandatory SSEs system SIMS that is overseen by the NPSA. As is the case in the United States, the SIMS is a requirement for registration purposes. Australia has just one national voluntary system called the AIMS. The reporting system does not specifically report SSEs, but does allow specialist units to use the reporting system. This reporting system along with working with ACSQHC helps to improve and reduce the occurrence of SSEs.

Due to the voluntary nature of adverse event reporting and their being no published data on the use of the report in New Zealand prior to this research being conducted, it remains difficult to compare DHBs responses to the SSE report with international responses to serious adverse events. The HQSC are working with DHBs to collate the information in the report (Health Quality and Safety Commission, 2012a). However, this collaboration is only with particular staff members, such as members of the quality and risk team or CMOs and therefore staff across the wider DHB may be unaware of the implications resulting from

adverse events. As previously stated, the results showed that the response to the report is limited and as such, there is more that could be done by DHBs in terms of using the report to the DHBs advantage. The HQSC stress that the report should not be used as a comparison tool due to the unreliable reporting rates (Health Quality and Safety Commission, 2012a). However, from the data gathered in this research project, it is clear that some interviewees did relay their use of the report as a tool to compare what was happening within their DHB to other DHBs and to see where they sat nationally in comparison with other DHBs. The implication of this practice is that each DHB varies in its size so often this makes comparisons unreliable because they do not know how rates of adverse events compare with other DHBs. The HQSC also points out, even if participants felt they had a great reporting culture, the literature tells us that adverse events are grossly underreported (Health Quality and Safety Commission, 2012a, Allen, 2000). What we see being reported is just the tip of the iceberg (Sari et al., 2007, Allan and Judith, 2005). It is therefore inappropriate to compare each DHB on the number of events that they have had, as this might not be an accurate representation. In addition to this when a DHB is collating the SSE event data they may have reported many events. This could mean that a DHB may have a better reporting culture than other DHBs or it could mean the complete opposite and reflect that this organisation may have an ineffective risk management system and therefore adverse events are happening at higher rates than is justified (Health Quality and Safety Commission, 2012a). Conversely, low numbers may reflect poor reporting or a very effective risk management process.

When the annual report is released, a number of DHBs commented that this is a reminder for them to go back and review recommendations that have been put in place for previous adverse events and to see how these recommendations are working. This was an interesting finding as one would presume that this would be a regular practice undertaken by DHBs. Guidelines from the HQSC suggest that there should be procedures in place to track progress of recommendations (Health Quality and Safety Commission, 2012d). Multiple DHBs did refer back to their SSEs committee meeting, which occurred at various intervals between DHBs. Some DHBs have SSE committee meetings weekly, others fortnightly or monthly. Some respondents spoke about the importance of informal sharing of observations but it is difficult to generalise from such observations because the effectiveness of information sharing at the local level is highly dependent on the local institutional culture. The variation in approaches to SSE reporting and in some cases a less than systematic approach by some DHBs, is at odds with what might be considered best practice (Institute of Medicine, 2001, Institute for Healthcare Improvement, 2011, Berwick and Leape, 1999, Chamberlain, 2008).

A notable concern about recommendations is the number that are put in place in regards to minimising an adverse event of the same nature from occurring again. Participants discussed that sometimes it is impossible to implement some of the suggestions and that there are too many made. Participants put forward that the number of recommendations should be limited to, at the most, five. Reasons given for this were having a large number of recommendations felt unachievable to staff and could potentially deter employees from reporting. Interviewees felt that staff may feel that each time they reported an adverse event, it would result in 20 or more processes that need to be changed and this becomes unattainable. The HQSCs Root Cause Analysis guide makes no official statement on how many recommendations are too many, only that these should have a time frame attached to them, be measurable and one person should have responsibility for implementing them (Health Quality and Safety Commission, 2012d). Policy suggestions set out by the NHS agrees with this but they also add that recommendations need to be realistic, clear, concise and kept to a minimum where possible (National Patient Safety Agency). This may be a point for consideration by RCA teams and the HQSC.

5.2 Quality Improvement

The use of the report as a quality improvement tool elicited mixed views from participants. Taking into account of all findings from questions surrounding the use of the report, its perceived value and use of other DHBs event information, the report's use, as a quality improvement tool is relatively limited. A positive aspect of the SSE report is that it has raised the profile of adverse events by assisting in the recognition of adverse events as important and not a taboo topic. Open discussions at national meetings are an important place for these events to be discussed and for individuals to share what they have learnt and their reflections on incidents. In terms of how participants responded to the question about the use of the report, there may have been some elements of courtesy bias. This will be discussed in part 5.6.

The value of the report was considered more important to the public than to the DHB organisations themselves. This thesis posits that the HQSC would disagree with this finding. One participant had relatively forthright views regarding the efforts the HQSC have gone to putting the report together and went as far as to say that it was a waste of time and that event reporting was not the way to get improvements in quality and patient safety and there are better drivers of quality improvement such as clinical audit. Seddon and Buchanan (2006)

discussed how audits within an organisation are valuable, and are important in terms of getting accreditation, but suggest that quality improvement works best when both are utilised. By auditing a patient's records it can become visible whether there are problems with certain processes such as reporting (Seddon et al., 2006a). Therefore, the two are mutually beneficial.

In regards to being able to use other DHB's event information, it was very surprising that a majority of DHBs said they were unable to use the information in the report from other DHBs events because it was limited in that it does not contain enough useful information. One of the objectives of the report is to allow for shared lessons (Health Quality and Safety Commission, 2012a). For participants to say they are unable to learn from others' adverse events is unfortunate because it implies a closed mind with respect to quality improvement initiatives (Leape et al., 2009). Quality improvement depends on reviewing situations with an open mind (Institute for Healthcare Improvement, 2011, Leape, 2002, Health Quality and Safety Commission, 2012a). Aside to this, it was at this point during the interviews that the idea of using other organisations solutions was brought up. A few participants felt that you had to be very careful with using others solutions because there is quite a process to work through to get employees and departments on board with making effective change to prevent adverse events. These are very useful reflections that great consideration needs to be given when considering how others' solutions will work within differing organisations.

During discussion around the use of the report as a quality improvement tool, participants reflected that the structure of the report was going to be changing for the next release, which would cover SSEs during the 2011/12 period. This will be discussed further in section 5.5 - *Quality Improvement a leading priority*.

5.3 Approaches to Adverse Events

It has become evident through the results of this study that some DHBs do not have the resources available to invest in electronic reporting technology. Quality and patient safety issues have been on the rise for the last three decades (Smidt, 1972, Institute of Medicine, 2000, Davis et al., 2002, Morton and MacMillan, 2003). It does not appear to matter what sort of reporting system is in place, for underlying reasons, the most common being fear of shame and blame, mean some people simply do not report adverse events (Ghalandarpoorattar et al., 2012). This was demonstrated in the results where one DHB said, "well if you don't want to fill out the form just give me a call and I'll do it" (*Director of Nursing*). Unfortunately, this

still did not happen. In regards to the DHBs using a paper based system there is the risk of a paper based report not being filed correctly or ending up on the appropriate person's desk. It may go unnoticed unless the patient makes a complaint or another staff member brings it up in front of an employee who is responsible for quality and patient safety, about which one participant said "ohh wait I don't know about that, lets investigate" (*Director of Nursing*). As opposed to an electronic report whereby once the electronic form has begun to be filled out, if the employee filling out the electronic form does not finish or submit the form then there are reminders sent to higher management to follow this up. For DHBs that are using a paper based system some interviewees described there can be a delay of up to two weeks for paper based forms to reach management, this is can be considered substandard and more emphasis should be put on making these adverse events a priority. Current guidelines recommend all SSEs, (that is events classified as a SAC1 or 2) will be reported to the Commission within 15 working days. Thus DHBs that have delays in notification to staff higher in the organisation, will have difficulty in meeting the requirements of national guidelines (Health Quality and Safety Commission, 2012c). The NPSA's policy states that all serious incidents must be notified to relevant bodies within two working days of the incident occurring (National Patient Safety Agency, 2010). This is quite a short timeframe and in New Zealand may not be achievable given the voluntary reporting system. This is because often adverse events are not reported immediately and have to move up the organisation through various members of staff before they are SAC rated and all people involved in the adverse event, (patient, family, physician and other staff members) have gone through the disclosure process. An example for the DHBs that do not have electronic reporting systems yet but have plans to introduce them into the organisation in the near future, is that they take into consideration the system of duplicates that has been described in the results by a quality and risk manager.

The results demonstrated that participants felt that nurses and allied health staff more often reported an adverse event than medical practitioners do. Underlying reasons for this were attributed back to the elements of risk that are associated with all procedures (Cronenwett et al., 2007, Braithwaite et al., 2010). It was described by some interviewees that when something does go wrong doctors feel that it was a risk and unfortunately it happened but they move on and fix it if they can, and sometimes disregard it as an adverse event (*General Manager of Clinical Governance, Quality and Risk Manager*). These issues with recognising adverse events can be traced back to workplace culture and professional development and will be discussed further in section 5.5 – *making quality improvement a leading priority*.

New Zealand's no fault system provided through ACC proves to have no effect on the rate of reporting (Paterson, 2002, Paterson, 2001). The literature identified a number of factors that were known to prevent adverse event reporting. This included lack of feedback, blame, humiliation, perfectionism, and lack of anonymity (Heard et al., 2012, Lawton and Parker, 2002, Evans et al., 2006). These are all consistent with responses from participants concerning what they thought were reasons preventing reporting adverse event reporting in New Zealand (Smits, 2010, Sexton et al., 2000, Heard et al., 2012, Evans et al., 2006). As with adverse event reporting, there remains a number of influences that prevent open disclosure from occurring at the appropriate time. These factors again are similar to the reasons identified above as preventing adverse event reporting but also in addition for doctors there is the loss of patient trust, guilt and loss of professional reputation (Ghalandarpoorattar et al., 2012). A promising sign is that all DHBs did report that they had current open disclosure policies in place that aligned with the national recommendations set out by the HQSC (Health Quality and Safety Commission, 2012c) Reporting and open disclosure both require the appropriate training to ensure that they are performed appropriately and to the highest standard. This idea will be discussed further in section 5.5 – *making quality improvement a leading priority*.

The results outline mixed views on the ease of use of the SAC matrix. Some participants felt that there was no problem with floor staff's interpretation of the severity of an incident but others also mentioned that time is often spent on reviewing and changing the severity of adverse event at a later time. The DHBs that have put in place steps to ensure that all severity scoring is done by management, is the most appropriate method to categorise the severity of an incident. By doing this there is no misinterpretation by floor staff that their 'reporting is not important' and they are not discouraged from reporting when management change severities of adverse events that have been reported. If this one approach was adopted by all DHBs there would be less potential confusion surrounding the severity of an adverse event and more emphasis and promotion around ensuring adverse events no matter their severity, are reported.

5.4 DHB Collaboration

A key finding relates to the establishment of national meetings and forums such as the national quality and risk managers meeting, or the national CMOs meeting. Regional

meetings have also been established, such as upper and lower North Island and South Island wide meetings. From participants' responses, these meetings play an essential role in the sharing of quality and patient safety information. They provide an environment where individuals with similar job roles in differing DHB structures are able to establish working relationships and provide feedback and support in a safe and understanding environment, which the literature states is essential to developing a culture of quality and safety (Gauld, 2003a, Conway, 2008, Flemons and McRae, 2012). The meetings also provide an opportunity for representatives from organisations such as the Ministry of Health and HQSC to attend and foster relationships with members of such groups. This could help regional groups to share policy, initiatives, and recommendations to the wider organisation. Members of these groups will be able to build stronger relationships, go back to their organisations, and help promote such organisations objectives.

Capital and Coast (CCDHB) were identified by 18 DHBs as the only DHB to send out informed alerts that contained information about adverse events that had occurred within their system. This demonstrates that this DHB has embraced quality and patient safety as being of vital importance to a high performing organisation and has no reservations about sharing adverse event information with others. It is surprising that other DHBs have not embraced this idea of sending email alerts given that they find the notifications from CCDHB beneficial. One participant pointed out that this might not occur because many incidents are unique to their own circumstances. Alternatively, the view of the majority of participants was that if an adverse event happens, it has the potential to happen in other organisations and therefore all organisations should be made aware of the potential risks. This is supported by international organisations such as the Joint Commission in the United States of America (Joint Commission, 2012).

The Joint Commission in the United States, and the NHS in England and Wales, both have alerting systems in place that send out vital information in regards to adverse events (Joint Commission, 2012, Keenan, 2013). No literature detailing whether these organisations had any knowledge about how other healthcare organisations are using these 'alerts' was found, therefore a comparison to the levels of 'alert' use within New Zealand's DHBs cannot be made. However, it seems that it would be counterproductive to not acknowledge a problem that another DHB has had and that they would only benefit from looking into their own systems to see if such an incident could possibly occur. One participant reported they had not been aware of any alerts in regards to the e-mail alerts that the other DHBs reported that they

had received. This suggests that this one participant may be sitting in a position in the organisation that is not privy to that information or possibly, there is an error in the communication system such as they have been missed off the email recipient list. This finding confirms the idea that it is essential to have quality improvement and patient safety representation at the top level of the organisation (Conway, 2008, Leape et al., 2009). This study had a number of participants that were in varying job positions and this may be reflected in their opinions regarding where they sat in the organisation. However given that the Chief Executive of each DHB was asked to recommend the most appropriate person who had the best knowledge on the use of and response to the SSE report it is likely that their feelings to the representation and position of a quality and safety in the organisation is valid. In order to ensure that all DHBs are being alerted in the future it may be that the HQSC could play a pivotal role in developing a national alerting system like the NHS and the Joint Commission rather than the once a year national report on SSE reporting (National Patient Safety Agency, 2010 , Joint Commission, 2012).

5.5 Making Quality Improvement a Leading Priority

Organisational structure and where the role of quality improvement and patient safety personnel sit is important in effecting change in an organisation. The participants in this study all felt that the executive level should have a major focus on quality and patient safety with representation at this level. In many organisations, this already happens but in some, the position of quality and safety it is still sitting lower than evidence suggests it should be (Bigda-Peyton, 2010, McKinsey and Company, 2010, Conway, 2008). The most common problem with the role of quality improvement and patient safety sitting lower in the organisation is that when information is passed to their superiors' critical points can be lost in translation and therefore not have the importance placed upon them that is required. In the literature review the top down vs. bottom up approach to bringing change into an organisation was discussed (Bigda-Peyton, 2010). Quality and patient safety needs to be seen as important by those sitting at the top of the organisation because if those at the top do not take it more seriously, those lower in the organisation are not going to see it as important either (Conway, 2008, Ministerial Task Group on Clinical Leadership, February 2009 , McKinsey and Company, 2010).

Multiple DHBs suggested that their governing boards have been more focused on budgetary concerns of the organisation at board meeting than they are on improving quality and patient

safety throughout the organisation. The most remarkable of these statements was from one participant who said when they joined their current DHB, quality was given a five-minute slot at the end of a two-hour meeting. This ties in with effective clinical governance, which discusses how change needs to begin at the top of an organisation and have a flowing effect to the bottom of an organisation (Gauld and Hornsburgh, 2012b). The IHI in 2009 stated that if quality improvement and patient safety were to lead the way in hospitals then their governing boards need to spend 25% of each meeting on quality and patient safety issues (Conway, 2008). Participant's responses suggest that currently many boards are spending less than the recommended 25% of time. Evidence has also shown that by having an organisation wide focus on quality and patient safety and investing time and money into improving current systems, savings will be made in the long run and bring down costs (Baker, 2012). So not only is it nonsensical not to pay attention to quality and patient safety issues but it also shows a lack of understanding from boards as to what is going on in the organisation. This could be related to the non-clinical nature of individuals who comprise representative boards. A number of participants brought this up in their interviews, reporting that they felt their board was out of touch with quality and safety and do not understand that adverse events not only result from physician / health professional mistakes but also result when wider management systems are inefficient. Research conducted by the IHI and others has shown that there is a direct correlation between high performance in hospitals and specific attributes of their board (Conway, 2008, Rollins, 2008 , McKinsey and Company, 2010). Goodall supports this theory having researched hospital performance in relation to whether it was physician-lead or management-lead and found there are possible associations with improved hospital performance when physicians oversee hospitals (Goodall, 2011). This is reconfirmed by the report produced by McKinsey and Company (2010) and also Laugesen and Gauld's publication (Laugesen and Gauld, 2012).

The findings from this study contribute to the idea of organisation culture. Culture is a major driver of quality improvement and improved patient safety (Gauld, 2003a, Lucian Leape Institute, 2003 , Seddon and Merry, 2002, Leape and Berwick, 2000a). The literature affirms that to become safer, hospitals need to build cultures of quality and safety that are bound in respect and communication and committed to full disclosure, apology, support, resolution and learning for staff, patients and families when harm has occurred (Gauld, 2003a, Leape and Berwick, 2000b, Leape and Berwick, 2005, Lucian Leape Institute, 2003 , Seddon and Merry, 2002). In 2000, Leape and Berwick (2000) identified that building a culture of safety that involves learning, trust, curiosity, systems thinking and executive responsibility would be

difficult. The results from this thesis confirm that multiple DHBs are struggling to develop an 'ideal culture'. There are a few DHBs that are profoundly more developed on the quality and patient safety perspective. Reasons for this could be due to the size of the organisation and the allocations of resources within in the organisation. According to Leape and Berwick, changing even a few practices and polices necessitates that all personnel share one vision and take personal responsibility for safety (Leape and Berwick, 2005).

Many organisations in the industrial world and aviation have shown that developing a high quality service can be achieved and this is not an unreasonable quest for healthcare as some health care organisations have already shown that achieving a high quality and patient safety outcome is achievable (Lucian Leape Institute, 2003 , Berwick and Leape, 1999, Sexton et al., 2000). The Lucian Leape Institute states that strong policies, training in conduct, reporting and response to problems are essential in order to achieve this (Lucian Leape Institute, 2003). The reasons that have been shown to impede a quality and safety culture have been overcome in many organisations and there is no reason why DHBs cannot follow examples that have been found to work elsewhere (Lucian Leape Institute, 2003 , Morton and MacMillan, 2003).

Feeding into culture is the provision of education and training opportunities for continuous professional development (Paterson-Brown, 2011, Cronenwett et al., 2007). In the 2010/11 SSE report the HQSC made remarks regarding how DHBs provided education and training to their employees (Health Quality and Safety Commission, 2012a). From the participants of this study it was found that some DHBs have more advanced opportunities for professional development than other DHBs. Basic orientation training into the organisation when new employment began was the only formal training some DHBs provided. Others provided periodic opportunities for staff to voluntarily attend seminars. Resource issues again influence a DHB's ability to provide professional development to its staff. Participants expressed that conferences and seminars provided by external bodies often cost thousands of dollars and under the current financial climate, it is not feasible for management to send its employees to such events. Multiple participants felt that it would be beneficial for the HQSC to increase the provision of such opportunities to DHBs as part of their services to healthcare development.

As with professional development, financial drivers also limit most organisations' ability to seek external advice regarding quality improvement initiatives. One highlight to come from these interviews is that multiple DHBs voiced their appreciation for the section in the report that is dedicated to showing off other DHBs' initiatives that have led to improvements in

quality and safety. Although this was important to one third of DHBs, it was felt by other DHBs that the HQSC would not be their first point of call if they wanted to learn about new initiatives. The most common response was that advice would be sought from national meetings, conferences, and international literature. It was demonstrated in the interviews that most participants appreciate the HQSCs work and that they appreciate the relationships that they have developed with individual members of the HQSC. That is the ability to contact them any time, ask questions, and get advice about situations occurring at their DHB without any stigma attached to the conversation. Nevertheless, many still had the opinion that this report from the outset is all about numbers and expressed that this is not how it should be. A possible solution for this is the HQSC producing an accompanying report specifically for DHBs in which detailed information about SSEs that have occurred within multiple DHBs, under similar situations, are talked about, their solutions and the steps in which the Commission recommends be followed to overcome the problems leading to the SSEs occurring in the first place.

The 2010/11 SSE report was used to inform this thesis. The SSE report referred to a central repository where the Commission records all SSEs reported on a database. However, this central repository is not open to DHBs. The Commission states that the aim of the repository is for DHBs to report findings from their incident reviews and then from the repository the Commission may be able to share lessons learnt (Health Quality and Safety Commission, 2012a). Nonetheless, the Commission recognises that it is proving challenging to have DHBs provide this information due to the voluntary nature of adverse event reporting. This database if used to its potential would be a valuable tool in the development of a specific report for DHBs. The literature identified that mandatory reporting systems, both in healthcare and other industries are the gold standard for adverse event reporting (Panesar, 2009, Leape, 2002). The reporting of SSEs is mandatory to the HQSC once they have been identified. However if an adverse event is not reported then it is unbeknown to all. In discussions with interviewees, the development of implementing a mandatory reporting system did not arise.

Multiple DHBs raised discussions on having a quality and safety champion. This should be a person that knows all the fine details to do with quality and a person other staff members can refer to when they need advice and support. To take this concept one-step further, it would be beneficial to have such a person on the executive management team and reporting directly to the board. This way, these champions can work to drive change from the top down, and show staff and the organisation that they are serious about improving quality and outcome for

patients in their care as the aforementioned literature describes (Leape et al., 2009, Conway, 2008). Champions in quality and safety tie in with the idea of clinical governance and standard six of the 'In Good Hands report' (Ministerial Task Group on Clinical Leadership, February 2009). Qualities outlined in the In Good Hands report such as the "personal drive for improvement with a deep motivation to improve performance in the health service and thereby make a real difference to others' health and quality of life" also fit in with this idea of what characteristics quality and patient safety champions would exhibit (Ministerial Task Group on Clinical Leadership, February 2009). A potential drawback of this is that other DHB groups are also likely to want such specific representation within their divisions and on boards. Since this research has been conducted, the HQSC have implemented a similar idea and sponsored improvement advisors. The HQSC are providing funding and training over one year to a number of individuals who were nominated by fellow colleagues, for them to go back to their local region and stimulate improvement across the organisation (Goodhew, 2013).

Whilst the interviews were being conducted, multiple DHBs reported the current structure of the report was changing and that in the next report instead of the HQSC publishing the information about each DHBs adverse events, DHBs would now be responsible for publishing that data on their own websites. Whilst this is not giving the DHB a greater workload, as they already have to configure this information to give to the HQSC, there was however, some suggestion that it is a step backwards in terms of enabling the ease of access to such information. This is because instead of accessing the information in one central repository (at the HQSC or in the SSE annual report), now if someone wants to access SSE information, they will have to look through the 20 DHB websites. Participants said that this would take too much time and they would probably not bother to look therefore health care workers who would normally read the centralised report may not bother to read the 'report' now and therefore lessons from these SSEs may not occur.

In further discussions with the Commission, these comments were brought up. The question was asked whether they felt this new structure was a more effective approach to event reporting. The Commission response to this was that since there has only been one report in this format there was no way to measure the reports effectiveness at this stage. The researcher was also informed about a stakeholder survey that was released after the release of the new structure of the SSE report. A company called Versus conducted this survey on behalf of the HQSC and confirmed participants' worries that the format change of the report was a step

backwards in terms of improving quality and patient safety. However, this survey only had a 28% response rate, which could be due to it being released over the Christmas period as this is a time of year when many people take annual leave. The response and comments made in this stakeholder survey are aligned with the findings of this thesis, in that the new structure of the report is less useful than previous years due to it being less user-friendly as each individual DHB now has to access sites from 19 other DHBs in order to see what SSEs have occurred elsewhere.

5.6 Methodological Issues

5.6.1 Strengths:

This was an exploratory study as there was no literature describing DHBs use of the SSE report to improve quality and safety. Qualitative research methods enabled exploring of individual participant's interactions with the SSE report through the conduct of interviews (Pope and Mays, 2008). Pope and Mays (2008) put forward that qualitative research methods are very effective at evaluating elements of the healthcare industry where and when appropriate.

Some of the interviews took a substantial amount of time to organise but the strength of this research is that all 20 DHBs participated. Due to limited resources, interviews were either conducted in person or over the phone. There is no evidence that interviews, which were conducted over the phone, were less satisfactory than face-to-face interviews (Pope and Mays, 2008, Liamputtong, 2013)

There will always be questions around sampling methods with qualitative methods compared to epidemiological sampling methods. In this research purposive sampling was used to interview individuals who had knowledge of the use of the SSE report within their DHB (Liamputtong, 2013). Another option to conduct the research to understand how and if DHBs use the SSE report to improve quality and patient safety could have been to do an in-depth case study of two or three DHBs. However, there would remain questions surrounding how to select the most appropriate DHBs. Would they be DHBs with the highest report of serious and sentinel event reports or would they be DHBs with the lowest number of SSE occurring within their organisations. If this approach was utilised it could have been conducted by interviewing all CEOs, all CMOs, nursing staff, quality improvement teams and allied

healthcare staff within the selected DHB. However, given the word and time parameters placed on Master's Thesis, this type of study would be more appropriate to a PhD. This sampling method was employed by the recent publication of the Clinical Governance Assessment Project in 2012, validating this approach (Gauld and Hornsburgh, 2012b). The decision was made to sample all DHBs to gain a wider perspective of how and if the SSE report was used by individuals of each DHB who had an in depth understanding of the report (Liamputtong, 2013). This is a trade off with the scope of study design and its limitations with conducting the research when it comes to selecting study participants in qualitative research. However, given the research aims as outlined at the beginning of this thesis, the most fitting method was chosen to get wider representation of what was going on with the use of the SSE report amongst all 20 DHBs.

5.6.2 *Weaknesses:*

According to Pope and Mays (2006), qualitative interviews require considerable skill and should be carried out by an experienced interviewer. The researcher was new to conducting interviews with having one previous experience. However, considerable thought and the recommendations that Pope and Mays (2006), Holloway (2005) and Liamputtong (2013) suggested in relation to novice interviewers were noted and taken into account before interviews. In an effort to assess the integrity of the researcher's interviewing skills, a pilot interview was conducted with a past employee of a DHB who had experience in a quality and safety role within the organisation and received positive feedback. In reflection, following transcribing and listening back to the interviews, the skills of the interviewer developed after conduct of the first official interview. Confidence asking questions and understanding of jargon such as abbreviations developed as the data collection progressed.

In the healthcare industry there is some concern that clinicians may have reservations about talking to non-clinical people about adverse events (Ministerial Task Group on Clinical Leadership, February 2009). In relation to the interviews, the researcher found that participants did assume that the researcher did have a clinical background and knowledge of the finer details of adverse events and the organisation's current policies and processes in place. When this occurred, the researcher made sure to reflect on remarks made by the participant if there was a lack of understanding by the researcher or wanted to probe further into an idea that the participant may have breezed over. If it was not possible to clarify a comment immediately, the researcher made a note of this and ensured that they came back to it at a more appropriate time in the interview.

At the outset of this research, the HQSC was contacted and asked if organisation would support this study. The aim of this was to maximise DHB participation and contribute to the improvement of quality and patient safety. Due to this affiliation, there was concern that participants would answer questions with responses that they felt should be said to please people higher in the organisation and outside affiliations and not provide an accurate representations of what actually happens around quality improvement and patient safety. To try and prevent this from occurring at the outset of the interview the researcher reiterated that responses would be kept confidential and the results of this research would benefit not only the HQSC but also the healthcare industry as a whole.

Due to the varying nature of job positions within each DHB, there may be questions about how involved participants are in quality and patient safety, which represent positions lower in the organisation. However, on reflection there is no evidence this has had an influence in the analysis of the data because the Chief Executive specifically recommended each individual. They should therefore be seen to be speaking on behalf of their organisation and their views should be taken as reflecting their DHB's knowledge and attitudes towards adverse events, quality, and safety. Possibly different lengths of tenure could influence level of organisation specific knowledge on quality improvement and patient safety. However, only three participants were recent appointees and had moved from a similar, if not the same, role that they held in their previous job. It is therefore unlikely to have had an impact on the results of this study.

5.7 Conclusion

This thesis has found that driving of quality and patient safety is better implemented in some DHBs than others. The Clinical Governance Assessment Project (CGAP) confirms that the key themes found in this research are not only relevant to quality and patient safety improvement (Gauld and Hornsburgh, 2012b). The CGAP found that there were issues with implementing a clinical governance structure in regards to education and training opportunities, getting leadership on board, collaboration and sharing with other DHBs (Gauld and Hornsburgh, 2012b). These are all inherently connected to improving quality and patient safety and the ability to use the SSE report and confirms that there are wider concerns in health care that are having implications for cross-sectorial improvement.

In this chapter the main findings from this study ‘How do DHBs use and respond to the SSE report produced by the Health Quality and Safety Commission?’ have been discussed. The findings in relation to how DHBs respond to the report were explored. It was found that the main response was to ensure that copies of the report were distributed around the organisation in the form of posters, pamphlets, and copies of the report. There were also a number of key findings in relation to the questions of significance in the literature review. Firstly, discussions on how DHBs used the SSE report were looked at. The researcher found that its reported uses were relatively limited. This is because participants for the most part expressed other DHBs’ event information was unusable because it was not detailed enough and anonymised to an extent that what information was provided was not useful. Secondly, the approach each DHB employed when an adverse event occurs was examined. This section clarified issues that arose in the literature review in regards to adverse event reporting and the methods used once an adverse event has been reported. Thirdly, collaborative approaches between DHBs were reviewed. In this section, it was evident that the national meetings that quality and risk managers attend have become the most beneficial outcome that allows the sharing of adverse events between DHBs. Finally, the researcher delve into whether DHBs felt that quality and safety issues were a priority in their organisation and some of the influencing factors that drive quality improvement and patient safety. These included financial aspects of the organisation, professional development opportunities and experience of board members.

Over all the results of this thesis show that the SSE report has had some benefits including increasing the public’s awareness of serious and sentinel events in our hospitals, but predominately participants did not report that it influences decisions made about quality and patient safety. The implications of this is that the HQSC, whose focus is on quality improvement and patient safety, and Ministry of Health need to implement alternative methods to influence how DHBs address SSEs and work with DHBs towards an improved culture in quality and patient safety.

6 CONCLUSIONS and RECOMMENDATIONS

This thesis set out to explore if and how DHBs use the SSEs report produced by the HQSC as a basis of improving quality and patient safety within DHB organisations. The study was conducted by interviewing key representatives of quality and safety from each of the 20 DHBs across New Zealand. These participants represented a variety of positions within each organisation bringing with them unique views about quality and safety and what role the SSE report plays in improvement.

Improving quality and patient safety is of the utmost importance because any adverse event can have serious implications for the patient, their family, all health professionals involved and the wider organisation. No system will ever be perfect but by ensuring that the health system, in particular DHBs focus on improving current practices and learning from their own and others mistakes, DHBs can focus on preventing unintentional harm from coming to patients. The costs of adverse events are a significant proportion of the healthcare budget and this is money that could be redirected towards other essential treatments and services (Brown et al., 2002).

Many factors influence the occurrence of an adverse event and whether it will be reported or not as outline in the previous chapters. The factors that influence an adverse event occurring include working environments, such as management processes that are put in place to ensure that the correct procedure, patient safety practises, or the right drugs are being administered to patients (Baker, 2012, Sexton et al., 2000). In terms of adverse events being reported and disclosed to both colleagues and patients, reasons such as loss of patient trust, fear of shame and blame and professional censure exist (Heard et al., 2012, Evans et al., 2006, Lawton and Parker, 2002). These issues were brought up by participants and are supported by the literature (Wolf and Hughes, 2008 , Ghalandarpoorattar et al., 2012, Gallagher et al., 2007). Developing a culture of quality and patient safety is key to reducing SSEs and promoting adverse event reporting (Flemons and McRae, 2012, Gault, 2003a, Woodward, 2005). Many DHBs are on the way to having such organisational cultural focus and should be encouraged in this movement by their boards and institutions such as the HQSC and Ministry of Health.

One theme that has recurred throughout this thesis has been the idea of culture within healthcare organisations and its impact on reporting and disclosure of events. Culture is a very individual concept based on observations, attitudes, and experience. Therefore, individuals

each uniquely interpret culture and thus there were a variety of understandings of a quality and patient safety culture presented in this thesis. Many mentioned that the culture of improved care, quality, and patient safety was changing within individual DHBs but also on a national level by in large due to the development of the HQSC. This thesis has shown that many participants' opinions around their DHBs culture are driven by financial aspects. This research further questions the allocation of resources for DHBs, because if a DHB is trying to improve quality, an initial input of resources will be required implement new initiatives, provide training, and purchase appropriate equipment. It calls to question why multiple DHBs reported that they are repeatedly having their resource budgets for quality cut.

The main finding to have come from this study is that the SSE report plays a limited role in improving the drive for quality and safety. This thesis has confirmed in the New Zealand context what the literature states about adverse event reporting, that voluntary reporting systems grossly under report adverse events. Furthermore, the events that are reported, which are often the SSEs, are just the tip of the iceberg. In discussions with interviewees, the idea of making adverse incident reporting mandatory did not arise. Therefore, there is insufficient evidence to draw conclusions on the implications of a mandatory reporting system in the New Zealand context.

Those who participated in this research were very passionate about their job and irritated that quality was a number one priority. Just over half the participants of this research were quality and risk managers and numerously voiced their opinion that they felt unheard or were not taken seriously enough by their superiors or the governing board. This opinion was also backed up by participants who were in the other categories but previously had been in a lower position in an organisation whilst trying to improve the culture towards adverse event reporting. Financial issues repeatedly came up as barriers to improving systems, whether this is in the form of funds for moving to good electronic reporting systems, professional development, or education and training opportunities. As New Zealand's health care system is unique, the findings from this thesis can add to the literature and help pave the way for thinking about how we can make quality and patient safety the number one priority in our hospitals.

The following is a list of recommendations based on the research presented in this thesis that both the HQSC and DHBs should take under consideration.

1. The HQSC needs to open up access to their current central repository or developed an additional repository for adverse event information that is only accessible to management level staff of DHBs. This repository could provide essential information about adverse events that have occurred within our hospitals and their general recommendations to minimise this from occurring elsewhere. This would also allow the HQSC to send out alerts from this repository that notified all appropriate DHB staff that this event has occurred. This would enable current hospital practises to be reviewed. This follows methods used in the NHS and USA.
2. There needs to be clear leadership from the top at the Chief Executive (CE) level. If staff observe that quality and safety are a priority at the top of the organisation they are more likely to ensure that it is a priority in their role as an employee. The HQSC should play an important role in ensuring that CEs make quality a priority by establishing relationships between the CEs of each DHB and offering professional development in quality and patient safety, and as such they will be familiar with what is required to ensure that a culture of quality and safety is developed throughout their organisations.
3. Although only a few participants felt they were at a disadvantage of helping promote change for quality and safety, national policy needs to be developed around the position of the quality and safety manager within the DHB. Such a position should be placed within the executive management team under all organisational structures. This would ensure they are well placed to reinforce that quality and patient safety are of vital importance to the organisation and that they take the occurrence of SSEs seriously. This role could also support the new Improvement Advisor role.
4. Education and training opportunities need to be made available and utilised more within many of the DHBs. Ensuring that education about adverse events and event reporting as well as open disclosure training opportunities are provided to all DHB staff members on a periodic basis is vital to reducing rates of SSEs. Participants suggested that this is a place where the HQSC could step in and coordinate the provisions of essential training and education. In regards to training opportunities provided from external sources such as the IHI, it often comes down to financial circumstances as to whether or not the DHB can or will sponsor particular staff member/s to attend. This was also an area that participants felt the HQSC may be able

to increase their sponsorship in and would help further reduce the gap between the HQSC and DHBs whilst building stronger relationships.

This thesis has shown that many DHB staff under-value the SSE report. If suggested recommendations were to be put into effect, the outcomes of SSEs could have a positive impact on quality improvement and improving patient safety. This research has also shown many organisations are learning from one another through other means such as the national quality and risk managers meetings.

6.1 Implications and Direction for Further Research

This study has contributed greatly to health care research specific to the New Zealand setting. Many of New Zealand's resources go into healthcare and especially into the additional treatment required when adverse events do occur (Brown et al., 2002). This work has uncovered several findings into the usefulness of the SSE report. The SSE report has been a useful mechanism for public disclosure of adverse events in our public hospitals. However, it has also identified some shortcomings that DHB staff perceive about the report. Ideas for further research include reviewing who is reporting (e.g. allied health staff, nurses, and doctors). Such a focus was beyond the scope of this research due to time and space constraints. However, by examining, which occupational groups are reporting at higher levels, new initiatives to improve adverse event reporting within specific groups of hospital staff may be developed. This in turn may help in the prevention and occurrence of SSEs, by staff members being more aware of their surroundings and the potential for SSEs to occur. Research also needs to be put into developing systems where the HQSC can play a central role in the provision of healthcare information for DHBs. It would be worthwhile conducting further research into how DHBs can use the information about adverse events to their best advantage.

As an external organisation, the HQSC have built individual relationships with key members of quality improvement teams within each individual DHB and among multiple national committees. They have a commitment to quality improvement and have a number of key professionals such as the new improvement advisors working with the organisations whose main aim is to get quality and patient safety to be the top priority for organisations.

The effects of the HQSC are evident in the release of four annual national SSE reports. These reports have improved the lay public's understanding of adverse events and made the public aware that safety in our hospitals is a priority but unintentional accidents do happen and this is

a risk when patients go into the healthcare system. It has increased public awareness of how SSEs can occur and increased knowledge that as an organisation the HQSC is working with DHBs to help prevent adverse events from eventuating. There are improvements both the HQSC and DHBs could make, and these are laid out above in the recommendations.

BIBLIOGRAPHY

- ADAM, B. 2003 The Challenges of Running a District Health Board *In: GAULD, R. (ed.) Continuity amid Chaos: Health care management and delivery in New Zealand* Dunedin, Otago University of Otago Press
- ALLAN, D. S. & JUDITH, S. 2005. Review of the Australian Incident Monitoring System. *ANZ Journal of Surgery*, 75, 657.
- ALLEN, D. 2000. Counting the cost. *Nursing Standard*, 15, 20-1.
- BAKER, G. R. 2012. The Challenges of Making Care Safer: Leadership and System Transformation. *Healthcare Quarterly*, 15, 8-11.
- BARNETT, R. & BARNETT, P. 2004. Back to the Future? Reflections on past reforms and future prospects for health services in New Zealand. *GeoJournal*, 59, 137-147.
- BERWICK, D. M. & LEAPE, L. L. 1999. Reducing Errors in Medicine. *British Medical Journal* 319, 136-7.
- BIGDA-PEYTON, T. 2010. *Making change happen in large organisations: Top down or Bottom Up?* [Online]. Available: <http://aneconomyofmeaning.wordpress.com/2010/07/02/making-change-happen-in-large-organizations-top-down-or-bottom-up/> [Accessed 1 July 2012].
- BRAITHWAITE, J., WESTBROOK, M. T., TRAVAGLIA, J. F. & HUGHES, C. 2010. Cultural and associated enablers of, and barriers to, adverse incident reporting. *Quality and Safety in Health Care*, 19, 229-233.
- BRENNAN, T. A., LEAPE, L. L., LAIRD, N. M., HEBERT, L., LOCALIO, A. R., LAWTHERS, A. G., NEWHOUSE, J. P., WEILER, P. C. & HIATT, H. H. 1991. Incidence of Adverse Events and Negligence in Hospitalized Patients. *New England Journal of Medicine*, 324, 370-376.
- BROWN, P., MCARTHUR, C., NEWBY, L., LAY-YEE, R., DAVIS, P. & BRIANT, R. 2002. Cost of medical injury in New Zealand: a retrospective cohort study. *Journal of Health Services Research & Policy*, 7 Suppl 1, S29-34.
- CANADIAN HEALTH SERVICES RESEARCH FOUNDATION 2006. We can eliminate errors in health care by getting rid of the "bad apples". *Journal of health services research & policy*, 11, 63-64.
- CHAMBERLAIN, N. 2008. The folly of rewarding silence while hoping for open reporting of adverse medical events--how to realign the rewards. *New Zealand Medical Journal*, 121, 58-66.
- CHENG, L., YUAN, Q., SUN, N., LI, Y., ZHANG, Z., WANG, L., ZHOU, J., LIANG, M., CUI, X. & GAO, G. 2011. International comparative analyses of incidents reporting systems for healthcare risk management. *Journal of Evidence-Based Medicine*, 4, 32-47.
- COMMUNIO. 2013. *Communio: Practical Health Care and Human Services Solutions* [Online]. Communio Group Available: <http://www.communio.co.nz/> 2012].
- CONWAY, J. 2008. Getting Boards on Board: Engaging Governing Boards in Quality and Safety. *Joint Commission Journal on Quality and Patient Safety*, 34, 214-220.
- CRONENWETT, L., SHERWOOD, G., BARNSTEINER, J., DISCH, J., JOHNSON, J., MITCHELL, P., SULLIVAN, D. T. & WARREN, J. 2007. Quality and Safety Education for Nurses. *Nursing Outlook*, 55, 122-31.
- CUMMING, J., POWELL, M. & BARNETT, P. 2004 Governance in District Health Boards in New Zealand: A report on progress
- DAVIS, P., LAY-YEE, R., BRIANT, R., ALI, W., SCOTT, A. & SCHUG, S. 2002. Adverse events in New Zealand Public Hospitals I: Occurrence and Impact. *The New Zealand Medical Journal*, 115, U271.
- DAVIS, P., LAY-YEE, R., BRIANT, R., ALI, W., SCOTT, A. & SCHUG, S. 2003. Adverse events in New Zealand Public Hospitals II: Preventability and Clinical Context. *The New Zealand Medical Journal*, 116, U624.
- DAVIS, P., LAY-YEE, R., SCHUG, S., BRIANT, R., SCOTT, A., JOHNSON, S. & BINGLEY, W. 2001a. Adverse Events Regional Feasibility Study: Indicative Findings. *The New Zealand Medical Journal*, 114, 203-205.

- DAVIS, P., LAY-YEE, R., SCHUG, S., BRIANT, R., SCOTT, A., JOHNSON, S. & BINGLEY, W. 2001b. Adverse Events Regional Feasibility Study: Methodological Results. *The New Zealand Medical Journal*, 114, 200-202.
- DUCKETT, S. & WILLCOX, S. 2011. *The Australian Health Care System* Australia Oxford University Press.
- EAVES-LEANOS, A. & DUNN, E. J. 2012. Open disclosure of adverse events: transparency and safety in health care. *Surgical Clinics of North America*, 92, 163-77.
- EVANS, S. M., BERRY, J. G., SMITH, B. J., ESTERMAN, A., SELIM, P., O'SHAUGHNESSY, J. & DEWIT, M. 2006. Attitudes and barriers to incident reporting: a collaborative hospital study. *Quality & Safety in Health Care*, 15, 39-43.
- FAUNCE, T. A. & BOLSIN, S. N. C. 2004. Three Australian whistleblowing sagas: lessons for internal and external regulation. *The Medical journal of Australia*, 181, 44-47.
- FLEMONS, W. W. & MCRAE, G. 2012. Reporting, Learning and the Culture of Safety. *Healthcare Quarterly*, 15, 12-17.
- GALLAGHER, T. H., STUDDERT, D. & LEVINSON, W. 2007. Disclosing Harmful Medical Errors to Patients. *The New England Journal of Medicine*, 356, 2713-2719.
- GAULD, R. 2003a. Introduction: Continuity amid Chaos: The context of health care management and delivery in New Zealand *Continuity Amid Chaos: health care management and delivery in New Zealand* Dunedin, New Zealand University of Otago Press
- GAULD, R. 2003b. One Country, Four Systems: Comparing Changing Health Policies in New Zealand. *International Political Science Review*, 24, 199-218.
- GAULD, R. 2009a. *The New Health Policy* Maidenhead, UK, Open University Press
- GAULD, R. 2009b. *Revovling Doors: New Zealand's Health Reforms - The Continuing Saga* Wellington, Health Services Research Centre: Institute of Policy Studies
- GAULD, R. & HORNSBURGH, S. 2012a. Clincial Governance Assessment Project: Analysis of Three Quality and Safety Questions in a National Survey of New Zealand Health Professionals Centre for Health Systems University of Otago.
- GAULD, R. & HORNSBURGH, S. 2012b. Clincial Governance Assessment Project: Final Report on a National Health Professional Survey and Site Visits to 19 New Zealand DHBs. Dunedin: Center for Health Systems University of Otago.
- GHALANDARPOORATTAR, S. M., KAVIANI, A. & ASGHARI, F. 2012. Medical Error Disclosure: The Gap Between Attitude and Practice. *Postgraduate Medical Journal*, 88, 130-133.
- GOODALL, A. H. 2011. Physician-leaders and hospital performance: Is there an association? *Social Science & Medicine*, 73, 535-539.
- GOODHEW, J. 2013 Health quality improvement scholarships awarded Available: <http://www.hqsc.govt.nz/news-and-events/news/1003/>.
- GRIFFIN, F. A. & RESAR, R. K. 2009. *IHI Global Trigger Tool for Measuring Adverse Events* [Online]. Cambridge, MA: Institute for Healthcare Improvement Available: <http://www.ihl.org/knowledge/Pages/IHIWhitePapers/IHIGlobalTriggerToolWhitePaper.aspx> 2013].
- HANNAWA, A. F. 2011. Shedding light on the dark side of doctor-patient interactions: verbal and nonverbal messages physicians communicate during error disclosures. *Patient Educ Couns*, 84, 344-51.
- HEALTH AND DISABILITY COMMISSIONER. 2009. *Open Disclosure* [Online]. Health and Disability Commissioner Available: <http://www.hdc.org.nz/decisions--case-notes/open-disclosure> 2013].
- HEALTH QUALITY AND SAFETY COMMISSION. 2012a. *Making our hospitals safer - Serious and Sentinel Events 2010/2011* [Online]. Wellington: Health Quality and Safety Commission Available: <http://www.hqsc.govt.nz/our-programmes/reportable-events/publications-and-resources/publication/333/>.
- HEALTH QUALITY AND SAFETY COMMISSION 2012b. *Making our hospitals safer - Serious and Sentinel Events 2011-2012*. Wellington - Health Quality and Safety Commission
- HEALTH QUALITY AND SAFETY COMMISSION. 2012c. *New Zealand Health and Disability Services - National Reportable Events Policy 2012* [Online]. Wellington Health Quality and Safety Commission Available: <http://www.hqsc.govt.nz/assets/Reportable-Events/Publications/Reportable-Events-Policy-Final-Jan-2013.pdf> 2012].

- HEALTH QUALITY AND SAFETY COMMISSION 2012d. Root Cause Analysis for Clinical Incidents: A Practical Guide Wellington: Health Quality and Safety Commission
- HEALTH QUALITY AND SAFETY COMMISSION. 2013. *Global Trigger Tools* [Online]. Wellington Health Quality and Safety Commission Available: <http://www.hqsc.govt.nz/our-programmes/other-topics/new-projects/global-trigger-tools/> 2012].
- HEARD, G. C., SANDERSON, P. M. & THOMAS, R. D. 2012. Barriers to Adverse Event and Error Reporting in Anesthesia. *Anesthesia and Analgesia*, 114, 604-614.
- HUTCHINSON, A. 2009. Trends in healthcare incident reporting and relationship to safety and quality data in acute hospitals: results from the National Reporting and Learning System. *Quality & Safety in Health Care*, 18, 5-10.
- INSTITUTE FOR HEALTHCARE IMPROVEMENT. 2011. The power of having the Board on Board Available: <http://www.ihl.org/knowledge/Pages/ImprovementStories/ThePowerofHavingtheBoardonBoard.aspx>.
- INSTITUTE FOR HEALTHCARE IMPROVEMENT. 2013. *About IHI* [Online]. Cambridge, MA Institute for Healthcare Improvement. Available: <http://www.ihl.org/about/pages/default.aspx> 2013].
- INSTITUTE OF MEDICINE 2000. *To Err is Human: Building a Safer Health System* Washington, D.C., National Academy Press.
- INSTITUTE OF MEDICINE 2001. *Crossing the Quality Chasm: A New Health System for the 21st Century*
- JAMES, B. C. & SAVITZ, L. A. 2011. How Intermountain Trimmed Health Care Costs Through Robust Quality Improvement Efforts. *Health Affairs*, 30, 1185-1191.
- JOHNSON, C. W. 2003. How will we get the data and what will we do with it then? Issues in the reporting of adverse healthcare events. *Quality & Safety in Health Care*, 12, 64-67.
- JOINT COMMISSION. 2012. *Sentinel event policy and procedures* [Online]. Available: http://www.jointcommission.org/Sentinel_Event_Policy_and_Procedures/ [Accessed 5th May 2013]
- KATIKIREDDI, V. 2004. National reporting system for medical errors is launched. *British Medical Journal*, 328, 481-481.
- KEENAN, D. 2013. *Never Events* [Online]. Care Quality Commission. Available: <http://www.cqc.org.uk/organisations-we-regulate/registered-services/information-professionals/never-events> 2013].
- KER, K. 2011. Misadventures to patients during surgical and medical care in England and Wales: an analysis of deaths and hospital episodes. *Journal of the Royal Society of Medicine*, 104, 292-298.
- KLEIN, R. 2012. Comparing the United States and United Kingdom: contrasts and correspondences. *Health Economics, Policy and Law*, 7, 385.
- KO AWATEA. 2013a. *About Ko Awatea* [Online]. Ko Awatea. Available: <http://koawatea.co.nz/about/> 2013].
- KO AWATEA. 2013b. *APAC Forum 2013* [Online]. Ko Awatea. Available: <http://apac-forum.com/> 2013].
- LAUGENSEN, M. & GAULD, R. 2012. *Democratic governance and health: hospitals, politics, and health policy in New Zealand*, Dunedin, New Zealand, Otago University Press.
- LAWTON, R. & PARKER, D. 2002. Barriers to incident reporting in a healthcare system. *Quality & Safety in Health Care*, 11, 15-18.
- LEAPE, L., BERWICK, D., CLANCY, C., CONWAY, J., GLUCK, P., GUEST, J., LAWRENCE, D., MORATH, J., O'LEARY, D., O'NEILL, P., PINAKIEWICZ, D. & ISAAC, T. 2009. Transforming healthcare: a safety imperative. *Quality and Safety in Health Care*, 18, 424-428.
- LEAPE, L. L. 2002. Reporting of Adverse Events. *The New England Journal of Medicine*, 347, 1633-1638.
- LEAPE, L. L. & BERWICK, D. M. 2000a. Safe health care: are we up to it? *British Medical Journal*, 320, 725-726.
- LEAPE, L. L. & BERWICK, D. M. 2000b. Safe health care: are we up to it? *British Medical Journal*, 320, 725-726.
- LEAPE, L. L. & BERWICK, D. M. 2005. Five years after To Err Is Human: what have we learned? *Journal of American Medical Association* 293, 2384-90.

- LEAPE, L. L., LAWTHERS, A. G., BRENNAN, T. A. & JOHNSON, W. G. 1993. Preventing medical injury. *Quality Review Bulletin* 19, 144-9.
- LIAMPUTTONG, P. 2013. *Research Methods in Health: Foundations for evidence based practice* South Melbourn, Victoria Oxford University Press
- LOAY, S. & CAMILLE, D. 2003. Six Sigma in health care. *International Journal of Health Care Quality Assurance*, 16, 1.
- LUCIAN LEAPE INSTITUTE. 2003 *THROUGH THE EYES OF THE WORKFORCE: Creating Joy, Meaning, and Safer Health Care* [Online]. Available: http://www.npsf.org/wp-content/uploads/2013/03/Through-Eyes-of-the-Workforce_online.pdf 2013].
- MACDONALD, N. 2012. Nil by mouth *Your Weekend* p.4.
- MATLOW, A., STEVENS, P., HARRISON, C. & LAXER, R. M. 2006. Disclosure of medical errors. *Pediatric clinics of North America*, 53, 1091-1104.
- MCGLYNN, E. A., ASCH, S. M., ADAMS, J., KEESEY, J., HICKS, J., DECRISTOFARO, A. & KERR, E. A. 2003. The Quality of Health Care Delivered to Adults in the United States. *New England Journal of Medicine*, 348, 2635-2645.
- MCKINSEY AND COMPANY 2010. Management in Healthcare: Why good practice really matters Centre for Economic Performance The London School of Economics and Political Science.
- MCLEAN, J. & WALSH, M. 2003. Lessons from the inquiry into Obstetrics and Gynaecology services at King Edward Memorial Hospital 1990-2000. *Australian health review : a publication of the Australian Hospital Association*, 26, 12.
- MEDICAL COUNCIL OF NEW ZEALAND. 2011. *Hospital accreditation* [Online]. Available: <http://www.mcnz.org.nz/maintain-registration/supervision/hospital-accreditation/>.
- MINISTERIAL TASK GROUP ON CLINICAL LEADERSHIP. February 2009 *In Good Hands - Transforming Clinical Governance in New Zealand* [Online]. Wellington Available: <http://www.aemh.org/pdf/InGoodHandsReport.pdf>.
- MINISTRY OF HEALTH. 2012. *Certification of Healthcare services* [Online]. Available: <http://www.health.govt.nz/our-work/regulation-health-and-disability-system/certification-healthcare-services>.
- MORTON, J. & MACMILLAN, S. 2003. Adverse events in New Zealand healthcare. *The New Zealand Medical Journal*, 116, U623.
- NATIONAL DISTRICT HEALTH BOARD QUALITY AND RISK MANAGERS GROUP. 2012. *Root Cause Analysis For Clinical Incidents: A Practical Guide* [Online]. Health Quality and Safety Commission Available: <http://www.hqsc.govt.nz/our-programmes/reportable-events/publications-and-resources/publication/478/> 2013].
- NATIONAL PATIENT SAFETY AGENCY Root Cause Analysis Investigation Tools: Guide to investigation report writing following Root Cause Analysis of patient safety incidents. National Patient Safety Agency
- NATIONAL PATIENT SAFETY AGENCY. 2010 *National Framework for Reporting and Learning from Serious Incidents Requiring Investigation* [Online].
- PANESAR, S. S. 2009. Reflections on the National Patient Safety Agency's database of medical errors. *Journal of the Royal Society of Medicine*, 102, 256-258.
- PATERSON, R. 2001. The public's hue and cry: medical complaints in New Zealand. *Journal of Health Services Research & Policy*, 6, 193-194.
- PATERSON, R. 2002. The Patients' Complaints System In New Zealand. *Health Affairs*, 21, 70-79.
- PATERSON-BROWN, S. 2011. Improving patient safety through education. *British Medical Journal*, 342, 938.
- PILLING, K. 2010 Baby's bladder removed by mistake. *The Independent*
- PINTO, A., FAIZ, O. & VINCENT, C. 2012. Managing the after effects of serious patient safety incidents in the NHS: an online survey study. *BMJ Qual Saf*, 21, 1001-8.
- POPE, C. & MAYS, N. 2008. *Qualitative Research in Health Care*, Blackwell Publishing John Wiley & Sons.
- QUALITY IMPROVEMENT COMMITTEE 2008. Serious and Sentinel Events Report 2006/07 Wellington Quality Improvement Committee
- ROLLINS, G. 2008 Getting Boards On-Board *The Safety Net*
- 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, 246-246.

- RUNCIMAN, W. B., WILLIAMSON, J. A. H., DEAKIN, A., BENVENISTE, K. A., BANNON, K. & HIBBERT, P. D. 2006. An integrated framework for safety, quality and risk management: an information and incident management system based on a universal patient safety classification. *Quality and Safety in Health Care*, 15, i82-i90.
- SARI, A. B.-A., SHELDON, T. A., CRACKNELL, A. & TURNBULL, A. 2007. Sensitivity of routine system for reporting patient safety incidents in an NHS hospital: retrospective patient case note review. *British Medical Journal*, 334, 79.
- SEDDON, M. 2003 Aiming for a quality health service: quality improvement in the New Zealand health sector *In: GAULD, R. (ed.) Continuity amid Chaos, Health care management and delivery in New Zealand* Dunedin, New Zealand University of Otago Press.
- SEDDON, M., BUCHANAN, J. & EPIQ 2006a. Quality improvement in New Zealand healthcare. Part 3: achieving effective care through clinical audit. *The New Zealand Medical Journal* 119, U2108.
- SEDDON, M., EFFECTIVE PRACTICE, I. & QUALITY 2006b. Quality improvement in healthcare in New Zealand. Part 1: what would a high-quality healthcare system look like? *New Zealand Medical Journal*, 119, U2056.
- SEDDON, M. & MERRY, A. 2002. How safe are our hospitals? *The New Zealand Medical Journal* 115, U268.
- SEXTON, J. B., THOMAS, E. J. & HELMREICH, R. L. 2000. Error, stress, and teamwork in medicine and aviation: cross sectional surveys. *BMJ (Clinical research ed.)*, 320, 745-749.
- SMIDT, N. A. 1972. Adverse reactions to drugs: a comprehensive hospital inpatient survey. *New Zealand Medical Journal*, 76, 397-401.
- SMITS, M. 2010. Exploring the causes of adverse events in hospitals and potential prevention strategies. *BMJ Quality & Safety*, 19, e5-e5.
- SPIGELMAN, A. D. & SWAN, J. 2005. Review of the Australian incident monitoring system. *Australian and New Zealand Journal of Surgery*, 75, 657-61.
- THE HEALTH ROUND TABLE. 2008. *Everything you wanted to know about The Health Roundtable: Version 12* [Online]. The Health Round Table Limited. Available: <https://http://www.healthroundtable.org/Portals/0/PublicLibrary/Timeless/AllAboutTheHealthRoundtable-v12.pdf>.
- THOMAS, D. R. 2006. A General Inductive Approach for Analyzing Qualitative Evaluation Data. *American Journal of Evaluation*, 27, 237-246.
- THOMAS, E. J., STUDDERT, D. M., NEWHOUSE, J. P., ZBAR, B. I. W., HOWARD, K. M., WILLIAMS, E. J. & BRENNAN, T. A. 1999. Costs of Medical Injuries in Utah and Colorado. *Inquiry*, 36, 255-264.
- VAN DER WEYDEN, M. B. 2005. The Bundaberg Hospital scandal: the need for reform in Queensland and beyond. *The Medical Journal of Australia*, 183, 284-285.
- VINCENT, C. 2001. Adverse events in British hospitals: preliminary retrospective record review. *British Medical Journal* 322, 517-519.
- WILSON, R. M., RUNCIMAN, W. B., GIBBERD, R. W., HARRISON, B. T., NEWBY, L. & HAMILTON, J. D. 1995. The Quality in Australian Health Care Study. *Medical Journal of Australia*, 163, 458-71.
- WILSON, R. M. & VAN DER WEYDEN, M. B. 2005. The safety of Australian healthcare: 10 years after QAHCS. *The Medical Journal of Australia*, 182, 260-261.
- WOLF, Z. R. & HUGHES, R. G. 2008 Error reporting and disclosure *In: HUGHES, R. G. (ed.) Patient Safety and Quality: An evidence-based handbook for nurses.* . Rockville, MD: Agency for Healthcare Research and Quality
- WOODWARD, S. J. 2005. Will the future continue to repeat the past? *Quality and Safety in Health Care*, 14, 74.
- WOOLSCROFT, B. & WATKINS, L. 2011. *A guide to ethics application for the department of marketing* [Online]. University of Otago Available: http://www.business.otago.ac.nz/marketing/research/files_of_publications/A_guide_to_ethics_applications_for_the_Department_of_Marketing.pdf 2013].

Appendix A: Letter of Support from the HQSC:

30 April 2012

Tracey Adamson
Chief Executive Officer
Wairarapa DHB
PO Box 96
Masterton 5840

Dear Tracey

University of Otago – DHB responses to Commission Serious and Sentinel Event Report

The Commission has been approached by Professor Robin Gauld (Director, Centre for Health Systems, University of Otago) who is co-supervising with Dr John Holmes (Clinical Senior Lecturer, Department of Preventive and Social Medicine, University of Otago) a research project to be undertaken by Livia Hardy looking at DHB responses to the annual Serious and Sentinel Event Report.

The study will involve interviewing the key person at each DHB who is responsible for overseeing the response to the report. It is expected that the subsequent study report will be useful to the health sector as a whole, and I hope that your DHB will assist Professor Gauld, Dr Holmes and Ms Hardy in this study. I understand that they will be in contact with you soon with further details of the study. Meantime, if you would like to contact the Otago University researchers, their details are:

Professor Robin Gauld, ph. 03 479 8632, email: robin.gauld@otago.ac.nz

Livia Hardy, ph. 03 479 7233, email: harli740@student.otago.ac.nz

Thank you for your continuing support of the Commission and its partners in improving the quality and safety of health and disability care in New Zealand.

Yours sincerely
Dr Janice Wilson
Chief Executive Officer
Health Quality and Safety Commission

Appendix B: Invitation to participate in study:

2 May 2012

Tracey Adamson
Chief Executive Officer
Wairarapa DHB
PO Box 96
Masterton 5840

Dear Tracey

How do District Health Boards respond to the annual Serious and Sentinel events Report?

The Health Quality and Safety Commission have recently contacted you regarding participation in this study. As part of my Master's degree at the University of Otago, I am working with Professor Robin Gauld and Dr John Holmes. I am interested in how District Health Boards individually respond to the annual Serious and Sentinel events report produced by the HQSC.

With increasing media coverage and literature on quality and patient safety, I am interested in how you use this wealth of information and the reports produced by the HQSC to improve management systems to prevent such events from occurring. The HQSC believes this to be of value not only to them and you but also to the health sector as a whole.

I would like to conduct semi structured interviews with the chief person for gathering and handling information on quality and safety issues within hospitals and overseeing the response to the Serious and Sentinel events report. I have also attached an additional information sheet. I will be in contact with you again soon but if you have any further questions or queries please don't hesitate to contact me.

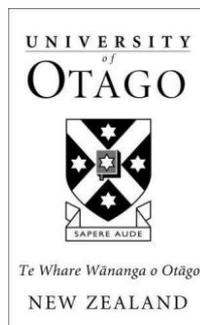
Ph.: 03 479 7233

Email: harli740@student.otago.ac.nz

Yours sincerely

Livia Hardy

Appendix C: Copy of Information Sheet sent to all CEO's with letter of invitation to participate in the study.



How Do District Health Boards Respond to the Serious and Sentinel Events Report?

INFORMATION SHEET FOR PARTICIPANTS

Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to participate. If you decide to participate, we thank you. If you decide not to take part, there will be no disadvantage to you and we thank you for considering our request.

What is the aim of the project?

The overall aim of this research is to look at how District Health Boards (DHBs) respond to the information provided by the annual sentinel events report produced by the Health Quality and Safety Commission (HQSC). 12.9% of admissions to hospital are associated with an adverse event leading to death or permanent disability. This project will look at what methods are put in place to help prevent such events from occurring. This project is being undertaken as part of the requirements for Master of Public Health degree.

What types of participants are being sought?

The individual working for each District Health Board, who is ultimately responsible for managing internal reportable events and the response to the serious and sentinel events report. Approximately 20 people will participate in this study. Chief Executives of DHBs will be contacted by the HQSC regarding the study. This will be followed up by a letter of invitation to participate to the individuals identified by the HQSC as the key person(s) in managing quality and safety concerns.

What will participants be asked to do?

Should you agree to take part in this project, you will be asked to respond to a semi structured interview conducted by a researcher either in person or over the phone. After completion of the interview, participants will be asked if they will be available for any follow up questions.

All interviews will be tape-recorded. The time involved should not exceed 45 minutes. All data collected will remain confidential, and will be destroyed after analysis.

Please be aware that you may decide not to take part in the project without any disadvantage to yourself of any kind.

What data or information will be collected and what use will be made of it?

The results of the study will provide documentation about the current methods that are being used to prevent serious sentinel events from occurring in the New Zealand health system. This information will also provide an insight into disclosure methods used.

The audiotapes from interviews will be analysed thematically for key themes and issues brought up during the interview process. The data collected will be securely stored in such a way that only those mentioned below will be able to gain access to it. At the end of the project, any personal information will be destroyed immediately except that, as required by the University's research policy, any raw data on which the results of the project depend will be retained in secure storage for five years, after which it will be destroyed.

The completed research will compile results found from all participating DHBs and will be evaluated against international methods currently practised. All Participating individuals will remain anonymous in any reports or publications on this study and every effort will be made to ensure that individual DHBs are not identifiable.

Interviews will be semi structured. This means there is an element of open-ended questions arising depending on the way in which the interview develops. In the event that the line of questioning does develop in such a way that you feel hesitant or uncomfortable you are reminded of your right to decline to answer any particular question(s) and also that you may withdraw from the project at any stage without any disadvantage to yourself of any kind.

If you have any questions about our project, either now or in the future, please feel free to contact either: -

Livia Hardy, Department of Preventive and Social Medicine

University Telephone Number: 479 7233, Email Address: harli740@student.otago.ac.nz

Professor Robin Gauld, Department of Preventive and Social Medicine

University Telephone Number: 479 8632, Email Address: robin.gauld@otago.ac.nz

Dr John Holmes, Department of Preventive and Social Medicine

University Telephone Number: 479 7201, Email Address: John.Holmes@southerndhb.govt.

This study has been approved by the Department stated above. If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph. 03 479-8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.

Appendix D: Question Guideline for Interviews:

1. Individual's role within their respective DHB, and scope of responsibility.
2. Where they sit in the organisation, their relationship with the board and other professional groups

Serious and Sentinel events:

3. Whether their respective DHB has had a sentinel event, do you know how many?
4. When using root cause analysis, how do you ensure it is conducted efficiently?
 - Who is usually involved in the RCA process?
 - Is this overseen by an expert?
 - Who is this usually?
5. Have you gone about redesigning care processes as a result of a serious event?
6. Anonymous reporting system – how do you pick up on sentinel events and less serious events or near misses?
 - Is your reporting system anonymous?
7. Disclosure policy – how do you promote open disclosure?
 - Is there a disclosure policy?
 - If you discover full disclosure has not happened, how do you rectify this?
 - Do you feel there are any factors that prevent you or anyone else from disclosing an event?

The Report:

8. The number of events reported is said by the HQSC to reflect on the success or lack of risk management programmes. How would you describe your risk management programme?
9. How do you keep up to date with local incident management and national reporting requirements?
10. The HQSC reports each DHB has a local system for reporting and responding to serious and sentinel events, would you be able to describe yours?

11. The definitions of a serious or sentinel event is laid out in the report, but remains subjective to each individual DHB to determine its severity. Do you use the severity assessment code (SAC), if not how do you go about rating incidents?
 - If yes, how likely would you be to report incidents with a rating of SAC3 or 4?
 - Do you find it difficult to categorise incidents based on this assessment tool
12. Why would you not report an event? Do you report near miss incidents?
13. Do you use the Serious and Sentinel events report as a basis of improving quality and safety?
14. I understand the information provided about other DHBs events is quite limited but have you been able to change anything in your own system as a result of anyone else's events?

The Organisation:

15. Do you feel you have enough support from organisations such as the Commission? If not, how would you like to see this change?
16. How would you describe your organisational culture
 - What would you consider to be the overall focus of the DHB?
 - What would you consider the main focus to be at board meetings?
17. Do you feel that you have adequate resources for the population you provide health services to?
E.g. access to staff, staff training, getting clinicians etc. interested in training
 - If not, what do you need?
E.g. Funding, nurses with special interest in QI, staff training, HQSC – is it involved enough?
18. Are you receiving external advice on quality improvement and patient safety? (i.e. from IHI or a similar international consultancy groups)
 - If so, do you have a contractual relationship with them?
 - What kind of quality improvement packages are you working with?
 - If not, would you consider developing such relationships?
24. Do you provide feedback to the HQSC about the report?

Appendix E: Copy of Ethics Approval

Reporting Sheet for use ONLY for proposals considered at departmental level



Form Updated: February 2011

HUMAN ETHICS APPLICATION: CATEGORY B

(Departmental Approval)

1. **University of Otago staff member responsible for project:**
Professor Robin Gauld and Dr John Holmes
2. **Department:** Preventive and Social Medicine
3. **Contact details of staff member responsible:** robin.gauld@otago.ac.nz
4. **Title of project:** How Do District Health Boards respond to the Serious and Sentinel Events Report?

5. **Indicate type of project and names of other investigators and students:**

Staff Research Names

Student Research Names

Level of Study (e.g. PhD, Masters, Hons)

External Research/ Names

Collaboration
Institute/Company

6. **When will recruitment and data collection commence?** Recruitment will commence in May 2012, with the data collection beginning as soon as participants are willing to schedule interviews.

When will data collection be completed? We will be aiming to have data collection completed by August.

7. **Brief description in lay terms of the aim of the project, and outline of research questions** (approx. 200 words): The aim of the project is to find out the individual responses each District Health Board (DHB) has to the annual sentinel events report produced by the Health Quality and Safety Commission (HQSC).

Research questions will consist of but are not limited to:

- Individual's role within their respective DHB, and scope of responsibility.
- Individual's typical week working at the DHB (the type of activities they engage in).
- Where they sit in the organisation, their relationship with the board and other professional groups
- How they fit into the structure of the DHB
- Whether their respective DHB has had a sentinel event
- I will ask them about events reported in the latest sentinel events report, their method of dealing with this and preventing the same from occurring again
- Disclosure policy
- Root cause analysis
- Anonymous reporting system – how do you pick up on sentinel events
- Have you gone about redesigning care processes
- If you don't use the report as a basis of improving quality and safety, why is this?

8. **Brief description of the method.** Please include a description of who the participants are, how the participants will be recruited, and what they will be asked to do: -

The participants will be the key person(s) in each District Health Board responsible for gathering and handling information on quality and safety issues within our hospitals.

The HQSC has endorsed the project and will be sending a letter of support to the chief executive of each DHB informing them of the study and the benefits of participating in this research. A letter will then follow this from myself outlining the study. I will then follow this letter up with a phone call in hope to organise an interview time, either in person or over the phone.

Reporting Sheet for use ONLY for proposals considered at departmental level

Participants will be asked to participate in a semi-structured interview that will be tape-recorded and transcribed. It is estimated that there will be approximately 20 interviews, who will be predominantly chief quality officers or their equivalents in charge of quality and patient safety.

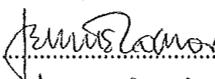
To ensure anonymity, all efforts will be made in the written report to ensure that participants/DHB will remain confidential and any quotes with the potential to identify DHBs will be excluded from the discussion.

9. Please disclose and discuss any potential problems: (For example: medical/legal problems, issues with disclosure, conflict of interest, etc)

DHBs may feel that this research is of no benefit to them. A consequence of this is that the response rate may be low.

Applicant's Signature: 

(Principal Applicant: as specified in Question 1, Must not be in the name of a student)

*Signature of *Head of Department:* 

Name of Signatory (please print): Jennie Connor

Date: 1/5/12

Departmental approval: *I have read this application and believe it to be scientifically and ethically sound. I approve the research design. The Research proposed in this application is compatible with the University of Otago policies and I give my consent for the application to be forwarded to the University of Otago Human Ethics Committee.*

**(In cases where the Head of Department is also the principal researcher then an appropriate senior staff member in the department must sign)*

IMPORTANT: The completed form, together with copies of any **Information Sheet, Consent Form and any recruitment advertisement for participants**, should be forwarded to the Manager Academic Committees or the Academic Committees Assistant, Registry, **as soon as the proposal has been considered and signed at departmental level.** Forms can be sent hardcopy to Academic Committees, Room G23 or G24, Ground Floor, Clocktower Building, or scanned and emailed to gary.witte@otago.ac.nz.

How Do District Health Boards Respond to the Serious and Sentinel Events Report

CONSENT FORM FOR PARTICIPANTS

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that: -

1. My participation in the project is entirely voluntary;
2. I am free to withdraw from the project at any time without any disadvantage;
3. Personal identifying information from audio tapes will be destroyed at the conclusion of the project but any raw data on which the results of the project depend will be retained in secure storage for at least five years;
4. Interviews will be semi structured. This means there is an element of open-ended questions arising depending on the way in which the interview develops. In the event that the line of questioning does develop in such a way that you feel hesitant or uncomfortable you are reminded of your right to decline to answer any particular question(s) and also that you may withdraw from the project at any stage without any disadvantage to yourself of any kind;
5. The results of the project may be published and available in the University of Otago Library (Dunedin, New Zealand) but every attempt will be made to preserve my anonymity.

I agree to take part in this project.

.....
(Signature of participant)

.....
(Date)



Appendix F: Copy of Severity Assessment Code that was in use during time of Interviewing.



Severity Assessment Code (SAC)

STEP 1 - Consequences Table

CLINICAL CONSEQUENCE

CORPORATE CONSEQUENCE

Analyse all incidents against ACTUAL and POTENTIAL outcomes				
Serious	Major	Moderate	Minor	Minimal
<p>Unexpected patient(s) death resulting from the process of health care, which is unrelated to the expected outcome of a patient's management</p> <p>Or any of the following events:</p> <ul style="list-style-type: none"> Inpatient suicide Wrong patient, wrong site or wrong invasive procedure, wrong implant events Retained equipment / swabs etc requiring surgical removal Misadministration of radioactive materials Patient / infant abduction / discharge to the wrong family Any investigation commenced by police related to patient abuse (eg rape) Blood transfusion resulting in haemolysis 	<p>Major permanent disability or loss of function (sensory, motor, physiologic or psychologic) unrelated to the natural course of the illness and differing from the expected outcome of patient management</p> <p>Or any of the following:</p> <ul style="list-style-type: none"> Suicide of an outpatient known to the mental health service within 7 days of contact with the service Unauthorised leave of a mental health patient with an assessed high risk of serious harm to self or others Unauthorised leave of Special Patient Threatened or actual physical or verbal assault of patient or staff requiring police intervention 	<p>Permanent reduction in bodily functioning (sensory, motor, physiologic, or psychologic) unrelated to the natural course of the illness and differing from the expected outcome of patient management</p> <p>Or any of the following:</p> <ul style="list-style-type: none"> Increased length of stay as a result of the incident Surgical or other intervention required as a result of the incident Patient at risk, absent against medical advice 	<p>An increased level of care including:</p> <ul style="list-style-type: none"> Review and evaluation Additional investigations Referral to another clinician 	<p>No injury or increased level of care or length of stay</p>
<p>Staff, contractor, visitor: Death(s) of staff member contractor or visitor</p>	<p>Staff, contractor, visitor: Permanent disability or loss of function to staff member, contractor or visitor; requires major additional medical or surgical intervention</p>	<p>Staff, contractor, visitor: Staff member, contractor or visitor requires extended treatment</p>	<p>Staff, contractor, visitor: Staff member or contractor requires short term treatment only with no lost time or restricted duties. Visitor requires short term treatment</p>	<p>Staff, contractor, visitor: Minimal injury to staff member, contractor or visitor; first aid required</p>
<p>Services: Non delivery of a key service; loss of Certification / accreditation status</p>	<p>Services: significant ongoing disruption to a key service; Certification for 1 year or less / recommendations requiring action within 6 weeks</p>	<p>Services: Disruption to a key service; Certification awarded for 2 years or less / recommendations requiring action within 3 months</p>	<p>Services: Disruption to service; Certification recommendations requiring action within 6 months</p>	<p>Services: Minimal disruption; low impact on Certification / accreditation status service</p>
<p>Finances: Cost overrun or reduction in revenue: the lower of >\$3M or > 10%</p>	<p>Finances: Cost overrun or reduction in revenue: the lower of >\$2M or > 7-10%</p>	<p>Finances: Cost overrun or reduction in revenue: the lower of >1.2M or > 4-7%</p>	<p>Finances: Cost overrun or reduction in revenue: the lower of >\$0.5M or > 2-4%</p>	<p>Finances: Cost overrun or reduction in revenue: the lower of >\$0.1M or > 0-2%</p>
<p>Environment: Toxic release off-site with detrimental effect, Fire requiring evacuation</p>	<p>Environment: Off-site release with no detrimental effects or fire that grows larger than an incipient stage</p>	<p>Environment: Off-site release contained with outside assistance or fire at incipient stage or less</p>	<p>Environment: Off-site release contained without outside assistance</p>	<p>Environment: Nuisance releases</p>

The dot point lists provided above relate mostly to secondary and tertiary care. Primary care and other health and disability services must assess the consequence of the incident using the descriptors provided

STEP 2 – Likelihood Table

PROBABILITY CATEGORIES	DEFINITION
Certain	Is expected to occur again either immediately or within a short period of time (likely to occur at least once in the next 3 months)
Almost certain	Will probably occur at least once in the next 4-12 months
Likely	Is expected to occur within the next 1 to 2 years
Unlikely	Event may occur at some time in the next 2 to 5 years
Highly unlikely	Unlikely to recur – may occur only in exceptional circumstances ie 6+ years)

STEP 4 – Action Required Table

ACTION REQUIRED FOR 'ACTUAL' INCIDENT RATING	
1	Extreme risk – immediate action required – A Root Cause Analysis (RCA) investigation must be completed within 70 calendar days. Reportable Event Brief (REB) must be forwarded to the national central agency
2	High risk – senior management attention needed – Notification to the national central agency and a detailed investigation must be completed within 70 calendar days
3	Medium risk – All incident forms to be reviewed, review in common incident types may be most appropriate to develop a common action plan. Responsibility for management of these incidents must be assigned.
4	Low risk – manage through team level review and improvement procedures.
Incidents rating a SAC of 3 or 4 may also be reported to the national central agency if the incident is considered by the organisation's senior manager to represent potential risk of serious harm, that should be widely known.	

STEP 3 – SAC Matrix

		CONSEQUENCE				
		Serious	Major	Moderate	Minor	Minimal
LIKELIHOOD	Certain	1	1	2	3	3
	Almost certain	1	1	2	3	4
	Likely	1	2	2	3	4
	Unlikely	1	2	3	4	4
	Highly unlikely	2	3	3	4	4

Appendix G: Never events as defined by the NPSA

All never events are serious preventable patient safety incidents that should not occur if healthcare providers have implemented the available preventative measures. The aim of the never events policy is that it will reduce the incident of never events to zero. Never events are considered intolerable and inexcusable by the NPSA. What also makes this policy interesting is that the NHS will not pay for any care so substandard to result in a never event. The list of never events is as follows.

1. Wrong site surgery
2. Wrong implant/prosthesis
3. Retained foreign object post-operation
4. Wrongly prepared high-risk injectable medication
5. Maladministration of a potassium-containing solution
6. Wrong route administration of chemotherapy
7. Wrong route administration of oral/enteral treatment
8. Intravenous administration of epidural medication
9. Maladministration of Insulin
10. Overdose of midazolam during conscious sedation
11. Opioid overdose of an opioid-naïve patient
12. Inappropriate administration of daily oral methotrexate
13. Suicide using non collapsible rails
14. Escape of a transferred prisoner
15. Falls from unrestricted windows
16. Entrapment in bedrails
17. Transfusion of ABO-incompatible blood components
18. Transplantation of ABO incompatible organs as a result of error
19. Misplaced naso-or oro-gastric tubes
20. Wrong gas administered
21. Failure to monitor and respond to oxygen saturation
22. Air embolism
23. Misidentification of patients
24. Severe scalding of patients
25. Maternal death due to post-partum hemorrhage after elective caesarean section