Quality Improvement Committee

Serious and Sentinel Events in New Zealand Hospitals

2008/09

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Foreword

This report continues the quest to improve health outcomes for New Zealanders. The information it contains relates to events reported by District Health Boards (DHBs) from July 2008 to June 2009. It does not include information about adverse events in the primary or private health care sectors.

For the 2008/09 year DHBs reported that 308 people treated in their hospitals were involved in a serious or sentinel adverse clinical event that was actually or potentially preventable. Of this total, 92 died during admission or shortly afterwards, though not necessarily as a result of the event. Over the same period nearly 950,000 people were treated and discharged by our hospital staff, who work very hard to relieve suffering and improve health and quality.

I strongly support the aim of doing all we can to support the voluntary reporting of adverse events, and I will be encouraging the same level of reporting from primary care and private hospitals. I also support public disclosure and debate, and in March 2009 I wrote to DHB chairs requesting that the *Serious and Sentinel Events Summary* be tabled during the public section of their next board meetings.

The Quality Improvement Committee's national quality improvement programmes[1] now under way include five main programmes aimed at increasing patient safety in a number of key areas. All of these programmes address quality problems identified in reported events. One of these is a nationally co-ordinated programme to standardise event recording and investigation in DHBs. Over the last two years over 1800 DHB staff have been trained in a standardised mechanism for reporting and managing the kinds of serious and sentinel events contained in this report. This will help us to learn from these events to prevent similar things happening again. The programme has also developed a national policy and specifications for a central repository that will make reporting simpler and allow alerts and recommendations for service improvements to be quickly distributed.

Patients are the first to say that they want to prevent similar events happening in the future, either to themselves or to other people. They encourage and support the concept of learning from mistakes. For this reason I am sure this report will be well received, because it provides the basis for learning not only within individual DHBs but also nationally across all services. Thank you to all those people in the DHBs and the Ministry of Health who have collectively contributed to this report.

The report presents data that reflects many tragic and sad events that have happened to patients in our care. We owe it to them to take every possible step to learn from these events and limit the chance of the recurrence of similar events. We must be spurred on to encourage open and frank discussion of how

[1] http://www.qic.health.govt.nz

these may have happened and to develop even safer health systems, which the people of New Zealand can trust. We have great health professionals, managers and support staff, and we must support them to continue to deliver safe and effective care.

Pat Snedden
Chair
Quality Improvement Committee

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Key Messages

Findings

- In the 2008/09 reporting year approximately 0.03% (3 in 10,000) of total admissions to DHBs involved a potentially preventable serious or sentinel event.
- The majority of events (39%) were the result of a clinical management problem. This is where there is a serious deterioration in a patient's condition that is not due to the natural course of their illness, or differs from the expected outcome of treatment.
- The second largest category of events (27%) was falls. Most of the events in this category occurred when the patient was medically unwell and/or when an elderly patient was mobilising without assistance.
- The third largest category of events (12%) was suicide.

Recommended actions

One useful way of investigating complex events is that used in other industries: 'root cause analysis'. This method is used to investigate and analyse a serious or sentinel event, with the aim of identifying the underlying causes and any contributing factors, and then recommending actions to reduce the chance of a similar occurrence. Its power is in ensuring that those actions directly related to the causes are identified.

The following recommendations are based on root cause analysis.

1. To reduce the number of adverse and sentinel events involving clinical management, recommended actions include:

- changes to patient monitoring and care delivery processes
- changes to the physical environment
- increased supervision of staff
- staff education
- development of new policies, protocols or guidelines
- purchase of new equipment.

2. To reduce the number of falls, recommended actions include:

- improving the use of falls risk tools to assess the patient's risk of falling, along with the use of care plans
- implementing hourly nursing rounds to anticipate toileting and other needs
- educating staff on falls prevention and management policy in this area

- maintaining equipment.

3. In the other event categories, strategies to improve care and prevent similar events happening in the future include:

- improving the assessment of patients at risk
- increasing the supervision of staff
- educating to increase the level of knowledge of clinical staff
- reviewing physical risk areas and reconfiguring clinical areas
- improving communication between hospital teams and with families.

Introduction

Background

National and international studies have shown that 10–15% of hospital admissions are associated with an adverse event, but that half of these events occur before the patient is hospitalised.[2] The vast majority of events reported are minor and do not result in harm or permanent harm to the patient. For example, they may involve missed medication or medication errors that do not harm the patient.

In contrast, a serious or sentinel event results in, or has the potential to result in, serious lasting disability or death that is not related to the natural course of the patient's illness or underlying condition (see the next section for more specific definitions). Such events are rarely the result of one unsafe act. Most are the consequence of a chain of events set off by small breakdowns in the safety nets built into the process of caring for patients. Unfortunately, the consequences can be tragic.

Reporting adverse events

The purpose of recording and investigating preventable adverse events in hospitals is to understand why these events occurred, which then provides a basis for taking action to try to prevent similar events from happening in the future. The overall aim is to improve patient safety.

In February 2008 the Quality Improvement Committee released the first sentinel and serious events report. Although hospitals have always collected data about such incidents, this report for 2006/07 represented the first consolidated report about serious and sentinel events across New Zealand's 21 DHBs. The release of this data is an important part of a national reporting system. It does not capture every event, but through initiatives to encourage open disclosure and learning, and with improved definitions, we will see the development of a culture of reporting events.

The purpose of the reporting system is to learn from incidents, not to apportion blame or to rank hospitals. Clinical staff have always been accountable for their practice to their patients, their profession, their colleagues and the organisations that employ them. The health sector must use this data in a way that encourages learning. Using it in any other way would adversely affect the culture of safety and openness we are trying to foster in DHBs. If clinicians believe that the information would be used against them or their DHB, they may be less willing to report such

[2] EN De Vries, MA Ramrattan, ; SM Smorenburg, et al. 2008. The incidence and nature of in-hospital adverse events: a systematic review. *Quality and Safety in Health Care* 17: 216−23

events. If clinicians believe the information will be used for learning and improvement, they will more readily report adverse events.

International experience with event reporting shows that the process of increasing awareness often results in a rise in the number of events reported. For this reason, the number of events reported nationally may well continue to rise over the next few years.

An incident management system for New Zealand

The Quality Improvement Committee is sponsoring a national programme to improve the management of health care events. Managing adverse events is a key strategy that health services are using to manage the risks of clinical care as well as corporate risks. Adverse event management is an effective mechanism for systematically identifying and managing problems and failures in the system and for informing the development of preventive strategies. It also guides the immediate response to events in order to reduce risk and minimise further harm, including emotional and psychological trauma for the patient, family and health practitioner.

This report and the concept of collecting and reporting nationally on serious and sentinel events using standardised definitions and data are new to New Zealand. The Quality Improvement Committee's national programme to improve incident management has successfully completed drafting and piloting a new national policy, the development and delivery of an education and training programme, and specifications for a central repository. DHBs have responded to these initiatives, and their systems have improved as a result.

The national programme was launched in June 2008 with the aim of achieving a nationally consistent approach to incident management across all health and disability services in New Zealand. The programme seeks to reduce harm caused to patients and their families, and to clinicians, and to develop a culture and environment within which incidents can be identified, reported, investigated and acted on to prevent their recurrence.

It was expected that the project would result in:

- identification of as many incidents in the health and disability sector as possible
- prioritisation of incidents using a common tool
- notification of all incidents to the right person/people for action
- the review and investigation of incidents to identify causes and develop mitigation strategies
- classification of incidents using a common hierarchy and taxonomy
- action − both local and national − to prevent recurrence
- truthful and open disclosure of adverse events
- support for patients, families and staff involved in incidents and adverse events

- the establishment of a sustainable, consistent, ongoing programme for the management of all incidents across the entire health and disability sector.

The programme developed a national policy for incident management and delivered a comprehensive training and education programme that reflected the main policy components, along with information on the steps of incident management, human factors, open disclosure, root cause analysis, and the use of the severity assessment code. Over 1800 DHB staff have attended this programme and will now have the skills to investigate and manage serious events. By effectively identifying the causes of events, they can make system improvements and reduce future patient risk.

A further component of the national programme developed the business and technical requirements for a nationally co-ordinated incident information management system that:

- supports the implementation of the national policy
- satisfies legal and legislative requirements
- supports the requirements of providers of health and disability services for the effective management of all health care incidents.

Ultimately, the aim of the system is to enable the implementation of national policy and assist the health care and disability sector to:

- respond effectively to all incidents
- manage the consequences of those incidents
- determine their causes
- take action to prevent recurrences.

This report provides a national overview of serious and sentinel events and offers the opportunity to accelerate learning by sharing experiences and avoiding the same mistakes in other DHBs. The key to preventing adverse events in hospitals is to encourage learning from mistakes *when they happen*. The first step in this chain is to encourage the development of a culture that supports disclosure of any adverse event.

Definitions: What are Serious and Sentinel Events?

Types of adverse events

Every year in New Zealand over 950,000 people are treated and discharged from a hospital. For a small number of these people, and despite safety systems and the best intentions of clinical staff, events happen that have the potential to cause harm, or actually do cause harm. Most of these events involve known complications of treatment and are not preventable based on current knowledge. They include known side-effects to medication, known risks from surgery and unpredictable events such as unknown allergic reactions.

In addition, a small number of events resulting in serious harm or death, or that require significant additional treatment, are potentially preventable. In the 2008/09 reporting year 308 potentially preventable serious or sentinel events were reported (at a rate of about 0.03%, or 3 in 10,000 admissions).

Clinical judgement has been used to further refine these categories so that they reflect the serious and sentinel adverse events that are considered preventable given current knowledge. For instance, a known complication of surgery is an adverse event, but if it is not preventable it will not appear in this report.

Standardised, consistent systems for classifying and recording adverse events are essential to the process of recording and investigating preventable adverse events in hospitals in order to understand why these events occur. Hospitals in New Zealand and around the world vary in the way they classify, collate and report preventable adverse events, and are only now starting to standardise their approach in this area. The Quality Improvement Committee is leading this standardisation work in New Zealand.

Definitions

A **health care event** is an event or circumstance that could have led, or did lead, to unintended and/or unnecessary harm to a patient, and/or a complaint, loss or damage.

An **adverse event** is a health care event causing patient harm that is not related to the natural course of the patient's illness or underlying condition.

A **serious adverse event** requires significant additional treatment but is not life threatening and has not resulted in major loss of function.

A **sentinel adverse event** is life threatening, or has led to an unanticipated death or major loss of function.

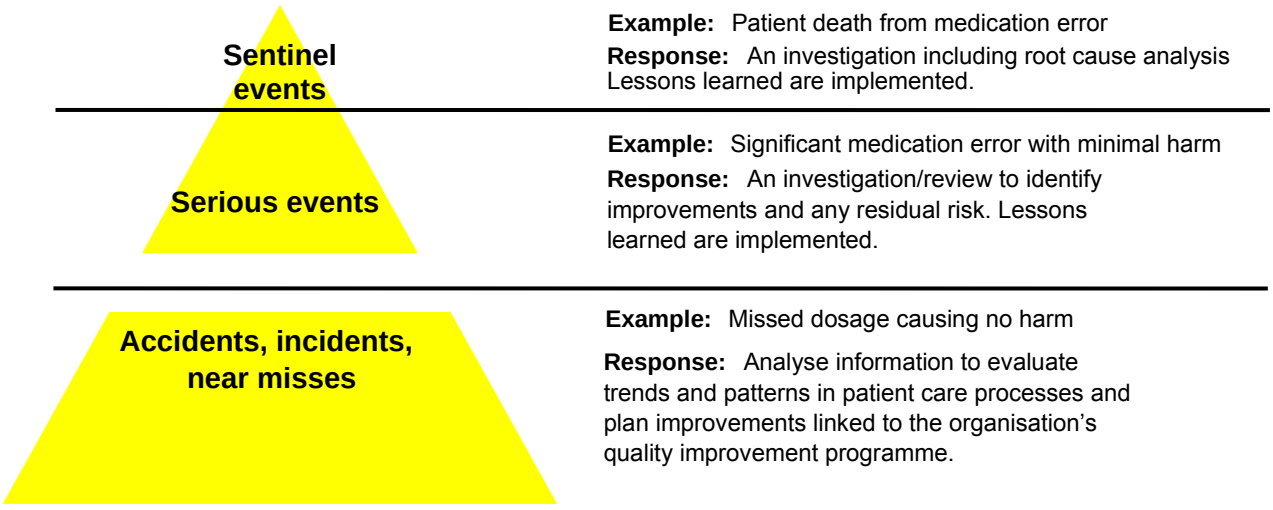
Open disclosure is the open discussion of adverse events with the affected parties and the associated investigation and recommendations for improvement.

Preventable describes an event that could have been anticipated and prepared for, but that occurs because of an error or some other system failure.

Root cause analysis is a method used to investigate and analyse a serious or sentinel event to identify causes and contributing factors, and to recommend actions to prevent a recurrence.

Medication errors are a common category of adverse event. The following diagram is an example of how a medication error can be classified and recorded based on the circumstances and outcome.

Figure 1: Classifying and recording a medication error



Understanding the Reporting of Serious and Sentinel Events

The following are some caveats that are crucial to understanding and interpreting the data on the following pages.

- The increase in reported events compared with last year means that the systems for capturing and reporting are improving. It does not mean the number of events is increasing.
- The increase in the number of reported events was expected and is likely to increase further as reporting systems improve. This increase is consistent with international experience and research.
- The international literature does not support the use of the number or rate of reported events as a way to judge a hospital's safety. There are considerable variations in the degree of reporting, not just in the rate of events.
- The number of events in some hospitals is very small, such that an increase by one event can result in a large statistical variation.
- The events documented in the DHB releases are voluntary reports. DHBs from which larger numbers of events are reported, and in greater detail, are likely to have better local systems for reporting and investigating, and probably a superior safety culture. A lower event rate for a DHB may well indicate a greater degree of under-reporting and under-investigating or, conversely, may be the result of a very active risk management programme.
- The national quality improvement programme on incident management has introduced a standard method for assessing the severity, the consequence and the likelihood of occurrence of an adverse event (see Appendix). This tool will improve standardisation and decrease the variation of the classification of incidents.

The aim of investigating serious events in greater detail and sharing the results is to identify system weaknesses so that they can be remedied.

Serious and Sentinel Events 2008/09

Comparison over time

Table 1 sets out data to compare the reporting of serious and sentinel events in the 2008/09 reporting year with those in the 2006/07 and 2007/08 reporting years.

Table 1: Sentinel or serious events, by DHB, 2006 to 2009*

DHB	Number of reported serious or sentinel events		
	2006/07	2007/08	2008/09
Northland	6	5	7
Waitemata	22	11	20
Auckland	26	30	31
Counties Manukau	7**	23	29
Waikato	24	36	60
Bay of Plenty	1	5	5
Lakes	1	6	3
Tairawhiti	1	3	7
Taranaki	5	7	2
Whanganui	3	4	7
Hawke's Bay	12	7	5
MidCentral	4	2	8
Hutt Valley	2***	7	10
Wairarapa	1	2	2
Capital and Coast	14	16	22
Nelson Marlborough	7	5	6
West Coast	5	11	2
Canterbury	22	41	44
South Canterbury	3	12	7
Otago	3	7	20
Southland	13	18	11
Total	**182**	**258**	**308**

* Reporting years are July 2006 to June 2007, July 2007 to June 2008 and July 2008 to June 2009.
** Four events in the 2007/08 reporting year were included in the figures for the 2006/07 reporting year. These events have been included in the totals for this later report period.
*** One event in the 2007/08 reporting year was included in the figures for the 2006/07 reporting year. This event has been included in the totals for this later report period.

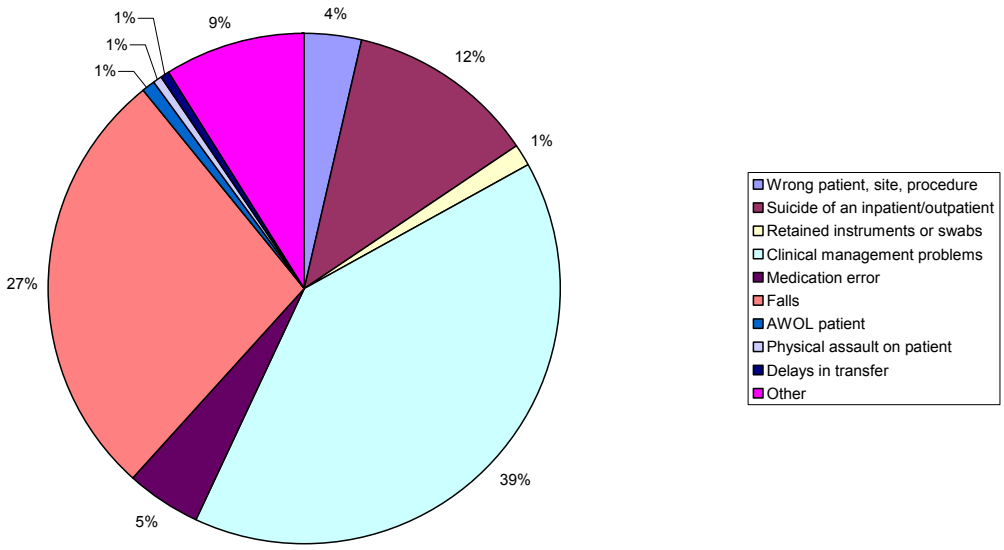
Types of events

Table 2 and Figure 2 summarise the nature and type of events recorded. Note that the DHBs are making the transition to recording information using a standardised national approach so there is variability in the data collected. This data should therefore be regarded as an indication of the most significant categories of events. It shows that the most common events are in the categories of clinical management, falls and medication error.

Table 2: Summary of event types from the 21 DHBs

Category	Number of serious or sentinel events	% of serious or sentinel events
Wrong patient, site, procedure	11	4
Suicide of an inpatient/outpatient	37	12
Retained instruments or swabs	4	1
Clinical management problems, made up of:		
4a – diagnosis	31	10
4b – treatment	36	12
4c – monitoring	18	5
4d – procedure	16	5
4e – investigation	1	
4f – discharge	10	3
4g – other	6	2
Multiple categories within clinical management	5	2
Clinical management problems sub-total	**123**	**39**
Medication error	15	5
Falls	85	27
AWOL patient	2	1
Physical assault on patient	2	1
Delays in transfer	2	1
Other	27	9
Total	**308**	**100**

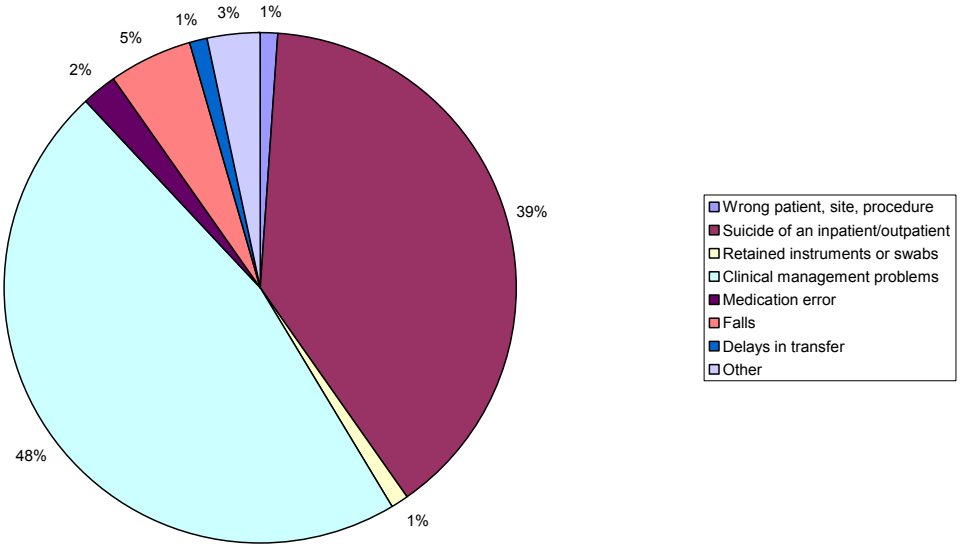
Figure 2: Percentage of events from 21 DHBs



Events associated with death of a patient

Figure 3 summarises the nature and type of events that were associated with a patient death. It shows that the cause of most of these deaths related to the clinical management category.

Figure 3: Nature and type of events associated with a patient death



Contributing factors

It is generally acknowledged that adverse events happen in any industry. Significant work in the past 20 years has built up a body of knowledge that contributes to our understanding of what causes these events.

In health care we have learned from how other sectors have investigated and prevented accidents. However, health care encompasses a degree of complexity that means many more variables affect outcomes compared with other sectors. Many safety nets are built into all health care, but unrecognised and unpredicted opportunities for error still exist.

A key point of learning from an adverse event is understanding what caused it to happen. Some of its causes may be immediately evident, but it is important to understand the underlying causes as well. To achieve this deeper understanding a root cause analysis is important. This type of analysis investigates what happened and identifies the factors that precipitated the events leading to the accident. Once we find the root causes of an event, it is possible to make changes to prevent similar events from occurring in the future.

As our knowledge of investigating events grows and our national reporting system matures, we will be better able to encourage accelerated learning from events.

Clinical Management: Lessons Learned

Serious and sentinel events involve a serious deterioration in a patient's condition that is not due to the natural course of the illness, or that differs from the expected outcome of treatment. Clinical management events include specific phases in the care process, such as:

- diagnosis
- treatment (including investigations ordered)
- monitoring of the patient following treatment
- safe discharge
- any complications arising from treatment.

There were 128 events reported in the clinical management category. This figure represents the largest proportion (39%) of serious and sentinel events reported. Table 3 breaks down this category into more specific subcategories used in all the reporting years.

Table 3: Classification of serious and sentinel events in the clinical management category, 2006/07, 2007/08 and 2008/09

Classification	Number of events (%)		
	2006/07	2007/08	2008/09
Diagnosis (including delayed and misdiagnosis)	6 (4%)	26 (21%)	34 (27%)
Treatment (including delayed and inadequate treatment)	18 (12%)	34 (28%)	39 (29%)
Monitoring/observations (not performed and/or actioned)	19 (13%)	17 (14%)	22 (17%)
Procedure-associated event or complication	60 (41%)	24 (20%)	16 (13%)
Investigations (delayed, not ordered or actioned)	10 (7%)	6 (5%)	1 (1%)
Discharge and transfer	23 (15%)	2 (2%)	6 (5%)
Other	12 (8%)	12 (10%)	10 (8%)
Total	**148 (100%)**	**121 (100%)**	**128 (100%)**

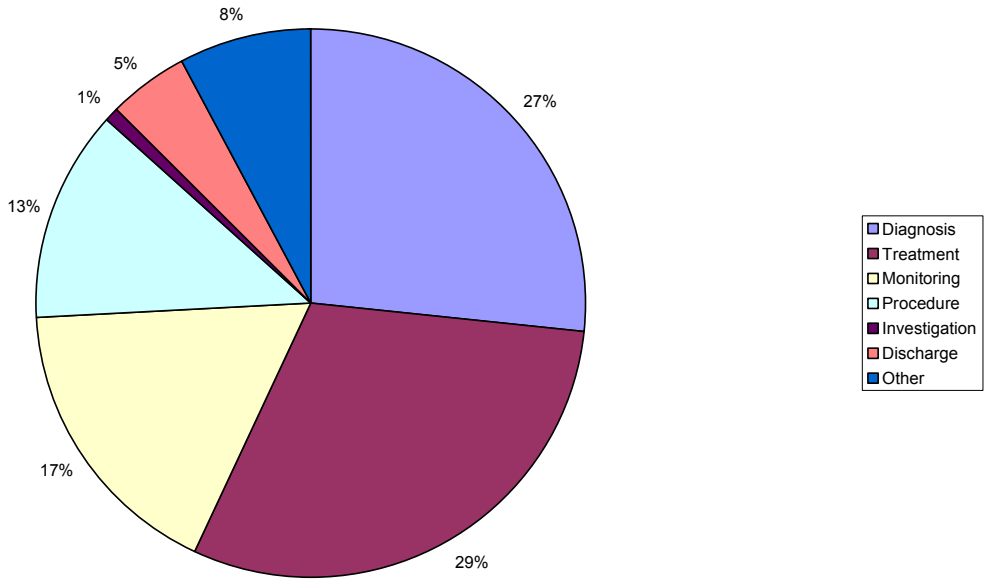
Note: Five events reported under the clinical management category fall into more than one subcategory.

As Table 3 shows, the two classifications with the most clinical management events were events or complications associated with diagnosis and delayed or inadequate treatment. Examples of these types of events are:

- preventable complications following surgical procedure or medical procedure

- equipment failure that affects a patient's condition
- a procedure carried out on the wrong patient
- delayed clinical staff response
- inadequate handovers.

Figure 4: Breakdown of clinical management serious or sentinel events



Actions taken to improve clinical management

Typically, actions taken to improve clinical management are concerned with systems and processes that could be improved to prevent the recurrence of such an event. A root cause analysis helps to identify the underlying causes that led to the event. The recommended actions therefore directly relate to the causes identified. Such actions might include:

- changes to patient monitoring and care delivery processes
- improved patient care planning
- changes to the physical environment
- increased supervision of staff
- staff education
- development of new policies, protocols or guidelines (eg, when to call the consultant)
- audit of compliance with policies, protocols and guidelines
- purchase of new equipment
- education and implementation of an early warning scoring (EWS) system
- improved staff handover procedures.

Falls: Lessons Learned

DHBs reported that 85 of the serious and sentinel events in the 2008/09 year were patient falls. This total represents 27% of the overall number of events reported. The reason for most of these falls related to a person's higher risk due to their physical or medical condition, combined with the DHB's inability to provide one-to-one care for every patient at risk of a fall.

Common recommended remedies reported for falls were, first, to identify those patients most at risk of falls and, second, to increase supervision of these patients. Other recommendations included:

- improving the use of falls risk tools to assess the patient's risk of falling, along with the use of care plans
- implementing hourly nursing rounds to anticipate toileting and other needs
- educating staff on falls prevention and management policy in this area
- monitoring the number of instances of falls
- maintaining equipment.

Initiatives to prevent falls

There will always be a risk of falls in hospitals given the nature of the patients that are admitted, and when falls occur the injuries may be significant. There is, however, much that can be done to reduce the risk of falls and to minimise harm while allowing patients the freedom and mobilisation they need during their stay in hospital.

There are many reasons why patients fall. For example, patients may undergo surgery that affects their mobility or memory; or they may need sedation, pain relief, anaesthetic or other medications that increase their risk of falling. Patients need to rapidly adapt to changes in their strength and mobility as they become ill and as they recover.

It is not desirable to aim for zero falls in hospital, because this would prevent many patients from mobilising and strengthening as part of their recovery. Falls reduction therefore must find the best fit between the patient's clinical needs to recover from their illness and the need to stay safe from the consequences of a fall.

Research shows that taking a multifaceted approach to reducing falls has the greatest effect. This approach involves making both clinical and environmental changes rather than focusing on one of these over the other. Many of the initiatives that DHBs have recommended support a multifaceted approach. For example, targeted risk assessment tools are being implemented and used in conjunction with other methods. This kind of initiative is consistent with

international research that shows that having a risk assessment tool does not in itself lead to an intervention.

Preventing falls is one of the priority areas in the New Zealand Injury Prevention Strategy, which is a partnership of organisations such as the Accident Compensation Corporation (ACC), the Ministry of Health and DHBs. Many DHBs have implemented a falls harm reduction programme that involves:

- assessing the falls risk of all patients over 65 years on admission to the ward
- documenting and implementing a falls minimisation programme for the patient, encompassing measures such as:
  - orienting the patient to their new surroundings
  - asking them to use the call button to summon the nurse for assistance prior to getting out of bed
  - introducing non-slip flooring
  - introducing hand rails
  - using adequate night-time lighting
  - implementing regular toileting times
  - assessing all medications for their appropriateness
  - referring the patient to physiotherapy
  - increasing observation as needed (in extreme cases, this measure will be one-to-one and may involve asking the patient's family to assist)
  - placing a falls risk sign above the patient's bed to alert staff and family to the patient's falls risk
  - educating family members on falls prevention
  - communicating the patient's falls risk at every staff handover
  - ensuring equipment is safe for use (eg, brakes on the beds are working).

The reports from DHBs highlight that falls have complex and wide-ranging causes, and so the interventions to reduce falls need to reflect this complexity and diversity. We are already starting to see the development of good policies and practices in this area across the DHBs.

Suicides: Lessons Learned

Although New Zealand has a high rate of suicide by international standards, it has been trending downwards over the past few years. This report deals only with the number of suicides of District Health Board patients in a hospital or community setting.

Suicides are tragic events that sadly occur both in the community and in the health care system. In the 2008/09 reporting year 8 suicides of DHB inpatients were reported. Another 29 recorded suicides occurred in the community after a client had had recent contact with a DHB.

Remedies to address this issue included reviewing risk assessment and observation procedures, reviewing physical environment risks, reconfiguring doors to improve observation, improving communication between hospital teams, and improving communication with families.

Initiatives to prevent suicide

The Ministry of Health has an action plan to prevent suicide, through which a number of initiatives are underway. A key initiative that has proven successful in DHBs is the Self-harm and Suicide Prevention Collaborative, or Whakawhanaungatanga. Under this initiative, emergency departments, crisis mental health services and Māori health services from 10 DHBs work together to improve the care of people who present at a crisis service and who have a risk of self-harm or suicide. The Collaborative focuses on the consumer's experience and has changed processes and care in accordance with a best practice guideline. The Collaborative is continuing under the guidance of the New Zealand Guidelines Group.

Medication Errors: Lessons Learned

DHBs reported 15 serious and sentinel events related to medication errors in the 2008/009 reporting year. They represent 5% of the total number of serious and sentinel events – the third largest category of events reported. Over half of the medication errors were either overdoses or wrong doses. In many cases, issues such as the similarity of packaging for different doses of the same medication contributed to the error. Other reasons were human error or unclear protocols.

Initiatives to prevent medication errors

Medication is one of the most common therapeutic interventions used in the health care system, so it is perhaps not surprising that medication errors are a relatively common adverse event. Approximately 1.6% of people admitted to hospital may experience an adverse medication event. Of these events, the majority are preventable and occur inside hospitals.

Several strategies have proven to be effective for reducing the rate of errors in medication management. They include:

- the use of standardised medication charts across the whole organisation or sector
- continually and effectively reconciling a patient's medication list, particularly when the patient is being transferred from one part of the health system to another part
- the introduction of safety mechanisms for the use of high-risk drugs
- verifying medications at the bedside, using bar-coded point-of-care systems
- using an electronic prescribing system.

In line with the above strategies, DHBs have taken the following initiatives to prevent the recurrence of such events:

- staff education in regard to dosage adjustments
- the introduction of PYXIS, an automated drug-dispensing machine, to some DHBs
- staff education on antibiotics that should be avoided when allergies are present
- introduction of the SWITCH campaign, which involves switching patients from intravenous to oral antibiotics
- the placement of warning notices in the dispensary area.

Safe medication management, one of the five national quality improvement programmes, is addressing the prevention of medication errors at national level.

Looking to the Future

Why is the safety of care not improving more quickly? To make substantial improvements it is important to continue to create an environment that encourages the reporting of adverse events. While substantial improvements to adverse event reporting are still required, as we continue to report on the serious and sentinel events we should see the development of a culture that encourages openness in admitting when things go wrong, addresses the root causes and prevents recurrence, where possible. At the same time, this culture needs to recognise that not all adverse events are preventable.

Over time we will see improved methods for recording and categorising events in DHBs, with a standardised approach nationally. This approach will in turn improve learning across DHBs and prevent the recurrence of serious and sentinel events. The overall result will be a safer health system.

It is through learning within DHBs, learning from other DHBs, increased public awareness of adverse events in health care, and the establishment of national and regional programmes that a safer health system will emerge. The Quality Improvement Committee's national quality improvement programme, which is concerned with the management of health care events, has developed a draft national policy on adverse event management that will improve reporting systems and produce nationally agreed definitions of adverse events – including serious and sentinel events. In particular, its emphasis on open disclosure training will contribute to improved reporting of serious and sentinel events.

One of the most effective strategies to rapidly improve quality, and one that has been implemented in several countries, is the use of national campaigns to prevent unnecessary deaths and reduce preventable harm. The use of a similar national campaign in New Zealand could well be considered as a future initiative to provide national and local measures of change and improvement to build a reliable national infrastructure for quality improvement actions and change.

Appendix: The Quality Improvement Committee

Patrick Snedden, Chair – Chair of Auckland DHB

Prof Alan Merry – Professor of Anaesthesiology, University of Auckland; Chair of the Quality and Safety Committee of the World Federation of Societies of Anaesthesiologists

Barbara Crawford – Quality and Clinical Risk Manager, Waikato DHB

Catherine Rea – *Quality and Risk Manager at Otago DHB and Chair of the National DHB Quality and Risk Managers Group*

Prof Cynthia Farquhar – *Postgraduate Professor of Obstetrics and Gynaecology, University of Auckland and Consultant at National Women's Auckland City Hospital, Chair of New Zealand Guidelines Group.*

Dr Jean Hera – community health worker / manager of the Palmerston North Women's Health Collective; public member of the Medical Council of NZ

Judi Strid – Director of Advocacy, Office of the Health and Disability Commissioner (HDC), to ensure close links on quality initiatives between the Quality Improvement Committee and the HDC

Dr Mary Seddon – Clinical Director, Quality Improvement Unit, Counties Manukau DHB; Senior Lecturer in quality improvement theory and techniques, Auckland School of Population Health

Dr Nick Baker – Paediatrician, Nelson Marlborough DHB; Chair of the National Child and Youth Mortality Review Committee