Queensland Government
Queensland Health

PATIENT SAFETY:
FROM LEARNING TO ACTION

FIRST QUEENSLAND HEALTH REPORT ON CLINICAL INCIDENTS AND SENTINEL EVENTS

April 2007

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April 2007

Foreword

On an average day in Queensland, well trained and dedicated staff provide care for 7456 inpatients and 25,093 outpatients in our public health system. For the overwhelming majority of patients, this care is delivered safely and effectively. It is important to acknowledge, however, that despite the best intentions of healthcare workers, things occasionally do go wrong. The Queensland community that we serve is aware of this problem. What they want to know is what is being done about it.

Adverse events cause physical and emotional harm to patients, their families and affected staff. This also generates a significant social and financial burden. It has been estimated that the direct costs associated with managing adverse patient events in Australia is $2 billion[1] per annum.

During the past ten years, publication of research findings from many countries, including Australia, has focussed attention on the unacceptable scale of the problem. This research and lessons from other high risk industries such as aviation, has led to a better understanding of the causes of patient harm and, importantly, what is required to improve safety. The Queensland Health Patient Safety Centre since its inception in January 2005 has been working with local health services staff, senior management, state and national bodies, to lay the foundations for a comprehensive approach to understanding and addressing major causes of patient harm in the Queensland public health system.

This report represents the first state-wide examination of patient safety incidents. For the first time in Queensland, the reporting, classification, analysis and action of patient incidents across the public health system is being presented to patients and staff. There is a risk that this report could potentially erode public confidence, at a time when the Queensland public health service can least afford it. I remain convinced, however, that change is only possible if we first have the courage to admit that the problem exists.

It is important to realise that without the courage and commitment of the dedicated people who work in the Queensland public health system, the information in this report would not be available. I would like to thank all the staff who contribute to improving patient safety by reporting and managing incidents.

We should not be pre-occupied with simply counting incident reports. Just as counting the number of speeding tickets issued does not indicate the number of drivers actually speeding, so too the number of incident reports does not accurately reflect the number of patient incidents occurring. As such, caution is required in using incident reporting as a measure of hospital performance. Organisations with a strong culture of reporting and effective local commitment to learning from incidents and addressing problems would be expected to report more.

State-wide learning from such events would not be possible without an enabling information management system. Since early 2005, the Queensland clinical incident reporting system (PRIME) has been progressively implemented across 19 of the now 20 public health service districts. Further development is ensuring that the system can effectively support the management and prevention of clinical incidents through providing information at all levels of the organisation.

"First do no harm" is a basic tenet of providing quality healthcare. We cannot always prevent humans from making mistakes. However, through a combination of reform at *individual, team* and *system* levels, we can prevent many of these mistakes from leading to patient harm.

The first step in the pursuit of improved patient safety is to acknowledge that the problem exists. It is only then that we can begin to address it. This report provides valuable information on the type of incidents that occur, the common causes and the actions being taken to make healthcare safer for patients.

I hope that the publication of this report will help to focus all in healthcare on the change that is needed to provide Queenslanders with the safest possible care. Our patients deserve nothing less.

Hon. Stephen Robertson MP
Minister for Health

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Executive Summary

Queensland Health is committed to being open and transparent to our patients and the community. We want to acknowledge that mistakes happen in health care and we want to learn from these mistakes and take action aimed at reducing the chance that they happen again. This report is part of that openness. Queensland Health believes that we won't encourage reporting and learning if we focus on blame and scapegoats – the things that go wrong in health care are usually the result of things going wrong at many points of a causal pathway all contributing to a bad outcome. Queensland Health is taking a number of steps to ensure that we do learn from the incidents identified in this report, including the establishment of the Patient Safety Centre and the activities listed in section 4.

Section 1: Understanding Patient Safety

- Evidence from many countries including Australia suggests that up to 1 in 10 patients suffer harm as an unintended consequence of healthcare in hospital;
- There is no evidence to suggest that Queensland Health is any better or worse than other health systems in Australia or overseas;
- Most harm is caused by *well intentioned and competent staff making errors* rather than bad or incompetent professionals;
- Punishing individuals involved in adverse events does nothing to stop someone else making the same mistake and creates a *culture of fear* and reluctance to report;
- Understanding the underlying system factors that lead to patient harm and fixing them, leads to improved safety;
- Designing care processes that make it *hard for staff to do the wrong thing*, is the best way to ensure patients are safe (Human Factors Engineering).

Section 2: Queensland Health Patient Safety System

- The *Clinical Incident Management Implementation Standard* endorsed in June 2006, provides a "how to" guide for staff at all levels;
- 38 Patient Safety Officers have been trained, deployed and supported across the state to support patient safety improvement at the local level;
- There is a standardised format for incident reporting, escalation, analysis, and tracking of corrective actions;
- Patient safety training has now been conducted on site in all health service districts;
- Over 1000 staff have been trained in Root Cause Analysis;
- Clinical incident information system (PRIME) deployed in 19 of the current 20 health service districts since its inception in 2004;

- Over 6000 staff completed the Human Error and Patient Safety (HEAPS) training course since 2003;
- A Bill is currently before the Queensland Parliament to support effective Root Cause Analysis of serious adverse events.

Section 3: Sentinel Events and Clinical Incidents: Reports from 2005/06

- During 2005/06:
    - 19 Sentinel Events (national definitions) were reported to the Patient Safety Centre;
    - 143 Supplementary Sentinel Events (Queensland Health definitions) were reported to the Patient Safety Centre.
- The top 5 contributing factors to Sentinel Events were:
    - Policies and procedures (23%);
    - Staff factors (20%);
    - Communication (20%);
    - Information (12%);
    - Coordination (9%).
- The top 5 sub-category contributing factors to Sentinel Events were:
    - Lack of availability of policies or procedures (16.7%);
    - Staff to staff communication failures (13.7%);
    - Inadequate training (7.5%);
    - Poor coordination between providers of care (7.1%);
    - Allocation scheduling (7.1%).

- During 2005/06, 33,226 Clinical Incidents (includes harm and near misses) were reported and managed in PRIME.
- On average 3,000 clinical incidents are currently reported per month.
- The top 5 primary clinical incident types reported were:
    - Falls (25%);
    - Medication (21%);
    - Aggression (10%);
    - Behavioural (8.2%);
    - Documentation (7.7%).
- Clinical Incident reporting rate per 100 admissions is 5.4%.

Section 4: From Learning to Action

- Queensland Health is using the information from clinical incident and sentinel event reporting to learn about the underlying causes of patient harm and take action to improve safety.
- Comprehensive programs are in place focussed on reducing harm from *falls, pressure ulcers, medication events, infection, surgical procedures* and *mental health related injury*.
- All Queensland Health hospitals now use a standard medication chart which is reducing harm from medication adverse events.
- Patients having surgery undergo standardised pre-operative checks *(similar to a pre-flight check for pilots)* including marking the operation site, to prevent wrong site/side/patient surgery.

- The Clinical Handover Program is exploring ways in which handover of patient information can be standardised to prevent harm from communication failure.
- Current work is targeting introducing patient safety training to undergraduate clinical courses, use of technology to prevent common mistakes and involving patients in speaking up for safety.

"Never doubt that a small group of thoughtful, committed people can change the world …. Indeed, it is the only thing that ever has….."

Meade

Section 1

Understanding Patient Safety

This introductory section provides an overview of the problem of patient harm associated with health care in Australia and internationally. It summarises the evidence, the extent of the problem and the reasons why errors occur. It explains why the current focus of punishing individuals making errors will not work, and what we can learn from other industries that have improved safety by designing systems around humans.

1.1 Common terminology in patient safety

As with most areas of science, patient safety has a vocabulary of commonly used words or 'jargon'. Wherever possible, plain English has been used in this report. However, the reader will benefit from an understanding of some commonly used terminology.

Clinical Incident
A *"clinical incident"* is any event or circumstance which has actually or could potentially, lead to unintended and/or unnecessary mental or physical harm to a patient.

Adverse Event
A clinical incident in which unintended or unnecessary harm resulted to a patient.

Near Miss (Also referred to as Near Hit or Close Call)
An incident which could have, but did not, result in harm, either by chance or through timely intervention.

Patient Harm
Death, disease, injury and/or disability experienced by a patient.

Human Factors Engineering (HFE)
The area of knowledge dealing with the capabilities and limitations of human performance in relation to the design of machines, jobs, and other modifications of the human's physical environment.

Root Cause Analysis (RCA)
Systematic process whereby factors that contributed to an incident are identified.

Sentinel Event
An unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof.

Systems Failure
A fault, breakdown or dysfunction within an organisation's operational methods, processes or infrastructure.

It is important to understand that *clinical incidents* comprise *adverse events* (where patients are harmed) and *near misses* (where harm did not occur either through chance or a timely intervention).

1.2 What is the evidence that patient safety is a problem?

Whilst the majority of patients derive improved health as a result of healthcare interventions, Australian published data suggests that up to 1 in 6 patients receiving hospital care suffer harm as an unintended consequence of their care.[1,2] These data have been reproduced in many countries with modern health care systems.[3,4,5,6]

The Quality in Australian Health Care Study[2] suggests that 50% of these events are preventable with 14% resulting in permanent disability and 5% in death. It is also known that falls, pressure ulcers, health care associated infections, medication adverse events, injury related to mental health events and surgical procedures account for most of the avoidable harm[7].

Adverse patient events cause physical and emotional harm for patients, families and affected staff. They also generate a significant financial and social burden. It has been estimated that the direct costs alone associated with managing adverse patient events in Australia is $2 billion per annum.[1]

Prevention of litigation is not the primary goal of patient safety. Only 1-2% of patients suffering an adverse event ever litigate.[4] Clearly, therefore, focussing only on reducing litigation will not significantly alter the burden of harm.

1.3 Why do patients suffer inadvertent harm as a result of healthcare?

The overwhelming majority of adverse events are caused by intelligent, well intentioned and competent individuals working in systems not designed to 'trap' human errors before they can lead to harm. It is now well recognised that adverse patient events rarely have a single cause, and that they most commonly result from various combinations of individual, team, organisational and environmental factors.[9,10,11,12]

Human performance can never be perfect, and yet health care providers often have unrealistic expectations of themselves, believing that if they try hard enough, they won't make mistakes. Reliance on vigilance and memory as a way of ensuring safety is becoming increasingly prone to failure as the complexity of healthcare increases.

Previous attempts to improve safety have focussed mainly on the individual[3]. Adverse events have been viewed as individual failures, and resulted in a range of consequences from mandatory retraining and internal disciplinary action to referral for disciplinary

proceedings by the registering authority and even criminal prosecution. This has often led to professional and personal humiliation for staff already suffering the emotional trauma of involvement in the adverse outcome.

Not only has this failed to address the underlying causes of patient harm, it has led to the creation of a culture of fear and secrecy for staff around reporting incidents.

1.4 Why do humans make errors? *"To Err is Human"*

Whilst we often expect perfect performance of health professionals, this is unrealistic. Health professionals in Queensland are extremely well trained. However, they are also human.

Errors are a feature of the human condition. All humans make errors and in certain circumstances, the capacity for making errors increases. Factors such as being hungry, stressed, late or tired actually increase the likelihood of errors. This is equally true for health care workers as it is for the general public. It is for this reason that to focus only on individual training and competence as a strategy for keeping patients safe is not enough.

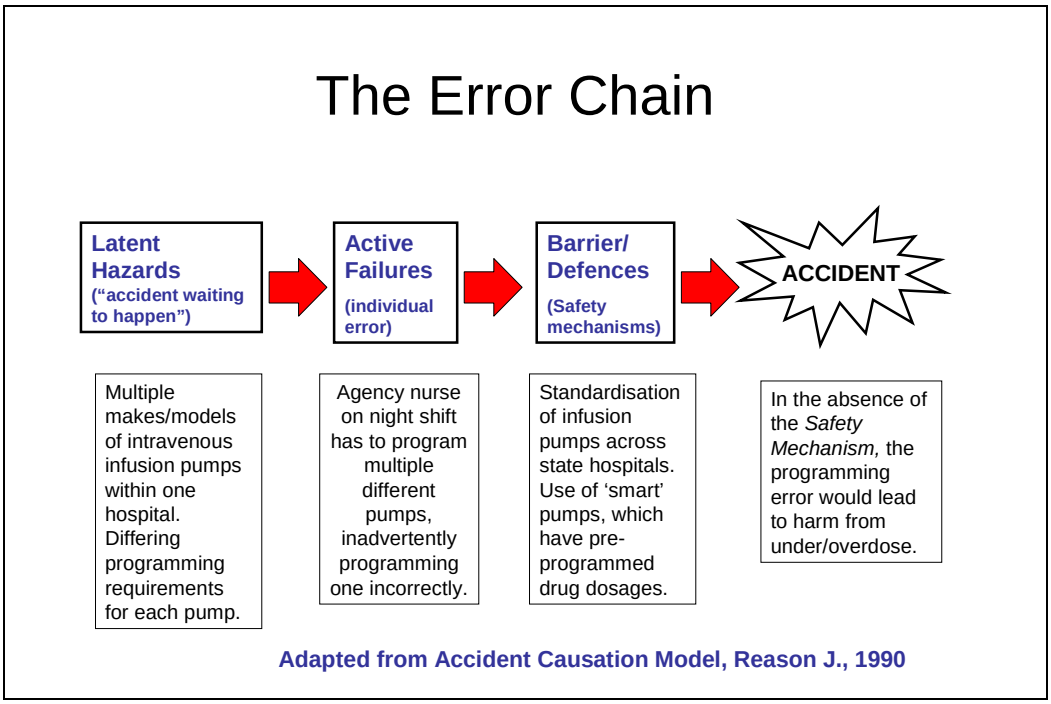
We have all forgotten to pick up that item from the supermarket, misplaced keys or written down an incorrect telephone number. These same types of simple errors can lead to serious harm in healthcare. An incorrect drug dosage calculation or forgetting to communicate an abnormal test result may be a simple error of a busy nurse or doctor, but can have disastrous consequences for a patient. Whilst errors are not morally wrong, when they are associated with serious consequences, professionals are often morally judged.

Health professionals work in circumstances that require long periods without meal breaks and under stress. As the complexity of healthcare increases, this creates multiple opportunities for humans to make errors and for things to go wrong. Nowadays, we recognise that we need to change the processes of care to improve safety. For example, an infusion pump that, through effective design, prevents an incorrect drug dose from being programmed provides a significantly greater safety margin than merely relying on the memory or vigilance of individual doctors and nurses.

Accident causation models can help in understanding how errors lead to patient harm, and where to target safety interventions. Pre-existing factors (latent hazards) combine with individual practitioner error to cause a patient injury. Effective safety barriers 'trap' the error before it leads to patient harm.

The example in Figure 1 illustrates how a latent hazard of multiple pumps combines with a common human error to lead to patient harm. Effective safety barriers targeting the latent hazard rather than the individual are more likely to prevent patient harm.

Figure 1 – Example of *patient harm from infusion pump error*



1.5 Why is incident management an effective strategy to reduce harm?

Evidence from other high risk industries over the past thirty years suggests that in order to improve safety, it is essential to acknowledge that human error is inevitable, and that we must re-design systems to 'trap' errors before they lead to harm. These so-called High Reliability Organisations (HROs) have focussed on building a culture where *adverse events* and *near misses* are valued as opportunities to learn about and fix vulnerable systems. This has resulted in significant improvements in safety and lessons that can be successfully applied to healthcare.[13,14] In order to do this we must create a culture in health care where staff are encouraged to report incidents without fear. Only then can we understand and fix vulnerable care processes.

Effective strategies include a focus on teams, communication and re-design of high-risk processes using a Human Factors Engineering (HFE) approach. Such systems contain ***forcing functions*** which reduce the reliance on memory and vigilance (paying attention) and through the effective use of 'hard-wired' solutions, unambiguous feedback, displays and instructions, make it difficult for staff to make a mistake *(An everyday example of a forcing function is the petrol pump nozzle. The design of the leaded fuel nozzle is such that it cannot physically be introduced into the fuel tank of a vehicle that takes unleaded fuel. It is not necessary to have had training or have read the policy, it is physically impossible to do the wrong thing.)*

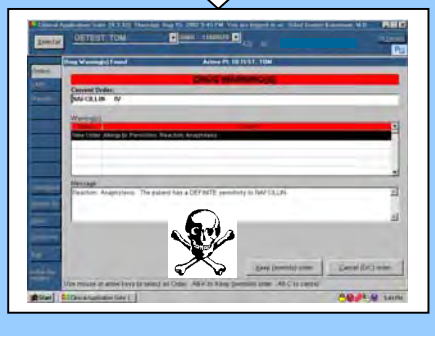
What is a *Forcing Function*[15]?

"A forcing function is a behaviour-shaping constraint, a means of preventing undesirable user input usually made by mistake".

Two examples of *Forcing Functions* in healthcare:

Patient bar-code systems make it harder to make patient identification errors and subsequent harm

Computerised prescribing with "decision-support" prevents incorrect dosing and drug interaction errors



Such design is rarely used in healthcare. Reliance on memory and vigilance of individuals is often the only barrier between a high risk procedure and patient harm.

High risk industries like aviation have found that incident management systems that emphasise *prevention*, rather than *punishment*, are an effective strategy in developing the organisational culture necessary to improve safety.

1.6 Will individuals be held accountable when patients are harmed?

Individual health care professionals will always be held accountable for their actions. In the aftermath of an adverse event, professionals are often subjected to intense scrutiny of their actions through external processes. These processes include professional regulators, the coroner, civil and occasionally criminal proceedings. Most of these statutory processes are focussed on ascertaining whether a practitioner is guilty of some form of professional misconduct or *'negligence'*. Indeed, in civil cases, compensation can only be awarded if negligence is proven.

As an employer, Queensland Health accepts that it is essential for staff to understand how they will be treated by the employer when a serious adverse event occurs. Staff have the right to be treated in a fair and just manner.

To this end, Queensland Health undertakes to support employees involved in adverse events and defines behaviours that would not attract employer support. These so-called '*blameworthy'* acts clearly define the line between genuine mistakes and recklessness or intentional harm.

Blameworthy Act*
An intentionally unsafe act by a staff member.
This is defined as:

- ***A purposefully unsafe act;***
- ***An act involving alcohol or illicit substance abuse by provider;***
- ***Patient abuse;***
- ***Criminal act.***

*Queensland Health Clinical Incident Management Implementation Standard, 2006.

The overwhelming majority of adverse events **do not** fall into this category. For all other events, staff can expect the focus of efforts to be on correcting the underlying system issues that pre-dispose to others making the same mistake, rather than being punished.

Occasionally, adverse events can be associated with a competency deficit of an individual practitioner. This requires an approach which is aimed at identifying the competency deficit and targeted remediation. Adverse event monitoring is not the best source of information to monitor the performance of individual professionals. There are much more sensitive ways to do this, however this is outside the scope of this report.

Section 1: Key Messages

- It is estimated that up to 1 in 10 patients suffer harm as an unintended consequence of healthcare in hospital;
- Most harm is caused by *well intentioned and competent staff making errors* rather than bad or incompetent professionals;
- Punishing individuals involved in adverse events does nothing to stop someone else making the same mistake and creates a *culture of fear* and reluctance to report;
- Understanding the underlying system factors that lead to patient harm **and fixing them**, leads to improved safety;
- Designing care processes that make it *hard for staff to do the wrong thing*, is the best way to ensure patients are safe (Human Factors Engineering);
- Individual health care professionals will remain accountable for their actions through existing statutory processes.

Section 2

Queensland Health Patient Safety System

This section provides an overview of how Queensland Health is building the capacity to prevent and address adverse events. Through the development and implementation of a *best practice* Standard*, there is a clear pathway of accountability for addressing patient safety from the frontline practitioner through to the Director General. This section summarises the Standard*, describing the people, processes and supporting systems that enable Queensland Health to learn from *adverse events* and *near misses* and fix priority problems at local, area and state levels.

**Queensland Health Clinical Incident Management Standard, 2006.*

2.1 How has clinical incident management changed in Queensland Health since 2004?

The first state-wide Queensland Health Incident Management Policy was endorsed in June 2004. This was an important document and provided a broad framework for the prevention and management of incidents. However, implementation of the Policy was not well resourced and lacked the necessary trained staff, tools and processes to ensure the benefits could be delivered.

Since the Patient Safety Centre commenced in January 2005, considerable work has been undertaken to build the foundations that underpin a *best practice* Patient Safety System. This system, described in this Section, ensures that information from clinical incidents can be effectively prioritised and used at all levels of Queensland Health to bring real safety improvements to staff and patients at the bedside.

2.2 What are the key components of the Queensland Health Patient Safety System?

The Patient Safety System has the following key components:

1. **People:** Clinical staff, support staff, patient safety officers, managers and executives are "safety aware" and know what to do to prevent and address adverse events.

2. **Processes:** A *Clinical Incident Management Implementation Standard* that outlines the 'how to' of clinical incident management, and provides tools to support staff.

3. **Structure:** Accountability for patient safety is clearly defined from practitioner through district and area health service management to the Director General.

4. **Enabling information system:** A state-wide web-based information system (PRIME) supports local management of incidents and facilitates analysis and tracking of actions at local, area and state-wide levels.

5. **Area Clinical Governance Units:** Support implementation and monitor compliance with patient safety initiatives within area health services.

6. **Patient Safety Centre:** Develops, implements and supports the Queensland Health Patient Safety System. Implements state-wide patient safety initiatives, and advises Queensland Health on patient safety issues.

7. **Other supporting bodies:** Several other units address specific patient safety risks at a state level. These include the *Safe Medication Practice Unit* (SMPU), *Centre for Healthcare Related Infection and Surveillance* (CHRISP), *Clinical Practice Improvement Centre* (CPIC) and *Skills Development Centre* (SDC).

2.3 Queensland Health Patient Safety System principles

Seven key principles underpin the operation of the Patient Safety System in Queensland Health. These are:

1. **Fairness:** Staff, patients and visitors involved in incidents will be entitled to be treated fairly by Queensland Health.

2. **Accountability:** Queensland Health and its staff have a duty to take reasonable care to avoid causing harm to patients. Accountability for incident management will be clearly articulated.

3. **Transparency:** Full and open communication should occur as part of incident management. Staff and patients reporting incidents should receive feedback on the results of any investigation/analysis and any endorsed preventive actions.

4. **Improvement focus:** Analysis of incidents should focus on addressing three questions: ‘what happened?’, ‘why did it happen?’ and ‘how could it be prevented?’ Implementation and evaluation of corrective actions is an essential component of incident management.

5. **Focus on systems, not individuals:** Analysis should focus on identifying and correcting underlying system problems rather than focussing on an individual.

6. **Obligation to act:** The obligation to take action to remedy problems is clearly accepted and the allocation of this responsibility is unambiguous and explicit.

7. **Prioritisation of action:** Resources are directed to those areas where the greatest improvements are possible.

2.4 Queensland Health Patient Safety System: *"Triple loop"* learning and action

Figure 2, on page 19, provides an illustration of the processes and governance of the Queensland Health Patient Safety System. The so-called "Triple loop" approach to governance ensures that there is review and action at three levels. These are described below:

➢ Learning and action loop 1: The clinical unit providing care

At the heart of the System is the patient and immediate clinical staff providing care. The System is totally dependent on *reporting, learning* and *action* at this local clinical unit level to be effective. The Patient Safety Centre has delivered extensive training and tools to support clinical staff including:

- Root Cause Analysis training in every health service district with over 1000 staff trained;
- Implementation of a clinical incident information system (PRIME) deployed in 19 of the now 20 health service districts with 33,226 incidents (includes harm and near misses) reported and managed during 2005/06;
- Over 6,000 staff trained in Human Error and Patient Safety (HEAPS) course and incident analysis tool.

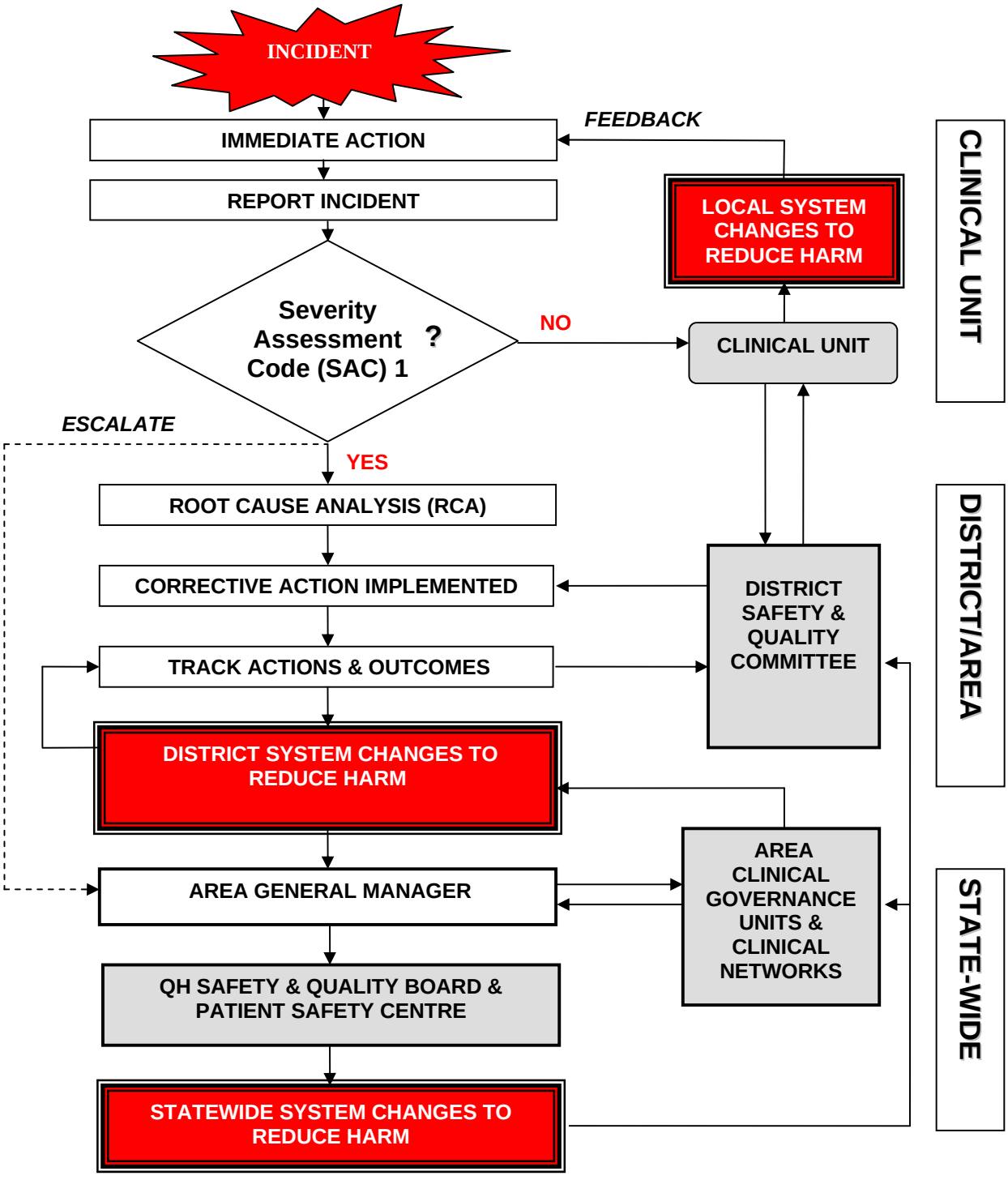
➢ Learning and action loop 2: The health service district

At the next level, the health service district provides support and leadership through the district safety and quality committee. This committee ensures that the recommendations from Root Cause Analysis (RCA) are implemented and monitored for effectiveness. Monitoring the safety and quality of district services and ensuring action is taken to address key patient risks is a core role of this committee.

➢ Learning and action loop 3: Area and state health system

The Patient Safety Centre and other state-wide units provide a link between district health services and the Queensland Health Safety and Quality Board to ensure that state-wide patient risks are identified and addressed. This requires analysis of data from incident reporting systems as well as other sources of data. State-wide safety improvement initiatives are endorsed and monitored through this Board. In addition, amendments to legislation due in 2007 will ensure that Root Cause Analysis provides benefits to patient safety without compromising the rights of individual staff.

Figure 2: QUEENSLAND HEALTH PATIENT SAFETY SYSTEM SUMMARY



Adapted from Queensland Health Clinical Incident Management Standard, 2006.

2.5 What is the goal of the Patient Safety System?

"The goal of the Patient Safety System is to **prevent patient harm"**

This is achieved by having processes that:

a) Identify and treat hazards **before** they lead to patient harm (pro-active);
b) Identify when patients are harmed and promptly **intervene to minimise the harm** caused to a patient as a result of the incident (reactive);
c) Ensure that lessons learned from clinical incidents are applied through **taking corrective actions** designed to minimise the risk of similar incidents occurring in the future (reactive and proactive).

2.6 How are clinical incidents managed in Queensland Health?

Clinical incidents are identified and reported by any staff member according to a *Severity Assessment Code* or SAC. The SAC is dependent on the *consequences* of the incident on the patient and is measured in terms of patient harm. See Table 1 (page 22).

The most serious events are SAC 1 which is *death or permanent loss of function*. These events, being the most serious, require mandatory escalation to the Director-General through the Area General Manager. This escalation is done in a standardised fashion using a *Reportable Incident Brief* (RIB).

38 Patient Safety Officers are deployed in health service districts around the state to ensure that each district is supported to comply with the Incident Management Standard. The Patient Safety Officers are clinicians trained in human factors engineering principles and systems analysis techniques. Their functions are in patient safety training for staff, incident analysis, and clinical audit.

What is a Patient Safety Officer?

Every health service district has a Patient Safety Officer. Usually clinicians, they are specially trained in Human Factors Engineering and systems analysis. They provide support to clinicians and managers in three main areas:

1. Technical support to sentinel event management and Root Cause Analysis
2. District staff training and orientation in patient safety and systems analysis
3. Process audits

The Patient Safety Officers form a network, supported by the Patient Safety Centre to ensure a consistent approach to the management of adverse events across the Queensland Health.

Dr Jim Bagian, Director of National Center for Patient Safety for Veterans Health Administration, USA presenting certificates at inaugural Patient Safety Training, Brisbane 2005.

2.7 Incident prioritisation and action

Once an incident is identified by a member of staff, this is reported using a web-based incident information system (PRIME).

Action in relation to the incident is determined by a priority rating system known as the Severity Assessment Code (SAC). This is summarised in Table 1, Page 22.

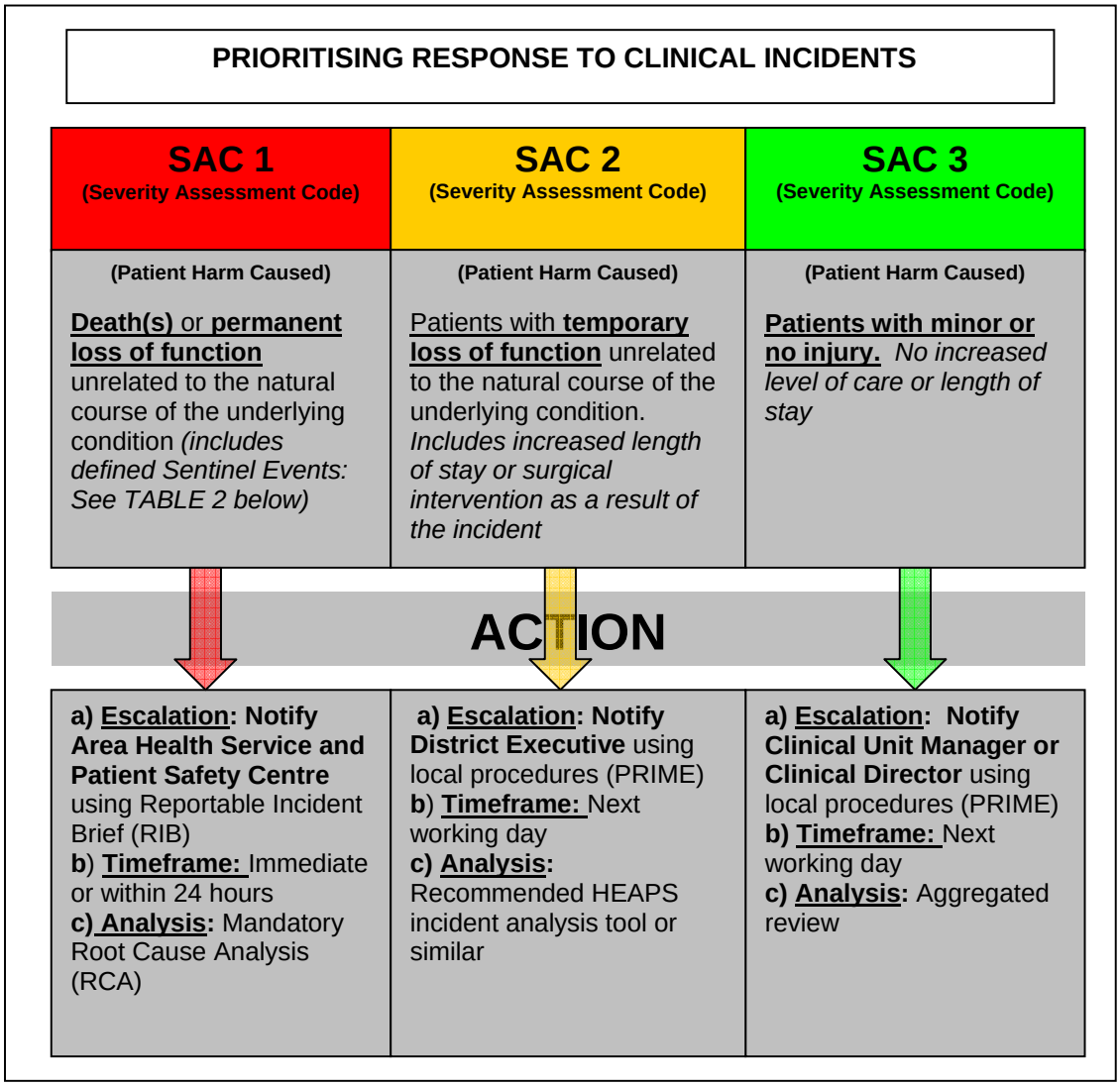
The line manager (usually the Nurse Unit Manager or Clinical Director) has the primary responsibility for ensuring that the incident is appropriately managed.

SAC1 events are normally subject to a mandatory *Root Cause Analysis* (RCA) conducted in the district health service.

> "A Root Cause Analysis (RCA) is a systematic process whereby factors that contributed to an incident are identified."

The RCA is conducted by a team specifically trained in this method. This tool, used in industry and validated for healthcare, is used to establish *what happened*, *why it happened* and *how it can be prevented*. It looks beyond the immediate causes by continually asking *why* to establish the root causes of an adverse event.

Table 1 – Prioritising response to clinical incidents



2.8 Queensland Health Sentinel Event List

In 2004, Australian Health Ministers[16] made a commitment to submit state based sentinel event data to support a National Sentinel Event Report. Queensland Health submits data for this Report. Table 2 (page 23) below provides a list of specified Sentinel Events which are considered under the category of SAC 1 events in the Queensland context.

For a comprehensive outline of the processes and tools used to support the Patient Safety System, refer to the *Queensland Health Clinical Incident Management Implementation Standard 2006*, available on http://qheps.health.qld.gov.au/psc/ or http://www.health.qld.gov.au/patientsafety/.

Table 2 – Queensland Health Sentinel Event List 2006

QUEENSLAND HEALTH SENTINEL EVENT LIST* 2006

1) **Death of a patient receiving inpatient mental health care**;**
2) **Maternal death or serious morbidity associated with labour or delivery;**
3) **Medication adverse event leading to the death of patient reasonably believed to be due to incorrect management of medications**;**
4) **Intravascular gas embolism resulting in death or neurological damage;**
5) **Haemolytic blood transfusion reaction resulting from ABO incompatibility;**
6) **Procedures involving the wrong patient or body part;**
7) **Retained instruments or other material after surgery requiring re-operation or further surgical procedure;**
8) **Infant abduction or discharged to wrong family;**
9) **Death or permanent loss of function unrelated to the natural course of the underlying condition***.**

**Definitions 1) thru 8) consistent with Australian Council for Safety and Quality in Healthcare National Sentinel Event List;*
***Sentinel Event definitions 1) and 3) have been modified from the national sentinel event list to improve clarity and respond to issues raised by staff during consultation;*
****Sentinel Event definition 9) is not a national sentinel event definition.*

Section 2: Key Messages

- *Clinical Incident Management Implementation Standard* endorsed in June 2006, provides a "how to" guide for staff at all levels;
- **38 Patient Safety Officers trained, deployed and supported** across the state to support patient safety improvement at the local level;
- Standardised format for incident reporting, escalation, analysis, and tracking of corrective actions;
- **Patient safety training conducted on site in all health service districts**;
- **Over 1,000 staff trained in Root Cause Analysis**;
- Clinical incident information system (PRIME) deployed in 19 of the now 20 health service districts with **33,226 clinical incidents reported and managed in the system** during 2005/06;
- **Over 6,000 staff** completed the **Human Error and Patient Safety (HEAPS)** training course since 2003;
- A Bill is currently before the Queensland Parliament to support effective Root Cause Analysis of serious adverse events.

Section 3

Sentinel Events and Clinical Incidents: *Reports from 2005/06*

This Section provides an analysis of the data from reported clinical incidents and sentinel events* from Queensland Health district health services from July 2005 to June 2006. The data sources include sentinel events reported manually during this period to the Patient Safety Centre and PRIME** clinical incident data. A number of case studies will be used to illustrate how the analysis of serious adverse events can be used as an opportunity to identify system failures and apply corrective actions to prevent future events from occurring.

A sentinel event is: An unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof.*
The Queensland Health Sentinel Event List changed to align with the National Sentinel Event List during fiscal year 2005/06.
***PRIME is a web-based clinical incident management information system to support reporting of clinical incidents. It was progressively implemented during 2005/06.*

How to interpret these data

There are a number of notes of caution in interpreting these data:

- Due to progressive implementation of PRIME during this period, reporting varies significantly through the year.
- International evidence suggests that incidents are significantly under-reported. The number of reported incidents in PRIME is unlikely to reflect the actual number of incidents occurring.
- Counting incident reports is generally not useful. Using incident reports as a means to understanding the root causes of patient harm is the best way to use this data.
- High numbers of reported incidents does not equate to poor safety performance. In fact, a safe organisational culture encourages reporting as a means of learning and improvement.
- The source data are confidential and de-identified.
- The data do not include incident reports from patients and consumers. Work needs to be done to ensure that the public can report incidents.

3.1 National Sentinel Event reporting (public sector) 2005/06

The National Sentinel Event List (Table 3 below) defines eight event categories and was developed by the Australian Council for Safety and Quality in Healthcare. Each state is required to collect data on sentinel events reported under each category. Due to differences between the states in interpretation of the event categories and reporting behaviours in hospitals, the data should not be used to compare state performance in patient safety.

Table 3 – National Sentinel Event reporting: jurisdictional comparison

National Sentinel Event		QLD 05/06	NSW 05/06	VIC 05/06	WA 05/06
SE1	Procedure involving the incorrect patient or body part	6	18	25	4
SE2	Suicide in hospital	4	6	7	4
SE3	Retained instruments or other material after surgery	6	11	6	1
SE4	Intravascular gas embolism resulting in death or neurological damage	-	-	-	-
SE5	Haemolytic blood transfusion reaction resulting in ABO incompatibility	1	-	-	-
SE6	Medication error resulting in death of a patient	1	-	2	1
SE7	Maternal death or serious morbidity associated with labour or delivery excluding neonates and babies	1	3	2	1
SE8	Infant discharged to wrong family	-	-	-	-
	TOTAL :	**19**	**38**	**42**	**11**

3.2 Additional reporting on Sentinel Events in Queensland (public sector) 2005/06

During the 2005/06 fiscal year, Queensland Health policy for reporting sentinel events exceeded the national reporting requirements. Table 4 provides a summary of reporting against eight supplementary sentinel event categories in Queensland. These categories are not used by other states and represent a commitment towards a more robust approach by Queensland to understanding patient safety risks.

These supplementary sentinel event categories were developed in Queensland after extensive consultation and were mandated through the Incident Management Policy of June 2004. This Policy also required that all sentinel events undergo investigation using Root Cause Analysis (RCA).

Table 4 – Queensland Supplementary Sentinel Events (public sector) 2005/06

Queensland Supplementary Sentinel Events	2005/06
Death of an employee during the course of their duties.	-
Death of a patient during inter-hospital transfer.	5
Sudden and unexpected death of an infant associated with labour or delivery.	15
Death of a patient during surgery.	5
Unexpected death of a patient.	32
The suicide or unexpected death in respect of any patient (inpatient or community) of a mental health service, any person who has been in contact with a mental health service or emergency department within seven (7) days preceding the incident.	81
Death of any person through shooting by the Queensland Police Service where the deceased had, or is reasonably suspected to have had, a serious mental illness.	1
Death of any other person due to the actions of a person who has, or is reasonably suspected to have, a serious mental illness.	4
TOTAL:	**143**

Comparing these data with other states is not possible due to significant variation in current sentinel event reporting criteria in each jurisdiction. Queensland is working with the other states and the Australian Commission for Safety and Quality in Healthcare with a view to improving the consistency and scope of data collection within the public and private sectors. This will ensure that valid comparison can occur between states for this important patient safety data. Future Queensland reports will reflect these changes.

It is important to note that hospitals or jurisdictions that report greater numbers of sentinel events are not necessarily less safe. Organisations that have a culture that supports learning about and fixing problems tend to report more. Organisations that punish staff for reporting failures tend to report less.

3.3 Contributing factors to Sentinel Events

Classification systems for sentinel event contributing factors remain developmental. The current system adopted in the draft national sentinel event report is based on a *priori* framework which was tested by application of event information. The classification is consistent with that used in the unpublished National Sentinel Event Report, Australian Institute Health and Welfare (AIHW) 2005.

This framework is based on work from contributing factor descriptions published in the Sentinel Event Program Annual Report 2003-04 for Victoria (Department of Human Services 2004) which refers to antecedents in the US Joint Commission on Accreditation of Health Care Organization's Root Cause Analysis template (http://www.jointcommission.org/SentinelEvents/) and the New South Wales Health Institute for Clinical Excellence Checklist Flip Chart for Root Cause Analysis (NSW Health 2003). Further work is being done internationally to develop a classification system (See http://www.who.int/patientsafety/en/).

The major contributing factors and subcategories form a basic taxonomy of causation of sentinel events.

3.3.1 Contributing factors

All Severity Assessment Code 1 (SAC 1) Reportable Incidents and Sentinel Events undergo a systematic process whereby factors that contributed to the incident are identified. Root Cause Analysis is undertaken to determine the underlying cause and contributing factors.

Of the total 162 sentinel events reported in Queensland, 110 had a Root Cause Analysis (RCA) completed. During the reference period, training and development in Root Cause Analysis was being implemented, hence 100% compliance was not achieved. It is expected that in the next reporting period, Root Cause Analysis training across Queensland Health districts will be completed and compliance will be significantly improved.

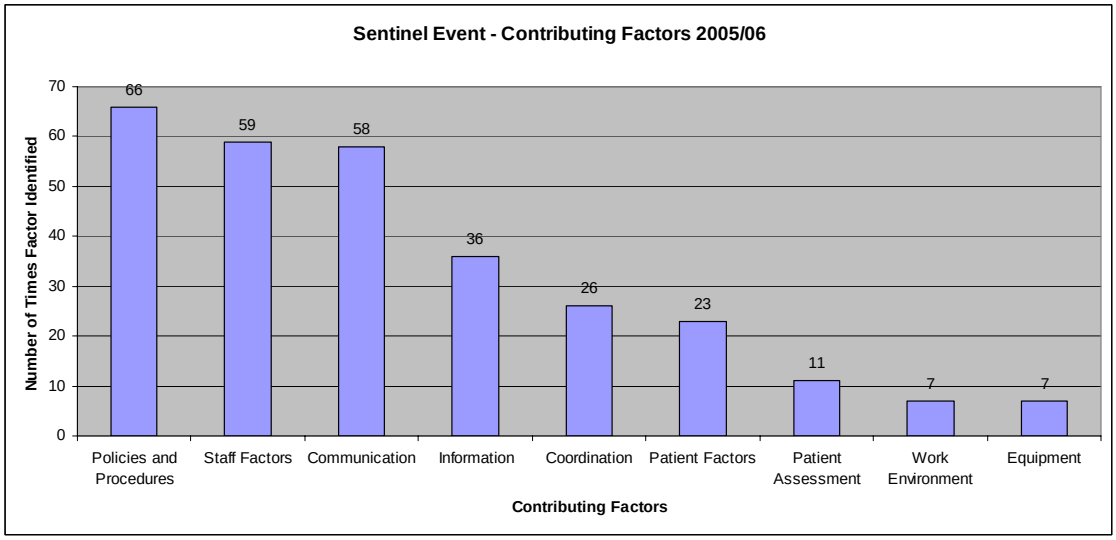
Of the Root Cause Analyses completed, 293 contributing factors were identified. As Root Cause Analysis techniques become embedded, the completeness of reporting of contributing factors should increase.

The classification of the 10 major contributing factors all contain sub-categories that enable the information to be considered in more detail.

3.3.2 Sentinel Events: contributing factors

Contributing factors are those factors which are directly relevant to the incident. The table below shows the nine types of contributing factors and the number of times the contributing factor was identified. Multiple contributing factors can be identified per event. Policies and Procedures, Staff Factors and Communication comprise 63% of the contributing factors identified.

Figure 3 – Sentinel Event Contributing Factors 2005/06



Where an RCA report identified one of these major categories, it may also have nominated some of the related sub-categories as contributing factors. Of the sub category groupings, 52% are reported in the top five contributing factors during the 2005/06 reporting period. These include:

Table 5 – Sentinel Event Contributing Factors – Sub-Categories 2005/06

Major Contributing Factors	Sub-Category	% of Events per Sub-Category
Policies and Procedures	Availability of / clarity	16.7%
	Failure to follow	4.4%
Staff Factors	Training	7.5%
	Allocation Scheduling	7.1%
Communication	Staff to staff	13.7%
Information	Completeness	5.8%
	Availability	4.4%
Coordination	Coordination	7.1%
Others	Others	33.3%
TOTAL		**100%**

When an RCA is commissioned and submitted to the Patient Safety Centre, on average, three recommendations are made per report. A strong focus of the recommendations was around the development or improvement of *Policy or Procedures*.

Within *Staff Factors*, training of staff was the highest recommendation. In addition, allocation and scheduling of staff was identified as a major contributing factor and included issues such as fatigue or experienced staff performing in positions or environments with which they were unfamiliar.

Recommendations in relation to *Information* were sub-categorised primarily into two groups – completeness and availability. Incomplete documentation was evident from many of the RCA reports, and availability of information was identified in those cases where a patient may have moved through numerous services as part of the continuum of care, i.e. acute care, community (both government and non-government), intra-district and inter-district, or interstate, as well as patient movement between units/departments within one facility.

3.4 Root Cause Analysis case studies

CASE STUDY 1 – Poor access to information delays treatment

What Happened? A small child was brought into a rural hospital and died due to an asthma attack.

Why did it happen? A Root Cause Analysis looked into what happened. The RCA Team found that treatment was delayed due to the lack of availability of relevant emergency protocols available at the bedside. Unlike children's hospitals in the city, rural doctors are only rarely confronted with such presentations and therefore are often unfamiliar with specific drug doses and protocols which vary greatly depending on the age of the child. This was considered to be a contributing factor to the death.

Action taken to prevent it happening again? The Root Cause Analysis team recommended that:

- Such emergency paediatric protocols be readily available for doctors in rural hospitals, and that this be in such a way that the staff could access this information whilst working to resuscitate a sick child.
- A system was implemented which allowed for the display of a range of emergency protocols on a large screen in the resuscitation area **during** resuscitation. Based on a child's weight or age, a range of protocols and emergency drug doses can be displayed for staff to see without the need to stop working on a sick child.

Outcome? The nursing and medical staff report much greater confidence that they can access best practice emergency treatment protocols for children whilst they are providing critical care to a patient. This will ensure that life saving treatment can be provided more speedily and safely in the future.

Communication of Lessons Learnt: This issue was communicated in the Patient Safety Matters Newsletter which led to interest from many rural hospitals in installing the system.

"16.7% of all sentinel events reported in Queensland in 2005/06 identified lack of availability of policy and procedures at the point of care as a major contributing factor"

Note: This is based on a real case. Details may have been altered to protect confidentiality of patients and staff.

CASE STUDY 2 – A case of mistaken identity

What Happened? A mental health inpatient was given an injection of a long lasting medication intended for another client. This caused significant adverse effects for nearly one month.

Why did it happen? Mental health inpatient clients do not wear any form of identification. This situation arose out of a desire to reduce the stigma of mental illness. The nurse in this situation asked the client to **confirm** their name "are you Mr Smith?" The client answered "yes". Unfortunately, the client was not Mr Smith, and was given the incorrect injection. Absence of any patient identification further contributed to the likelihood of this mistake.

Action taken to prevent it happening again? Failure to appropriately identify the correct patient was considered by the Root Cause Analysis Team to be a major factor in this adverse event. They recommended that:

- All mental health inpatient clients have a digital photo taken on admission and fixed to the medication sheet and;
- The practice of medication administration include the nurse taking this sheet to the patient, asking the patient to **state** "what is your name and date of birth?", *rather than confirming their name and date of birth*, and visually checking the identification of the patient against the photo identification.

Outcome? Despite the initial concerns expressed by the mental health consumer group, agreement was reached and the system was implemented successfully. There has been a marked reduction in medication mistakes since this was introduced. The system has been well accepted by the mental health clients.

Communication of Lessons Learnt: This issue was communicated in a Patient Safety Matters Newsletter and has been used as a case study in state-wide Root Cause Analysis training conducted by the Patient Safety Centre. There has been widespread interest from Mental Health Units in this initiative and it is being considered for state-wide implementation.

Note: This is based on a real case. Details may have been altered to protect confidentiality of patients and staff.

CASE STUDY 3 – Poor device design traps unwary practitioner

What Happened? A patient dies after receiving an overdose of morphine from a small infusion pump that was incorrectly programmed.

Why did it happen? The Graseby pump is used to provide pain relief by infusing the contents of a syringe at a rate measured by the distance moved in millimetres.

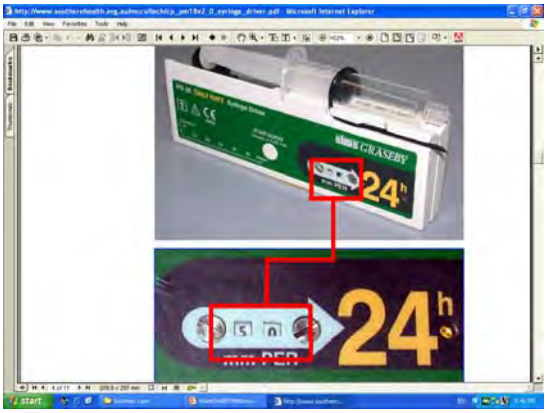
- There are two types of Graseby pumps, which look almost identical. One infuses in **mm per hour** and the other in **mm per 24 hours**. This leads to confusion in staff as both are used in the health service.
- During routine maintenance, the flow rate is set at the maximum (99mm) to test. After maintenance, the flow rate was not re-set. This led to the contents of the syringe being infused in 1 hour instead of 24 hours.
- The flow rate is indicated by a tiny glass window on the pump. Nursing staff do not usually alter the rate and so did not check this.

Action taken to prevent it happening again? A search of the literature indicated that this device had been implicated in a number of similar deaths. The following actions were recommended by the Root Cause Analysis Team:

Immediate:
- Therapeutic Goods Administration be notified as the regulator for medical devices.
- That a label be affixed to every Graseby pump alerting staff to ensure the rate setting was **2mm per hour**.
- An Alert be prepared and sent statewide highlighting this risk to staff.

Medium term:
- Remove one device type from service reducing opportunity for error
- Rate setting to be locked by engineering
- Seek to replace with alternate device which has safety features in the design

Outcome and Communication of Lessons Learnt: Alert labels were fixed to all pumps. A new device is under development by the manufacturer. An investigation was commissioned by the TGA with the recommendations available on: http://www.tga.gov.au/docs/pdf/tganws/tganews42.pdf.



Look-alike pumps cause errors

Note: This is based on a real case. Details may have been altered to protect confidentiality of patients and staff.

CASE STUDY 4 – Overdose of blood thinning drug

What Happened? A patient dies after bleeding due to excessive anticoagulation (blood thinning) therapy.

Why did it happen? Warfarin is a drug used to thin the blood. It is used in approximately 10% of all hospital patients. It is used to prevent blood clots in patients with various heart problems or those suffering deep vein thromboses.

The body is very sensitive to this drug and each patient responds differently. Blood tests are used to monitor how 'thin' the blood is and the dose is adjusted accordingly. In this case, the doctor prescribed doses that were too high for the patient and this led to the patient suffering a brain haemorrhage leading to death.

Analysis of this and many similar incidents found that:

- Warfarin was given routinely at 6pm which was after the usual doctor had gone home. This meant that doses were often prescribed by doctors that were not familiar with the patient.
- No clear guideline was available to aid doctors correctly dose.
- The prescription form did not identify target range for the blood test.

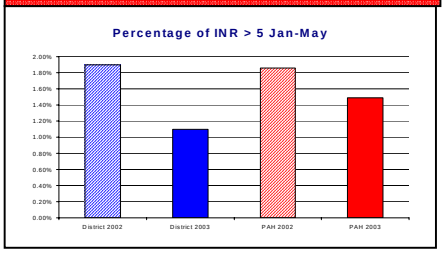
Recommendations included:

- Implement a bedside Warfarin dosing guide **on the end of every Queensland Health hospital bed**.
- Change the dosing time to 4pm to ensure that it was the patients' usual doctor that prescribed the warfarin dose.
- Amend the medication chart to ensure that the target range and dosing is clear.

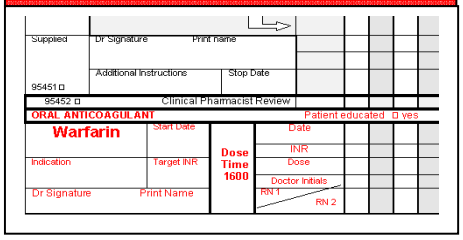
Action taken to prevent it happening again? As a result of work done by the Safe Medication Practice Unit and all Queensland Health hospitals over the past four years:

- A bedside warfarin dosing guide is on the end of every hospital bed in Queensland.
- A standardised medication chart is in use across all Queensland Hospitals, which has a re-designed section for warfarin prescription with built-in safety features.
- The dosing time has been changed to 4pm.

50% Reduction in Warfarin Overdose



New Warfarin Section on Medication Chart



Outcome? There has been a significant (50%) reduction in cases of warfarin overdose.
Communication of Lessons Learnt: The *Queensland Health Safe Medication Practice Unit (SMPU),* working with participating health service districts, doctors, nurses and pharmacists, has widely implemented these interventions, and have taken a lead role in implementing the national inpatient medication chart for the Australian Council for Safety and Quality in Healthcare.

Note: This is based on a real case. Details may have been altered to protect confidentiality of patients and staff.

CASE STUDY 5 – Blood transfusion mix up

What Happened? A patient received incompatible blood products post-operatively. The blood was intended for another patient. The patient sustained a transfusion reaction, but made a full recovery.

Why did it happen? Root Cause Analysis (RCA) identified the following contributing factors:

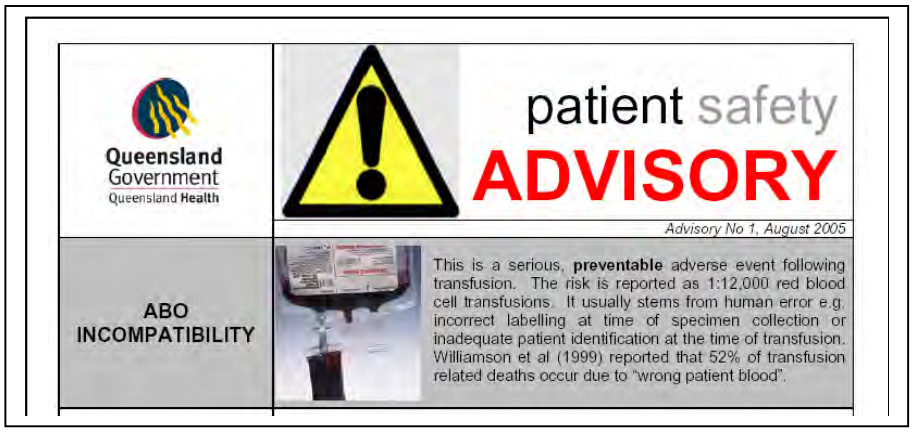
- Agency nurse unfamiliar with local procedures for checking patient identity with blood product label, and how to find procedures.
- Local procedures did not indicate the need for the staff to ask the patient to *'state'* **NOT** *'confirm'* their name and date of birth prior to transfusion.
- Change of nurse occurred between patient check and prior to transfusion being commenced.

Action taken to prevent it happening again?

- The Hospital reviewed procedures for transfusion to ensure consistency with the National Health and Medical Research Council (NHMRC) Guidelines.
- All agency nurses receive a briefing card on reporting to duty which provides essential information including how to access hospital procedures.
- The Hospital procedure shall state that the person spiking/hanging the blood or blood product shall be one of the two people who undertook the component and patient identity check.

Outcome? Applications of training and procedural corrective actions are at best weak solutions to such problems. The State-wide Blood Program is currently working with the Patient Safety Centre and health service districts to develop and pilot specific cognitive aids (basic instruction checklist) fixed to all blood bags, which will provide **simple instructions** on the **standard operating procedure where it is needed, every time**.

Communication of Lessons Learnt: A Patient Safety Advisory was circulated to all Health Service Districts on this issue in August 2005.



Note: This is based on a real case. Details may have been altered to protect confidentiality of patients and staff.

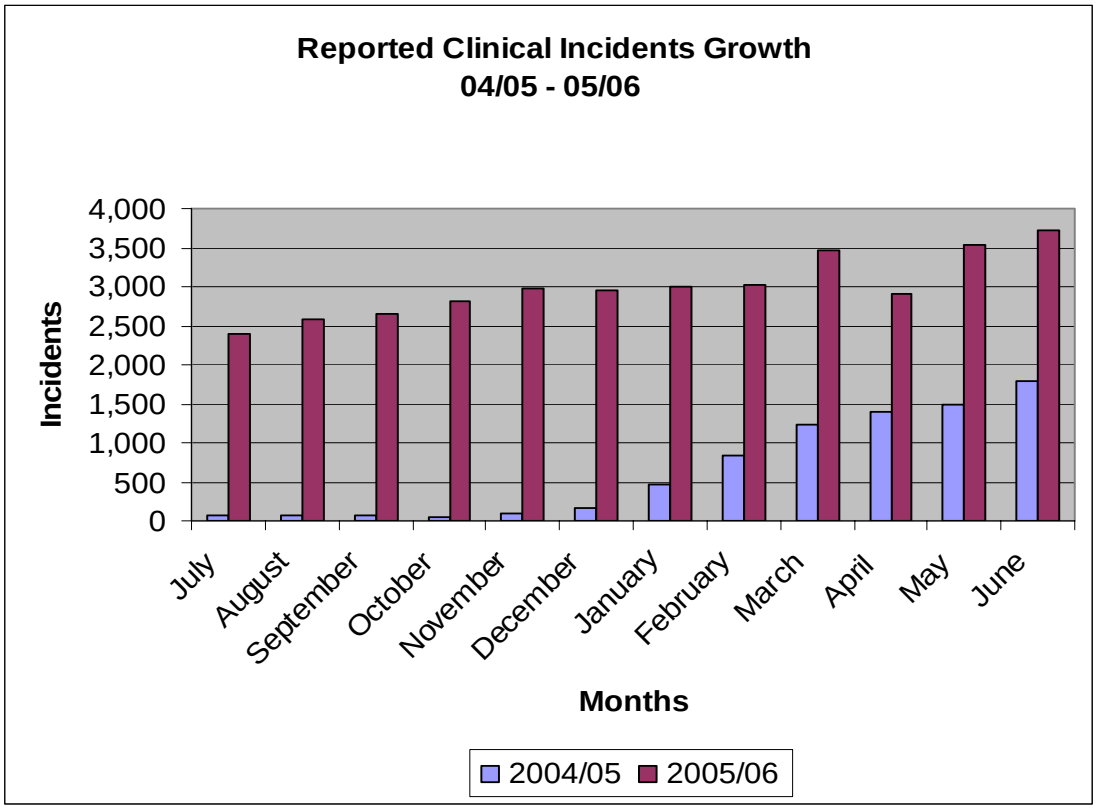
3.5 PRIME – Reported clinical incidents (includes harm and near misses) 2005/06

PRIME is a web-based, electronic incident management system that allows for incident reporting and management actions on any networked computer within Queensland Health.

It has been developed and implemented to 19 of the now 20 health service districts in Queensland Health.

The growth of reported clinical incidents has increased 35% during financial year 2005/06. This is primarily attributed to the roll out of the PRIME clinical incident management system within the health service districts. Following the implementation, monthly reported clinical incidents have averaged 3,000 per month.

Figure 4 – Growth in Clinical Incidents Reported (includes harm and near misses) in PRIME



3.5.1 Clinical incident type

There are currently no nationally agreed data and definition standards for clinical incidents. It is therefore not possible to compare clinical incident data between states because each state has different categories and definitions. This will be addressed by current work being undertaken by the World Health Organisation to develop international standards for patient safety.

In Queensland, clinical incidents are categorised into primary clinical incident types. Figure 5 (page 37) shows the frequency of incident reports by primary incident types. Falls, Medication, Aggression, Behavioural and Documentation are the top five reported primary clinical incident types and comprise 71% of the total.

Falls incident type includes but is not limited to:

- a patient fall whilst getting out of bed +/- injury sustained (eg hip fracture)
- a patient fall whilst transferring from a wheelchair to the bed or toilet +/- injury
- a patient slips or trips on a wet floor +/- injury.

Medication incident type includes but is not limited to:

- when a patient is prescribed or given the wrong drug or the wrong dosage of drug
- when a medication infusion is delivered at the wrong rate.

Aggression incident type includes but is not limited to:

- where a nurse, patient or visitor is threatened with or incurs bodily harm or verbal abuse perpetrated by a patient, visitor or staff member
- where hospital or patient property is damaged by a patient or visitor.

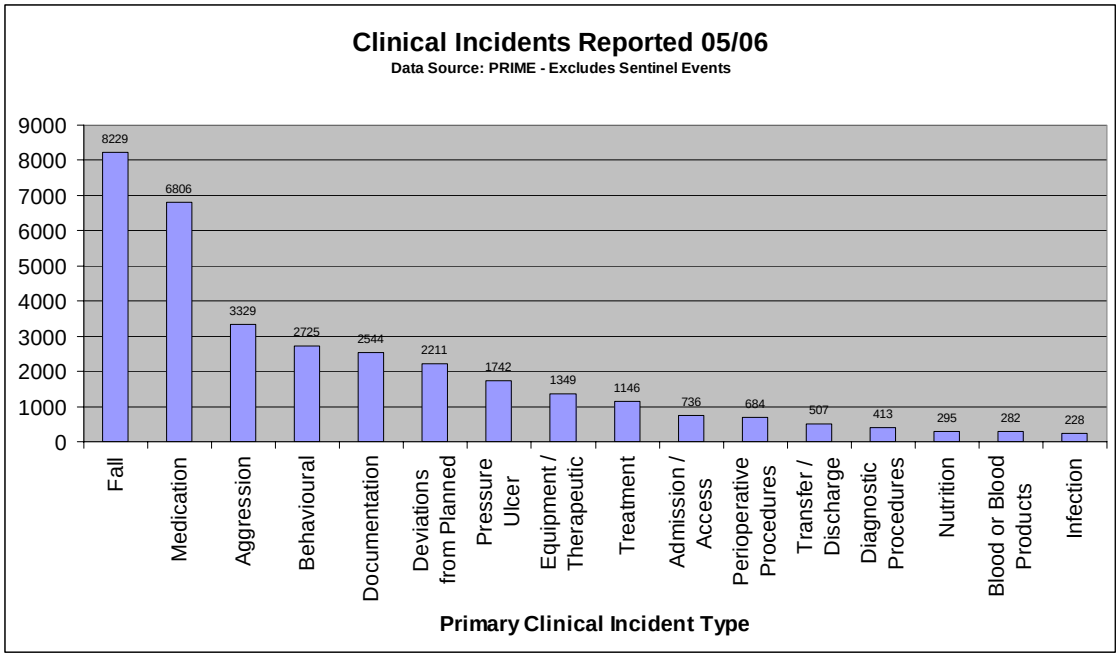
Behavioural incident type includes but is not limited to:

- use of illicit drugs on hospital property
- when a regulated patient with a mental health condition attempts to abscond
- attempted suicide
- patients found to have weapons in their possession
- when a patient self mutilates
- when a patient sexually assaults another patient or staff member.

Documentation incident types include but are not limited to:

- the absence of allergy information, medical records or consent for surgery
- use of unacceptable abbreviations (which can lead to communication breakdowns.

Figure 5 – Clinical Incidents Reported (includes harm and near misses) in PRIME by Primary Incident Type 2005/06



3.5.2 Incident analysis

Work is currently progressing to undertake detailed analysis of individual incident types. A range of state-wide groups are working with the Patient Safety Centre to analyse incident data in order to better understand the factors that lead to incidents.

Developmental work is also underway within Queensland Health and other jurisdictions in relation to incident reporting indicators.

The Queensland Health clinical incident reporting rate per 100 admissions is 5.4%. This compares with data from the National Health Service[20] in the United Kingdom which reported an average reporting rate of 4.9%.

Section 3: Key Messages

During 2005/06:

- 19 Sentinel Events (national definitions) were reported to the Patient Safety Centre;
- 143 Supplementary Sentinel Events (Queensland Health definitions) were reported to the Patient Safety Centre.

The top 5 contributing factors to Sentinel Events were:

- Policies and procedures (23%);
- Staff factors (20%);
- Communication (20%);
- Information (12%);
- Coordination (9%).

The top 5 sub-category contributing factors to Sentinel Events were:

- Lack of availability of policies or procedures (16.7%);
- Staff to staff communication failures (13.7%);
- Inadequate training (7.5%);
- Poor coordination between providers of care (7.1%);
- Allocation scheduling (7.1%).

Analysis of reported Sentinel Events is performed in a systematic, standardised and transparent way using Root Cause Analysis.

Whilst this process is focussed on local ownership and corrective actions, analysis of state-wide clinical incidents and Root Cause Analyses ensures that systemic problems can be *identified, prioritised* and *actioned.*

During 2005/06, 33,226 Clinical Incidents (includes harm and near misses) were reported and managed in PRIME.

On average almost 3,000 clinical incidents reported per month currently.

The top 5 primary clinical incident types reported were:

- Falls (25%);
- Medication (21%);
- Aggression (10%);
- Behavioural (8.2%);
- Documentation (7.7%).

Clinical Incident reporting rate per 100 admissions is 5.4%.

For the first time, Queensland Health is now able to understand how the design of systems of work contribute to patient harm.

Section 4

Preventing Patient Harm: From Learning to Action….

This Section provides an overview of what action is being taken to address key state-wide patient safety risks. Whilst much of the important work to keep patients safe occurs through analysis and action at the clinical unit and hospital level, there is a need to take a state-wide approach to address key issues that commonly cause patient harm. These key activities will be presented in terms of the area of harm being addressed, the corrective strategies and the measures of success.

4.1 What are the major causes of patient harm?

Australian and international research[2] suggests that the most common causes of preventable patient harm in our healthcare system include:

- Falls injury
- Pressure ulcers
- Healthcare associated infections
- Medication adverse events
- Procedural complications

4.2 What are the factors that contribute to this harm?

When these and other adverse events are analysed using techniques such as Root Cause Analysis (RCA), a small number of *root causes* or contributing factors are frequently found. These can be summarised as:

- Individual staff knowledge, skills and training deficits;
- Lack of availability of critical information to assist professionals make the right decisions ***at the point of care;***
- Lack of communication, and the tools to support effective communication of patient information, staff to patient, staff to staff and between different service providers;
- Poor design of systems of care which make it more likely that staff will make mistakes *(For example: two medication ampoules that are stored next to each other and look alike, but are for totally different purposes)*
- Lack of awareness of risks and the culture (attitudes and behaviours) necessary to effectively reduce risk of adverse events.

4.3 What is being done to address these problems?

The Queensland Government has committed to major reform as outlined in the *Action Plan: Building a better health service for Queensland* document published in October 2005. This document highlights a range of strategies that ultimately will lead to better health services to Queenslanders.

The focus of this Patient Safety Report is on the strategies that specifically target the patient safety risks identified by Queensland clinical incident and sentinel event data.

4.4 From learning to action: state-wide strategies to reduce harm

4.4.1 Addressing major causes of harm

a) Falls injury prevention

Action: A Multidisciplinary Falls Injury Prevention Collaborative has been formed by the Patient Safety Centre. This group of public/private, hospital and community clinicians are ensuring that the Falls Injury Prevention National Guidelines are implemented across Queensland. The initial focus is on:

1. Improving incident reporting indicators for falls.
2. Improving education/training/awareness programs for both clinicians and consumers.
3. Implementing service development initiatives including:
   (i) Specialist Falls Prevention Resource Officers.
   (ii) Falls Clinics (community or outpatient).
   (iii) Cross continuum approaches where appropriate state-wide.

Expected outcome: Reduced falls-related injury across hospital and community sectors.

Contact: rebeccaAR_bell@health.qld.gov.au

Fall Prevention In Older People

b) Pressure ulcer prevention

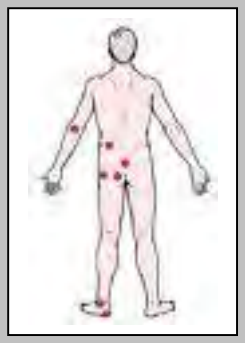
Action: A Multidisciplinary Pressure Ulcer Prevention Collaborative has been formed by the Patient Safety Centre to develop and sustain pressure ulcer prevention programs. This Collaborative, involves participants from public/private and hospital/community settings.

The initial focus is on:

1. Improving incident reporting/audit for pressure ulcers.
2. Improved education and training for staff and consumers.
3. Investing in pressure reducing devices for patients.
4. Funding pressure-reducing mattresses to all QH beds.

Expected outcome: Reduction in number and severity of pressure ulcers.

Contact: michelle_holland@health.qld.gov.au



Common pressure areas

c) Prevention of health care associated infections

Action: The Centre for Healthcare Related Infection Surveillance and Prevention (CHRISP) leads Queensland Health efforts to minimise patient and staff harm from health care associated infection.

CHRISP aims to:

1. Respond with appropriate systemic interventions to internal and external factors that have caused or are likely to cause preventable health care associated infection to patients and staff.
2. Provide the necessary education, competencies, capabilities, technology and frameworks to enable all Queensland Health facility-based Infection Control Programs to identify, respond appropriately and prevent health care associated infection to patients and staff.

Current and planned work includes the development and implementation of techniques to:

a) reduce blood stream infection.
b) lower the risk of infection with multi-drug resistant organisms.
c) reduce the risk of needle stick injury in hospitals.

Expected outcome: Minimise patient and staff harm from preventable health care associated infection.

Contact: CHRISP@health.qld.gov.au

d) Prevention of medication adverse events

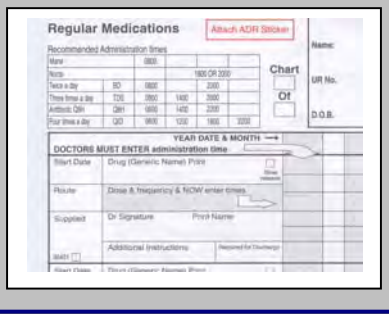
Action: The Queensland Health Safe Medication Practice Unit (SMPU) takes a lead role in addressing and preventing patient harm resulting from medication adverse events.

SMPU working with health services across Queensland, has developed and implemented a standardised medication chart in all 108 public hospitals. This has now been taken up by the Australian Commission for Safety and Quality in Healthcare and implemented across the nation. The standard medication chart, through human factors design principles, prevents many of the common medication errors that could lead to patient harm.

SMPU is working on four priority areas which are:

1. High risk medications and systems.
2. Medication continuum (hospital to community).
3. Medication review (in hospital check of drugs).
4. Electronic medication management.

"Standard Medication Chart in all Queensland Health hospitals reduces patient harm"



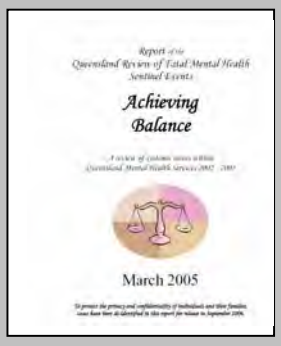
Expected outcome:

Prevent patient harm from medication adverse events.

Contact: christine_maclean@health.qld.gov.au

e) Suicide prevention in mental health services

Action: A review of fatal mental health sentinel events in Queensland Health led to the publication of the report *Achieving Balance* in March 2005.



The *9 Key Recommendations* from this Report form the basis for the work of the Mental Health Sentinel Event Team in the Patient Safety Centre. This Team works in partnership with health services, consumers and the Director of Mental Health Branch to implement these important improvements in mental health safety.

The priorities include:

1. Standardisation of key processes.
2. A supporting electronic information system.
3. A focus on emergency department care of mental health clients.

Expected outcome:
Reduced risk of preventable death of mental health consumers.

Contact: sandra_blake@health.qld.gov.au

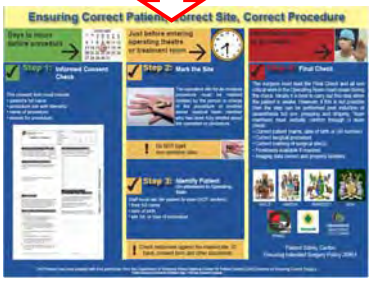
f) Procedural complications: incorrect site/side/patient surgery

Action: The Patient Safety Centre in partnership with The Royal Australasian College of Surgeons, Peri-operative Nurses Association of Queensland and other professional bodies, have implemented a simple pre-operative check to prevent patient harm from incorrect surgery.

The check includes **marking of the operative site** by the surgeon and a **Final Team Check** which occurs just prior to the operation.

"Simple pre-operative check prevents incorrect surgery"

"I would not get on an aeroplane without standard pre-flight safety checks. Why would I have an operation without the same assurance".



Outcome: The goal is to reduce injury from incorrect site/side/patient surgery to zero.

Initial compliance with the protocol is only 50% (by observational study). Further action is underway to gain 100% compliance. **Patients can assist** by requesting that their site be marked prior to surgery.

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g) Procedural complications: Blood Transfusion Safety Project

Action: The Queensland Health Blood Management Program is an initiative of Clinical And Statewide Services (CASS). Working in partnership with the Patient Safety Centre and health service districts, the Blood Management Program aims to promote the safe use of blood transfusions.

"A cognitive aid on every bag to help staff administer blood more safely"

Initial priorities include:

1. Establishing a standard data set for blood related incidents.
2. A state-wide approach to the reporting and analysis of blood related adverse events.
3. Conducting baseline observational audits of blood transfusion practices across the state.
4. Implementing a **cognitive aid on every blood bag** to help staff to **administer blood safely.**

Outcome: Reduce patient harm associated with blood transfusion.

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4.4.2 Addressing major contributing factors

a) Open Disclosure Program

Action: The Patient Safety Centre commenced the Queensland Health Open Disclosure Pilot Project in August 2005. The Pilot is an innovative approach to implementing a sustainable, clinician-led process for responding to the needs of patients, and staff when serious adverse events occur.

"When a patient is harmed, they want to know that we care and will take action to fix up problems in our system".

The *Open Disclosure Standard*, developed by the Australian Council for Safety and Quality in Healthcare, provides a national approach to this issue. The components of Open Disclosure include an early expression of regret***: "saying sorry"*** when an adverse event occurs, ***open and honest explanation*** of what happened, ***identification of the contributing factors*** and ***action to fix any underlying system failures***.

1. 90 Clinician mentors have been trained using simulation and actors trained in this difficult area.
2. The Pilot program is due to be completed in June 2007.
3. Full state-wide implementation is due to commence in 2007.

Expected outcome: Improved patient safety; improved patient and staff satisfaction; decreased complaints and litigation.

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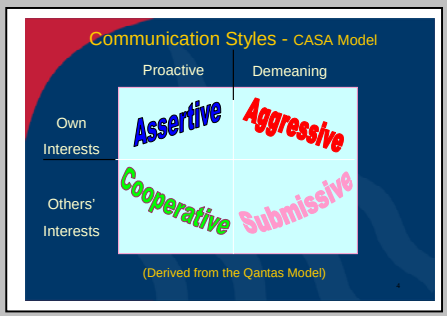
b) Human Error and Patient Safety Training Program (HEAPS)

Action: The Human Error and Patient Safety Program is an essential 'building block' in facilitating the change from a culture of blame to one of learning. Commencing in 2003, it has reached over 6,000 staff in Queensland Health. The Patient Safety Centre plans to **reach over 20,000 staff** with this popular course by the year 2010.



The course aims to provide:

1. Basic understanding of causes of human error.
2. How systems factors contribute to patient harm.
3. Basic systems analysis techniques.
4. Tools to improve communication, assertiveness and teamwork.

Expected outcome: Professionals and managers understand how to prevent and address patient harm and the behaviours that promote safe practice.

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c) Clinical Handover Pilot Program

Action: The Patient Safety Centre, working with a small group of senior clinician leaders, has developed a Pilot Project in Clinical Handover.

The aim of the Pilot is to support health services to implement existing *evidence-based* handover strategies into practice, and determine those practices that should be implemented across the state.

Priority handover areas include:

1. Multidisciplinary rounds.
2. Change of shift.
3. Interdepartmental.
4. Hospital/community.

Expected outcomes: Reduced patient harm arising from communication failures.

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d) Coronial Management Program

Action: Outcomes from coronial inquiries into health service related deaths provide a valuable insight into system problems and proposed solutions in the healthcare system.

Until recently, there was no mechanism to collect and analyse this data to inform improvement across the Queensland Health system. Without guidelines and support structures, relatives of the deceased and involved staff were often left unsupported for long periods of time leading to unnecessary stress and delays in the coronial processes.

Priority areas of work include:

1. Amendments to the Coroners Act.
2. Improved reporting of deaths to the coroner through on-line staff education resources and better design of death certificates.
3. Standard procedures following deaths reportable to the coroner.
4. Improved coordination between Office of State Coroner and Queensland Health.
5. Aggregation, analysis and reporting of coronial findings.

Expected outcomes: Improved reporting of deaths subject to coroner and improved satisfaction of relatives of deceased patients and relevant staff.

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e) Skills Development Centre

Action: Queensland Health **Skills Development Centre** is one of most technologically advanced and comprehensive skills development centres in the world. Opened on 23 September 2004 by the Premier of Queensland, it is the only one of seven in Oceania to have a complete suite of virtual reality and simulation training equipment. It covers over 3500sqm, with 26 session rooms, laboratories, and even a fully-functional operating theatre and hospital ward.

Skills development is important in improving patient safety and enhancing the quality of care. While healthcare professionals often learn on the job, the current system of training known as "s*ee one, do one, teach one*" is no longer appropriate. This is why the Queensland Health Skills Development Centre (SDC) has chosen to "s*ee one, sim one",* and provide *"safe practice*." This is a new paradigm where training through the use of simulation and virtual reality removes the need for clinicians to establish their competency and proficiency on real patients.

Outcome: Improved practitioner competency; improved teamwork; improved patient safety.

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f) Workplace Culture and Leadership Centre

Action: The Workplace Culture and Leadership Centre has been commissioned to assist Queensland Health to provide workplaces where people want to work, where they treat each other with respect and where they are supported for their contribution. Staff satisfaction is closely linked to patient safety, satisfaction and outcomes.

The Centre provides:

1) **Measurement and monitoring of workplace culture and climate:** A number of factors are known to influence staff satisfaction and organisational outcomes such as management practices, clinical communication, teamwork and trust in management.
2) **Core leadership development for clinical and non-clinical executives and managers**.

Outcome: Organisation leaders at every level that are supported and equipped to positively influence the organisational culture to improve patient and staff safety.

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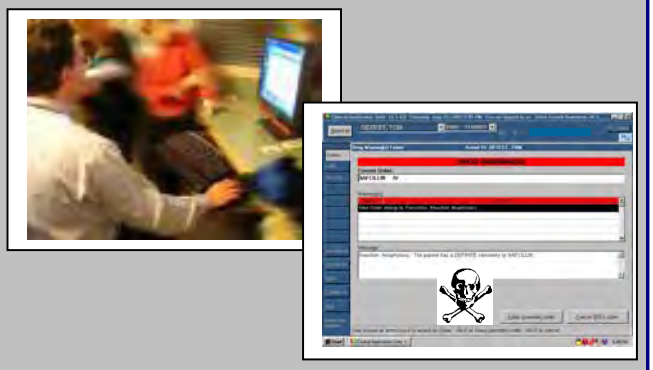
4.4.3 The future

The section below outlines three important areas that Queensland Health will be progressing over the next three years.

Undergraduate & Post Graduate curriculum in Patient Safety

Developing a culture of safety requires an investment in the health care professionals and managers of tomorrow. To this end, work is progressing in introducing comprehensive safety curricula into undergraduate and post graduate medical, nursing and allied health and health management courses. This requires a faculty of teachers with the knowledge and skills to teach a curriculum and, most of all, clinical leaders willing and able to model this practice as *'the way they do business'.*

Technology solutions:



Patient safety can be improved by the appropriate use of well designed technology. Evidence based interventions such as **electronic prescribing of medicines with decision-support** provides professionals with alerts and prompts to reduce the risk of medication errors. Many areas within Queensland Health are working together to deliver IT solutions to meet the needs of a complex healthcare system.

Technology solutions can also provide 'forcing functions' which make it difficult for staff to make common mistakes. Examples include ward based medicines dispensing units and pharmacy robotics. In an environment of world-wide shortage of trained health professionals, these solutions also enable better use of existing skilled staff in direct patient care.

Patient involvement:

One of the most important barriers in preventing adverse events is **you**….the patient. Many patients have averted potential harm from occurring by **alerting staff when things just don't seem right**. An unusual tablet, incorrect date of birth on your medical file and asking the doctor to mark the site of your operation are just a few examples of how you can help keep yourself safe. The Patient Safety Centre is seeking innovative ways to improve the confidence of patients to ***speak up for their safety***.

Section 4: Key Messages

- Queensland Health is using the information from clinical incident and sentinel event reporting to learn about the underlying causes of patient harm and **take action** to improve safety.
- Comprehensive programs are in place focussed on reducing harm from *falls, pressure ulcers, medication events, infection, surgical procedures* and *mental health related injury*.
- All Queensland Health hospitals now use a standard medication chart which is reducing harm from medication adverse events.
- Patients having surgery undergo standardised pre-operative checks *(similar to a pre-flight check for pilots)* including marking the operation site, to prevent wrong site/side/patient surgery.
- The Clinical Handover Program is exploring ways in which handover of patient information can be standardised to prevent harm from communication failure.
- Current work is targeting introducing patient safety training to undergraduate clinical courses, use of technology to prevent common mistakes and involving patients in **speaking up for safety.**

Section 5

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