



**Government  
of South Australia**

Department of Health

# Improving the System:

## South Australian Patient Safety Report

2003-2004



Safety  
&  
Quality



The Safety and Quality symbol represents the consumer being central, placed on a foundation of safety (the cross) encircled in an upward spiral towards continuous improvement, with the depiction of the staff of Asklepios from the Greek legend, symbolic of medicine.

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## Foreword

The people of South Australia deserve the best possible health care, in the best possible circumstances.

People working in the health system try hard to provide this. We provide a lot of care to the people of this state. In 2003-2004 over 17,000 babies were born, more than 249,000 people were admitted to hospital and more than 300,000 people visited emergency departments. More than 70,000 women were screened for breast cancer, district nurses kept 447,000 appointments and over 737,000 doses of vaccine were distributed. Things are getting busier - each year there are about 2 per cent more admissions to hospital than the previous year.

We have reason to believe that we do our job well. The standard of care in Australia is in line with the world's best. Our state's infant mortality rate - which reflects to some extent the standard of care - is the lowest in the country, and has halved over the past 15 years. The great majority of those that were admitted to hospital were satisfied with the care they received, particularly the coordination of their care and the level of communication with staff.

While these figures are impressive, they are not enough. Of course, we want to know that people were satisfied with the standard of care they received in a South Australian hospital but we want to know more. We want to know that the care they received was as good as it could possibly be.

There are many, many ways that the health care system, as a whole, works to maintain and improve the quality of care given to the people of South Australia.

Doctors, nurses and other health professionals are trained to the highest standards in the world. We recruit among the best in the world. We have top class universities and research facilities to attract the best.

There are many ways that as a Department we work to maintain and improve those standards. We offer ongoing education to staff, so they stay involved and continue to improve. We collate the world's best research and present it as information that people working in the system can use and we set standards so that people know what is expected of them.

We also oversee the sort of quality control programs that other industries undertake. We ask our customers - the patients - how well we are going. We draw up protocols for people to follow, and measure to see how well we are doing. We work hard on the safety of the health system, ensuring it reaches the highest possible standards.

This report deals with the safety and quality aspects of the public health system. In particular, it deals with a new approach, which is the monitoring of serious incidents.

It deals with these incidents in a new way. Instead of just asking "How many things went wrong?", it asks "Why did they go wrong?" and "How can we make the system work better?"

This is a much better approach. It allows problems to be acknowledged, rather than hidden. It allows honesty and transparency and most importantly, it allows problems to be fixed so that the chances of them happening again are reduced.



It is important, in reading this report, not to be transfixed by the number of incidents reported. This is a new approach, and it will take time to settle in. However many incidents are reported here, it is likely there will be more reported next year as more people get used to making reports. Of course we do not want more incidents to happen, but we will use every chance we get to analyse them and improve the system, so they are less likely to happen again.

This approach works only because the women and men who work in the South Australian public health system report such incidents. I would like to thank them - they have the sense to realise that we can only improve through acknowledging our errors, and having the courage to deal with errors. I'm sure we will all see the benefits of their courage for years to come.



Jim Birch  
Chief Executive  
Department of Health



## Acknowledgements

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- The Victorian Department of Human Services for permitting the use of their adverse event classification system.

The South Australian Department of Health also acknowledges the commitment of staff in health services across the state in their efforts to improve patient safety.



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# 1. Our commitment to maintaining and improving quality

We agree with the Australian Council for Safety and Quality in Health Care when it states that a safer health care system is one that puts consumers at the centre and harnesses the experiences of patients and their carers to drive improvements.

## What is quality?

We believe that there are six separate yet related elements which make up quality. They are:


- Safety – clearly, we must avoid doing harm while trying to do good
- Effectiveness – any treatment should have a clear and measurable benefit
- Appropriateness – it is important to do the right thing, at the right time
- Consumer participation – as well as having rights, consumers make the system work better
- Efficiency – we must get value for money
- Access – all people should have the same access to health care regardless of geography, socio-economic group, ethnicity, age or gender.

We believe that if we can improve our performance in any of these areas, the overall quality of care will increase.



## What does a quality service look like?

A health service which treats safety and quality as important will look something like this:

- 
- The consumer will be the focus of attention
  - The organisation's board and senior management will accept responsibility for the quality of the health care provided
  - There will be a systematic and system-wide approach to continuous improvement
  - There will be an emphasis on preventing harm through improving systems and re-designing processes
  - Senior management will take responsibility for implementing and maintaining a structure for managing the safety and quality of health care
  - Clinicians will take responsibility for the standard of their own practice, and will share responsibility for creating and maintaining a system which provides safe, high quality care
  - Consumers will be encouraged to participate in both their own care and treatment, and in the planning, delivery and evaluation of health services
  - Consumers will find it easy to complain and compliment
  - Partnerships of care will be emphasised, especially with health practitioners in the community, including GPs
  - There will be a strong advisory and reporting structure
  - The best available evidence will be used to guide decisions
  - The quality of health care will be measured systematically
  - Those measurements will be fed back to people working in the system
  - The system will be driven by performance in the six dimensions of quality
  - The organisational structures and systems for safety and quality will be evaluated by an external accrediting body.

This report relates to just one of these statements - "the quality of health care will be measured systematically". It will deal with the identification and measurement of particular problems, and the ways the system deals with them.

## A just culture

Until recently, the usual way to deal with mistakes in health care was to point the finger. If somebody was discharged without the proper medication, or a patient did not have the right blood tests before an operation, a doctor or nurse was inevitably blamed. "Who did this?" and "Whose fault is it?" - was the standard approach.

Gradually, slowly, the healthcare sector has learnt from other industries that this was not the right approach. The airline industry, in particular, has learnt that if you asked "who did this" and focussed on dealing with one individual, it did not change anything. Unless they changed why the person made a mistake, then it was likely that somebody else would make the same mistake.

So the airline industry learnt to ask 'how?', 'why?', 'How did this go wrong?' and 'Why did this happen?'. They would look at each mistake closely and work out what was wrong with the systems in place. Then they would make changes so that the same mistake was less likely to happen again.

For example, if a pilot flew too low because he or she missed reading an important instrument, instead of simply reprimanding the pilot, they would look deeper. Was the instrument positioned so it could be read easily? Was it well lit and easy to read? What other things was the pilot supposed to be doing at the same time? Were there too many distractions?

They tried to fix the problems that led to the pilot missing the instrument and found that travel became safer.

The healthcare sector is learning to take the same approach. We are learning to see how and why things went wrong, rather than just point the finger.

Of course, if an individual needs to be disciplined, that individual will be disciplined. If people working within the health system behave in unacceptable ways - if they do anything criminal or negligent, if they cause harm while affected by drugs or alcohol, if they deliberately set out to do harm - then appropriate action will be taken to ensure public safety. However if they were acting reasonably and responsibly, then the how and the why will be treated as more important than the who.




## 2. The national approach to safety

Governments throughout the nation are striving to maintain and improve the safety and quality of the health care systems they manage. To this end, the Australian Council for Safety and Quality in Health Care was set up in 2000. Its role is to lead national efforts to improve the safety and quality of health care provision in Australia. It aims to:

- Support those who work in the health system to deliver safer patient care
- Involve consumers in improving health care safety
- Improve data and information for safer health care
- Redesign systems of health care to further develop a culture of safety
- Build awareness and understanding of health care safety.

The Council finished its term at the end of 2005 and its functions will be taken over by the Australian Safety and Quality Commission. It is expected that the commission will have similar aims.

Governments and other employers everywhere use a wide variety of means to maintain and improve the quality of care. Methods include:

- 
- Employing the best possible staff
  - Using good orientation techniques to ensure staff know what they are doing before they start
  - Providing ongoing staff education and training
  - Offering career opportunities to keep valued staff interested and learning
  - Making it easy for people to complain about problems
  - Responding to and investigating those complaints
  - Having peers review the actions of their colleagues
  - Setting clear standards, and measuring whether those standards are met
  - Producing, disseminating and implementing guidelines and protocols
  - The use of information technology
  - A range of efforts to support clinical practice improvement.

As part of this broad approach to quality, the state and territory Health Ministers agreed to measure a small number of rare occurrences. The Health Ministers decided that by looking very closely at a small number of events, known as sentinel events, much could be learnt. The events they chose were these:

- Procedures involving the wrong patient or body part
- Suicide or suspected suicide of a patient in an in-patient unit
- Retained instruments or other material left in a patient after surgery, which requires more surgery to remove them
- Intravascular gas embolism (an air bubble in the blood) causing death or neurological damage
- Blood transfusion reaction resulting from ABO (blood type) incompatibility
- Medication error leading to the death of a patient
- Maternal death or serious illness associated with labour or delivery
- A baby discharged to the wrong family.

Clearly, these are serious problems which, in a perfect world, would not happen. Unfortunately they do - in South Australia in 2003-2004 there were two such suicides, one intravascular gas embolism, one such blood transfusion reaction and one serious problem associated with childbirth. (see *Table 1*)

Table 1: Sentinel event notifications received 2003-2004

Sentinel event	Number of notifications received
Procedures involving the wrong patient or body part	0
Suicide/suspected suicide of a patient in an in-patient unit	2
Retained instruments or other material after surgery requiring reoperation or further surgical procedure	0
Intravascular gas embolism resulting in death or neurological damage	1
Haemolytic blood transfusion reaction resulting from ABO (blood type) incompatibility	1
Medication error leading to the death of a patient reasonably believed to be due to incorrect administration of drugs	0
Maternal death or serious morbidity associated with labour or delivery	1
Infant discharged to wrong family	0
<b>Total</b>	<b>5</b>

## South Australia's additional safety approach

The Department of Health sees the benefit in monitoring and managing safety in this way and believes that important lessons can be learnt from analysing errors. In fact, we have taken this approach even further. Our policy is that:

- All incidents that take place in a healthcare facility will be assessed using a Safety Assessment Code (*see below*)
- All serious incidents will be reported to higher levels of authority
- All serious incidents will be investigated using a root cause analysis (*see page 6*)
- Health professionals will be trained in all of the above.

## The Safety Assessment Code

The Safety Assessment Code (SAC) is a method of assessing the seriousness or potential seriousness, and the likelihood of recurrence, of any event going wrong in a hospital or other healthcare facility.

It is used by healthcare facilities to assess every reported patient incident which may include injury, mistake or serious complication.

Using the code, incidents are graded according to their severity - from 1 (most serious) to 4 (least serious). The code takes into account the likelihood of an event happening, and the consequence of it happening. Examples follow:

- A SAC 1 incident can cause serious harm to the patient – for example, a fall resulting in a fracture. The Department of Health is notified of all SAC 1 incidents, and these are investigated by the health services
- A SAC 2 incident is serious, but less so than a SAC 1 incident – the harm to the patient may be less, or there may be less chance of it recurring. A SAC 2 incident involves, for example, a patient receiving an overdose of medication, and needing treatment or a longer stay in hospital to correct the effects. Executive staff such as nursing and/or medical directors are informed of all SAC 2 incidents in their service, and investigate all of them
- A SAC 3 incident is more minor – for example, the early formation of a pressure area. These are dealt with by the local health service
- A SAC 4 incident is more minor still – for example, routine observations are missed or medications not given, but there are no ill effects to the patient. These are dealt with by the local health service.

This report will contain a summary of all SAC 1 and potential SAC 1 incidents (*see page 6*); their root causes and the lessons that have been learnt from them.

We need to acknowledge that incidents such as those summarised here have indirect effects, as well as direct ones. Consumers, their carers, their families and the general public are all affected. Health care providers themselves also might suffer psychological and professional consequences from medical error. The flow-on effects give us even more reasons to learn from such incidents.

## Root cause analysis

Root cause analysis is a method of getting beneath the surface of a problem to see what underlying factors may have contributed to it happening.

A root cause analysis focuses on the systems in place and the processes, rather than the people involved. As a result it allows lessons to be drawn from an incident, and improvements to be made.

A root cause analysis is carried out by a team of health professionals formed specifically for the investigation. Team members usually work at the health care facility where the incident occurred and the team is composed of different professional groups allowing members to use their knowledge of how care is delivered to dig deep into the causes. For more detail, see Appendix B.

## Serious incidents

The Department of Health was notified of 66 different SAC 1 incidents in 2003-2004. They have been sorted into general groups, which are as follows.

- 1 Suicide or suspected suicide in the community – these are people who died within 28 days of contact with the mental health system. The term “suspected suicide” is used because only the coroner can decide whether a death is suicide or not and, in many cases, our reports are collated before any coroner hearings.
- 2 Clinical management – these are people who had a problem arise after difficulties with an admission, an appointment, a response to an emergency, their diagnosis, their tests or their surgery.
- 3 Obstetric – These are incidents involving the foetus or newborn during labour, delivery and may extend to 28 days after delivery.
- 4 Medications – This relates to incidents where people suffered an ill effect or complication after taking medication or intravenous fluids. The issues may involve: prescribing, dispensing, presentation, delivery, administration, storage, security or an allergic reaction.

There are also categories of pressure ulcer, falls and nutrition, but we cannot give even brief descriptions in case we accidentally identify people involved. We need to protect their privacy. For the number of events reported in each category, see the table below:

Table 2: SAC 1 event notifications received 2003-2004

SAC1 Event (grouped)	Number of notifications received
Suspected suicide in the community	39
Clinical management	15
Obstetric – delivery	7
Medications	2
Pressure ulcer	1
Falls	1
Nutrition	1
<b>Total</b>	<b>66</b>

## Potential incidents

Hospitals also reported a number of incidents that were potentially serious, but did not cause death and, in most cases, no permanent effects. We treated these incidents with the same care, believing we could learn from them. The types of potential incidents are described below;

Table 3: Potential SAC 1 / Sentinel event notifications received 2003-2004

Potential SAC 1 / Sentinel Event (grouped)	Number of notifications received
Clinical management	12
Attempted suicide*	6
Medications	2
Obstetric - delivery	1
<b>Total</b>	<b>21</b>

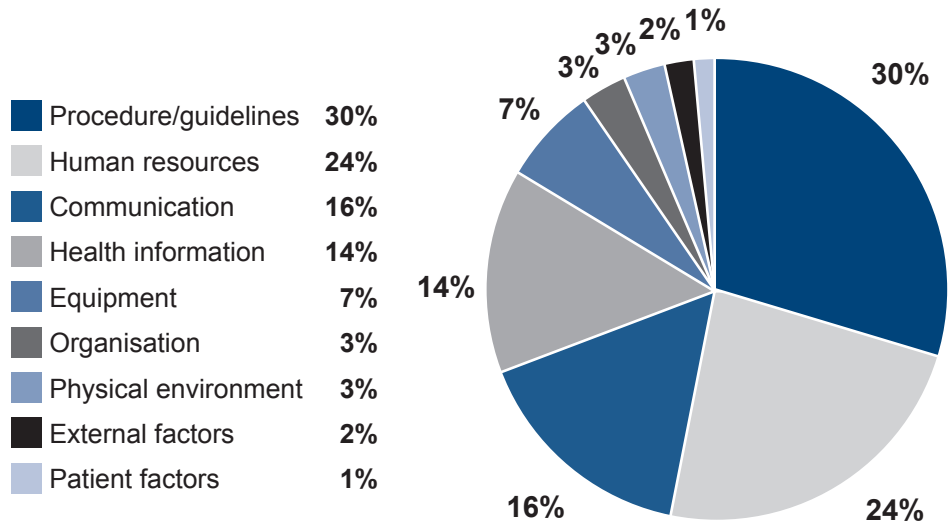
\*3 events in the community and 3 events in an inpatient unit

## Contributing factors

The root causes of these incidents and potential incidents, in their broad categories, were as follows (see *Figure 1*). The most common root causes are listed first:

- Procedures and guidelines – they may not have been clear, well known and available
- Human resources (staff) – issues include the availability and supervision of staff
- Communication – issues of how we communicated either with staff, or between staff and the patient, or between staff and family
- Information – health information may not have been documented
- Equipment – it may not have been available, reliable and standardised so that staff knew how to use it properly
- Organisation – there may not be a suitable culture or management structure.
- Physical environment – this is the environment of the facility and if it meets the needs of the users of that facility
- External factors – an issue that is not within the control of the organisation and is external to the facility
- Patient factors – this relates to the patient’s physical or health status.

Figure 1: All events – contributing factors



The health services have made a number of recommendations in each case. They will be described in the following two chapters.

### How do we compare?

All states and territories are working to produce reports on sentinel events - a national report is expected within a year. Some states are also publishing reports on sentinel and SAC 1 events. At the moment, only New South Wales and Victoria have analysed their incidents and produced public reports. The figures for Victoria are presented slightly differently, so the only meaningful comparison is with New South Wales.

Table 4 shows that the figures for South Australia and New South Wales, allowing for the difference in the size of the populations, are fairly similar.

Table 4: Comparison of serious incidents in South Australia and New South Wales 2003-2004

	South Australia	New South Wales
Sentinel events	5	31
SAC 1 events	66	421

## 3. The improvements so far

The health system in South Australia has made many improvements as a result of root cause analysis of sentinel events and SAC 1 events. They are as follows:

### Communication

- Use of a computerised system to inform community mental health teams when a patient is discharged from a hospital
- Development of a system to ensure that pregnant women are managed by the obstetric team should they arrive in the general emergency department
- A system that clearly indicates the degree of urgency required for a pregnant patient who requires a caesarean section
- Promoting the criteria and the use of a Medical Emergency Team as a means of ensuring that patients receive urgent medical attention if staff believe a patient's condition is deteriorating
- Linking patient assessment in pressure ulcer management with the electronic nursing care plan
- Display of a checklist showing the types of meals delivered to an area to help staff ensure the correct diet is given to the correct patient
- A standardised template for handover to ensure optimal communication of relevant clinical information
- A standard categorisation system used for booking of operative procedures in hospitals that use the electronic theatre booking system to improve the timeliness of operative procedures.

### Procedures and guidelines


- Incorporation of a standardised pressure ulcer risk assessment into the nursing history/ patient assessment
- Protocols to assist in the prescribing of warfarin therapy available in all medication charts
- Protocols to help clinical staff make decisions based on mental health risk assessment findings
- Incorporation of the Australian and New Zealand College of Anaesthetists' policy for monitoring during anaesthetic into hospital policy
- A cross speciality protocol for the management of a condition requiring surgery
- A protocol for communication about specific post-operative complications to appropriate medical staff
- A transfer procedure that clearly indicates the roles and responsibilities of nursing and medical staff
- A guideline to indicate minimum staffing and equipment required for the safe transfer of patients within or to a critical care area
- Establishment of positive patient identification in specimen labelling
- A procedure using the patient identification sticker system and involving consumer participation in labelling to ensure the right baby receives their mother's expressed breast milk
- Observations taken within 30 minutes for all patients presenting to emergency departments via ambulance
- High dependency and critical care admission criteria guidelines (revised)
- Clear guidelines on the level of staff required to manage different levels of patient acuity.

## Human resources

- Clinical training programs to help staff in the management of patients with suicidal ideation
- Education and competency assessment for emergency department staff in caring for and triaging mental health patients, including a weekly staff development programme
- Appointment of an educator to help provide clinical education in a specified speciality area
- An education package to help implement a pressure ulcer assessment tool
- An electronic tool has been developed to track junior staff's clinical competencies that allows rapid feedback to both the staff and their supervisor, and enables the supervisor to decide when those staff can perform specific tasks unsupervised
- Additional medical cover for a speciality area
- Psychiatric registrar attendance in an emergency department for up to 13 hours/day and in addition a mental health emergency department liaison position has been established
- An increase in the time allocated for first appointments to one hour and an increase in time allocated for subsequent appointments in an outpatient department.



## Health information

- 
- Use of a checklist accompanying the mental health risk assessment tool to ensure that all relevant patient details are obtained at the time of admission
  - Redesign of the neurovascular observation chart to include guidelines to support action in the event of a change in neurovascular observation
  - Remove from circulation multiple forms that can be used for the same purpose
  - Implement one standard form across the facility for specimen requests
  - Provide booklets on warfarin therapy to patients at the time of counselling with a clinical pharmacist.

## Equipment

- Change from reusable to single use only bags for ventilation to reduce the risk that the parts are incorrectly replaced after sterilising and cleaning
- Eliminate the use of auto-injection pumps for cardiac intervention procedures.

While many changes have been made, others are yet to occur. This process is still in its infancy, and will grow and strengthen with time, particularly as the Department of Health has established a program for continuous improvement so that what is learnt in one part of the system is also learnt across the system.

Please note that these recommendations seek to deal with issues in the local health service where adverse events have occurred. They are specific to the local context, and should be adopted by other health services only after any potential interactions with existing local systems have been properly evaluated.

All of these reforms add to the general climate of change in South Australia. Since 2003, the pace of reform has quickened, and many changes have been made to improve the quality and safety of the care we provide. Below are just a few examples.

### **Health and Community Services Complaints Commissioner**

South Australia's first-ever Office of the Health and Community Services Complaints Commissioner opened in October 2005. The Health and Community Services Complaints Commissioner is an independent, statutory office dedicated to helping people - complainants, their families and carers, as well as service providers - resolve complaints about health and community services across public, private and non-government sectors.

All South Australians now have access to an independent complaints body if efforts to resolve their complaints with a provider are unsuccessful. As well, the office of the Health and Community Services Complaints Commissioner will:

- Monitor trends to help with safety and quality improvements
- Provide fair and impartial dispute resolution
- Promote greater accountability
- Report on issues about the delivery of health or community services.



## New legislation to regulate doctors

The previous legislation covering medical practice was enacted in 1983 and much has changed since then. In 2004 the new Medical Practice Act came into force, with a particular aim of protecting the health and safety of the public.

The new Act promises to make doctors and their practice more open and accountable. The Medical Board, which regulates much of medical practice, is under greater scrutiny by Parliament. In particular, the process of managing complaints is expected to be more consumer-focussed, open and transparent.

The new Act also limits members' terms of office, which will encourage greater turnover and fresher thinking among board members. The Act also demands that any codes developed by the board be approved by the Minister for Health - this will ensure that the rights of the public are safeguarded.

Finally, the Medical Practice Act 2004 allows for the registration of medical students. This ensures that the same influences and controls over doctors are extended to those training to become doctors.

## The Coroner

The Coroner conducts inquests to determine the cause or circumstances surrounding a death in hospital. Recommendations are then made to prevent similar deaths occurring in the future. This is an important investigative system to improve safety and quality. Root Cause Analysis complements the Coronial and other investigative processes.

The Coroner's Act 2003 replaced the Coroners Act 1975 on July 1st 2005. The new Act expands the reporting and coronial process. The Act may be viewed on the Coroner's Court web-site at [www.courts.sa.gov.au](http://www.courts.sa.gov.au)

## Mental health

There is a determination throughout the healthcare sector to improve the care for people with mental illness as the following summary shows.

A new risk assessment tool has been developed. This allows people assessing those with mental health problems, either in person or over the telephone, to be more confident they are assessing the risk and carrying out the appropriate treatment in either admitting them to hospital or arranging community care.

Early in 2005, a new Community Based Information System was launched. This collects data on all non-inpatient contact with the mental health system. If a person with mental illness sees their usual health professionals, or even turns up unexpectedly to an emergency department, all their previous information will be available. This should allow for better treatment of people with mental illness, better coordination of treatment, and should reduce the risk of seriously ill people slipping through the net.

We are making significant efforts to improve the care of people with mental illness who attend emergency departments. For example, we have funded education and training sessions to help staff working in emergency departments to provide better care for people with mental illness.

More specialist mental health staff are spending more time in local hospitals at Whyalla, Port Augusta, Port Lincoln, Wallaroo and at the Port Lincoln Aboriginal Health Service. As well, we have provided:

- Better coordination and more contact between psychiatrists in the city and health professionals in the country, giving better access to specialist resources for people in the country
- Funding for two more specific mental health positions - a mental health program manager and mental health principal clinician - in each country health region
- Training programs in emergency psychiatry for mental health services and general practitioners
- An increase in the number of mental health specialists visiting country areas to work with and support general practitioners.

### **Mental health and suicide prevention**

Preventing suicide is not easy. Of all the people who are at risk, it is difficult to predict and to prevent suicide on an individual level. However, there is much that can be done to prevent suicide in a broader way.

Prevention needs a two-fold approach - working with people with mental illness to ensure they are in the best possible health, and working with the wider society to do things like reduce unemployment and increase the awareness and understanding of mental illness.

In February 2005, the Social Inclusion Board provided \$680,000 over two years for suicide prevention in country South Australia, especially among young men. At the same time, an Australian-first pilot program started which will see specially trained crews of mental health staff and ambulance paramedics attending call-outs in the northern and southern suburbs of Adelaide.

This coordination should help people in crisis.

### **The BloodSafe program**

Sometimes, seriously ill people need blood transfusions. These transfusions can save lives, but occasionally those receiving them have serious reactions.

The Department of Health has reduced the risk of such reactions by establishing the BloodSafe program across metropolitan public hospitals.

BloodSafe is a very successful and rewarding collaboration involving haematologists, transfusion nurse consultants, transfusion educators and transfusion medicine scientists to ensure safe and effective blood transfusions.

There are two aims. One is to make sure that blood transfusions are used only when there are no alternatives. The other is to make sure that the right blood is given to the right person.

## Communication

The Health Department has run a series of one-day workshops for health professionals. The aim is to develop communication and team work skills to reduce errors in patient care.

It also produces a quarterly newsletter on safety and quality issues, and on the improvements undertaken. This newsletter is available to all staff and to patients and their families. It is also available on the Department of Health Safety and Quality web-site at [www.safetyandquality.sa.gov.au](http://www.safetyandquality.sa.gov.au)

## Preventing falls

Falling over can be a serious problem for an older person. Older people who fall can hurt themselves, can break bones and end up admitted to hospital. Occasionally, for an older person, a fall and a broken bone can be the start of serious problems - loss of mobility and loss of independence. Preventing falls is a very important aspect of health care.

The South Australian Hospitals Safety and Quality Council is working to ensure that every South Australian in residential care and every person over the age of 65, no matter where they live, get enough calcium and vitamin D each day. Calcium and vitamin D are essential elements for bone strength.

So far, it has developed formal recommendations on how much vitamin D and calcium people need each day. It is now working on ways to make sure its recommendations are implemented. The Department has also funded a project by Osteoporosis Australia (SA) on ways to ensure that people with osteoporosis get the best possible treatment.

## Safe Medication

Medications can cause side effects even when taken correctly. Anticoagulants - drugs used to thin the blood and reduce clotting - are a group of drugs which commonly cause problems, that can be sometimes quite serious.

The Department is working to reduce the number of problems caused by anticoagulants. In particular, it is working to:

- Prevent deep vein thrombosis (DVT, or blood clots) in people in hospital, so that fewer people need to take anticoagulants
- Making sure that when people start taking the anticoagulant warfarin, they do so in the safest and most effective way
- Ensure that anybody taking warfarin whose blood becomes too thin is treated in the safest and most effective way.

A team from various hospitals developed guidelines on the use of anticoagulants. In a pilot study, clinicians were educated about the guidelines. The management of people taking anticoagulants improved significantly, with:

- More people getting preventive treatments to avoid DVT
- Anticoagulation working faster when it was used
- More people whose blood had thinned too much receiving the ideal care
- More blood tests being followed up at the right time.

These results are excellent. The Department of Health is working to get the project adopted in other parts of the state.

## Obstetric care

The Department aims to broaden the choices available to women while pregnant. One option is the GP / Obstetrician shared care program, which has been established state-wide. This program aims to:

- Broaden GP involvement in antenatal care
  - Improve patient care
  - Strengthen the relationship between GPs and metropolitan public hospitals
  - Provide valuable research so obstetric care can continue to improve.
- Guidelines for the care of pregnant women and birth-related conditions have been developed for medical staff, midwives and pharmacists, and are based on research and best practice. They are available on the internet at [www.health.sa.gov.au/ppg](http://www.health.sa.gov.au/ppg).

A number of other projects have been established, including ones which:

- Are reducing the time taken to carry out an emergency caesarean section once it is decided that such an operation is needed
- Are making it easier for rural midwives and doctors to attend electronic foetal monitoring workshops
- Are helping teach midwives and junior doctors using hand-held personal digital assistants and rapid feedback.



## Patient identification

In 2004 the booklet *The Correct Patient, Correct Site, Correct Procedure Protocol* was released. It is vital that people facing surgery have the right operation at the right surgical site.

This protocol involves identifying and involving the patient at various steps along the path towards surgery. It is being implemented in all South Australian hospitals. In the end, the risk of having the wrong operation, which is already very low, will be even lower.

## Pressure area care

People who are in bed for long periods might develop ulcers, or bed sores, on their backs, bottoms and legs. Efforts to prevent this happening are known as pressure area care.

The South Australian Pressure Management Collaborative 2004-2005 is a network of people from 15 different South Australian health services. They worked together to develop, implement and evaluate a number of different ways to prevent and treat bed sores.

The collaboration developed a number of tools for health professionals, such as:

- Reminders so that patients at risk of bed sores are moved regularly and into suitable positions
- Pressure ulcer auditing protocols
- Staff and patient education resources
- Posters and charts describing the best methods of care
- Practical information for clinicians working within their own organisations to set up ways to prevent and manage pressure areas.

## 4. The future

The public health system, following its analysis of serious incidents, is planning further changes.

The Department of Health aims to improve the safety of blood transfusions even further. It plans to allow laboratory staff access to patients' blood group records from other institutions throughout the state. This will go even further to ensure that patients receive the right blood.

Another project aims to improve the safety of medications by using online information. Before prescribing any drugs, the Doctor can check all drugs with a database to:

- Look for interactions between drugs
- Give warnings based on specific groups, such as pregnant or breastfeeding women, older people and children
- Supply information for consumers.

Our efforts to reform mental health care will continue. Recently, consultations were held with people with mental illness, their families and carers, and mental health professionals. Many issues were raised particularly the issue of being able to intervene early and prevent serious deterioration in people with mental illness. The Mental Health Act is being reviewed, and these issues will be addressed.



## 5. Conclusion

The South Australian health system is in a good condition. We are working to make it safer than ever before.

As part of the safety process, we collect information on serious incidents and analyse them. We learn from our mistakes, and make every effort to ensure the same mistake does not happen again. Only by taking an honest look at ourselves can we continue to improve.

## Appendix A

### **Safety and Quality Unit, Clinical Systems, South Australian Department of Health**

The Safety and Quality Unit within Clinical Systems in the South Australian Department of Health in conjunction with the South Australian Hospitals Safety and Quality Council coordinates the framework for safety and quality in health care in South Australia. The unit has a coordinating role in the management of adverse events and supports system improvement from a state-wide perspective.

The Safety and Quality Unit recognises that the consumer is at the centre of health care. The unit is committed to supporting health professionals, consumers and carers in their endeavour to achieve quality health care. To improve safety and quality the Department of Health, in partnership with the health services of the state, actively contributes to the Australian Council for Safety and Quality in Health Care's vision of a safer health care system. This vision is one that:

- Is people centred, so that patients feel comfortable as partners in their own health care, and teams of health professionals are encouraged to work together effectively for the care of each patient
- Has a culture of learning for quality improvement, with honest and open communication, and mechanisms for measurement and reporting that provide data for system improvement and for accountability
- Supports multidisciplinary approaches, and encourages development of practical initiatives that provide strategies and tools for improving safety and quality that can be transferred to other settings
- Constantly strives to eliminate error and improve system design to make health care safer.

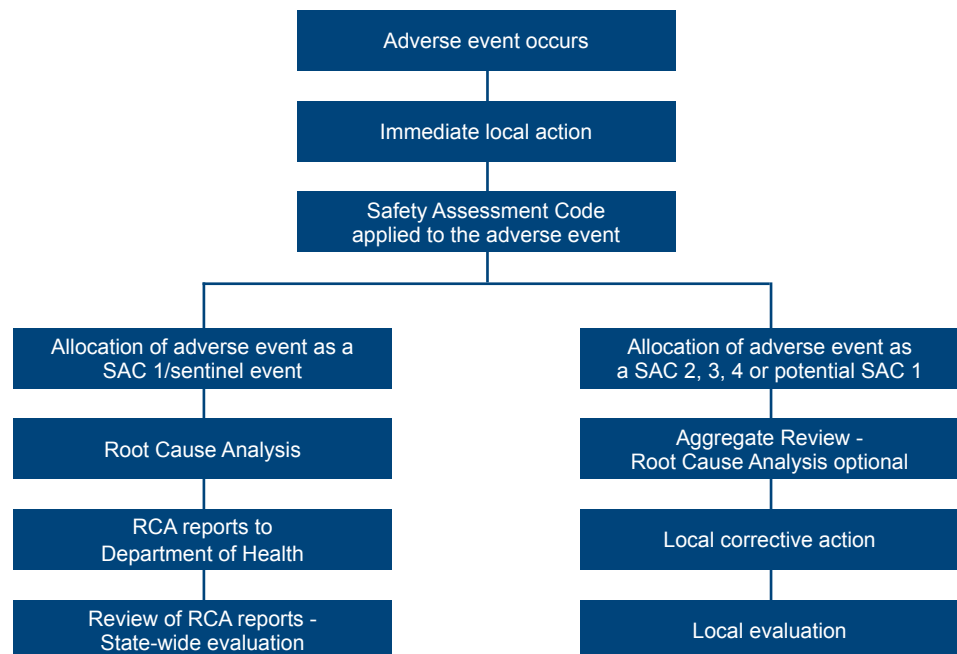


## Appendix B

### Adverse events – reporting and management process

At the Australian Health Ministers Conference in August 2001, a proposal to adopt a national approach to the collection and use of incident data was endorsed by all health ministers. The national approach included local, jurisdictional and national level review and management of information relating to incidents resulting in serious adverse patient outcomes. South Australia has developed a system for the reporting and management of serious adverse events as well as a centralised incident reporting system.

Figure 2: The management of adverse events: Flow diagram of the adverse event investigative process



### Incident reporting

A computer software program called the Advanced Incident Management System (AIMS) was acquired by the Department of Health in 2003. The roll-out of the information technology infrastructure to all public hospitals has been occurring over the past 18 months and is now available in all country hospitals. This allows incidents to be reported electronically and data to be available centrally for analysis.

The function of this software is to assist staff to:

- Provide easy and accessible incident reporting to all health system employees and contractors
- Store information relating to voluntarily reported adverse incidents and near misses for management action, analysis and risk reduction activity
- Provide a management framework for follow up of incidents by appropriate personnel
- Provide a system for legal protection of identifying incident data to promote reporting (qualified privilege)
- Enable management of risks associated with clinical care.

This software forms part of the incident management system. Clinicians can report an adverse event:

- Using an incident report form
- Directly on-line using AIMS
- Through a 24-hour contact centre staffed by nurses.

These reports are then entered into AIMS and reviewed by management of the health services. This is a voluntary incident reporting system.

A reporting culture is crucial in the detection and management of adverse events and near misses. In 2002 the IRIS (Incident Reporting to Improve Systems) project sought to determine the staff barriers to incident reporting and developed interventions to overcome identified reporting barriers.

Staff focus groups identified that common barriers included time constraints, unsatisfactory reporting processes, knowledge deficit on the incident reporting and management process, feelings of personal risk in reporting and a perceived lack of value in reporting. As a result of the project, a number of user-driven interventions were developed and evaluated including:

- A one page simplified reporting form
- A 24-hour reporting contact centre staffed by nurses at the Royal District Nursing Society
- Extensive education on the benefits of reporting (including near misses)
- The promotion of a culture of safety.

Many of these user-driven interventions are in active use today to facilitate a reporting culture.

### **Safety assessment code rating**

All incidents received are assessed by the organisation in which they have occurred against the Safety Assessment Code or SAC (Appendix C). This coding allocates a numeric score to the incident which guides the organisation in appropriate management and action.

The SAC Matrix categorises incidents according to four levels based on consequence/severity and likelihood/probability. SAC 1 incidents are adverse events that result in extreme or major harm to patients. Events categorised as SAC 1 must be investigated by means of a root cause analysis.

A potential SAC score is also given to all incidents in addition to the actual SAC classification. The reporting of potential SAC 1 or sentinel events is voluntary, although encouraged. These notifications are included in this report under potential SAC 1/sentinel event reports. These are events that may have received a lower actual SAC but have the potential in future to reoccur as a SAC 1 event.

## Sentinel events

A subset of eight incident types, referred to as sentinel events, along with all SAC 1 events, must be reported to the South Australian Department of Health, Safety and Quality Unit. Sentinel events require an investigation by root cause analysis.

The eight defined sentinel events below have been agreed nationally to be key indicators of systemic problems:

- 1 Procedures involving the wrong patient or body part
- 2 Suicide of a patient in an inpatient unit
- 3 Retained instruments or other material after surgery requiring re-operation or further surgical procedure
- 4 Intravascular gas embolism resulting in death or neurological damage
- 5 Haemolytic blood transfusion reaction resulting from ABO incompatibility
- 6 Medication error leading to the death of a patient reasonably believed to be due to incorrect administration of drugs
- 7 Maternal death or serious morbidity associated with labour or delivery
- 8 Infant discharged to wrong family.

## State level reporting

All SAC 1 and sentinel events are required to be reported to the Safety and Quality Unit, Clinical Systems, South Australian Department of Health.

Guidelines for the reporting and management of SAC 1 and sentinel events have been developed and distributed to all hospitals. Information is collated and reviewed by the department and systemic health-care problems identified for improvement. Results of root cause analyses conducted in relation to serious adverse events, and their recommendations for system improvement, are sent to and recorded by the Department of Health. Potential SAC 1/sentinel events or near misses are reported to the department on a voluntary basis.

In November 2004 the reporting of mental health adverse events merged directly into the sentinel event reporting system to form one reporting process for patient safety and risk managers.



## Root Cause Analysis (RCA)

Root Cause Analysis (RCA) is a method of drilling down to assist in the identification of health system flaws that may not be immediately apparent at initial review. It is a technique developed by the US Veteran Affairs National Center for Patient Safety (US-NCPS) for the identification of contributing system factors in health related adverse events and near misses. During an RCA causal statements are generated through event mapping and investigation of links between context, events, actions and patient outcomes.

The characteristics of an RCA are:

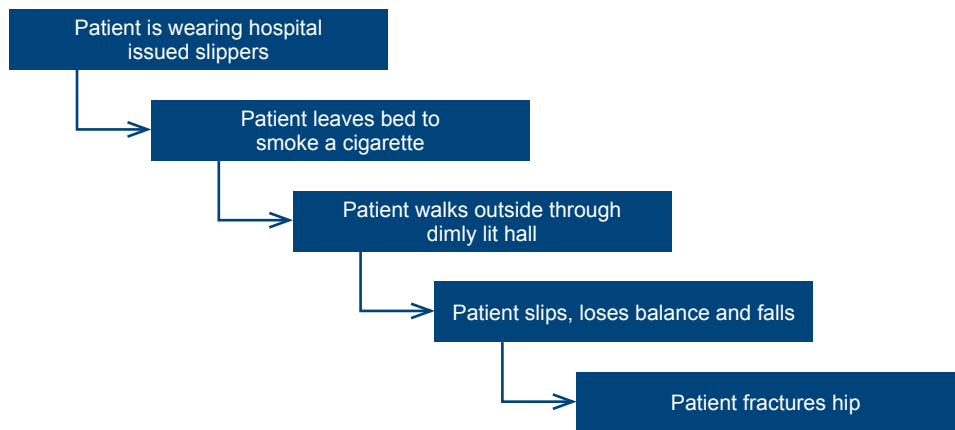
- A focus on systems and process - not individual performance
- A review of literature
- A means of extensive examination of the events in order to uncover underlying contributing factors
- The potential to lead to procedure and system change. This can occur through system redesign or the introduction of a new process to prevent recurrence
- Causal statements indicating the cause and effect of the event
- Causal statements which do not use negative language or focus on human error without a preceding cause
- An interdisciplinary approach - staff on the RCA team have knowledge about the event and the process of care
- A primary focus on systems - staff dig deeper asking *what* and *why* until all aspects of the event are reviewed and contributing factors are considered
- An environment that is safe from blame and retribution.

Two-day RCA training workshops have been provided by the South Australian Department of Health since 2003 to more than 1000 health service employees from many health care services within the state. Quality, patient safety and risk managers from the health services participate in teaching root cause analysis to health employees.

### Example of the RCA methodology

- 1 Event occurs  
*A patient fractures her hip after going outside for a cigarette.*
- 2 Clinician reports event to AIMS
- 3 Review of the report by clinical nurse manager or departmental head and SAC allocated
- 4 Review of report by patient safety manager with a decision to form an RCA team to investigate the event  
*An RCA team is arranged and meets within seven days. Members are formally commissioned to an RCA team. This is a commitment from the hospital's general manager that actions and recommendations for improvement arising from an RCA will be addressed.*
- 5 RCA is carried out  
*The adverse event is reviewed and an initial flow diagram of the chronological sequence of events is developed.*

Figure 3: Series of events leading to necessity of RCA report

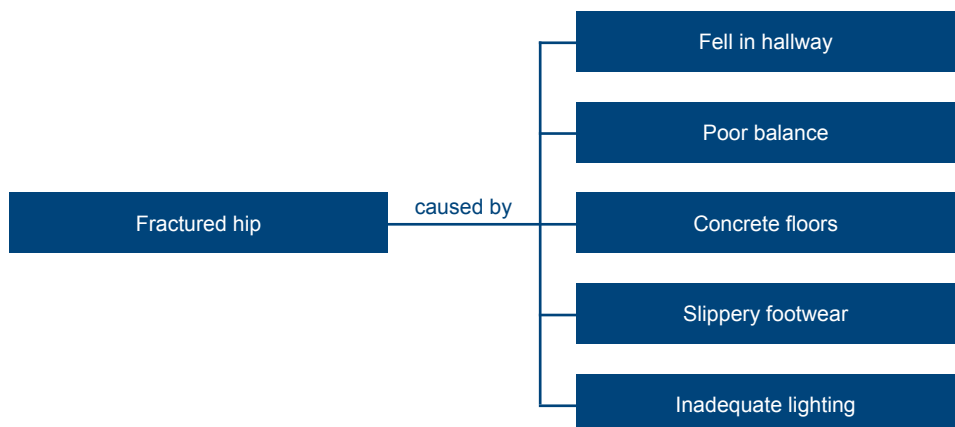


After developing the diagram, the team seeks to find out more information.

- Questions on *how?* and *why?* are asked. A booklet is used to guide team members in asking questions. This assists the team members to look deeper at the issues rather than focusing on blaming the individual
- The team gathers information to establish the context in which the event took place
- At the end of this process the team develops the final interpretation of what happened. This is then developed into a final detailed flow diagram.

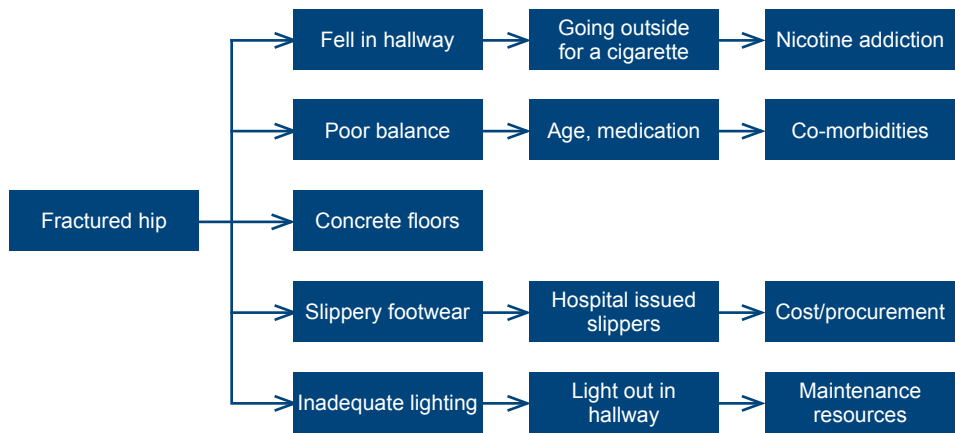
The team then develops a cause and effect diagram to uncover the causal links that will lead them to the root cause/contributing factors of the problem. This will enable the team to recommend effective barriers and solutions to the problem.

Figure 4: Causal links flow diagram – fractured hip



The final cause and effect diagram is then completed with the additional information gathered from interviews and a review of the case notes.

Figure 5: Cause and effect diagram - fractured hip



The final stage is to develop the causal statements. These statements address why something went wrong, not who was responsible.

- Due to the hospital's smoke free policy and a patient's nicotine addiction, patients use the exterior smoking shelters. This increases the risk of falling.
- Due to the lack of a process to manage unanticipated price increases in the re-ordering of patient supplies, patient slippers without slip-proof soles were procured resulting in the increased likelihood of a patient falling and fracturing their hip.

From these statements, strategies for system improvements are developed and presented as recommendations.

## Appendix C

### Safety Assessment Code

Probability Categories	Definition
Frequent (almost certain)	Is expected to occur again either immediately or within a short period of time (likely to occur most weeks or months)
Probable (likely)	Will probably occur in most circumstances (several times a year)
Occasional (possible)	Probably will recur, might occur at some time (may happen every 1 to 2 years)
Uncommon (unlikely)	Possibly will recur - could occur at some time in 2 to 5 years
Remote (rare)	Unlikely to recur - may occur only in exceptional circumstances (may happen every 5 to 30 years)



Action Required		
1	Extreme risk	Immediate action required - A Root Cause Analysis (RCA) investigation must be commenced. Reportable Incident Brief (RIB) must be forwarded to the DH.
2	High risk	Senior management attention needed - Notification to the DH and/or RCA investigation is to be undertaken at the discretion of management.
3	Moderate risk	Management responsibility must be specified eg. aggregate data then undertake practice improvement project.
4	Low risk	Manage by routine procedures - aggregate data then undertake practice improvement project.

Likelihood / Consequence	Extreme	Major	Moderate	Minor	Insignificant
Frequent (almost certain)	1	1	2	3	3
Probably (likely)	1	1	2	3	3
Occasional (possible)	1	2	2	3	4
Uncommon (unlikely)	1	2	3	4	4
Remote (rare)	2	3	3	4	4

## Analyse all incidents against ACTUAL and POTENTIAL outcomes

<b>Extreme</b>	<b>Major</b>	<b>Moderate</b>	<b>Minor</b>	<b>Insignificant</b>
<p>Patients with <b>Death</b> unrelated to the natural course of the illness and differing from the immediate expected outcome of the patient management or any of the following:</p> <ul style="list-style-type: none"> <li>• Procedures involving the wrong patient or body part</li> <li>• Suicide</li> <li>• Retained instruments or other material requiring surgical procedure</li> <li>• Intravascular gas embolism resulting in death or neurological damage</li> <li>• Haemolytic blood transfusion</li> <li>• Medication error leading to death</li> <li>• Maternal death or serious morbidity associated with labour or delivery</li> <li>• Infant abduction or discharge to wrong family</li> </ul>	<p>Patients with <b>Major permanent loss of function</b> (sensory, motor, physiologic or intellectual) unrelated to the natural course of the illness and differing from the expected outcome of patient management or any of the following:</p> <ul style="list-style-type: none"> <li>• Disfigurement</li> <li>• Surgical intervention required</li> </ul>	<p>Patients with <b>Permanent lessening of bodily functioning</b> (sensory, motor, physiologic, or intellectual) unrelated to the natural course of the illness and differing from the expected outcome of patient management or any of the following:</p> <ul style="list-style-type: none"> <li>• Increased length of stay or additional operation or procedure</li> </ul>	<p>Patients requiring <b>Increased level of care</b> including:</p> <ul style="list-style-type: none"> <li>• Review and evaluation</li> <li>• Additional investigations</li> <li>• Referral to another clinician</li> </ul>	<p>Patients with <b>No injury or increased level of care or length of stay</b>, will include near misses</p>
<p><b>Staff:</b> Death of staff member or hospitalisation of 3 or more staff</p> <p><b>Visitors:</b> Death of visitor or hospitalisation of 3 or more visitors</p> <p><b>Services:</b> Complete loss of service or output</p> <p><b>Financial:</b> Critical financial loss &gt; \$1,000,000</p> <p><b>Environmental:</b> Toxic release off-site with detrimental effect. Fire requiring evacuation</p>	<p><b>Staff:</b> Permanent injury to staff member, hospitalisation of 1 or 2 staff, or 3 or more staff experiencing lost time or restricted duty or illness</p> <p><b>Visitors:</b> Hospitalisation of 1 or 2 visitors</p> <p><b>Services:</b> Major loss of agency/service to users, including cancellation of booked surgery, more than twice</p> <p><b>Financial:</b> Major financial loss \$100,000 - \$1,000,000</p> <p><b>Environmental:</b> Off-site release with no detrimental effects or fire that grows larger than an incipient stage</p>	<p><b>Staff:</b> Medical expenses, lost time or restricted duties or injury / illness for 1 or 2 staff</p> <p><b>Visitors:</b> Medical expenses incurred or treatment of 1 or 2 visitors but not requiring hospitalisation</p> <p><b>Services:</b> Disruption to users due to agency problems</p> <p><b>Financial:</b> Moderate financial loss \$10,000 - \$100,000</p> <p><b>Environmental:</b> Off-site release contained with outside assistance or fire incipient stage or less</p>	<p><b>Staff:</b> First aid treatment only with no lost time or restricted duties</p> <p><b>Visitors:</b> Evaluation and treatment with no expenses</p> <p><b>Services:</b> Reduced efficiency or disruption to agency working</p> <p><b>Financial:</b> Minor financial loss &lt; \$10,000</p> <p><b>Environmental:</b> Off-site release contained without outside assistance</p>	<p><b>Staff:</b> No injury or review required</p> <p><b>Visitors:</b> No treatment required or refused treatment</p> <p><b>Services:</b> No loss of service</p> <p><b>Financial:</b> No financial loss</p> <p><b>Environmental:</b> Nuisance releases</p>

## Appendix D

### Contributing factors classification

The classification system is based on the major categories of the Victorian Department of Human Services model. The Victorian Classification System is available in the "Sentinel Event Program - Annual Report 2003-2004" (Department of Human Services, State of Victoria - [www.health.vic.gov.au/clinrisk](http://www.health.vic.gov.au/clinrisk)). The categories listed below are based on a modification of the Victorian model.

### Procedures and guidelines

Contributing factors that are a result of a procedure, policy, guideline or processes in providing care are incorporated under this category. These are issues relating to the availability, accessibility or the absence of policy or guidelines. They can relate to misunderstanding or non-compliance with policy, procedure or established practice.

### Human resources

This major category highlights issues surrounding the human resources of a health care organisation. This includes the allocation and management of staff.



### Communication

Information flow and availability are two main areas within the category of communication. Communication issues may result due to verbal or written forms of communication and may be between staff, patient or family members.

### Health information

This involves all issues surrounding the health information of a patient. This involves the documentation that arises from health care (medical records) or the information that is given to a patient on their condition or treatment plan.

### Patient factors

This relates to the individual patient factors, of which clinical conditions are issues.

### Equipment

This category is concerned with all issues relating to equipment. The issues surrounding equipment may include: the number of different types of equipment that have the same function, the availability of equipment, its functionality or its malfunction.

### Physical environment

This category deals with the physical environment of the health service. The focus is on design of the environment and if it supports the operations of the service. An example is the design of a room that allows for patient observation.

### **External factors**

This involves an issue that is external to the health service. An example is the use of an external diagnostic facility.

### **Organisation**

These are issues related to the organisation and may involve the organisational management of a health service or culture of that service.







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