Incident Management in the NSW Public Health System - Looking, Learning, Acting

JULY TO DECEMBER 2008
Incident Management in the NSW Public Health System

Looking, Learning, Acting

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Foreword

This seventh report on clinical incidents puts the NSW public health system under scrutiny. Such incidents can affect the safety of patients and the quality of their care.

NSW is acknowledged as a world leader in encouraging the reporting of clinical incidents, regardless of their severity or consequences. Our colleagues at the frontline of delivering health care have embraced the “reporting culture”.

Importantly, this report helps to analyse incidents and expand the “learning culture”.

As a result, many new approaches to patient safety and the quality of our care have become part of the “improvement culture”.

These characteristics exemplify the dedication and hard work of so many of our colleagues across NSW. To each of you and for your work, we say thank you.

Professor Clifford Hughes, AO
Chief Executive Officer
Clinical Excellence Commission

Professor Debora Picone, AM
Director-General
NSW Health
Executive Summary

This report provides information on clinical incidents reported in the NSW health system between 1 July and 31 December 2008. This work is part of the Clinical Excellence Commission’s (CEC) contribution to the NSW Patient Safety and Clinical Quality Program (PSCQP) established in 2004.

A clinical incident is any unplanned event which results in, or has the potential to harm a patient.

Many of the approaches being used in health care come from lessons learned in other high-risk industries like aviation, nuclear power and mining. In each it is recognised that staff are human and are prone to mistakes. We all need to concentrate on identifying risks and putting systems in place that make it easy to do the right thing every time.

The CEC and the PSCQP use a “whole-of-system” risk management approach. Notifications through the Incident Information Management System (IIMS) are a key to knowing about risks in the health system. A vital ingredient is nurturing an open “reporting culture”. Analysis of reported incidents builds a “learning culture” around these events. Increasing the number of notifications is the first step. Continued learning and targeted action needs to follow.

Clinical incident notifications totalled 61,217 in this report period, a rise of 4.5 per cent compared with the previous six months. The top five incident types continue to be falls, medication and intravenous fluid events, clinical management, aggression and behaviour/human performance. In this period, 795,370 patients were admitted to hospital for a total of 3,213,740 bed days. A further 956,821 were treated in emergency departments. NSW Health delivered 36,116 births and performed 220,366 surgical procedures. The rate of serious incidents reported is 0.097 per 1,000 bed days, less than 0.04 per cent of all admissions.

Themes continue to emerge from IIMS data and Root Cause Analysis (RCA) reports. Monitoring and observation, with recognition and management of deteriorating patients, are reflected in many improvement initiatives across the State. Patient identification incidents continue to be reported from ward, imaging and surgical services. Communication issues, including documentation and handover of clinical care, often underpin these incidents. These findings are consistent in health systems around the world.

The report also provides information about actions taken at both State and Area Health Service (AHS) level to address the issues identified. These include Safety Alert Broadcasts (SABs), projects and programs such as Between the Flags and CLAB-ICU, enhanced early pregnancy services and guidelines to ensure that the physical needs of mental health patients are addressed across the system. More importantly, local and immediate responses occur daily throughout the system, as clinical units identify problems and develop clinical solutions. The commitment of NSW Health staff to report and address risks is vital in maintaining the high quality of clinical care that patients have a right to expect.
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Background

Patient safety and clinical quality have always been central to health care. While there have been increasingly rapid advances, previously unimaginable, in our capacity to treat complex and ageing patients, we need to ensure that quality care is delivered safely every time.

To improve patient safety, we must identify and notify incidents and risks. Reporting alone, however, will do nothing to reduce the risk of harm to our patients. A robust framework is required, built on the information from incident notifications, and subsequent investigations of what has really occurred. Then we can aggregate and use the data to make improvements. These are the elements of the NSW Health Incident Management Policy and Framework.

People working in the NSW public health system are trained and encouraged to report all incidents through the Incident Information Management System (IIMS). This is accessible by all staff and is prominent on all computers in all public health facilities throughout the State. It helps managers to address identified risks and to record their actions for future learning. It is both a notification tool and a database. All information is maintained and accessible for trend analysis and review. As would be expected, incidents where a patient has been harmed, or a serious risk identified are prioritised and explored in greater detail.

Serious clinical incidents and the results of their investigation must be reported to the NSW Department of Health so that others can learn and be alerted to potential risks. One of the roles of the Clinical Excellence Commission (CEC) is to enhance learning from incident reporting. It conducts aggregated analysis and openly communicates the findings to health professionals, the Department of Health, the Minister and the public. This informs the “learning culture” needed to improve the quality and safety of patient care.

Another essential part of incident management is open communication with the patient, their family and carers, known as Open Disclosure.

Open disclosure is a frank discussion with a patient and their family/support person about a patient-related incident that may have resulted in harm or injury. The key principles of open disclosure include openness and timeliness of communication, acknowledgement of the incident, an apology, recognition of the reasonable expectations of the patient and their support person, confidentiality and support for staff.

These approaches are integral to the NSW Patient Safety and Clinical Quality Program. In addition to the CEC and Department of Health roles, Clinical Governance Units have been established in each Area Health Service to assist with implementing the program. More information can be obtained at:

The information in each section of this report is presented “thematically” -

Looking (at the incident information)

Learning (from analysis, what issues need to be addressed). Both drive the health service into

Acting (to improve the quality and safety of patient care in NSW).

An incident is any unplanned event resulting in, or having the potential to result in harm to a patient. The term “incident” is very broad and provides comprehensive information on many areas where improvements could be made.

The NSW health system uses a Severity Assessment Code (SAC) matrix. This allows the person notifying an incident to assign a ranking, known as a SAC score, by plotting the consequences
(from serious to no harm caused) and the likelihood that it could happen again (from frequent to rare). There are four ratings. SAC1 indicates extreme risk and SAC4 low risk. The processes for clinical incident management, based on SAC rating, can be found in Appendix 1.
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Key trends from IIMS

First we will look at aggregated incident notification data across the whole NSW health system. Analysis at this level allows a better understanding of trends and vulnerabilities. This is important, because incidents which occur uncommonly in one Area Health Service may have causes common to similar incidents elsewhere. The collective findings provide early warnings as well as meaningful information about what needs to be done to improve patient safety and clinical quality across the system.

Overall notifications

The 61,217 clinical incident notifications in this report compare with 58,573 during the previous six months - a 4.5 per cent increase. The rate of incident reporting (all SAC ratings) is 19 per 1,000 bed days or 7.7 per cent of admissions. The rate of serious incidents reported is 0.097 per 1,000 bed days, less than 0.04 per cent of all admissions.

The rate of reporting continues to rise. This positively reflects increasing awareness of the value of reporting - whether or not harm occurred. The ongoing trend of increased reporting rates since IIMS was implemented is shown (Figure 1). The most recent report from the UK indicates that “as many as 10 per cent of patients admitted to hospital suffer some form of harm, much of which is avoidable”. Similarly, a study reviewing 18 types of medical events in the US estimated that medical errors may account for 2.4 million extra hospital days and 32,600 deaths per year. The percentage of NSW incident notifications per admission remains consistent with international data and also tells us that we are still working toward a mature safety culture where every possible opportunity for learning is reported.

The majority (93.39 per cent) of notifications were associated with medium- or low-risk (SAC3 or SAC4 – see Table 1), with a slight increase in the percentage of SAC1-3 incidents and a reduction of just over one per cent of SAC4 notifications.

The SAC1 data includes suspected suicide of 51 mental health patients being managed in the community. The rate of serious incidents occurring in hospital drops to 0.033 per cent if these incidents are excluded. Except for Ambulance and Justice Health, Area Health Services are provided with data to show reporting rates by bed days.

<table>
<thead>
<tr>
<th>SAC rating</th>
<th>Number</th>
<th>Percentage (%) of notifications</th>
<th>As a percentage (%) of all hospital admissions</th>
<th>As a percentage (%) of all contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAC1</td>
<td>311</td>
<td>0.51</td>
<td>0.039</td>
<td>0.002</td>
</tr>
<tr>
<td>SAC2</td>
<td>1,232</td>
<td>2.02</td>
<td>0.155</td>
<td>0.007</td>
</tr>
<tr>
<td>SAC3</td>
<td>26,852</td>
<td>43.86</td>
<td>3.375</td>
<td>0.152</td>
</tr>
<tr>
<td>SAC4</td>
<td>30,318</td>
<td>49.53</td>
<td>3.811</td>
<td>0.171</td>
</tr>
<tr>
<td>No SAC allocated</td>
<td>2,513</td>
<td>4.10</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
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**Figure 1: Clinical Notifications by Month 01/05/2005 to 31/12/2008**

Who reports Incidents?

Most incidents are reported by nurses, as indicated in Figure 2. There may be a number of reasons, including: the proportionally large number of nurses in the health care work force, the number of occasions of care provided by nurses and anecdotal evidence that nurses often report incidents on behalf of other members of the clinical team. At June 2008, 40,612.2 full-time equivalent (FTE) nurses were working in NSW. Data for June 2007 indicates that there were 7,318 FTE doctors, 584 interns, 4,677 visiting medical officers (who work an average of 10 hours a week in the public health system) and 5,915.4 FTE allied health/other professional staff. Although doctors make up 13 per cent of the workforce, they report only three per cent of incidents.

**Figure 2: Clinical Incidents by Notifier**
The most common incident types notified by nurses were patient falls, followed by medication/IV fluids (the top two principal incident types overall); by doctors, clinical management; by allied health staff, including pharmacists, medication/IV fluids. Thirteen per cent of all actual SAC1 and nine per cent of actual SAC2 incidents were reported by doctors. The overall percentage of SAC1 and SAC2 incidents is 2.53, but for doctors it represents 11.12 per cent of notifications.

The highest numbers of clinical incidents are reported by staff in mental health inpatient units. This is reflective of a strong reporting culture around risks to the safety of all patients under their care, in areas where behaviours can be threatening or unpredictable. The top 10 reporting services are shown in Figure 3.

**Figure 3: Clinical Incidents by Specific Services (Top 10) for the Period Jul-Dec 08**

<table>
<thead>
<tr>
<th>Service</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obstetrics - Maternity</td>
<td>1557</td>
</tr>
<tr>
<td>Pathology</td>
<td>1772</td>
</tr>
<tr>
<td>Intensive care</td>
<td>1911</td>
</tr>
<tr>
<td>Surgical - Orthopaedics</td>
<td>1955</td>
</tr>
<tr>
<td>Surgical - General</td>
<td>2077</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>2576</td>
</tr>
<tr>
<td>Emergency medicine</td>
<td>3540</td>
</tr>
<tr>
<td>Aged Care - Geriatrics</td>
<td>5789</td>
</tr>
<tr>
<td>Medicine - General</td>
<td>6324</td>
</tr>
<tr>
<td>Mental Health - Inpatient</td>
<td>6955</td>
</tr>
</tbody>
</table>
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Figure 4: Clinical Incidents by PIT and SAC July - December 2008

The types of incident reported largely reflect the patient groups and the clinical services provided. It is not surprising that falls are the most common PIT in aged care and rehabilitation units, where patients may have problems with balance and mobility. The highest PIT in pathology services (Documentation) is a direct consequence of the focus on checking documentation for all tests ordered.

Table 2: Top 10 Specific Services and Their Top Five PITs Respectively

<table>
<thead>
<tr>
<th>Specific Service</th>
<th>Top Five Principal Incident Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Health - Inpatient</td>
<td>Aggression - Aggressor</td>
</tr>
<tr>
<td>Medicine - General</td>
<td>Fall</td>
</tr>
<tr>
<td>Aged Care - Geriatrics</td>
<td>Fall</td>
</tr>
<tr>
<td>Emergency Medicine</td>
<td>Clinical Management</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>Fall</td>
</tr>
<tr>
<td>Surgical - General</td>
<td>Clinical Management</td>
</tr>
<tr>
<td>Surgical - Orthopaedics</td>
<td>Fall</td>
</tr>
<tr>
<td>Intensive Care</td>
<td>Clinical Management</td>
</tr>
<tr>
<td>Pathology</td>
<td>Documentation</td>
</tr>
</tbody>
</table>
SAC1 Clinical Incidents

This group includes sentinel events and incidents which resulted in significant risk or actual harm to the patient. Incidents classified as National Sentinel Events are listed in the definitions at the end of this report.

All clinical SAC1 incidents are subject to an RCA, a thorough investigation technique that looks at all the contributing factors. The goal is to identify all opportunities to improve systems for the safe delivery of quality care.

In this reporting period 311 clinical SAC1 incidents were notified, compared with 281 in the previous period. They include mandatory reporting of deaths in custody and all events involving the wrong procedure or body part, regardless of the consequence for the patient. This represents an 11 per cent increase from the previous period. It includes five near-miss, 12 retained material and two sexual safety incidents, reported as SAC1 to facilitate comprehensive investigation, even though this is not mandatory. This is evidence of the value placed on learning through Root Cause Analysis (RCA).

Table 3: SAC1 Incidents According to Service

<table>
<thead>
<tr>
<th>Service or PIT</th>
<th>Jul-Dec 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental health - includes suspected suicides, mandatory reporting and aggression. Excludes clinical management of mental health patients</td>
<td>73</td>
</tr>
<tr>
<td>Maternal and Perinatal Stream (all PITs)</td>
<td>30</td>
</tr>
<tr>
<td>Blood/Blood Products</td>
<td>4</td>
</tr>
<tr>
<td>Clinical management - includes HAI, patient identification and retained accountable items</td>
<td>172</td>
</tr>
<tr>
<td>Falls</td>
<td>16</td>
</tr>
<tr>
<td>Medication/IV fluids</td>
<td>2</td>
</tr>
<tr>
<td>Mandatory reporting - including deaths in custody</td>
<td>9</td>
</tr>
<tr>
<td>Near-miss incidents reported as SAC1</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>311</td>
</tr>
</tbody>
</table>

Serious incidents involving patients who died

During the reporting period 203 (65 per cent) of the SAC1 incidents were associated with the death of a patient. This excludes mandatory reporting of nine deaths in custody and is the same percentage as the previous period. The clinical condition of patients is often highly complex. It may not be possible to determine precisely how much a particular incident contributed to their death.

It should be noted that all deaths in custody (mandatory reporting) and in special circumstances where concerns were raised about management of a critically ill or dying patient, are classified as SAC1 incidents.
Analysis of top five principal incident types and complaints

The top five PITs account for just under 70 per cent of all notifications in IIMS. The rate of reporting for these has been relatively consistent over the past three years, as shown in Figure 5. This section contains analysis of the most common types of incidents in NSW public hospitals.

Table 4: Top Five PITs by SAC Rating July – December 2008

<table>
<thead>
<tr>
<th>Clinical Incidents SAC Rating</th>
<th>SAC1</th>
<th>SAC2</th>
<th>SAC3</th>
<th>SAC4</th>
<th>No SAC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>16</td>
<td>225</td>
<td>6,148</td>
<td>6,371</td>
<td>375</td>
<td>13,135</td>
</tr>
<tr>
<td>Medication/IV fluid</td>
<td>2</td>
<td>68</td>
<td>2,846</td>
<td>6,718</td>
<td>563</td>
<td>10,197</td>
</tr>
<tr>
<td>Clinical management</td>
<td>172</td>
<td>397</td>
<td>3,678</td>
<td>3,787</td>
<td>481</td>
<td>8,515</td>
</tr>
<tr>
<td>Aggression - Aggressor</td>
<td>6</td>
<td>62</td>
<td>4,178</td>
<td>1,942</td>
<td>99</td>
<td>6,287</td>
</tr>
<tr>
<td>Behaviour/human performance</td>
<td>67</td>
<td>163</td>
<td>2,218</td>
<td>1,946</td>
<td>103</td>
<td>4,497</td>
</tr>
</tbody>
</table>

The reporting rates, by SAC score for all PITs for which incidents were reported, can be seen in Figure 3.

Figure 5: Top Five Clinical Principal Incident Types by Reporting Rates

Falls

Falls are the most commonly reported clinical incident in IIMS. They happen most frequently among patients aged 75 or older. People who fall in hospital often have more than one chronic condition, may be taking many medications and may be frail. Impaired thinking, caused by dementia or confusion, can increase the likelihood of a fall. They are also of concern in the general community, particularly as the population ages. Reducing falls and fall injury are recognised internationally as important for improving patient safety.

Even in the safest health care environments, patients can collapse when they are sick. They can also fall while being encouraged to regain mobility. There can be a tendency to accept
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these events as part of a patient’s condition. Falls, however, can lead to serious injury, from which elderly or already unwell patients may never recover.

All falls require investigation and management, even if no injury results. They are an important indicator of a person’s wellbeing and the risk of falling again.

In the reporting period 13,135 notifications identified a fall as the PIT. The table below shows the SAC categories for fall notifications.

<table>
<thead>
<tr>
<th>Principal Incident Type</th>
<th>Clinical Incidents SAC Rating</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SAC1</td>
<td>SAC2</td>
</tr>
<tr>
<td>Fall</td>
<td>16</td>
<td>225</td>
</tr>
</tbody>
</table>

Sixteen were classified as SAC1, compared with nine in the previous six months. The rise is largely accounted for by changes in the way incidents were previously classified. In earlier reports, if the patient’s fall was believed to be related to their overall clinical management, the incident was re-classified and reported under the clinical management PIT. Most fall notifications were SAC3 and SAC4, indicating the willingness of staff to report, even where there was minimal or no harm.

Reported falls have risen since the previous report from 12,515 to 13,135. The rate of 4.09 falls per 1,000 (inpatient) bed days compares favourably with best-practice figures in the international literature, which cite an average of five falls per 1,000 bed days. This is no cause for complacency, but some progress is being made.

Falls were the most frequently reported incident in general medical, aged care, rehabilitation and orthopaedic surgical wards (see Table 2). They are the second highest PIT in general surgical wards and the third highest in mental health services. They are not confined to aged care units, even though they occur most frequently in patients aged over 75. Hospital-wide action is needed to reduce this risk.

Figure 6: Clinical Area Where Fall Occurred (Top 20)
All 16 patients who were the subject of SAC1 notifications died following a reported fall in hospital. Some patients were found collapsed and may have died due to their underlying clinical condition. RCAs identified that six of the nine who sustained head injuries in falls were on anti-clotting medications, increasing their risk of bleeding in or around the brain.

The SAC2 incidents included 153 patients who sustained fractures, requiring additional treatment and a longer stay in hospital. Ninety-eight patients fractured a femur (thigh bone) - a significant injury for someone already sick enough to be in hospital. A study published in the British Medical Journal in 2002 (Goldacre et al) suggests the death rate within one year of a fractured neck of femur is between 20 and 35 per cent.

It is important also to consider the social and financial effects for patients who do not regain their previous level of independence and cannot go home, or those for whom this significant injury worsens other clinical conditions.

Analysis of SAC1 and SAC2 indicated that a significant number of falls occurred:

- overnight, when patients are attempting to go to the toilet (SAC1)
- between 9.00 and 10.00 a.m., when patients are showering and
- between 7.00 and 8.00 p.m., when patients are being settled for the night.

When all SAC ratings are included (Figure 9), the peaks continue to be in the morning and evening, as well as early afternoon. Falls continue to occur throughout the night.

In recognition of this, screening to assess each patient’s likelihood of falling is part of the admission process, particularly for those 65 or older or with conditions which increase this risk. The Ontario Modified Stratify Falls Risk Screen, which has been validated internationally, is the most common tool used. The NSW Falls Program continues to support and provide education for staff about reducing the risk. It also works with the community to keep people on their feet.

Thorough patient assessment and strategies to reduce falls risk for individuals follow-on from screening. They are benefiting from a standardised system-wide approach. Additional resources and personnel (e.g., observers) are increasingly recognised as essential to reduce fall injury risk in the ageing population. Hospitals are also buying equipment, such as beds which can be adjusted to make it easier for patients to get up safely. Installation of grab-rails and slip-resistant flooring in all clinical areas is also progressing. A program at Prince of Wales Hospital is also studying the effect of sedation on patients at night and whether this may contribute to falls risk.

**Medication/IV fluid**

Medication or intravenous fluid incidents remain a concern with 70 of the 10,197 reported being SAC1 or 2. In the previous reporting period there were 10,557.

<table>
<thead>
<tr>
<th>Top 5 Principal Incident Types</th>
<th>Clinical Incidents SAC Rating</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SAC1</td>
<td>SAC2</td>
</tr>
<tr>
<td>Medication/IV fluid</td>
<td>2</td>
<td>68</td>
</tr>
</tbody>
</table>

Medication errors can occur anywhere in the chain from prescribing, dispensing (in the pharmacy) to distributing and administering them to the patient. The process is often complex, with many steps and checks, often in separate locations within the ward setting. It can be vulnerable to human error, as it is highly reliant on memory and subject to interruption. Our systems for differentiating between medications which “look alike / sound alike” are evolving but still imperfect. The peak times for recognising and reporting errors are those when medications are being given out on the ward.
The highest percentage of medication incidents were reported by staff in general medical wards (1,441), pharmacy (837), aged care – geriatrics (562) and emergency medicine (489). The IIMS data indicates that 3.7 per cent of reported incidents contributed some harm to the patient (including a complaint being made). In 44 per cent of notifications the error was detected without any harm – a near-miss. The patient outcome was not indicated in 21 per cent of cases.

Some of the most serious incidents occurred because:

- there was an error in the dose given
- the patient was not given medication critical to their care
- the specific risk factors for the patient, such as drug interactions, were not considered.

Medication Incidents by Top 10 Agents

The medication agents most commonly involved in incidents reflect international trends (narcotics/opioids, insulin, anticoagulants and paracetamol) and are detailed in Figure 8.

Table 5: Intended Effect of Medication Agents Involved in Incidents

<table>
<thead>
<tr>
<th>Agent</th>
<th>Intended effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paracetamol</td>
<td>Pain relief, reducing fever</td>
</tr>
<tr>
<td>Aspirin</td>
<td>Pain relief, reducing fever and inflammation</td>
</tr>
<tr>
<td>Oxycodone, morphine, fentanyl</td>
<td>Opiate-based pain relief</td>
</tr>
<tr>
<td>Methadone hydrochloride</td>
<td>Pain relief or management of drug dependence</td>
</tr>
<tr>
<td>Warfarin sodium, heparin, enoxaparin sodium (clexane)</td>
<td>Anti-thrombotic (anti-clotting) agents</td>
</tr>
<tr>
<td>Insulin</td>
<td>Synthetic hormone used to manage diabetes</td>
</tr>
</tbody>
</table>
Where notifier details were specified, nurses reported over 5,800 medication incidents, pharmacists less than 1,700 (mostly about prescribing errors) and doctors less than 250. The vast majority are administration errors and cause no harm to the patient (SAC3 or 4). Many medication/IV fluid incident reports relate to incomplete documentation at all stages of delivery. They reflect that the checking mechanisms in place do detect errors and help to prevent harm to patients.

The NSW Department of Health has a Statewide Medication Committee to oversee the safe and effective use of medications across the State. A web site has been established for NSW Health staff. It includes advice on safe handling of high-risk medications like
antibiotics, potassium and other concentrated electrolytes, insulin, narcotics & sedating agents, chemotherapy, heparin and other anticoagulation agents.

Medication Safety Self-assessment (MSSA)

The CEC coordinates the MSSA program in collaboration with international groups in Canada and the USA. Other Australian states now contribute data to the program. It provides facilities and pharmacists with a structured framework to assess current medication safety practices and allow them to:

- assess the effectiveness of their medication policies and procedures in terms of patient safety outcomes
- systematically identify gaps in the delivery of care that could constitute a medication risk and areas for improvement
- measure performance against international benchmarks to identify continual improvement over time.

High-level action is essential to address internationally recognised risks. Important improvements can also respond to a single incident. A great example follows.

A review of IIMS data by the CEC identified a reported medication incident, in which a patient received a higher than normal dose of a widely-used pain-relief agent, fentanyl, when being transported to hospital. The patient was quickly treated and was not harmed.

The Statewide IIMS database was searched to find similar incidents related to use of fentanyl. International literature was also reviewed. Although only a small number of incidents (mostly SAC3) were identified, when the information was discussed with the ambulance service, they responded promptly by:

- reviewing and adjusting their pain-relief protocol
- conducting internal review of all relevant cases
- advising staff of the incident

so that this effective medication could continue to be used safely.

Clinical Management

Clinical management is the third highest category of notifications in IIMS but contains the highest number of SAC1 incidents.

The clinical management category records patient care incidents, including diagnosis, investigations, treatment, clinical observations and monitoring. Risks associated with the transfer of care and sentinel events involving patient identification, retained instruments and procedures carried out on the wrong part of the body are also included in this incident type.

From July to December, 2008, 8,515 clinical management notifications were received, compared with 7,870 in the previous period. This is an eight per cent increase. The relatively high percentage of both SAC1 (2.02) and SAC2 (4.66) incidents in this PIT reflects the increasing complexity of clinical care.
Looking, Learning, Acting

<table>
<thead>
<tr>
<th>Principal Incident Type</th>
<th>Clinical Incident SAC Rating</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SAC1</td>
<td>SAC2</td>
</tr>
<tr>
<td>Clinical Management</td>
<td>172</td>
<td>397</td>
</tr>
</tbody>
</table>

To enable collection of more specific information for analysis of clinical management incidents, the classification was improved early in 2008. It is, therefore, not possible to speculate about the factors underlying the reported increase in these rates. The number of incidents where one or more of these categories has been selected is shown in Figure 13.

Figure 10: Clinical Management Incidents across all SAC Categories July to December 2008

As in the previous period, the highest number of incidents under the clinical management PIT related to decisions and processes of treatment. This represents a 45 per cent increase in reporting in this category (2,248 compared with 1,540). It includes events where the notifier believed the care provided was delayed, inadequate or not the most appropriate treatment for the patient’s clinical condition at that time. The highest numbers were about treatment of the patient being inadequate or delayed (over 2,100). This classification includes incidents where:

- the availability of diagnostic services delayed the treatment of patients
- test results were not appropriately reviewed
- there were delays in obtaining a senior medical or specialist review
- the patient did not receive all the treatment expected within the recommended time for the clinical condition.

There were 37 SAC1 incidents classified as inadequate or delayed treatment.

In a relatively small number of cases, the notifier believed the patient had received the wrong treatment for the condition.

The next highest category was transfer of care, related to handover to another clinical team or to home. There were 958 incidents, compared with 632 in the previous reporting period – a 52 per cent increase. The proportion of notifications related to transfer also rose - from eight to 11 per cent. Three SAC1 RCAs identified that the main contributing factor related to transfer of the patient’s care.
The treatment and transfer of care categories both reflect concerns about written and verbal communication between staff and with patients and their families, as well as the complexity of effectively co-ordinating all the components of care.

**Retained accountable items** requiring surgical removal are reported as SAC1 incidents. Further detail on these is contained on the following page.

The rest of the 90 incidents in Figure 10 (SAC2-4), reflect occasions where an error was recognised and rectified. They demonstrate the effectiveness of checking mechanisms to ensure that all items used in operating theatres are accounted for. They include near-miss incidents where x-rays are undertaken, or instrument counts repeated, if there is any suspicion that any item is missing.

Procedures involving the wrong patient or body part are also classified as SAC1 incidents. There were 51 in the current reporting period, including seven related to infant feeding with breast milk. The remaining **incorrect patient/procedure/site** incidents shown in Figure 10 are those where potential for such an incident has been recognised by staff. All areas where clinical tests and procedures occur must have checks in place to match the patient to the intended procedure. Variations from these processes are often reported even though no harm has occurred.

**SAC1 Clinical Management Incidents**

All SAC1 clinical management, falls, medication/IV fluid and blood/blood product incidents are checked by the State RCA Review Committee to:

- identify emerging themes and risks
- inform further investigation and analysis
- understand and articulate risks to patient safety and, most importantly
- facilitate feedback to clinical leaders and escalation of concerns to the Department of Health.

The classifications identified during Root Cause Analysis of clinical management SAC1 incidents is shown in Table 6. This represents the aggregated data following review of final RCA reports. In a small number of RCAs a classification cannot be applied.

**Table 6: Clinical Management SAC1 Incidents by Specific Issue**

<table>
<thead>
<tr>
<th>Category of Care</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jan-Jun</td>
<td>July-Dec</td>
</tr>
<tr>
<td>Diagnosis missed or delayed</td>
<td>34</td>
<td>37</td>
</tr>
<tr>
<td>Complication - not the desired treatment outcome</td>
<td>21</td>
<td>15</td>
</tr>
<tr>
<td>Investigation delayed/not ordered or reviewed</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Observations not performed/significance not recognised</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Transfer of care - delayed or inadequate planning</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Inter-hospital transfer - inadequate stabilisation</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Treatment - delayed and/or inadequate</td>
<td>16</td>
<td>33</td>
</tr>
<tr>
<td>Retained material following a surgical procedure</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Identification - wrong patient, site or procedure</td>
<td>40</td>
<td>42</td>
</tr>
</tbody>
</table>

*includes near-miss incidents
The Australian Commission for Safety and Quality in Health Care (ACSQHC) worked with the States and Territories to develop an agreed set of **National Sentinel Events**, which are reported annually. NSW Health applies a broader interpretation of these definitions which include:

- all procedures and diagnostic tests where a **patient identification error** occurred, regardless of the seriousness of the outcome for the patient. This includes blood tests being taken from the wrong patient, because of the potential for wrong treatment, based on an incorrect test result. In the current period, all RCAs related to blood test incidents stated that the error was detected without any harm occurring. Of the 44 identification-related SAC1 incidents, 24 occurred in imaging/nuclear medicine, 10 in ward areas, nine in the operating suite and one in a dental service.

- **retained material** incidents, regardless of whether surgical removal was required. In the current reporting period, 12 of the 24 incidents related to retained material deemed to be more problematic to remove than to leave inside the patient. This includes small fragments of surgical drill bits which broke and became embedded in bone during orthopaedic procedures.


Detailed analysis of RCAs also identified:

- thirty cases where there was a delay in recognising a deteriorating patient
- four where guide wires were unintentionally left in patients after insertion of an intra-vascular line
- forty-four where inadequate patient identification resulted in the wrong patient undergoing a procedure, most commonly an x-ray.

RCA identified underlying issues which either contributed to, or failed to prevent these incidents. They include system issues, human (staff) and patient factors.

In response to four cases where guide wires were unintentionally left in patients after insertion of an intra-vascular line, a Safety Alert was developed and released in June 2009. It highlights this risk for clinical staff and advises how it can be reduced. It can be viewed at: [http://www.health.nsw.gov.au/quality/sabs/index.html](http://www.health.nsw.gov.au/quality/sabs/index.html)

There is an international focus on surgical safety, including the launch in June 2008 of the second WHO Global Patient Safety Challenge “Safe Surgery Saves Lives”. It provides resource material, including checklists, to ensure correct site surgery, avoid surgical site infections, improve anaesthetic safety and improve surgical team communication. In NSW many of these elements are covered by pre-existing policy and checklists for patient/procedure identification, venous thromboembolism and antibiotic prophylaxis. For more information about the WHO “Safe Surgery Saves Lives” campaign go to: [http://www.who.int/patientsafety/safesurgery/en/](http://www.who.int/patientsafety/safesurgery/en/)

Similarly, the NSW Correct Patient, Correct Procedure and Correct Site policy directive describes what must be done to ensure that surgical operations, endoscopy, dentistry, radiology, nuclear medicine, chemotherapy and radiation therapy procedures go according to plan. A key component is “Time-out” where the whole team stops to confirm identification.
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National and international research also highlights the importance of strengthening clinical teamwork and giving all members confidence to speak up when risks to patient care are identified. The WHO and the Imperial College London have followed the lead of other high-risk industries of encouraging and empowering surgical teams to communicate effectively to improve safety. Other studies have shown that, despite many complexities affecting communication, staff were attracted and more likely to share critical information when they felt supported in their work environment. This may have been a factor in lower mortality and adverse event rates within the clinical units studied. Improving communication is an emerging focus throughout health care training in NSW and is often incorporated in simulation training for high-risk and emergency situations.

Clinical Management Incidents in Maternal and Perinatal Services

There are over 80 facilities which provide maternity services in NSW. Six role levels relate to the complexity of care that can reasonably be managed and supported at the service. This care is dependent on neonatal and clinical support services and the skill mix of staff, rather than the particular skills of individual health professionals.

Most pregnancies and births proceed with little intervention. Every pregnancy, however, requires a thorough risk assessment to ensure that mothers who need additional care at any stage are directed to appropriate services before the birth of the child. Safe maternity care relies on tiered networks to provide consultation and where appropriate, referral and transfer to higher levels of care.

The pregnancy and birth cycle involves three stages - the antenatal period, the birth itself and the care of mother and baby afterwards. Care must consider the wishes of mothers and ensure the best health outcomes. During the report period there were 36,116 births in NSW public hospitals.

During the reporting period, 1,320 incidents were notified by obstetric-maternity services. SAC3 and SAC4, where no ongoing harm occurred, made up over 92 per cent of incidents reported (44 and 48 per cent respectively). The most frequently reported PITs were clinical management, medication/IV fluid and documentation. Clinical management was the primary reason for 58 per cent of incidents. This PIT includes issues associated with monitoring of mothers and babies and management of ante- and post-partum bleeding. Thirty of the notifications for maternity and perinatal care were classified as SAC1, compared with 25 in the first half of 2008.

Figure 11 reflects the stage(s) where SAC1 maternity and perinatal clinical management incidents occurred. Note that each incident may have involved more than one stage.

Figure 11: Maternal and Perinatal SAC1 Incidents by Stage of Care July-December 2008

*The paediatric incident related to wrong expressed breast milk being given to a baby readmitted to hospital. NICU/SCN = neonatal intensive care unit/special care nursery.
Even with appropriate care, some babies die, sometimes without any indication of problems, sometimes due to known complications. It is not required to refer all perinatal (infant) deaths to the coroner, so in some cases the exact cause of death may not be known. During the report period, there was one maternal death, caused by an underlying clinical condition.

Seven incidents related to provision of breast milk. In three cases the baby was given to the wrong mother to feed. Four babies received the wrong expressed breast milk. Seven of these incidents occurred in the first half of 2008.

The RCA report information was aggregated to identify common system issues. Staffing and workload, communication between care providers and usefulness of policy/guidelines were the most frequent ones identified.

The RCAs also show that the clinical management issues identified were similar to those in other specialities. Nine identified issues with treatment, five indicated that the significance of clinical observations was not immediately recognised, seven related to patient identification (breast milk) and three identified difficulties with timely diagnosis of complications during childbirth.

The majority of RCA recommendations were about changing work processes, providing further education and developing and reviewing policies. A smaller number involved standardising communication, reviewing staffing numbers/skill mix, or developing checklists to ensure that all possible risks are considered.

Improving Early Pregnancy Care

The Hughes/Walters Inquiry, which reviewed an incident where a woman had a miscarriage in the Emergency Department at Royal North Shore Hospital, made 21 recommendations about improving the care of women experiencing problems in early pregnancy. These apply to all public hospitals in NSW. The then Health Minister, Hon. Reba Meagher, announced additional funding of $4.5 million for the 2008-09 financial year to implement the improvements.

The recommendations included the establishment of:

- Early pregnancy units (EPUs) co-located in emergency departments
- Early pregnancy assessment services (EPAS) co-located in maternity.

The main role of EPUs is to fast-track the assessment, initial management and early access to psychological support services for women with uncomplicated early pregnancy problems below 20 weeks gestation. Women may also be referred to EPAS for outpatient care.

Clinical Management Incidents in Mental Health Services

Two SAC1 clinical management incidents related to mental health patients with acute medical conditions, including pulmonary embolism and peritonitis. Treatment issues were the most common in the SAC2 incidents. They also reflected concerns about the management of patients who were physically unwell and had complex conditions, together with care coordination issues. Treatment and transfer of care were the two most common issues notified in the SAC3 and SAC4 incidents.

Ensuring the physical health care of mental health patients is essential.

Policy and guidelines providing clear direction to Area Health Services about this question were released in May 2009. They combine practical strategies to improve service delivery and information on appropriate health care tests and checks. Posters and information sheets for patients, families and carers, GPs and health staff have been distributed. The policy is supported by training for staff.
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Aggression

The fourth highest number of IIMS notifications list “aggression-aggressor” as the PIT. They include aggression by patient-to-staff, patient-to-patient and by visitors entering health facilities. The majority are about aggressive behaviour by patients towards staff.

The victims are most often staff caring for vulnerable patients – those with mental illness, dementia, delirium and other conditions affecting the brain. Aggression can also result from use of alcohol and other drugs and can occur in emergency departments. Most incidents did not cause serious harm, but they are disruptive and distressing.

There were 6,287 notifications under the aggression-aggressor category. Four thousand, including all six SAC1s, were notified by mental health services.

<table>
<thead>
<tr>
<th>Principal Incident Type</th>
<th>Clinical Incident SAC Rating</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SAC1</td>
<td>SAC2</td>
</tr>
<tr>
<td>Aggression - Aggressor</td>
<td>6</td>
<td>62</td>
</tr>
</tbody>
</table>

Aggression represented 43 per cent of the 10,312 notifications in mental health services. The majority, classified as SAC3 and SAC4, related to patient aggression towards staff. Two sexual safety incidents were rated SAC1 to facilitate incident investigation. The SAC2 incidents generally concerned acts of hostility or violence in both inpatient and community settings. A small number related to sexually-disinhibited behaviour by inpatients. Verbal aggression dominated the SAC3 and SAC4 incidents.

Developing staff skills to manage confused and disorganised behaviour is generally included in mandatory training for areas such as mental health and dementia care. It is essential to maintain safety to care for patients.

The Guidelines for the Promotion of Sexual Safety in NSW Mental Health Services released in 1999, were revised and re-released in 2005, and are next due for review in 2010. Feedback indicates that earlier review would assist mental health staff to keep patients safe. Workshops and consultation with key stakeholders have helped to guide the project framework.

Behaviour/Human Performance

This category includes incidents where patient behaviour was considered to be non-compliant, unco-operative, reckless or risky, including self-harm, wandering or absconding. The majority of notifications were made by mental health services.

<table>
<thead>
<tr>
<th>Principal Incident Type</th>
<th>Clinical Incident SAC Rating</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SAC1</td>
<td>SAC2</td>
</tr>
<tr>
<td>Behaviour/human performance</td>
<td>67</td>
<td>163</td>
</tr>
</tbody>
</table>

All 67 of the SAC1 incidents were reported by mental health services.

Suspected suicide of any patient receiving mental health care is classified as SAC1 whenever the person was:

- an inpatient at the time
- on authorised leave or absent without leave from an inpatient unit
- being managed in the community and in contact with a public mental health facility within seven days of the death or
- there are reasonable clinical grounds to suspect a connection between the death and the care/treatment provided.
Fifty-one suspected suicides met these criteria. All suicides in mental health services are regarded as ‘suspected suicides’ until a formal cause of death is provided by the coroner. There were no inpatient (hospital) suicides in the reporting period.

Clinical Incident Review Committee

A clinical incident review committee established in September 2008 provides a structured approach to aggregated RCA reports from mental health and/or drug and alcohol services across the State. It reports on issues identified and provides advice to Area Health Services on addressing these clinical risks.

Suicide Risk Assessment and Management Prevention Framework

The Framework was developed to improve the skills of health workers in key NSW Health settings in relation to the detection, assessment and management of patients who may be at risk of suicide. It was released in 2005 as a component of the NSW Health policy on the management of patients with suicidal behaviour. An electronic training program for the Framework was also released. An evaluation is being conducted to ensure the Framework is up to date and being fully implemented across AHS. A suggestion of a reduction in suicides over recent years requires caution. Interpreting changes in small numbers, which may be influenced by chance factors or random events could be misleading.

Suicide Prevention Strategy

The 1999 Whole-of-Government Suicide Prevention Strategy is also being revised. It provides a framework for building resilience and preventing suicide and suicidal behaviour, in partnership with families and the community. The government committed to a range of actions across the following strategic directions:

- increasing communities’ ability to prevent suicide
- providing outreach and support for groups at higher risk
- enhancing the effectiveness of services in suicide prevention
- providing support for people affected by suicide
- providing information on suicide prevention.
Complaint Management

The NSW Health Complaint Management Policy requires patient concerns to be resolved effectively and in a timely manner and that the system learns. It is underpinned by the following principles:

- encourage patients and their families to provide feedback
- acknowledge and respond to complaints quickly and sensitively
- deal with complaints in a manner that is effective, complete and fair to all parties
- communicate complaint information openly, while protecting confidentiality and privacy.

A senior complaints officer is located in each Area Health Service clinical governance unit. Senior staff are available 24 hours/seven days a week to hear the concerns of patients, families and carers. Each hospital can provide contact details for these officers. Complaints and their resolutions are recorded in IIMS.

In the reporting period 6,303 complaints were received, compared with 8,926 in the previous six months. Of these, 6,188 have had the severity assessment code confirmed locally by the health service at the time the data was extracted. The SAC distribution of these incidents is illustrated below.

<table>
<thead>
<tr>
<th>Principal Incident Type</th>
<th>Complaint Incident SAC Rating</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SAC1</td>
<td>SAC2</td>
</tr>
<tr>
<td>Complaint</td>
<td>3</td>
<td>86</td>
</tr>
</tbody>
</table>

The number of complaints reported in IIMS shows staff commitment to hearing concerns raised and learning from the information received. As discussed earlier, the number of clinical incidents notified as complaints is significantly less than those identified by staff. There were 6,303 complaints, compared with 61,217 clinical incident notifications.

What did people complain about?

The top three complaint categories were communication, treatment and access. These were the same in the previous six-month period.

“Communication” was the primary issue identified in 28.6 per cent of complaints compared with 18.7 per cent in the previous reporting period. Patients saw staff as being unhelpful, lacking compassion or abrupt. It includes complaints about information on test results and treatment. It also covers how the family should care for the patient at home.

The classification of “Treatment” was applied to 27.9 per cent of complaints, compared with 16.8 per cent in the previous six-month period. Complaints related to receiving all of the care required to treat the condition, infection control, medication and co-ordination of care. This category also covers organising the necessary equipment needed to accompany a patient home and helping the family plan for this move.

“Access” was the category applied to 25.1 per cent of complaints. This was applied to 15.0 per cent in the previous period. Complaints related to the availability of speech pathology, the opening hours of clinics, the postponement of surgery and waiting for long periods in a clinic or emergency department.
The ability of staff to better communicate with patients is being addressed by the Leadership Development Program. Area Health Services are providing communication training for front-line staff. The aim is to assist in balancing the demands of their jobs, while remaining responsive to patients’ needs.

Consumers can play an active role in their own health care. Ten Tips for Safer Health Care follow. More information can be found on the website of the Australian Commission for Safety and Quality in Health Care.

Be actively involved in your own health care.
Speak up if you have any questions or concerns.
Learn more about your condition or treatments by asking your doctor or nurse and by using other reliable sources of information.
Keep a list of all the medicines you are taking.
Make sure you understand what the medicines are for and how to use them.
Get the results of any test or procedure.
Talk to your doctor or other health care professional about your options if you need to go into hospital.
Make sure you understand what will happen if you need surgery or a procedure.
Make sure you, your doctor and your surgeon all agree on exactly what will be done.
Before you leave hospital, ask your health care professional to explain the treatment plan you will use at home.

Issues identified

Review of the aggregated data facilitates identification of key issues which emerge from incident notifications. The recognition and management of deteriorating patients, the ongoing prevalence and impact of patient falls and the risks associated with hospital acquired infection were key issues identified during this reporting period.

Managing the deteriorating patient

Delays in recognition and response to patients whose condition was deteriorating were identified in 30 of the SAC1 incidents. Within the clinical management PIT, over 600 notifications related to monitoring and observation of patients. This is an essential part of identifying a change in a patient’s condition. A number of RCAs included recommendations about improving the capacity of busy staff to:

- identify patients at risk as early as possible
- provide an expert rapid response to improve the patient’s outcome.

The issues associated with failure to recognise deteriorating patients were also highlighted in the Final Report of the Special Commission of Inquiry into Acute Care Services in NSW Public Hospitals which can be found at: [http://www.lawlink.nsw.gov.au/lawlink/Special_Projects/ll_splprojects.nsf/pages/acsifinalreport](http://www.lawlink.nsw.gov.au/lawlink/Special_Projects/ll_splprojects.nsf/pages/acsifinalreport)

Chapter 19 “Deteriorating Patients” reports the inquiry’s findings which culminate in the following recommendation:

**Recommendation 91:**

Within 12 months, NSW Health is to implement a system in accordance with the recommendations of the Clinical Excellence Commission for the detection of deteriorating patients containing the following elements:

- a system for early identification of an at-risk patient in every hospital in NSW (this system will involve the implementation of a specifically designed vital signs/observation chart);
- escalation protocols to manage deteriorating patients, which would include a rapid response system;
- development and implementation of detailed education and training programs, aimed at recognising and managing the deteriorating patient;
- the ongoing collection and analysis of appropriate data to monitor the implementation and progress of the program;
- a standardised process for the handover of patients which can be utilised on all occasions and can equally be done when all clinicians are not on site together;
- high-level support from management and clinicians; and
- ongoing evaluation.

The CEC continues to work on this project with front-line staff. It is also leading work around the recognition and management of the deteriorating child.

Standardising handover and recording of physiological parameters are essential to recognise when a patient is deteriorating. All staff must be educated to escalate concerns and to obtain assistance for the patient. All these approaches recognise the importance of keeping clinical staff at the patient’s bedside for as much time as possible. Administrative and preparation-for-care tasks should be streamlined to ensure that handover of care includes all relevant information for the wellbeing of the patient. This is recognised within the NSW Health Essentials of Care program and the Garling Report.

Healthcare Associated Infections

Healthcare Associated Infections (HAIs) are a major issue in the quality and safety of health care, both internationally and in Australia. They can prolong hospital admissions and can cause significant harm to patients, some of whom die as a result. HAIs reported during the current period were the thirteenth largest PIT. Three SAC1 incidents were reported. The processes for gathering and sharing data about HAIs have been strengthened. Patient outcomes, such as surgical site and central line infections, are reported to NSW Health as indicators, as well as into IIMS. The most effective way to reduce the spread of infection, both within hospitals and in the community, is to practise good hand hygiene and, where appropriate, sterile procedures.

The importance of hand hygiene

Hand hygiene is well recognised as the single most important strategy to reduce the spread of harmful infectious agents to patients in hospitals. Every State in Australia and many other countries, are grappling with this issue. The importance of hand hygiene was first recognised by scientists in the 1840s and confirmed by Florence Nightingale in improving survival rates for soldiers injured in the Crimean War in 1854.

In October 2005, the World Health Organization (WHO) launched the first Global Patient Safety Challenge "Clean Care is Safer Care". In 2006/07 the CEC, in partnership with NSW Health, conducted a Statewide campaign to improve hand hygiene compliance. Clinical and other staff were observed systematically in hospitals across the State. Compliance rates were re-audited in July 2008 to measure how well the changes achieved during the campaign were sustained.

Compliance varied according to professional group. While nursing staff had the most opportunities, they also had the highest compliance. Medical staff compliance overall was poor, a fact recorded worldwide. Area Health Services (AHSs) reported between 39.1 and 85.2 per cent compliance. Of nine submitting data in July 2008, six reported lower levels of compliance since February 2007. Most notably, three AHSs reported approximately 30 per cent decline.

One AHS, measuring the greatest improvement, had continued audits after the completion of the Clean Hands Save Lives campaign. Comprehensive and regular feedback was provided to all staff. This enabled regular monitoring of ward performance and instilled a recognition and reward process for high-performing areas. It reported hand hygiene compliance over 80 per cent between July and December 2008.
The Clinical Excellence Commission is leading the NSW implementation of the National Hand Hygiene Initiative. More information can be found at: http://www.cec.health.nsw.gov.au/moreinfo/handhygiene.html

CLAB-ICU

The Central Line Associated Bacteremia (CLAB) project has been discussed in previous reports. It continues to support and monitor the use of standardised techniques for sterile insertion of central lines. One aim has been to achieve a 20 per cent reduction in CLABs in ICU patients by January 2008 and a further 8 per cent by January 2010. By July 2008, after the first 12 months, the overall infection rate had dropped from 3.2 per 1000 line days to 1.9 - a 40 per cent improvement. The infection rate for the first three days post-insertion fell by 89 per cent to 0.2 infections per 1,000 line days. This standardised method has been very successful in reducing the CLAB rate in NSW public hospitals. The commitment of ICU staff in achieving this safety improvement is commended.

Patient falls in hospital

Patient falls are a recurring and complex issue across the NSW health system. Similarly, the US Joint Commission recorded them as the largest single category of reported incidents. During the reporting period, nine patients sustained serious head injuries and 153 sustained fractures as a result of falls in hospital settings.

Understanding the underlying causes of incidents

Root Cause Analysis (RCA) identifies factors which may have contributed to serious (SAC1) clinical incidents, to prevent them in future. The NSW RCA Review Committee checks all clinical management incident reports so that emerging themes and underlying issues can be identified and highlighted for action. In addition to the IIMS classification sets, it looks at underlying factors for patients, human (staff) and the system.

In this context “system” refers to co-ordination of care, routine treatment processes and the application of best practice guidelines and policy. All are essential for the provision of quality care to the right patient, at the right time and in the best possible location. The most common system factor identified was inadequate communication between staff caring for the patient, including when care is being handed over to another shift or speciality team. Availability, awareness and usefulness of policy, procedures and guidelines was the second highest factor. RCAs also identified that workforce issues, including skill mix, education and orientation can impact on the capacity of staff to provide quality care.

The term “human factors” refers to types of errors made by doctors, nurses and other health care staff. These are broadly categorised into:

- cognitive errors, related to interpretation of information and decision-making, e.g., assuming that because it is raining outside, it will be cold
- skill-based errors, where a step in a familiar task is inadvertently omitted, e.g., forgetting to turn off the oven after removing the food
- violations, e.g., crossing a clear road against the ‘don’t walk’ signal, or exceeding the speed limit by a few kilometres per hour.

Sixty-two clinical management RCAs identified human factors – most commonly violations of policy/procedures and cognitive errors. Violations generally occur because staff are trying to expedite care of patients in high-workload areas. There is no intention of causing harm.
Cognitive errors can occur because information is incomplete or misinterpreted. A cognitive error can delay a correct diagnosis or recognition of significance of clinical signs. Interruption of a task can increase skill-based and cognitive errors. In hospital settings it can be difficult to avoid interruptions, because it is important to respond to patient, family and staff needs as they arise. Observation in Australian hospitals indicates that the rate of interruptions during an ICU ward round can be as high as 16 per hour. This can lead to incomplete handover of information. Increasing the time nursing staff spend with patients and providing checklists and prompts for comprehensive handover improve the flow of care and reduce the need for interruptions.

Skill-based errors are often associated with fatigue and reduced attention, although studies with pilots using simulators have shown that, when fatigued, they are more vigilant for errors and the frequency does not increase. Perhaps we have come to expect the same of clinical staff working long hours, because they recognise the importance of providing the right care.

Review of the RCAs attempts to determine if particular groups of patients are more likely to be involved in a serious incident ("patient factors"). Some international studies show that certain groups, such as older males of African-American origin, are more likely to be involved in an adverse event in hospital. In NSW, however, the most common patient factors largely represent groups with higher rates of admission to health care services – i.e., those aged over 75, who have chronic conditions such as diabetes, heart or renal failure or cancer. Other factors, such as having English as a second language, obesity, impaired cognitive functioning due to mental illness, dementia, confusion or delirium were also identified. While it is important to recognise and manage increased risk for older, sicker patients, it is equally important to be alert to potential risks for all patients in the health system.

Sharing lessons learned with clinical staff

Analysis of IIMS and RCA data is of no benefit if the findings are not shared with those who care for patients every day. In addition to this biannual report, the CEC does this in a number of ways, including:

- biannual IIMS reports to each Area Health Service
- monthly feedback to directors of clinical governance from the RCA Review Committee
- Clinical focus reports, highlighting emerging themes
- Liaison with clinical interest groups, the Greater Metropolitan Clinical Taskforce, NSW Health taskforces and committees and
- Other clinical quality forums.

Provision of clinical focus reports to the NSW Reportable Incident Review Committee (RIRC) has also been effective in prompting and informing safety alerts and reviews of care processes. Effective patient care.

The Safety Alert Broadcast System

NSW Health has developed the Safety Alert Broadcast System (SABS) to relay concerns as quickly as possible. They provide health services with early warnings about safety issues and indicate who is responsible for taking action. Focus groups conducted with health professionals show that the system is proving effective.
There are three levels of warning:

- **Safety Alert**: Requires immediate action, designates who is responsible and calls for mandatory reporting of the steps taken to address the risk.
- **Safety Notice**: Alerts designated managers to important issues. They must review or develop processes and protocols to ensure that the issue is managed for any safety risk.
- **Safety Information**: Provides information on safety issues.

Five safety alert broadcasts were released during this reporting period. Two related to recall by the Therapeutic Goods Administration (TGA) of equipment used in treatment. The others related to peripherally inserted central catheter (PICC) lines, whooping cough and autonomic dysreflexia.


In the previous report specific mention was made of a safety alert issued about pulmonary embolism in young people. None were reported in the current period.

**Acute Coronary Syndrome**

The previous report discussed action taken by the Clinical Services Redesign to improve the availability of guidelines for management of patients with acute coronary syndrome (ACS). Their action, along with a safety notice issued in April 2009, continues to raise awareness about symptoms of ACS and the importance of screening for this group of time-critical conditions.

Other Learnings

Throughout the health system improvements to the quality and safety of clinical care are responding to risks notified in IIMS. Many are monitored at both Area Health Service and State level, but others receiving less recognition may be equally effective and important. The commitment of health professionals, supported by clinical governance units, management at all levels and ultimately the Department of Health is recognised and applauded.

We cannot fix risks we don’t know about, so the 4.5 per cent rise in reporting rates is a positive step towards making health a learning organisation. Sharing the lessons learned from analysis and solutions trialled can be complex in such a large, diverse organisation, but progress is being made. A review of the current root cause analysis methodology used in NSW started early in 2009 and is expected to enhance the effectiveness and learning from serious incident investigations. The way information gathered during RCA is aggregated, reviewed and communicated to health professionals is also evolving.

The issues associated with recognition and management of patients who clinically deteriorate are now widely recognised, with many local and State-level strategies working to improve this aspect of patient care. As well as the Between the Flags project, the CEC is working with paediatric doctors and nurses to address this issue, recognising that children whose condition is deteriorating may exhibit different symptoms from adults.

Communication and handover of care issues have again been evident, particularly among the clinical management PIT. The NSW Acute Care Taskforce is working with health professionals to facilitate comprehensive handover of all relevant clinical information at every point where care of the patient is transferred.

It is encouraging to see that IIMS data is increasingly being explored by clinical groups and when consideration is being given to equipment purchase and process change. With over four years of data within the system, IIMS is now a rich source of information about risks to safe and effective patient care.

We are committed to providing ongoing reports on incidents within the NSW health system. We look forward to providing you with more information on the progress of changes made in response to this analysis in our next report. We will continue to look. We continually learn and we again commit to continuous action in clinical practice improvement.
References

- Oliver D and Healey F, (2009), Falls risk prediction tools for hospital inpatients: do they work? Nursing Times; 105, 17, 18-21
### APPENDIX 1: Managing Clinical Incidents in the NSW Health System – SAC Matrix

<table>
<thead>
<tr>
<th>SAC1 - Extreme risk</th>
<th>SAC2 - High risk</th>
<th>SAC3 &amp; 4 – Medium or low risk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Immediate actions</strong></td>
<td>Immediate threats to safety removed. IIMS notification made. Area Health Service (AHS) Chief Executive informed. Department of Health (DoH) notified via Reportable Incident Brief (RIB) for Statewide risk assessment.</td>
<td>Immediate threats to safety removed. IIMS notification made. Senior management notified. DoH notified via RIB of incidents with Statewide implications.</td>
</tr>
<tr>
<td><strong>Investigation</strong></td>
<td>Root Cause Analysis (RCA) investigation is completed by the AHS and sent to the DoH within 70 days.</td>
<td>Detailed investigation overseen by clinical governance unit at AHS level.</td>
</tr>
<tr>
<td><strong>Analysis and aggregation of findings</strong></td>
<td>State level – thematic analysis of RCAs undertaken and reported monthly to the Reportable Incident Review Committee (RIRC). AHS level – peak quality committees and lead clinicians informed.</td>
<td>AHS aggregated data used to determine local actions.</td>
</tr>
<tr>
<td><strong>Actions in response to identified risks</strong></td>
<td>State level - Actions to address identified risks are determined by RIRC and undertaken by relevant organisation (DoH, CEC). AHS level – RCA recommendations actioned.</td>
<td>AHS level – Recommendations from detailed investigations actioned.</td>
</tr>
<tr>
<td><strong>Feedback</strong></td>
<td>Information about State level projects/actions is given via monthly meetings with directors of clinical governance. SABS and lessons learned website, six-monthly incident report. AHS processes to feedback to patients/families via Open Disclosure and to staff and clinical teams via local processes.</td>
<td>Information about State level projects/actions is given via monthly meetings with directors of clinical governance. SABS and lessons learned website, six-monthly incident report. AHS processes to feedback to patients and families via Open Disclosure and to staff and clinical teams via local processes.</td>
</tr>
</tbody>
</table>

AHS - Area Health Service  
DoH - Department of Health  
RIB - Reportable Incident Brief  
RIRC - Reportable Incident Review Committee  
SABS – Safety Alert Broadcast System
APPENDIX 2: Principal Incident Type Descriptors

Accidents/Occupational Health and Safety
This is used to classify incidents related to accidents, occupational health and safety, or the physical environment and staff incidents. Examples are: a needle stick injury, exposure to a hazardous substance, a staff member sustains a burn after spilling a hot drink over his arm, a wet or slippery floor surface.

Aggression – Aggressor
This is used to classify the details of the aggressive incident, in the context of the aggressor. Examples are: a patient punching another person, a person making physical or verbal threats.

Aggression – Victim
This is used to classify any harm to the victim of an aggressive episode. Examples are: a patient being punched by another individual, a victim of a physical or verbal threat.

Anaesthesia
This is used to classify the details of incidents related to anaesthesia delivery. This classification does not capture information related to surgical complications or incidents. These need to be reported separately.

Behaviour/Human Performance
This is used to classify the details of behaviour or human performance incidents. Examples are: a patient exhibiting self-harming behaviour, a staff member behaving in a rude or hostile manner.

Blood/Blood Products
This is used to classify the details of incidents related to blood /blood product transfusion processes, dispensing or quality problems. Examples are: a patient suffers an anaphylactic reaction to a blood transfusion, a blood unit is mislabelled, blood is stored at the incorrect temperature, incorrect blood pack is dispensed from transfusion service.

Buildings/Fittings/Fixtures/Surrounds
This is used to classify the details directly related to a building, including fittings within, a building, the fixtures attached and the external surrounds of a building. Examples are: poorly designed building/room for its intended purpose, leaky plumbing, loose or insecurely fixed wall mounted appliance, cracked or uneven pathways, power failure.

Clinical Management
This is used to classify the details related to the clinical management of a patient. This includes diagnosis, treatment planning and delivery and ensuring the correct identification of each patient and procedure. Examples are: unintended injury during a medical/surgical procedure, procedure performed on the wrong body part or side, delay in diagnosis of patient's condition.

Complaints
This is used if a consumer expressed dissatisfaction about health care services. Examples include a complaint about the care provided or the manner in which it is delivered.

Documentation
This is used to classify the details of an incident involving a problem with any written, typed, drawn, stamped or printed text/information and/or any document into which it has been
entered. Examples are: a patient's medication chart is filed into another patient's medical record, a treatment order is ambiguous or difficult to read, incorrectly labelled specimens.

**Falls**
This is used to classify details related to a fall. Examples are: a patient found on the floor is suspected of having fallen, a disorientated patient fell after forgetting to use his walking frame.

**Hospital Acquired Infection/Infestation**
This is used to classify the details of infections or infestation acquired during hospitalisation. Examples are: a post-operative wound infection, an infected IV (inha-venous) cannula site.

**Medical Devices/Equipment/Property**
This is used to classify the details directly related to medical devices, equipment or property. Examples are: routine maintenance not performed on an autoclave, no diathermy earthing plates available for a theatre procedure, a damaged or faulty patient lifter.

**Medication/IV fluids**
This is used to classify the details related to medication or intravenous fluid incidents. Examples are: medication prescribing errors, incorrect intravenous fluid infusion rates.

**Nutrition**
This is used to classify the details of nutrition incidents. Examples are: a diabetic patient received a non-diabetic meal, the wrong TPN (Total Parenteral Nutrition) formula was infused, a patient's naso-gastric feed was given at 80 mls/hr instead of 40 mls/hr.

**Organisation Management/Services**
This is used to classify the details of any incident involving the provision of patient, staff and visitor services or the organisational management of the health care institution. Examples are: no hospital beds available, inadequate staff supervision, insufficient staff for workload, inadequate staff facilities, no after-hours kitchen service available.

**Oxygen/Gases/Vapours**
This is used to classify the details of incidents involving both therapeutic and non-therapeutic use of oxygen and/or other gas. Examples are: oxygen administered at four litres per minute when it should have been eight, medical air administered instead of oxygen.

**Pathology/Laboratory**
This is used to describe issues associated with the collection, transport and processing of specimens.

**Pressure Ulcer**
This is used to classify details of either new pressure ulcers or the worsening of pre-existing pressure ulcers which occur during clinical care. An example is when a bed-bound patient develops a pressure area.

**Security**
This is used to classify the details of incidents directly related to the security of the organisation. Examples are: theft of personal property, bomb scare.
## APPENDIX 3: Definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>IIMS</td>
<td>Incident Information Management System. An on-line incident reporting and management system developed in Australia for NSW Health.</td>
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<tr>
<td>Incident</td>
<td>Any unplanned event resulting in, or having the potential to result in harm to a patient.</td>
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<tr>
<td>Incident</td>
<td>The cycle of activities required to recognise, report, understand and reduce the risk of unplanned events occurring. In the health system, feedback to the notifier and sharing of learnings are essential components of this cycle.</td>
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<tr>
<td>Near-miss</td>
<td>An unplanned event that did not result in injury, illness, or damage - but had the potential to do so. A break in the chain of events prevented harm, either due to staff recognition and action, or a fortuitous event.</td>
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<tr>
<td>Notification</td>
<td>The initial report within IIMS that an incident or near-miss may have occurred. All staff are required to report incidents in IIMS and must complete the mandatory fields within the system. Notifications can be anonymous and reflect the information known by the reporter at the time.</td>
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<tr>
<td>Perinatal</td>
<td>The period shortly before, during and after the birth of a baby.</td>
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<tr>
<td>Principal Incident Type</td>
<td>The classification system within IIMS which assists the incident reporter to describe the incident. The term is often abbreviated to PIT.</td>
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<td>RIB</td>
<td>Reportable Incident Brief. A document used to notify NSW Health of a reportable incident. RIBs are subject to statutory privilege under section 23 of the Health Administration Act. For more information, see PD2006_058 Authorised Research and Investigation under the Health Administration Act 1982 and the Incident Management Policy Directive.</td>
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<tr>
<td>Sentinel event</td>
<td>Sentinel event is a term used to describe incidents that have been agreed nationally to be indicators of system problems. These include:</td>
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<td>- Procedures involving the wrong patient or body part</td>
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<td>- Suspected suicide in hospital</td>
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<td>- Retained instruments</td>
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<td>- Unintended material requiring surgical removal</td>
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<td>- Medication error involving the death of a patient</td>
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<td>- Intravascular gas embolism</td>
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<td>- Haemolytic blood transfusion</td>
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<td>- Maternal death associated with labour or delivery</td>
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<td></td>
<td>- Infant discharged to the wrong family.</td>
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