

SYDNEY WEST
AREA HEALTH SERVICE

NSW  **HEALTH**



**ANNUAL REVIEW OF
ROOT CAUSE ANALYSIS - 2006**

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
1. BACKGROUND	4
2. VOLUME AND SUBJECT OF RCAS	4
3. PROCESS	5
3.1 Completion Times.....	5
3.2 Team Membership.....	5
4. OUTCOMES.....	6
4.1 Causal Statements	6
4.2 Recommendations & Outcome Measures	7
Outcome Type	8
5. IMPLEMENTATION OF RECOMMENDATIONS.....	8
6. DISCUSSION	9
6.1 Pattern of RCAs.....	9
6.2 Processing efficiency	10
6.3 Case Selection	10
6.4 Team Selection.....	11
6.5 Recommendation Implementation	11

EXECUTIVE SUMMARY

During 2006, forty-eight (48) RCAs were completed within SWAHS, all but five of which involved patient death. Two of the RCA's unrelated to death resulted from failure to apply the "Correct Patient, Correct Site, Correct Procedure" protocol. Two related to suspected homicide committed by a client of the mental health service. The fifth RCA was for a baby born with hypoxic brain damage following foetal distress.

The most frequent incidents resulting in an RCA were procedural complications, delay in recognition and management of the acutely deteriorating patient, and community suicides. In ten RCAs, it was concluded that the patient outcome was inevitable and was not related to provision of care. Communication was the most commonly occurring contributing factor for 2006 RCA's. Common themes for 2006 repeated the 2005 themes of:

- management of the acutely deteriorating patients; including assessment and access to more senior staff.
- post-surgical/procedural pathways, particularly for complex patients.
- assessment in ED, particularly for patients requiring input from multiple teams.
- assessment, documentation and communication for patients at risk of suicide.

The average time taken to complete an RCA was shorter in 2006 in comparison to 2005 and this can be linked to a significant improvement in administrative efficiency for management of RCA's.

Deficits in the tracking of implementation of RCA recommendations were recognised in the 2005 report and improvements in the development of recommendations that are approved by an Organisation Impact Meeting prior to final RCA approved, have increased the capacity for the organisation to implement recommendations in a timely fashion.

Recommendations have been made regarding:

- the need for CGU to monitor high frequency RCA issues.
- the need to develop an alternative streamlined methodology for certain RCAs.
- the need to develop a pool of non CGU RCA facilitators.
- the need to follow up the outcome for recommendations which involve conducting an audit.
- the need to ensure that significant clinical risks identified through the RCA process are incorporated into a Risk Register.

REPORT ON ROOT CAUSE ANALYSIS IN SWAHS

RCA's COMPLETED IN 2006

1. BACKGROUND

In 2004, NSW Health introduced the Patient Safety and Clinical Quality Program (PS&CQP). This incorporated the pre-existing Safety Improvement Program (SIP) and introduced a variety of new expectations that were set out in the NSW Health PS&CQP Implementation Plan. One aspect of this plan (Function 10) relates to internal reporting. The plan requires that the Executive Director of Clinical Governance provide reports to the Chief Executive regarding the number, nature and outcome of RCA's performed in the Area Health Service.

In SWAHS, the CGU has taken the opportunity to review the last 12 months of RCA activity. The information in this report is derived from the RCA database, maintained by the CGU and relates to RCA's completed in 2006.

Comparison to the 2005 results will be made from time to time throughout this report.

2. VOLUME AND SUBJECT OF RCAS

Forty-eight (48) RCA's pertaining to SAC 1 incidents were commenced during 2006, an increase of some 20% over 2005. There were four additional RCA's completed in 2006 for non SAC 1 incidents. The following analysis relates purely to the SAC 1 RCA's completed in 2006.

Of the forty-eight cases, all but five related to patient death. Of the five exceptions, two were sentinel events of procedures involving the wrong patient or wrong body part. Both cases resulted from failure to implement the "Correct Patient, Correct Site, Correct Procedure" policy. Two were mandatory RCA's resulting from suspected homicide committed by a person who has received care of treatment for mental health illness in the preceding six months and the final RCA was for a baby born with hypoxic brain damage following foetal distress.

Eleven deaths resulted from unexpected outcomes from the clinical management of surgical/procedural patients. Six of these deaths were associated with procedural complications that could not be foreseen, two related to practitioner performance and two from sub-optimal pre-operative preparation and communication by the treating teams. By far the major theme among this group was the delay in recognition and management of the deteriorating patient.

Thirteen deaths were related to suicides: one inpatient suicide, and one in-patient death by misadventure following an attempted suicide. Typically, these deaths represent patients with a history of chronic mental health problems who were known to the Mental Health Service and at high risk of suicide. In eight of the cases it was determined that there was no additional action the Area Health Service could have taken to prevent the death. Another Mental Health related death occurred following a client absconding from the Cumberland Hospital Admissions Centre prior to admission and then exsanguinating from lacerations acquired by breaking into his own home. There were also two RCA's conducted after clients of the Mental Health service were charged with homicide.

The seventeenth death associated with Mental Health occurred when an inpatient required physical restraint. This RCA was reconvened later in the year. The findings indicated the physical restraint was not unreasonable and the patient's subsequent cardio-respiratory arrest could not be explained by the restraint alone. The Coroner dismissed the inquest on the basis of the detailed report from the RCA Team.

The increase in volume compared with 2005 can probably be attributed to three factors. Comprehensive Area wide death audit was commenced by CGU in 2006. This identified a number of SAC 1 deaths, which had not previously been reported, and is the major factor in the increase in non- mental health RCAs. In addition the legislative changes to the Health Service Act have resulted in a more rigid interpretation of the SAC matrix, resulting in RCAs being conducted into deaths, which may not previously have been considered worthy of an RCA. The majority of the increase in the Mental Health RCAs can be attributed to changes in the SAC matrix, requiring the RCAs be conducted in Mental Health patients suspected of committing homicide.

3. PROCESS

3.1 Completion Times

For each RCA, key milestones are recorded, and for each milestone an internal benchmark has been set. The sum of these internal benchmarks is 70 days, which has been the NSW Health benchmark since August 2006. This benchmark applies to the period from IIMS notification through to submission to the DOH.

For the 48 RCAs completed in 2006, the median time to completion from commencement of an RCA was 69 days, with a mean of 74. This represents a marked improvement in performance compared with 2005. During this twelve month period, the time to completion halved. Improvements of between one to three weeks have been achieved at every milestone with the exception of commissioning. This has been achieved by scheduling each milestone early in the process. This has had a particular impact on the Organisational Impact Meeting (OIM), where the delay has reduced from an average of twenty nine down to eight. In addition, the allocation of a Patient Safety Officer as a dedicated resource to each RCA has resulted in a reduction to the meeting and report writing phase of four weeks and an acceleration of the post OIM sign off.

3.2 Team Membership

The forty-eight RCAs involved 160 team members. The median size of an RCA team was four (4) with a range of two (2) to seven (7).

CGU facilitated or led 39 RCAs. The nine RCAs in which staff from CGU were not involved were in Mental Health. All of these were in the first half of the year after which there was a conscious decision made to include a PSO in all RCA's for a minimum of the first meeting and preferably to provide secretariat for each RCA. Twenty-nine (29) RCAs had a nominated Team Leader who was not a CGU member.

One hundred and fifty five (155) separate non-CGU staff participated on RCA teams and sixteen (16) of these were involved in more than one team. Only eight (8) non-CGU staff participated in three or more RCAs.

It can be seen from the above that while casual exposure to the RCA methodology has been quite broad, there is only a small pool of staff who have had sufficient exposure to be considered adequately trained for the facilitator role.

4. OUTCOMES

Of the thirty-one (31) non-Mental Health related RCA's, only three were not related to patient death. In twenty five (25) of these thirty-one cases it was determined that aspects of the provision of health care may possibly have contributed to, or exacerbated the patient's outcome. This, of course is always a difficult judgement, as in most cases the patients died either:

- as a direct consequence of their disease process or injury (19 out of 31 non-Mental Health deaths).
- as a consequence of a well described complication of management (5 out of 31 non-Mental Health deaths).

In six (6) cases it was concluded that system issues or individual errors did not contribute to the outcome and that the provision of care fell within the clinical service's normal expectation.

Of concern was a noticeable phenomenon prevalent in RCA's involving staff from High Dependency Units, Coronary Care Units and Cardiac Catheter Laboratories not applying the PACE / MET / ALS criteria to their patients and this contributing to delays in management. This was found in six of the 28 non-Mental Health deaths that RCA's investigated during 2006. It is a trend that will be closely monitored in 2007 RCA's.

In four (4) non-Mental Health related cases it was concluded that system issues or individual errors did not contribute to the outcome and that the provision of care fell within the clinical service's normal expectation.

Of the Mental Health related RCA's, 13 resulted from community suicides in which three (3) cases it was concluded that the service could not have altered the outcome and that the provision of care fell within the clinical service's normal expectation. Four (4) of the community-based suicide RCA's identified failed risk assessment or follow-up processes for clients of the mental health service upon discharge that may have altered the outcome.

When compared with 2005 RCA results it can be seen that there has been no percentage change in the volume of RCA's with no identifiable systems issues or errors.

4.1 Causal Statements

The forty-eight RCAs generated ninety-nine (99) causal statements with an average of two causal statements per RCA.

All causal statements have been coded according to a human factors classification specified by the DOH. The results are contained in the table below.

Causal Statement Classification	No
Communication	38
Equipment	1
Knowledge, skills and competence	18
Patient Factors	13
Policies / procedures	17
Resources	2
Safety Mechanisms	1
Work environment / scheduling	9

Locally, these human factors have been sub-classified in SWAHS and the following table represents the most significant causal factors. All of the following were identified in 5 or more RCAs.

Causal Statement Classification	No
No protocol or standard procedure	12
Delay in relaying important clinical information	12
Documentation missing or inadequate	11
Assessment of Severity of Patients Condition not Recognised	10
Multiple teams not communicating effectively	8
Policy not known or staff not appropriately trained	5

These two tables tell us that communication; delays in sharing clinical information and documentation were the most common causal factors. These are similar to the themes that were identified in the 2005 RCA analysis.

4.2 Recommendations & Outcome Measures

The forty-eight RCAs generated one hundred & eighty-seven (187) recommendations with a median of four (4) per RCA (range of 0-14). Common themes to those identified in the 2005 analysis emerged around policy development and training of staff in relation to:

- Acutely deteriorating patients; in particular the assessment and access to more senior staff.
- Activation of PACE and MET in areas of high dependency nursing such as cardiac units (Cardiac Catheter Laboratories and Coronary Care Units) in the absence of documentation for deviation from hospital protocols.
- Post surgical pathways; particularly for complex patients.
- Assessment in ED, particularly for patients requiring input from multiple teams.
- Assessment, documentation and communication for patients at risk of suicide.

The forty-eight RCAs generated one hundred and forty five (145) outcome measures with a median of three per RCA. All Outcome Measures have been coded according to a locally developed classification. The results are contained in the table below.

Outcome Type	No
Conduct Review/Audit: One off	17
Conduct Review/Audit: Recurrent	13
Facility/Equipment: Improved Utilisation	2
Facility/Equipment: New Allocation/Acquisition	3
New Procedure: Write/Amend Protocol or Guidelines	39
Notification: External	6
Service: Amend Delivery Model for Existing Service	10
Staffing: Improve Supervision	4
Staffing: Improve Working Conditions	2
Staffing: Increase Staffing Levels	1
Staffing: Define, Evaluate & Enforce Competencies	6
Training: Education of Staff	36
Training: Update Educational Material/Manual	10

Of the 145 outcome measures resulting from the 2006 RCA's there remains 30 outcome measures that are not complete as at 1 August 2007. The following table indicates there are some networks who have yet to develop robust processes for implementing recommendations and thus completing outcome measures: Cardiac Services and Mental Health Services have the greatest volume of incomplete outcome measures, however they are also the two networks with the greatest volume of recommendations. Surgical Services and Clinical Operations completed a high percentage of their overall volume of outcome measures.

Network	Total	Incomplete	%
Mental Health Services	34	13	38
Cardiac Services	20	9	45
Surgical Services	13	1	8
Clinical Operations	13	1	8
Medical Administration	9	3	33
Teaching and Research	4	1	25
Area Nursing Services	3	2	67

Strategies to assist low-performing networks will be one of the primary areas for focus in 2007 in terms of completion for RCA recommendations and outcome measures.

5. IMPLEMENTATION OF RECOMMENDATIONS

The forty-eight RCAs completed in 2006 generated 145 outcome measures. During 2006, PSO's identified communication between CGU and the Networks responsible for implementing RCA recommendations to be suboptimal. In an effort to improve this communication, the PSO's discussed the issue with each of the Network Operations Managers (NOM's). A form was developed as a result of these discussions (Annex A)

that simplified the response process. Persons Responsible and/or Network Directors are now required to check the box which best reflect the status of implementing recommendations. Recommendations now fall under one of four categories:

- Implemented (evidence to be provided by NOM or person responsible for implementation).
- No longer required (evidence to be provided that an alternative has been implemented that precludes implementation of this recommendation).
- Delayed implementation (rationale for delay in implementation and approval from Network Director for delay).
- Not implemented (rationale for not implementing recommendation and approval from Network Director for decision not to implement).

At the completion of an RCA the form is provided with a signed copy of the Final RCA Report to each Network Director and Person Responsible for implementing RCA recommendations. The due date for implementation is clearly enunciated on a covering memorandum. To date this has seen an improvement in networks advising CGU of their status with recommendation implementation.

6. DISCUSSION

The five major issues that emerged from the 2005 RCA analysis are the same issues identified in this year's analysis:

- information from the pattern of RCAs,
- processing efficiency,
- case selection,
- team selection; and
- recommendation implementation.

These issues are discussed below, and a number of recommendations, which are summarised in the Executive Summary, emerge as a result of this discussion. It is envisaged that these recommendations will be presented to and endorsed by the HCQC.

6.1 Pattern of RCAs

With four years of RCA data recorded, patterns of incidents have emerged.

Detailed analysis has already been undertaken regarding the first three years of patient suicides recorded in the RCA database.

Data from RCA's has supported the work of the Deteriorating Patient sub-committee, providing evidence of increasing demands on hospital units such as intensive care and the emergency response teams (MET / PACE / ALS).

A third group of data to emerge has been the suboptimal communication between various medical and surgical teams, specifically in relation to the consultation process. CGU is in the process of gathering key stakeholders together to develop a set of standards for the timely response to requests for team/consultation review; the appropriateness of registrars performing consultations in lieu of the

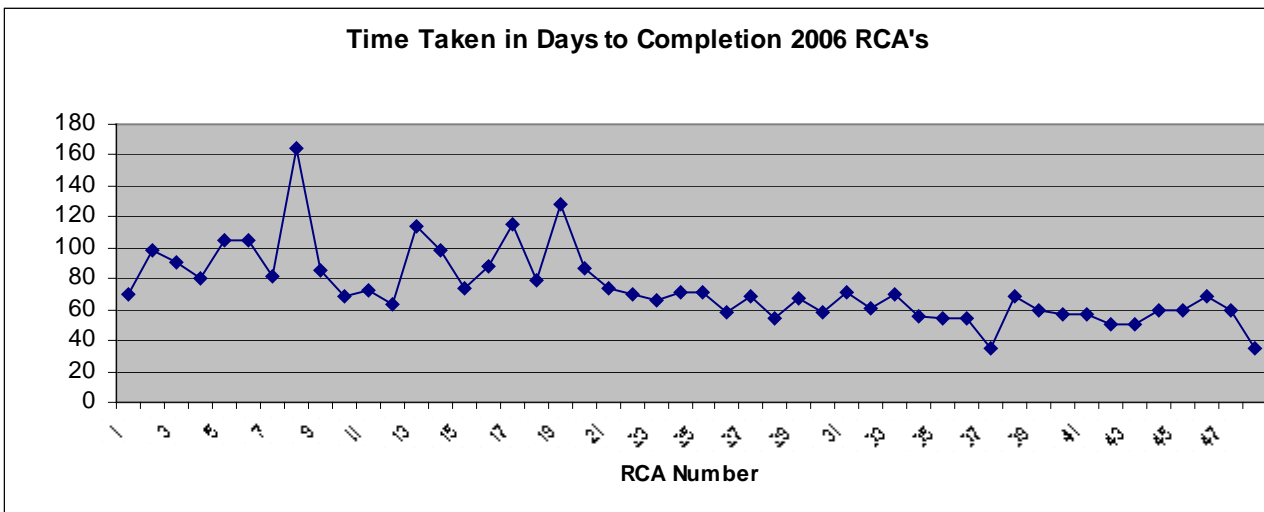
consultant physician or surgeon; and the appropriate documentation to request a consultation or in response to a consultation.

Recommendation 1

That the Clinical Governance Unit (CGU) maintains a program of detailed analysis of high frequency RCA incident types, focusing on acutely deteriorating patients and RCAs involving the coordination of care between different teams.

6.2 Processing efficiency

The following graph crudely demonstrates the decreasing time taken to complete RCA's in 2006. There were two new Patient Safety Officers (PSO) employed in CGU in June 2006 and their commencement coincides with the decrease in time noted from RCA number 21 onward.



As a result of these process efficiencies, SWAHS has led the state in compliance with the new DoH benchmark (ie since August 2006).

6.3 Case Selection

RCA is a highly resource intensive methodology. It is therefore desirable that each RCA should provide outcomes. In previous years, case selection has been variable, resulting in up to 40% of RCA's having no outcome (ie no system improvements identified). In 2005 this was reduced to nearly 20% and the Clinical Governance Unit targeted a reduction in the percentage of RCAs with no outcome to 10% in 2006. This target was not achieved, and the rate remained the same (around 20%). The most likely reason for this has been the change to the Health Services Act which has reduced the flexibility of Area Health Services in commissioning RCAs. The Area has a legislative requirement to conduct RCAs into all clinical SAC 1 incidents, irrespective of the potential outcome of the investigation. As a corollary to this, the CGU is now investigating alternative methodologies to allow for more streamlined investigation in situations where it is anticipated that the RCA is unlikely to identify system improvements.

Recommendation 2

That in 2007, the CGU develops an alternative methodology for streamlined RCAs, and applies this in situations where it is anticipated that the RCA is unlikely to identify system improvements.

That CGU sets a target of <10% of the traditional comprehensive RCAs having a negative result.

6.4 Team Selection

The Clinical Governance Unit provided a Team Facilitator for all RCAs including Mental Health from the beginning of June 2006. This facilitation resulted in RCA's progressing in a timely fashion, RCA reports being completed by the RCA team on time, a marked improvement in the quality of report writing, and development of recommendations that were robust and implementable. This role was not extended beyond the Patient Safety Officer in 2006, however it is the intention of CGU to target the group of staff who have participated in multiple RCAs for training as Team Facilitators.

Recommendation 3

That a pool of non CGU RCA facilitators be developed in the Networks with high frequency of RCAs (ie Mental Health, Cardiology, Surgery and Anaesthetics).

6.5 Recommendation Implementation

As previously mentioned in paragraph 5.1 the Clinical Governance Unit established new processes in 2006 for tracking the implementation of RCA recommendations. These new processes require the Patient Safety Officer responsible for facilitating the RCA to follow up with the Network Operations Managers on a regular basis, to ensure the implementation of RCA recommendations.

CGU commenced risk assessment of recommendations. This has resulted in high-risk recommendations being followed up by both the Patient Safety Officer responsible for facilitating the RCA and through the CGU Executive.

Changes to the wording of desired outcomes for recommendations that relate to conducting an audit or review (either one of or recurrent) has resulted in the requirement for the network responsible for implementation of the review, to provide CGU with a report of the outcome of the review. This has resulted in networks undertaking the reviews in a short time after the completion of the RCA (and in some cases prior to completion of the RCA), rather than leaving the review to be undertaken at an indeterminate time in the future.

Implementation of changes to PSO involvement in each RCA from the middle of 2006 resulted in the quality of RCA recommendations improving. Rather than developing large numbers of "soft" recommendations that may or may not be implementable or have intangible effect on removing or decreasing the likelihood of an incident recurring, the PSO's worked hard to drill down to the cause or main contributing factors for incidents and developed robust recommendations. It is suggested that the improved level of implementation reflects the level of increased engagement between networks and the Clinical Governance Unit. It is envisaged that there will continue to be measurable improvements in the 2007 analysis.

That CGU will rate the level of risk of the recommendations as per SWAHS Risk management framework and ensure that the outcomes for those recommendations, which represent high risk to the organisation, are followed up and documented.

Recommendation 4

That those recommendations that relate to conducting an audit or review must have the outcome of the review documented by CGU.

Recommendation 5

That CGU routinely consider the risks identified at the end of each RCA and ensure that these are captured on a Risk Register.