



THE UNIVERSITY OF
NEW SOUTH WALES



CENTRE FOR CLINICAL GOVERNANCE RESEARCH

EVALUATION OF THE INCIDENT INFORMATION MANAGEMENT SYSTEM IN NEW SOUTH WALES: STUDY NUMBER 6



MAP OF THE FACILITY PROCESSES
INVOLVED IN IMPLEMENTING IIMS AND
HANDLING INCIDENTS

The Centre for Clinical Governance Research in Health undertakes strategic research, evaluations and research-based projects of national and international standing with a core interest to investigate health sector issues of policy, culture, systems, governance and leadership.

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1 ABBREVIATIONS AND DEFINITIONS

1.1 Abbreviations

AHS	Area Health Service
CCGR	Centre for Clinical Governance Research at University of NSW
CEC	Clinical Excellence Commission
CGU	Clinical Governance Unit
IIMS	Incident Information Management System
NSW Health	NSW Department of Health
PSCQP	Patient Safety and Clinical Quality Program
PHO	Public Health Organisation
PSI	Patient Safety International
QSB	Quality and Safety Branch, NSW Health
RCA	Root Cause Analysis
RIB	Reportable Incident Brief
ROI	Return on Investment
SAC	Severity Assessment Code
SIP	Safety Improvement Program
SIM	Strategic Information Management Branch, NSW Health

1.2 Definitions

Clinical Practice Improvement	A combination of tools, techniques, skills and attributes designed to enhance care inputs, structures, cultures, processes, outputs or outcomes.
Culture	The configuration of attitudes, values, beliefs, meanings, behaviours and practices which together can be seen to be definitive of 'what people are' or 'where people come from'. Culture can be seen as a 'state' or something people possess, while it appears more fruitful to regard it as performance and also a process.
Ethnography	A research technique used for describing what human beings do in selected settings, usually comprising 'participant observation', field notes, narrative accounts, interviews, and other qualitative research methods.
Evaluation	The systematic examination of a policy, program or project aimed at assessing its merit, value, worth, relevance or contribution.
Formative Evaluation	Evaluation conducted during a course of a policy's, program's or project's life.
Innovation	The rate, propensity, capacity and effectiveness in adopting new ideas, practices or behaviours.
Leximancer	A software package which identifies the key ideas, concepts and themes in text-based documents, allowing researchers to examine the concepts, and the relationships between them, in detail.
Organisational Culture	The collective set of relationships in organisations that differentiate one group from another in terms of dress, attitudes, values, behaviours, beliefs, language and shared meaning.
Summative Evaluation	Evaluation conducted at the end of a policy's, program's or project's life.
Triangulation	A multi-method research or evaluation design which adduces converging or diverging evidence drawn from pluralist sources to illuminate an object of inquiry.

2 EXECUTIVE SUMMARY

This report outlines the results of study 6 in the evaluation of NSW Health's Incident Information Management System (IIMS). This study reviews processes at Area Health Service (AHS) and facility levels for the management and handling of IIMS. IIMS processes and use were mapped against seven dimensions. These were: design factors; reporting; protections; staffing; external factors; follow up; and evaluation.

This study found that IIMS is becoming embedded in health services across NSW. It is well accepted, and utilised effectively within the limits of a range of teething problems. There is general agreement that IIMS represents a major step forward in addressing safety and quality concerns in NSW. Issues with IIMS at AHS and facility levels centre on software capabilities including limitations, updates and enhancements to the system, how reporting strategies can be enhanced, using the system to realise its potential, and finding ways to improve reporting processes and provide feedback to notifiers and services.

3 INTRODUCTION

3.1 Overview

The NSW Department of Health (NSW Health) commissioned the Centre for Clinical Governance Research (CCGR) at University of New South Wales to conduct a formal evaluation of its Incident Information Management System (IIMS) as part of a contract to identify and evaluate a Knowledge Management program for Quality and Safety Branch. NSW Health needed the evaluation to assess the success of the implementation and effects of the program against the project objectives and key expected benefits.

The objective of IIMS at the time the evaluation was commissioned was to provide an electronic system that:

- Recorded all healthcare incidents
- Assisted managers through a workflow module to manage the incidents that occurred in their area
- Recorded the results of reviews or investigations of incidents
- Provided reports on all incidents that had been recorded in the system.

The evaluation aims to utilise the multi-method, triangulated approach employed in the *Evaluation of the Safety Improvement Program*, conducted by CCGR for the Clinical Excellence Commission (CEC) and NSW Health in 2004-2005. The IIMS evaluation was agreed to be a synthesis of 10 inter-related studies (Table 1). This evaluation was conducted by A/Professor Jeffrey Braithwaite, Ms Jo Travaglia, Conjoint A/Professor Mary T. Westbrook, Dr Christine Jorm, Dr Cynthia Hunter, Ms Katherine Carroll, A/Professor Rick Iedema and Ms Mahalakshmi Ekambareshwar.

Table 1: Evaluation studies

STUDY	TITLE	COMMENTS, ACTIONS AND TIMEFRAMES	LED BY/TEAM
Study #1	Literature review	<ul style="list-style-type: none"> ▪ National and international peer reviewed and professional journals ▪ Databases ▪ Websites ▪ Relevant industry and research bodies 	Christine Jorm, Jeffrey Braithwaite, Jo Travaglia
Study #2	Review of the education and training program	<ul style="list-style-type: none"> ▪ Prospective analysis of IIMS' face to face and online training ▪ Retrospective analysis of IIMS' pilot training program evaluation forms 	Mahalakshmi Ekambareshwar, Jo Travaglia, Jeffrey Braithwaite, Mary Westbrook
Study #3	Review of the project implementation process for IIMS	<ul style="list-style-type: none"> ▪ Interviews with key stakeholders ▪ Review of project implementation plan ▪ Questionnaire 	Jeffrey Braithwaite, Jo Travaglia

Study #4	Analysis of the success of the “reach” of IIMS within the health system	<ul style="list-style-type: none"> ▪ Interviews ▪ Focus groups ▪ Walk around survey 	Jo Travaglia, Jeffrey Braithwaite, Cynthia Hunter, Katherine Carroll, Jeffrey Braithwaite
Study #5	Assessment of the satisfaction of IIMS users with the system	<ul style="list-style-type: none"> ▪ Questionnaire ▪ Comparison with international and industry programs 	Mary Westbrook, Jo Travaglia, Jeffrey Braithwaite
Study #6	Map of the facility processes involved in implementing IIMS and handling incidents	<ul style="list-style-type: none"> ▪ Interviews with key stakeholders ▪ Focus group of key stakeholders 	Jo Travaglia, Jeffrey Braithwaite, Mary Westbrook
Study #7	Examination of incident reports and management responses	<ul style="list-style-type: none"> ▪ Comparison of IIMS with other reporting mechanisms pre- and post- IIMS ▪ Comparison with international approaches 	Jo Travaglia, Jeffrey Braithwaite, Mary Westbrook
Study #8	Review of the dissemination of lessons learned	<ul style="list-style-type: none"> ▪ Questionnaire ▪ Interviews with key stakeholders 	Jo Travaglia, Jeffrey Braithwaite, Mary Westbrook
Study #9	Assessment of the value and use of IIMS to the CEC	<ul style="list-style-type: none"> ▪ Interviews with CEC staff 	Jeffrey Braithwaite, Jo Travaglia
Study #10	Examination of the reporting processes, including change in management of RIBS post IIMS	<ul style="list-style-type: none"> ▪ NSW Health data ▪ Interviews with Quality and Safety Branch staff 	Jo Travaglia, Jeffrey Braithwaite

Having presented the results of study 5, the *Assessment of the satisfaction of IIMS users with the system*, we turn to the results of study 6. This study was designed to provide a *Map of the facility processes involved in implementing IIMS and handling incidents*. This report documents the outcomes of this study. This component of the evaluation was conducted by Ms Jo Travaglia and A/Professor Jeffrey Braithwaite.

3.2 About this report

The next section, section 4, *Methods*, documents the way we went about conducting the interviews in order to map the processes of implementing IIMS and handling incidents. Section 5 presents our findings, and section 6 discusses the findings in relation to the key research questions. The conclusion, section 7, briefly outlines the implications of these findings for the evaluation of IIMS as a whole.

4 METHODS

In this study we employed three methods to consider the way in which IIMS was implemented and managed across the state. Firstly, we conducted in-depth, semi-structured telephone interviews with Directors of Clinical Governance from nine Area Health Services (AHS) across the state. The interviews lasted from 45 to 80 minutes. The decision to interview Directors of Clinical Governance rather than CEOs was based on their immediate responsibility for, and understanding of, IIMS. Secondly we conducted structured interviews with 15 key managers drawn from the 11 AHSs. Participants were senior staff members responsible for IIMS and its implementation. Thirdly, we conducted focus groups with medical practitioners (n=4), nursing staff (n=4) and pharmacists (n=7).

In the interviews and focus groups we asked questions of the type: how is IIMS being utilised across the state? What differences are occurring with customising the database? What further customisations are required? Were there changes to reporting pathways pre- and post-IIMS? How are the various IIMS modules working? How are performance management issues being handled? How is IIMS being used at different levels in AHSs?

5 FINDINGS

In order to assess the effective utilisation of IIMS across the State, we mapped AHSs and facility processes against a model we constructed, based on current literature, of factors affecting incident reporting.¹⁻⁴ Seven dimensions were identified in the model, and used to compare current practice against the elements of best practice. The dimensions were: design factors; reporting; protections; staffing; external factors; follow up; and evaluation. The results are presented in the tables below.

5.1 Design factors

Design factors are those aspects of a system which affect individuals' or organisations' effective use of that system. Six key issues were identified in the literature: integration with existing reporting systems; ability to accept mandatory, voluntary and anonymous reports; ability to deal with high volumes of reports; standardized and simple classifications; ability to compute root cause; and online confidential reporting system. Table 2 presents a summary of the impact of those factors at AHS and facility levels, and issues identified by AHSs, facilities and professionals. It should be noted that some design factors may be an attribute of the IIMS data set (rather than the software per se), for example mandatory or missing fields.

Table 2: Design factors affecting incident management systems

DESIGN FACTORS	CURRENT PRACTICE AND ISSUES
1. Integration with existing reporting mechanisms	<ul style="list-style-type: none"> ▪ AHSs, facilities and departments had a range of pre-existing incident reporting mechanisms ▪ Two AHSs reported having a version of AIMS (the programme upon which IIMS is based) before the arrival of IIMS ▪ Occupational Health and Safety (OH&S), complaints, and pharmacy departments often had their own systems. Some were commercial products (e.g. Riskmate for OH&S) others were constructed by the facility or department (e.g. complaints registers). The self-constructed formats often used paper based reporting, combined with a simple database such as Access) ▪ Some facilities and departments have retained these systems, as they find their use easier and more appropriate to their needs than IIMS ▪ The OH&S and Complaints modules are those most often mentioned as being circumvented or augmented by other systems. There are also examples of intensive care, anaesthetics and palliative care departments retaining or creating their own systems. Specifically: <ul style="list-style-type: none"> - The OH&S module is considered to have too many mandatory fields - The Complaints module was judged to be problematic. Of particular concern was the difficulty in extracting from the module information about whether an incident has met the benchmark

	<p>dates set by NSW Health</p> <ul style="list-style-type: none"> ▪ Staff involved in patient safety and clinical risk management, as well as members of the senior executive also kept registers (usually based on database tools) for RIBs and RCAs ▪ A variety of other incident review and reporting mechanisms are also currently utilised at facility and departmental (or stream) level. These include Mortality and Morbidity Reviews, peer reviews, audits, and record review. The results of these reviews are kept by the groups involved, although Patient Safety Managers are either involved in, or aware of these processes ▪ IIMS has replaced pre-existing incident reporting systems at AHS and facility level. However, some AHSs retain other reporting systems for specific aspects of incident reporting. OH&S databases were the most commonly mentioned, followed by RIBs and RCAs databases, and then complaints systems ▪ Rationale for duplicate systems: <ul style="list-style-type: none"> - Perception of users that Analyser did not produce accurate reports¹ - There were issues with absence of date fields for incidents - RCA fields did not match NSW Health requirements - The system as it stands allows for timely tracking and reporting of incidents
<p>2. Ability to accept mandatory, voluntary and anonymous reports</p>	<ul style="list-style-type: none"> ▪ IIMS provides these capabilities ▪ Issues with mandatory fields <ul style="list-style-type: none"> - OH&S incident fields are too numerous - Recent changes to OH&S screen requires information (for example date of birth of worker or visitor) which were difficult to obtain - As a result of this, notifiers are advised/choose to utilise dummy results (for example 01/01/1900 for date of birth) ▪ AHS have submitted desired changes to mandatory fields to the NSW Health User Group
<p>3. Ability to deal with high volumes of reports</p>	<ul style="list-style-type: none"> ▪ Indicators that IIMS is not yet able to cope with high volumes of reports were reported: <ul style="list-style-type: none"> - Breaks in connectivity to NSW health - “Crashing” of the system - Slowness of the system - Instability of the system - Restriction to viewing of only 1,000 records at a time for managers
<p>4. Standardized and simple classifications</p>	<ul style="list-style-type: none"> ▪ In general, users and notifiers were able to employ existing classifications. Some caveats and concerns remain. The following are examples: <ul style="list-style-type: none"> - the breadth of some classifications (e.g. “blood”

¹ It should be noted that this issue was examined in detail by the vendor and NSW Health. No evidence was found of errors in Analyser reports. The issue then becomes why staff continue to have this perception, and what can be done about it.

	<p>products was seen to apply to everything from wrong blood type, to slipping on blood products)</p> <ul style="list-style-type: none"> - The inability to combine classifications e.g. all anti-coagulants, versus having to search for each type of anti-coagulant (this has already been flagged for version 4) - Use of less common terms (e.g. trolley versus stretcher) - Use of USA/MIMS terms for medications - The use of salts in medication classifications - The classifications do not encompass categories for specific departments or disciplines: paediatrics, ambulance, pharmacy all provided examples - The classifications are not “intuitive” <ul style="list-style-type: none"> ▪ Complaints incident category, intended for patients’ complaints, is frequently used by staff to record grievances
<p>5. Ability to compute root cause</p>	<ul style="list-style-type: none"> ▪ Computation of root causes for SAC1 incidents and sometimes SAC2s, is conducted through RCAs and by RCA teams. Root causes for SAC3-4s are conducted by a small number of facilities or services, typically those with very small numbers of SAC1s (e.g. paediatrics). All SAC1s are required to have an RCA. Two issues arise: <ul style="list-style-type: none"> - While most are, not all SAC1s are said to be reported in IIMS - SAC scores are not a mandatory field, it is therefore difficult to search IIMS by level of SAC ▪ An analysis of causes in a sample of SAC1s is currently being conducted by the CEC ▪ IIMS provides a facility for recording RCA processes and recommendations. The fields in this screen do not equate with those in the IIMS policy
<p>6. On-line confidential reporting systems</p>	<ul style="list-style-type: none"> ▪ IIMS allows for confidentiality of reporting. One side-effect of this is that users cannot save and return to their reporting; reports must be conducted in one session or the information is lost. The rationale for this is that security issues dictate that information cannot be left in the system at a local level, it must be submitted in order to be saved ▪ Facilities and managers have added to confidentiality requirements by limiting the number of users who can view sensitive incidents: in particular, those involving performance management issues with staff ▪ The online version of IIMS is a significant improvement on older database and paper based systems. Some issues remain: <ul style="list-style-type: none"> - Physical access to computers in some facilities - Familiarity with use of computers, particularly for older staff - Familiarity with, and access to computers by hospitality staff ▪ Some facilities and AHSs continue to allow paper reporting for the reasons above. The paper based

	<p>reports are typically entered either by the managers or by staff of the Clinical Governance Units (including IIMS managers)</p> <ul style="list-style-type: none"> ▪ The previous on-line call centre for reporting was not considered appropriate for reasons of cost and because operators were not trained in medical terminology. A consortium of three AHSs: NCAHS, GWAHS, GSAHS are in the process of establishing their own automated reporting system
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5.2 Reporting

Reporting systems refers to those functions of incident reporting systems which allow the “outputs” to be utilised in the improvement of quality and safety of systems, and to prevent recurrences of incidents. Seven aspects were identified: ability to investigate all reports; ability of system to sort reports as routine, new or unique incidents; accuracy of reporting; ability to analyse common factors and causes; ability to identify corrective action at local level; and ability to obtain and evaluate preventative plans to eliminate reoccurrence. Table 3 assesses these.

Table 3: Reporting factors affecting incident management systems

REPORTING FACTORS	CURRENT PRACTICE AND ISSUES
1. Ability to investigate all reports	<ul style="list-style-type: none"> ▪ Investigation of all reports is not required by NSW Health. SAC1s carry a requirement for an RCA, SAC2s are also investigated. SAC3-4s are dependent on the managers ▪ Ability to investigate reports has been affected by: <ul style="list-style-type: none"> - Loss of reports in early stages of IIMS implementation particularly in change over of system and occasional “crashes” of the system - Data integrity, affected by input and by issues with mandatory fields - The functionality and ease of use of the reporting system, particularly Analyser - IIMS provides a method for capturing, collating and analysing data to a certain level – investigation of reports, particularly non-mandated near misses and SAC3-4s is dependent on the time, resources and culture of the facility or service. - Availability of staff with skills to conduct analysis of IIMS data
2. Ability of system to sort reports as routine, new or unique incidents	<ul style="list-style-type: none"> ▪ IIMS does have the ability to sort reports but this is limited by its functionality (including time taken), mandatory fields, and dating requirements
3. Accuracy of reporting	<ul style="list-style-type: none"> ▪ Accuracy of reporting is affected by accuracy of data which are entered, and how they are entered ▪ The most commonly identified issue is the accuracy of the queries in Analyser. As in Table 2, there is a perception that some reports produced from Analyser were not accurate

	<ul style="list-style-type: none"> ▪ Analyser has improved in the most recent version of IIMS, with significant changes planned for the next version
4. Ability to analyse common factors and causes	<ul style="list-style-type: none"> ▪ One of the current reported limitations of the way in which data can currently be extracted from the system, which is preventing the analysis of factors such as location of falls
5. Ongoing and timely analysis of all reports	<ul style="list-style-type: none"> ▪ IIMS' ability to provide data for ongoing timely analysis of reports has been questioned. All participants mentioned the length of time required to process data and to convert data into useable reports ▪ Most users migrated data from Data manager to an excel sheet and used pivot tables to covert data to reports ▪ One AHS reported that problems with analyser had been resolved and that their staff used the module frequently
6. Ability to identify corrective action at a local level	<ul style="list-style-type: none"> ▪ IIMS' increased ability to identify corrective action at local levels. Examples at ward levels of managers utilising IIMS to identify both incidents and trends and create and implement corrective action were given by all AHSs ▪ Significant local variation, attributed to organisational culture and commitment, was noted at ward level in the same facility ▪ Users' ability to extract, interpret and utilise data is the other major issue affecting this factor ▪ Clinical Governance Units, Patient Safety and Clinical Risk Managers and Patient Safety Managers maintain an overview of safety and quality strategies for AHSs and facilities ▪ A major issue of concern was the ability to prove that incidents were being managed and had been completed. It was noted by several respondents that an incident could be marked as finalised, but what that meant in terms of actual actions was difficult to assess without an audit
7. Ability to obtain and evaluate preventive plans to eliminate reoccurrence	<ul style="list-style-type: none"> ▪ As above ▪ Management of issues and their outcomes is located with managers. Issues identified include: <ul style="list-style-type: none"> - the ability and resources required to monitor strategies across all wards and services, and to monitor and review the level and type of recommendations of incidents reported, and their implementation was identified - the ability and resources required to monitor and review SAC 3-4s and near misses, which were seen as a rich source of learning, but which are secondary to the analysis and follow up of SAC1-2s

5.3 Protections

One of the major factors affecting staff of health services' willingness to report is perceived level of protections. IIMS forms part of the NSW Patient Safety and Clinical Quality Program. With the instigation of that program legislative changes have been put in place to protect members of RCA teams. Table 4 provides a summary of current perceptions of AHSs, facilities and professional groups about those protections.

Table 4: Protections affecting incident management systems

PROTECTIONS	CURRENT PRACTICE AND ISSUES
1. Immunity which does not affect ability to prosecute for malpractice	<ul style="list-style-type: none"> ▪ The Health Administration Act of 1982 provides statutory privilege to RCA team members and all documentation prepared by the team as part of the RCAs ▪ Privilege does not extend to pre-existing documents such as RIBs, medical or administrative records, and the content of the report prepared at the end of the RCA, or the advanced classification of the RCA
2. Confidentiality	<ul style="list-style-type: none"> ▪ IIMS and its associated policies were considered adequate in maintaining confidentiality for individuals involved in, witnessing or analysing incidents ▪ Some concerns were expressed about the level and number of people who were able to view incidents on the IIMS system, but this was being addressed at a local level ▪ The major concern identified was difficulties with the IIMS' User Administrator module. In particular, managers found it very difficult to identify and remove individuals from the system. This meant that individuals who had left employment with an AHS were still able to log on and see incidents from that AHS or facility
3. Stronger sanctions for trying to block investigations	<ul style="list-style-type: none"> ▪ No evidence was given of people trying to actively block investigations ▪ Direct and anecdotal evidence was provided, across several AHSs and facilities, of managers suggesting or directing individuals not to notify an incident because of the time and resources required to investigate and report on such incidents ▪ A small number of examples was given of individuals who were encouraged or pressured not to report, and one individual reported some ramifications of having reported such as being branded a "trouble maker"

5.4 Staffing

As indicated in previous sections, the utilisation of IIMS by staff is affected by a number of factors, including resources (such as computers) and culture (such as support for reporting by managers). Table 5 outlines five factors which impact on IIMS: increased involvement of professional licensing agencies; independently employed risk managers; training on reporting; education; and peer review and credentialing processes.

Table 5: Staffing and resources affecting incident management systems

STAFFING/RESOURCES	CURRENT PRACTICE AND ISSUES
1. Increased involvement of professional licensing agencies	<ul style="list-style-type: none"> ▪ No evidence was presented of the increased involvement of professional licensing agencies in the implementation or impact of IIMS
2. Independently employed risk managers	<ul style="list-style-type: none"> ▪ All AHSs have some combination of clinical risk, patient safety and occupational health and safety managers ▪ Some AHSs have employed Patient Safety and Clinical Risk managers at facility, as well as AHS levels. Part of the brief of facility level managers is to support the use of and learning from IIMS
3. Training on reporting	<ul style="list-style-type: none"> ▪ Training has been devolved to AHSs ▪ IIMS Managers and Officers, and to a lesser extent Patient Safety Managers and Officers, take a leading role in IIMS training, at a group, team, and individual level ▪ There remains a strong dependence on colleagues training each other on the use of IIMS. Two major concerns arise: <ul style="list-style-type: none"> - The transfer of “bad habits” on the use of IIMS (such as strategies to override mandatory fields) - The use of the “live” program for training practice resulting in either the trainee viewing actual incidents, or dummy incidents being inadvertently entered ▪ The IIMS manual was considered inadequate for the needs of users or educators ▪ An IIMS training manual is available for trainers on the NSW Health Training site ▪ IIMS training materials, including videos, CD/DVDs and online training are produced centrally. Access to these materials has proven difficult at times, and there is a lag between updates of IIMS software and changes to training materials ▪ The online training program was seen to have limited functionality, to “drive” the learner through rather than allowing them to make and learn from their mistakes, and to be out of date for the current version of IIMS ▪ This aspect of IIMS is addressed in studies 2 and 4 of this evaluation
4. Education	<ul style="list-style-type: none"> ▪ Technical issues are as above ▪ IIMS managers were extending and developing the type of education, including coaching and just-in-time training and education, they or their staff provide ▪ Significant efforts are being made in assisting managers to develop skills and knowledge to create, analyse and utilise reports from IIMS ▪ IIMS managers have created a number of tip and information sheets for the benefit of notifiers and users on a range of notification and management issues. ▪ IIMS managers have created reporting sheets and structures to assist managers in the creation of reports at a local level ▪ Educational sessions using IIMS data are presented to

	Clinical and Quality Councils, in Grand Rounds and staff meetings
5. Restructuring peer review and credentialing processes to assure fairness and objectivity	<ul style="list-style-type: none"> ▪ This is outside the scope of this evaluation. It should be noted that QSB is supporting peer review programs, particularly in rural areas, around identification of adverse events

5.5 External factors

In Table 6 we review one of the external factors which impinge on incident management that is, media awareness. The second factor, reducing of malpractice litigation is outside the brief of this evaluation.

Table 6: External factors affecting incident management systems

EXTERNAL FACTORS	CURRENT PRACTICE AND ISSUES
1. Media awareness of true nature of adverse outcomes and errors	<ul style="list-style-type: none"> ▪ The major vehicle for media and community awareness of incidents reported through IIMS are the Annual Reports of the Patient Safety and Clinical Quality Program ▪ Fear of media exaggeration was also quoted as the reason for some AHSs not posting their overall IIMS rates and trends on their internet sites
2. Reducing malpractice litigation	<ul style="list-style-type: none"> ▪ This is outside the terms of reference of this evaluation

5.6 Follow up

Follow up refers to all those aspects of incident management which “close the loop”. In Table 7 we review six of these factors: corrective action plans that are non-punitive; timely investigations with sound plans of correction; on-site follow up; rapid and meaningful feedback to general staff and reporting individuals; comparative data on trends common problems and effective solutions collected and distributed from a central service; and encouragement of continued reporting through feedback.

Table 7: Follow up factors affecting incident management systems

FOLLOW UP	CURRENT PRACTICE AND ISSUES
1. Corrective action plans that are non-punitive	<ul style="list-style-type: none"> ▪ No evidence was given of corrective plans being anything other than non-punitive
2. Timely investigations with sound plans of correction	<ul style="list-style-type: none"> ▪ Timeframe for reporting of RIBs and RCAs are determined by NSW Health ▪ SAC2-4s are determined by the AHS and managers involved. The quality of plans of correction are said to vary with managers. Patient Safety Managers, Quality Committees, Clinical Risk Managers and Clinical Governance Units are monitoring these processes
3. On-site follow up	<ul style="list-style-type: none"> ▪ Follow up of incidents is managed at local level, with support of Clinical Governance Units

<p>4. Rapid and meaningful feedback to general staff and reporting individuals</p>	<ul style="list-style-type: none"> ▪ The rate and quality of feedback at an individual and group level, varies significantly ▪ In best practice, notifiers (who chose not to remain anonymous) are notified of the outcomes of the incident as soon as possible. Examples were provided where notifiers never received information on an incident's progress, despite having provided their details ▪ Similarly, different wards and facilities provided different levels of feedback. Some presented and discussed issues at staff meetings on a monthly, or occasionally a weekly, basis. Some departments, wards and professional groups did not generally engage in group discussions on incident rates ▪ Communication and feedback about enhancements and modifications to the system were seen as a major issue. NSW Health is perceived as providing inadequate feedback about enhancements of, and modifications to, the system. Instances were given when significant changes occurred and the AHS were not notified about their implementation ▪ The User Group is considered unable to accept process changes and inform AHS about enhancements and modifications in a timely manner. The infrequency of meetings was identified as one of the causes for this ▪ The Workflow module is widely used in one AHS, and then used progressively less to the point where one AHS uses it very little. The issues appear to be organisational. In the early stages some managers were overwhelmed by reports. Others found their module difficult to use. The AHS who use it frequently find it useful as a way of communicating both internally, and across the AHS, on relevant incidents
<p>5. Comparative data on trends, common problems and effective solutions collected and distributed from a central service</p>	<ul style="list-style-type: none"> ▪ Comparative data, benchmarking and trend data are collected mostly at AHS level. There appears to be less emphasis on collecting and distributing effective solutions, although this is happening in some facilities ▪ CEC collects and compares data at AHS levels, and provides a report on that data to Directors of Clinical Governance
<p>6. Encouragement of continued reporting through feedback</p>	<ul style="list-style-type: none"> ▪ As 4 above at a facility and ward level ▪ NSW Health was perceived as needing to provide more and timelier information about incidents as a whole, and in relation to alerts in particular

5.7 Evaluation

The final factor is evaluation. Two aspects are considered: evaluation at a local level and demonstration of outcomes. These are presented in Table 8.

Table 8: Evaluation factors affecting incident management systems

FOLLOW UP	CURRENT PRACTICE AND ISSUES
<p>1. Evaluation at local level of both system and corrective actions</p>	<ul style="list-style-type: none"> ▪ The need for evaluation of corrective actions and strategies was identified as a missing factor in the management of incidents

	<ul style="list-style-type: none"> ▪ IIMS was generally seen as still being largely utilised as an incident monitoring system. This was considered to be a result of its recent implementation. A move towards closer monitoring and evaluation both of recommendations and corrective strategies was predicted to occur with the maturing of the system, and the acculturation of staff ▪ Concerns were expressed that most of the effort in IIMS was centred on reporting – proportionally much less was allocated to follow up
<p>2. Ability to demonstrate improved outcomes</p>	<ul style="list-style-type: none"> ▪ As with evaluation of the IIMS system as a whole, and the corrective actions associated with individual incidents, this element was considered immature

6 DISCUSSION

It is important to read the findings from this study as contributions to the development of IIMS. IIMS was universally felt to be a significant contribution to patient safety across all AHSs, facilities and professional groups. It has a deal of promise which, if fulfilled, can lead to advances in monitoring and managing incidents. The issues raised in this study are common examples of the concerns users have with many new database systems. Rather than indicating disaffection with IIMS, they are indicative of a system which is maturing and can contribute over time to improvements. They do, however, have implications for reporting rates and incident management, and need to be considered carefully.

IIMS has largely replaced other AHS-wide incident reporting systems. Some parallel systems continue to exist. There are some concerns where AHSs have felt the need to create or maintain an alternative incident database for one or more incident categories (for example complaints), or where they simply choose to enter data from these categories into IIMS. Design and reporting factors are obviously associated with IIMS as a software product. Some of these are in the process of being addressed in discussions by NSW Health and the software vendor. Others need to be dealt with in a short time-frame, as does the process for the identification, reporting and repair of technical problems. One specific example is the need to align the RCA fields with NSW Health requirements for reporting of RCAs. Difficulties with the volumes of reporting are a similar issue. Increased reporting is being actively encouraged – there is some evidence that the shortcomings of the system are working against this.

Classifications remain a contested issue, but where there is agreement by the relevant group or groups, for example the need for a function which groups types of medications, or the removal of international names of medications (albeit as per the commonly used Monthly Index of Medical Specialties (MIMS)), it is unclear why these modifications have not been made. The use of IIMS as a mechanism to deal with staff grievances was a major concern in AHSs. One service removed the complaints tab from the system: only relevant managers can input complaints. Another AHS noted that while the Complaints module was intended for patient complaints, the fact that staff in AHSs used it to log their own complaints indicated a need to log these complaints, and to capture and learn from them.

Initiatives to create and use reports from IIMS as an improvement strategy are increasing. Apart from technical issues and the need for additional templates, this process is hampered mainly by the need to develop expertise within AHSs, facilities, departments and wards. This is seen as an ongoing process and not an issue with IIMS per se, although improving the technical capacity of IIMS would make the process easier. The same is true of staffing issues, especially in relation to keeping training resources up to date.

The protections associated with IIMS seem to be operating effectively, and importantly are seen as operating effectively by notifiers. The major systems issue here is addressing the removal of Users from the system who have resigned or moved position. External factors do not seem to be having a major impact on the use of IIMS.

Three issues of concern remain. Each is about organisational and systems processes, rather than about IIMS as a software system. Nonetheless, each has the potential to have a positive impact on rates of reporting. Firstly, suggestions have been made that individuals are being discouraged from reporting, and even more so, that some individuals are being labelled (or sometimes sanctioned) for reporting. It does not appear that this is a widespread issue, but it is well enough known to be discussed by informants in several of the interviews. Secondly, there are issues of follow up or feedback. There is a general concern about the lack of feedback at every level of the health system. This issue needs to be addressed rapidly and systematically. An examination is required of the most effective manner by which feedback can be structured and provided. Thirdly there is the issue of local evaluation of safety improvement strategies. This is about realising IIMS' potential contribution to safety and quality, as well as a monitoring, tool, and capitalising on the investment in it.

7 CONCLUSION

IIMS is becoming embedded as a useful tool in health services across NSW. It is well accepted, and effectively utilised in many cases. There is general agreement that it is a major step forward in tackling safety and quality issues in NSW. Concerns with IIMS at AHS and facility levels centre on: the effectiveness of the software; the need for improved reporting strategies; the need for timely and effective updates and enhancements; alternative ways to deal with staff grievances; and the need for feedback and responsiveness throughout the system.

8 REFERENCES

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