



THE UNIVERSITY OF
NEW SOUTH WALES



CENTRE FOR CLINICAL GOVERNANCE RESEARCH

EVALUATION OF THE INCIDENT INFORMATION MANAGEMENT SYSTEM IN NEW SOUTH WALES: STUDY NO 5



ASSESSMENT OF THE SATISFACTION OF
IIMS USERS WITH THE SYSTEM

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 5 in the evaluation of NSW Health's Incident Information Management System (IIMS). This study provides an analysis of the Centre for Clinical Governance Research's (CCGR's) survey of 2185 staff in health services across NSW. We conducted this component of the evaluation in April and May, 2006. The full questionnaire, shown in Appendix 1, contains 23 items. The report focuses on the following domains: health professionals' knowledge of, and experiences when using IIMS; satisfaction with IIMS; understanding of IIMS; views on the security of IIMS; workplace safety cultures; and evaluations of IIMS. Participants assessed examples of safety incidents and indicated whether they should be reported and 44% provided comments on how they thought IIMS could be improved.

We found support for IIMS from health system staff who for the most part were knowledgeable about and familiar with IIMS processes. There was more satisfaction than dissatisfaction with IIMS training, ease of use and access to IIMS. Overall participants held more favourable than unfavourable attitudes toward IIMS. However IIMS reports were regarded as harder to do and less accurate than paper reports and not regarded as encouraging disclosure to patients. Responses of managers and non-managers were compared and significant differences identified. Managers reported more favourable attitudes toward IIMS on 84% of attitude items. Managers were more likely to have received training in IIMS, to have attended a course in IIMS, to have reported an incident on IIMS and to have reported more incidents. However managers and non-managers reported similar patterns of reporting incidents following the introduction of IIMS; the majority were reporting the same number of incidents prior and post-implementation.

The major issues of concern emerging from a content analysis of respondents' final comments included IIMS not being user-friendly, being time consuming to use and lacking necessary fields for accurate reporting of incidents. Lack of feedback after submitting incident reports, lack of sufficient training and difficulties in accessing IIMS were also problems.

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, 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"> ▪ Questionnaire ▪ Interviews ▪ Focus groups ▪ Walk around survey 	Mary Westbrook, Jo Travaglia, 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, Christine Jorm, 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 4, the *Analysis of the success of the reach of IIMS within the health system*, we turn to the results of study 5, *Assessment of the satisfaction of IIMS users with the system*. This study presents the results of a questionnaire administered to 2185 staff. This component of the evaluation was conducted by Conjoint A/Professor Mary Westbrook, Ms Jo Travaglia and A/Professor Jeffrey Braithwaite.

3.2 About this report

The next section, section 4, *Methods*, documents the sample and procedure for implementing the questionnaire. 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

4.1 Sample

The sample consisted of 2185 health professionals from the eleven Area Health Services (AHSs) in New South Wales. The composition of the sample is described in detail in the Results section of the report (5.1 and 5.2)

Questionnaire

The full questionnaire is shown in Appendix 1. It contains 23 items. These are mainly Likert type questions which ask respondents to indicate their strength of agreement/disagreement with various attitudinal statements. The questionnaire design drew on corresponding attitudinal scales and work in related studies.¹⁻⁶ The attitude items may be classified according to their focus on the following domains: satisfaction with IIMS, understanding of IIMS, security of IIMS, participants' workplace safety cultures and evaluations of IIMS. There are also factual questions exploring respondents' demographic and workplace characteristics, and open-ended items asking for additional information (eg "if "other" please specify") and for respondents' text comments on IIMS and ways they consider the functioning of the IIMS system could be improved. Three safety related incidents are described and respondents rate whether they think i) reporting the incident is appropriate, ii) they would report it, and iii) somebody should report it. Four questions are addressed only to managers and ask for their overall evaluations of the IIMS system. The questionnaire was trialled on health practitioners and modified after receiving their comments. The reliability of the questionnaire as measured by Cronbach's alpha was 0.83.

4.2 Procedure

The questionnaire was placed on a website set up for that purpose by Centre staff. The Chief Executive Officer (CEO) of all 11 AHSs was contacted by letter inviting his or her staff to participate in the survey. Access to staff was then negotiated with the CEOs or senior staff. Invitations to participate in the survey were then distributed to staff via their internal email (eight AHS), within weekly staff bulletins (two AHS) or in two cases notification was placed on an intranet site. The invitation gave staff directions to follow the link to the website, complete the questionnaire and transmit it electronically to the Centre. Due to technical issues at some AHSs, emails were sent out between the end of April and early May 2006. The final cut off date for inclusion in the study was 26 May, 2006. The questionnaire was anonymous.

Participants' answers to the Likert scale items were summed or converted to percentages and descriptive statistics were calculated. Content analyses of responses to the open-ended questions were performed using two methods viz a software package Leximancer which identifies the key themes and concepts in a text and classical content analysis based on coding of the themes which emerged from the texts. Chi square analyses and t-tests for independent groups were used to compare responses of managers and non-managers. Some respondents did not answer all questions so numbers in analyses vary. Significance level was set at 0.05.

5 FINDINGS

5.1 Participants' demographic and work related characteristics

Table 2: Area health services and health facilities in which participants worked

QUESTIONNAIRE ITEMS AND RESPONSES					
1. In which Area Health Service do you work?	N	% of total	4. Where do you do most of your work?	N	% of total
Greater Southern AHS	107	4.9	Tertiary referral hospital	649	29.7
Greater Western AHS	12	0.5	Regional hospital	521	23.8
Hunter New England AHS	473	21.6	Rural health facility	219	10.0
North Coast AHS	164	7.5	Community Health Centre	216	9.9
North Sydney Central Coast AHS	165	7.6	Area Health Service (Office)	166	7.6
South Eastern Sydney Illawarra AHS	566	25.9	Ambulance service	217	9.9
Sydney South West AHS	104	4.8	Private practice	5	0.2
Sydney West AHS	174	8.0	Other	169	7.7
Children's Hospital Westmead	116	5.3	No answer	23	1.1
Ambulance Services NSW	218	10.0			
Justice Health	86	3.9			
Total	2185		Total	2185	

The absolute numbers of survey participants coming from the various AHSs varied greatly as exhibited in Table 2. Over a quarter (25.9%) of respondents came from the South Eastern Sydney Illawarra AHS (who had their own incident monitoring system prior to the introduction of IIMS), and 21.6% came from Hunter New England AHS (who had had a prior version of AIMS in place, when IIMS was introduced). The Ambulance Services were over-represented in terms of number of personnel, contributing 10.0% of returned questionnaires. Other AHSs contributed between 8.0% (Sydney West) and 4.8% (Sydney South West) of returned questionnaires, the exceptions being Greater Western whose return rate made up 0.5% of the total sample and Justice Health which provided 3.9% of returns. These different return rates probably reflect varying distribution policies and publicity given to the survey within the various AHSs. Some AHSs may be more positively oriented toward new health initiatives eg the Ambulance Services also gave the most positive evaluations of any group to the Safety Improvement Program (SIP) we evaluated in 2005.⁷ The composition of AHS samples varied in terms of their proportions of managerial and non-managerial staff. Five AHS had between 55% and 60% of non-managers in their samples viz North Coast, North Sydney Central Coast, South Eastern Sydney Illawarra, Children's Hospital Westmead and Ambulance Services NSW. Hunter New England, Greater Southern, Sydney South West and Justice Health had between 49% and 36% of non-managers in their samples. Sydney West had 22% and Greater Western's samples contained 8% non-managers. The health facilities in which respondents worked are shown in Table 2. The majority was employed in tertiary hospitals

(29.7%) but a high proportion (23.8%) came from regional hospitals.

Table 3: Participants' demographic and work characteristics

QUESTIONNAIRE ITEMS AND RESPOSNES	
Item and characteristic	Sample details
3. Gender #	Male 528 (24.4%) Female 1634 (75.6%) <i>Managers</i> Male 296 (27.3%), Female 788 (72.6%) <i>Non-Managers</i> Male 232 (21.5%), Female 864 (78.5%) $\chi^2=9.80$, df 1, p 0.002
2. Professional background (a)	Medicine 121 (5.5%) Nursing 1190 (54.5%) Allied Health 405 (18.5%) Other 469 (21.5%)
19. Manager/non-manager	Manager 1095 (50.1%) Non-manager 1090 (49.9%)
6 Years in health-care post-graduation #	<i>Managers:</i> Mean=21.4 years, SD=9.3 years <i>Non-managers</i> Mean=15.8 years, SD=10.1 years t=13.32, df 2124, p 0.000
7. Percentage present work is management duties #	<i>Managers:</i> Mean=70.9%: SD=30.5% <i>Non-managers:</i> Mean=18.0%: SD=25.0% t=43.30, df 2087, p 0.000
8. Percentage present work is clinical duties #	<i>Managers:</i> Mean=25.7%: SD=29.3% <i>Non-managers:</i> Mean=68.1%: SD=34.1%% t=-30.32, df 2072, p 0.000

(a) Proportions of managers and non-managers in professional groups did not differ significantly

Difference between managerial and non-managerial responses is statistically significant

Table 3 captures the characteristics of survey participants. The proportions of male and female respondents were similar to that of the Australian Health workforce which is composed of 25.8% males and 74.2% females.⁸ There were disproportionate numbers of male managers and female non-managers among survey respondents which probably reflects the situation in the health workforce. The professional backgrounds of participants varied considerably from the composition of the Australian health workforce. While 13.3% of the

health workforce consists of doctors only 5.5% of the sample came from medicine. Nurses represent 54.2% of the health workforce and comprised 54.5% of the sample. Allied health professionals who make up 10.5% of the health work force represented 18.5% of the sample. ‘Others’ make up 22.0% of the health work force and 21.5% of the sample. Thus doctors were under-represented and allied health over-represented among survey participants. All Australian health professional groups favour safety improvements but research shows such attitudes are less positive among doctors and most positive among nurses with allied health attitudes lying between these groups but more similar to the attitudes of nurses.⁹ While these attitudes and disinclination of some doctors to become involved in health initiatives such as the SIP¹⁰ may help explain the low representation of doctors in the survey sample, the high participation rate of allied health professionals was unexpected.

The final Likert items in the questionnaire (19-22) were to be answered ‘if you are a manager’. Half the sample answered them indicating that they had a managerial role. Responses to items 6-8 (see Table 3) indicated that on average managers had 21.4 years of post graduation experience in health care and their work load consisted of considerably more managerial (70.9%) than clinical work (25.7%). Non-managers tended to have less experience (15.8 years). They reported that 68.1% of their work was clinical and 18.0% managerial.

5.2 Managers’ and non-managers’ experiences with IIMS

Table 4: Managers’ and non-managers’ experiences using IIMS

QUESTIONNAIRE ITEMS AND RESPOSNES	
Items on use of IIMS	Responses
9. Undertaken IIMS training? #	<p>Yes Managers: 1021 (93.5%), Non-manager:801 (74.2%)</p> <p>No Managers: 71 (6.5%) Non-managers 278 (25.8%)</p> <p>$\chi^2=149.3$, df 1, p 0.000</p>
10. Form of training? #	<p><i>Presentation or course</i> Managers: 708 (68.9%), Non-manager:468 (57.3%)</p> <p><i>A colleague explained</i> Managers: 149 (14.5%), Non-manager:216 (26.5%)</p> <p><i>Online</i> Managers: 153 (14.9%), Non-manager:85 (10.4%)</p> <p><i>CD/DVD</i> Managers: 18 (1.8%), Non-manager:47 (5.8%)</p> <p>$\chi^2=70.2$, df 3, p 0.000</p>

<p>11. The training I received provided me with the skills to report an incident on IIMS # (rated from 1=strongly agree to 5= strongly disagree)</p>	<p><i>Strongly agree</i>: Managers 15.0%, Non-M. 8.8% <i>Agree</i>: Managers: 60.1%, Non-M.: 58.8% <i>Unsure</i>: Managers: 8.4%, Non-M.: 12.5% <i>Disagree</i>: Managers: 10.3%, Non-M.: 11.1% <i>Strongly disagree</i>: Managers: 6.2%, Non-M.: 8.8% $\chi^2=27.50$, df 4, p 0.000</p>
<p>12. Have you ever reported an incident using IIMS? #</p>	<p>Yes 886 (81.7%), Non-manager: 822 (77.0%) No Managers 199 (18.3%) Non-managers: 246 (23.0%) $\chi^2= 7.23$, df 1, p = 0.007</p>
<p>12a How many incidents have you reported using IIMS? #</p>	<p>Managers: 13.49 incidents, SD 29.5 Non-managers: 6.95 incidents SD 24.9 t=4.00, df 1110, p 0.000</p>
<p>13. Since the introduction of IIMS I am reporting:</p>	<p><i>More incidents</i> Managers: 215 (21.3%) Non-managers 179 (18.6%) <i>Same number of incidents</i> 570 (56.5%) Non-managers: 557 (58.0%) <i>Fewer incidents</i> Managers: 224 (22.2%) Non-managers: 224 (23.3%) $\chi^2= 2.21$, df 2, p = 0.329</p>

Difference between managerial and non-managerial responses is statistically significant

Managers' and non-managers' experiences using IIMS

Managers' and non-managers' experiences with IIMS, as shown on Table 4, differed considerably. Managers were significantly more likely than other staff to have undertaken IIMS training (93.5% vs 74.2%) and the type of training they received also differed significantly. Managers were far more likely to have attended a course or presentation (68.9% vs 57.3%) and somewhat more likely to have received their training online (14.9% vs 10.4%).

Non-managers were more likely to have learned how to use IIMS from a colleague (26.5% vs managers' 14.5%) and from a CD/DVD (5.8% vs managers' 1.8%). Differences in type of training may explain why managers rated their training more highly in terms of providing them with skills to report incidents on IIMS. Managers were significantly more likely to say they had used IIMS to report an incident (81.7% vs 77.0%). However there was no significant difference in the ways the introduction of IIMS had influenced the reporting patterns of the two groups.

Overall group experiences using IIMS

Considering the respondent groups together, regardless of their managerial status, it can be

said that most had received training in how to use IIMS (83.9%). The most common form of training was a course or presentation (63.8%), followed by explanation from a colleague (19.8%), online (12.9%), or from a CD or DVD (3.5%). Examination of ratings of different types of training indicated that presentation and courses were considered most effective, with 78.5% checking 'strongly agree' or 'agree'. Online training and instruction from a colleague were almost equally effective; 69.8% strongly agreed or agreed that online training was effective and 68.8% gave these ratings to instructions from a colleague. Of those who learn from CDs or DVDs only 46.9% checked these ratings. However in both the manager and non-manager groups a large majority of participants agreed that they were satisfied with their training in IIMS. The questionnaire also enquired as to other training in IIMS that respondents had received. Of the 100 participants who checked this option, not all described the nature of this training. One-to-one training was cited by 38 participants, GP training was mentioned by 26, 14 said they were self-taught and 4 said they were given information over the phone. The majority (79.3%) of respondents had reported an incident using IIMS. However patterns of reporting had not changed markedly since the introduction of IIMS. The majority (57.2%) of participants said they were reporting the same number of incidents. While 20.0% were reporting more incidents this trend was counterbalanced by the slightly larger proportion (22.8%) who were reporting less. Participants were asked how many incidents they had reported using IIMS. This was clearly a difficult question to answer precisely by citing a number. Many participants (n=931) did not attempt to answer the question while 6.5% gave verbal estimates such as 'lots' or 'hundreds'. Only 50.8% of respondents cited a number of incident reports. As Table 4 shows managers reported significantly more incidents than other staff (13.49 vs 6.95). The large standard deviations reflect estimates of the number of incidents reported. These ranged from 0 (one respondent) to 500.

5.3 Managers' and non-managers' attitudes toward IIMS and incident reporting

5.3.1 Managers' and non-managers' satisfaction with IIMS

Table 5: Results of chi square analyses comparing managers' and non-managers' ratings of satisfaction with IIMS

QUESTIONNAIRE ITEM		PERCENTAGES OF MANAGERS' AND NON-MANAGERS' RATINGS AND RESULTS OF CHI SQUARE ANALYSES (A)						
M=Managers	N=Non-managers	Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly	χ^2 df 4	P
14.1 IIMS is easy to use	M* N*	11.9% 11.2%	25.7% 26.8%	19.5% 22.0%	37.8% 35.0%	5.2% 5.0%	3.13	0.536
14.2 The classification of incidents used in IIMS is logical	M* N*	8.2% 6.3%	27.6% 25.8%	24.6% 34.8%	36.3% 31.2%	3.3% 1.9%	29.38	0.000
14.7 I can complete my incident report later if I'm interrupted or I need to add	M* N	13.2% 13.9%	23.3% 25.4%	18.8% 32.1%	39.6% 26.3%	5.1% 2.3%	72.23	0.000

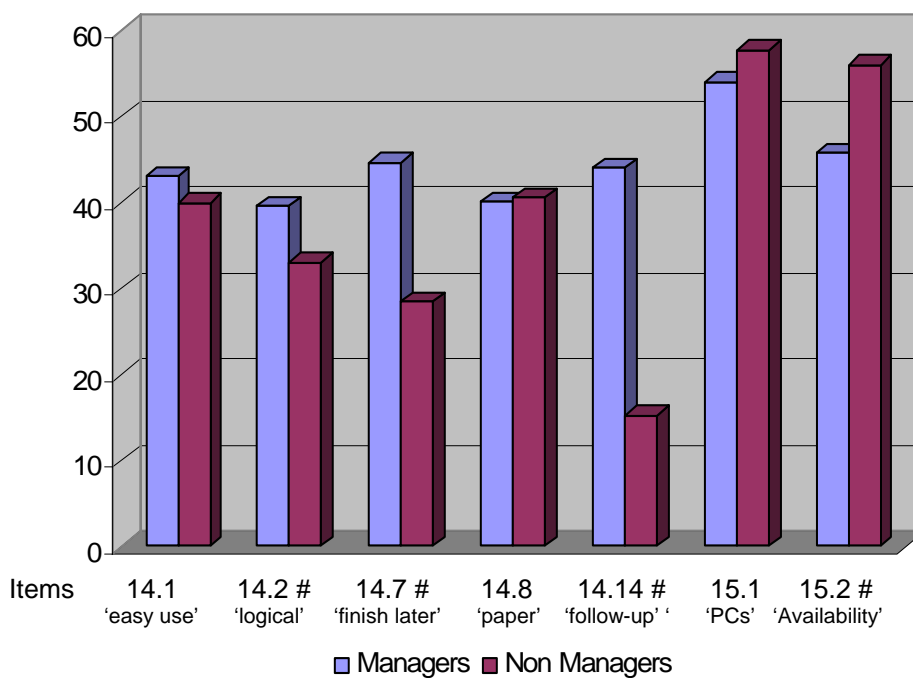
further details								
14.8 Reporting an incident on the computer is easier than reporting one on paper	M	19.7%	23.6%	16.4%	29.8%	10.4%	2.44	0.656
	N	17.9%	23.2%	18.2%	31.0%	9.6%		
14.14 I can easily determine the follow up status of any incident	M*	10.5%	24.9%	20.4%	37.9%	6.3%	214.2	0.000
	N	20.1%	33.1%	31.6%	14.3%	1.0%		
15.1 We have an adequate number of PCs in my workplace to access IIMS	M*	14.1%	24.5%	7.4%	43.5%	10.6%	5.34	0.254
	N*	14.5%	20.4%	7.3%	46.7%	11.1%		
15.2 IIMS is operating whenever it is needed	M*	10.9%	24.8%	18.5%	39.8%	6.0%	58.88	0.000
	N*	7.5%	13.5%	22.9%	50.2%	5.9%		

(A) Ratings from 1=disagree strongly to 5=agree strongly

Number of participants in analyses ranged from 2101-2060

* Percentage of 'agree strongly' + 'agree' responses is greater than percentage of 'disagree strongly' + 'disagree' responses

Figure 1: Percentages of managers and non-managers strongly agreeing or agreeing with satisfaction items



*Difference between managerial and non-managerial responses is statistically significant

Managers' and non-managers' satisfaction with IIMS

Managers' satisfaction with IIMS was significantly greater from that of non-managers on three of the four items that elicited significant differences in this domain. Compared to other staff, managers thought that the classification of incidents used in IIMS was more logical and it was easier to determine the follow-up status of incidents. Managers were much more likely to say that they could complete incident reports later if they were interrupted. While this is to be expected as managers with appropriate security clearances are able to save and return to incidents, it should be noted that not all managers agreed that this was possible. However non-managers were more likely than managers to say that IIMS was operating whenever it was needed. This may be influenced by the fact that as non-managers report fewer incidents than managers and have less need to follow up incident reports so they have less need to access IIMS. There were no statistically significant differences in the attitudes of the two groups regarding the ease of use of IIMS, the ease of use of IIMS compared to paper reporting of incidents, or having an adequate number of PCs available to access IIMS.

Overall satisfaction of participants

Table 5 shows that on six of the seven satisfaction items greater percentages of managers agreed (thus indicating satisfaction) rather than disagreed. Non-managers however were more satisfied than dissatisfied in their responses to only four of the seven items. A larger proportion of both groups was satisfied that IIMS is easy to use, that the classification is logical, that there are enough PCs available to access IIMS and that IIMS is operating when needed. A larger proportion of both groups disagreed that reporting an incident on computer is easier than a paper report. While managers tended to agree that they could complete a report later if they were interrupted and that they could easily follow up incident reports, other staff did not.

Thus the greatest problem regarding satisfaction with IIMS was that both managers and other staff found it harder to report incidents on computer than on paper. Non-managerial staff were not well informed about procedures for using IIMS that allow them to complete a report when interrupted and to follow up their reports. Despite this a greater proportion of both groups said IIMS is easy to use, though 37.8% of the total sample found it difficult. The implementation of IIMS elicited most satisfaction in terms of provision of access to IIMS. Managers were more likely to have received IIMS training, to have been trained at a special course and have had more experience reporting incidents on IIMS so their greater satisfaction with using IIMS is not unexpected. More training directed at non-managerial staff would seem desirable.

5.3.2 Managers' and non-managers' understanding of IIMS

Table 6: Results of chi square analyses comparing managers' and non-managers' understanding of IIMS

QUESTIONNAIRE ITEM	PERCENTAGES OF MANAGERS' AND NON-MANAGERS' RATINGS AND RESULTS OF CHI SQUARE ANALYSES (A)						
M=Managers N=Non-managers	Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly	χ^2 df 4	P

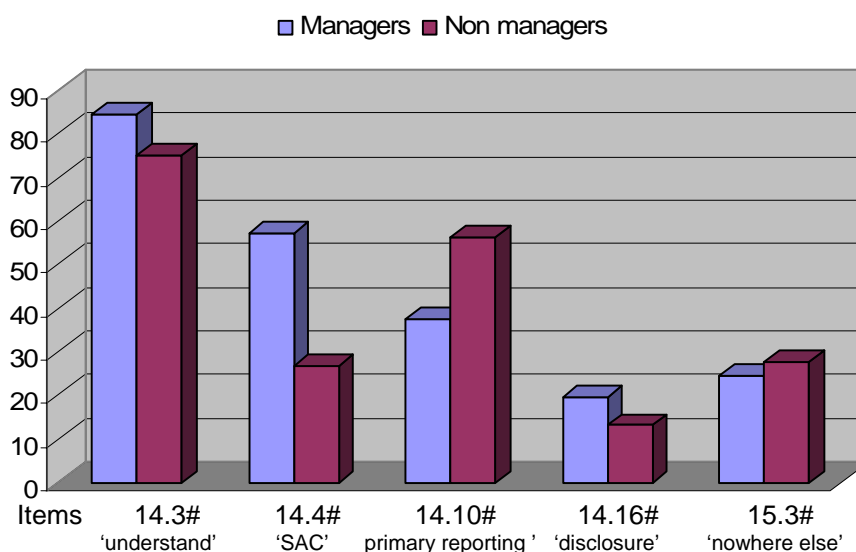
14.3 I have a sufficient understanding of what defines a reportable incident	M*	1.4%	5.7%	8.7%	61.6%	22.6%	63.33	0.000
	N*	2.1%	11.9%	12.2%	61.7%	12.1%		
14.4 I always know what severity (SAC) rating to assign an incident I report	M*	3.8%	21.3%	17.9%	45.7%	11.3%	225.8	0.000
	N	11.4%	33.8%	28.3%	24.5%	2.0%		
14.10 Incidents should only be reported by the primary people involved and not by outsiders	M*	8.0%	29.8%	14.7%	35.8%	11.7%	32.46	0.000
	N*	4.1%	23.9%	15.9%	38.7%	17.4%		
14.16 IIMS encourages open disclosure to patients	M	6.1%	23.3%	51.4%	16.9%	2.4%	43.47	0.000
	N	5.5%	17.0%	64.5%	12.4%	0.6%		
15.3 If I use IIMS I do not need to report the incident anywhere else	M	18.3%	47.5%	9.9%	21.8%	2.6%	13.17	0.010
	N	14.0%	45.6%	12.6%	23.9%	3.8%		

(A) Ratings from 1=disagree strongly to 5=agree strongly

Number of participants in analyses ranged from 2085-2060

* Percentage of 'agree strongly' + 'agree' responses is greater than percentage of 'disagree strongly' + 'disagree' responses

Figure 2: Percentages of managers and non-managers strongly agreeing or agreeing with items examining understanding of IIMS



#Difference between managerial and non-managerial responses is statistically significant

Managers' and non-managers understanding of IIMS

Managers' responses differed significantly from those of other staff on all five items assessing understanding of IIMS. As presented in figure 2 managers were more likely to agree strongly or agree that they understand what defines a reportable incident and know what SAC rating to assign. Managers were less likely to say that incidents should only be reported by the primary people involved and that if an IIMS report is made there is no need to report the incident elsewhere. More managers than non-managers thought that IIMS encourages open disclosure to patients.

Overall understanding of IIMS

Table 6 indicates that on two of the five items assessing understanding of IIMS more respondents from both groups agreed rather than disagreed. The majority of managers and other staff said they knew what defines a reportable incident. More participants in both groups agreed, rather than disagreed, that incidents should only be reported by the primary people involved. On items 14.16 and 15.3 more members of both groups disagreed than agreed. More disagreed that IIMS encourages open disclosure to patients and that if they use IIMS they do not need to report the incident elsewhere. The latter reaction is a desired outcome of the IIMS program. Regarding open disclosure to patients over half of both groups adopted a neutral stance and few agreed that disclosure is encouraged by IIMS. This item received the highest proportion of neutral ratings in the survey suggesting that participants did not feel strongly about the issue. The majority of managers agreed that they can assign SAC ratings while most non-managers disagreed.

5.3.3 Managers' and non-managers' views on the security of IIMS

Table 7: Results of chi square tests comparing managers' and non-managers' ratings of security of IIMS

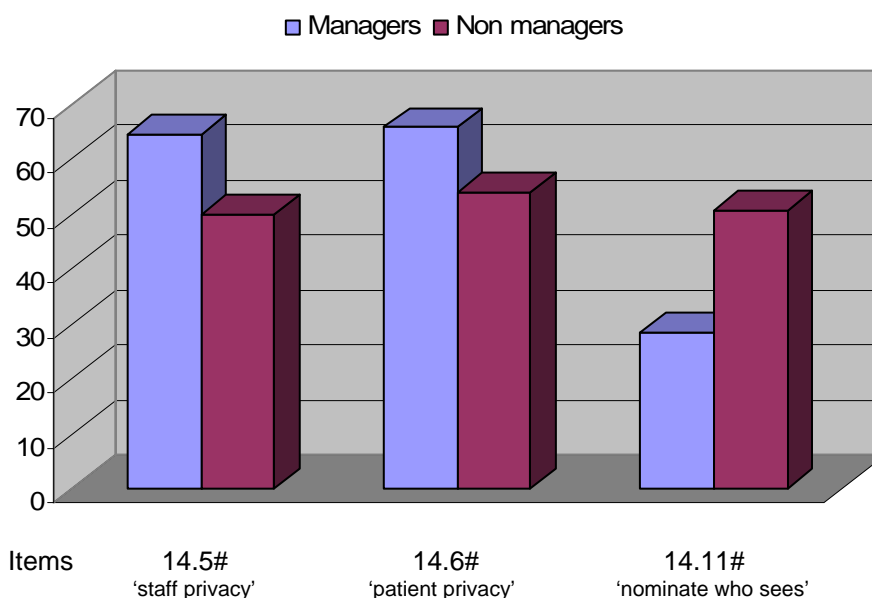
QUESTIONNAIRE ITEM		PERCENTAGES OF MANAGERS' AND NON-MANAGERS' RATINGS AND RESULTS OF CHI SQUARE ANALYSES (A)						
M=Managers	N=Non-managers	Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly	χ^2 df 4	P
14.5 The security and privacy of the IIMS system for staff is adequate	M* N*	3.3% 4.5%	8.5% 8.5%	23.8% 37.1%	55.0% 44.4%	9.4% 5.5%	54.24	0.000
14.6 The security and privacy of the IIMS system for patients is adequate	M* N*	2.3% 2.2%	5.3% 4.4%	28.8% 39.4%	56.6% 48.9%	9.1% 5.0%	44.03	0.000
14.11 I should be able to nominate who will see my report	M* N*	5.9% 1.8%	29.5% 18.2%	26.0% 29.2%	30.4% 37.6%	8.1% 13.1%	72.35	0.000

(A) Ratings from 1=disagree strongly to 5=agree strongly

Number of participants in analyses ranged from 2085-2065

* Percentage of 'agree strongly' + 'agree' responses is greater than percentage of 'disagree strongly' + disagree' responses

Figure 3: Percentages of managers and non-managers strongly agreeing or agreeing with items examining security of IIMS



#Difference between managerial and non-managerial responses is statistically significant

Managers' and non-managers' attitudes toward IIMS security

There were significant group differences on all security items. Managers were more likely than other staff to consider that the security of the IIMS system was adequate for both staff and patients. There was little difference in the percentages of managers agreeing with these two items (64.4% and 65.7%). However non-managers were more likely to consider security for patients was adequate (53.9%) than was the case for staff security (49.9%). Non-managers were more likely to agree (50.7%) that they should be able to nominate who sees their incident reports as compared to 38.5% of managers.

Overall attitudes toward security

Table 7 shows that on all items more respondents from both groups agreed, as opposed to disagreed, in their responses. Thus the majority of participants was satisfied with the security IIMS provided for both staff and patients. More participants agreed, rather than disagreed, that they should be able to nominate who sees their incident reports.

5.3.3 Managers’ and non-managers’ perceptions of workplace safety cultures

Table 8: Results of chi square analyses comparing managers’ and non-managers’ ratings of the safety culture in their workplaces

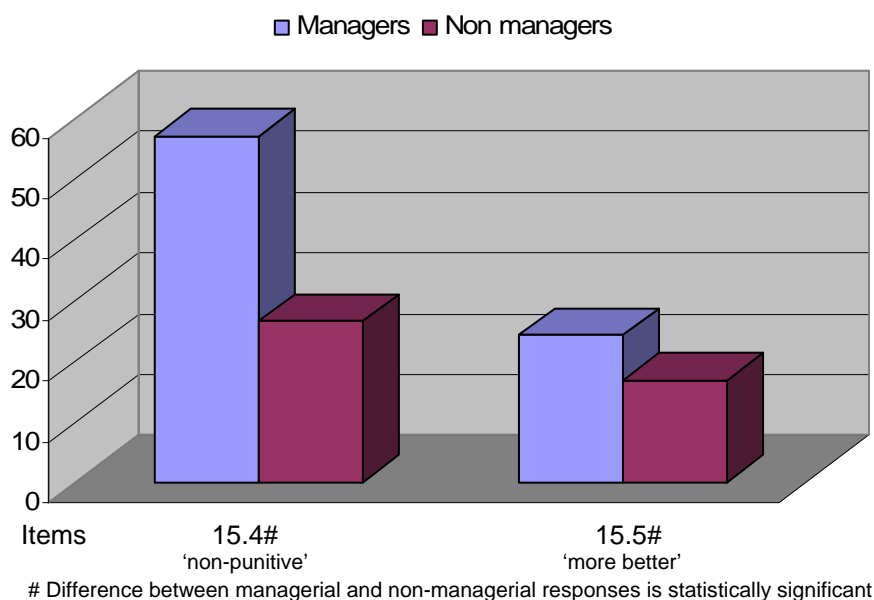
QUESTIONNAIRE ITEM		PERCENTAGES OF MANAGERS’ AND NON-MANAGERS’ RATINGS AND RESULTS OF CHI SQUARE ANALYSES (A)						
M=Managers N=Non-managers		Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly	χ^2 df 4	P
15.4 We have a non-punitive culture of reporting in my workplace	M*	3.8%	21.3%	17.9%	45.7%	11.3%	225.8	0.000
	N	11.4%	33.8%	28.3%	24.5%	2.0%		
15.5 The culture in this facility is "the higher the number of incident reports, the better"	M	9.1%	34.0%	32.6%	21.0%	3.3%	20.46	0.000
	N	10.7%	36.4%	36.1%	13.6%	3.2%		

(A) Ratings from 1=disagree strongly to 5=agree strongly

Number in analyses ranged from 2081-2080

* Percentage of ‘agree strongly’ + ‘agree’ responses is greater than percentage of ‘disagree strongly’ + ‘disagree’ responses

Figure 4: Percentages of managers and non-managers strongly agreeing or agreeing with items examining work safety cultures



Managers’ and non-managers’ perceptions of workplace safety cultures

Managers’ perceptions of the safety cultures at their workplaces differed dramatically from the views of other staff. While 57.0% of managers checked agreement options describing their workplaces as non-punitive, only 26.5% of other staff did so. While 24.3% of managers

believed their facility did encourage incident reporting only 16.8% of other staff thought this.

Overall perception of workplace safety cultures

The only instance of more agreement than disagreement responses occurred in managers' ratings of their workplace cultures as non-punitive (Table 8). Non-managerial staff typically did not agree that their work cultures are non-punitive. Far more managers and non-managers disagreed, rather than agreed, that they had workplace cultures which valued high rates of incident reporting.

5.3.5 Managers' and non-managers' evaluations of IIMS

Table 9: Results of chi square analyses comparing managers' and non-managers' evaluation of IIMS

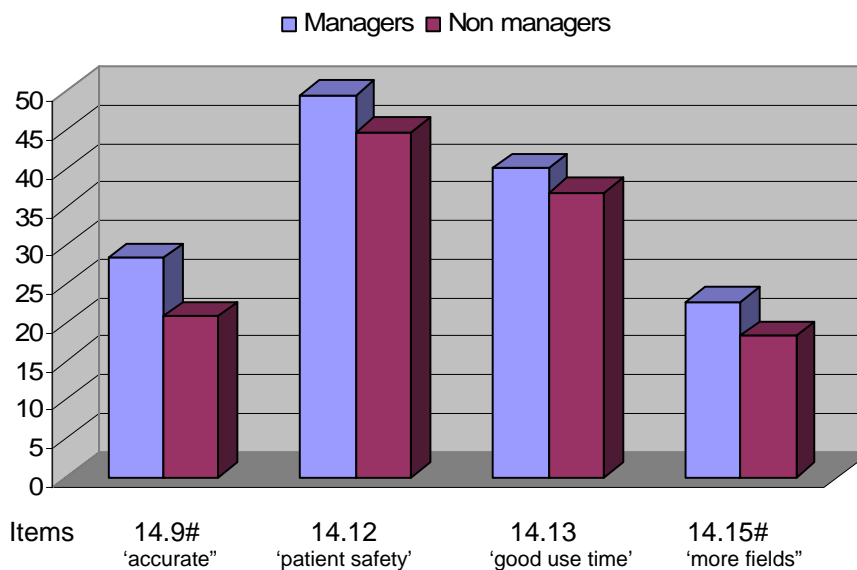
QUESTIONNAIRE ITEM		PERCENTAGES OF MANAGERS' AND NON-MANAGERS' RATINGS AND RESULTS OF CHI SQUARE ANALYSES (A)						
M=Managers	N=Non-managers	Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly	χ^2 df 4	P
14.9 Computerized incident reports are more accurate than paper incident reports	M N	11.2% 11.4%	26.5% 27.2%	33.9% 40.5%	23.0% 17.3%	5.4% 3.6%	18.26	0.001
14.12 IIMS improves patient safety	M* N*	3.9% 5.5%	13.4% 13.1%	33.2% 36.6%	39.7% 37.1%	9.8% 7.6%	8.51	0.075
14.13 Reporting incidents using IIMS is a good use of staff time and resources	M* N*	13.2% 13.9%	21.3% 22.4%	25.5% 26.8%	34.3% 32.4%	5.7% 4.5%	2.77	0.597
14.15 There should be more mandatory fields in IIMS	M N	9.9% 5.1%	29.7% 23.3%	37.6% 53.2%	16.9% 14.4%	5.8% 3.9%	57.23	0.000

(A) Ratings from 1=disagree strongly to 5=agree strongly

Number of participants in analyses ranged from 2081-2071

* Percentage of 'agree strongly' + 'agree' responses is greater than percentage of 'disagree strongly' + 'disagree' responses

Figure 5: Percentages of managers and non-managers strongly agreeing or agreeing with items evaluating IIMS



Difference between managerial and non-managerial responses is statistically significant

Managers' and non-managers' evaluations of IIMS

Table 9 shows that on two of the four evaluative items managers made significantly more positive evaluations. They were more likely than other staff to consider that computerised incident reports were more accurate than paper reports and that there should be more mandatory fields in IIMS. While managers were somewhat more likely to say that IIMS improved patient safety and that its utilisation is a good use of staff time and resources the differences were not statistically significant.

Overall evaluations of IIMS

Among both groups more participants were likely to agree than disagree that IIMS improves patient safety and is a good use of staff resources. Among both groups more disagreed than agreed that computerised reports were more accurate and that there should be more mandatory fields in IIMS. However a neutral response was the most frequent answer to both these questions.

5.3.4 Managers' and non-managers' reactions to safety incident scenarios

We turn to the responses to scenarios for various safety incidents. Table 10 and figures 6-8 present this information.

Table 10: Managers' and non-managers' responses to incident scenarios

QUESTIONNAIRE ITEM	NUMBER AND PERCENTAGES OF RESPONDENTS GIVING RATINGS AND RESULTS OF CHI SQUARE ANALYSES (A)
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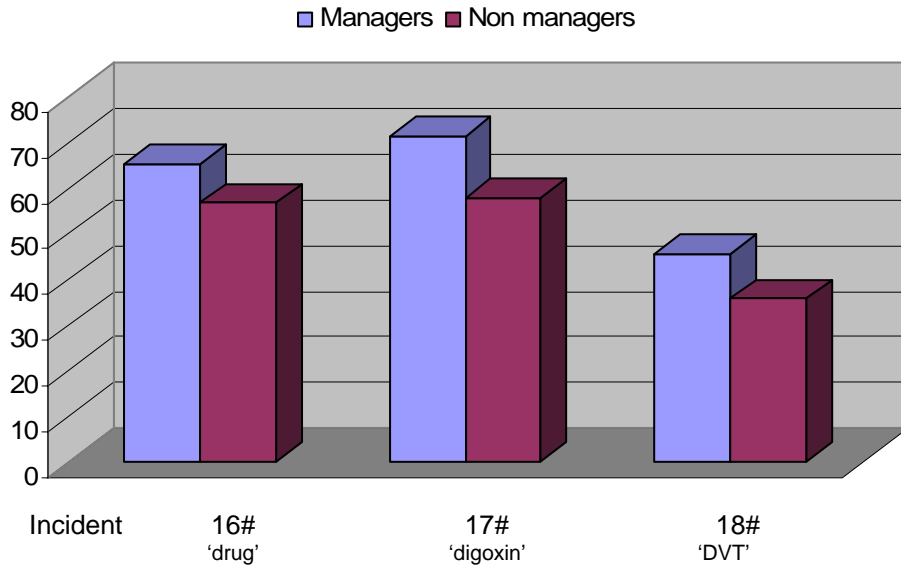
M=Managers N=Non-managers		Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly	χ^2 df 4	P
16. Scenario one: A patient requires an intravenous drug. Although the nurse is capable of doing this, the protocol states that a doctor must give the first dose of any drug administered intravenously. The nurse follows the protocol and sets up all the equipment and then pages a doctor. It takes a long time for a doctor to arrive. Eventually a doctor rushes onto the ward and administers the drug, and rushes out again. The delay in administering the drug means that the patient is more uncomfortable than she would have been.								
Reporting this incident is appropriate	M*	1.4%	16.0%	17.1%	56.1%	9.4%	18.47	0.001
	N*	2.2%	19.7%	21.2%	50.4%	6.5%		
I would report this incident	M*	2.7%	25.0%	19.4%	45.0%	7.8%	27.61	0.000
	N*	4.3%	30.2%	23.8%	36.4%	5.2%		
Somebody should report this incident	M*	2.4%	17.9%	20.5%	50.5%	8.7%	25.10	0.000
	N*	3.0%	22.2%	26.7%	41.1%	7.0%		
17. Scenario two: There is an order for digoxin. The nurse on who is double checking the dose notes an error in the order. The doctor recalculates the dose and the correct dosage is given.								
Reporting this incident is appropriate	M*	1.9%	16.0%	10.7%	57.9%	13.5%	41.47	0.000
	N*	3.5%	23.4%	15.2%	47.5%	10.4%		
I would report this incident	M*	2.6%	21.0%	13.6%	50.1%	12.6%	79.89	0.000
	N*	5.0%	30.6%	21.2%	35.8%	7.5%		
Somebody should report this incident	M*	2.8%	17.5%	15.1%	51.3%	13.2%	39.16	0.000
	N*	4.3%	24.1%	20.5%	42.2%	8.9%		
18. Scenario three: No order for DVT (deep vein thrombosis) prophylaxis is made for a patient who undergoes elective surgery. The patient does not suffer a DVT.								
Reporting this incident is appropriate	M*	2.7%	20.1%	31.5%	38.6%	7.2%	27.37	0.000
	N*	4.9%	24.5%	34.8%	31.5%	4.3%		
I would report this incident	M*	3.0%	26.1%	32.4%	32.4%	6.1%	39.22	0.000
	N	5.6%	29.5%	38.4%	23.2%	3.2%		
Somebody should report this incident	M*	3.0%	22.3%	31.7%	36.4%	6.7%	32.84	0.000
	N*	4.8%	25.3%	38.6%	27.7%	3.6%		

(A) Ratings from 1=disagree strongly to 5=agree strongly

Ratings from 1=disagree strongly to 5=agree strongly

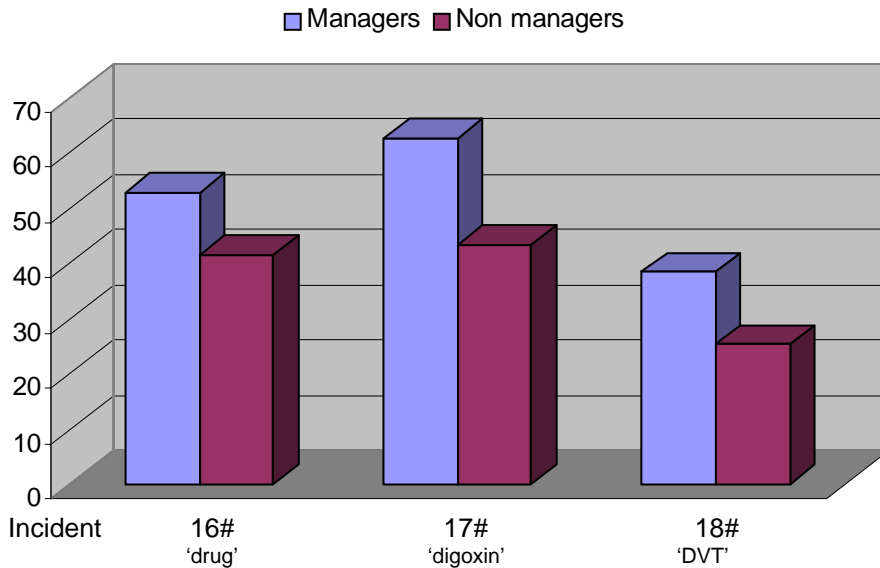
Number of respondents ranged from 2050-1973

Figure 6: Percentages of managers and non-managers strongly agreeing or agreeing it is appropriate to report incident



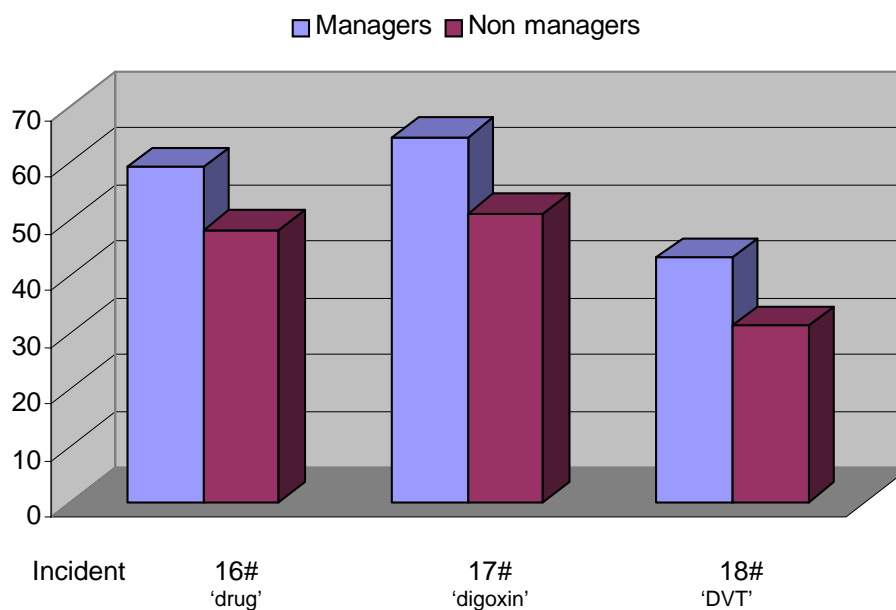
#Difference between managerial and non-managerial responses is statistically significant

Figure 7: Percentages of managers and non-managers strongly agreeing or agreeing they would report the incidents



#Difference between managerial and non-managerial responses is statistically significant

Figure 8: Percentages of managers and non-managers strongly agreeing or agreeing someone should report incidents



#Difference between managerial and non-managerial responses is statistically significant

Managers' and non-managers' reactions to incident scenarios

Managers' responses to all nine items assessing the three scenarios differed significantly from those of other staff. Compared to non-managers, more managers said that reporting the incidents was appropriate, that they would report the incidents and that somebody should report the incidents.

Overall reactions to incident scenarios

Table 10 shows that with one exception both managers and other staff were more likely to agree than disagree that reporting of incidents should occur. The exception occurred in responses to item 18 where other staff were more likely than managers to disagree that they themselves would report the DVT incident.

In responding to the three incidents both managers and non-managers were most likely to say they would report the incident, second most likely to say that reporting the incident is appropriate and least likely to say that somebody should report the incident. Furthermore both managers and other staff were most likely to say they would report the incident in item 16 involving an intravenous drug. Both groups said they were least likely to report the incident in item 17 involving digoxin. The same ranking of responses occurred regarding the incident being judged as reportable and the view that somebody should report it; item 16 received most endorsement and item 18 least. So although managers were more likely to agree that reporting of the incidents should occur there was consensus between the two groups as to the relative importance of reporting the three incidents.

5.3.7 Managers’ overall assessments of IIMS

Table 11: Managers’ overall assessments of IIMS

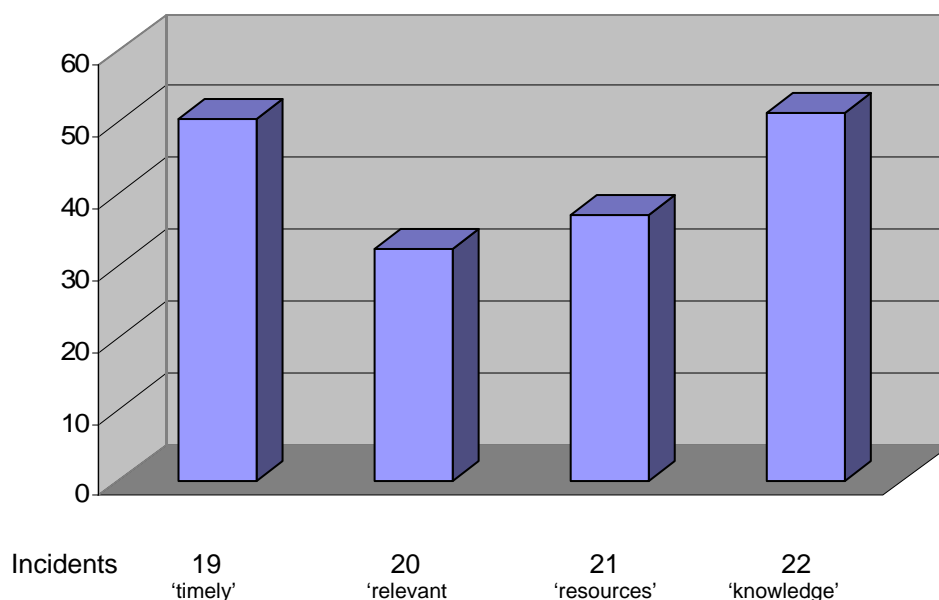
QUESTIONNAIRE ITEM	PERCENTAGES OF MANAGERS’ RATINGS AND RESULTS OF CHI SQUARE ANALYSES (A)				
	Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly
19. IIMS provides incident data to all relevant departments in a timely fashion *	93 (8.5%)	228 (20.8%)	223 (20.4%)	491 (44.8%)	60 (5.5%)
20. The incident reports I review contain all relevant details	129 (12.0%)	369 (34.2%)	220 (20.4%)	335 (31.1%)	25 (2.3%)
21. Resources are available to analyse real-time incident data promptly	164 (15.3%)	315 (29.3%)	306 (28.5%)	266 (24.8%)	23 (2.1%)
22. IIMS improves the system's knowledge of appropriate quality and risk measures and trends *	97 (9.0%)	142 (13.2%)	285 (26.6%)	473 (44.1%)	76 (7.1%)

(A) Ratings from 1=Disagree strongly to 5=Agree strongly

Numbers of respondents ranged from 1095-1073

* Percentage of ‘agree strongly’ + ‘agree’ responses is greater than percentage of ‘disagree strongly’ + ‘disagree’ responses

Figure 9: Percentages of managers strongly agreeing or agreeing with overall evaluation items



Overview of managers' overall assessments of IIMS

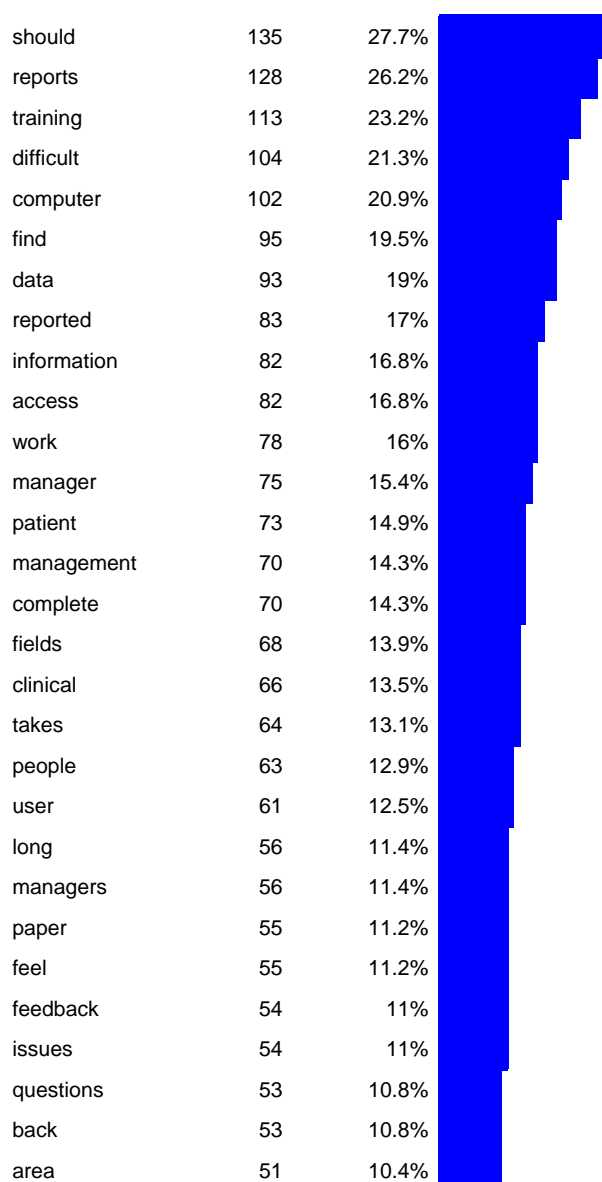
Two of the four assessment items that were only answered by managers elicited more agreement than disagreement from participants. As shown in Table 11 these items stated that IIMS provides incident data to relevant departments in a timely fashion and that IIMS improves the system's knowledge of quality and risk trends. When responding to the more practically oriented questions there was more disagreement than agreement. Less than a third of managers (32.4 %) believed the incident reports they review contain all the relevant details while close to half (46.2%) disagreed. There was least support for the proposition that resources are available to analyse incident data promptly. Just over a quarter (26.9%) found this to be the case while 44.6% disagreed. Thus there was far more support for what IIMS can ideally provide but in practice managers suffer from a lack of information in incident reports and a lack of resources to analyse that information.

5.4 Content analyses of participants' text comments on IIMS

The final survey question, 'Are there any other comments you would like to make about IIMS and ways to improve the functioning of the IIMS system?' was open-ended, requiring a text response. It was answered by 1,244 (56.9%) participants. Of these 1,129 (51.7%) actually answered the question asked while 115 (5.3%) gave irrelevant answers eg made comments about the questionnaire, and wrote that they had no comments to make. Respondents' answers were subjected to two forms of content analysis.

5.4.1 Leximancer analysis

One content analysis procedure used Leximancer, a software tool. This provided a succinct outline or summary of respondents' major comments on IIMS. Leximancer analyses text in order to identify its key themes, concepts and ideas. A concept is a group of words related by their usage in the text. The Leximancer concept map of respondents' comments on IIMS (figure 10) shows the main concepts found in respondents' comments about IIMS. The circles clustering the concepts indicate concepts that are most closely related in terms of being likely to appear in close proximity in the text. The titles of these clusters are generated by Leximancer via its thesaurus. The results below show that respondents had a set of issues centred on five key areas: software, including the slowness of the system; the length of time it takes to report an incident; difficulties in entering data; hardware, in particular access to computers; and organisational issues, such as the need for feedback and training.



5.4.2 Classical content analysis

Classical content analysis compresses text into content categories using explicit coding rules. In the present content analysis emergent coding was used. In depth examination of participants' text answers was carried out by two of the research team who identified the issues raised by respondents. The two researchers compared notes, reconciled differences and developed the coding instructions to be applied as shown in Table 13. The researchers established the reliability of their independent coding on a sample of surveys. Issues which were only raised by small numbers of participants were grouped together as 'other comments'. Respondents could score on as many categories as they mentioned but could not receive a score of more than 1 for each category eg a respondent who made 2 positive statements about IIMS only received a score of 1 for that category. The number of issues raised by each respondent was calculated.

Table 13: Examples from coding categories used in content analysis of text answers

CODING CATEGORIES FOR CONTENT ANALYSIS AND EXAMPLES FROM PARTICIPANTS' ANSWERS
<p>1. IIMS is confusing/difficult/ not user friendly</p> <ul style="list-style-type: none"> ▪ Not very user-friendly - need more effective prompts ▪ Difficult to get into IIMS and determine the place to start the report ▪ IIMS times out too quickly ▪ The system kicks you out without notice ▪ Area of reporting is sometimes difficult to highlight ▪ The system is hospital oriented and too ambiguous for Ambulance officers' needs
<p>2. IIMS is time consuming/too long</p> <ul style="list-style-type: none"> ▪ It is too long ▪ Clinicians find IIMS far too time consuming ▪ As a manager I find it very time consuming to enter all the management details ▪ Cumbersome, lengthy process to manage IIMS. Requires one day a fortnight to complete this ward's incidents ▪ Takes too much time ▪ Scrolling through choices takes a lot of unnecessary time which we don't have
<p>3. IIMS lacks necessary fields/ has unnecessary mandatory fields</p> <ul style="list-style-type: none"> ▪ Newer medications not on IIMS; seems to be an excess of little used herbal preparations ▪ IIMS does not have the scope to allow for incidents within radiotherapy to be reported ▪ Can't use properly due to lack of categories that best describe our incidents ▪ Too many mandatory fields ▪ On reporting a visitor falling, it was difficult to complete IIMS as the mandatory fields only showed worker not visitor—some fields were not relevant ▪ Many of the dropdown fields do not adequately cover my needs
<p>4. Feedback about IIMS reports submitted is lacking/difficult to get</p> <ul style="list-style-type: none"> ▪ There is no follow-up to indicate anything has been achieved by IIMS ▪ A number of times review and management of IIMS incidents have been delegated to me but I have not been notified ▪ Feedback from management after I have completed a report seems non-existent ▪ Needs some sort of acknowledgement that IIMS has been processed, addressed ▪ Not knowing if data has been transferred to relevant people
<p>5. Have not received IIMS training/need further training</p> <ul style="list-style-type: none"> ▪ It would have been helpful to have an in-service on the use of the system ▪ More training required ▪ More education for staff ▪ There should be training sessions conducted for every staff member and a step by step instruction sheet available next to the ward computers

<ul style="list-style-type: none"> ▪ Overall staff need more training
<p>6. IIMS has reduced staff reporting of incidents</p> <ul style="list-style-type: none"> ▪ I think there is under-reporting due to staff reluctance to use a computer ▪ IIMS has created a culture of not reporting incidents ▪ Older nurses would rather under-report than use IIMS ▪ I have stopped filing incident reports ▪ I have noticed a significant decline in clinicians' attitudes re IIMS reporting
<p>7. Difficult to access computers or IIMS program</p> <ul style="list-style-type: none"> ▪ Ensure IIMS is online more than it is off line ▪ Hotel services employees have No access to PCS in our hospital ▪ IIMS is not always available when I have time to do it ▪ Having access at all times would help ▪ We need access to more computers
<p>8. Staff do not fill in IIMS as they should eg incorrect or inadequate reports, use paper forms which others enter, refuse to report on IIMS</p> <ul style="list-style-type: none"> ▪ We still have to fax the incident to risk management. Can't they access the system? ▪ I [have not], and no doctors I know have undertaken IIMS training. We use nurses to do the data entry. ▪ When I check the information on the notifier tab I find that staff put in anything just to get an incident into the system so the data is not correct ▪ I am constantly being asked by nursing staff to complete an IIMS for them ▪ Incidents are often classified inappropriately ▪ We are completing incidents manually and our DON submits electronically ▪ My staff don't input so they give me a paper copy
<p>9. Negative overall evaluation of IIMS (emotive)</p> <ul style="list-style-type: none"> ▪ The system is another administrative waste of time ▪ IIMS represents another black hole into which clinicians have to pour time and energy ▪ With this anonymous way of reporting I have noticed a definite breakdown in team trust ▪ The IIMS system has created a monster; it's developed a police state within health ▪ As for most systems IIMS is left mainly to nursing staff—reporting and managing—again in the main doctors are left out of the loop (nurse) ▪ Don't bother getting medical staff involved. We are not anyway. IIMS is mainly aimed at nursing staff complaining about 'incompetent' doctors!
<p>10. Positive evaluation of IIMS (may also be critical of some aspects)</p> <ul style="list-style-type: none"> ▪ As a passionate advocate in improving patient safety, I support and commend IIMS ▪ Great system; has hugely improved adverse incident reporting within this facility ▪ I I find the reporting system is timely ▪ Easy to use dropdown bars especially in the mandatory fields ▪ T The explanations of categories are very helpful

<ul style="list-style-type: none"> ▪ The system seems user friendly, quick and efficient
<p>11. Unable to save and return to IIMS</p> <ul style="list-style-type: none"> ▪ Reports generated do not save on the system; why can't you save while entering IIMS? ▪ Once you save the incident you cannot have access to it unless you go to your manager ▪ Staff aren't aware they can re-access a report if they have not time to complete it ▪ Need to be able to save a half entered incident and return to it later
<p>12. Unable to print copy of IIMS report</p> <ul style="list-style-type: none"> ▪ Enter on IIMS and then write on the notes, when before, the paper report allowed for copy to stay with the patient's notes ▪ Can't print out a final draft ▪ Without a hard copy you can't check at a later date whether the content is unaltered ▪ I was surprised there was no way that I can have a copy of my report ▪ Staff should be able to print out a copy
<p>13. Have problems applying SAC</p> <ul style="list-style-type: none"> ▪ It would help staff [not to make mistakes] if the SAC matrix was on the screen with the descriptions ▪ Determining the SAC is tricky at times ▪ The SAC scoring should be done by managers [staff can't do it correctly] ▪ I The SAC of a reported incident can vary from one person to another ▪ The SAC rating is a tool we are still learning ▪ Difficult to distinguish between SAC codes
<p>14. Have been ordered/strongly discouraged from reporting on IIMS</p> <ul style="list-style-type: none"> ▪ There's bullying from managers preventing the logging on of incidents ▪ If pharmacists report interventions (near misses) on the ward re prescribing they are in danger of ruining their credibility with medical staff they have to work with as they are seen as 'dobbing in' medical staff. This upsets pharmacists particularly the younger ones. ▪ We're not encouraged to use IIMS as it means more work for managers ▪ We have been specifically told by clinical governance not to use IIMS to report drug related admissions ▪ I find it alarming that managers have and do discourage and indeed punish staff for reporting incidents
<p>15. Other comments about IIMS</p> <ul style="list-style-type: none"> ▪ The IIMS system is primarily a clinical reporting system that does not meet NSW OHS legislative requirements ▪ It's faster to complete a paper report ▪ Security of system is doubtful ▪ IIMS needs a spell-check ▪ Too much backward and forwarding between managers being asked weeks after the event to explain yourself ▪ The introduction of IIMS trained data entry personnel accessed by phone would

improve the system

- There should be oversight to ensure appropriate reporting

The results of the classical content analysis are shown in Table 14. Survey participants who provided a relevant text response to the final question mentioned on average 1.83 issues. The most frequent comments, raised by over a quarter of these respondents, was that IIMS was not user-friendly (27.5%) and that entering an incident on IIMS was too time consuming (25.6%). Problems regarding fields were cited by 22.2% of respondents. This was a particularly common response from allied health professionals who found that IIMS lacked the fields they required to report an incident accurately. Some respondents wanted more mandatory fields and others wanted less. Failure to receive feedback was a source of frustration to 18.4% of respondents. While these were primarily those who originally submitted a report, managers also encountered feedback problems management of reports. Not receiving training or not receiving adequate training was mentioned by 12.6% of respondents. According to 11.4% of respondents, less reporting of incidents (usually by staff in general but sometimes by the respondent) was said to be occurring since the introduction of IIMS.

Table 14: Results of content analysis: Numbers and percentages of participants raising

ISSUES ABOUT IIMS			
Issues raised	Number citing issue	% of total sample (n=2185)	% of relevant answers (n=1129)
IIMS is confusing/difficult/ not user friendly	310	14.2%	27.5%
IIMS is time consuming/too long	289	13.2%	25.6%
IIMS lacks necessary fields/ has unnecessary mandatory fields	251	11.5%	22.2%
Feedback about IIMS reports submitted is lacking/difficult to get	208	9.5%	18.4%
Have not received IIMS training/need further training	142	6.5%	12.6%
IIMS has reduced staff reporting of incidents	129	5.9%	11.4%
Difficult to access computers or IIMS program	108	4.9%	9.6%
Staff do not fill in IIMS as they should eg incorrect or inadequate reports, use paper forms which others enter, refuse to report on IIMS	94	4.3%	8.3%
Negative overall evaluation of IIMS (emotive)	74	3.4%	6.5%
Positive evaluation of IIMS (may also be critical of some aspects)	51	2.3%	4.5%
Unable to save and return to IIMS	50	2.3%	4.4%
Unable to print copy of IIMS report	45	2.1%	4.0%
Have problems applying SAC	34	1.6%	3.0%
Have been ordered/strongly discouraged from reporting on IIMS	24	1.1%	2.1%

Other comments about IIMS	255	11.7%	22.6%
Average number of issues raised*		M=0.94 SD=1.24	M=1.83 SD=1.17

*Respondents did not receive a score of more than 1 for any issue even if several points were made regarding issue

Issues raised by less than 10% of respondents included lack of access either to computers or to the IIMS program (9.6%). Reports of staff not filling in IIMS reports as they should were made in 8.3% of answers. Negative overall evaluations of IIMS which had emotive overtones were expressed by 6.5% of respondents while 4.5% gave positive evaluations of the system. Inability to save and return to IIMS was cited as a problem by 4.4% while 4.0% found being unable to print a report was a deficiency of the system. Problems applying SAC were mentioned by 3.0% of respondents. The reports by 2.1% of respondents that they were being ordered or discouraged from using IIMS, almost always by managerial staff, were disturbing.

5.4.3 Comparison of Leximancer and classical content analysis findings

Issues of concern raised in the Leximancer analysis of survey participants final comments centred on five broad areas: software, including the slowness of the system; the length of time it takes to report an incident; difficulties in entering data; hardware, in particular access to computers; and organisational issues, such as the need for feedback and training. The classical content analysis of respondents' text answers yielded 14 major issues. The most frequently cited issues raised in the content analysis echoed the issues identified by the Leximancer analysis viz IIMS is time consuming, IIMS is not user friendly, feedback about IIMS reports is lacking, IIMS training is inadequate, and IIMS is difficult to access. However the classical content analysis also identified more specific issues such as problems regarding saving or printing reports, ways in which staff fail to adequately report on IIMS or are discouraged from reporting incidents. There were also some participants who do not support IIMS. These included those who made emotive negative comments about the system as well as managers and others who forbade or discouraged use of IIMS; the latter quite possibly in some cases because of the extra work IIMS was seen to involve for them.

The formulation of the final question asked for participants' suggestions as to how the IIMS system might be improved so it is hardly surprising that problems were the focus of most answers. These need to be viewed in conjunction with the relatively more positive than negative views reported by the total research sample of 2185 health personnel in their responses to the other survey questions. For example, the majority of participants in the survey were satisfied with their access to computers, to the IIMS program and to their IIMS training. The problems identified in the content analyses may occur more frequently in particular facilities or AHSs but the very varied sampling across AHSs made this hypothesis impossible to test. Further investigation as to the prevalence of problems across the different health professional groups is also warranted. Here again there are some sampling difficulties as some professional groups, most notably medicine, were significantly under-represented in the survey sample.

6 DISCUSSION

We report on the major findings in this section. We bring the study to a conclusion in the next section.

Overall, we found substantial support for IIMS from health system staff who are knowledgeable about or familiar with IIMS processes. If a favourable attitude is defined as an item to which a greater proportion of participants 'strongly agree' or 'agree', as opposed to saying they 'strongly disagree' or 'disagree', then the following 20 positive attitudes were held by both managers and non-managers (Table 15).

Table 15: Survey items which elicited positive attitudes from respondents

ITEMS TO WHICH MORE RESPONDENTS AGREED THAN DISAGREED
11. The training I received provided me with the skills to report an incident on IIMS
14.1 IIMS is easy to use
14.2 The classification of incidents used in IIMS is logical
14.3 I have a sufficient understanding of what defines a reportable incident
14.5 The security and privacy of the IIMS system for staff is adequate
14.6 The security and privacy of the IIMS system for patients is adequate
14.10 Incidents should only be reported by the primary people involved and not by outsiders
14.11 I should be able to nominate who will see my report
14.12 IIMS improves patient safety
14.13 Reporting incidents using IIMS is a good use of staff time and resources
15.1 We have an adequate number of PCs in my workplace to access IIMS?
15.2 IIMS is operating whenever it is needed
Eight of nine of the responses to the incident scenarios in which managers and non-managers agreed concerned incidents should be reported (see Table 10)

If a negative attitude is defined as an item to which a greater proportion of participants 'strongly disagree' or 'disagree', as opposed to saying they 'strongly agree' or 'agree', then the following six negative attitudes were held by both managers and non-managers as shown in Table 16.

Table 16: Survey items which elicited negative attitudes from respondents

ITEMS TO WHICH MORE RESPONDENTS DISAGREED THAN AGREED
14.8 Reporting an incident on the computer is easier than reporting one on paper
14.9 Computerized incident reports are more accurate than paper incident reports
14.15 There should be more mandatory fields in IIMS
14.16 IIMS encourages open disclosure to patients
15.3 If I use IIMS I do not need to report the incident anywhere else
15.5 The culture in this facility is "the higher the number of incident reports, the better"

Some response patterns were not so clear-cut. Five items elicited positive attitudes from managers but negative attitudes from other staff (Table 17).

Table 17: Survey items which elicited positive attitudes from managers and negative attitudes from non-managers

ITEMS TO WHICH MORE MANAGERS AGREED AND MORE NON-MANAGERS DISAGREED
14.4 I always know what severity (SAC) rating to assign an incident I report
14.7 I can complete my incident report later if I'm interrupted or I need to add further details
14.14 I can easily determine the follow up status of any incident
15.4 We have a non-punitive culture of reporting in my workplace
18 (ii) I would report this incident (DVT prophylaxis not ordered)

There were highly significant differences between managers and other staff who participated in the survey, both in terms of their experiences using IIMS and their attitudes towards IIMS. Managers were more likely to have received training in IIMS, to have attended a course in IIMS, to have reported an incident on IIMS and to have reported more incidents. However managers and non-managers reported similar patterns of reporting incidents following the introduction of IIMS; the majority were reporting the same number of incidents prior and post-implementation. Managers' views differed significantly from those of non-managers on 26 (84%) of the attitudinal items in the questionnaire. On all but four of these items managers were more likely to agree than were other staff. The items which non-managers agreed with more strongly were: 15.1 'We have an adequate number of PCs in my workplace to access IIMS', 15.2 'IIMS is operating whenever it is needed', 14.10 'Incidents should only be reported by the primary people involved and not by outsiders' and 14.11 'I should be able to nominate who will see my report'.

Only managers were asked to make four final assessments of IIMS. While the managers expressed positive attitudes towards what IIMS can achieve in providing incident data to all departments in a timely fashion and improving the system's knowledge of trends, the two items addressing immediate practical issues elicited negative replies. Only a third of managers said that the incident reports they review contain all the relevant details while 46.2% disagreed (20.4% were neutral). Only 26.9% of managers said that there are resources available to analyse incident data properly, 44.6% denied this was the case and 28.5% were neutral. Thus a high proportion of managers were experiencing considerable problems when attempting to process IIMS incident reports.

Participants' attitudes may also be classified in terms of the six domains (from items 14-18) explored in the study viz satisfaction with IIMS, understanding of IIMS, IIMS' security, workplace safety culture, evaluations of IIMS and reporting incidents. As Table 18 shows there are more positive attitudes (held by both groups) toward IIMS security and the reporting of incidents. These are reassuring findings. Most negative attitudes are held toward understanding of IIMS and workplace safety cultures.

Table 18: Attitudes elicited by items in six IIMS domains

IIMS DOMAIN	ATTITUDES			NO. OF ITEMS
	Positive both groups	Negative both groups	Managers positive, non-managers negative	
Satisfaction (Table 4)	4 (57%)	1(14%)	2 (29%)	7 (100%)
Understanding (Table 5)	2 (40%)	2 (40%)	1 (20%)	5 (100%)
Security (Table 6)	3 (100%)	0	0	3 (100%)
Workplace culture (Table 7)	0	1(50%)	1 (50%)	2 (100%)
Evaluations (Table 8)	2 (50%)	2 (50%)	0	4 (100%)
Reporting incidents (Table 9)	8 (89%)	0	1 (9%)	9 (100%)

The two content analyses identified the major issues of concern of the 51.7% of participants who choose to make comments on IIMS and suggest improvements. Both analyses revealed that for many health professionals IIMS is not perceived as user friendly and is found to be very time consuming to use. There are problems from lack of training, lack of access and lack of feedback. The classical content analysis provided more specific examples within these broad areas and suggested groups within the health system who may be more likely to encounter these problems. IIMS tends to be more problematic for allied health professionals such as pharmacists and those working outside hospitals eg ambulance officers. The classical content analysis also identified very specific issues that might be targeted eg being able to save a report and return later to complete it, the facility to print a copy of a report and most importantly ensuring feedback after a report is made.

The way in which these issues can potentially be addressed is dependent on the agencies responsible for that aspect of IIMS. The direct software issues (for example the question of saving and returning to IIMS or printing a copy of a report) can be addressed in the next version. Difficulties with the mandatory fields relate to the NSW Health Data Set, and can be dealt with at that level. The need for further training, both in general and specifically relating to the SAC process, is an AHS issue, as are the disincentives or organisational barriers to reporting. Some issues cut across a number of levels: IIMS is too time consuming can involve any or all of the: software program itself (a vendor/NSW Health issue); number of mandatory fields (NSW Health/AHS); and speed of the network and hardware. Similarly issues with feedback about notifications can be addressed at a State-wide (NSW Health/CEC), or the concerns appear primarily about AHS or local level feedback, as is the question of IIMS reducing the reporting of incidents. The final group, confusion about and reluctance to use IIMS, access to computers, and incomplete or inappropriate use of IIMS are AHS issues, and ones which could, potentially be dealt with through a combination of training and the use of a call centre.

7 CONCLUSION

This survey has elicited attitudes of 2185 staff to a range of questions about IIMS. There are challenges ahead in improving incident management in NSW, and considerable opportunities to do so.

8 REFERENCES

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9 APPENDIX

9.1 Appendix 1: IIMS Questionnaire

Incident Information Management System (IIMS) Survey

Thank you for your support of this project.

You can complete this form in several ways.

This is an interactive pdf form. All you need is a normal Adobe reader in order to type directly onto this form.

Print out this copy and write in the answers as indicated.
Mail the survey form back to us at the following address:

Jo Travaglia
Centre for Clinical Governance Research
Faculty of Medicine
University of NSW
10 Arthur St
Randwick SYDNEY NSW 2052
Australia

Or Fax to: (02) 9663 4926

Please make sure that however you choose to fill in this form, you send it to Jo Travaglia by:

Wednesday, 24 May, 2006

If you have any problems, please call Jo on: (02) 9385 2594

THANK YOU

Your Demographics		
* Required fields		
1*	In which Area Health Service do you work?	<p><i>Please tick one of the following:</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Greater Southern AHS <input type="checkbox"/> Greater Western AHS <input type="checkbox"/> Hunter New England AHS <input type="checkbox"/> North Coast AHS <input type="checkbox"/> North Sydney Central Coast AHS <input type="checkbox"/> South Eastern Sydney Illawarra AHS <input type="checkbox"/> Sydney South West AHS <input type="checkbox"/> Sydney West AHS <input type="checkbox"/> Children's Hospital Westmead <input type="checkbox"/> Ambulance Services NSW <input type="checkbox"/> Justice Health
2*	<p>What is your professional background?</p> <p>Please tick one of the following:</p>	<p><i>Please tick one of the following:</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Medicine <input type="checkbox"/> Nursing <input type="checkbox"/> Allied Health <input type="checkbox"/> Other <p><i>If Other, please specify</i></p> <hr/>
3	<p>What is your Gender?</p> <p>Please tick one of the following:</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Male <input type="checkbox"/> Female
Your Work		
4	<p>Where do you do most of your work?</p> <p>Please tick one of the following:</p>	<p><i>Please tick one of the following:</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Tertiary referral hospital <input type="checkbox"/> Regional hospital <input type="checkbox"/> Rural health facility <input type="checkbox"/> Community Health Centre <input type="checkbox"/> Area Health Service (Office) <input type="checkbox"/> Ambulance service <input type="checkbox"/> Private practice <input type="checkbox"/> Other

5	What is your current position in your organisation?	<p><i>Please specify:</i></p> <p>_____</p>
6	How many years have you worked in health care post-graduation? (since you gained your initial qualification)	<p><i>YEARS. Enter nearest whole number</i></p> <p>_____</p>
7	What percentage of your present work time do you spend on management duties?	<p><i>PERCENT. Enter a number</i></p> <p>_____</p>
8	What percentage of your present work time do you spend on clinical duties?	<p><i>PERCENT. Enter a number</i></p> <p>_____</p>
IIMS Training		
9	Have you undertaken any IIMS Training	<p><i>Please tick one of the following:</i></p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>
10	What form did the training take? (tick as many as appropriate)	<p><input type="checkbox"/> Presentation or course</p> <p><input type="checkbox"/> A colleague explained</p> <p><input type="checkbox"/> Online</p> <p><input type="checkbox"/> CD/DVD</p> <p><i>If Other, please specify</i></p> <p>_____</p>

11	The training I received provided me with the skills to report an incident on IIMS	<p><i>Please tick one of the following:</i></p> <p><input type="checkbox"/> Strongly Agree</p> <p><input type="checkbox"/> Agree</p> <p><input type="checkbox"/> Unsure</p> <p><input type="checkbox"/> Disagree</p> <p><input type="checkbox"/> Strongly Disagree</p>				
Using IIMS						
12	Have you ever reported an incident using IIMS?	<p><i>Please tick one of the following:</i></p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><i>If YES, please specify how MANY incidents</i></p> <p>_____</p>				
13	Since the introduction of IIMS I am reporting:	<p><i>Please tick one of the following:</i></p> <p><input type="checkbox"/> More incidents</p> <p><input type="checkbox"/> The same number of incidents</p> <p><input type="checkbox"/> Fewer incidents</p>				
<p><i>Please tick one box for each of the following statements:</i></p>						
14	<i>Indicate from your experience with IIMS your agreement with the following statements:</i>	Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly
14.1	IIMS is easy to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.2	The classification of incidents used in IIMS is logical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.3	I have a sufficient understanding of what defines a reportable incident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14	<i>Indicate from your experience with IIMS your agreement with the following statements:</i>	Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly
14.4	I always know what severity (SAC) rating to assign an incident I report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.5	The security and privacy of the IIMS system for staff is adequate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.6	The security and privacy of the IIMS system for patients is adequate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.7	I can complete my incident report later if I'm interrupted or I need to add further details	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.8	Reporting an incident on the computer is easier than reporting one on paper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	<i>Indicate from your experience with IIMS your agreement with the following statements:</i>	Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly
14.9	Computerized incident reports are more accurate than paper incident reports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.10	Incidents should only be reported by the primary people involved and not by outsiders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.11	I should be able to nominate who will see my report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.12	IIMS improves patient safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.13	Reporting incidents using IIMS is a good use of staff time and resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.14	I can easily determine the follow up status of any incident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.15	There should be more mandatory fields in IIMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.16	IIMS encourages open disclosure to patients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IIMS in my workplace						
		<i>Please tick one box for each of the following statements:</i>				
15	<i>Indicate from your experience with IIMS your agreement with the following statements:</i>	Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly
15.1	We have an adequate number of PCs in my workplace to access IIMS?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2	IIMS is operating whenever it is needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.3	If I use IIMS I do not need to report the incident anywhere else	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	<i>Indicate from your experience with IIMS your agreement with the following statements:</i>	Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly
15.4	We have a non-punitive culture of reporting in my workplace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.5	The culture in this facility is "the higher the number of incident reports, the better"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Could you consider the following three scenarios?						
Scenario one						
16	<i>A patient requires an intravenous drug. Although the nurse is capable of doing this, the protocol states that a doctor must give the first dose of any drug administered intravenously. The nurse follows the protocol and sets up all the equipment and then pages a doctor. It takes a long time for a doctor to arrive. Eventually a doctor rushes onto the ward and administers the drug, and rushes out again. The delay in administering the drug means that the patient is more uncomfortable than she would have been.</i>					
		<i>Please tick one box for each of the following statements:</i>				
		Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly
16.1	Reporting this incident is appropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.2	I would report this incident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.3	Somebody should report this	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	incident	
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Scenario two						
17	<i>There is an order for digoxin. The nurse on who is double checking the dose notes an error in the order. The doctor recalculates the dose and the correct dosage is given.</i>					
		<i>Please tick one box for each of the following statements:</i>				
		Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly
17.1	Reporting this incident is appropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.2	I would report this incident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.3	Somebody should report this incident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scenario three						
18	<i>No order for DVT (deep vein thrombosis) prophylaxis is made for a patient who undergoes elective surgery. The patient does not suffer a DVT.</i>					
		<i>Please tick one box for each of the following statements:</i>				
		Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly
18.1	Reporting this incident is appropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.2	I would report this incident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.3	Somebody should report this incident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you are a manager, please answer questions 19-22, if not, please proceed to the final question number 23						
		<i>Please tick one box for each of the following statements:</i>				
		Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly
19	IIMS provides incident data to all relevant departments in a timely fashion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20	The incident reports I review contain all relevant details		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Resources are available to analyse real-time incident data promptly		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	IIMS improves the system's knowledge of appropriate quality and risk measures and trends		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	Are there any other comments you would like to make about IIMS and ways to improve the functioning of the IIMS system?							

Thank you very much for your time and input