CENTRE FOR CLINICAL GOVERNANCE RESEARCH

EVALUATION OF THE INCIDENT INFORMATION MANAGEMENT SYSTEM IN NEW SOUTH WALES: STUDY NUMBER 3

REVIEW OF THE PROJECT IMPLEMENTATION PROCESS FOR IIMS

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 3 in the evaluation of NSW Health's Incident Information Management System (IIMS). This study examines the project implementation process for IIMS. In-depth interviews were conducted with five senior staff members from Communio (the company which project-managed IIMS), NSW Health and the Clinical Excellence Commission. In these interviews we sought the stakeholders' views on the implementation of IIMS. We then reviewed the project implementation documentation and plan, and assessed the extent to which the plan was realised and contractual obligations met.

The introduction of a State-wide information technology system was an ambitious project, but from its inception IIMS attracted significant managerial support and resources. A combination of tight project management, good governance and clear accountabilities from all key stakeholders resulted in a project that was well handled and co-ordinated.

The project faced some significant challenges. During the project's implementation there were large scale systems and personnel changes in both AHSs (as a result of restructuring) and the Quality and Safety Branch (QSB) of NSW Health. The disbanding of the project team as soon as the implementation project was complete affected IIMS' smooth transition from project to fully implemented program. Technical issues, including response times of the software vendor, the user-friendliness of the IIMS interface, and other design and administrative issues, were of concern. It is clear that there remain aspects of IIMS which need to be fine-tuned in order to ensure that the significant benefits that IIMS promises can be realised. Overall, however, we found that the IIMS implementation project was a success, that the project management team met all its contractual requirements and milestones, and that the project implementation phase was completed on time and on budget.

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 Katherine Carroll, Ms Jo Travaglia, Conjoint A/Professor Mary T. Westbrook, Dr Christine Jorm, Dr Cynthia Hunter, 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	▪ 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	▪ 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	▪ 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	▪ 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	▪ 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	▪ Interviews with key stakeholders ▪ Focus group of key stakeholders	Jo Travaglia, Jeffrey Braithwaite, Mary Westbrook
Study #7	Examination of incident reports and management responses	▪ 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	▪ Questionnaire ▪ Interviews with key stakeholders	Jo Travaglia, Jeffrey Braithwaite, Mary Westbrook
Study #9	Assessment of the value and use of IIMS to the CEC	▪ Interviews with CEC staff	Jeffrey Braithwaite, Jo Travaglia
Study #10	Examination of the reporting processes, including change in management of RIBS post IIMS	▪ NSW Health data ▪ Interviews with Quality and Safety Branch staff	Jo Travaglia, Jeffrey Braithwaite

Having presented the results of study 2, the *Review of the education and training program,* we turn to the results of study 3. This study was the *Review of the project implementation process for IIMS.* This report documents the outcomes of this study. This component of the evaluation was conducted by A/Professor Jeffrey Braithwaite and Ms Jo Travaglia.

3.2 About this report

The next section, section 4, *Methods*, documents the way we went about conducting the interviews, reviewing the project implementation plan and assessing the extent to which IIMS was implemented effectively. 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 two methods to assess the extent to which the IIMS project was implemented, and how well or otherwise it has become institutionalised in the health system. Firstly, we interviewed five key stakeholders in-depth, seeking their views on the way IIMS was implemented. The interviewees were drawn from Communio, the company contracted by NSW Health to project-manage the implementation of IIMS, NSW Health and the Clinical Excellence Commission. Each participant was a senior staff member with intimate knowledge of the implementation processes.

Secondly, we reviewed the project implementation documentation and plan and assessed the extent to which the implementation plan was realised and the contractual obligations were met. In essence, we are asking in this retrospective study: was the planning for implementation appropriate, was the implementation plan achieved and how, and what have we been able to learn from this for the benefit of future implementations?

5 FINDINGS

In the lead up to the IIMS implementation, Communio had undertaken project work for NSW Health which had been completed satisfactorily, and a pilot project implementing IIMS had been conducted in Hunter Area Health Service. Quality and Safety Branch (QSB) in NSW Health sponsored the implementation of IIMS through Communio, following a tendering process both for the system and for the project manager. Having chosen AIMS and Communio, a well-structured and extensively documented project plan was developed and executed.

5.1 The broader context

The broader context was favourable for this implementation. The Walker inquiry into Campbelltown and Camden Hospitals was under way,[1] and this had stimulated policy activity within New South Wales to develop a range of strategies to address patient safety concerns. The Safety Improvement Program (SIP) consisted of a range of strategies of which three were highly prominent: educate cohorts of clinicians in safety improvement techniques and practices; mandate root cause analyses for Severity Assessment Code (SAC) 1 events; and implement IIMS. [2 3]

Therefore the implementation project had the support of the recommendations the Special Commission of Inquiry into Campbelltown and Camden Hospitals. It also had the support of the Minister's office, key stakeholders in NSW Health's senior ranks including at Director-General and Deputy Director-General levels, from the Institute for Clinical Excellence (ICE); now the Clinical Excellence Commission (CEC) board, AHSs and amongst policy makers, clinicians and managers. There was an imperative to implement IIMS and the momentum and resources to enable it to happen were made available.

5.2 The planning process

The background documentation and the interviewees' commentaries both support the proposition that this project was initiated and managed via a well-structured implementation plan. It was recognised that this was an ambitious project – to put in a State-wide information technology system across the NSW health system – which had rarely happened before. Interviewees reported never having seen such a detailed and extensively documented plan and there was admiration expressed for the rigorous approach to executing the plan, keeping it on track and making sure that milestones were adhered to.

5.3 Execution

It was determined that a rapid roll-out implementation process was to be effected. At the outset, Communio chose not to get bogged down in lots of contractual change requests or local politics, but single-mindedly moved to marshal resources and strive to push ahead and implement IIMS. Communio provided a mindset which said: let's get on with this, let's have very clear roles and responsibilities, let's work hard and collaborate in a very focused way on project delivery. Suitable support in NSW Health and AHSs were identified and mobilised, and communication of expectations of roles and responsibilities was stressed. There was a determination to deliver on time and on budget. This execution was contrasted with the traditional implementation approaches of other projects which NSW Health had sponsored. In the experience of interviewees, these tended to be more measured and conservative and less forceful.

That is not to say that there were not the usual challenges to implementations of this kind. There were many stakeholders, differing opinions and multiple AHSs involved. The project was designed to replace, and cut across, existing ways of handling incidents. There was not uniform agreement that IIMS was the best system, and some people in AHSs owned their own systems of incident management and did not want a different system, sponsored by NSW Health, to be imposed on them. But there was determined project management leadership, and widespread agreement that execution according to the plan and the delivery of milestones in support of a uniform, standardised, State-wide system were of ultimate importance.

5.4 Contractual obligations

By consensus, all contractual requirements were met, milestones were delivered on time, and the project was completed on time and on budget. The major milestone was that the project was to be finished by May, 2005 and data collection via the system was to begin in June, 2005. This was achieved.

5.5 Success factors

What were the ingredients which made this project work? Various constituent elements were in place. The planning was exemplary, with excellent documentation. The governance from the vendor, NSW Health, the Institute for Clinical Excellence (ICE) and subsequently the CEC, and AHSs was focused and aligned to project objectives. Tight project management and a concentration on sticking to deadlines were viewed as important; people took their responsibilities seriously and had clearer accountabilities than usual for implementation. The project was well handled, well resourced and effectively coordinated both centrally and at AHS level.

In addition, there was a level of impetus that is not always available to projects of this type. The Campbelltown and Camden inquiry provided momentum. The SIP initiatives running parallel with this project helped create a receptive environment. There was sufficient funding and top management support. There was a passion within QSB, some other parts of NSW Health, CEC and in various parts of AHSs for the success of this project.

5.6 Limitations and constraints

Despite the overall success of this project there were limitations and constraints. The tight timeframes meant that people were stretched. Some reportedly struggled for a while. Some of the detailed issues concerning IIMS were unable to be dealt with within the implementation time-scale and thus, inevitably, this was a high-level systems implementation. Now there is a necessity to refine the use of IIMS over time.

If some respondents had their time over they indicated they might put in IIMS first, then initiate the SIP program and RCA processes rather than the other way around, so that as people undertook their safety improvement training and learned about and engaged with RCAs the information management system would already be in place. For some interviewees this would have made more sense, but there is also recognition that this was probably only knowable retrospectively.

One major constraint was that the restructuring from 20 AHSs to eight was occurring during the project implementation. There were also some personnel changes including senior staff in QSB in the last few months of the implementation. However, the platform had been laid and the ethos of a determination to complete was well-established and these factors, while they made things more difficult, were not fatal.

The technical support for IIMS via the owner of the software, Patient Safety International (PSI), was limited at times. PSI was quite a small operation at the time of implementation, but now has increased resources and has reportedly learned to respond more rapidly.

IIMS itself has some limitations which have been exposed during implementation. The system is reportedly somewhat clunky, i.e. there are multiple screens and decision trees and it takes time to enter incidents. The classification system is not always intuitive for some users. For example, the clinical management category is sometimes hard to follow and some users find the terminology unfamiliar. The risk is that if the system is not seen as highly user-friendly this might deter some people from completing the entry of a particular incident. Mitigating this, people who do not report as they should are most likely to be those who did not report under older, manual systems. This is essentially not a problem of IIMS but a problem of incident reporting more generally. One possible way to resolve these kinds of issues is through the use of a call centre with specially trained staff. This approach is currently already being utilised by three AHSs.

Within NSW Health, it remains an ongoing job to manage expectations. Once a system like this goes in, people discover what they could have, and they seek more capability. People's demands for information to suit them, in formats that match their expectations are virtually unlimited. Against requirements such as these, all systems have their constraints. IIMS began to meet this type of problem as soon as it was in place.

5.7 Next steps

Once a project of this kind is delivered, consideration turns to making the transition from implementation to functioning system. This is dealt with in more detail in other sections of this evaluation. An important factor is that the project team from Communio and NSW Health disbanded as soon as implementation was complete. Interviewees suggested that to a considerable degree the implementation momentum had been lost because of this. In addition, resources available for implementation had now been expended and therefore the project no longer had these at its disposal. Some things that needed to be finalised are taking longer to attend to than is necessary. For example, specialist needs, not part of the original scope, have emerged in areas such as radiation oncology and the Neonatal Emergency Transport Services (NETS). IIMS does not address these as effectively as it does other areas and these specialised groups have not had their needs attended to quickly enough.

The clarification of roles and responsibilities for IIMS is needed. At this point IIMS is being managed in various ways by CEC, QSB, and the Strategic Information Management Branch (SIM). It would be useful to review and clarify each of these bodies' respective roles and responsibilities in relation to IIMS.

The transition from project to program is also a key task for Directors of Clinical Governance in AHSs. Data quality and reporting processes need to be improved, and IIMS needs to be owned right across the health system. An improved focus on doctors using the system is needed. Other issues are more technical, and involve liaison with PSI, for example to improve software interfaces and the reporting function. NSW Health is in the process of adopting IIMS software version 3.5 and is pressing for version 4.0 which will be a Web-based application with more functionality and suitability to the NSW health environment. It is envisaged that these will be addressed over time. These issues are dealt with in more detail in other sections of the evaluation.

6 DISCUSSION

Across the State at the height of this project some 400 people were involved in various ways. It was a highly complex software implementation project with ambitious aims and tight deadlines. The decision to implement this way – at the same time, for every AHS, across the state – proved to be the right one. A coordinated, simultaneous implementation avoided the problems of past projects whereby multiple piloting exercises and long sequenced lead times conspired against rapid deployment. While command and control styles suit this kind of implementation until the system is in place, long-term success is related to people owning the system and integrating it with their work within AHSs and facilities.

There are significant benefits to having institutionalised IIMS in this way. There is now a State-wide system in place. This invokes several benefits or potential benefits including uniformity, more complete data sets, the eventual capacity to benchmark data and the potential for users to learn together across the health system.

While stakeholders have yet to take advantage of it fully, IIMS brings with it the capacity to manage incidents collectively and more comprehensively in the future. However, there are challenges yet to be resolved with IIMS that the implementation study has brought to attention. The transition from implementation project to ongoing information management program has not, at this point, been finalised. This means that there are things to attend to so that IIMS' capabilities are optimised and the system is fine tuned and made user-friendly. These are reported in subsequent studies.

7 CONCLUSION

This was virtually a textbook project implementation with appropriate support, resources and project leadership. The major implications are two-fold. First, the task now is to capitalise fully on the IIMS implementation and optimise use of the system. Second, the lessons learned from the successful project management of a large IT implementation, for the benefit of those managing future large-scale installations, particularly those of a State-wide character, are now available. These lessons should be summarised for the benefit of future projects.

8 REFERENCES

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