HIC 2008 Australia's Health Informatics Conference
Editor: Heather Grain
Publisher: Health Informatics Society of Australia Ltd (HISA)
ISBN 978 0 9805520 0 3

Implementing Technology-Based Care and Management Systems for Effective Aged Care Outcomes: Issues and Recommendations

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Objectives:

The aims of this paper are threefold; firstly to identify the hurdles faced by managers and staff in implementing contemporary systems of information technology (IT) in the aged care context; secondly to suggest approaches that can be used to overcome resistance to IT by staff and enhancement of their IT proficiency and transfer of evidence to practice; and thirdly, to determine factors that influence staff uptake and proficiency in the use of IT. These objectives will be addressed through the use of a case study.

Background:

One of the challenges facing health and welfare policymakers is the increasing demand for aging services and aged care. Government responses have included the promotion of healthy, active aging (Soar & Seo, 2007); support for improvements in documentation quality and efficiency, and e-commerce. A major strategy has been the introduction of a new funding model using the Aged Care Funding Instrument or ACFI (Australian Government Department of Health and Aging, 2008; Cullen, 2007; Hogan, 2007). These strategies have been developed in parallel to the uptake of e-health through the aged care e-health connectivity projects. Such projects include: (i) icare Clinical and Care Management at Lyndoch Warrnambool (2005-2006) reported as a case study, as part of the Australian Government of Health & Aging's Clinical IT in Aged Care Project (Australian Government Department of Health and Aging, 2005), and (ii) the e-health connectivity proof of concept project, a collaboration between Adelaide Western General Practice Network and The Society of Saint Hilarion Nursing Homes (Reeves, 2007) The potential benefits of ehealth include increased safety and quality; improved access to appropriate care; shift to coordinated care and increased workflow of the health workforce, but specifically, the ability to embed evidence-based practice as the foundation of health care interventions (AHIC, 2007).

Case Study Setting:

Evidence based practice is increasingly the catch-cry of health practice in all contexts including the aged care industry. For managers, clinicians and support staff much of the hurdle to be overcome in pursuit of evidence-based practice is accessing up-to-date and relevant information that can feasibly be transferred to practice. In 2007 the RSL LifeCare ANZAC Village in Sydney undertook an all-of-organisation approach to the introduction of a system of contemporary IT management, care and treatment services. The result was a wholesale change in the culture of the Village which comprises 460 residential aged care clients at various levels of need for care, treatment, support and protection. The emphasis of care services at the Village is on prevention of health deterioration and maximising quality of life.

[1]Ehealth can be defined as the electronic management of health information to deliver safer, more efficient, better quality healthcare.
[2]This was a HealthConnect SA funded trial involving the implementation of a clinical information system in a residential aged care facility.

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Solution:

(i) System design

Workflow issues associated with documentation systems for care, treatment and management needed to be overcome. These included maintaining continuity of records during the transfer from a paper-based system to the IT system; and also ensuring that the IT system, Lee Total Care (LTC) included all aspects of information needed for regulatory compliance under the Commonwealth Aged Care Age 1997 and Quality Principles (as amended).

The system that was introduced needed to be synchronised with the development of staff skills in using computer-based records. Staff training in basic IT usage was required in many instances and the staff underwent intensive skills enhancement through group learning and on-to-one coaching. As well, established IT systems had to be modified for integration of the commercial software, and then training in the use of the new system was needed.

LTC was implemented in stages across the different care units of the RSL ANZAC Village, as follows:

1. Connie Fall and Mosman Trust went live on 4 June 2007
2. Tobruk, Wirraway and Catalina, Milne Bay went live in November-December 2007
3. Kokoda, Phyllis Stewart and all remaining care units in Peter Cosgrove House were live on 3 March 2008.

In all of these low care and high care areas a systematic approach was undertaken. All staff were invited to participate in a 'computer knowledge survey'. Individual staff received along with their survey, a memo, outlining the reasons for the survey and the proposed introduction of the LTC system in the near future. The results of the survey informed the organisation as to the type, content and frequency of training sessions that were required.

Skill levels varied widely across staff within each unit and between different units. Surveys were conducted in stages as roll-out occurred in areas of the Village. The first and second stages involved 40% of staff, most of whom were working in the low care hostels, 125 surveys revealed that 17.6% had absolutely no computer knowledge at all; 36%% claimed to have a basic understanding of computers; and 46.4% said they had a good working knowledge of computers and their usage. This broad pattern of existing skills seemed to be the norm for all other staff subsequently surveyed.

(ii) Training

Prior to training sessions staff were streamed into groups according to their IT skill levels. Sessions were designed around staff learning needs as well as the need for IT skills in their work roles (Table 1)

Topic	Time (hours)	Comment
1. Introduction to computers 2. Introduction to Lee Total Care	**1.5** **3.0**	Target staff with no computer experience Target staff with some knowledge & skills but who need a refresher on the basics of computer usage.
3. Introduction to Lee Total Care for registered & enrolled nurses	6.0	Focus on proficiency in use of the software.

Table 1. *Training Program*

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After training, and before each area 'went live', staff were required to complete a 10 minute competency assessment. Staff sat with one of the RSL LifeCare trainers on a one-to-one basis to go through the fundamentals of the LTC program and also to have coaching session which could be varied in time and intensity as required. When the competency of the staff member was established, each was set up with their LTC username and password.

In the high care areas as well as in low care hostels, LTC was used as a vehicle for change in work practices. Past restrictive work practices included only registered nurses completing all care documentation (Angus & Nay, 2003). Care staff were familiar with completing observational checklists such as bowel charts, sleep assessments etc but little else. All care staff were included in learning sessions on LTC use and during their training were shown how to write progress notes, complete incident forms and assessments (Ryburn, 2007).

In all 310 staff undertook the LTC training and included registered and enrolled nurses, assistants in nursing and care service employees, allied health staff and recreation aides. A total of 1,147.5 hours of training occurred averaging 3.7 hours per staff member.

The two trainers between them were allocated 400 hours for set up and training, and a further 150 hours for training assistance and support. 40 hours of IT technical support was also provided. This support was accessed when the "LTC Training Environment" was set up on all computers in the areas. Staff were encouraged to start playing around in the training environment after training. Some staff were so keen that they came in on their days off or before their shift started to practice in the training environment.

Some managers were not fully supportive of care staff undertaking the training because they were not committed to them writing the care documentation which had previously been done by registered nurses. In some areas, even though care staff have done the training and been assessed as competent, they are permitted limited access to the computer by their managers. Some of the care staff did not realise the extent of changes that were linked to the LTC and in particular the implications for them in this project – and several did not believe it was necessary to attend training. In other areas some staff missed training because they were caught up in work commitments and could not get away or were not allowed to leave their work area at that time.

Each area had a scheduled date for the system to 'go live' and at that time all documentation would need to be done on the computer using LTC. Low care managers in the hostels were quite keen to commence and many expressed their delight at the teamwork that the project created in their work areas as staff helped each other on the computer to master the system. The two trainers have maintained a watching brief and on-call availability for the areas in which the system is 'live'.

Commitment to the project:

Management commitment to the project was central to the success of its implementation (Chenoweth & Kilstoff, 2001). The LTC software system, staff training time and resources, trainers and supporting documentation and training materials all contributed to the implementation of a system that was both multilayered and diverse across RSL LifeCare. In addition, an upgrade of existing systems, purchasing of additional licences and new hardware was required. Quite apart from the cost of the Lee Total Care system, the commitment by RSL LifeCare management to staff training was extensive and ongoing. Training costs were $28,687 including work release time paid at their base rate, $28,500 for trainers, and additional computers at $14,500.

Uptake:

An essential aspect of the project and its implementation was staff motivation and predictably some embraced the change while others were more resistant or lacking in confidence. On the whole staff reactions were surprisingly positive and even those who showed initial reticence embraced the change following training and coaching tailored to their individual needs and learning pace and provided in a way that ensured their privacy.

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The main issues related to:

(i) Skill levels , workloads and professional roles

(a) It was anticipated also that differences in skill levels and willingness to learn to use the technology would be influenced by the age of participants. When some of the older staff who had no computer knowledge were encouraged to try, there was widespread discussions about retiring; or being too old to learn these new skills; and debates about the wisdom of changing a paper-based system that was working quite well. While many in this group have overcome their concerns, some are still reluctant and tend to find excuses as to why the new system will not work.

(b) Skill levels within their professional and work roles were also considered in relation to staff responses to the introduction of the LTC. For instance, staff in the labour-intensive high care areas regarded the new system as adding to their workloads which were already burdensome. Staff from low care areas also shared this response and expressed concerns about whether the training and used of computers could in fact be fitted into their already busy workday.

(c) Role delineation issues also arose, especially for registered nurses when they realised that care staff in high care areas would be undertaking some of the care documentation that had been the province of registered nurses. Questions were raised about literacy levels within the ranks of care staff as well as about their skill levels related to reporting on resident condition. Quite a widespread concern was that registered nurses may lose important aspects of their professional role if care staff undertook this type of documentation – and fears of looming redundancy were expressed.

(ii) Age of care staff

(a) Middle-aged staff with English as a second language were particularly worried about this new system showing up their language skills as well as poor computer knowledge and skills. For some, the main concern related to a fear that others may ridicule them because their English language skills were limited.

(b) Younger staff tended to be computer-savvy and so did not find the change daunting. While their overall attitude was enthusiastic, there was also an attitude of 'cockiness' which delayed their learning some of the aspects of the LTC system. Eventually all of these challenges were overcome.

(iii) Other Health Providers

Allied health staff such as physiotherapists also attended IT training but have been reluctant to commit to an electronic system because of fears that non-allied health personnel may change information that they have entered. As a result they have clung to some paper-based documentation despite assurances of data security within the system. On the other hand, hostel managers and enrolled nurses seem to like the new LTC system and continue to find ways to use it to save time and make their work easier to do. Administrative staff also saw the benefits of having all information centrally located and accessible by staff with the appropriate permissions built into the system.

(iv) Challenges and Barriers

(a) Overcoming reluctance by some staff and keeping pace with enthusiastic early adopters of the change was a challenge that stimulated the RSL LifeCare trainers and It support team. Through their innovative but dignified activities the training team succeeded in getting experienced and senior members of staff to accept leadership and advice from staff with less work experience but more IT skills that they had. For example, example cases were constructed using photographs and biographical details of famous people who were given fictitious but funny conditions and situations… a strategy

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that enabled participants to have a laugh despite being nervous. Training sessions were catered and relaxed and participants were made to feel welcomed, relaxed and valued.

(b) All training materials were written in plain English and computer technology jargon was kept to a minimum. A sense of camaraderie was engendered through the staff newsletter "Chatterbox" and coloured flyers around the Village announcing sessions and successes. All learning handouts were in colour and LTC User Manuals were prepared and distributed to every care unit. As a result the messages about the system, its usage and management were consistent across the organisation and enabled staff from different work areas to discuss their issues and perceptions of the LTC.

Training sessions encouraged staff to be creative in using the LTC and many enjoyed reading the fanciful case 'notes' that their colleagues had entered into the system. Learner numbers were kept low so that one-to-one coaching could be provided as necessary. All staff knew that LTC was being introduced and that they would be provided with as much training and coaching support as each of them needed in order to gain the skills required.

Evaluation of outcomes:

By the time LTC went live in each area, staff were prepared to a level of confidence that enabled them to use the system. The successful training and implementation occurred as a result of several factors as outlined in table 2.

Factor	Action
1. Trainers	Staff from within the organisation acted as trainers which facilitated the transition from "old" to "new" systems.
2. Staged implementation.	Progressive Troubleshooting
3. Staff concerns	Immediate feedback
4. Organisational knowledge	Trainers able to "talk the talk" and "walk the walk" with staff.

Table 2. *Factors and Actions taken in expediating the implementation process.*

The implementation timeline now includes other facilities within the larger RSL LifeCare organisational responsibility. Aged care facilities across NSW that are also part of RSL LifeCare are now implementing the LTC. Initially it was hoped that the system would be implemented by December 2007 across all five locations, however it has taken until March 2008 for this to be achieved.

Ongoing implementation issues:

As the system becomes entrenched, a series of evaluations are planned that extend beyond the competency and utilisation monitoring that currently occurs. For example, working groups are planned to enable specific areas of the program to be monitored and to develop other functions that can be added to the LTC system. Through group feedback, information will be gathered from all areas, enabling them to further commit to the project by being involved in its development (ownership).

Ongoing training for existing staff and training of incoming staff in use of the system will be initiated within the work units where highly proficient staff will be paired with the newcomer if possible. Where this is not able to be done, the trainers will make time to provide coaching and refresher sessions. As issues arise, a FAQ area on the company website has been set up to address questions and answers that have been circulated.

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Informal audits of the system documentation is already underway to ensure that the workflow is occurring and the organisation is able to manage regulatory compliance risks.

Results:

Of the registered nurses, managers and support staff involved in IT training, implementation and proficiency coaching, 75% reached mastery of all aspects within 3 months of commencement. The key to success in implementing this IT change within the Village was the program planning by the team and acknowledgement of learner problems and attention given to finding solutions for individuals as well as the group. As well, management commitment of financial, time and human resources to the project was an essential element of its success.

Discussion and implications:

Change implemented within a care context with traditional reliance on non-technology solutions requires management commitment to (i) adequate IT resourcing (ii) organisational culture of support (iii) acknowledgement of staff input and innovation (iv) evaluation of outcomes for staff, managers and clients.

In hindsight, implementing a project of this size demanded a fulltime project manager and a fulltime assistant. This project was undertaken as an additional part of the chief trainer's role which itself was a full time commitment. The assistant trainer was brought on-board in about September. Without her help the achievements of the last 6 months would not have been possible. The roles are shared between trainer and assistant in terms of overseeing and project management, training, troubleshooting and arranging for upgrades and remedial coaching.

General anticipation of problems with staff willingness to embrace something totally new and different were unfounded. Most staff were keen to learn and those who were at first reluctant, soon learned that support and assistance was available and that they were not expected to do it all by themselves.

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