Medical record scanning project, Alfred Health, Melbourne: implementation of Cerner ProVision Document Imaging

Ross Buchanan and Chrisa Alexiou

Abstract/Summary
Cerner ProVision Document Imaging (CPDI) medical record scanning was implemented at Alfred Health in Melbourne during 2010. It was the first installation of this software system in Victoria. The aim of the project was to provide improved access to medical record documents for clinicians in an online manner. This was seen as a significant clinical change project and was a major initiative for the Health Information Services (HIS) and Information Technology Services (ITS) Departments. Challenges to be overcome were the organisation and bar-coding of documents, the structure of the documents in the clinical viewing portal, clinician uptake of the new system, and maintaining HIS turnaround times while ensuring quality.

Keywords (MeSH):
Medical Records; Electronic Health Records; Online Systems

Supplementary Terms:
Record Scanning; Change Management

Introduction of medical record scanning
During 2010, medical record scanning was implemented throughout Alfred Health. The major rollout commenced at The Alfred in March, followed by Caulfield Hospital in August and Sandringham Hospital in November.

With a Cerner clinical information system in place since 1999, including online access to pathology and radiology results, the decision was made in 2007 to add a scanned medical record component. A business case was developed and funding was made available by the Department of Health (DH) (formerly DHS) in 2008 through a capital advance/interest free loan. Following a tender process, Cerner ProVision Document Imaging (CPDI) was chosen in 2009. This was followed by an eight-month implementation period.

Background
The main driver for implementing a scanned medical record was to enhance clinical access to patient information. This would address issues of delayed delivery of paper medical records to clinical areas and missing records, both of which adversely affected patient care. A related aim of the project was to significantly reduce risk to patient safety and organisational risk, and enhance patient care by having medical record images available online in a timely manner. The system provides multiple users with simultaneous access for patient care, research, audit and review.

Many Victorian hospitals had already implemented medical record scanning, but Alfred Health was the first in the State to utilise CPDI. Alfred Health Executive, in conjunction with Health Information Services (HIS) and Information Technology Services (ITS) Departments, saw this as a fundamental clinical change project. A project team was established, headed by a Senior Project Manager with a clinical background. The project team was made up of six experienced clinical and administrative support staff, along with other professionals who assisted with training and education throughout the organisation, such as bank nurses and ward clerks. The challenges ahead were to successfully implement scanning in HIS and train clinical staff to realise the full benefits of the system.

Document scanning preparation
Areas of preparation that are universal when planning for medical record scanning are forms management and bar-coding. The more time spent planning the rationalising, cataloguing, numbering and bar-coding of forms prior to ‘go-live’ makes scanning more logical...
and the location of scanned documents online by clinicians straightforward. A crucial aspect of this is to identify unofficial or ‘orphan’ forms that develop over the years in clinical areas. These forms that may have been accommodated in the paper medical record are difficult to meaningfully allocate to the viewing structure without appropriate titles and form numbers. This is an area that Alfred Health has spent considerable time working on over the last 12 months and will continue to do so into the future.

Significant input was also provided by clinical staff and the project team to reach an agreed forms structure and folder display ‘tree’ in the PowerChart clinical viewing portal (technically known as the Event Set Hierarchy – ESH). The ESH orders different types of documents by category and displays them in folders in a logical manner for viewing. Clinicians can opt to view or skip past any document. The content of the ESH includes scanned medical record forms, direct entry clinical documents and imported documents. There was considerable debate around which viewing categories and sub-categories to establish, where individual forms would sit in the record structure, and the benefits of having a detailed structure versus a simpler model. More detail would add to the time taken to navigate and open each folder to locate particular documents, with a simpler structure taking less time to navigate but potentially making it more difficult for clinicians to find what they are looking for.

**HIS structure changes**

Restructuring of HIS to take on the new technology required significant planning, from both a technical and industrial relations point of view. At least 12 months prior to go live, HIS management advised the clerical, secretarial and health information management coding teams of the planned changes. As clerical equivalent full-time (EFT) was to be affected, an impact statement was developed in conjunction with the Human Resources Department. Consultation occurred with the Health Services Union in relation to the clerical workforce changes the new technology would bring. The general theory is that for every single EFT needed to deliver a traditional paper medical record service, only 0.5 EFT is required to deliver a scanned medical record service. As Alfred Health did not plan to back-scan existing medical records, a hybrid system eventuated with paper medical records prior to 2010 still being provided to clinical areas. This acted as a complement to scanned documents available in Cerner PowerChart post go-live. Providing both services concurrently requires maintenance of existing resources, so a gradual reduction of clerical EFT was planned over a four- to five-year period. The plan is to reduce EFT by approximately 40% over this timeframe, with 10% having been achieved in the first year. The reduction in EFT will provide savings in order to realise the benefits to the business of a scanned medical record.

Some clerical redundancies occurred around the time of go-live at The Alfred. No redundancies occurred in the smaller HIS departments at Caulfield or Sandringham. The redundancies were limited in number and will not be repeated, with future EFT reductions to be met through natural attrition and the completion of temporary staff contracts. During go-live, temporary agency staff helped to maintain scanning turnaround and to bolster the regular team who were also providing a paper medical record service. Use of agency staff has now ceased with the regular permanent clerical team handling both service areas. The implementation of a scanned medical record has provided an opportunity for HIS clerical staff to multi-skill and become involved in a variety of tasks, where previously individual staff were responsible for one or two defined medical record functions.

To provide a scanning service seven days a week, a team of casual staff was employed and trained to help HIS meet the 24- to 48-hour scanning service level agreement. The use of casual staff will gradually reduce over the next few years, with the regular team taking on more of the scanning as the need to provide the paper based medical record volumes reduces.

**Post go-live changes**

The new HIS processes introduced at The Alfred in March for go-live needed to be refined in April after scanning turnaround increased to ten days. With some lean process re-design and help from the project team, a two-day turnaround was achieved by the end of April. This has been maintained since that time. Additional scanning workstation licences have recently been purchased to give each HIS site more flexibility to manage the scanning production, quality control and validation steps.

The scanning delays in April at The Alfred had a negative impact on the clinical staff so early in the project. Once rectified, more training was offered in clinical areas prior to the project team moving to Caulfield Hospital for phase two of the implementation.

Scanning accuracy has also been a focus of the implementation due to some errors occurring in document allocation by HIS. After conducting various ad hoc audits in the first few months following go-live, HIS then developed a formal scanning quality audit program to measure performance in this area. As a result, further training of HIS staff has been provided.
Improvements have been made in the way scanning process changes are communicated to HIS staff on an ongoing basis, including how briefing discussions are structured and the content recorded.

**HIS staff benefits**

A number of benefits have been realised due to the scanned medical record. Feedback from clerical staff is that scanning is less stressful than searching the hospital for missing paper medical records. Occupational Health and Safety has improved for all HIS staff as there is less manual handling for everyone involved. Physical work has been replaced by computer work, with CPDI and the Kofax scanning software being easy to use and reliable, as have the Bowe Bell and Howell batch scanners. Exercises at every workstation have been introduced and hourly reminders are in place to encourage staff to be more mobile when sitting at scanning workstations.

Having all patient information online has now opened up opportunities for Health Information Managers (HIMs) to undertake clinical coding from home. This has been trialled with a view to developing a formal program, which will help to retain HIMs and clinical coders and assist Alfred Health to manage the coder workforce shortfall.

**Project completion**

The project officially finished in December 2010. A post-implementation review was conducted by surveying HIS, ITS and clinical staff. Feedback was provided on the need to maintain scanning turnaround times while providing a high level of quality with regard to document placement in the Cerner PowerChart clinical viewing system.

**What did we learn from the project?**

The project highlighted the following factors:

- the importance of training and preparation
- the training of HIS scanning staff to allocate documents to the right place in the clinical viewer
- the training of clinical staff in how to quickly and effectively navigate through documents to access important information.

There was an assumption that many staff were adept at using Cerner given that it had been in place since 1999. This proved not to be the case for a wide cross-section of staff, resulting in the project team providing training in clinical areas for longer than originally planned. A positive outcome of this has been an increase in ongoing training resources for ITS, and a continuance of the relationships the project team has established with clinicians.

Although the project is complete, this is just the beginning of a new service era for HIS. The Cerner system has the ability for clinicians to directly enter patient care information. As more direct data entry occurs and we get closer to an electronic health record, the need for scanning will diminish. In the meantime, we are viewing the medical record scanning process as part of the transition from paper to electronic health records.

**Ross Buchanan**  BMedRecAdmin (Hons), MHSc  
Director  
Health Information Services  
Alfred Health  
Commercial Road  
Melbourne VIC 3004  
AUSTRALIA  
Tel: +61 3 9076 2019  
email: r.buchanan@alfred.org.au

**Chrisa Alexiou**  BMedRecAdmin  
Senior Operations Manager  
Health Information Services  
Alfred Health  
Commercial Road  
Melbourne VIC 3004  
AUSTRALIA  
Tel: +61 3 9076 2009  
email: c.alexiou@alfred.org.au