Managing a State-wide eMR Clinical Transformation

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Abstract

The NSW Electronic Medical Record (eMR) program is one of the largest clinical information system implementations outside of the USA and UK. This clinical transformation program commenced 18 months ago and entails the rapid implementation of five Cerner clinical solutions across seven out of the eight Area Health Services in NSW. Responsibility for the implementation is a partnership between HealthTechnology, the Area Health Services and the vendor, Cerner Corporation. The implementation will have a significant impact on clinical work practice, as a result of which change management has been formally recognised as a critical element of the implementation strategy. The Organisational Change Management framework and methodology developed centrally for the program comprises a practical set of templates and tools. The aim is to ensure consistent and standardised approach to managing change across the state.

Two facilities in two different Area Health Services are scheduled to go live with the eMR in 2008 and work is progressing in the remaining AHSs. Whilst successes have been achieved with adopting certain key elements of the change management methodology, notably definition of future state and benefits baseline, many challenges remain including selling the vision and engaging clinicians.

Background:

The NSW Electronic Medical Record (eMR) Program is one of the largest clinical information system implementations outside of the USA and UK. This clinical transformation program commenced 18 months ago and entails the rapid implementation of five Cerner clinical solutions in seven out of the eight Area Health Services (AHS) in NSW. $79m has been approved by NSW Treasury for the Program, to date, and each AHS is making a substantial additional financial contribution. Some 180 hospitals will be affected and 84,000 staff trained, of which 53,000 are clinicians. Responsibility for the implementation is a partnership between HealthTechnology, the Area Health Services and the vendor, Cerner Corporation. The implementation will have a significant impact on clinical work practice, and as a result change management has been formally recognised as a critical element of the implementation strategy.

Some of the key drivers for this program are:

- Growing evidence that investment in Information and Communications Technology (ICT) improves hospital performance;
- The need for a consistent high quality delivery of care across the State enabled by ICT;
- A need to achieve baseline clinical ICT across the State;
- In an environment of constrained resources it has been recognised that ICT can remove administrative burden on clinicians.

The eMR journey is a multi year program comprising a number of major projects:

- Software implementation;
- Upgrade of infrastructure including a centralised hardware platform, high availability and response time with a 24x7 support structure and point of care devices;
- Changed work practices, policies and procedures;
- Training and support services.

The current phase provides the foundation of the eMR and includes:

- Results and electronic Orders (PowerChart)
- Scheduling
- Discharge referrals
- Emergency Department (ED) system (FirstNet)
- Operating Theatre (OT) system (SurgiNet)

The implementation of a complete eMR will take a number of phases :
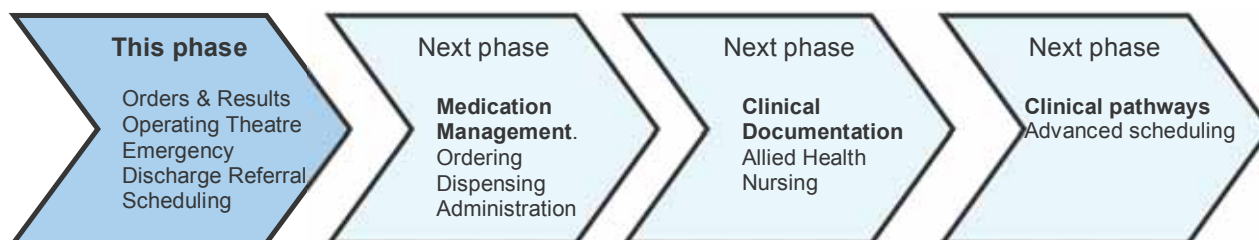
Phase 1 of the Program is the foundation eMR which sets the stage for additional phases of work. This Program is not the end state as, for example, it does not encompass clinical documentation or medication management. Future phases are currently not funded by NSW Treasury. Success of phase 1 is therefore critical to increase the chance of funding for subsequent phases.

NSW Treasury provided $79 million on the basis of a well founded business case quoting an array of benefits based on published papers and experiences from local and international implementations. A condition of funding is quarterly reporting to Treasury on progress in achieving the benefits. This will continue for two or more years post implementation until the whole value of this stage of the eMR is delivered. A benefits realisation measurement plan has been developed at the program level using a scorecard approach with dimensions for Quality, Safety, Access and Cost.

Change Management Approach:

Post Implementation Reviews of most IT implementations in NSW to date, highlight lack of effective change management. This has led to change management being formally acknowledged as vital element of implementation. Consistent with a State Baseline Build (SBB) approach, strategies, templates and tools were developed centrally at Program level to ensure a consistent and standardised approach to change management.

The eMR change management combines elements of the internationally accepted Accelerated Implementation Methodology (AIM) with those of Cerner's transformation methodology dealing specifically with technological change. Both are tried and tested best practice methodologies. The Program provides assistance and support to the AHS with managing the change as well as funding to appoint a change manager at each AHS.

The key elements of the eMR change management strategy are:

- Defining the change and current state analysis;
- Stakeholder management including the development of a sponsorship strategy, where sponsorship is seen a the single most important factor in ensuring successful implementation;
- Communications as a vital tool in gaining stakeholder understanding and engagement;
- Learning and development employing a blended approach of web based training tools, instructor led training and TRAIN domain activities;

- Analysing the gap between current and future state to more clearly define the change, inform test scripts development and learning requirements;
- Benefits realisation where benefits and change are totally interdependent.

Stakeholder Management:

The development of a stakeholder management plan commences with the identification of all stakeholders – the groups and key individuals who will take vital ownership of this project and make it happen such as sponsors, champions, change agents and subject matter experts. This is followed by analysis of their current and desired levels of commitment, the impact of project on the individuals and groups and their issues and concerns. Good stakeholder analysis during project preparation will yield significant return on investment of time as the project progresses.

Sponsorship is arguably the single most important factor in ensuring fast and successful implementation and the concept of 'cascading sponsorship' (AIM) is a powerful mechanism to foster ownership and commitment. The AIM describes a technique of the 'role map' based on the organisational chart as a very useful tool to map the key stakeholders across the organisation. This visual representation helps people to identify a network of sponsors across, up and down the organisation and quickly shows where there are gaps (or 'black holes') which are to be avoided. In an organisation wide implementation such as the eMR, such a sponsorship network of individuals who commit to the change and owning the implementation will facilitate accurate communications and reinforce the changes required. The aim is to generate clinical engagement with demonstrated commitment to and ownership of the change.

Communications:

In order to ensure consistency and standardisation of messages, a raft of communications materials were developed centrally for use by all AHS. These include a state-wide communications strategy, eMR brochures and posters and a template for a local AHS Communications Strategy and Action Plan for each AHS to complete. A monthly State newsletter 'eMR At A Glance' with contributions from each eMR site is produced and local AHS eMR newsletters are important vehicles for education. The State eMR website can be found at http://home.htech.health.nsw.gov.au/emr and several AHS have eMR web pages on their intranet. A feedback loop is recognised as a vital means of two-way communication and is available at eMRFeedback@htech.health.nsw.com.au . 'Patient journey' presentations have been compiled with screenshots of the State Baseline Build (SBB) as a means of defining the change and familiarising end users with the new system.

Future State Process Flows and Gap Analysis:

The gap analysis between current and future state work processes will facilitate an understanding of new work processes allowing clear communication of changes. The difference between the two states is categorised under three headings to form a change register or matrix termed 'Stop, Start, Continue':

1. Processes that are new and will start;
2. Processes that are old and must stop;
3. Processes that are unaffected by the new system and must continue.

This will also inform training programs and assist with identifying policies and procedures that need to be adjusted or developed. Mapping future state workflows also assist with identifying changes to responsibilities and skill requirements.

Learning and Development:

The challenge of providing busy clinicians with adequate training to support a new system is huge and a blended approach to training has been adopted to meet this need. The approach combines:

- Web Based Training tools for Results, Orders, FirstNet, SurgiNet and Scheduling;
- Instructor Led Training and learning materials (e.g. quick reference guides) ;
- TRAIN environment activities

Curriculum and learning materials were developed centrally at Program level and are customisable at local AHS level where the training programs are adapted to the new business practices, policies and procedures.

Benefits Realisation:

Treasury has provided a standard approach and methodology for managing benefits. The key principles include conducting baseline measurements, getting ownership of the delivery of benefits and multiple post implementation assessment of the delivery of benefits. A plan is required to manage benefits and report progress against targets. Many IT projects fail to deliver the business benefits due to a sole reliance on the application to deliver the benefits. Benefits are achieved through business change in conjunction with the application and there is an inseparable link with change management. It is recognised that benefits management continues well after the installation of the software. A benefits plan and register has been developed to track progress post implementation. The benefits plan and change management plans are aligned to work together.

Current Status:

Implementation was originally scheduled to be concurrent across seven AHS. The implementation strategy has since been modified and the focus of the eMR implementation is currently on South Eastern Sydney and Illawarra Health (SESIH) and North Coast Area Health Service (NCAHS). At SESIH, a metropolitan area with an iPM Patient Administration System (PAS), St George Hospital is scheduled to be the first facility to go live with the full suite of eMR applications in September 2008. Lismore Base Hospital is the first NCAHS facility scheduled to go live in October 2008, NCAHS being a rural AHS and an existing Cerner site with Cerner PAS and Results already in production. The approach to implementation is to develop a whole-of-area build of the system, based on the SBB. Implementation commences at the first AHS site closely followed by successive implementation at all other sites within the AHS.

Experience to date:

On the eve of implementing the eMR in two AHS, practical experiences with implementing the change management methodology are outlined below.

Vision:

The implementation of the eMR throughout NSW is underpinned by the State Baseline Build (SBB). The SBB acts as a 'starter pack' or foundation of the eMR on which each AHS will build in order to establish an eMR that meets local needs. The SBB ensures that the core components of the eMR, such as standard clinical terminology and content are consistent across all AHSs.

With respect to managing change, the advantage of having a SBB is that it embeds the new workflows as standardised processes. The challenge has been the lack of access to the SBB (hence future state) at the outset of the Program. We were therefore not able to demonstrate the system in advance, define the change, let people know what the product is or how it will affect their future work processes. Limited access to the SBB only became available well into the implementation, after most AHS had completed their current state analysis. We were therefore not able to present a vision of the Future State via a demonstration of the SBB at

the start of the stakeholder engagement. Nor have we been successful in building or selling the vision which should, in fact, be stronger than not knowing the system. However, lack of familiarity with the new system significantly contributed to this lack of vision.

Stakeholder Management:

One of our key challenges is that stakeholders had difficulty in grasping the change without any experience of or access to the new system leading to frustration. If, for example, people had had access to the WBTs prior to the SBB or the current state workshops (see below), issues could have been prevented or better managed. This also prohibited the development of the cascading sponsorship at the AHS level as it is difficult to get sponsors on board, not knowing what message we wanted them to propagate.

We were also unable to clearly demonstrate the value of the eMR at the individual clinician level. Whilst we had documented the 'What's In It For Me' (WIIFM), it was still words rather than practical experience and hence has failed to convince, to date.

This lies at the heart of the difficult task of engaging clinicians. Success is about clinical ownership. The ownership of the system is now being facilitated through a structure of clinical advisory groups at State and AHS level where the clinicians have an opportunity for direct input into the future of their system.

Business Process Reviews:

Current state business process review (BPR) workshops were held in all AHSs at the start of the eMR project. The workshops served as an important first step in stakeholder engagement and provided the first opportunity for the newly formed AHS that resulted out of an amalgamation of two previous AHS to discuss different work practices. Through the process of defining the current state and identifying issues, these workshops served to create dissatisfaction with the current state and stimulated change. This should have been the first step in the change management process, not an end product in itself. The workflow definition and identification and resolution of issues commenced during the BPR workshops should flow on into definition of future state and on into post implementation. This is only just beginning to happen as, to date, the future state work has been undertaken in relative isolation of the current state work. The lack of access to the system at the current state workshop to assist with keeping the BPR process focussed served as a further limitation to the proceedings and in some cases undermined confidence in the future state.

Some components of the SBB design started well in advance of the start of the Program. Furthermore, the ongoing design and build of the SBB which was occurring concurrently with BPR workshops, largely took place in isolation of these workshops and was therefore not able to benefit from the knowledge gained from the BPR. A further challenge to the acceptance of the SBB has been that the rapid implementation of the eMR has not allowed for AHS to review or change the SBB which has posed a different set of challenges and frustrations. There were, for example, instances where the AHS eMR team did not feel that the build reflected their work practice and sought to change the SBB which required significant further negotiation and change control leading to delays.

Project Resources:

While the assignment of a full time change manager to the AHS team is most welcome, their tasks are over-shadowed by build and implementation tasks. The aggressive timeframe for implementation has resulted in the focus tending to be about installation rather than implementation of the new business processes. Indeed, it is hard at this stage to get recognition for the fact that change management will dominate post implementation activities for several months and it has not been recognised in resource plans at both Program and AHS level.

Change and Benefits:

Recognising that benefits cannot not be achieved without change, our team worked together to ensure that each step in the change and benefits frameworks complemented each other.

In order to achieve the benefits, the value of the eMR to clinicians had to be defined and agreed with them. The first step was to identify the changes the eMR would deliver where direct benefits could be measured. These were then discussed with clinicians at the major hospitals, their opinions sought and measures agreed. In some case new areas of benefit were identified and included in the measurement plan. A second source for identifying benefits was to review of the BPR issues log. These highlighted business problems which could be resolved with the eMR and deliver benefits. The list of issues was often a good starting point for getting engagement with clinicians. A third source for identifying benefits is the future state designs where stopped and new processes highlighted planned changes which could lead to benefits.

A series of benefits workshops were held at the major hospitals in the lead Area Health Services. Attendees included groups representing management and the clinical areas. Once the measures were agreed, the collection of baseline data took place. This included audits of pathology and medical imaging request forms, assessments of time spent handling printed results and clinician satisfaction surveys. Other data were obtained from standard monthly KPI reporting. Once the measures were completed they formed part of the overall plan for each Area in realising benefits. These were reported to the Area Steering Committee. Key to the benefit plan is a tracking board of "what has to change" activities for the Steering Committee to monitor quarterly post implementation. Examples include use of the eMR for placing orders, adequate workstations and the termination of key processes such as the cessation of printing results.

At this time, the baseline measures have been collected and engagement achieved with the stakeholders on tracking the benefits. Post implementation monitoring will take place on a quarterly basis. It is anticipated that both change and benefits activities will work together for some time.

Conclusion:

Acceptance at AHS level of the merits of the benefits realisation and cooperation with the baseline benefits measure gathering has been one of the key success stories of the eMR Program, to date. Another significant and gratifying success is the widespread acceptance and adoption of the future state and gap analysis methods. Both NCAHS and SESIH have put significant effort into detailed future state workflows resulting in their ability to quickly gain a solid knowledge of the application and the ability to pass this information on to end users. Further analysis of these future state workflows in terms of what processes will stop, start or continue are paying big dividends in terms of input into benefits and training.

Overall, a solid change management approach has been developed. The major elements of the methodology have essentially been embraced and implemented, to a greater or lesser extent, and these practical experiences help us improve the execution of the methodology for future implementations. Some of the areas will are seeking to address include: more clearly defining the change to enable us to communicate the vision to our sponsors; protect future plans to ensure there is adequate time and resources for change management and benefits realisation.

References:

'Accelerating Implementation Methodology (AIM)' Implementation Management Associates, Inc, 2005