HealthConnect

Evaluation

Department of Health and Ageing (DoHA)

24 August 2009
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Document Overview

Details

Purpose

Audience
This document is intended for public release.

Document details
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Executive Summary

Background
HealthConnect was a national change management strategy that sought to improve safety and quality in healthcare by enabling improved access to key health information at the point of care through the use of electronic communication.

Commencing in July 2004, funding for the HealthConnect program was utilised to support state based projects through partnerships between the Commonwealth government and state and territory governments. These initiatives worked to address local needs while at the same time, contributing toward the collective achievement of the HealthConnect program goals.

Projects funded through the HealthConnect program aimed to leverage existing projects and infrastructure, where possible, and to progress compliance with the National E-Health Transition Authority (NeHTA) and other nationally agreed standards.

Project Objectives
The HealthConnect program in support of its aim to improve safety and quality in healthcare, and through the funded jurisdictional projects, sought to achieve the following outcomes:

- enhanced clinical communication through standardised electronic clinical messages;
- enhanced quality and safety of health service delivery through a shared electronic health record;
- integrated models of care supported through a shared electronic health plan;
- life saving information about participating individual consumers being available in emergencies;
- enhanced primary care communications network; and
- consumers better able to manage their care.

Review methodology
Communio was contracted to undertake a review of the HealthConnect program to determine whether the program had met its objectives. In order to assess this Communio:

- reviewed program documentation;
- reviewed project documentation;
- reviewed HealthConnect project websites;
- consulted via telephone with jurisdictional state project managers; and
- consulted via telephone with the funding body.

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Executive Summary, Continued

Key Components

The table below outlines the nature of HealthConnect projects in each state.

<table>
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*development of prototype system and implementation of associated assistive tools

Summary of outcomes

The HealthConnect program provided significant gains in the establishment of eHealth infrastructure across Australia. The projects funded through the HealthConnect program collectively helped to establish the foundations for future eHealth activities and contributed to an improvement in national readiness for eHealth. This infrastructure will ultimately improve the consumer experience and the quality and safety of health service delivery.

As a change management strategy, the HealthConnect program made significant inroads in altering the landscape in which eHealth operates. The program contributed to a change in the perceptions of eHealth around the country. This was achieved by each state or territory project engaging with health professionals and establishing links across different healthcare environments. This groundwork should be capitalised upon to drive future agendas.

Some of the projects supported by HealthConnect have been leaders in the Australian eHealth environment, navigating a complex pathway in advance of the establishment of national standards. For this reason the outcomes of the HealthConnect program provide important lessons in progressing the National E-Health Strategy. At the completion of the program, the National eHealth Transition Authority (NeHTA) is leveraging off the investments from the HealthConnect program by continuing some of the funded initiatives and using the lessons provided.

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While traversing new ground, the program faced new and sometimes unexpected challenges. For this reason, some of the projects supported by the HealthConnect program were unable to achieve the deadlines and/or deliver the specified project outcomes detailed in the original funding agreements. This was due to factors which included a rapidly changing eHealth policy environment, technical advances and progress in standards development. These factors have been recognised internationally as a challenge in eHealth implementation. Where this occurred, benefits from initial investment were realised and expected project outcomes should be delivered over increased timeframes. Significant effort was also directed toward identifying the cause of the delays and capitalising upon lessons learned.

All lessons learned through the HealthConnect program, in terms of both program administration and technical aspects, should be shared broadly. The maintenance of communication between key jurisdictions would assist in realising the full benefits of this program particularly in regard to the transfer of project components between jurisdictions. Furthermore, program lessons may continue to inform the development of standards and priorities as implementation of the National E-Health Strategy progresses.

The HealthConnect program achieved its identified objectives through the implementation of the state and territory based projects.

This decentralised approach used to administer the program facilitated the achievement of bodies of work which were aligned both with the local environment and the objectives of the program. The lessons learned, challenges encountered and strategies used in each of the state and territory based projects have contributed to a collective knowledge base regarding eHealth within the Australian context. These issues are explored in detail in each of the project summary reports.

There have been a number of key achievements made by the HealthConnect program which support safety and quality in healthcare. These are specifically highlighted in individual project summaries and include the following:

- the roll out and success of a broad range of eHealth initiatives in the Northern Territory, particularly the Shared Electronic Health Record in servicing the health care needs of the indigenous population including those in rural/remote areas;
- the Electronic Patient Care Record project, implemented in Tasmania, was rolled out statewide and has been incorporated into all Tasmanian ambulances;
- the establishment of essential eHealth infrastructure across South Australia to support the broader eHealth agenda and the deployment of the Primary Care Sidebar which supports the work of clinicians;
- the integration of the HealthConnect WA and VIC programs into their respective jurisdictional eHealth programs to ensure that the outcomes of the investment are realised; and
- Over 75,000 participants registered in the NSW Shared Electronic Health Record.
Executive Summary, Continued

Program benefits
The HealthConnect program brought about benefits in both the local and national context. The extent of the impact of each state or territory based project varied. Upon consideration of the benefits of the program on a national level, the following have been identified:

• the establishment of key eHealth infrastructure across the participating states and territories to facilitate future eHealth initiatives;
• engagement and development of relationships which cross public and private, primary and tertiary health care boundaries where there were few, if any, previously;
• lasting lessons and knowledge regarding privacy concerns and consent models which directly contribute to the ongoing development of eHealth initiatives;
• implementation of change management strategies to prepare clinicians/health professionals across the country to accept eHealth and to prepare for further development and change in this area;
• exploration of specific technical solutions to meet particular eHealth needs and evaluation of their strengths and weaknesses; and
• jurisdictional collaboration to leverage off HealthConnect program investment in the implementation of the Victorian Ambulance Clinical Information System (Tasmanian ePCR project) and the South Australian Health Provider Registry in a number of states/territories.

Identified lessons
Several key lessons were learned through the HealthConnect program. These include the following:

• the need and value of stakeholder engagement early in the project and the importance of maintaining these relationships using proactive and persistent strategies;
• the need to balance the size of a project and potential benefits against achievable project goals within defined timeframes;
• the value of a close working relationship with other jurisdictions and NeHTA in order to share lessons from projects which can assist in order to exert positive pressure and motivate change management to progress the project within timelines and budget;
• the importance of achieving a critical mass of users to test and evaluate the benefits an eHealth initiative;
• the importance of clear and responsible administration of complex eHealth programs/projects;
• an understanding that innovative projects in eHealth are likely to face unknown challenges and risks for which project teams need to have the capacity to adapt and respond accordingly; and
• the need for early consideration of sustainability of applications post expiry of funding, including issues of ownership, ongoing funding and governance.

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Relationship with NeHTA

Throughout the review period there were many examples of how both national standards and a national work agenda would benefit progress of Australian eHealth programs. As the HealthConnect projects were often working in advance of the development of eHealth standards, there was acknowledgement that there were both risks and advantages for the projects. Certainly knowledge gained through experience will prove invaluable as national standards continue to be developed. Risks however do emerge if standards deviate from the initiatives developed through the funding.

Increasing links to NeHTA were identified through the review period with partnerships and lessons being developed and shared. This will contribute to a leveraging of opportunities created through the HealthConnect program and the broader investment in these projects.

The projects’ managers report attendance at specific NeHTA working groups and working parties. While specific membership and attendance has not been listed in the state/territory summaries broad involvement and a willingness to participate was been noted.

Relationship to the broader national eHealth agenda

As discussed, the HealthConnect program supported state and territory based projects which addressed the particular needs and issues within their local environment while contributing to a national knowledge base. As a result, the solutions developed through the HealthConnect program have not, necessarily, been developed solely with a view to national deployment.

That said, a number of the projects (including the South Australian Provider Directory and the Tasmanian Electronic Patient Care Record System) are being investigated for or are currently being utilised in other jurisdictions.

It is imperative that the lessons learned from the outcomes of these projects contribute to the broader eHealth agenda. Certainly there is the opportunity for the program’s outcomes to contribute to the implementation of the National E-Health Strategy.
Background

The current HealthConnect Program has a long history that created the environment in which the projects reported on in this document have achieved their outcomes.

The HealthConnect program was a concept proposed in 2000 by the National Electronic Health Records Taskforce, which sought to collate – with consent – consumer health related information in an a standard electronic format at the point of care. This repository of health related information would then allow health professionals and consumers to access the health record at subsequent episodes of care. Pilot projects, which ran for several years, were established in three states: Tasmania, the Northern Territory and Queensland.

HealthConnect ran concurrently with MediConnect. MediConnect began as the Better Medication Management System as an Australian Government Budget Initiative funded from 2000-01 to 2004-05. The aim of MediConnect was to provide an Australia wide electronic medication record.

The MediConnect initiative was built within the framework of “Health Online: A health information Action Plan for Australia” and successful field-testing was completed in Victoria and Tasmania in 2003. In 2004 MediConnect was incorporated into the HealthConnect program.

In 2004 a review completed Boston Consulting Firm recommended a shift in the national approach to eHealth programs and the National eHealth Transitional Authority (NeHTA) was created. NeHTA, a collaborative enterprise owned by the Australian federal, state and territory governments was established to develop national standards, clinical terminologies and patient and provider identifiers.

A change in focus for HealthConnect was also undertaken and the program took a new direction as a change management strategy. This strategy sought to support state based projects to work towards the national HealthConnect implementation outcomes as outlined above. The program aimed to work towards creating national interoperability and consistency of health information shared via electronic means.

The focus of state based projects changed to be more aligned with the local community requirements, abilities and opportunities in the eHealth environment. Initial funding allocations were made for the program in 2004-2006. Funding agreements were subsequently extended to 2007-2009.

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Project administration

Changes in the nature of the HealthConnect program resulted in changes to the administrative systems to support it. This brought challenges as the nature and extent of central support and administration fluctuated. For instance, project managers reported significant value in attendance at HealthConnect program managers meetings where lessons were exchanged and collaboration occurred. However these meetings were not conducted throughout the entire program period. In addition, projects reported challenges in the planning and management of their projects during periods where decisions related to ongoing funding were uncertain.

Each state program found the support and advice they received from the Department of Health and Ageing valuable. This was particularly the case during periods where the project encountered difficulty and/or a required change.

Project summary

The following sections of the report provide a summary overview of the outcomes and key lessons from each jurisdictional project funded through the 2007-2009 funding agreements.
Australian Capital Territory

Project Overview

The ACT HealthConnect 2007/2009 project sought to leverage previous HealthConnect and ACT Health investment in an “Electronic Discharge Summary and Referral System for ACT Hospitals”. Expansion of the project included eReferrals by primary and other health care providers to ACT Health service providers.

The project aimed to achieve:
- open and transparent communication between GPs, Specialists and ACT Health;
- the capacity to integrate e-referrals within the GP and specialist desktop;
- maximisation of participation of GPs and specialists in the project;
- provision of support to GP and specialist in terms of changed work practices with the introduction of e-referrals; and
- to provide the opportunity to test NeHTA eReferral standards through the GP to ACT Health interface.

Project period

The project period extended from 17 October 2007 to 30 June 2009.

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Expected outcomes

The expected project outcomes were to include:
- enhanced clinical communication through standardised electronic clinical messages delivered through a secure broadband infrastructure;
- enhanced quality and safety through the establishment of electronic referrals;
- alignment with emerging national eHealth standards;
- enhanced primary care communications network;
- lasting positive change in priority eHealth areas leading to continued support by the Territory and opportunities for national implementation;
- enablement of a secure means for GPs and other health care providers to send an electronic referral to service providers within ACT Health;
- standardised practices associated with the completion of referrals to ACT Health;
- provision of acknowledgement back to GPs and other health care providers that a referral had been received by ACT Health and how it was actioned; and
- improvement to the existing workflow associated with referral management.

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Summary

The original ACT funding agreement indicated that roll out of the identified solution blueprint, which aimed to test the robustness and efficiency of the solution to 30 early adopter groups, was to be conducted by 31 October 2008. This target was unable to be met largely due to the heightened work required to scope and develop the solution. Early activities included:

- establishing and mapping existing work practices across the ambulatory care settings within the ACT;
- properly scoping, designing and testing the potential solution; and
- ensuring that the GP practice systems were integrated to send eReferrals via HL7 messaging.

As a result, Phase I of the roll out was pushed to June 2009. During this phase, 65 specialists and 41 provider GPs in 7 practices were equipped to make referrals into ACT Health.

Phase I progressed well and at its completion the planning stages for Phase II commenced. Ongoing funding for Phase Two will be supported by the ACT Government and key aims will be to:

- significantly increase the number of participating GPs (including those practicing in nearby NSW); and
- expand the capability of the system so that more services within ACT Health can benefit from eReferrals (e.g. cancer services, community health and aged care).

Ability to achieve objectives

ACT HealthConnect was able to achieve progress towards its objectives as outlined below:

**Enhanced clinical communication through standardised electronic clinical messages delivered through a secure broadband infrastructure**

The proposed solution outlined by Orion Healthcare allows multiple methods of sending electronic referrals to ACT Health while maintaining the value of an electronic process. The technical approach does not consider the use of an "online" referrals system. Instead it focuses on a standards based, messaging approach. This lends itself to a future potential installation of a form based referral system.

**Enhanced quality and safety through the establishment of electronic referrals**

The eReferral system helps to improve both quality and safety of health care in a multitude of ways including:

- improved consistency and completeness of referrals into ACT Health
- improved feedback loops back to GPs from specialist services which includes specific information status (e.g. referral received, referral triaged, date and time of first appointment, referral about to expire) and exception messages (e.g. patient 'Did not attend' appointment; ‘referral not accepted’ and reason); and
- the development of a simple, and easily accessible system that facilitates auditing of referrals.
These will collectively contribute to an increase in both quality and safety, by increasing the transparency of the referral process, enabling issues, inconsistencies or potentially dangerous situations to be identified and addressed. An example of improved safety could be demonstrated if a GP identifies that a patient has been (in his or her opinion) incorrectly triaged.

**Alignment with emerging national eHealth standards**
The ACT HealthConnect project team collaborated with NeHTA, and took steps to map their previously developed discharge summary system to the NeHTA standards. At the time of development, NeHTA standards for eReferral were unavailable and therefore were not factored into development of the system. There were, however, plans to undertake a similar mapping exercise against future eReferral standards.

**Enhanced primary care communications network**
The ACT HealthConnect program elected to use a single provider for all secure messaging. As a result, the functionality provided will potentially allow interoperability between providers. While it was not a focus of the project it has been a value add derived from the implemented technology.

**Lasting positive change in priority eHealth areas leading to continued support by the State and opportunities for national implementation**
The eReferral system contributes to broader ACT eHealth goals, which recently attracted $90 million dollars in ACT Government funding. The project was conducted with a clear view of enabling eReferrals not only in ambulatory care clinics, but also the aged care, cancer services and community health areas. The ACT Government funding was supported by ACT Health funding to support implementation and ongoing management costs.

Enable a secure means for GPs and other health care providers to send an electronic referral to service providers within ACT Health

The use of HL7 messaging allows for secure messaging to be facilitated by the eReferral system.

**Standardised practices associated with the completion of referrals to ACT Health**
Extensive attention was paid to the establishment, standardisation and redesign of workflows associated with processing of eReferrals. This required consultation, development, testing and training of a wide range of ACT Health employees and external providers. The result was standardisation of workflow practices associated with the management of referrals in the ambulatory care setting and the identification of key issues for settings targeted in Phase II.

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To provide acknowledgement back to GPs and other health care providers that a referral has been received by ACT Health, and how it has been actioned, in the ‘test’ environment
Phase I of deployment included notification of receipt of referral, triage status, outpatient appointment date and time, back to the referring GP. It also informed the GP if the referral was rejected and why.

Provision of acknowledgement to GPs and other health care providers that a referral has been received by ACT Health and how it has been actioned
Notification of referral receipt and increased communication improved transparency across the health care system. During Phase I, participating providers received their notifications as per the solution specifications. This was verified by the project team which contacted the GPs involved.

To improve the current workflow associated with referral management
The business process redesign mapped the existing processes and contributed to improved and standardised processes. Further opportunities for improvement were also identified and will continue to be progressed in Phase II. For example, the use of national healthcare identifiers would remove the need for specific approaches established to process referrals in the absence of national healthcare identifiers.

What worked well for each project

Project management
A key strength of ACT HealthConnect was the manner in which the project was managed. The approach relied upon the following:

- an extensive planning phase where early risks, problems, bottlenecks and issues were identified providing the project team with a clear understanding of the environment;
- engagement of an external project manager with experience and expertise working with GP software providers to manage the work of the project (negotiations regarding interoperability and timeframes); and
- the identification and segmentation of the work into key work streams that included:
  - business process redesign and re-engineering (standardised business practices);
  - technical project manager;
  - GP coordination and engagement; and
  - internal ACT Health work stream.

This project structure was further supported by the use of a common access portal which facilitated communication and enabled key participants to access key resources and information.
What worked well for each project (continued)

**Stakeholder engagement**
The importance and value of stakeholder engagement was identified by ACT HealthConnect early in the project. The project focused specifically on engagement and participation of the end users of the system. Involving key stakeholders in scoping, development and testing of the solution helped to ensure that outcomes were acceptable to the user community. Further information regarding the ongoing acceptability will be available from ACT as the project completes implementation and expands its reach.

**Project scope**
The ACT HealthConnect project team reported that its ability to clearly establish the boundaries of what the project would offer was a key element of project success.

The decision to not meet the established roll out target dates was due to a comprehensive understanding of the environment within which the technology would be implemented. The project team considered it important to restrict scope but ensure that the methodology followed was robust and contributed to the ultimate success of the project.

What did not work well

Key lessons learned on what did not work well in the HealthConnect ACT project include:

**Integration of practice management software**
Phase I of the project was rolled out to a cohort of 41 GPs. Broader roll out of the technology was limited due to the inability of certain GP operating systems to produce HL7 REF messages within the project timeline. At the time of writing, vendors were working with the project team to trial the use of HL7 REF messages between Medical Director and the messaging software. The fact that HealthConnect ACT data indicated that around 45% of GPs use Medical Director and 15.5% have no operating system had implications for the project. An additional challenge related to interoperability where the lack of appropriate standards created an obstacle.

**Reliance upon other ACT Government Departments**
One challenge faced by ACT HealthConnect identified throughout the course of the project was the need to coordinate the workload of different teams within the Territory Government to carry out the work required for the project. Separate agendas, competing priorities and variable capacities at time proved to be challenging. To address this, the project team undertook liaison with the Departments involved, developed relationships and engaged them in a series of workshops to establish an understanding of the project and critical timelines.

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Opportunity to do differently

The conclusion of phase I of the project provided the opportunity for reflection on what and how things could have been done differently. The project team reported that issues identified may be addressed in Phase II of the roll out and may add value to future eHealth projects and programs.

Centralised communication

Although stakeholder engagement was identified as strength, reflection revealed that there may have been value in centralising responsibility for communication responsibility within ACT Health. This would have ensured greater consistency in communication and “message”.

Development of electronic resource information for GPs

Currently the project aims to keep GPs informed regarding specialists and their sub-specialties through the generation of a hard copy information package. As the eReferral program continues to expand there will be a need to concentrate effort into converting this to an electronic resource.

Stakeholder engagement strategies

The ACT HealthConnect project team set about engaging stakeholders early in the project period. Completion of a scoping and implementation study prior to the project assisted in identifying key stakeholders early. This allowed for opinions and contributions to be sought and delivered a sense of ‘ownership’ to stakeholders. Importantly, the project team did not just target those stakeholders who would be participating in Phase I. They also engaged with stakeholders in other clinical settings and NSW GPs who will be involved in Phase II. Early introduction and engagement ensured there was involvement and awareness of the project for some time. This was important in enabling key issues/differences and potential challenges to implementation to be identified early.

The key risk identified with this approach was management of stakeholder expectations.

Key stakeholders in the project including GPs and hospital staff (clinical and administrative) participated in focus groups and helped to provide input, shaping the design of the final solution. Throughout implementation, a live newsletter was produced and the project engaged with and promoted progress through the ACT Division of General Practice newsletter.

The advantage of stakeholder engagement strategies implemented by ACT HealthConnect was development of ongoing relationships/partnerships with key stakeholders that previously did not exist. An opportunity to further develop these relationships to support future work in the eHealth area exists.

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Change management strategies

Change management was a key consideration for the HealthConnect ACT team since project inception.

The Business Process Redesign work stream of the project required a close working relationship with ambulatory care specialists and administrative teams to fully scope existing business practices. Once established across a variety of settings, practices were redesigned and standardised. These new systems required review, testing and acceptance prior to being incorporated into the final solution. Once designed, further training was delivered to enable use of the new technology.

Timing of training was based on the preferences of those involved, and was targeted to address specific professional needs (Physician, Nursing, and Administrative) and the role that the system would play in daily work routines. One on one and large group training events were offered in an effort to meet the needs of the various target audiences.

The change management plan developed to guide and manage this process will be evaluated as part of the post implementation review.

Local needs

The project ensured local needs were addressed through the conduct of a scoping study. This was followed by careful collaboration regarding the redesign of workflows and development of the solution.

Inclusion of NeHTA standards

ACT HealthConnect project team reported an ongoing dialogue with NeHTA which included collaboration on a number of national initiatives including:
- participation in the trial use of pathology packaging;
- involvement of NeHTA in the design around Patient Master Index project; and
- conduct of a Unique Health Identifier Jurisdictional Impact assessment.

The project team mapped the ACT discharge summary system against NeHTA. NeHTA standards on eReferral are currently being developed and a similar mapping exercise will be undertaken when these are completed.

Integration issues and solutions

The key integration issue identified in the ACT HealthConnect program was the inability for some GP practice systems to send eReferrals via HL7 messaging.

This issue impacted on project implementation goals and the reach of the system. While work continues with vendors to achieve interoperability the timeframes for the resolution had not been determined at the time of writing.

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Australian Capital Territory, Continued

Project benefits The ACT HealthConnect project resulted in several benefits. These include the following:
- improved clinical communications regarding referral status and progress;
- increased transparency in health care administration (cancellation; booking and triaging decisions being provided to GPs);
- improved consistency and completeness of referral including a standardised template with required fields identified;
- the ability to pre-populate information from Practice Management Software;
- more efficient referral workflow practices;
- easily viewable work lists for quick processing and auditing;
- a central, shared repository for collaborative processing;
- faster access when seeking to determine the status of a referral (both inside and outside the clinical department involved); and
- reduced turnaround time for referral processing, from time of receipt to time appointment made.

Lessons learned The following lessons have been learned via the HealthConnect ACT program:
- the value of stakeholder engagement in creating a solution which is both clinically and administratively suitable/acceptable;
- the value of ongoing relationships with project stakeholders and the knowledge that word of mouth has the ability to float or sink a project;
- the project scope needs to be clearly articulated and defined early in the project to ensure identification of realistic and achievable deliverables; and
- the importance of effectively managing stakeholder expectations.

Gaps identified The key barrier identified by the HealthConnect ACT project team relates to the absence of unique patient health Identifiers. The absence of a UHI means that the referrals received will require a laborious task of ensuring that the correct patient record is selected and/or is registered within the patient administration system.

The necessity to ensure the correct patient record is selected and/or is registered within the patient administration system will be resolved with the introduction and incorporation of national health identifiers.

Sustainability Sustainability of the eReferral project was considered from project inception. The plan to target ambulatory care with other clinical streams (e.g. cancer services and aged care) to be included in Phase II reflected a desire to deliver a quality system prior to broader implementation.

There is strong support for eHealth and the project from ACT Health Minister Katy Gallagher, reflected in recent ACT Government investment in eHealth initiatives and an ongoing funding commitment to meet costs associated with Phase II and ongoing operations.
Healthlink was a NSW Health Electronic Health Record (EHR) initiative designed to bring together summaries of health information for individuals from different GPs, hospitals and community health centres and place them into one secure computerised record. NSW Health piloted Healthlink to inform the subsequent rollout of the EHR across NSW.

The pilot commenced in March 2006 and the 2007/2009 funding agreement supported continuation of its operations and ongoing improvement, as well as preparation for the broader rollout.

The Healthlink pilot was the largest pilot of its type in Australia. At its peak the pilot was expected to include approximately 50,000 consumer records and data from 27 different source systems. The pilot was implemented in two locations, Maitland and Western Sydney, and targeted consumers under the age of 15 and over the age of 65.

The project enabled GPs to generate, with patient consent, the necessary summary data for messaging to the Healthlink EHR, allowing private sector health summaries to be linked with public sector summaries. It was anticipated that during the pilot period, GP users would account for approximately 50% of the clinical user base of the EHR, with the remaining clinicians comprising a mixture of acute and community health clinicians from a range of health disciplines.

The project period extended from 17 October 2007 to 30 June 2009.

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New South Wales, Continued

Expected outcomes

The expected project outcomes included:

• The bringing together of summaries of health information for individuals from different GPs, hospitals and community health centres into one secure computer record;
• GPs able to generate, with patient consent, the necessary summary data for messaging to the Healthelink EHR;
• Enhanced clinical communication through standardised clinical messages;
• Enhanced quality and safety through shared patient data;
• Integrated models of care through EHR and chronic care initiative;
• Life saving information being readily available in an emergency;
• Enhanced primary care communications network; and
• Consumers better able to manage their health care.

Summary

The Healthelink program progressed well against the project objectives.

The key successes of the project related to lessons learned arising from a recruitment model, the challenges in establishing a clear and restricted scope for a pilot and issues around system integration.

A key challenge was how to draw substantial conclusions about the overall impact of the technology based on the small scope of the pilot. The inability of health professionals to effectively integrate the tool into everyday practice impacted on the capacity to draw conclusions as to impact and identify the lessons learned.

Ability to achieve objectives

Bring together summaries of health information for individuals from different GPs, hospitals and community health centres and put them into one secure computer record

The strength of Healthelink was the ability of the technology to bridge the gap between the NSW Health tertiary and the Commonwealth primary care systems. The EHR brought together health care information from different sources into one, accessible repository. This functionality allowed other health care providers to access the record quickly and note information which might impact upon their clinical interaction with a patient. At the time of writing over 75,000 consumers had participated in the Healthelink trial, exceeding the original target of 50,000 enrolments.

GPs will be able to generate, with patient consent, the necessary summary data for messaging to the Healthelink EHR

All GPs who participated in the pilot were able to contribute to the Healthelink EHR. This required no additional work for the GP as the program was configured to work with their current interface. Existing fields were completed and automatically uploaded in the EHR.

Enhanced clinical communication through standardised clinical messages

In order to facilitate communication, all of the information uploaded to the EHR was automatically standardised. This ensured that all information, regardless of where it was retrieved, was reliable and consistent.

Continued on next page
Ability to achieve objectives (continued)

**Enhanced quality and safety through shared EHR**
The information contained within the EHR enabled clinicians to access key health information quickly and reliably, thereby reducing the risks associated with a lack of communication and timeliness of access to patient health information. Examples of enhanced quality and safety were identified in a KPMG evaluation of the Healthelink pilot. One example involved the prevention of a potential adverse drug interaction following the viewing of the EHR.

**Life saving information available in an emergency**
The Healthelink demonstrated how the EHR can provide life saving information in an emergency situation. The KPMG evaluation report included the following example:
- Emergency department staff were able to provide the best standard of care to a client who was having an acute myocardial event by establishing the client’s normal cardiac function more quickly than they would have without Healthelink.

**Enhanced primary care communications network**
Healthelink enabled information and data to be shared between more than one provider. This information included clinical diagnoses and medications prescribed by any one provider. Access to this information contributed to more informed and transparent health care delivery.

The key limitation to the success and ongoing impact of the system was the low level of consistent clinician use of the Healthelink. Ongoing use of the system was limited, not because of the tool itself, but due to the lack of integration into routine practice because of the pilot nature of the tool. This limitation is further explored under the limitations section of the report.

**Consumers better able to manage their health care**
The benefits of the EHR for consumers, in terms of their ability to manage their health care, became apparent during the trial period. The KPMG evaluation identified the following situations where the record directly contributed to an improvement in health care delivery:
- a client who has difficulty attending their GP was able to access their diagnostic results via the EHR. The results confirmed there was no need to attend the GP appointment and they telephoned the GP for confirmation.
- a patient’s family did not have to travel to a patient’s home in order to retrieve a list of medications the patient was taking to inform an ED physician as they were accessible via the EHR. This saved the patients family a long return journey to access this information.

As more personal data is captured by the EHR and more consumers continue to actively use their record, the full value of the resource will become increasingly apparent.

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2 KPMG. Op cit.
3 KPMG. Op cit.
4 KPMG. Op cit.
What worked well for this project

A number of strategies used contributed to the success of the Healthelink pilot. These include:

**Restricted pilot project scope**

In order to effectively roll out the pilot project, the NSW project team elected to restrict the scope of the project to effectively test the deployment. Strategies included restricting recruitment to certain age ranges within identified pilot postcode areas, minimising the technical scope of the EHR to reduce deployment and integration issues and using consent procedures to maximise participation in an effort to reach critical mass. These strategies enabled the pilot to proceed in a contained manner whereby the scope was manageable.

When this restricted scope appeared to be negatively impacting the project, the project team identified the need to broaden the cohort. Healthelink expanded the eligibility criteria from the original arrangements of patients over 65 living in the selected Maitland postcodes (2320, 2321, 2322, 2323 or 2324) and those 15 and under living in the identified Western Sydney postcodes (2145, 2148, 2150, 2770, 2750 or 2747) to include both cohorts in all postcode areas. In addition four new postcodes in Western Sydney were included to better accommodate the catchment area of Westmead hospital, raising the total to six (2145, 2148, 2150, 2770, 2750 or 2747).

**Web-based deployment**

In order to deploy an easy to use solution and to mitigate against potential integration issues, the Healthelink EHR was available as a web based tool. Importantly, this enabled practitioners to use the system and have it appear seamless within their operating system while at the same time operating within a secure environment. Furthermore this structure allowed health professionals to access the system from their web browser enabling access regardless of location.

*Continued on next page*
Many aspects that worked well for the NSW Healthelink also provided key project challenges. These issues are explored in greater detail below:

- **Restricted pilot project scope**
  The restrictive nature of the pilot project scope inhibited the integration of the EHR into regular clinical practice. The project was therefore unable to reach ‘the tipping point’ where the full benefits of the system could have been realised. For example, the restriction of the cohort to specific age ranges within the pilot area and the decision not to enter historical medical records into the system resulted in many records containing information from only one clinician. This reduced the value of the EHR and was reflected in a lower than expected clinical uptake of Healthelink. At June 2009 there were 57 active clinical records in the first quarter as opposed to the target figure of 200. Furthermore, the scale of the project scope made it difficult to prove the larger scale benefits and broader societal influences.

- **Limited functionality and accessibility**
  The Healthelink EHR was a web based system which functioned as a repository of information rather than as a clinical decision making tool. Although benefits have clearly been derived from use of this tool, its limited functionality reduced the overall impact and use of the system. Furthermore, the EHR was been integrated with a limited number of GP operating systems, thereby limiting both widespread use and availability.

- **Relationships with external vendors**
  This proved to be a challenge for the project team in terms of costs and lack of experience negotiating with vendors. Clearly the motivations of private sector businesses vary significantly from those of NSW Health. In order to facilitate integration of the system, Healthelink relied upon external vendors to complete the specified work. The project team, having no control over these parties’ policies or procedures, faced challenges in terms of standardisation and consequently outcomes varied. For instance, one interface took 12 months to be integrated. This was largely due to a mixture of technical challenges and differing priorities between the vendors and NSW Health.

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The NSW Healthelink project has avoided some controversy. The strategy used to obtain client consent to participate in the pilot project was the subject of significant discussion and debate. This is explored below.

- Effective recruitment campaign for consumers

Healthelink elected to implement an 'opt-out' consent model for participation in the program. This model operated on implicit consent where clients were informed that they were included in the pilot, and were required to actively 'opt-out' if they elected not to participate. This method was selected following examination of lessons learned from previous HealthConnect projects where an inability to reach a 'critical mass' of participants had impacted negatively on the ability to assess the true impact of the technology. It was thought that this methodology would maximise lessons learned from the pilot. A diagram illustrating the process has been included in Figure 1 below:

![Figure 1](image)

The 'opt-out' method proved to be an effective method of recruiting consumers. This did however, come at a cost when it was revealed that it contravened existing privacy legislation (Privacy Principle number 15 of the Health Records and Information Privacy Act 2002 (HRIP Act) which states:

'Authorised – your health information can only be included in a system to link health records across more than one organisation if you expressly consent to this.'

However, in March 2006, in response to this issue, the Health Records and Information Privacy Regulation was gazetted in NSW parliament which provided an exemption to Privacy Principle Number 15 for health professionals involved in the Healthelink pilot.

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5 Privacy NSW, Fact Sheet - No 5 January 2004

6 NSW Council of Social Services (NCOSS). NSW Healthelink trials.
http://www.ncoss.org.au/bookshelf/health/submissions/Healthelink-Trials-Presentation-May06.ppt#256,1,NSW Healthelink Trials
New South Wales, Continued

Controversial issues cont’d (continued)

The consent process continued to generate a significant amount of negative publicity from stakeholders. Detractors expressed concerns that the EHR was accessible to all health practitioners, not just an individual’s own practitioners, and that the system lacked the ability for a patient to quarantine sensitive records and/or block particular providers’ access to their record.

In an effort to address the concerns regarding adherence to best practice in privacy, the Privacy Commissioner of NSW joined the project’s Steering Committee.

Overall, this method of obtaining consent, although valuable, is not one which would probably withstand the court of current public opinion if it were to be rolled out more broadly. For this reason, the pilot represents a valuable learning experience in terms of an “opt-out” consent process and contributes to the repository of information and lessons on eHealth consent and privacy issues.

What could have been done differently

Project scope

The HealtheLink pilot project was developed based upon lessons learned from previous HealthConnect projects. This information influenced the scope of the project, particularly the technology and recruitment cohort. Although this helped to achieve certain ‘wins’, expanding the target population may have helped to increase clinical use of the EHR through broader integration into clinical practice. Selecting one area (for instance Western Sydney) and recruiting consumers from all age groups from within the identified postcodes would have provided a richer environment from which to draw conclusions.

This risk and its potentially negative impact on the project should have been identified early in the project risk register and risk management strategies developed. The project could also have benefited from early identification of the following additional risks:

− for the majority of patients, records have been developed by only one clinician thus limiting the identification of benefits where records are shared between health providers.
− the HealtheLink operated independently of some GP operating software and thus remained separated from normal operating procedures which in turn reduced the frequency of use. Technical issues with some vendor products caused delays in implementation which impacted on take-up.

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Clinical follow-up regarding consent procedures
A key concern identified by consumers and clinicians cited in the KPMG Healthelink pilot evaluation was the consent procedures used to inform clients of their participation in the pilot. Clinical teams across the catchment area were responsible for informing patients about the pilot project and the consumer option to not participate.8

Procedures used to obtain consent at different clinical sites could have been standardised to increase reliability. This important clinical and ethical issue could have been identified and managed as a high level risk early in the project and monitored throughout the implementation phase. Audits should have been conducted to assess performance to ensure clients were adequately informed of their participation.

Engagement strategies
The NSW Healthelink project utilised a number of different strategies to engage with both the clinical community and consumers. These strategies were coordinated by an ‘Engagement coordinator’ who was responsible for the coordination and follow up of stakeholders. Details including the strengths and limitations of strategies implemented are outlined below:

Consumer strategies
A comprehensive media campaign was designed for the Healthelink pilot for the key pilot sites. All marketing materials were developed in consultation with a marketing team. The media for communication included newspapers, radio announcements, print materials and a website. Both a broad range community awareness strategy and a more targeted approach, where individuals were recruited to participate at specific points of contact, were undertaken.
Marketing materials were reviewed halfway through the project in order to remove jargon (e.g. words such as opt-out and opt-in) and make them more readable. In addition, resources were developed for the many multi-cultural communities within the recruitment areas. This had been identified as a key limitation of the earlier strategy. Resources including a one-page information sheet available in different languages were made available from the website. In addition, there was a hotline which clients could contact and which was supported by a translation service.

Clinicians
A clinician engagement strategy was produced in May 2006. This document outlined how the project aimed to engage both GPs and vendors. The document identified the number of GPs within the pilot areas and strategies to involve them in the project. A focus of the initial approach was consideration of ‘incentives’ to encourage GP participation early in the project period. The strategy also outlined training requirements, training status and ongoing engagement requirements to help manage relations with this key group.

8 KPMG, Op Cit

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The Healthelink was supported by stakeholder reference groups in both target areas (Maitland and Greater Western Sydney). Each group met quarterly and addressed local issues and concerns. Membership in the reference group included both health professionals and consumers. The stakeholder reference groups helped ensure that the local community was aware of and had ownership of the pilot project.

General Practitioners (GPs)
In order for the project to be a success, GPs were required to engage fully. As a result of the restricted geographical reach of the pilot environment, the GP Divisions of General Practice were able to provide limited support to the project and project team.

Privacy
There was significant stakeholder and community opposition and concern related to privacy. Concerns related to the inability of consumers to restrict access to those health providers whom they did not wish to view the record. This issue led to some negative media. The experiences of this project in addressing privacy issues may inform the national strategy.

In order to effectively integrate the use of the EHR into routine practice, the Healthelink project team were aware of the need to have a consistent approach to change management. The approaches implemented have included training using a variety of methods of teaching, communication and maintenance support.

The change management strategies implemented had varying levels of success. Challenges included difficulty in arranging suitable venues and training times to introduce health professionals to the Healthelink. Even when health professionals expressed a keen interest in the system, access limitations had a negative impact.

The straightforward nature of the EHR was a significant strength as it enabled those with a moderate level of computer skills to use the system. In addition, the project team developed an online tutorial (e-tour) of the system which a clinician could use at their own convenience.

One key risk was change fatigue for clinicians, due to the volume of change activities being simultaneously driven by other parts of the health sector. This was managed throughout the project.
New South Wales, Continued

Local needs
When implementing the EHR, the need for GP business continuity was paramount and the system adapted to meet the needs of the GP.

The Healthelink program aimed implement the package to GP services with minimal disruption and this was reflected in the fact that each implementation was customised to the existing software available at each setting. This resulted in development of a very good understanding of the systems in use throughout NSW and the potential challenges or potential quick wins for broader system rollout in the future.

Inclusion of NeHTA standards
The NSW Healthelink project worked with NeHTA to progress a number of national initiatives, with particular interest in how the standards being developed would impact upon the EHR (for instance the Unique Health Identifier initiative).

State-wide planning work focussed on the gap analysis between EHR and the Shared EHR being proposed by NeHTA.

The lessons learned through the NSW pilot EHR can be used to inform the broader EHR agenda. There is a need for development of national minimum requirements for source systems and related technologies (hardware and communication technology requirements) that will be necessary for the efficient installation of a state wide EHR (including minimisation of disruptions to other vendor software).

In addition minimum information standards for all aspects of core EHR development (pathology, medical terminology) should be developed to further the work in this area. 3

Integration issues and solutions
Integration issues arose when the EHR was integrated with the existing GP software. 10 To address this challenge NSW Health worked with vendors and GPs to adapt the installation to meet the local needs. This approach may be a challenge on a broader scale.

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New South Wales, Continued

Project benefits

The Healthelink project achieved the following benefits:

• the results of this project provided key lessons which can be applied to the future roll out of an EHR both within NSW and across Australia.

• In terms of quality and safety the system provided health care providers with access to information that led improved decision making in the interests of patient health. The EHR provided easier access to patient clinical information, and improved communication between health providers reducing the risk of an adverse event occurring (i.e. Medication interaction) and reducing the burden for the family/patient.

• the EHR increased transparency in the delivery of healthcare, increasing the ability of consumers to be informed. Consumers who elected to access their record saw the same information as their health care worker. This not only empowered patients but may act as a positive influence on the nature and quality of health care professional clinical records.

• the Healthelink project overcame significant challenges resulting in the ability to collate information from various source, standardise the information collected and have it centrally located. This involved the introduction and development of a number of business rules which enabled records from consumers who opted out of the project to be excluded.

Lessons learned

Some of the lessons learned from the Healthelink project included (but were not limited to) the following:

• in order to accurately assess the effectiveness and usefulness of an eHealth initiative, a critical mass of participants is required;

• an opt-out method of consent for participation in eHealth projects results in high levels of consumer recruitment. Stakeholders may, however, have concerns about and these need to be actively managed and or avoided;

• Integration of the system with GP software allows GPs to participate in the project without additional administrative burden; and

• While communications strategies employed were effective, standardising communication and multi-lingual communication tools would have represented improvements.

Continued on next page
New South Wales, Continued

Gaps identified

**Active messaging**
Some GPs identified a desire to have the HealtheLink facilitate active messaging, enabling them to communicate freely with each other. This may have enhanced the value and scope of the EHR and will be considered in the future.

**National standards**
A variety of national eHealth programs are contributing to a comprehensive body of knowledge which will help to drive and inform the national eHealth agenda. The lessons learned from current projects will enhance the work being undertaken to establish standards and common processes.

Sustainability

NSW Health considered the issue of sustainability throughout the life of the project and this impacted upon the scope and roll out of the project.

The outcome was development of a straight-forward system that allowed health professionals and clients to access a data storage and referral system as opposed to a program which aided in clinical decision making. This ensured that by keeping the system simple future replication could be achieved with minimal difficulty.

Broader roll out may increase the possibility of integrating the EHR into normal business practice and therefore facilitate the development of a tool with enhanced value and relevance to the clinical environment.
HealthConnect NT, which came to be known as eHealthNT, aimed to implement a Shared Electronic Health Record (SEHR) and Secure Electronic Messaging Service (SEMS) (including referral management services and diagnostic results reporting) to key services and communities across the Northern Territory. This project also aimed to develop and implement the electronic transfer of prescriptions, electronic clinical decision support and advanced electronic medication management for key aged care service providers and continued development of community provider prescribing.

The project period extended from 1 November 2007 to 15 September 2008.

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The following outcomes were to be achieved at the completion of the contract:
- The patient passed safely back to their community after an acute event
- Improved quality and safety of care for patients in hospitals;
- Improved care in emergency presentations and for the chronically ill, and children;
- Improved coordination and delivery of health services to indigenous populations;
- Expansion of the eHealthNT SEHR service to urban populations;
- Enhanced care for the aged and frail;
- Consumers better able to manage their health care;
- Continued local eHealthNT operating presence;
- Continued eHealthNT governance arrangements;
- Australian Government Health Check Information Support Primary Care Information System (PCIS) Package; and
- An informed community ready for participation in integrated health care.

The eHealthNT program is regarded widely by stakeholders as a successful demonstration of benefits that can be realised from investment in eHealth. The project achieved its identified outcomes, and delivered key lessons that will inform the national eHealth agenda.

Continued on next page
The patient passed safely back to their community after an acute event
Health professionals reported that the deployment of electronic discharge summaries in Northern Territory public hospitals for inpatient and Emergency Department attendances by consumers registered for the SEHR, provided clinical benefit. In the eHealthNT evaluation report, health professionals reported benefits that were not expected but that contributed to holistic care delivery. These included the ability to access current patient health profiles, hospital discharge summaries, pathology results and records from multiple providers.

Improved quality and safety of care for patients in hospitals
The eHealthNT program resulted in increased safety and quality of health care. Deployment of the electronic Medication Management System, MedChart, in major NT public hospitals resulted in improved workflows and accountability and eliminated issues related to legibility of handwritten prescriptions. The eHealthNT project reports indicated that audits of the MedChart system demonstrated a 400% difference in favour of the electronic system for the number of missed medication doses between a MedChart and a non-MedChart ward with equal patient numbers and a similar patient mix. Furthermore, as the system automatically indicated patient allergies, further improvements in safety and quality are expected to be identified.

Improved care in emergency presentations and for the chronically ill and children
The SEHR enabled information to be made available to health care professionals when and where it was needed for all patients registered to participate. The ability of health providers to access a broader range of information, including medications, care plans and immunisation records, contributed to the ability to provide safer and better quality care to this patient population. The integration of the SEHR, Primary Care Information System (PCIS) and Secure Electronic Messaging Service (SEMS) allowed clinicians to access information from child health checks regardless of where they were conducted or where the child was attending. Additionally, the SEHR Immunisations Web Service enabled providers to access the Territory’s immunisations data base, implemented in May 2008. Other advances, such as the deployment of the MedChart medication system enabled increased quality of care as outlined above.

Breaking down the barriers of distance by improved coordination and delivery of health services to indigenous populations
The NT SEHR broke down barriers and improved health care delivery to remote indigenous populations. That the SEHR was implemented across a large portion of rural and remote communities and indigenous populations, represents a significant accomplishment.

The following diagram (Figure 2) shows the targeted areas for recruitment. Green indicates populations and communities that were engaged to participate and the purple area indicates locations identified for future engagement.
The eHealthNT project implemented several strategies to engage remote communities across the NT. These strategies are explored in greater detail below.

The remote communities included the Nganampa Health Council which agreed to the implementation of SEHR into the very remote Anangu Pitjantjatjara Homelands.

Consumer registrations for the SEHR at the conclusion of the project were 25,000 which exceed the projects initial target of 20,000. At the time of writing, registrations had continued to increase with registrations exceeding 34,000.

Expansion of the HCNT SEHR service to urban populations

The eHealthNT SEHR was fully operational in three Darwin general practices in Darwin at the conclusion of the HealthConnect program. Following the end of the HealthConnect funding this was expanded to include another GP After Hours Clinic. The value of the SEHR in the metropolitan environment continues to increase as the use of the system develops. As an example, patients (registered with SEHR) who attended the after hours GP clinic could be referred to the Emergency Department (ED) via SEHR. When this occurred, an updated copy of their record was available to the ED health when the patient presented. Further applications of the system are likely to become apparent as more consumers register and as it is further integrated into routine practice.
Northern Territory, Continued

Continued local HealthConnect operating presence and Continued HealthConnect governance arrangements
The eHealthNT program secured funding to maintain, but not expand upon the initiatives developed through the eHealthNT program funded through HealthConnect. The governance arrangements developed through the program period and existing eHealth presence within the community will continue.

Enhanced care for the aged and frail
The ETP project that allows GPs to forward secure, electronic prescriptions to pharmacists across the NT was expanded by eHealthNT. An electronic medication prescribing, dispensing and administration system (eMMS) was implemented in one residential aged care facility enabling a fully paperless system. This MedChart project system was reportedly integrated into all patient management systems in all public hospitals and the Primary Care Management System used in NT remote health centres. The program was further expanded to include the community prescribing implementation of the ETP project. This was launched in April 2008 with reportedly very positive feedback from all participants.

Consumers better able to manage their health care
The consumer survey data presented in the eHealth NT SEHR implementation evaluation reports indicated that the majority of consumers reported an increase in their ability to manage their health as a result of the SEHR.

Two consumer resource centres were established; one was located at Royal Darwin Hospital and the other in the Wadeye Community. Their purpose was to pilot consumer access to telehealth services and video conferencing, although no activity concerning the latter took place during the project period.

An informed community ready for participation in integrated health care
The eHealthNT program generated significant awareness regarding the SEHR as reported in the eHealthNT evaluation. This could continue to be improved to ensure the SEHR reaches a critical ‘tipping point’ where it is integrated into routine clinical practice.

The breaking down the barriers – a pathway to the future
The project provided significant lessons about how to successfully engage with remote indigenous populations and the strengths and challenges of the specific solutions implemented.

Continued on next page
Northern Territory, Continued

Ability to achieve objectives cont’d (continued)

Australian Government Health Check Information Support Primary Care Information System (PCIS) Package
At the close of the project, the integrated Patient Care Information System was fully operational in 23 remote health centres.

The PCIS has been updated and can now receive and send electronic pathology results. It is also integrated with the Secure Electronic Messaging System and the SEHR. All registered users in PCIS are automatically registered as SEHR users.

The system continues to be used to support the care of patients in remote areas. Programs such as the Preventable Chronic Disease Team and the Maternal Youth and Child Health Program have contributed to the function and value of the system.

What worked well for each project

Community engagement
The eHealthNT program excelled in engagement of local communities. This is evidenced by the program’s engagement with over 90% of remote aboriginal communities who were targeted for participation and the engagement of 68% of the total remote indigenous population to participate in the SEHR.

At the time of writing the SEHR had over 2500 participating clinicians and 34,000 consumers enrolled. These figures demonstrate the project successfully engaged and stimulated the community to act. A detailed summary of the strategies used to motivate participation is included below.

Project governance
A clear project governance structure existed from the beginning of the program and incorporated senior representation from key stakeholder groups including GPs, Aboriginal medical health services, government and acute care clinicians. Membership also included key decision makers from the field and helped to ensure that decisions and project outcomes could be appropriately translated to the clinical environment.

Several working groups reported to the Steering Committee. Each group has played an instrumental role in ensuring the appropriate systems and structures were developed.

Continued on next page
### Northern Territory, Continued

#### What worked well for each project (continued)

**Incremental approach**
The incremental implementation approach used by eHealthNT was reportedly an important element of its success. It ensured that lessons learned throughout implementation were integrated into the progressive roll out. Importantly, as the project expanded its reach, the governance structure also adapted with new members of key community organisations participating in both local working parties and on the Steering committee.

**Project management**
A consistent and comprehensive approach to project management also assisted the success of the project. The quality and skills of the project team reportedly combined to provide a comprehensive set of skills that included background knowledge and technical skill. This was enhanced by support from the funding body and provision of funding to enable the establishment and maintenance of a quality team.

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#### What did not work well
The key limitation identified by the project team arose when continuation of funding was uncertain. This led to difficulties in staff retention and forward planning and development.

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#### Opportunity to do differently
The trial and error approach to system development and integration would have reportedly led to a different approach if the project had the opportunity to begin afresh. While some approaches negatively impacted on timelines and implementation they did, however, provide valuable lessons for future implementations. For instance, unforeseen challenges regarding integration of the SEHR with the Medical Director program would have been factored into timelines.

eHealthNT has shared many of the technical lessons learned with NeHTA and other jurisdictions. This has included conducting eHealth tours by key stakeholders and jurisdictional representatives. The formal communication forums and pathways which occurred at the beginning of the HealthConnect program were reportedly valuable, and could have been continued to be so if they have been given ongoing support. These forums provide an essential time for communication of lessons, pitfalls and accomplishments to be discussed.

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*Continued on next page*
Northern Territory, Continued

Stakeholder engagement strategies

In order to engage Aboriginal and Torres Straight Islander communities and increase participation in eHealthNT projects, the project team developed a culturally appropriate engagement strategy. This involved identification of key community leaders and targeting initial communication at these individuals. The key leaders differed depending upon the community. In one community, leaders were primarily the elders; in others they included representatives from the Community Council. Once relationships were established and key stakeholders were supportive of the initiative, their influence within the community was leveraged to gain broader community acceptance.

This strategy was complimented by a broader community campaign that included culturally appropriate resources and promotional materials developed primarily in-house with consultation from experts as required. Marketing materials, including a re-branding of the project from HealthConnect NT to eHealthNT and the development of a mascot, known as ‘Kanga’ were developed in an effort to promote the various programs. The mascot and logo were featured on promotional material, automobiles and at community events such as the Imparja Cup Cricket Festival carnival which was sponsored by eHealthNT in an effort to promote the program directly to stakeholders.

All strategies were supported by the appointment of Aboriginal Community Recruitment Officers located in key areas around the Territory including Katherine, Darwin, Central Australia and the in the Top End Division of General Practice. These staff members helped support the local recruitment process, responded to enquiries and problems and provided an ongoing presence to capitalise on the initial investment and engagement.

This project serves as an example of how success can be achieved when marketing is approached in a comprehensive and holistic manner.

Efforts to engage clinicians involved establishment of a full time Clinical Engagement Team which aimed to build clinician awareness and support. This was supported by marketing material, a project website and interactive communications including demonstration programs where clinical situations were modelled. The team coordinated clinical forums and workshops and targeted individual clinicians. Feedback from clinicians on eHealthNT services has been positive and acknowledges the value add the initiatives have delivered in terms of services provided to patients consumers.

Continued on next page
Awareness of the need to address change management was apparent early in the eHealthNT project. Strategies used included:

- **Use of clinical champions and change agents**
  This strategy helped to facilitate change and awareness in the clinical and community environments by contributing to how both the project and its benefits were perceived. Identification of these stakeholders was undertaken early and the project capitalised on their involvement throughout the different stages.

- **Project benefit awareness**
  A concentrated effort was directed to development of clinical scenarios and materials that demonstrated how the project benefited stakeholders. By clearly stating the benefits in a manner that was relevant to the stakeholder the project team contributed to establishing the initial stages of change.

- **Education/training**
  The Clinical Engagement Team and the Consumer Registration officers were able to provide education and training and ongoing support and assistance when required. They also provided ongoing support and assistance when required which was important to integrating strategies, techniques and tools into practice in the long-term.

- **Integration**
  Integration and planning were essential in minimising any disruption caused by implementation of the technology in the clinical environment. Extensive work on systems design was involved in integrating processes into existing workflow practices.

One key success of the eHealthNT project was its ability to address the needs of the local community. This targeted project design resulted in high levels of stakeholder and community support for each of the initiatives. The SEHR was developed to meet the needs of indigenous Territorians who represent a highly mobile population and where for many, English is a second language. This creates problems for continuity of care and safety and quality in terms of health provider access to clinical histories and health care delivered by a variety of providers in a range of different locations. The value and importance of the SEHR in this context was immediately acknowledged and understood and contributed to engagement of key project stakeholders.

As a consequence the project has achieved 90% participation in some indigenous communities.
Northern Territory, Continued

Local needs (continued) Some opposition to the projects emanated from the clinical community who doubted the value and/or capability of the eHealth solutions. These clinicians were targeted for proactive engagement in an effort to change their perceptions. Once the project became more established, informal and formal networks were used to inform clinicians of project progress and identified benefits.

As the project grew and expanded, the governance structure changed accordingly. New areas that became involved were asked to participate in the governance structure ensuring local ownership and accountability.

Inclusion of NeHTA standards The eHealthNT Project team report that NeHTA played an active and increasing role in the project, particularly during late 2008 early 2009.

Frequent engagement and communication between the project team and NeHTA became standard practice and several officials visited the project site.

The opportunity to for NEHTA to learn from experiences encountered throughout the eHealthNT project was identified and collaboration with NEHTA is ongoing. The Electronic Transfer of Prescriptions (ETP) aged care program is expected to expand and the first full web services messaging system that enables web discharges and messaging in compliance with full NeHTA standards is to be developed.

Integration issues and solutions The main integration issues that the eHealthNT project faced largely related to interoperability and adherence to the business rules required for each of the projects.

Managing the consent and registration process in a manner which met the privacy and consent rules was a difficult process. Validation audits were conducted on an ongoing basis in order to assess the robustness and validity of the system. This included ensuring information was both sent and received by the systems.

When performance issues were identified, for example when it became noticeable that the viewing time for the SEHR record was too slow, the IT professionals brainstormed and delivered solutions that shifted the SEHR to a web systems platform.

Another example included the large scale upgrade to the repository which took place in 2008. As the original system was not developed to be production strength, a new platform was developed that would support new initiatives and demands upon the system.

Interoperability issues became apparent when deploying the SEHR into the 3 GP practices in Darwin. Early problems related to extraction of clinical data in the first clinic were resolved prior to broader deployment.

Continued on next page
Northern Territory, Continued

Project benefits

The benefits which arose from the eHealthNT program included:

• Increased access to coordinated and informed care for indigenous populations (including those residing in remote settings);
• Improved quality and safety of health care delivery for people within the Northern Territory through the extension and implementation of programs such as the full Electronic Transfer of Prescriptions and the Medication Management System;
• Involvement and engagement of indigenous populations both as consumers and as clinical officers in a program which specifically addresses their needs;
• The development of extensive eHealth infrastructure to support ongoing work in both eHealth and at the bedside which can contribute to improved outcomes;
• The implementation and testing of systems which can inform future work both within other jurisdictions and nationally;
• The lessons learned regarding potential challenges and advantages of specific roll out and implementation strategies (for instance the strengths of a staggered implementation program); and
• The ability to leverage from existing programs to further expand the reach and impact of the technologies implemented within the Territory.

Lessons learned

Lessons learned from the eHealthNT project include:

• The importance of stakeholder engagement (clinician, consumer, Indigenous) and utilising a variety of strategies to support and maximise this engagement;
• The value of a strong, tested consent method;
• The importance of a change management process;
• The value of an appropriate, robust project governance structure capable of adapting as the project expanded; and
• The value of developing systems to manage the flow and process for accumulating and gathering the required information.

Gaps identified

The following gaps and opportunities were identified by eHealth NT:

• The need to meet emerging NeHTA standards related to data storage. Currently the eHealthNT program stores data in PDF form and this will need to move to allow storage in full atomic data form.
• The development of a NeHTA compliant repository will be developed that will facilitate the optimum generation of data from a feeder system. This will allow for further work to be undertaken in support of a national approach.
• The implementation of national healthcare identifiers. Northern Territory has self-nominated as an early adopter for National Health Identifiers to benefit and strengthen current systems.

Continued on next page
No clear sustainability plan was developed at the beginning of the eHealthNT program. Rather the program assumed ongoing funding would be provided by the Commonwealth.

In 2008-09, eHealthNT attracted funding from the Northern Territory Government which will sustain the initiatives at current levels. However, these funds do not allow expansion of the project.

Projects that aim to expand existing initiatives are being pursued through collaboration with interested states and with the support of NeHTA. Funding support is being sourced from alternative sources.
South Australia

Project overview

The HealthConnect South Australia (HCSA) project aimed to improve health outcomes by the development of a secure primary health care communications infrastructure and applications for improved prevention of chronic disease and management of patients with chronic disease.

This included implementation of secure broadband to a wide range of health care providers, implementation of secure messaging and the development of the prototype eHealth Care Planning System (EHCPS). These initiatives aimed to provide a comprehensive chronic disease management system with the ability to create a shared web-based electronic care plan to enable access to vital patient information when and where it was needed.

Project period

The project period extended from 9 November 2007 to 30 June 2009.

Key contact

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Expected outcomes

The following outcomes were expected to be achieved at the completion of the contractual period:

- enhanced clinical communication through standardised electronic clinical messages delivered through a secure broadband infrastructure;
- enhanced quality and safety through the establishment of a shared electronic care planning record;
- improved capability for consumers to manage their own health care;
- alignment with emerging national eHealth standards;
- enhanced primary care communications network;
- ensure lasting positive change in priority eHealth areas leading to continued support by the state and opportunities for national implementation; and
- develop and maintain enablers for a national flow of key health information.

Summary

The HCSA program focused on the development of a secure primary health care communications infrastructure, applications for improved chronic disease prevention, management of patients with chronic disease and delivery of effective change management strategies. The program made significant advances in these areas.

Continued on next page
South Australia, Continued

### Ability to achieve objectives

The following outlines HCSA’s ability to achieve the specific program objectives.

**Enhanced clinical communication through standardised electronic clinical messages delivered through a secure broadband infrastructure**

A total of 282 secure broadband grants were delivered in 2007/2008 bringing the total to over 1119 for the broader program. These grants helped to establish essential eHealth infrastructure with most private SA health care providers (including GPs specialists, allied health and professionals) now equipped to participate in future eHealth initiatives. This was supported by the provision of training resources and tools to health professionals aimed at improving levels of knowledge and skills in relation to e-security. A security manual was developed and made available on the HCSA program website.

Through the HCSA program funding for secure messaging packages was provided to primary health care practitioners working in private practice. Each of the 1210 packages distributed, covered the cost of installation, licensing and support of the secure messaging software for a period of 12 months. In addition, it incorporated the identification and promotion of communication networks in which the secure messaging software functions. Secure messaging allows clinical information such as referrals, letters and prescriptions to be electronically transferred between healthcare professionals in a way that maintains privacy.

**Enhanced quality and safety through the establishment of a shared electronic care planning record.**

The development and testing of a shared electronic health summary and communications solution, drawn directly from the GP clinical desktops, was not completed within the project period. It was expected to be completed following the project expiry. Clarification of the date was not available at the time of writing.

Strong support for the eHealth Care Planning System (EHCPS) was received from the clinical community key stakeholder groups including GP Plus Health Care Networks, Central Northern Adelaide Health Service, Southern Adelaide Health Service, Country Health, General Practice South Australia (GPSA), and allied health organisations. The Primary Care Sidebar, a desktop communication and information hub which allowed data to be populated directly from the GP clinical system, was deployed to over 600 health care providers. The Sidebar contained a comprehensive suite of electronic clinical support tools, GPSA Health Provider Registry (HPRy) “Quicklook”, clinical audit tools and the RACGP eRedbook - a preventative guideline tool developed as part of the Department of Health and Ageing’s Managed Health Network Grants.

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Improved capability for consumers to manage their own health care
As the EHCPS was not fully developed and implemented the HCSA project was not able to achieve this objective. Numerous benefits will, however, be realised and consumers empowered to manage their own health care should Stage II proceed in the future.

Alignment with emerging national eHealth standards
Where possible HCSA was involved and collaborated with NeHTA to integrate its work into the ongoing development of standards and projects. SA participation included attendance in NeHTA forums, working groups and a national eHealth Steering Committee. The HCSA project focused on the integration of emerging NeHTA standards in the development of the EHCPS.

In addition, the project maintained involvement in national eHealth programs and projects to ensure awareness of how its local project fitted into the broader agenda.

Enhanced primary care communications network
Clinical communication was enhanced through the development of the Health Provider Registry (HPRy). The HPRy functions as an electronic address book for the South Australian health care system. The registry was been updated to include the contact details for 98% of SA GPs, 90% of specialists and 32% of private allied health professionals. It is expected that work on the HPRy to increase the number of allied health professionals will continue beyond the project period.

Implementation of Stage 1 tools as part of the Primary Care Sidebar resulted in a significant shift in data quality at the GP practice level. It also increased awareness of the need to manage patient data more effectively in order to deliver best practice care across a multi-disciplinary team.

Ensure lasting positive change in priority eHealth areas leading to continued support by the State and opportunities for national implementation.
The HCSA projects helped change the eHealth landscape within the state. The introduction and implementation of both secure broadband and electronic messaging among a critical mass of health care providers including private allied health providers within the HPRy, contributed towards a cost-effective and largely self-sustaining infrastructure.

Develop and maintain enablers for a national flow of key health information
The HCSA office provided a forum for communication of key, national eHealth information and priorities. There was also evidence of collaboration between the HCSA program and other state eHealth initiatives including the Northern Territory, Tasmania and Queensland.
The HCSA project had a number of strengths which helped the project achieve its objectives. These included:

**Strong stakeholder engagement**
The project team's strong stakeholder engagement strategy which identified the separate needs and priorities of the stakeholders involved in the project. This was enhanced by a marketing and awareness strategy that used a comprehensive approach and ‘brought the project to the user’ through strategies such as road shows. These tools helped garner support for the program.

Knowledge of the environment also well-positioned the project team to ‘bridge the gap’ between the interests of stakeholders.

The project functioned in a unique capacity (because of its governance) to facilitate communication between the public health ICT platforms and approaches to private providers whose motivations and abilities differed widely.

**Flexibility**
The HCSA project experienced change throughout the funding agreement. When the focus or ability of the program to deliver its initial objectives was impacted by external pressures the project and project team identified opportunities to ‘value add’ to new initiatives and/or strengthen their overall project delivery. This flexibility helped to ensure that the project continued to deliver, but also operated effectively within a complex and evolving scope.

**Collaboration**
The HCSA project team successfully collaborated learned from and shared resources with other HealthConnect projects. This was evidenced by the uptake of the SA Health Provider Registry as the basis for registries in the Northern Territory, Tasmania and Queensland and by Queensland’s consideration of use of the Primary Care Sidebar.

This type of collaboration leverages existing funding and investment made by other states and territories. Further collaboration between jurisdictions will capitalise on these opportunities.
South Australia, Continued

**What did not work well**

The key challenges faced by the HCSA project included the barriers and timelines involved in the establishment of the HCSA program office and the absence of a national eHealth strategy to guide and encourage national collaboration.

The project team reported that recruitment of suitably qualified and experienced staff took longer than initially thought. This was accompanied by a significant amount of work associated with the establishment of the office and negotiation of the administrative requirements for both the state and national levels of governments.

The absence of a national eHealth strategy was identified as an inhibitor to collaboration with other states. National program managers meetings were reportedly a valuable forum. However, these ceased during the final months of the HealthConnect program, at a time where key lessons could have been learned, shared and discussed. The absence of a cohesive strategy resulted in a lack of encouragement for collaboration.

In addition, HCSA experienced some challenges with project consultants and contractors determining the scope of some project work. An example of this was the under-scoping of the Allied Health Provider Registry by GPSA. In the hindsight, the project may have benefited from the project team’s direct involvement in the scoping of the tasks. The expertise of the project team may have mitigated this risk and minimised the consequences to the project objectives.

**Opportunity to do differently**

**Communication strategies**

Given the opportunity to conduct the project over again HCSA would alter their approach to include specific engagement with rural GPs. The multiple pressures and concerns competing for GPs’ attention in these rural environments made it difficult to engage with rural GPs. In addition, assumptions about the suitability of the metropolitan approaches and parameters to meet the requirements of the regional groups. Resources were subsequently allocated to adapt these approaches to more appropriately meet their needs. An alternative strategy of engaging with GP stakeholder organisations may have been a more productive method of achieving similar outcomes.

**Sustainability**

The HCSA program would have benefited from further considering sustainability of initiatives developed through the funding agreement. A number of tools and initiatives will remain ongoing and operative because of the structure and implementation and the change management strategies that were used when they were introduced.

Without ongoing support the continued deployment and management of some tools cannot be assured. This will impact on the projects’ ability to become self-sustaining.

*Continued on next page*
South Australia, Continued

Stakeholder engagement strategies

As previously mentioned, stakeholder engagement was a strength of the HCSA projects. The project team acknowledged the need to customise an engagement strategy to specifically target each stakeholder group. An example of this targeting was noted in the approach taken to engage with clinical specialists. It was identified that these health professionals may take longer to engage with due to their use of customised tools to conduct their business and/or relying upon paper-based methods of business practice. Awareness and understanding of the issues impacting engagement helped the project team to deliver targeted messages which met the stakeholders’ needs.

The project team used a number of strategies to facilitate engagement. These included the use of direct stakeholder consultation, broader workshops, working groups and assessment panels. In addition, a series of ‘road shows’ were conducted to showcase the work of the projects. These strategies were supported by the production of communication materials including newsletters, websites, and promotional articles.

These methods of engagement helped attract interest from a variety of health professionals including allied health professions who had not previously been engaged in eHealth. Management of expectations once these professions were engaged represented a challenge.

Change management strategies

The key change management strategies that used by HCSA included:
− promotion and marketing;
− education and training;
− project and IT support; and
− partnerships with key stakeholders, including identification of clinical advocates to assist in driving the projects forward.

These strategies were supported by strong clinical engagement. In addition, some of the tools and project outcomes (e.g. the clinical audit tool) used a method of collaboration to change practice. It empowered clinicians to audit their own data and improve quality.

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Local need

HCSA attempted to address the needs of the local communities in developing both the projects and implementation strategies. This was done through close contact with key stakeholder groups such as the Divisions of General Practice. The strategy involved the appointment of clinical and business champions within different stakeholder groups which helped to improve communication and identify specific issues that could be addressed through the project.

Inclusion of NeHTA standards

HCSA reported that a close working relationship with NeHTA was developed over the project period. This included involvement and participation in National eHealth Steering Group meetings, and through meetings between NEHTA and SA NeHTA representatives.

Presentations of the NeHTA compliant EHCPS were provided to executive NeHTA representatives who were reportedly supportive of the project and its aim to bridge the gap between primary and acute care settings.

Integration issues and solutions

Many of the key integration issues which impacted the HCSA program during the 2007/9 funding agreement were identified during the previous funding round, specifically during the OzDocsOnline trial. This trial helped to identify key challenges that were then addressed during this phase. An example includes the challenges related to interoperability between the PrimaryCare Sidebar and Best Practice software.

Project benefits

Significant benefits have been realised by the HCSA project. A major proportion of benefits are at this stage realised by health care providers. As the initiatives continue to evolve the benefits for health consumers will increase substantially.

Health professionals have benefited from the introduction and development of an eHealth infrastructure throughout the state. A critical mass of South Australian health care providers have been equipped to participate in eHealth initiatives. The full benefits of this infrastructure are yet to be realised and the true value of this development will emerge over time.

Continued on next page
The PrimaryCare Sidebar project delivered significant new benefits to clinicians and allied health providers, facilitating easy access to professional tools and assessments. This resulted in clinical benefits for patients through improvements in patient care. Tools such as the K10 screening test for mental health, the Depression Anxiety Stress Scale (DASS), The Australian Type 2 Diabetes Risk Assessment Tool (AUSDRISK) and the Diabetic Foot Assessment Tool (TLFAT) were made available. In addition the PrimaryCare Sidebar facilitated access to the General Practice South Australia Health Professionals Registry “Quicklook” that provided access a registry of allied health professionals that could contribute to patient care. The RACGP e-Redbook panel was also deployed across South Australia as a trial for potential national implementation.

Finally, the key benefit of the program was establishment of communication networks between health professionals. Attitudes to eHealth changed, concerns were addressed and change management strategies facilitated wide acceptance of electronic communication networks.

The key lessons learned through the conduct of the HCSA project included:

• the value of a clearly defined scope;
• change is possible – even in the face of adversity;
• the importance of engaging appropriate stakeholders from a variety of positions and viewpoints and valuing their contributions;
• allowing the end users to drive the change provides opportunities to realise project outcomes; and
• a key challenge for all eHealth initiatives will be the need for common ground to be established between the private and public sectors.

Interests, agendas and motivations vary so there is a need to develop shared understanding and goals.

The project team identified the following gaps which may influence future eHealth programs:

• the need for a healthcare identifiers to improve the accuracy of systems;
• there was acknowledgement of the value of sustaining the HCSA project and continuing to fill the gaps identified by the project; and
• the need for a coordinated national, funded approach to eHealth.
South Australia, Continued

Sustainability

Much of the infrastructure developed by HCSA will be sustainable in the long term. Tools such as the security education program and accompanying manual will enable the benefits from the initial investment to be realised now and in the future.

The HCSA projects are being integrated into the SA Department of Health so that a minimal project team can be sustained until at least 30 June 2010. This addressed concerns about the ongoing management of systems such as the PrimaryCare Sidebar, the management and completion of development and testing of the shared electronic health record and communications solution for which a pilot is planned in the Aldinga GP Plus centre.

A workshop with key stakeholders was conducted by the HCSA program office in mid 2009. This meeting brought interested parties together to explore the key issues impacting on the sustainability of the developed solutions, including ongoing ownership, management and implementation. The meeting also identified ways forward in eHealth and encouraged action by interested parties to help continue to capitalise on the existing momentum.
Tasmania

Project Overview

The HealthConnect Tasmania (HCT) projects aimed to improve services through the delivery of integrated electronic health information through the:

- redevelopment of the Provider Directory;
- upgrade of the Tasmanian Health Client Index (THCI);
- state-wide rollout of the Electronic Patient Care Record (ePCR) system;
- implementation of a secure electronic messaging network known as ShareMED between the community pharmacy, GP and aged care sectors;
- state-wide rollout of the Electronic Discharge Summary (EDS) in public and private hospitals including a Fast Secure Portal Access Trial; and
- implementation of a secure electronic transfer of data in relation to supplied drugs of dependence - Real Time Reporting (RTR).

Project period

This project period extended from 7 September 2007 to 30 June 2009.

Key Contacts

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Outcomes

The following outcomes were to be achieved at the completion of the contractual period:

Core Activities

- Visible and accountable management of the HCT Program;
- Planning and policy to ensure HCT alignment and development of national eHealth agenda; and
- Visible partnering with stakeholders in order to promote uptake of local and national eHealth activities.

Core Enablers

Putting enablers in place to facilitate standardised secure electronic communication and integration of clinical systems. These included:

- Tasmanian Health Client Index (THCI);
- Tasmanian Provider Directory; and
- Management of Health Messaging.

Funded Projects

Promotion of enhanced clinical communication through standardised electronic messages, products and services, comprising:

- Electronic Discharge Summary – state-wide rollout, including EDS enhancements and the purchase FirstDatabank licenses to assist EDS through the Pharmacy Upgrade project;
- Fast Secure Portal Access Trial (FSPAT);
- ePCR state-wide Rollout, including ToughBook Mounting;
- Real Time Reporting (RTR); and
- ShareMED.

Continued on next page
Tasmania, Continued

Summary
HCT achieved the objectives identified in the funding agreement. Their project management skills were acknowledged through receipt of two Project Management Achievement awards in 2007 from the Australian Institute of Project Management, the peak body for project management in Australia.

HCT conducted its initiatives by supporting a series of projects throughout the state that were in turn supported by a central program office.

Ability to achieve objectives

Core Activities
- Visible and accountable management of HCT Program
- Planning and policy to ensure HCT alignment and development of national eHealth agenda
- Visible partnering with stakeholders to promote uptake of local and national eHealth activities.

The HCT program office effectively established the infrastructure required to administer a large, successful, eHealth program. Elements which contributed to this success included the following:
- Establishment of a comprehensive governance structure to guide the development and implementation of its funded projects.
- The program Steering Committee comprised representatives from key stakeholder groups.
- In addition the HCT program maintained representation on the Steering Committee of each funded project. This arrangement allowed the project staff to monitor progress and advise on requirements under the HCT program's Funding Agreement.
- Project documentation submitted with Progress Reports indicated a clear project management process that included supporting plans such as the Project Implementation Plan and Risk Registers.

Enablers in place for standardised secure electronic communication and integration of clinical systems
Like the THCI, the health messaging service is now managed within Information Services, Department of Health and Human Services (DHHS) in a fully operational environment.

Provider Directory updated to increase scope of provider types to better facilitate standards based approach and NeHTA compliance
The scope of the Directory was increased to link with DHHS systems. This resulted in the system being able to supply all healthcare providers with secure messaging and facilitate the transfer of patient information to clinicians. It also facilitated the dissemination of public health alerts and disaster and pandemic management activities.

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Phase 1 of the update was completed and included the execution of a contract with GP Tasmania for supply of healthcare provider data and sourcing of a provider directory system.

Phase 2 was delayed, with timelines realigned due to NeHTA involvement. Design and technical specifications were due for completion shortly after the project period.

NeHTA identified the Provider Directory as an optimal project to test the work that was undertaken on Healthcare Identifiers subsequent to the HealthConnect program.

The result will be ongoing activity that will be managed through the Information Services Unit within the DHHS.

**Tasmanian Health Client Index (THCI) Database information transferred, information accessible and up and running on new application by 5 Jun 2009**

The THCI went live in June 2008. This project upgraded capacity to coordinate client demographic information within and across health information systems to maximise the quality and timeliness of information available to provide client care.

**Funded projects**

**Electronic Patient Care Record (ePCR) – State-wide Rollout infrastructure and implementation complete by June 2008**

The ePCR was a significant and successful project funded through HCT. The project was rolled out across the 3 Ambulance Service Regions and was fitted into 100% of the Tasmania Ambulance fleet.

The project is an excellent example of a state based project that has the possibility of adoption across other states and territories. A national collaborative group was established through NeHTA with significant interest in the project being expressed by several states. At the conclusion of the project the ePCR formed part of the core business operations of the Tasmanian Ambulance Service.

**ShareMED Home Medicine Review and Residential Medication Management Review workflows improved. Improved clinical and administrative efficiencies**

The project entered its final phase under the HealthConnect program and with work focussed on resolution of issues to ensure the respective clinical and messaging systems were functional within the GP and Community Pharmacy environments. The Pharmacy Guild of Australia drafted an initial evaluation report that was due to be finalised shortly after the vendor interoperability issues were resolved.

**Fast Secure Portal Access Trial (FSPAT)**

The FSPAT project allocated all funds to trialling technologies to assist fast, secure access to clinical systems. FSPAT trialled systems which enabled clinicians to access a range of electronic systems with one swipe of an authentication tool. Feedback to the trial was positive and there was support for an ongoing program.
Tasmania, Continued

Ability to achieve objectives (continued)

Electronic Discharge Summary (EDS) – State-wide rollout and full implementation at all target hospitals
The EDS system was operational across the state and was rolled out with in a phased approach with different ‘go-live’ dates. The Royal Hobart Hospital and North West Regional Hospital were live from October 2008 with Launceston and Mersey Community Hospital following in early 2009.

The EDS system was integrated with the Pharmacy dispensing system, so that dispensed medications automatically appeared in the medication selection panel for discharge summaries. This proved to be challenging with one system experiencing integration issues arising from the use of the generic versus brand names of pharmaceuticals used. Once identified, this challenge was addressed with steps are being taken to resolve the issue.

Real Time Reporting (RTR) - Software to enable electronic messaging and real-time monitoring of prescriptions for drugs of dependence purchased and installed
Software vendors completed the web interface specifications into five key dispensing systems and the secure electronic transfer of data in relation to supplied drugs of dependence. The system was transitioned to DHHS core business with future development to be managed by the Pharmaceutical Services Branch.

What worked well for each project

Project Management
The HCT project demonstrated high quality project management. This was reflected in the fact that it received two Project Management Achievement awards in 2007 from the Australian Institute of Project Management, the peak body for project management in Australia.

These awards recognise best practice and innovation in project management. HealthConnect Tasmania triumphed over several other well respected, large projects to win the awards.

A particular strength of the project was the governance structure. Its collaborative nature and the incorporation of stakeholders from both internal and external organisations helped to ensure that a wide range of agendas and priorities were considered in the program.

Collaboration
The HCT program demonstrated extensive collaboration by project partners and external organisations. The project team acknowledged that the establishment of an HCT program office that sat slightly outside the traditional environment allowed the development and re-engagement of health stakeholders who were reluctant to engage with DHHS. The perceived independence from DHHS encouraged open communication unconstrained by past issues and emotions. Essentially, the HCT program office functioned as a bridge between stakeholder groups and the Department.
### Tasmania, Continued

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<tr>
<th>What worked well for each project (continued)</th>
<th>Stakeholder engagement</th>
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<tr>
<td></td>
<td>A key aspect of the collaboration that HCT demonstrated was dependent upon the stakeholder engagement strategies employed. A comprehensive stakeholder management plan identified key project stakeholders and their relationship to the program. Targeted communication strategies were then developed to facilitate engagement. This was accompanied by an analysis of key messages and suitable communication methods. Engagement included consumers, key stakeholder groups and funding bodies, providing a coherent approach to promotion of the program.</td>
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<tr>
<th>What did not work well</th>
<th>One of the challenges that HCT faced was negotiating complex relationships with eHealth vendors. There was a lack of incentive for vendors to align their solutions with the compatibility and interoperability needs of various projects.</th>
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<td>The lack of a nationally consistent driver to persuade vendors to ‘come to the table’ made it difficult for the project team to drive agendas forward on a state by state basis. Attempting to negotiate and address costs incurred by the vendors independently limited both affordability and efficiency.</td>
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<tr>
<th>Opportunity to do differently</th>
<th>The opportunities to do things differently that were identified by the HCT program largely centered on the management structure and program arrangements.</th>
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<td>The delivery framework implemented involved outsourcing of project delivery to external organisations. Although there were some advantages (for instance ability to meet local needs), ultimately these would have been outweighed by the benefits of a centralised service delivery model. This is largely because of opportunities that would have been available to maximise effort, share efficiencies and have a greater amount of influence on how the project was conducted and issues arising.</td>
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<td>The program team also identified a desire to extend the scope of the funded projects to include environments or clinical settings that had not been specifically targeted by the current program. This would have included a greater focus on preventative health environments.</td>
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The stakeholder engagement strategies implemented by HCT built on initiatives used during the 2004/2006 funding agreements. It was acknowledged early in the project period that ‘engaging with stakeholders requires continuation of the close relationships already forged, where there is a shared vision, a high level of trust established, frank and open exchange of information on performance and where there is a genuine mutual concern for the achievement of agreed program and funded project outcomes’.

As addressed in the previous section of this report, the clear stakeholder engagement plan identified not only key participants but also key messages and communication methods.

Significant amounts of marketing materials were produced to address the needs of various stakeholders. Non-traditional methods of communication and engagement, including the hosting of an eHealth expo, helped to engage and stimulate interest.

These strategies were complemented by an out-posted officer program. These officers were strategically positioned at three GP Divisions of General Practice and the Pharmacy Guild of Australia office in Tasmania. This strategy helped to foster communication and collaboration between program officers and stakeholders. It bred familiarity and trust and was a key factor in success, particularly in the early development and implementation stages of the program. Once greater awareness of eHealth both in Tasmania and nationally had been established, this strategy was no longer required and the approach was amended accordingly.

At the conclusion of the project an evaluation of key stakeholders’ views of the engagement process was undertaken. There was generally positive feedback regarding the inclusiveness of the HCT program. Where challenges were identified, or a stakeholder group’s ideal vision for the program not realised, positive outcomes from existing work were highlighted.

Importantly, HCT was commended by the Consumers Health Forum of Australia for its engagement and inclusion of health consumers. The consumer selection process used by the project was identified as a model for other states with particular acknowledgement of the open and transparent process for nomination and the inclusion of criteria that related to consumer representative experience and expertise.
Change management strategies

The HCT project required that change management be addressed not only in terms of direct project outcomes and expectations but also in terms of the change in strategic direction of the program.

Initially project plans included the coordination and ongoing control of change management plans and processes from a central HCT office. However, with the decentralisation of the program, change management became the responsibility of individual project teams. The central program management office assisted in the development of both business plans and change management strategies but was not responsible for their implementation and evaluation. Standardised tools and templates were utilised to streamline project and change management processes.

Local needs

The HCT team ensured that the project effectively addressed local needs by calling for local projects expressions of interest. This process helped both to generate ideas and ensure that the projects conducted by HCT met the needs of the clinical community and the HealthConnect program objectives. In order to decide what projects were to be executed by HCT submissions were formally evaluated by a review panel.

Successful organisations received funding to manage projects. This helped to ensure that projects met local needs and were locally 'owned'. Some specific projects grew out of incidents and issues flagged by the community. For example, the Real Time Reporting project developed as a result of a coroner’s finding that a centralised and managed system would prevent consumers from ‘shopping around’ for Schedule 8 medications.

Local stakeholders, such as GP Tasmania and the Pharmacy Guild of Australia, helped progress the HCT program through its promotion and by addressing their constituents’ resistance to change, where it occurred. For example, GP Tasmania was instrumental in advocating for GPs across Tasmania to become eHealth compatible to ensure that each practice had the capacity to ‘hook into the program’. GP Tasmania completed an IT audit of the GP practices that helped the HCT program target its initiatives and which assisted ongoing project monitoring.

These key stakeholder groups helped manage feedback and communicate key messages throughout the life of the projects. This was particularly important during times of change when health professionals or consumers expressed concern regarding the shifts in focus in the HealthConnect projects. Stakeholder expectations had to be carefully managed and required considered work to re-establish trust and realign expectations with the redesigned program scope and focus.
Inclusion of NeHTA standards

HCT worked with NeHTA to progress the program. This included specific project involvement such as NEHTA’s participation in the review of the ShareMED technical architecture prior to the project build by the Chief Information Officer of NeHTA. This review resulted in the architecture being supported and approved in-principle despite the lack of established standards.

More broadly there was ongoing consultation with NeHTA including visits and participation in meetings and forums in order for HCT to gain advice on standards implementation in the development of business and functional requirements. Furthermore, the EDS and ShareMed projects were developed with guidance from NeHTA to inform development and ensure inclusion of SnoMed and Australian Medicines Terminology (AMT).

Integration issues and solutions

As mentioned previously the capacity to address system integration issues was limited by the absence of drivers for many system vendors. Vendors were reluctant to incur the costs of changing and updating systems in the absence of a business case. To address these issues and progress solutions, the project team developed relationships with vendor representatives and conducted frequent formal and informal meetings where progress and future directions were regularly discussed.

There were, however, achievements related to integration within the program. For example, the ePCR allowed the ambulance service to interact directly with the hospital systems. In addition, through the work with the core enablers, a good platform was established to assist in solving further integration issues. Client identification record data was cleansed resulting in the allocation of only one identifier per person as opposed to the duplicated data that existed prior to HealthConnect.

The EDS interoperability challenges mentioned previously in the report arose late in the project period. These provided the opportunity for hospitals to both refine dispensing processes and the management of patient medications.

Continued on next page
Tasmania, Continued

Project benefits
The HCT project resulted in numerous benefits for both the clinicians and consumers. The projects provided the tools and resources to establish extensive infrastructure and platforms for existing and future projects.

The key benefits included:
- the development of eHealth infrastructure that will help to support future investments and goals;
- an updated provider directory that includes an array of provider types;
- systems to increase communication across health care locations and between providers that will ultimately improve clinical care; and
- a system that meets the needs of the community and which aims to reduce the potential complications and administrative demand required to manage prescriptions for drugs of dependence.

Lessons learned
Several key lessons were identified throughout the course of the HCT project. These included:
- The importance of early identification of the key players who will be involved in the project and the value of early engagement;
- Managing stakeholder expectations and re-igniting interest once trust has been lost;
- The value of stakeholder collaboration and its role in sustainability of the project; and
- The importance of strong, clear project management processes underpinning implementation of a large scale program.

Gaps identified
The key gaps identified by the project team were the absence of national eHealth standards and the absence of drivers/incentives for vendors to deliver interoperability.

Sustainability
Significant eHealth infrastructure was established throughout Tasmania with a view to the sustainable operation of several initiatives. All projects factored in sustainability plans early in the project period. Implementation of training and development of infrastructure in many projects helped to ensure ownership of the ongoing business processes.

Although the systems were designed to be sustainable, the issue of ownership and ongoing accountability continued to arise. This was particularly important due to the changing nature of the eHealth environment that requires continual adaptation to cope with changes and new technology. Changing ownership created a risk that when future updates are required (particularly urgent updates) resources may be lacking.
The HealthConnect Victoria (HCV) Project sought to leverage off existing infrastructure and established tools to extend the available functions. By working with the HealthSMART Program and other eHealth initiatives across public and private health providers, the aim was to produce an integrated approach to health care across the state. The functions that were to be added to the existing HCV system included:

- Multi-provider case management; and
- Interaction with the current and anticipated State infrastructure to improve the capability to automatically refer patients between providers.

Additionally the project aimed to consider how elements of existing and proposed state infrastructure could be incorporated in the prototype system to allow more automated system support of these inter-provider care management processes.

Key elements of the HCV project included:

- Summary views that supported assessment and intake processes for Single Entry Points to healthcare services through minimisation of duplicate data entry - particularly patient/client demographics, care and case management plans and referral information required for service coordination;
- Enabling tools to actively support integrated service delivery through exchange of clinical information; and
- Electronic referral based on established Victorian service coordination protocols.

The project period extended from 17 October 2007 to 30 June 2009.

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The following outcomes were to be achieved at the completion of the contractual period:

- improvement of the collation of relevant patient/client health information for transfer to another health provider for client care;
- improvement of the process for creation and sending of health information or the receipt and storage of health information;
- use of available standards for interoperability;
- use of standard referral templates for consistent information at the point of care;
- use of evidence in care planning activities; and
- determination of how best to implement the HealthConnect principles for electronic referrals in Victoria.

It was not possible for the HCV program deliver all of the objectives specified in the funding agreement. Some key achievements, however, that will contribute to completion of the project’s goals in future included:

- a comprehensive mapping and analysis of current referral processes and requirements for the CareDirect eReferral system;
- the development of functional specifications endorsed by key stakeholders and technically reviewed for future integration into the broader HealthSMART Program; and
- a comprehensive governance arrangement and standards developed for the CareDirect eReferral project. These have been provided to NeHTA to inform ongoing development work.

The inability of the HCV project to fully achieve the project outcomes was due to a number of challenges which the project faced throughout the funding period. These included (but are not limited to) the following:

- an overly ambitious project scope;
- delays in finding a suitable candidate to take up the role of Project Manager; and
- the absence of an effective project governance structure to effectively mitigate risks and ensure the project remained on target to deliver the identified outcomes.

The project team worked at maximising the outputs of the project while addressing the challenges involved. As the project period came to a close, effort was made to capitalise on the lessons learned from and ongoing benefits.

Continued on next page
Victoria, Continued

What worked well for each project

Identification of issues
The HCV project focussed on specific identified problem areas and issues within the Victorian healthcare system. In the HCV Project Plan (2008), reference was made to the presence of “a number of point solutions that are not sustainable or scalable”. It went on to say that “agencies have different information systems, paper-based systems and divergent health care processes” and explained that there is an increasing “demand for a ubiquitous capability to receive, action, create and send patient referrals across health and other service providers”. The HealthConnect program sought to address this concern and contributed valuable input to the common eHealth knowledge bank.

Stakeholder engagement
The project demonstrated that there are stakeholder groups within the Victorian health care system who are motivated to work towards change and development of further eHealth technologies within the state and identified clinicians willing to act as ‘clinical leaders and change agents’.

What did not work well

What did not work well within the HCV project includes:

• Ambitious project outcomes
The project outcomes were vast and when this became apparent they should have been modified accordingly. Specifically, project timelines that could not be met should have been addressed early and outcomes that were clearly unattainable (particularly eReferrals) should have been brought to the attention of key stakeholders at the earliest possible time.

• Leadership
There was a lack of effective project leadership and ongoing management of risks and issues. The extended period of time when the Project Manager’s position was vacant had a detrimental impact upon the project outcomes. Ensuring appropriate governance structures could have assisted in managing the associated risks. For instance, postponing work on the project may have been better than continuing without a Project Manager.

Continued on next page
Opportunity to do differently

- Ensuring that the project plan was clearly aligned with the funding agreement;
- Maintaining direct project management throughout the duration of the project time period;
- Addressing challenges identified early in the project period;
- Establishing a comprehensive project governance structure with a clear reporting and accountability processes; and
- Using the original project documentation and structure to drive the project. Even if this required updates and amendments, it could have assisted in keeping the project on track.

Stakeholder engagement

In the initial phases of the project a comprehensive stakeholder engagement plan was developed. As the project encountered problems these plans were largely abandoned. Upon the appointment of a second Project Manager, the following strategies were implemented:

- An alternative communications plan was developed that targeted at specific stakeholder groups;
- Key organisations such as GP Victoria were engaged and the preferred communication methods and key messages were determined. While broader communication tools were continued these proved to be the least effective.
- The relevance of the eReferrals program was re-established with the goal of developing key messages for specific audiences;
- Hands-on assistance was provided to ensure that stakeholders remained engaged;
- Work was aligned with the program’s outcomes and policy position. It was advocated that all business within eHealth be conducted electronically;
- Conveying a sense of enthusiasm and clear direction to key project participants;
- At the conclusion of the project, a key lesson learned was the need to engage people in ongoing and governance activities who have an interest in and commitment to the aims of the project.
Initially a key focus of the project was change management. There was strong recognition that the successful implementation of new technology would require change in professional practice. Communication and stakeholder engagement activities were identified as critical in order to develop a solution which met the needs of clinicians.

As the project progressed and the project objectives changed, there was less focus upon change management. The project team acknowledged that this aspect of the project could have been improved. Specifically, when the environmental assessment was completed, a significant amount of energy was directed at increasing awareness and engaging stakeholders. Little effort, however, was devoted to explaining how laborious and significant this change would be.

As the initial project plans were not used, there was a lack of clear planning. As effort increasingly focussed on putting the project back on track, the focus on change management diminished. Assumptions that eHealth would be eagerly embraced and its advantages immediately obvious were proved incorrect by some stakeholder reactions.

A thorough understanding of how the current environment works was required in order to progress this project. To achieve this, the project team engaged with key stakeholders who participated in several workshops. The purpose of the workshops was to give HCV an understanding of the local environment and to identify the complexities involved in developing eReferral capability including:

- receiving and integrating messages into the application;
- acknowledging receipt of the referral back to the GP;
- matching patient data to current clients;
- using agreed referral content and format to comply with standards;
- designing key process components and their functionalities; and
- taking paper based ‘as is’ processes to the ‘to be’ electronic processes with clinicians.

Analysis of this work and ongoing consultation resulted in the development of the business requirements for a solution that aligns to both national data and technical messaging standards. In addition, the documentation of functional specifications was completed and a technical review completed.

Ongoing activities with expert groups, (functional and technical) took place with particular reference to the development of technical specifications and compliance with message standards.

NeHTA embraced the work of the HCV team, acknowledging this project as a ‘site of excellence’.
HCV identified a number of infrastructure gaps which will need to be addressed in order to proceed. These include:

- Healthcare identifiers;
- Authentication services; and
- Provider systems capable of creating, sending, receiving and processing referral requests.

Many of these gaps are currently being addressed by NeHTA and/or the Department of Health and Ageing.

It is expected that if the solution is implemented the HCV project will bring a number of benefits to the Victorian community and national eHealth agenda as outlined below.

- Referrals will outline the level of urgency required for appointments so decisions are made on a clinical rather than administrative basis. Furthermore, information available to the health professional should be of increased robustness and could inform improved health planning.
- Work that was undertaken in support of the HealthConnect Program is to be used by NeHTA to inform development of eReferral standards.
- An environmental assessment of existing referrals revealed that over 600 referrals were missing/absent. This assessment strongly supported the claims as to the value of an electronic management of referrals.

The following lessons can be learned from the HealthConnect Victoria project:

- the importance of establishing a clear and realistic project scope;
- the value of a solid governance structure implemented at project inception that clearly outlines responsibilities and accountabilities including keeping key stakeholders abreast of challenges and issues as early as possible;
- engage the right key stakeholders from the beginning – include Terms of Reference and responsibility forms for those interested in participating so that rules and expectations are clear from the outset and appropriate selection of stakeholders can be undertaken;
- managing stakeholder expectations and retaining their engagement and interest in the project is an ongoing process that requires specific strategies and commitment; and
- the importance of recruiting suitably qualified and experienced Project Managers.
Victoria, Continued

<table>
<thead>
<tr>
<th>Gaps identified</th>
<th>The gaps and areas of opportunity for the future identified by HCV include the integration of eReferrals directly into care and discharge plans.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainability</td>
<td>Sustainability of the project work was reportedly considered by the project team and the further development of the HealthConnect project will be integrated into the broader eHealth Victoria work plans.</td>
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Western Australia

Project Overview

eHealth Web Portal and Notifications and Clinical Summaries application

This project aimed to develop the infrastructure and capability to deliver secure communications between providers in both public and private sectors by working towards the development of a Web Portal and Single Provider Index and Notifications and Clinical Summaries application System (NaCS). Design and implementation of this project will provide the core building blocks and platform for establishing enhanced electronic communication across WA Health.

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Project period

The project period extended from 2 October 2007 to 30 June 2009.

Project outcomes

The following outcomes were to be achieved at the completion of the contractual period:

- Establishment of foundations for the procurement of an enterprise-wide web portal and interoperability platform;
- Establishment of a Single Provider Index (SPI) and point of management for provider contact and communication details;
- Establishment of a variety of distribution methods for the electronic delivery of patient event notifications (admissions and discharges in the first instance) in the required formats, from plain text to data structures compatible with practice management applications;
- Provision of a standard discharge summary preparation system to draw content from other clinical applications and conform to new national standards;
- Development of end-to-end business processes to create, approve and distribute discharge summaries which meet the needs of clinical, GP and consumer stakeholders;
- Enable the business capability to use the new discharge summary system through a change management and training exercise within WA Health and communication within the GP community; and
- Establishment of a reporting base to enable continual improvement in discharge summary content and relevance.

Continued on next page
Western Australia, Continued

Project Summary
The HealthConnect WA (HCWA) project team worked towards the identified goals and made significant progress in developing the building blocks for the broader eHealth program of work within the State.

Activities such as the enabling of electronic discharge summaries in country health services, exchange of information between public and private health professionals and a trial of the secure messaging service in the South Metropolitan Health Service for booking of outpatient referrals by GPs, resulted in actual benefits. In addition, significant work was invested in drafting specific functional specifications of the web portal and interoperability platform and requirements for the Notifications and Clinical Summaries system.

Ability to achieve objectives
Establishment of the foundations for the procurement of an enterprise wide web portal and interoperability platform
HCWA continues to progress development of a web portal and interoperability platform for both new and existing systems covering new core program areas including clinical information/management, patient administration and medication management. The tender document, “Requirements for Portal, Interoperability and Development Environment Solution” has been developed and advertised. Award of the tender is not expected until after the completion of the HealthConnect program. Hardware was purchased for a proof of concept of the solution to be used in the supporting infrastructure.

Establishment of a Single Provider Index (SPI) and point of management for provider contact and communication details
The SPI system had not been established. The patient and provider index solution concept, however, was completed and endorsed. Provider data held in different applications across the state will be consolidated into a global data store. In preparation, detailed analysis was undertaken to evaluate state provider index data and maintenance of the current systems providing the foundation for a detailed solution design for a series of phased projects. The solution design, development and implementation of the global data provider system is expected to be completed subsequent to the HealthConnect program and index systems in other jurisdictions will be assessed to see if they are applicable to the WA setting. A consultation framework was established for stakeholder engagement.

Establishment a variety of distribution methods for the electronic delivery of patient event notifications
Notifications were established to be sent by a variety of distribution methods. Secure messages are delivered by using third party broker services and integrate with GP practice software. This is taking place in both country and metropolitan health services via Healthlink or Medical Message Exchange (MMEx). Automated Faxes are sent to those who prefer this method.

Continued on next page
Western Australia, Continued

Ability to achieve objectives
(continued)

Provision of a standard discharge summary preparation system drawing content from other clinical applications and conforming to new national standards
A number of disparate systems were previously developed and operated across Western Australia. A detailed analysis of these systems was undertaken and the NaCS subsequently designed to address the identified gaps and challenges.

NeHTA was engaged by HCWA to undertake assessment of the existing major metropolitan discharge summary system to determine compliance with specifications and suitability for wider deployment. The NeHTA recommendations were acknowledged within the NaCS functional requirements and "will be reviewed and incorporated when practical". 13

Develop end-to-end business processes to create, approve and distribute discharge summaries that meet the needs of clinical, GP and consumer stakeholders
End to end business processes were developed to populate discharge summaries from existing patient and clinical systems through to delivery to the GP desktops. The discharge summary systems were developed in conjunction with local stakeholders in an effort to meet their needs and clinical requirements.

Enable the business capability to utilise the new discharge summary system through a change management and training exercise within WA Health and communication within the GP community
A trial was undertaken for the transmission of secure messages for WA Country Health Services and for the electronic outpatient referral bookings for South Metropolitan Health Service. A technical and functional assessment was undertaken to determine opportunities for MMEx to be extended to provide complementary clinical systems functionality towards a shared patient health record system as electronic messages are transacted. The solution will meet the rural needs for a consistent Discharge Summary for WA Country Health Services (WACHS). Following from this, the University of Western Australia (UWA) Centre for software practice was awarded a contract for the provision of clinical management and secure messaging services for Department of Health Western Australia (DoHWA). This three year contract will enable the electronic transmission of secure messages (such as Discharge summaries) between DoHWA and private health providers.

The HCWA project team relied primarily upon message brokers and vendors to implement a change management strategy and for GPs for the existing electronic discharge summary systems and during the pilot mentioned above. Broader change management strategies will be implemented throughout the state when the NaCS is ready for deployment.

Continued on next page

Establish a reporting base to enable continual improvement in discharge summary content and relevance
The existing discharge summary system provides a number of reports on the messages transacted.

The functional specifications for the NaCS system detailed that the system will contain reports that reflect the need for continual improvement in discharge summary content and relevance.

Understanding of local environment
The HCWA team developed a strong understanding of local needs and the challenges faced by different communities. The project team was aware of, and gave specific consideration to, the impact that any developed solution would have on the daily work of the clinical professionals. Importantly the development of the initial discharge summary project resulted from a key recommendation of the Reid Report (2004) titled “A Healthy Future for Western Australia”. This report provided a long-term vision for the future of health care in Western Australia and sets out a plan for major health reform.

Since the initiation of the project, the scope was expanded beyond discharge summaries to include the broader Notifications and Clinical Summaries application. This broadened scope encompassed all clinical summaries exchanged between WA Health and external providers and was an indicator of how the project responded to the clinical needs of the community.

Flexibility
When issues beyond the control of the project began to adversely impact upon project deliverables (for instance a change of government resulting in delays) the project team (in consultation with the Department of Health and Ageing) redirected focus by progressing with other aspects of the program. Focus shifted from the Portal to the expansion of the then Discharge summary system.

What did not work well
The HCWA project faced a number of challenges. Many were beyond the control of the project team but had a significant influence on the manner in which the project proceeded.

Resourcing
At the outset of the project period DoHWA found it difficult to compete with the mining sector in engaging suitably qualified individuals. As a result the turnover of the positions was high (three project officers were employed over a period of six months) and it was difficult to assemble an appropriate team. Costs escalated dramatically in an attempt to engage suitably qualified individuals and the risks to the project outcomes were considerable.
## Western Australia, Continued

### What did not work well (continued)

**Change in external factors**
In addition to the challenge of engaging project resources, the HealthConnect project operated through a period of change within the DoHWA. Significant organisational changes within the Department and the eHealth division, combined with a change in government meant the project operated in an environment of changing priorities and shifting focus. This impacted upon stakeholder engagement as other organisations and key stakeholders were also affected by these changes. As a consequence the project struggled to maintain continuity in stakeholder engagement and project resourcing.

**Project governance**
Although the established governance structure was suitable to support the project, the structure of the delivery systems meant that the project team was dependent upon other departments for deliverables. Such dependence was directly linked to risks that required ongoing management and control.

### Opportunity to do differently

The HCWA project team demonstrated resilience in its ability to redirect efforts and focus in the face of challenges that impacted directly upon timeframes and deliverables.

The project team noted that, given the opportunity, they would revise the project governance structure. They agreed that capitalising on the motivation and engagement of the stakeholders, who were on the steering committee during the initial proof of concept stage, may have benefited the program.

This committee, established for the original proof of concept project, had been disbanded at the conclusion of the project. When HealthConnect funding was secured, the project assumed a general eHealth WA model of governance. Although this provided opportunities (such as security of project sustainability within the broader eHealth WA program), it meant that the project became one aspect of a larger body of work. Governance and project tasks were distributed across two existing eHealthWA committees and project teams. This added to the complexity of managing the program. A late change occurred to the project that saw the governance changed to include a new clinical reference group established to provide support and leadership.

### Stakeholder engagement strategies

The HealthConnect team reported that marketing and stakeholder communications were strong features of the project. Stakeholders were engaged in the project through a number of forums with representation from business users, vendors and system owners along with significant clinician input.
Initial engagement began during the development of the proof of concept. As outlined previously, a range of key stakeholders participated and sat on the project Steering committee. Representation included project team members, clinicians, non-clinical administrators and representatives from relevant organisations.

Project stakeholders provided input into the direction of the project. The level of stakeholder interest was reportedly more intense and widespread for the discharge summary than the development of the web portal due to the delays in the procurement process for the portal.

The need to implement change management strategies when implementing the projects was considered throughout the HCWA project. Specific attention was paid to the change required in rural and regional settings as metropolitan staff was already using discharge summaries.

The change management strategy in rural and regional areas was supported by message brokers and practice management software suppliers. A governance group including primary care and public hospital clinicians was established to develop an implementation strategy. The strategy also involved the use of project officers who were seconded from their regular positions and who consulted with clinicians and staff on site to facilitate the roll out. This fairly standard approach was used initially at a pilot site with lessons learned from this experience impacting upon the subsequent roll out.

In order to adequately assess local needs, a series of scoping exercises were undertaken. Clinical facilities were engaged to identify what systems were currently being used and a benefit and gap analysis was conducted. A business case was then developed that supported the application for HealthConnect funding. A further requirement specification was completed to include additional clinical notifications.

The engagement strategies and scoping exercises employed sought to involve key participants in the projects. This included both clinical and administrative staff (health information managers) that would be impacted by the project.

The scoping exercise determined that existing local discharge summary systems in the larger metropolitan hospitals incorporated a number of additional functions that are not a priority for the smaller and rural hospitals. As such a single solution may not adequately address requirements for both metropolitan and country settings.
Local needs
(continued)

In order to address the concerns of the community, the project aimed to create awareness that there is no ‘one size fits all’ solution and that the solution concept must comply with and allow for other functionality at a local level.

Inclusion of NeHTA standards

Relationships were formed between the HCWA team and NeHTA. NeHTA provided input to the original portal tender specifications and participated in the evaluation. In addition, NeHTA completed an evaluation of the major existing Electronic Discharge Summary systems to determine compliance with specifications and suitability for wider deployment.

Ongoing work is being undertaken to determine how DoHWA target architecture and capabilities align to national approaches.

Improved channels of communication have been opened with NeHTA and there is continual interaction between the architectural groups within each entity.

Integration issues and solutions

Currently the WA health system uses two separate, patient administration systems. Both are due for replacement and have different patient identifiers. The HCARE system is currently used in rural communities and is not integrated with the metropolitan system, TOPAS. The introduction of the portal and interoperability system will facilitate integration. A project is underway to extend the common patient identifier used in the metropolitan hospitals to the HCARE system that operates in non-metropolitan areas.

In terms of integration with GP software, there has been reliance on the message brokers and vendors to convert messages into formats that allow them to be received by practice software.

Early in the project period the vendors indicated a willingness to facilitate integration. As the project progressed, however, the lack of a business case for vendors resulted in timelines slippage. The establishment of specific national standards will reduce these problems.
Western Australia, Continued

**Project benefits**
The HCWA program worked through and resolved some of the key issues involved in the establishment and development of eHealth infrastructure within Western Australia. Throughout the course of the project, the benefits realised included:
- examination and analysis of privacy and confidentiality issues and how these relate to the execution of eHealth initiatives within WA, a state, which at the time of writing, lacked a privacy act and related legislation;
- engagement of key clinicians, including primary care providers, and consumers with commitment to continue this work into the future;
- development of a proof of concept;
- engagement of vendors and suppliers - there is a greater understanding of the vendor environment;
- development of increased skills, networks and awareness in the areas of eHealth; and
- the extension of electronic discharge summary and related functions into rural and regional areas.

**Lessons learned**
Key lessons learned from the HCWA project included but are not limited to the following:
- consideration of sustainability should occur early in the project and where, integration within existing structures is the response, this should be negotiated to ensure that investment will continue to reap rewards;
- the need for funding bodies and project teams to be flexible in the face of unforseen challenges especially when working in ‘uncharted waters’; and
- the value of completing a clear analysis of the dependencies should the program be integrated within an existing infrastructure. Multiple dependencies provide both benefits and challenges. The issues, concerns and timeframes should be assessed at the outset and those that need to be monitored identified early.

**Gaps identified**
The key gaps identified included:
- the lack of fully developed national standards and services such as the healthcare identifiers;
- lack of a certification and compliance regime for vendor adherence to the emerging standards and specifications;
- investment into areas of dependencies (preparation of GPs and vendors);
- there are a number of other clinical notifications that need to be addressed if an effective electronic discharge summary system is to be introduced; and
- the fact that momentum must be maintained – when stakeholders have engaged with a project, it is important to retain their support and involvement.

*Continued on next page*
Western Australia, Continued

Sustainability

As previously mentioned, the work of the HCWA program will be sustained by its integration into a broader eHealthWA initiative. This will ensure that the project established via HealthConnect funding will achieve its aims.
Conclusions

Summary of lessons learned

There have been a significant number of lessons from the HealthConnect program which will contribute to future work in the eHealth arena:

- the need for cross professional stakeholder engagement that transcends traditional boundaries of funding and practice in order to develop systems and work practices that meet the needs of all health care providers;
- the need to clearly define project scope, implement strong project management techniques and centrally administer programs and projects with clear accountability and reporting structures in the place;
- the understanding that projects which seek to traverse new waters in eHealth are likely to face unknown challenges and risks and project teams need to be able to adapt and respond accordingly;
- in order to effectively assess the impact of any new technology, a critical mass of users must be reached;
- the importance of communication and sharing of lessons between jurisdictions;
- the need to tailor communication and engagement strategies depending on previous exposure to eHealth and supporting infrastructure (for instance with rural versus metropolitan practitioners);
- the importance of ongoing and continual support to convey key messages, particularly to the wider community;
- the value of flexibility and inclusiveness in engaging key stakeholders in the governance roles as increased ownership encouraged involvement and participation;
- the benefits of integrating applications into existing software and workflow to reduce burden and increase uptake of a new technology;
- the need to factor sustainability, ongoing governance and ownership early in the project to avoid initial investment being lost;
- the value of considering sustainability throughout the project including through training, appropriate documentation and sharing of resources; and
- the challenges and benefits of the eHealth environment where projects, resources and plans need to be flexible enough to keep pace with evolving technologies and related processes.

Continued on next page
Conclusions, Continued

Outcomes

The HealthConnect program sought to achieve the following outcomes.

- enhanced clinical communication through standardised electronic clinical messages;
- enhanced quality and safety of health service delivery through a shared electronic health record;
- integrated models of care supported through a shared electronic health plan;
- life saving information about participating individual consumers being available in emergencies;
- enhanced primary care communications network; and
- consumers better able to manage their care.

Through the individual projects implemented, each of these outcomes has been achieved, and significant progress has been made towards making eHealth an accepted part of business in Australia.

As noted throughout the report, some individual state and territory projects were unable to deliver on the original objectives as identified within their funding agreements. For this reason the overall impact of the HealthConnect program will not be fully understood until these are able to be evaluated.

It is apparent however that the HealthConnect program has significantly contributed to the establishment of infrastructure that will enable the ongoing development of eHealth initiatives.

Relation to the National eHealth Strategy

The HealthConnect program will serve as a platform for future national developments in eHealth. The National eHealth Strategy, released in December 2008, identified four key work streams on which the strategy is based. These include; Foundations; E-Health solutions; Change and Adoption and Governance. Much of the work of the state and territory based projects have sought to make in-roads into these specific areas.

Foundations

As detailed throughout the report, a key element of the HealthConnect program was the establishment of the some of the infrastructure required to enable future work in this area. The program has clearly helped to lay the foundations required for eHealth.

E-Health solutions

The various state and territory based projects have enabled a number of lessons to be learned about specific technical solutions; their limitations and strengths. This includes lessons about how these solutions can be implemented in practice (for example the consideration of privacy and confidentiality in eHealth).

Continued on next page
Western Australia, Continued

Relation to the National eHealth Strategy (continued)

Change and adoption
As a change management strategy, the HealthConnect program has worked to increase national awareness of eHealth and has helped to change perceptions about new technology. The development of relationships within clinical communities, methods of communication and strategies to encourage change and adoption can be utilised to drive work forward in this area.

Governance
The strengths, limitations and impact of different eHealth governance structures have been explored by the HealthConnect program. These lessons can be utilised to further inform development and should serve to add value to future programs regarding potential challenges as new initiatives are developed.

Overall, HealthConnect has paved the way for future eHealth work to continue in an environment where awareness of eHealth is greater and the community is more receptive to eHealth solutions.