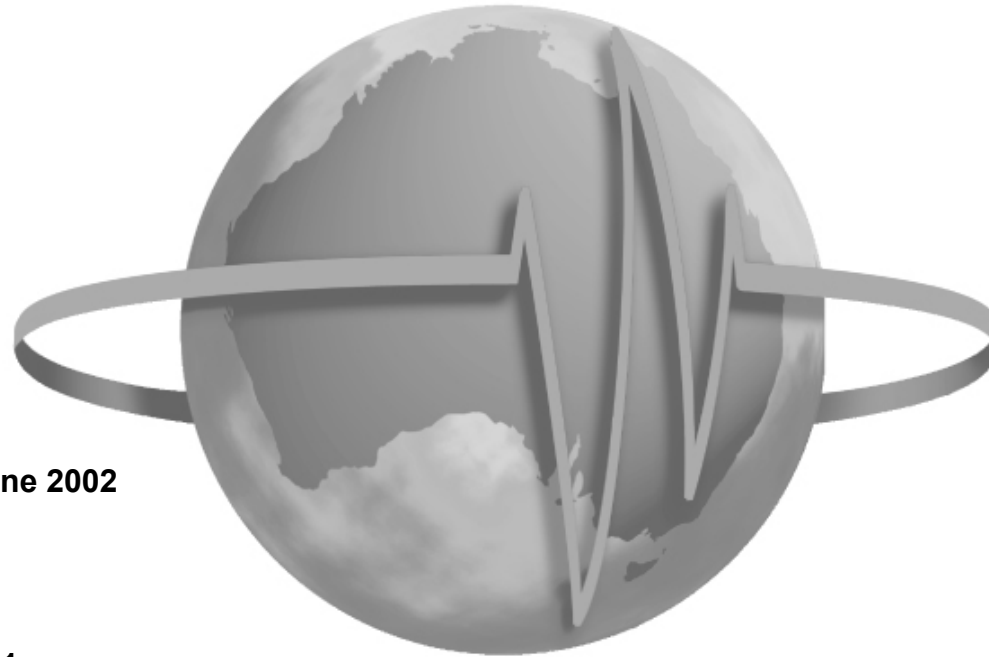


Draft

HealthConnect Business Architecture

March 2002

Please provide comments by the 14th of June 2002
by email to healthconnect@health.gov.au
or send to
The HealthConnect Program Office
Department of Health and Ageing
MDP 66, GPO Box 9848, Canberra ACT 2601



Disclaimer: The HealthConnect Business Architecture is under development. This document is work in progress.

The HealthConnect project is a Commonwealth, State and Territory initiative under direction of the HealthConnect Board.



HealthConnect

A health information network for all Australians

Foreword

Access to the right information at the right time is essential in providing good health care. Current paper-based record keeping systems, coupled with organisational and professional boundaries, can result in consumers and providers having to hunt around for critical information held in a variety of locations and in different formats.

New technologies such as electronic health record systems have the potential to address these fundamental problems by freeing up the exchange of critical information so that it is available where it is needed most – at the point of care. Ultimately, such improvements in information flow will lead to better quality of care and health outcomes for all Australians.

To this end, the Commonwealth, States and Territories are jointly undertaking a two-year research and development program to test the potential of a national health information network known as *HealthConnect*. At the end of this phase, Australian Governments will be better placed to decide whether to proceed with *HealthConnect* on a national basis.

The *HealthConnect* Business Architecture is a key component of this work. Essentially, the Business Architecture describes what *HealthConnect* needs to be able to do to deliver on its objectives. As such, this work needs to precede any testing of the concept on the ground.

Clearly, the success of *HealthConnect* in the longer term will depend on the extent to which it meets consumers' and providers' needs. Stakeholder input is therefore critical to the development of the Business Architecture.

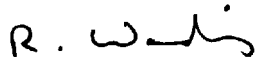
The Business Architecture version 0.7 is now being circulated for stakeholder comment as a first step in an iterative process in which we will see several versions of the Business Architecture over the course of the research and development program. Your views on the draft Business Architecture will be important in shaping this nationally significant project.

Please forward your comments by the 14th of June 2002 to the:

HealthConnect Program Office
MDP 66
Department of Health and Ageing
GPO Box 9848
CANBERRA ACT 2601

Or by email to healthconnect@health.gov.au

On behalf of the *HealthConnect* Board, I look forward to receiving your input.



Dr Robert Wooding
Chair, *HealthConnect* Board

11 April 2002

Structure of the document

The Draft HealthConnect Business Architecture documentation comprises the following parts, namely:

Part 1 – The HealthConnect Context, which sets the boundaries for HealthConnect including objectives, scope, principles, stakeholders, privacy/consent issues, relationship with other initiatives as well as issues/risks (this document).

Part 2 - The HealthConnect Processes, which describe the major system and business processes of HealthConnect together with a scenario based on a person with diabetes.

Part 3 – The HealthConnect Functional and Technical Requirements, which tabulates the ranked individual functional requirements. The technical requirements detail at a high level the system, operational, and standards characteristics.

Attachment A – HealthConnect Consent Principles and Possible Models, which discusses the subject of consent and possible consent options. This is an extract from a larger discussion paper on consent currently being developed. The attachment is intended to provide the reader with some sense of the ideas being considered – ie it is not a definitive statement on the consent policy for HealthConnect.

Table of Contents

Foreword.....	1
Introduction.....	5
PART 1 - The HealthConnect Context	
1 The HealthConnect Project Scope.....	8
2 The HealthConnect Business Architecture.....	12
3 HealthConnect – The Business Context.....	17
4 Controls for HealthConnect	27
5 Activities Related to HealthConnect	30
6 Business Issues and Risks	34
7 The Trials	37
PART 2 - The HealthConnect processes	
Introduction.....	42
HealthConnect Processes - Scenarios	45
HealthConnect Business Processes - A User Perspective.....	51
Overview of Business Processes.....	52
A. Registration at place of care – new client.....	54
B. Registration at place of treatment – existing client	57
C. Provider consultation with consumer present	61
D. Provider interactions with HealthConnect in the absence of the consumer or vice versa.....	67
E1 Researchers seeks anonymised unit records.....	71
E2 Analyst, researcher, planner etc seeks aggregated data.....	72
F Registration External from Place of Care.....	74
Business Process Issue: Consumer Registration.....	76
Business Process Issue: Consumer Identification.....	77
Business Process Issue: Authorisation Mechanism	78
Business Process Issue: Change Management.....	78
HealthConnect Processes - A System Perspective.....	79
Overview of System Processes	80
System Process Descriptions	85
1 Manage Participation.....	85
Manage participation issue: Consent models.....	87
2 Receive and Store Event Summary	89
Event Summary Issue: Event Summary Definitions.....	92
Event Summary Issue: Timing of Receipt of Event Summary.....	93
Event Summary Issue: Delivery of Event Summaries.....	93

Draft - For Comment

Event Summary Issue: Archiving of Event Summaries.....	94
Event Summary Issue: Collection of initial health history	95
Event Summary Issue: Control of Trigger Rules.....	96
3A Generate and Deliver EHR View (Primary Uses).....	98
View Issue: Support for care planning.....	101
View Issue: Creating and maintaining ‘Views’ of current information.....	102
View Issue: Downloading.....	102
View Issue: Decision Support.....	103
3B Generate and Deliver Report (Secondary Uses).....	105
4 Data Store Descriptions.....	107
HealthConnect Access Mechanisms.....	114
Access Issue: Engagement of Software Vendors.....	116
External Systems Descriptions.....	117

PART 3 - The HealthConnect Functional and Technical Requirements

Introduction.....	122
HealthConnect Functionality	124
1 Manage Participation.....	124
2 Receive and Store Event Summary.....	129
3A Generate and Deliver EHR View (Primary Uses).....	132
3B Generate and Deliver Report (Secondary Uses).....	135
Issue: National Focus.....	137
Technical Requirements.....	137
4 Technical Requirements.....	138
Issue: Value Proposition	142

Attachment A - HealthConnect Consent Principles and Possible Models

Introduction.....	144
Consent and access control – A policy framework for HealthConnect	144
1 Consent policy framework	144
2 Access control policy framework.....	145
3 Where are consent and access control mechanisms needed in the HealthConnect process?	148
4 Proposed models for a consent and access control framework.....	150

Introduction

In July 2000 the National Electronic Health Records Taskforce proposed the concept of a national health information network (*HealthConnect*) that would allow information held in electronic records to be collected, safely stored and exchanged – but only with the individual health consumer’s permission. The *HealthConnect* Project is a joint Commonwealth, State, and Territory initiative. The Federal 2001-02 Budget provides funding over two years (matched by State and Territory funding) to undertake research and development work on *HealthConnect*.

One of the key pieces of work is to accurately define a Business Architecture for *HealthConnect*. The Business Architecture answers the question, “What does the *HealthConnect* system need to be able to do?” This is necessary to ensure that the project delivers the services that the users require. While the existing program is a two-year research and development activity, the Business Architecture is intended to inform the long term vision of *HealthConnect*.

The “*Draft HealthConnect Business Architecture*” is being circulated for broader comment. A separate companion document “*Draft HealthConnect Business Architecture Overview*” has also been developed as a more accessible document for those less experienced in technical documentation. The Overview also provides information on the wider *HealthConnect* program of work and the governance arrangements implemented to oversee the project. Copies of either document are available electronically on the web site at www.healthconnect.gov.au or in hard copy on request to the *HealthConnect* Program Office.

The Business Architecture is a living document and it will undergo a number of iterations during the research and development work. It will initially inform the development of the *HealthConnect* trial sites and will in turn be informed by the results of those trials. The final version would become the design basis should a decision be made by Australian governments to proceed with implementation of *HealthConnect* on a national basis. In addition, it will be used as part of a mapping exercise with the Better Medication Management System to ensure compatibility and interoperability between the two projects. Adjustments to the Business Architecture that arise from this exercise will be reflected in subsequent versions.

The Architecture has been developed with involvement from all members of the *HealthConnect* Program Office which includes Commonwealth, State and Territory representatives, members of the Architecture Working Group which includes providers, consumers, industry and technical experts and has been further informed by consultations with groups of consumers and providers.

There are a number of key policy issues, such as privacy, consent and access control which are undergoing further work. The architecture has been constructed with the flexibility to allow for incorporation of the decisions on these issues. Throughout the document issues are flagged which will require further work. These are highlighted by the use of thick-bordered text boxes. Your comments on these issues will be especially helpful.

Your comment on these documents will help ensure that the project is well grounded in the reality of health care delivery to meet the needs of consumers and providers. If you have any questions please contact the *HealthConnect* Program Office by sending an email to healthconnect@health.gov.au, ringing (02) 6271 4340 or by writing to MDP66 GPO Box 9848 Canberra, ACT 2600.

Health*Connect* Business Architecture

Part 1 – The Health*Connect* Context

Version 0.7

March 2002

1 The HealthConnect Project Scope

1.1 Background

The National Electronic Health Records Taskforce proposed the concept of a national health information network (HealthConnect) that would allow information held in electronic records to be collected, safely stored and exchanged – but only with the individual health consumer’s permission. The following is an extract from the Taskforce Report:

Australia now has a unique opportunity to invest in the health of its people by building a national health information network to support a system of electronic health records for those who want to share potentially vital information with their various health care providers. Such an investment holds the promise of better health, and higher-quality care while improving personal privacy because the information that providers need to know will be accessible when and where it is needed (in contrast to the existing situation with paper-based records). The aim is to ensure that information is used to help consumers receive the best possible care.

Objectives

Improved delivery of health care and better quality of care, consumer safety and health outcomes for all Australians while enhancing the privacy and respecting the dignity of health consumers by:

- *Empowering consumers to be able to take a greater responsibility for their own health care and be better informed about the choices available to them in respect of their health care;*
- *Ensuring better decision-making which is shared by both consumers and health providers at the point of care;*
- *Providing a flexible, seamless and integrated process of care through the improved delivery of health care and better quality of care, consumer safety and sharing and better exchange of information;*
- *Providing better access to health care, particularly in rural and remote areas;*
- *Building a best-practice, evidence based health system;*
- *Encouraging better, more targeted health initiatives; and*
- *Informing research, learning and training;*

Through developing a nationally coordinated and distributed system of electronic health records, which is based on the greater use of online technologies

Extract from “A Health Information Network for Australia”

1.2 The HealthConnect Project Proposal

The HealthConnect Project is a joint Commonwealth, State, and Territory initiative. The Federal 2001-02 Budget provides funding over the next two years (matched by State and Territory funding) to undertake research and development work on HealthConnect. This is managed by the HealthConnect Program Office, which has been established physically within the Commonwealth Department of Health and Ageing in Canberra. Each State and Territory has a designated officer working with the Program Office.

A formal project methodology, the Logical Framework methodology, was employed to define the HealthConnect project. This methodology clarifies project expectations and accountabilities by articulating a series of causes and effects, together with the assumptions that accompany them. The project is then defined in the form of a matrix, detailing a hierarchy of objectives. This is summarised in the table overleaf, extracted from the HealthConnect Project Proposal, which was endorsed by the HealthConnect Board on 10 September 2001 (available at www.healthconnect.gov.au).

1.3 Guiding Principles of the HealthConnect Project

The following guiding principles were also defined in the HealthConnect Project Proposal. These set the scene for progressing the HealthConnect vision:

“That consumers and providers are central to the development of HealthConnect and will be actively engaged in shaping the work over the next two years.

That Australian jurisdictions are partners in the developmental work of HealthConnect.

That privacy, confidentiality and security of personal information will be paramount in the development and implementation of HealthConnect.

That the need to ensure a national focus will be central to the development of HealthConnect* over the next two years.

That evaluation and research is integral to the work of HealthConnect over the next two years, to ensure its potential value is both tested and realised.

That industry input will be sought in the development of HealthConnect.”

Extract from HealthConnect Project Proposal

*This refers to the two year research project.

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HealthConnect Hierarchy of Objectives (extract from HealthConnect Project Proposal)

<p>Goal(s) (ie the higher order objective(s) to which the project contributes)</p>	<ul style="list-style-type: none"> ▪ Improved health outcomes ▪ Improved healthcare delivery ▪ Improved participant (consumer and sectoral stakeholders) satisfaction with the health system 	
<p>Purpose(s) (ie the direct effect(s) or impact(s) of the project)</p>	<ul style="list-style-type: none"> ▪ Improved knowledge creation and employment of same ▪ More informed consumers ▪ Less time and resource wastage, including reduction in duplication of information/tests etc ▪ More appropriate health care delivery and decision making ▪ Better informed, planned and coordinated care ▪ More empowered providers, consumers and planners ▪ More effective targeting of resources (people, services, dollars etc) 	
<p>Outputs (the deliverables of the project)</p>	<ul style="list-style-type: none"> ▪ A national system of electronic health records available to authorised consumers and providers. ▪ Availability of the best health information (clinical, evidence and service) to the right people, at the right time and place, and in appropriate forms – targeting the needs of a range of HealthConnect users ie consumers, health care providers, managers ▪ Confidence in a national health information network in Australia (privacy, information storage and retrieval, governance etc) ▪ Improved quality (scope and nature) of health data holdings ▪ Integrated decision support capacity* ▪ A sustainable business model (eg incentives framework) ▪ Better equipped health workforce – ie information use, decision making etc 	
<p>Activities (the main tasks that must be undertaken)</p>	<ul style="list-style-type: none"> ▪ Establish Program office (management processes etc) ▪ Deploy HealthConnect system infrastructure** ▪ Develop privacy, security & access framework & arrangements ▪ Develop appropriate consent models ▪ Develop and implement communication strategy ▪ Identify & link with other organisations/programs/professional groups etc ▪ Develop HealthConnect governance arrangements (short & long term) ▪ Determine the need and viability of incentives to support HealthConnect ▪ Develop & employ data, classification, messaging & storage standards 	<ul style="list-style-type: none"> ▪ Develop HealthConnect architecture ▪ Develop event summary framework & data sets/dictionary ▪ Identify, develop & deploy HealthConnect applications*** ▪ Identify, facilitate development & deploy decision support ▪ Develop & deploy consumer/provider identification strategies ▪ Develop and implement education & training strategy ▪ Develop and implement an evaluation strategy ▪ Test HealthConnect components

* The degree of integration of decision support for the trial sites is not yet determined

** In the next two years this refers to trial site system infrastructure

*** In the next two years this includes the development of a number of common services to be utilised by the trial sites

1.4 HealthConnect Project Work Streams

The HealthConnect Project has been established as an initial two-year research and development project and does not incorporate longer-term development and implementation of the comprehensive HealthConnect vision. Four main streams of activities are being conducted over the two-year period, namely:

- Research and evaluation – incorporating the establishment of a research framework to test the HealthConnect concept and specific development activities for potential national rollout;
- Management issues – incorporating governance, stakeholder engagement, change and risk management;
- Building blocks – incorporating privacy, access and consent arrangements, national architecture, event summaries, standards; and
- Design and implementation – incorporating HealthConnect architecture development and implementation of trial sites.

The development of the Business Architecture is one of the activities in the Design and Implementation Stream. Issues being addressed by the other streams are referred to in the Business Architecture although not covered in detail.

2 The HealthConnect Business Architecture

2.1 Aims of the Business Architecture

There are widely differing views about the short and long term scope of HealthConnect – what types of events, providers, geographical areas etc should be included; who and how consumers and providers would become participants; what existing processes could be improved and what new processes could be supported, how it would work in the operational environment; and what technologies would be required etc. There will be tensions such as that between the desire to support innovation at the local level and achieve sufficient structure so as to avoid incompatibility at the national level and that between information dissemination and personal privacy. In addition there is the potential for significantly underestimating the complexity of implementing even a narrowly scoped HealthConnect type system.

Primary aims of the Business Architecture are to provide:

- a statement of the HealthConnect business requirements;
- a basis and starting point for the development of the systems architecture; and
- a framework to assist the trial sites in understanding the specific requirements of HealthConnect.

In addition, the Business Architecture documentation is also intended to:

- inform stakeholder debate on the scope and processes of HealthConnect; and
- enable the relationship with other initiatives such as BMMS and GEHR to be analysed more effectively.

While it is envisaged that the HealthConnect ‘system’ will comprise a range of systems with standardisation, compatibility and integration being key, it is currently far from clear what form these systems might take and how the functionality and scope delineation might exist. The Business Architecture defines the HealthConnect functionality from a system and business process perspective without preempting the solution(s). Indeed systems of electronic health records have proved very difficult to design and implement successfully as stated in the National Electronic Health Records Taskforce Report:

“There are also lessons to be learned from implementing complex systems:

- implementation needs to be incremental;
- it needs to be flexible enough to adjust to the emergence of new technology;
- electronic health record systems significantly alter work practices and potentially, consumer habits;
- it is preferable to start with a sound system that has been evaluated in its development;
- it can take many years to implement an effective system;
- involvement of users, including health consumers, is essential in design and testing;
- the implementation team must have a leader who is clinically orientated, understands the problems, is available to users; and
- projects must have an ongoing evaluation component to justify costs.”

From “A Health Information Network for Australia”

A staged approach has been proposed with the States and Territories implementing a series of trial projects aimed at proving the concept in niche areas while retaining and testing the potential for wider expansion for national use. These trials are to be aimed at facilitating and stimulating collaboration of existing local/state projects/programs/stakeholders towards achieving the national goals of *HealthConnect* while answering many of the questions identified in the research and evaluation strategy.

2.2 Scope of the Business Architecture

A business (or business process) architecture defines business strategy, organisation and key business processes. Traditionally, this exercise has also been known as a functional requirement specification in the systems development methodology. It is considered that the term Business Architecture more accurately reflects the need to describe the functional blueprint that needs to be defined to enable the information technology solution(s) to be designed, constructed, implemented, and supported.

The Business Architecture answers the question, “What does the facility/system need to be able to do?” In *HealthConnect* terms the Business Architecture will define key requirements such as:

- the kind of information to be held on *HealthConnect*;
- the types of services potentially provided under *HealthConnect*;
- the need for a seamless collection of information from providers so they are not required to perform additional work;
- the need to provide consumer access; and
- the need to provide high speed delivery of information from *HealthConnect*.

In identifying the functions that the ‘system’ ought to support, the Business Architecture does not set out the rules and conditions under which those functions could be used. The *HealthConnect* governance structures, when established, will determine these in due course. The Business Architecture does, however, build in the ability to implement such rules and support the monitoring of the conditions of use. The Business Architecture recognises that the economic value of each of the individual requirements needs to be assessed. This is discussed in Part 3 and will be addressed in detail as part of the systems architecture.

An important objective of the Business Architecture development was to document, communicate and gain input to the scope of functionality comprising *HealthConnect*. At the time of the development of the Business Architecture, a methodology and documentation tools for the *HealthConnect* System Architecture had not been selected. Consequently a basic modelling technique which described the flow of data was used as a comparatively simple communication mechanism. It is recognised that once a methodology/tool has been selected for the System Architecture project there will be a preliminary activity required to convert the content of the Business Architecture into the appropriate format.

Before continuing with the development of the Business Architecture it is appropriate to talk briefly about the Systems Architecture which will build directly from the Business Architecture.

2.3 Scope of Systems Architecture

The Systems Architecture answers the question “How can the system components (previously defined in the Business Architecture) be most effectively implemented from an information and technology perspective?” The Systems Architecture will document:

1. The information component, which describes the structure of *HealthConnect*’s logical and physical data assets (eg event summary formats)
2. The applications component, which provides a plan for the individual application systems to be deployed, their interactions and their relationships to the core business processes of *HealthConnect*.
3. The technology component, which focuses on the computer software and hardware infrastructure intended to support the deployment of the core applications.

In *HealthConnect* terms, the Systems Architecture will document key requirements such as:

- the need for secure messaging;
- bandwidth for information exchange;
- a system interfacing standard;
- data repositories;
- availability, performance and reliability;
- disaster recovery and capacity planning;
- directory services;
- access control and consent;
- the need for non-repudiation, digital signatures, notaries, auditing, attribution, notification and other medico-legal requirements;
- distributed search, creation, update and management of Electronic Health Records;
- useability;

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- unique identification; client, provider and facility;
- data models;
- the role of record architectures;
- data quality requirements;
- software quality requirements; and
- configuration management issues.

2.4 Development of the Business Architecture

The development of the Business Architecture will involve wide consultation and review of the documents as it is developed. An Architecture Working Group was established to provide the HealthConnect Program Office with advice on design matters relating to the development of the HealthConnect Business and Systems Architectures and implementation of the HealthConnect trial sites. This group comprises the following representatives:

Name	Organisation	Name	Organisation
Greg Lee (Chair)	HealthConnect Program Office	Paul Basso	Dept of Human Services (SA)
Dr Tony Sara	Health Informatics Society of Australia and NSW Health	Joanne Collison	Health Insurance Commission
Heather Grain	Lecturer in Health Informatics – Latrobe University	David Rowlands	Queensland Health
Keith Kranz	Dept of Human Services (VIC)	Glen Gooma	Medical Software Industry Association
Dr Branko Cesnik	Monash University representing AMA	Dr Chris Harrison	Top End Division General Practice NT
Ken Patterson	ACT Health and Community Care	Kate Moore	Consumer
Dr Ian Cheong	Royal Australian College of General Practitioners	Kaely Woods Shayne McCusker	Better Medication Management System

2.5 *The Business Architecture Document*

The HealthConnect ‘system’ is complex and many of the specific requirements continue to emerge and have not yet been agreed. The Business Architecture is of necessity a living document which will be enhanced over time. The trials in particular will provide valuable feedback on the requirements. Although technical requirements will be addressed in detail as part of the Systems Architecture, technical requirements that have a business impact, eg system availability, response times, are included in the Business Architecture.

In summary, the HealthConnect Business Architecture documentation comprises the following parts, namely:

Part 1 – The HealthConnect Context, which sets the boundaries for HealthConnect including objectives, scope, principles, stakeholders, privacy/consent issues, relationship with other initiatives as well as issues/risks (this document).

Part 2 - The HealthConnect Processes, which describe the major system and business processes of HealthConnect together with a scenario based on a person with diabetes.

Part 3 – The HealthConnect Functional and Technical Requirements, which tabulates the ranked individual functional requirements. The technical requirements detail at a high level the system, operational, and standards characteristics.

Attachment A – HealthConnect Consent Principles and Possible Models, which discusses the subject of consent and possible consent options. This is an extract from a larger discussion paper on consent currently being developed. The attachment is intended to provide the reader with some sense of the ideas being considered – ie it is not a definitive statement on the consent policy for HealthConnect.

2.6 *The Business Architecture Timeframe*

While the existing program is a two-year research and development activity, the Business Architecture addresses the long term requirements and vision for HealthConnect. It is recognised that the implementation of some of these requirements will not be achievable in the short to medium term. The order of implementation of individual requirements will depend on characteristics such as value, desirability, achievability and sequencing.

To give an indication of what might be achieved in the short to medium term, the individual requirements detailed in Part 3 have been assigned a ‘timing’ classification, namely:

- **Short** term: 2 years – test through trials – these functional requirements must be included in the trials;
- **Medium** term: 2-5 years – operational – functional requirements to be implemented as the project moves to a national approach/roll-out; and
- **Long** term: 5-10 years – functional requirements to support the vision of HealthConnect.

3 HealthConnect – The Business Context

3.1 The Primary Business Problem

The primary business problem that HealthConnect aims to address can be described as:

*Providers and consumers want access to
timely, selected/simple/summary/relevant information
relating to the health status, treatment and events of individuals
at the time of care
to assist decision making
so as to improve the care provided to an individual or to themselves
ensuring provision of appropriate clinical servicing
improving the quality of life of the individual
whilst also ensuring effective use of the health budget.*

3.2 The HealthConnect Model

The identification and analysis of the individual processes contained in the HealthConnect ‘system’ has been based on the underlying EHR model for HealthConnect:

“The EHR model is one that essentially provides for the
systematic collection (at point of care), transfer, storage and retrieval
of clinical and demographic information in the form of event summaries
to be presented, with appropriate authorisation, via meaningful views and reports”

3.3 EHR Views and Reports

One of the major challenges of *HealthConnect* will be to present the information collected in a useful and meaningful way to the specific requestor of the information. Core to the development will be the definition of a range of ‘views’. These views will differ according to the provider type – specialists will be interested in different types of data than community health workers. Providers will also be interested in different views of a person’s EHR depending on the issue being addressed.

A chronological list of events will be of some but limited use. This simple approach will quickly overwhelm the viewer as he or she hunts through the event summaries (Refer 3.4 – Event Summaries) to find the information needed. *HealthConnect* will need to be able to ‘extract’ relevant data from event summaries and present meaningful packages of information. Deciding what information ought to be presented in any particular EHR View will need to be strongly based on the needs identified by consumers and providers through consultation and also influenced by the latest evidence based practice. This will also need to be tempered by the need to maintain the integrity of the information by ensuring that important components of an EHR are always included so that information cannot be misinterpreted by being seen out of context.

An important division in the classification of these ‘views’ is the distinction between ‘EHR Views’ which are designed to serve the needs of the primary participants ie consumers and providers and ‘Reports’ which are designed to serve the needs of secondary participants such as managers and researchers (Refer section 3.5 –Participants). There will be important differences in the form and content of these two categories of ‘view’ and in the circumstances in which their use is allowed. EHR Views will generally contain identified information on individual consumers while ‘Reports’ will usually take the form of aggregated data.

3.4 Event summaries

Event summaries are central to the *HealthConnect* model. The development of both a framework for specification of event summaries generally and key event summaries themselves are fundamental areas of work. The framework will include high level classification of the types of event summaries (eg for health service discharge, prescription, diagnostic test result) and will build on existing work where available (eg standards for discharge referrals, experience gained with the Better Medication Management System). As a starting point in the development process a generic event summary structure is presented in the table below. Defining the ‘event’ of interest will need to accommodate the variety of ways in which health care is provided. Primary care services, for example, frequently have multiple providers involved in the single event. For example, a service at an Aboriginal Medical Service centre might involve an Aboriginal Health Worker, General Practitioner, and/or Nurse in a single visit to the service. Defining the rules for whom is responsible for the submission of an event summary and under what circumstances they are submitted will be an important part of the framework.

Detailed specification of event summaries will be undertaken within this framework, and introduced to the *HealthConnect* trials where this is feasible. Deciding what information ought to be collected in a particular type of event summary will be determined through consultation processes and would be informed by the results of projects already completed. Such decisions will need to be strongly based on the needs

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identified by consumers and providers and also influenced by the latest evidence based practice. There has already been considerable work done around Australia in defining specific event summaries, such as discharge referrals, although considerable duplication of effort has occurred. Event summaries are expected to be kept simple in the first instance and developed over time, driven in a coordinated way by the HealthConnect Program Office.

Information type	Generic Event	Examples of data that might be collected				
		GP consultation	Hospital inpatient visit	Pharmacy visit	Nursing	Care planning event
Event descriptors (mandatory)	Date, Time, Place, Participants, Event Type	Yes	Yes	Yes	Yes	Yes
Key data gathered	Observations, investigations, tests, signs and symptoms, history, allergies, risk factors	Reason for encounter, symptoms, significant examination findings	Pathology results, preliminary diagnosis	Reported allergy	Presenting condition, vital signs, physical assessment	Possibly reason for conference
Results of Analysis	Condition/Issue/Diagnosis identification	Diagnosis or assessment	Diagnosis	Script cancelled due to drug interaction, confirmed by prescriber	Issue	Underpinning evidence-based guideline (where appropriate)
Health services provided	Treatments commenced, activities undertaken	Counselling, pap smear, flu injection	Surgery, medications	Medication dispensed, advice given	Wound care, medication administration, catheterisation	Agreement of a care plan
Future Services suggested/ordered/requested	Referrals, orders, prescriptions, requests for assessment	Prescription, pathology tests, referrals	Referrals, outpatient appointments	Referral	Care program	Schedule of services
Expected outcomes of treatments	Clinical and personal goals, contingency planning	Yes			Yes	Yes
Administrative	Consent and security settings Provider/consumer sign off	Yes	Yes	Yes	Yes	Yes

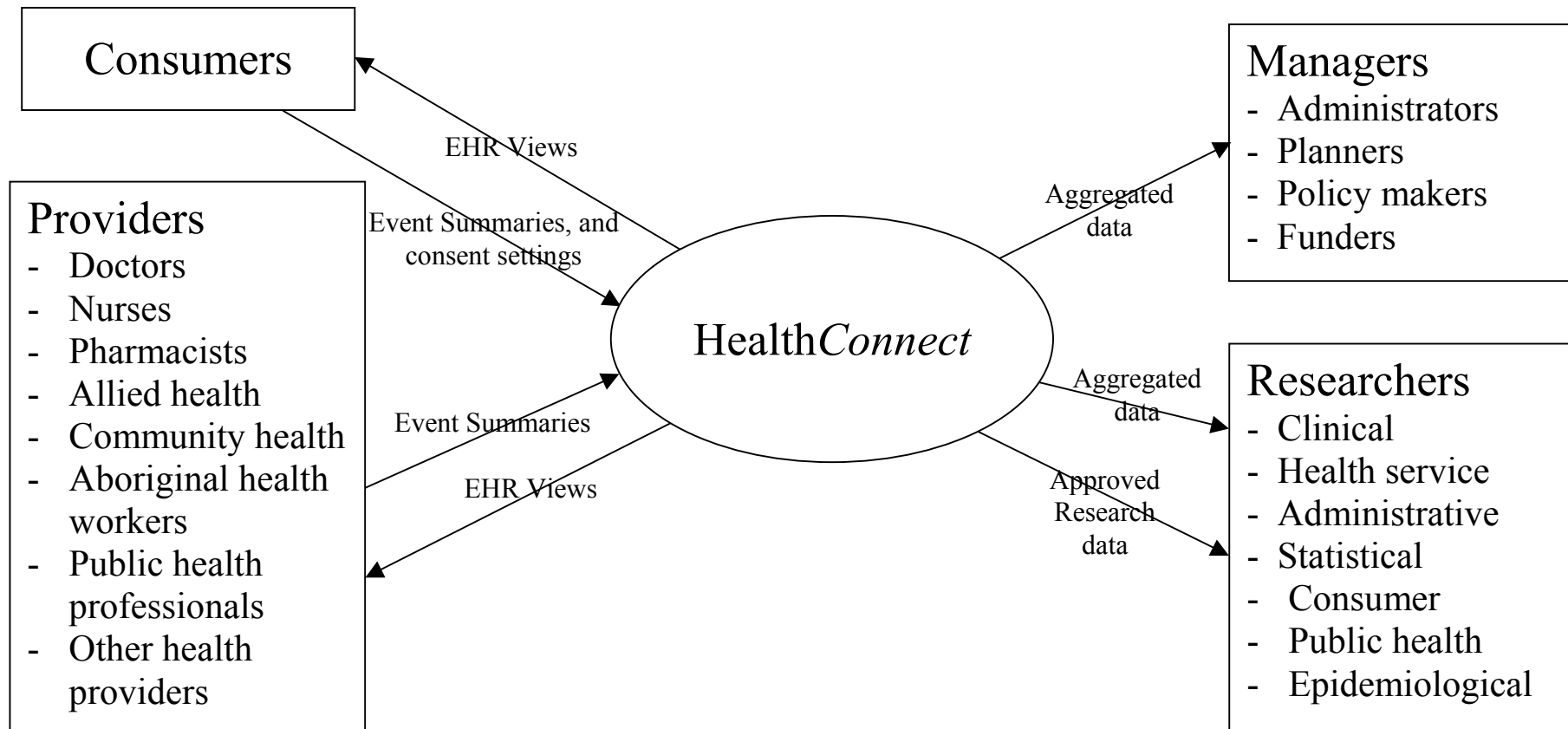
3.5 The HealthConnect Participants

There are four broad groups of participants in HealthConnect: consumers, providers, managers and researchers. These can be further subdivided into primary users (consumers and providers) and secondary users (managers and researchers). There is a fifth group who are key to the success of HealthConnect but will not generally be users of the system, eg consumer representative groups, provider representative groups, and the IT industry. These have been grouped under a category of other stakeholders.

Context Diagram 'Participants'

Primary participants

Secondary participants



Consumers

The key participant in the operation of *HealthConnect* is the consumer of health services. The health record created within *HealthConnect* is organised around the person. All Australians will at some time be consumers of health services and thus potentially participants in *HealthConnect* if they so choose.

Carers, such as parents, or a guardian, looking after a sick child, or an adult caring for an ageing parent, will have a role in *HealthConnect*. At times they will act on behalf of a consumer in regard to consent and access control. They may also be involved in reporting self-care activities to *HealthConnect* that the consumer would have otherwise done himself or herself. Conceptually, the carer in this role is functioning as an extension of the consumer by performing tasks that that person cannot do by himself or herself.

Providers

All providers of health care are potentially participants in *HealthConnect*. In the first instance the range of health care providers will be limited by the capability of the *HealthConnect* 'system' to receive and deliver information about certain types of health events. The more likely events are listed below, although there is the potential for there to be many more:

- doctor consultations;
- hospital stays – admissions and discharges;
- pathology tests – requests and reports;
- radiological examinations;
- pharmacy visits - dispensing; and
- community health activities, eg Home and Community Care (HACC) visits.

The provider types involved in these health events would include:

- general practitioners;
- specialists;
- pharmacists – community and hospital;
- hospital based clinicians – surgeons, physicians, emergency department staff;
- nurses/nursing services;
- allied health professionals–physiotherapists, social workers, occupational therapists, dieticians etc; and
- community health workers.

Over time the range of providers who could potentially participate in *HealthConnect* will increase as the system evolves and the various provider groups demonstrate their ability and willingness to engage with the system. Thus dentists, optometrists and complementary medicine providers would possibly become participants in the *HealthConnect* 'system'. Given the increasingly blurred boundary between health and community care there may be some community agencies that could usefully participate. Public health professionals might also participate in *HealthConnect*. Their activities will straddle the roles of both provider and researcher. Carers could also be involved in their role as provider of health services.

Managers

Managers consist of those people who organise the provision of healthcare services. This group includes:

- institutional administrators (eg hospital administrators, practice managers);
- planners (eg local area health boards and regional health services);
- policy-makers (eg bureaucrats, ministers and politicians); and
- funders (eg government and private health insurance).

Their participation in *HealthConnect* would be determined by the functions that they would be entitled to utilise. Setting clear boundaries around what they can and cannot do will be essential for the acceptability of *HealthConnect*, but will also influence the utility of *HealthConnect*.

Researchers

Many forms of research, including clinical, healthcare service and administrative research, could be possible under *HealthConnect* subject to consent. The management of research functions under *HealthConnect* will depend ultimately on participants' views of what should and should not be permitted, subject to the appropriate controls, authorisation limitations and satisfaction of the monitoring processes.

Other Stakeholders

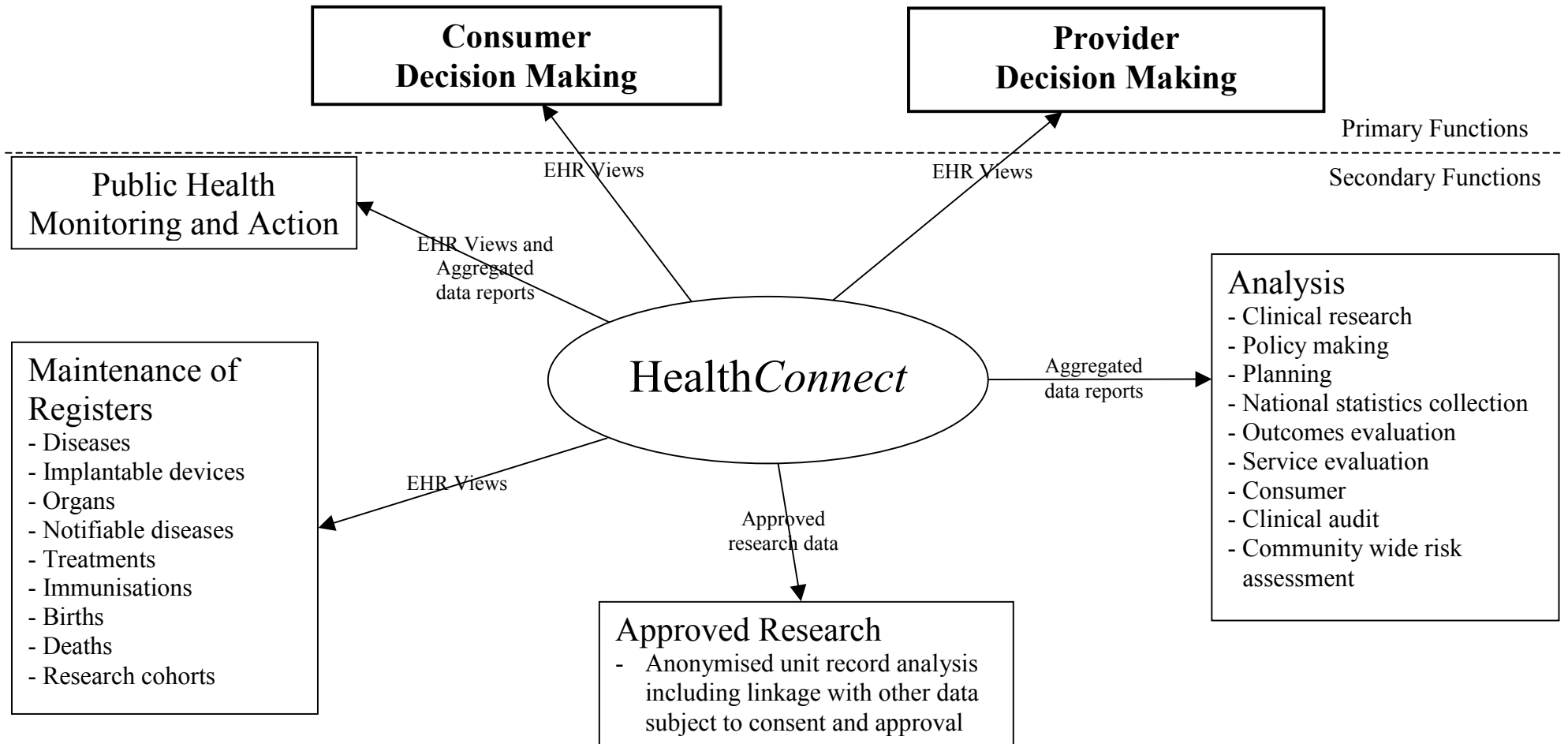
There will be an array of groups who will be closely interested in *HealthConnect* but not be active direct users of the 'system' that is they will not have access to information held in *HealthConnect* but will be interested in its operation. These will include:

- Consumer groups (eg Consumers' Health Forum, National Aboriginal Community Controlled Health Organisations, Health Consumers of Rural and Remote Australia);
- Provider representative groups (eg Australian Medical Association, Royal College of Nursing, Pharmacy Guild, Divisions of General Practice, Australian Divisions of General Practice, Royal Australian College of General Practitioners, Rural Doctors' Association of Australia, Australian College of Rural and Remote Medicine);
- IT industry, who will provide the equipment, services and people to operate the systems (eg software, hardware, telecommunications companies and groups such as the Medical Software Industry Association and Australian Information Industry Association);
- Health information providers, publishers and health libraries;
- Health Insurance Commission – further consultation and analysis is required to work out what information could be provided by the HIC; and
- The National Health Information Management Group - responsible for endorsing changes to the National Health Data Dictionary, the authoritative source of nationally agreed data definitions and classifications in the health sector. Event summaries once defined should be published in the Dictionary as recognised national standards.

3.6 The Functions of HealthConnect

Once widely implemented and particularly if high levels of participation are achieved HealthConnect will represent an exceptionally rich source of information and potentially have, with permission, a wide range of uses. The key possible uses, which are subject to consent being granted, are presented diagrammatically below with the type of data supplied by HealthConnect indicated adjacent to the arrow. Brief descriptions of the uses are provided. The rules under which these uses could be performed will be established through the access control policy of HealthConnect.

Context Diagram 'Functions'



As a general principle *HealthConnect* is not intended to replicate existing functions where they are well established. In many instances it will support such functions by providing relevant information subject to appropriate access control and consent processes.

Consumer Decision Making

The empowerment of consumers in the management of their own health care is a key focus of *HealthConnect*, though it is recognised that this will be limited in the short term. Consumers will be in a position to view their own health records and, in time, this activity could be enhanced through linkage with knowledgebases to help consumers understand what they are looking at. Consumers would also be able to lodge event summaries of health treatments conducted at home and monitor trends, possibly as part of health and wellbeing programs. These activities may be achieved at home or ‘over-the-counter’. The potentially large number of consumers wishing to access *HealthConnect* from home will have technical implications in terms of volume and access management and control and will need to be addressed in the Systems Architecture project.

Provider Decision Making

A primary focus of *HealthConnect* is to provide access to information to assist care providers in the provision of quality health care to individual consumers. This will be achieved through access to information such as:

- consumer clinical history;
- allergies;
- test results; and
- drug warnings/alerts and prompts/reminders.

HealthConnect will primarily provide access to clinical history. Simple decision support functionality will be incorporated in *HealthConnect*, as will be the ability to integrate data into more functionally rich decision support and point of care clinical tools. This functionality will contribute to the ability of the provider and consumer to make the best decisions.

HealthConnect will contain event summaries of diagnostic tests (pathology, radiology, etc). It would therefore be possible to use the ‘system’ to facilitate the delivery of test results to the requestor. The completeness of the tests and the management of review of the results by the requestor would need to be addressed.

Analysis

Controlled provision of data, generally aggregated, could be provided, where consumer permission existed, for authorised analysis to assist activities such as:

- policy making;
- planning;
- national statistics collection;
- outcomes evaluation;
- service evaluation;
- consumer;
- professional peer review; and
- community-wide risk assessment.

Total quality management analyses might include continuous improvement studies, utilisation review, protocols and guideline development, performance monitoring (peer review, clinical audit, outcomes analysis), benchmarking, and accreditation.

Policy development/health service management might include health statistics analysis, trend analysis, casemix analysis, resource allocation, reports and publications, and risk management.

Maintenance of Registers

In the short to medium term it is envisaged that *HealthConnect* would access information from existing registers rather than be a provider of information to the registers. For example, in the early years *HealthConnect* may seek information from the Australian Childhood Immunisation register on the immunisation status of children registered with *HealthConnect*. The conditions under which such access would be possible would need to be agreed with each register. In the longer term when *HealthConnect* is established and widely used it would be an ideal mechanism for facilitating the provision of relevant information to these registers.

This would be particularly important for registers which require timely reporting, such as notification of infectious diseases. It would also improve collection of data for voluntary registers where providers may be unaware of their existence. Types of registers might include disease specific (eg cancer), implantable and other devices, organs, treatments, immunisations, births, deaths, and research cohorts.

Public Health Monitoring and Action

Supporting the needs of public health professionals will involve a number of functions including notifications, the provision of aggregated data for monitoring purposes and the capacity to allow for detection and tracking of disease outbreaks.

Approved Research

It is anticipated that research uses for the HealthConnect data could be quite varied. Given that research requests receive appropriate ethics approval and individuals have provided authority for such uses, data may be provided (possibly through an access authority) for epidemiological research, environmental research, and clinical research. Proposed and potential use of the data would be closely controlled through the provision of anonymised data for unit record analysis, where consent exists, and restrictions on linkage with other data.

Supporting research would enable development and evaluation of new diagnostic modalities, disease prevention measures and treatments, epidemiological studies and population health analysis.

Other Functions

These might include areas such as education.

4 Controls for HealthConnect

4.1 Privacy

In acknowledgment of stakeholders' views that e-health initiatives, such as HealthConnect, require a robust, health-specific privacy framework, Health Ministers have established a Health Information Privacy Working Group under the Australian Health Ministers' Advisory Council (AHMAC) to develop a nationally integrated privacy framework for health information. The Privacy Working Group — comprising Commonwealth, State and Territory representatives — is developing the draft National Health Privacy Code with the aim of delivering consistent privacy arrangements across the public and private sectors. The Code is intended to form one layer of privacy within which key initiatives such as HealthConnect can operate.

The overall privacy framework may consist of three layers. They are:

1. The *Privacy Amendment (Private Sector) Act 2000* and together with guidelines developed by the Federal Privacy Commissioner;
2. The National Health Privacy Code, which is expected to take the principles contained in the *Privacy Amendment (Private Sector) Act 2000* to a greater level of detail. The code will apply specifically to health information and both public and private sector organisations will be able to use it; and
3. Additional legislation for specific e-health initiatives, such as the operation of HealthConnect (including matters such as consumer consent, responsibilities and obligations of providers, specified uses of data and governance of the proposed network) or possible legislation required for the Better Medication Management System.

The draft National Health Privacy Code is expected to be distributed for public consultation in mid 2002. The mechanism by which the code will be implemented on a national basis has not yet been determined. One option is for it to be approved under the *Privacy Amendment (Private Sector) Act 2000* for use by private sector organisations, with States and Territories enacting the code for their public sectors. The compatibility of the State/Territory privacy legislation and Commonwealth legislation will need to be confirmed and monitored as part of the implementation.

4.2 Consent

Both consumer and provider participation in HealthConnect is intended to be on an opt-in basis. At the end of the two-year research and development phase, anticipated key deliverables in the area of consent include:

- development of the policy framework in which consent will operate within HealthConnect;

- a fully operational model for recording electronically consent provided by a consumer that supports the operation of *HealthConnect*, ensuring that when personal health information is exchanged or shared it is done so in a manner which realises consumers' rights to privacy and confidentiality of their personal health information. This model will need to be user-friendly for both consumers and providers (especially in terms of time and ease of operation) and incorporate mechanisms to identify and authenticate the person giving the consent as well as verifying that consent has been given; and
- development of draft legislation relating to: how consumers and providers give consent to participate in *HealthConnect*; give consent to interactions with *HealthConnect* for each episode of care; who may give consent and withdraw consent; situations where the individual consumer is unable to give consent; and consent to specific uses of personal health information within *HealthConnect*.

The underlying principles and consent model options are presented as an attachment to the business architecture.

4.3 Access Control

The notion of access control is central to *HealthConnect*. Unless providers and consumers are assured that personal health information is adequately protected within the network, and that there are stringent controls over who has access to what information, the viability of *HealthConnect* will be compromised. Equally it is understood that there will need to be a balance between consent, privacy and access control versus the useability of the system. If the mechanics of accessing information are overly onerous and strict, the usage and thus success of the system may be jeopardised and the benefits to consumers and providers not achieved.

There are a number of dimensions to access control that will need to be incorporated into *HealthConnect* in the event of implementation on a national scale. At the level of the individual consumer, *HealthConnect* will need to allow individuals to limit access to specific users. Governance structures will need to be established to oversee user authorisation, including access by third parties with respect to authorised, secondary uses of data. Strict access rules and safeguards, including auditing and monitoring mechanisms, will need to be in place to prevent unauthorised access, use or disclosure of data held within *HealthConnect*.

The key areas of work over the next two years will be to develop:

- a national policy framework by which access control will operate within *HealthConnect*;
- the necessary business rules and technical requirements needed to ensure consumer control over who has access to their electronic health records, and to ensure appropriate provider access, building on work undertaken in the Better Medication Management System and *HealthConnect* trial sites; and
- develop a model for ongoing governance of access control in the longer term, including governance arrangements and appropriate legislation.

4.4 Standards

The standards agenda as outlined in *Setting the Standards: A National Health Information Standards Plan for Australia* (February 2001, NHIMAC) is concerned with defining and progressing the development of health information standards for HealthConnect and wider electronic health information exchange. This will include standards and related documents (such as guidelines and handbooks) including:

- data definition (eg the National Health Data Dictionary, National Minimum Datasets);
- health record architecture/structure (eg Good Electronic Health Record, CEN 13606, HL7 Reference Information Model and Clinical Document Architecture);
- coding and classification (eg ICD10-AM);
- terminology;
- messaging and communication (eg HL7 Clinical Documentation Architecture, Corba, XML-Protocol, SOAP, WSDL and UDDI);
- identification (eg for client, health care provider, and location); and
- access control and security (encryption, Public Key Infrastructure, Security Socket Layer (SSL)).

5 Activities Related to HealthConnect

Another key issue requiring detailed planning concerns the relationship of the HealthConnect project and numerous other projects and research underway. This includes projects being conducted by the Commonwealth, by individual States and Territories, by private health providers, by the Health Insurance Commission, and by advisory and standards bodies such as the International Standards Organisation (ISO) and National Health Information Management Advisory Council (NHIMAC). Some of the more relevant projects are listed below.

5.1 Better Medication Management System

The Better Medication Management System (BMMS) is a voluntary system that will create and store a personal electronic medication record that contains details of all medications for an individual consumer. With the consent of the consumer, details will be entered into the BMMS by the consumer's doctor or pharmacist. The BMMS will make possible the creation of an electronic consumer medication record, collated from records of prescriptions written by different doctors and dispensed by different pharmacists. With consumer consent, a prescribing doctor will be able to check medication information added by other doctors for potential drug interactions.

Administration of the BMMS project involves comprehensive consultation. The BMMS Development Group is closely involved in the governance of the project. The BMMS Development group includes representation from consumer groups, medical and pharmaceutical associations, the software vendor industry, and State and Commonwealth governments. A Field Test is to be conducted in 2002 to enhance the understanding of how BMMS would operate in practice. The BMMS Implementation Taskforce is currently working to complete the design of the Field Test.

In many ways BMMS might be considered a specific subset of HealthConnect with many of the underlying principles being the same. Both projects have to address issues of consumer and provider identification, consumer consent and authorisation models, standardisation and privacy of the information as well as interfacing to provider software.

Principles agreed by the BMMS Development Group in February 2001 include:

1. "BMMS is intended to be integrated into the broader electronic health record system, HealthConnect.
2. The aim of the development of the BMMS should be to allow seamless integration with HealthConnect at the time of its implementation."

The HealthConnect Program Office has an ongoing liaison role with the BMMS team and documents/issues from BMMS provide key input into the HealthConnect development. It is envisaged that BMMS will ultimately be integrated into the HealthConnect framework. There are plans to conduct a project in early 2002, which maps the business requirements of the two systems highlighting similarities and differences. This will inform subsequent activity and modifications aimed to ensure interoperability and compatibility between the two projects.

5.2 EHR*Net

In March 2000 the NSW Health Council set an objective for the NSW health system to implement the Electronic Health Record (EHR) by 2010, with significant progress in at least two Areas within the first three years. In July 2000 the NSW Health EHR strategy set out the direction to be taken by NSW Health to ensure that those objectives can be met.

The vision for NSW Health is that by 2010 all people of NSW will have access to the benefits of a coordinated EHR. The use of on-line technologies will improve the delivery of health care, with better quality health care, outcomes and consumer safety, whilst enhancing privacy and respecting personal dignity.

EHR*Net, which is the repository where event summaries will be stored may also store data arising from non-government health providers. The common principles underlying the purpose and operation of EHR*Net and Health Connect provided the opportunity for an integrated approach to progressing these two initiatives. It was agreed by NSW Health and the HealthConnect Program Office that the EHR*Net would form the basis of the NSW HealthConnect Trial Site proposal and also that key elements of the EHR*Net and HealthConnect Architecture would be jointly developed.

5.3 Health identification

Fast and accurate identification of individuals, providers and organisations participating in HealthConnect will be vital for such an electronic health records network to be effective. There are a number of activities underway addressing this issue.

Standards Australia IT14/9/3 Working Group has released a draft Health Care Client Identification Standard for the health industry. The draft standard is intended to promote uniformly good practice in identifying individuals and recording identifying data, so as to ensure that each individual's health record will be associated with that individual and no other person. The Working Group will also develop a standard for provider identification followed by a facility/service identification standard. The HealthConnect Program Office will continue its direct involvement with the Working Group.

Safe patient identification was an issue canvassed by the National Electronic Health Records Taskforce in the context of advising Health Ministers on a national approach to electronic health records. The Taskforce recommended the establishment of a national health identifier, to be used only in the health sector under strict privacy controls and implemented concurrently with the proposed national health network, HealthConnect.

All States and Territories have some or many forms of identification – either an identifier, a master patient index or a set of processes. The Northern Territory, for example, has developed systems of patient identifiers based on Master Patient Indexes, which combine demographic data with a unique identifier. Western Australia has had an identifier in use in Perth for nearly 20 years. New South Wales is in the process of establishing a Statewide Unique Patient Identifier. Many of these activities are focussed on the public health system, frequently only the hospital component.

The research and development phase of HealthConnect will see the adoption and evaluation of local-level identification systems. The BMMS is investigating the use of the Medicare number/PIN and DVA number/PIN as its consumer identifier.

Work is being undertaken through the National Health Information Management Advisory Council on the potential and options for a national health identifier (or 'health key').

In addition to the accurate identification of individuals, it is also important that providers and facilities/services can be accurately identified and located. There are a number of projects relating to provider directories being undertaken by the individual States and Territories and other groups including Divisions of General Practice and provider organisations such as the Australian Medical Association. The Health Insurance Commission (HIC) has established a Directories Project to examine the various directories accessed by HIC applications such as Medicare, PBS and Australian Childhood Immunisation Register with a view to consolidating them into six master directories – Provider and Other Stakeholder Directory, Consumer Directory, Location Directory, Group Directory, User Profile Directory and Service Schedules.

There is some concern that the separate development of State and Territory directories might result in difficulties when implementing HealthConnect on a national basis. The Program Office is currently taking steps towards investigating the initiatives in this area and developing a national strategy for the development of provider directories.

5.4 Public Key Infrastructure (PKI)

Controlling access to the HealthConnect information will be critical to maintaining appropriate privacy and confidentiality levels. The use of PKI is a sophisticated mechanism that ensures the authentication, integrity, confidentiality and non-repudiation of data transmitted by health care providers.

A security framework for HealthConnect is to be developed. This framework will define the requirements need for security, identify where PKI fits in and determine the potential role for providers of PKI services such as the Health Insurance Commission.

The HIC has achieved Gatekeeper accreditation for PKI solutions and has created the Health eSignature Authority. Public Key Technology solutions using internet email and web services have already been achieved for a number of HIC applications, including 'Easyclaim PC', BMMS, 'Easyclaim direct Bill' and Coordinated Care Trial system. There are other organisations that have been accredited as Gatekeeper Registration Authorities.

5.5 Good Electronic Health Record (GEHR)

The Good Electronic Health Record (GEHR) provides an open architecture and a standard format for electronic health records. GEHR proposes a common framework for structuring, storing and managing patient data so that it can be shared and exchanged between different healthcare

providers in a safe and accurate manner. The original version of GEHR was developed in Europe nearly a decade ago. The initial work on GEHR was utilised in the development of the draft European Electronic Health Record Standard CEN ENV13606.

In 1997, the Commonwealth Department of Health and Family Services (DH&FS) engaged the IBM Consulting Group to deliver an appropriate functional requirements specification and supporting technical framework for Clinical and Administrative General Practice Computer Systems that would ultimately lead to widespread adoption and use by practitioners. IBM concluded that a properly architected electronic health record would be central to the effective use of general practice computer systems and the delivery of improved quality of patient care supported by decision support. The architecture recommended for Australian general practice was the *Good European (now Electronic) Health Record*.

An important breakthrough, which enables GEHR to be fully implemented through the development of a method for standardising and implementing clinical content, known as “archetypes”, has been made in Australia over the past three years. The *OpenEHR* Foundation has submitted a proposal to the HealthConnect Program Office to develop, test and evaluate the core components of the Good Electronic Health Record architecture, and determine its suitability as a record architecture for HealthConnect. This proposal is currently being assessed.

5.6 ISO Requirements for an Electronic Health Record Reference Architecture

This Electronic Health Record requirements work item was first proposed at the International Standards Organisation (ISO) Technical Committee 215 Working Group 1 meeting in September 1999. The ISO/WD 18308 Version 1.0 contained over 700 EHR requirements from 29 different sources. The ultimate aim of this work item is to produce an ISO Standard or Technical Specification for Electronic Health Record reference architecture requirements. This will be in the form of a consolidated set of requirements produced from all of the collected source requirements and listed under a suitable requirements framework. Work on the consolidated set of requirements was well advanced at the time of writing.

Principles of the Electronic Health Record Reference Architecture are stated as:

- “The Electronic Health Record RA is intended to support the creation of a whole of life integrated health record. The Electronic Health Record created should be timely, reliable, complete, accurate, secure, and accessible and designed to support the delivery of healthcare services regardless of the model of healthcare being applied. It should operate in a way which is truly global yet respects local customs, language and culture.
- The Electronic Health Record should not be considered applicable only to patients, that is, individuals with the presence of some pathological condition. Rather the focus should be on individual’s health, encompassing both well being and morbidity.

- The Electronic Health Record recognises that an individual's health data will be distributed over different systems, and in different locations around the world. To achieve the integration of data, the Electronic Health Record RA will require the adoption of a common information model by compliant systems and the adoption of relevant international standards wherever possible.
- Boundaries must exist to define what is/is not regarded as part of the Electronic Health Record.”

The European Standards Committee (CEN) has recently decided to develop a new Electronic Health Record standard based on the existing CEN ENV13606 draft standard and GEHR. The ISO Requirements for an Electronic Health Record Reference Architecture will be used as one form of compliance testing for implementers of the new CEN/GEHR Electronic Health Record standard. The HealthConnect Program Office will be part of this process with specific areas of relevance being incorporated into HealthConnect developments.

6 Business Issues and Risks

Once established, HealthConnect must provide ongoing services and support for all stakeholders. A critical mass of services must be available at implementation to promote rapid opt-in enrolment from consumers and providers. The services must be high quality and reliable to minimise the drop-out rate.

It is important that the management of HealthConnect be able to convince stakeholders to adopt a common set of building blocks and technical solution(s) for HealthConnect. At present a great variety of technical solutions are being implemented and will continue to evolve to enable providers to exchange clinical information in a manner that is less than ideal. Controls to protect privacy, consent and security are often missing or at best only short term. The HealthConnect initiative is an ideal opportunity to implement a common solution nationally.

A suitably skilled and available workforce must also be established and sustained to support the operation of HealthConnect. How this is achieved and at what cost are yet to be understood. Equity of service to all parts of Australia will be required and must be supported by an effective workforce.

The critical success factors, barriers to their implementation and possible management mechanisms are set out in the table below.

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6.1 Critical Success Factors

Critical Success Factor	Possible Risks	Potential Management Mechanisms
Buy in		
Consumer Buy in – enough consumers participate to make the benefits achievable	Consumers unaware of HealthConnect and its benefits Concern about privacy and integrity of health records Concern re provider control/unwanted access by provider type	Consumer engagement, wide consultation, consent models, privacy policy and security framework Possibly initial low data volumes building up as confidence increases Consumer controlled access is real and workable.
Provider Buy in – enough providers participate to make the benefits achievable (including private health organisations)	HealthConnect inconsistent with workflow and existing systems Not seen to add value Required infrastructure/common language/ resources not available	Demonstrate value, provide good, useful information Seamless integration (depends on development of standards, industry participation) Early delivery of a functional ‘system’ Establish language standards Implementation support and documentation
Industry buy in – industry develops and provides the required products and services (eg interfaces)	Lack of industry capacity, capability, willingness Inadequate of business case	Industry consultation Clear requirements Solid engagement process Identification of business case
Privacy/security/consent policies and protocols defined and implemented	Policies not defined within an appropriate timeframe Consumers and providers remain concerned about privacy	Management mechanisms for privacy, security and consent identified
Equity of consumer access	Lack of infrastructure in areas, eg rural Poor access to IT services for some groups eg, homeless, Aboriginal and Torres Strait Islanders and people from non-English speaking backgrounds.	Keep infrastructure needs to a minimum Establish simple access mechanisms, provide access assistance
Related Projects/Initiatives		
BMMS – effective coordination	Different solutions/approaches/architecture Lack of data integration Duplication of effort	Ongoing collaboration
Other EHR projects (eg ISO EHR RA, GEHR, EHR*Net) – effective coordination	Different solutions/approaches inconsistent with HealthConnect objectives Duplication of effort	Ongoing collaboration
Other standards projects (eg NHIMG, IT14) – effective coordination	Standards and classifications not defined within an appropriate timeframe Duplication of effort	Ongoing collaboration

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Capacity of HealthConnect to deliver		
Suitable method of identification developed	Privacy concern/resistance Complexities of creating and managing identification Trial approaches to identification add further complexities	Monitor NHIMAC progress Investigate potential problem areas and strategy for addressing them
Provider computerisation – sufficient levels for all types of providers	Sections of the provider population do not have appropriate levels of infrastructure implemented and used Use of HealthConnect restricted, benefits not realised	
HealthConnect data is of sufficient quality	Incomplete data limiting the effectiveness of HealthConnect	Standards development Industry cooperation Establish quality assurance program Minimise redundant data storage
Easy integration to work practices	Use of HealthConnect time consuming Registration processes become a major overhead	Clearly defined business processes Seamless interfaces Establish bulk registration where possible, subject to appropriate consent Encourage cooperation and understanding through stakeholder and industry participation in development process
Speed and ease of use – information desired readily available and consent arrangements effective and efficient	Complex to use so not used to full potential Time consuming to use so not always used	Simple self explanatory operation Education system/tool rollout Seamless integration with local systems Fast response time Provide support/help line for providers
Management/Legal		
Appropriate Governance	Participant concern over governance structure	Consultation and policy development
Resolution of issues such as ownership/ intellectual property of information	Lack of resolution resulting in limited data exchange. Fear of loss of income	
Minimise potential for litigation	Insufficient clarity in roles and responsibilities relating to registration, access and use of HealthConnect data Lack of understanding of responsibilities and limitations of data	Clear, simple and well communicated definition of responsibilities Development of appropriate agency agreements
Funding for full HealthConnect obtained Funding model needs to sustain HealthConnect on an ongoing basis	Existing funds cease 30/6/03	Evaluation process generates evidence to justify further funding

7 The Trials

7.1 The Trial Concept

The trial sites are a central feature of the *HealthConnect* Project. They are a key mechanism for testing the feasibility of the *HealthConnect* concept and for informing what might be the preferred model in the event of national rollout. A number of trial sites will be established over the period of the Project. Each will employ the *HealthConnect* architecture, albeit different sites may test alternate approaches to various issues, such as event summaries and consent and access arrangements.

7.2 Common Services

At its meeting on the 7th December the *HealthConnect* Board considered and endorsed a Program Office proposal to review the process by which trial site development is undertaken. The Program Office recommended a strategy to identify and develop a number of Common Services which, if developed would be implemented in trial sites.

The Board endorsed the recommendations subject to further analysis being undertaken to assess the viability of Common Services being developed in Trial Sites. This work has been completed, in brief, the strategy recommends the identification of candidate common services that would be adopted in all trial sites. Examples of those identified to date include storage, event summaries, consent and privacy. More will be determined through the Systems Architecture project.

Common Services are defined as those components fundamental to implementing and operating the *HealthConnect* model on a national basis, that is, they are common and essential across all trials. They are the elements of the business and systems architecture that will be used by trial sites and form the basis for any wider rollout. As such, it is essential that all common services have a clearly defined function and scope. Similarly, the relationship between each Common Service must also be clearly understood.

The Common Service Approach provides an opportunity to maximise the value of the trials. In particular the approach allows:

- An evaluation of the value of the *HealthConnect* concept from a common base;
- Supports an evaluation of the workability, scalability and interoperability of the *HealthConnect* concept;
- An evaluation of a number of Common Services would make the definition of a preferred implementation model possible;
- A minimisation of duplicate investment and development effort across trials;
- A “live” test of elements of the systems architecture can be undertaken; and
- A mechanism to avoid the need to completely retool and retrain prior to a national rollout because of the existence of common services that may be scaled up to a national *HealthConnect*.

7.3 The Proposed Trial Sites

In terms of site selection, States and Territories have been invited to develop proposals for possible trials within their jurisdictions. This approach has been adopted not only because the *HealthConnect* Project timeframes do not allow for a lengthy tendering process, but also because jurisdictions will expend a significant part of their *HealthConnect* commitments within their own jurisdictions. It should also be noted, that funds may also be sought from the Commonwealth's *HealthConnect* contribution to support trial activity, particularly in the case of smaller jurisdictions.

The *HealthConnect* Program Office will take an active role in supporting the development, ongoing management and monitoring of the trial sites. Involvement may be facilitated through a variety of mechanisms ranging from direct 'on the ground' support within trial sites, through trial committee structures, to management team involvement. Regular reports will be provided to the *HealthConnect* Board. It is anticipated that, following Board agreement to proceed, trials will be progressively established in 2002/2003, given the substantial work and compliance checking that will be needed to make the trials operational.

Four preliminary proposals have been received to date. These are from New South Wales, Queensland, Tasmania and the Northern Territory,. The following descriptions are indicative of the current thinking on these projects. It is likely that there will be changes as they proceed through detailed design and implementation.

NSW

The NSW EHR strategy has provided the opportunity to investigate and test the key building blocks for the research and development phase of *HealthConnect* and NSW's EHR*Net. It is proposed that the *HealthConnect* trial will be conducted at two sites with information tailored to meet the requirements of the differing clinical streams. The two sites are: the Child Health Information Network (CHIN) at the Children's Hospital at Westmead which is estimated to involve over 10,000 children and 250 locations and the Chronic Disease Management System (CDMS) in the Hunter region which is estimated to involve 2,000 people and up to 50 locations. The CHIN and CDMS will be the first elements of EHR*Net to be implemented.

The CHIN project will support the care of children with acute and chronic conditions and also provide the equivalent of an electronic 'Blue Book' for all children.

The CDMS project will support the proposed CONNECT Coordinated Care Trial. This is focussed on the needs of people over fifty-five with Congestive Heart Failure and Chronic Obstructive Pulmonary Disease.

Queensland

Queensland Health has proposed a trial located at two sites: (i) diabetes care, to be based on an extension of the work already under way on the sharing of information and care plans by the Brisbane Inner South and other Divisions of General Practice, and (ii) an extension of the current North Queensland General Practice IM/IT project for electronic pre-operative and post-operative assessment for elective surgery. The Brisbane

trial site is expected to involve several hundred clients at ten or more provider sites. The Townsville site is expected to involve considerably less clients but at about the same number of provider sites.

Tasmania

Tasmania has proposed the development, implementation and evaluation of Health*Connect* arrangements for a 65+ aged cohort (enrolling approximately 1,000 participants) with a focus on diabetes. These arrangements will be provided within a bounded service network area (inclusive of up to 35 service points), including, at a minimum, acute care, general practice, emergency department, community nursing and community allied health, aged care assessment team (ACAT) services and aged care facilities.

Northern Territory

The Northern Territory has proposed a trial centred in the Katherine area. The project has a major focus on indigenous health issues associated with a remote population. The trial will test consent arrangements, creation, local storage and exchange of medical, discharge and pathology event summaries. The majority of the 5,000 population in the area will be encouraged to enrol in the trial.

