National E-Health Strategy

SUMMARY

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Australian Health Ministers' Conference

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Australian Health Ministers' Conference

Foreword

Australia's health system delivers some of the world's best health outcomes. However, maintaining or improving these outcomes in the face of growing pressures on the health care system will require a fundamental change in the way health care is delivered into the 21st century. Change must address the way information is accessed and shared across the health system, which will in turn transform the way health care professionals practice and consumers interact with the health system.

Currently the health information landscape is characterised by discrete islands of information with significant barriers to the effective sharing of information between health care participants. It also poses challenges when trying to understand and report on what is really happening to support population health surveillance and guide policy, service planning, innovation and clinical and operational decision-making.

Whilst Commonwealth, State and Territory Governments and the private sector are already investing in various E-Health foundations or initiatives, without some form of national coordination there is a real risk of extensive duplication, avoidable expenditure, and the creation of new solutions that cannot be integrated or scaled across the continuum of care.

In early 2008, Australian Health Ministers, through the Australian Health Ministers' Advisory Council (AHMAC), commissioned Deloitte to develop a strategic framework and plan to guide national coordination and collaboration in E-Health. As part of this process, Deloitte conducted a series of national consultations which included Commonwealth, State and Territory Governments, general practitioners, medical specialists, nursing and allied health, pathology, radiology and pharmacy sectors, health information specialists, health service managers, researchers, academics and consumers. An electronic submission process was also used to facilitate wider community input.

The national E-Health strategy developed by Deloitte, together with key stakeholders, provides an appropriate basis to guide the further development of E-Health in Australia. It adopts an incremental and staged approach to developing E-Health capabilities to:

- leverage what currently exists in the Australian E-Health landscape;
- manage the underlying variation in capacity across the health sector and States and Territories; and
- allow scope for change as lessons are learned and technology is developed further.

The strategy reinforces the existing collaboration of Commonwealth, State and Territory Governments on the core foundations of a national E-Health system, and identifies priority areas where this can be progressively extended to support health reform in Australia. The strategy also provides sufficient flexibility for individual jurisdictions, and the public and private health sectors, to determine how they go about E-Health implementation within a common framework and set of priorities to maximise benefits and efficiencies.

The ultimate benefit achieved from a national E-Health strategy is a safer and more sustainable health system that is equipped to respond to emerging health sector cost and demand pressures. Improvements in the Australian health care system will also drive stronger workforce productivity that is integral to Australia's long run economic prosperity.

The E-Health strategy is commended as a useful guide to the next steps for Australia in its E-Health journey. The E-Health strategy is pragmatic, balances different priorities and will help to lead Australia towards the delivery of a safer, better connected and more sustainable health care system.

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Chair
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1 Introduction

Australia has one of the best health systems in the world based on the health outcomes of its citizens. However, maintaining or improving the health outcomes of Australians will require a fundamental change in approach to the way health care is delivered in this country.

The Australian health system is straining to deal with increasing cost and demand pressures and a shortage of skilled health care workers. Given this reality, we need to move to a system where every interaction between consumers and care providers achieves maximum impact on health outcomes and where scarce financial and human resources are deployed as effectively as possible. Most of all we must draw upon the latent capacity in the system represented by consumers themselves playing a more active role in the protection and management of their personal health outcomes.

This change will require a fundamental shift in the way information is accessed and shared across the health system. We have to move away from a reliance on tools such as pen, paper and human memory to an environment where consumers, care providers and health care managers can reliably and securely access and share health information in real time across geographic and health sector boundaries. The only way this can be achieved is through the implementation of world class E-Health capability.

The World Health Organisation defines E-Health as 'the combined use of electronic communication and information technology in the health sector.' In more practical terms, E-Health is the means of ensuring that the right health information is provided to the right person at the right place and time in a secure, electronic form for the purpose of optimising the quality and efficiency of health care delivery. E-Health should be viewed as both the essential infrastructure underpinning information exchange between all participants in the Australian health care system and as a key enabler and driver of improved health outcomes for all Australians.

1.1 Australia's Health Care System

The Australian health care system is one of Australia's largest and most complex industry sectors. It employs over 850,000 people and delivers services to a diverse population of approximately 21.3 million residents across a very wide range of geographic and socio-economic settings. Services are provided by a complex network of largely autonomous public and private care providers working across over 1,000 public and private sector hospitals and tens of thousands of additional general practice, clinical specialist, community health, allied health and aged care settings. In 2005-06 Australia spent one in every eleven dollars on health which equated to nearly $87 billion or approximately nine per cent of GDP[1].

The Australian health system is fundamentally important to the country from both an economic and social perspective. A healthy population underpins strong economic growth and community wellbeing and prosperity. Australia is performing very well relative to its international peers in this regard. OECD and Australian Institute of Health and Welfare (AIHW) data indicates that at an average of 81.4 years, Australians enjoy one of the longest life expectancies in the world and falling incidences of many major diseases[2]. This headline performance, however, hides a number of significant challenges and issues which threaten the future performance and sustainability of the Australian health system if not addressed.

1 Australian Institute of Health and Welfare (AIHW) , Australia's Health (2008)
2 Australian Institute of Health and Welfare, Australia's Health (2008)

1.2 Health System Challenges

Health Sector Trends

The Australian health sector, similarly to other developed nations, faces a set of increasingly significant challenges in continuing to deliver high standards of health outcomes. These include:

- Significant differences between the health outcomes for advantaged and disadvantaged, particularly indigenous, Australians
- A large ageing population
- The increasing incidence of chronic disease
- Increasing consumer demand for more costly, complex and technologically advanced procedures
- The supply and distribution of skilled health sector workers.

Together these challenges are inexorably driving increased health care service demands, costs and complexity and are already testing the limits of the financial, physical and human resources of the Australian health system.

Health expenditure as a proportion of Australian GDP has more than doubled over the last four and a half decades, from 3.8% in 1960-61 to 9.0% in 2005-06.[3] The growth of health care spending as a proportion of GDP is expected to continue, increasing to an estimated 16 to 20% of GDP projected by 2045.[4] At the same time Australia is facing real challenges finding sufficient numbers of skilled health care workers across many parts of the sector to satisfy current, let alone future, levels of demand. These trends call into question the very sustainability of the Australian health care system in the medium to long term.

Use of Information Technology

The second set of challenges relates to the way information is stored, shared and used across the Australian health system. At its core, health is a knowledge industry with information being central to all aspects of care planning, management and delivery. Despite this, the primary information tools used to manage health care in this country still revolve around pen, paper and human memory. The use of such fallible tools to manage a sector as complex and critical as health care should be a cause of profound concern for 21st century Australia.

Other information centric consumer industries such as telecommunications and financial services have undertaken sustained investment in information technology over a 20 to 30 year period. This investment has enabled companies in these sectors to integrate systems and databases across all parts of their national and global businesses and business partner networks. As a result an Australian consumer can use an ATM anywhere around the globe to access their bank accounts. Australian consumers can also seamlessly transfer their telephone and broadband services from one provider to another and can access global telecommunications networks from any point in the developed world. By contrast, the health care sector struggles to share potentially critical patient information between service providers within the same post code.

Despite its size, complexity and information intensiveness, the Australian health sector has invested well less than half of the amount sectors such as these have spent on information technology over the same period of time. As a result, the general state of health IT across Australia and the realisation of associated service quality, safety and efficiency gains lags behind that of comparable industries by many years, in some cases decades.

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[3] Australian Institute of Health and Welfare. *Health Expenditure Data Cubes*, September 2008

[4] Australian Institute of Health and Welfare. *Long term trends in health expenditure*, September 2008

The Australian health information landscape is characterised by many thousands of discrete islands of information, many of which are paper based. This has created significant barriers to the effective sharing of information between health care participants, an issue compounded by Australia's multiple health service boundaries and geographic distances. It also poses real challenges when trying to understand and report what is really happening in the Australian health care system to support population health surveillance and guide policy, service planning, innovation and clinician and operational decision making.

The relative lack of maturity of information technology within the health sector has important implications for patient safety. In a complex, multi point service delivery environment with hundreds of millions of service encounters each year, reliance on largely manual processes and information flows creates the potential for a truly significant amount of errors and inefficiencies. It is very difficult to accurately estimate the real impact of these issues because of the poor quality of Australian health system information. However, studies have found that up to 18 per cent of medical errors are due to the inadequate availability of patient information[5] and that adverse events broadly account for as much as three per cent of total costs of care each year. This represents approximately $3 billion[6] in avoidable annual expenditure, money that could be better spent absorbing additional health sector demands driven by an ageing and sicker population.

1.3 Health Sector Response

The challenges and issues facing the Australian health care sector will not be solved by doing more of the same, particularly given the limited nature of available human and financial resources. There is a widespread recognition within the sector that better use of information technology should play a critical enabling role in implementing national health care reform and policy agendas and improving the efficiency, safety and ultimately the sustainability of the Australian health care system. There is also a greater recognition of the role that individuals can play in protecting their health and more actively participating in the care process to improve personal health outcomes. At the same time, broader social trends have increased the demand for, and acceptance of, the use of information technology to meet personal and community needs.

These sentiments, combined with mounting frustration at the severely limited ability to effectively access and share health information, are driving a substantial amount of E-Health activity across all parts of the Australian health sector. Since 2005, the Commonwealth, States and Territories have been investing, through the National E-Health Transition Authority, in key building blocks for a national E-Health platform. At the same time, every Australian State and Territory is in the process of either defining or implementing some form of jurisdiction wide E-Health strategy, and making significant investments in foundational infrastructure in the health sector. Within the private health sector, individual clinicians, professional groups and organisations are also investing in E-Health infrastructure and initiatives. The result is a very large and growing number of disparate E-Health initiatives being delivered within local geographic regions, within acute and primary care settings, and across health sector disciplines in this country.

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5 Australian Institute of Health and Welfare, *Australia's Health 2002*, 2002

6 Jonathon P Ehsani, Terri Jackson and Stephen J Duckett *The incidence and cost of adverse events in Victorian hospitals 2003–04*, Medical Journal of Australia, 2006

1.4 The National Response

The Choice

As a nation Australia now faces an important choice. Do we allow this inevitable and increasing E-Health activity to continue to progress in an unfettered manner or do we take action to more strongly coordinate and align activity on a national basis?

A number of Australian E-Health projects have already delivered promising results and have allowed individual parts of the health care system to address specific local needs. However, the reality is that in almost all cases these projects have produced IT solutions that cannot be easily connected with other health information systems or scaled to support larger consumer and care provider populations. This severely limits the ability for these solutions to provide more than a narrow, localised set of benefits and, at a system level, undermines the nation's ability to promote equity in health outcomes, drive meaningful safety and efficiency gains and ensure appropriate safeguards for personal health information.

The amount of dollars invested in E-Health by Commonwealth, State and Territory governments alone over the past ten years is estimated to be in excess of five billion dollars. Despite this investment Australia has only made marginal progress towards being able to electronically exchange information across different parts of the health sector due to the limited coordination of E-Health plans and investments.

Without some form of national coordination there is a very real risk of extensive duplication of E-Health effort and expenditure and the creation of a whole range of new solutions that cannot be integrated or scaled across the continuum of care. There is a point at which the number of these disparate systems will be so great, and integration so difficult, that the ability to realise the gains from creating an integrated system may be prohibitively risky and expensive to attain. This would represent a major lost opportunity for Australia to take a very significant, technology enabled step towards the delivery of safer, more efficient and sustainable health care services for all Australians.

The Action

To capitalise on this once in a generation opportunity, Australia should embark on a strategy of national E-Health coordination and alignment. This would involve the establishment of national frameworks and infrastructural components that can be leveraged at State and Territory, regional and local levels to deliver solutions that are able to be integrated and shared data across geographic and health sector boundaries. The recommended strategy encourages national alignment and connectivity whilst providing the Commonwealth, States and Territories, individual care providers and care provider organisations with the ability to take different approaches to solving their specific E-Health challenges.

National action should be focused in four key areas:

- **Implementing the national 'health information highway'** infrastructure and rules to allow information to be seamlessly accessed and shared across the Australian health system
- **Stimulating investment in high priority computer systems and tools** that can deliver tangible benefits to Australian consumers, care providers and health care managers
- **Encouraging health sector participants to adopt and use high priority systems and tools** as they become available
- **Establishing an E-Health governance regime** to enable effective coordination and oversight of national E-Health activities.

2 National Vision for E-Health

Australia should aspire to continue to lead the world in health outcomes for its citizens. Central to the achievement of this will be a health system which more effectively responds to the health care needs of individuals and communities. Developing a world class E-Health capability would provide new options for how Australians manage their own health and interact with the health system across geographic and health sector boundaries.

E-Health will enable a safer, higher quality, more equitable and sustainable health system for all Australians by transforming the way information is used to plan, manage and deliver health care services.

E-Health will:

- *Ensure the right consumer health information is electronically made available to the right person at the right place and time to enable informed care and treatment decisions*
- *Enable the Australian health sector to more effectively operate as an inter-connected system overcoming the current fragmentation and duplication of service delivery*
- *Provide consumers with electronic access to the information needed to better manage and control their personal health outcomes*
- *Enable multi-disciplinary teams to electronically communicate and exchange information and provide better coordinated health care across the continuum of care*
- *Provide consumers with confidence that their personal health information is managed in a secure, confidential and tightly controlled manner*
- *Enable electronic access to appropriate health care services for consumers within remote, rural and disadvantaged communities*
- *Facilitate continuous improvement of the health system through more effective reporting and sharing of health outcome information*
- *Improve the quality, safety and efficiency of clinical practices by giving care providers better access to consumer health information, clinical evidence and clinical decision support tools*
- *Support more informed policy, investment and research decisions through access to timely, accurate and comprehensive reporting on Australian health system activities and outcomes.*

2.1 Implications of the vision for stakeholders

The E-Health vision can also be expressed in terms of what it might mean for each of the three key groups of impacted stakeholders:

- **Consumers –** individuals who receive Australian health care services and the friends, family and carers who are directly involved in the care of the individual
- **Care Providers** – the individuals and organisations that provide Australian health care services
- **Health Care Managers** – Australian health sector clinical managers, health service managers, planners, researchers and policy makers.

Stakeholder Group	Current State	Future State
Consumers	• Largely responsible for coordinating their own care delivery and acting as the integrator of health care information across the health system • Spend time repeating the same information to multiple care providers and/or receiving duplicate treatment activities • Poor, and in most cases zero, access to personal health information which is stored in multiple, fragmented silos across the health system • Limited security of personal health information or ability to control who accesses it • Heavily reliant on individual care providers for access to reliable health information • Unequal access to health care services, particularly in remote and rural communities	• When consumers interact with the health system, ***care providers will know who they are*** and have access to relevant details of their health information • Will rely on the ***health system to effectively coordinate*** their care regimes and treatment activities • Will have an ability to ***access their own health records*** and maintain a personal health diary • Will have confidence that their ***health information is managed securely and confidentially*** • Will have the ability to ***better manage their own health*** through access to reliable and accredited sources of health information • Will have technology enabled ***access to a broader and deeper range of health services from within rural and remote communities*** • Will be supported in the management of their care through ***automated monitoring of their health status*** and ***access to individual care plans***
Care Providers	• Work with incomplete and fragmented information when providing care to consumers • Spend time collecting consumer information and duplicating treatment activities • Manually coordinate care with other providers and exchange information in an inefficient, incomplete and ad hoc manner • Risk the occurrence of adverse events through incomplete information and a lack of access to decision support tools at the point of care • Limited ability to interact with consumers remotely • Limited means to monitor effectiveness of service delivery outcomes	• Will have an ***integrated and complete view of consumer health information*** at the point of care • Will be able to ***share information electronically in a timely manner across different geographic locations and all parts of the health sector*** • Will have access to data that allows them to ***more effectively monitor and evaluate service delivery outcomes*** • Will be able to ***electronically order tests, prescribe medications and refer individuals to other providers*** • Providers' care decisions will be supported by ***access to appropriate information sources and decision support tools*** at the point of care • Will be able to ***electronically interact with consumers regardless of where they are geographically located*** • Will be able to ***collaborate with other professionals*** by more easily sharing expertise and evidence • Will have ***easy access to clinical knowledge and evidence sources*** to assist with skill development
Health Care Managers	• Rely on incomplete, fragmented and untimely information when trying to make decisions • Spend time trying to collect and manually integrate information from many different data sources • Limited ability to share clinical and administrative management information across the health sector • Very difficult to meaningfully understand the national impact of strategic, operational or clinical treatment decisions	• Will have ***access to timely and complete information about health system activities and outcomes*** • Will have a ***reliable and comprehensive evidence base*** to inform and monitor the impact of clinical, policy, investment and administrative decisions • Will be able to ***better respond in the case of emergencies*** through real time monitoring of public health indicators • Will be able to ***rapidly assess the national impact of particular treatment regimes*** via access to nationally aggregated clinical datasets

2.2 The vision in action

Young Child Scenario

Seven year old Tom injured his arm in a Saturday afternoon game of football and was in pain. His mother took him to the emergency department of the local hospital, where the doctor arranged for an X-ray in the radiology department. The X-ray was made available electronically to the doctor who was promptly able to diagnose the injury as a fracture. The doctor applied a cast to the broken limb, and prescribed medication to assist with the management of Tom's pain.

When Tom was discharged, an electronic discharge summary was sent to his regular GP with information about when Tom was admitted and discharged, the nature and treatment of the injury, and the recommended follow-up.

This allowed Tom's GP to see when the injury needed to be re-assessed and an appointment was made accordingly. This meant that Tom and his family did not need to return to the hospital for additional injury assessment, only for the removal of the cast. It also informed the GP of which medications had been prescribed, reducing Tom's risk of receiving additional medications or medicines which might have an adverse reaction when used in combination.

Chronic Disease Scenario

Mrs Jones is a 68 year old lady who has been diagnosed with a chronic illness. Her GP determines that Mrs Jones would benefit from attending sessions with allied health professionals and educators who are able to assist with her condition. Mrs Jones' GP uses an electronic care planning system which assists in development of a team care plan tailored to her specific needs.

Through the care planning system, the GP has access to a registry of care providers and can search for suitable health professionals. During a consultation, Mrs Jones and her GP identify and discuss which care providers she would prefer to meet, taking into account geographic location. A printed map of each relevant location is then generated to assist Mrs Jones attend appointments.

The GP sends an electronic notice inviting each healthcare provider to participate in Mrs Jones' care. On acceptance of this invitation, and with Mrs Jones' permission, the GP sends relevant information from her electronic health record to each team member. When Mrs Jones arrives for her appointments she is not required to relay her medical history, provide paper documents or remember test results. For Mrs Jones, this may reduce unnecessary visits to healthcare providers and improve the effectiveness and timeliness of her care.

Aged Care Scenario

Mr Egan is a resident in a Residential Aged Care Facility that has been equipped with software enabling the electronic transfer of prescriptions.

As part of this system, Mr Egan's GP also has access to electronic decision support regarding the medicines prescribed. This alerts the GP to any potential adverse reactions between the multiple medications that may be prescribed.

Since the introduction of the software, Mr Egan is no longer required to travel from his residence to the pharmacy to collect his prescription medications, nor is he required to send a paper prescription with a resident carer. His prescriptions are sent electronically to the pharmacy, reducing possible errors caused by misreading handwriting or the re-keying of information. Mr Egan's carers and nurses also have real-time access to the status of his prescriptions, ensuring that they are aware of which medications have been ordered or dispatched.

Indigenous Scenario

An indigenous resident of a remote area of Northern South Australia, English is Sally's third language and she finds it difficult provide a full medical history when attending unfamiliar health care facilities.

Recently Sally had taken a trip from her home to a ceremony taking place 150 km away in the Northern Territory. While there, she was involved in an accident and badly sprained her ankle. Sally attended the local medical centre for assistance but had difficulty communicating to the attending healthcare provider that she had allergies to certain medications.

Sally was registered with the Northern Territory Electronic Health Record program, and her medical history was available immediately. The doctor was able to see that she suffered from an allergy to a common anti-inflammatory drug. Once this allergy was identified, her treatment was determined accordingly and Sally was able to avoid a potentially harmful administration of a routinely prescribed drug.

3 National Strategy for E-Health

3.1 Strategic Principles

There are seven principles that underpin and inform the proposed strategy and approach.

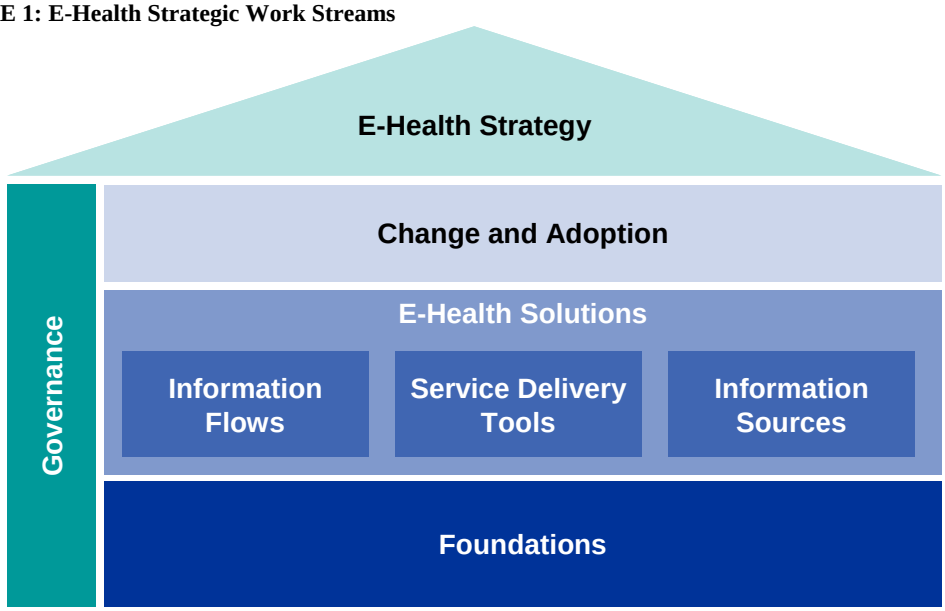
- **National infrastructure** - Deliver core elements of enabling national E-Health infrastructure once, rather than duplicating development costs and efforts and increasing the likelihood of rework
- **Stakeholder engagement** – Actively engage key health care stakeholders in the design and delivery of E-Health solutions
- **Incremental approach** - Build long term national E-Health capability in an incremental and pragmatic manner, focusing initial investment in those areas that that deliver the greatest benefits for consumers, care providers and health care managers
- **Recognising different starting points** - Balance active support for care providers with less developed capability, while not constraining the ability for more advanced participants to progress
- **Leverage** - More effectively leverage and scale E-Health activity across the country
- **Balancing alignment and independence** - Drive alignment of national E-Health activities whilst not unnecessarily limiting the ability of health care participants and vendors to implement locally relevant solutions
- **Relevant skills –** Ensure sufficient numbers of skilled practitioners are available to support delivery of the national E-Health strategy.

3.2 Strategy Overview

In order to address these principles four major strategic streams of activity have been identified.

- **Foundations** – Establishing the core foundations for electronic information exchange across the health sector. This work stream is fundamental as, without the basic ability to securely share health information there will effectively be no national E-Health capability
- **E-Health Solutions** – Stimulating the delivery of E-Health solutions to the key users of health information. This work stream facilitates the delivery of specific computing systems and tools to address the high priority needs of consumers, care providers and health care managers
- **Change and Adoption** – Fostering consumer, care provider and health care manager adoption of E-Health. The aim of this work stream is to focus effort on achieving a 'tipping point' of stakeholder adoption of E-Health solutions as quickly as possible
- **Governance** – Ensuring the effective leadership, coordination and oversight of the national E-Health work program. This work stream focuses on the establishment of appropriate national E-Health governance structures and mechanisms.

FIGURE 1: E-Health Strategic Work Streams



Implementation of the four strategic work streams needs to be undertaken in a tightly coordinated and concurrent manner in order to effectively deliver the national E-Health work program. Each work stream is highly dependent upon the success of the others.

Appropriate E-Health foundations, in the form of computing infrastructure and consistent information standards, rules and protocols, are crucial to effectively sharing information across geographic and health sector boundaries. In this regard E-Health foundations can be viewed as analogous to an 'information highway' – unless the system is connected up in some uniform and rules based way, then information cannot move across the network.

Foundations alone will not be of any value unless consumers, care providers and health care managers have access to specific computing solutions or tools to enable them to view and share appropriate health information. E-Health solutions will be the tangible means by which users can benefit from the building of a connected information network.

The implementation of national E-Health solutions will similarly be pointless unless consumers, care providers and health care managers are motivated to use these solutions. This is a two way relationship as the quality of the underlying E-Health solutions will also play a critical role in driving stakeholder take-up and support of the E-Health work program.

Finally it is unlikely that any of this can be achieved unless supported by a governance regime which provides appropriate coordination, visibility and oversight of national E-Health work program activities and outcomes.

3.3 Foundations Work Stream

The Foundations work stream focuses on implementing the basic infrastructural building blocks required to enable the effective electronic sharing of information across the Australian health sector. These include the implementation of consumer and care provider identifiers, establishment of standards, rules and protocols for information exchange and protection, and implementation of underlying physical computing and networking infrastructure.

Why do we need national action?

- It will be significantly more cost effective to develop these foundations once at a national level rather than duplicating effort and expenditure across Australian States and Territories
- National consistency of standards, protection legislation and identifiers is required to ensure that information can be effectively shared and protected anywhere across Australia. Any deviations in approach across the country will pose a direct risk to the nation's ability to seamlessly and securely exchange health information
- There is strong international evidence that nations such as New Zealand, England, Scotland, Denmark and Canada have only made significant E-Health progress at a national level once they have established appropriate E-Health foundations.

What can we leverage?

Since 2005, the National E-Health Transition Authority (NEHTA) has had responsibility for developing core foundations for a national E-Health system. Work to date includes defining clinical terminologies and information messaging standards, and designing unique consumer and care provider identifiers for use in Australia. At the same time, the Commonwealth and State and Territory Governments are working to develop a proposal to establish a nationally consistent regulatory regime that will provide effective, streamlined and transparent privacy arrangements for health information.

What do we need to do establish the foundations?

Establishing the national foundations for E-Health requires focused activity in five key areas:

- **Identification and authentication –** There is a need to design and implement an identification and authentication regime for health information as soon as possible as this work will be absolutely fundamental to the nation's ability to securely and reliably access and share health information. Australia should seek, as far as possible, to make the allocation of the consumer and care provider national identifiers universal and automatic.
- **Information protection and privacy –** The establishment of a robust privacy and regulatory regime to authorise specific E-Health initiatives, and ensure appropriate privacy safeguards and consent processes for access to and use of health information and participation in E-Health initiatives. Accordingly there is a need to focus on completing the development of a nationally consistent regulatory framework and implementing this framework in a timely manner.
- **National E-Health information standards –** There is a need for a national program of E-Health information standards definition to underpin the consistent and accurate collection and exchange of health information. This will involve accelerating the implementation and adoption of the E-Health standards that NEHTA has commenced and identifying and prioritising the next tranche of required national E-Health standards. A consistent and inclusive process for the development, endorsement and implementation of national E-Health standards should be established together with a three year rolling national E-Health standards implementation plan.

- **Investment in computing infrastructure –** A key barrier to E-Health take-up is the relatively poor quality of computing infrastructure (PCs, network connectivity and core patient, clinical and practice management systems) across many parts of the Australian health sector. There is a need to establish mechanisms to encourage care providers to invest in the implementation and maintenance of an acceptable baseline of computing infrastructure.
- **National broadband services –** A key foundation of the national health information highway will be access to national broadband services that provide connectivity between all Australian care providers. There is a need to engage and collaborate with relevant government and telecommunications organisations to extend planned broadband connectivity infrastructure to all Australian health care providers as soon as possible. As part of this process, there should be a focus on ensuring that national communications infrastructure will be fit for E-Health use and is priced in a manner that does not discourage the sharing of health information across geographic and health sector boundaries.

3.4 E-Health Solutions Work Stream

The E-Health Solutions work stream focuses on the national actions that are required to encourage the development and use of high priority E-Health systems that improve the efficiency and effectiveness of Australian health care delivery. These E-Health solutions represent the tangible means by which consumers, care providers and health care managers will electronically interact with the health system.

A great number of individual E-Health solutions have been implemented, or are in the process of being implemented, across the Australian health sector with limited coordination, standardisation or integration. The focus of this work stream is to harness and align this significant national E-Health activity to drive towards a desired set of national outcomes.

Why do we need national action?

The intent of this work stream is not to constrain market freedom through centrally controlled purchasing policies and implementation models, or to assume central responsibility for the commissioning and directing of E-Health solutions development. The reality is that it would be extremely difficult, and of questionable value, to try and centrally manage the vast amount of disparate E-Health activity occurring across the Australian health sector.

However, there is a strong recognition that this activity needs to be much more strongly aligned than at present to:

- Avoid the costly duplication of solution development activities
- Enable the more effective leveraging and scaling of successful solutions
- Improve the ability for E-Health solutions to exchange information across geographic and health sector boundaries.

This can be achieved through a nationally coordinated focus on mechanisms such as targeted financial investments, stakeholder change and adoption programs and solution compliance testing and certification regimes.

Where should we focus?

At a national level, there is a need to encourage the development of solutions in priority areas that will provide the greatest tangible benefits to Australian consumers, care providers and health care managers. National consultation and international research have identified the following set of high priority E-Health solutions in three categories – electronic information sharing, service delivery tools and health information sources.

E-Health Solution Category	Priority Solutions	Description
Electronic Information Sharing	• Referrals • Event summaries including discharge summaries, specialist reports and notifications • Prescriptions • Test orders and test results • Care plans	Improving the capability of patient, clinical and practice management systems to support key electronic information flows between care providers. These key information flows provide a basis for improved care planning, coordination and decision making at the point of care.
	• Consumer demographics • Current health profile • Current medications list	The key datasets that provide the summary of a consumer's key health data and their current state of health, treatments and medications. These datasets will improve the quality of service delivery and will ensure that consumers do not have to remember or repeat this information as they navigate the health system.
Service Delivery Tools	• Decision support for medication management • Decision support for test ordering	Encouraging the development of specific tools that improve the quality of clinical decision making and can reduce adverse events and duplicated treatment activities.
	• Chronic disease management solutions. • Telehealth and electronic consultation support	Encouraging development of specific tools that improve the management of chronic disease and the accessibility of care delivery. Chronic disease management solutions enable timely identification and monitoring of individuals and support management of their condition by providing automated reminders and follow-ups. Telehealth and electronic consultation tools enable improved rural, remote and disadvantaged community access to health care services.
Information Sources	• Health care reporting and research datasets • Health information knowledge bases	Implementing improved datasets for health care management that provide access to longitudinal and aggregated information for analysis, reporting, research and decision making. Providing access to a set of nationally coordinated and validated health knowledge sources for consumers and care providers.
	• Individual electronic health records (IEHRs)	Implementing IEHRs that provide consumers with access to their own consolidated health information and provide care providers with a means to improve the coordination of care between multi-disciplinary teams. IEHRs can also support the collection and reporting of aggregated health information.

These priority E-Health solution sets are not intended to be exhaustive. However, they do represent the areas that should be given national funding and resource priority due to the tangible nature of the care delivery and coordination benefits they can provide. In order to progress activity as quickly as possible, it is envisaged that national progress towards the development of richer and more scalable E-Health solutions in each of these areas should occur in a concurrent rather than sequential manner.

How do we drive national alignment?

Driving national alignment in the development of high priority E-Health solutions requires two key actions:

- **National investment fund –** The development of high quality, scalable Australian E-Health priority solutions should be stimulated via tightly governed access to a national investment fund. This will require the development of rules and criteria to guide the allocation of investment funds and the definition of appropriate governance, process and control mechanisms.
- **National compliance function –** The establishment of **a** national compliance function to test and certify E-Health solutions as being compliant with national E-

Health standards, rules and protocols. This will drive the development of national E-Health solutions that comply with E-Health standards and can be integrated and scaled across the Australian health sector. Certification criteria should be based on the principle of setting progressive targets to be achieved over a rolling three year timeframe.

What can be delivered nationally?

This strategy is advocating a market driven approach to E-Health solutions development, however there are two pieces of high priority E-Health solutions infrastructure where a national approach to implementation appears worthy of serious consideration.

- **Health knowledge portals** – The implementation of separate internet based portals for consumers and care providers that will provide access to a set of nationally coordinated and validated health knowledge sources. Although these knowledge sources exist in some form today, they are fragmented, not always consistent or up to date, and involve significant duplicated effort and investment to maintain.
- **Prescriptions service** – The implementation of an electronic prescriptions transfer service between care providers and community and hospital pharmacies. Establishment of a nationally integrated service will allow consumers the freedom to fulfil medication scripts at a pharmacy of their choice, regardless of location.

How should we approach the implementation of individual electronic health records?

An Individual Electronic Health Record (IEHR) is a secure, private electronic record of an individual's key health history and care information. The purpose of Individual Electronic Health Records is to provide a consolidated and summarised record of an individual's health information for consumers to access and for use as a mechanism for improving care coordination between care provider teams. The IEHR can also be used as a key information source for longitudinal and aggregated health information, in conjunction with other health sector data sets, to support more informed health care reporting and research.

As part of the national E-Health Strategy it is recommended that Australia adopt an incremental and distributed approach to the development of IEHRs. This is a pragmatic approach that:

- Focuses initial effort on enabling the flow of quality and relevant health information across the Australian care provider network;
- Supports more effective management of IEHR implementation costs and risks;
- Reflects the complexity and fragmentation of the Australian health system and the relatively early stages of IEHR development in Australia; and
- Supports the timely delivery of IEHR capability in those parts of the health sector that are ready to move more quickly.

This approach comprises four key phases of activity.

1. Connect Care Providers

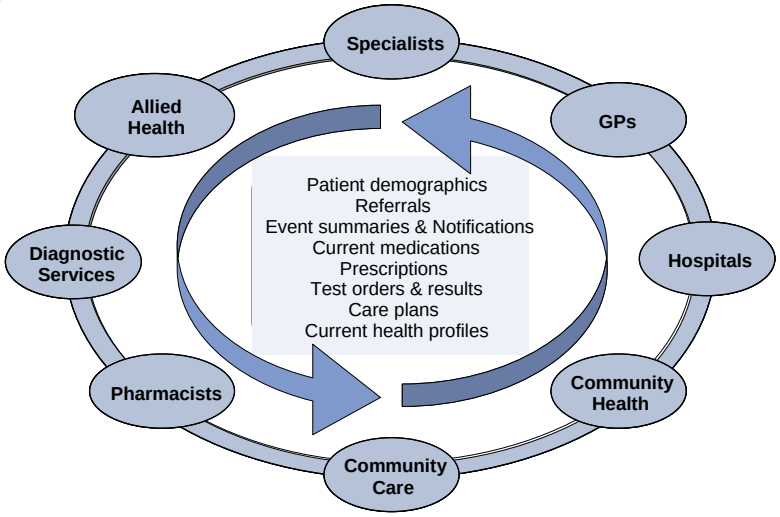
The first step in the journey towards the building of national IEHR capability is to connect care providers across the Australian health system so that they can effectively access and share consumer health information. This step requires the implementation of national E-Health foundations such as consumer and care provider identifiers, standards, rules and protocols for information exchange and protection, and underlying physical computing and networking infrastructure. Current plans are to implement an initial set of these core information exchange building blocks at a national level by 2010.

2. Enable Key Information Flows

The next step should be to enable the flow of priority sets of information between care providers to provide a base of comprehensive and reliable information on which IEHRs can

be built. These priority information flows include referrals, event summaries, prescriptions, test orders/results and care plans and should incorporate consumer health datasets such as demographics, current health profiles and current medications lists. This step involves the definition of national standards to facilitate the exchange of this information and changes to patient, clinical and practice management systems to support the flow of these priority information sets between care providers.

FIGURE 2: Key Information Flows

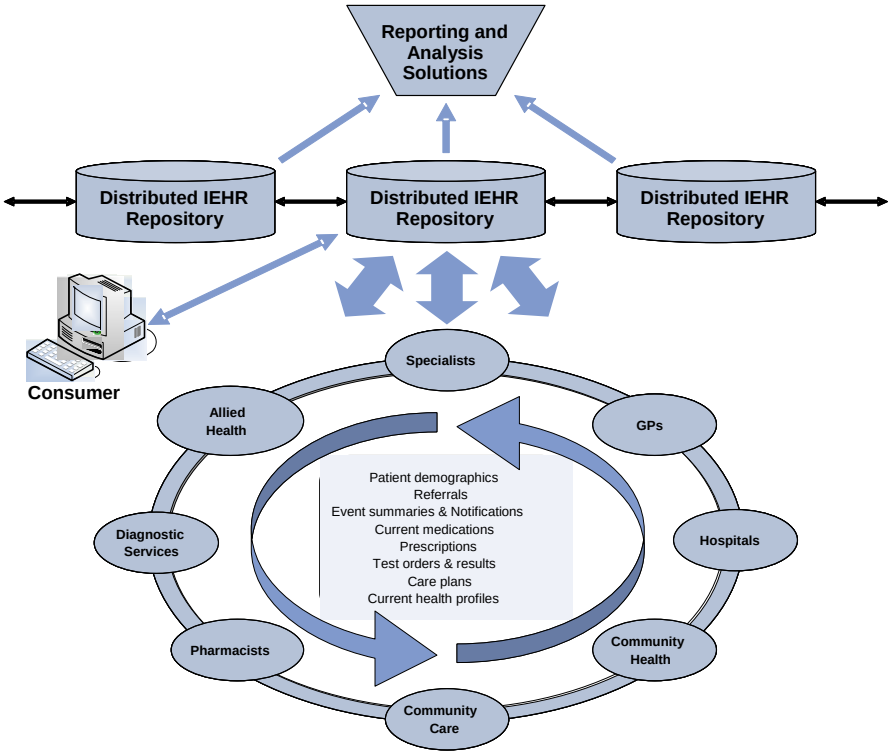


3. Facilitate the Development of Distributed IEHRs

Once some of these key information flows are established between groups of care providers, secure repositories can be developed in a distributed manner across the health system that can accumulate the information in these flows into a consolidated record for each individual. As additional information flows are established, these can be incrementally added into the consolidated record to increase the richness of information available in the IEHR.

IEHRs can be used to provide consumers with access to their own personal health information, tailored care plans and a personal health diary to record observations on their state of health. Reporting and analysis tools can also be built to support analysis of de-identified and aggregated datasets based on the information contained in these repositories.

FIGURE 3: Distributed IEHRs



4. Review and Consolidate

Over time consolidation of the IEHR record repositories could be considered to reduce operating costs, rationalise infrastructure and simplify operational management.

What are the implications of this IEHR approach?

Adopting an incremental and distributed approach allows different care provider networks to progress towards the establishment of IEHR repositories at different rates based on the extent to which infrastructure foundations and key information flows are in place. Distributed repositories will most likely be developed across geographic regions by large care provider organisations and care provider networks. However, this strategy also recognises the potentially important role that non direct care delivery organisations such as Microsoft, Google, Medicare and health insurers might play in creating IEHR repositories that allow consumers to electronically access their personal health information.

The key challenge associated with a distributed IEHR strategy is ensuring that the health information contained in these repositories is consistently secure, private and accurate and can be found, shared, transferred and reported on across multiple national repositories. Accordingly all IEHR repositories must be based on consistent national data standards and fully comply with data protection legislative requirements. This may need to be supported by the establishment of a formal licensing regime to regulate the operators of IEHR repositories.

Individual's health records will need to be accessible from anywhere in Australia and components of these health records may reside in one or more repositories. There will therefore need to be a central indexing or addressing mechanism established that allows E-Health solutions to determine in which repository an individual's IEHR, or components thereof, are located.

3.5 Change and Adoption Work Stream

The Change and Adoption work stream focuses on what needs to be done to encourage and enable participants in the health care system to adopt E-Health solutions and change their work practices to be able to use them effectively. The aim of this work stream is to enact national strategies to drive the adoption of E-Health in Australia to a self sustaining tipping point as quickly as possible.

The majority of E-Health adoption and change activities should be undertaken and managed at local and regional levels across the Australian health system. There is a need, however, for some national strategies to accelerate the adoption of E-Health in Australia across the health sector. This includes a coordinated program of awareness, training and education, and incentive and compliance programs. The targets of these programs are consumers, care providers, health care managers and vendors, with a particular focus on driving the adoption of E-Health solutions across Australian consumer and care provider communities.

Why is change and adoption important?

Global and Australian experiences clearly demonstrate the critical role health care participants play in determining the success of E-Health initiatives. These experiences also show that realisation of care delivery benefits is directly related to the extent that participants are willing to use E-Health solutions to interact with the health system.

Although unlikely to happen in the short term, there is global evidence emerging that consumer demand for access to better health information may become the real driver for the adoption of E-Health solutions in Western democracies. Until very recently Australian consumers have not been meaningfully engaged in the E-Health debate and there has been a consequent lack of pressure for action from this critical stakeholder group. It is apparent that Australian consumers will choose the nature and timing of their own involvement in the E-Health agenda and will not utilise solutions unless they are accessible, user friendly, trustworthy and clearly add value to their lives.

Where E-Health has been successfully implemented in this country, it has typically been led by pockets of the care provider community. In the majority of cases, however, there has been a consistent and significant underestimation of the effort required to engage and support care providers in the adoption of E-Health solutions. These E-Health initiatives have demonstrated that care providers will not adopt E-Health without clearly understandable benefits to themselves and to their patients, or if any solution imposes inefficiencies within the care delivery process.

Based on this experience, there is an emerging realisation that winning the hearts and minds of Australian health care participants will be a critical factor in determining the ultimate success of the national E-Health agenda.

What are health care participants adopting?

E-Health solutions are the tangible IT systems and tools that consumers, care providers and health care managers will use to interact with the health system. It is through the adoption and use of these E-Health solutions that benefits will directly accrue to health care participants. The efforts of this work stream therefore need to focus on ensuring that consumers, care providers and health care managers are aware of these solutions, are educated in their use, and are encouraged and motivated to adopt them.

What do we need to do to drive change and adoption?

Driving change and adoption requires focused activity in five key areas:

- **National awareness campaigns –** A key mechanism for driving change and adoption is making consumers and care providers aware of the E-Health solutions that are available to them and the benefits that use of these E-Health solutions may provide. This may involve mechanisms such as media campaigns, solution demonstrations and web based communication of E-Health status and success stories. As part of this process consumers should be actively encouraged to access and use emerging individual electronic health record solutions with a particular focus on those segments of the population that interact frequently with the health system such as mothers and infants, the elderly and those with chronic disease
- **Financial incentive programs –** Awareness and education campaigns should be supported by an appropriate incentive program to actively encourage care providers to purchase and implement high priority E-Health solutions as they become available. It is recommended that incentives be based on financial payments which are linked to the actual use of E-Health solutions and targeted at key private sector care providers (e.g. GPs, clinical specialists, community pharmacists, and diagnostic service providers). Incentives should be funded nationally and, where possible, should use existing national funding mechanisms such as MBS and PBS claiming through Medicare Australia
- **National care provider accreditation –** While incentive mechanisms may be used as a short term mechanism to drive E-Health adoption, the longer term focus should be on embedding the use of E-Health solutions into the day to day operating practices of care providers. A key means by which this can be achieved over time is by making adoption and use of E-Health solutions a national requirement for professional accreditation of care providers. This will involve liaising with care provider professional bodies to define appropriate E-Health accreditation criteria such as the establishment and maintenance of acceptable levels of computing infrastructure and the use of high priority, standards compliant E-Health solutions
- **Vocational and tertiary training –** There is a clearly identified need to ensure sufficient numbers of skilled health IT resources as this is looming as a critical barrier to the successful implementation of a national E-Health work program. The building of Australia's E-Health skills capacity and capability will require the national coordination of changes to vocational and tertiary training programs. The emphasis of these changes should be to strengthen the understanding of the importance and use of health IT as part of care provider training programs and to increase the number of specifically trained Australian health informatics practitioners. This last action should involve consideration of the establishment of nationally recognised tertiary qualifications in health informatics in a similar manner to countries such as the United States.
- **Stakeholder reference forums and working groups –** The best E-Health outcomes will result from the continuous engagement of a broad range of interests representing public and private care providers, professional, government, vendor and community groups. To achieve this, it is recommended that stakeholder reference groups be established to provide input into the appropriateness and completeness of E-Health foundations, to prioritise E-Health solutions activity and to provide insight into the effectiveness of adoption and change approaches. In addition it is recommended that national professional body working groups be established to determine and oversee the changes required to professional education, training and accreditation programs.

3.6 Governance

The governance work stream focuses on establishing the framework for effective management and oversight of the national E-Health strategy and associated work program.

Current Governance Arrangements

The current national E-Health governance arrangements have supported improved coordination between Commonwealth and the State and Territory Governments in the oversight of their respective health information management responsibilities. However, the current arrangements are not sufficient to provide effective governance of the national E-Health agenda. This is due to factors such as a lack of organisational capability or capacity to deliver the national E-Health strategy and work program, a high reliance on collaboration between disparate committee, sub-committee and working groups, and the relatively limited representation of key health stakeholders in decision making processes.

Governance Principles

There are a set of governance principles that should underpin the design of a national E-Health governance structure.

Governance Principle	Description
Clarity of accountability	Ensure clear decision making accountability and provide all stakeholders with clarity regarding their roles and responsibilities
Transparency	Provide widespread visibility of the progress of Australian E-Health activities
Appropriate stakeholder representation	Provide a forum for representation across all key stakeholder groups Ensure broad ownership and a balanced approach to the delivery of E-Health
Sustainability	Implement a governance model that will not be unduly impacted by changes to the political or stakeholder environment
Support for activity at multiple levels	Recognise that E-Health governance will need to support initiatives that deliver E-Health capability at differing levels of granularity
Effective leadership and coordination	Effective leadership and coordination of the range of activities that need to occur across all national E-Health work streams
Balance local innovation and national outcomes	Continue to encourage local innovation while ensuring that the development of E-Health solutions supports national E-Health outcomes

What do we need to do to establish effective governance of the E-Health agenda?

Establishing effective governance requires focused activity in three key areas:

- **National E-Health governing board –** Establish a national governing board for E-Health that reports to the Australian Health Ministers' Conference, has an independent chair and a breadth of cross sectoral stakeholder representation. The E-Health governing board should have accountability for setting overall national E-Health direction and priorities, for reviewing and approving E-Health strategy and funding decisions and for the monitoring of progress against national E-Health strategy deliverables and outcomes
- **National E-Health entity –** Establish a national E-Health entity to coordinate and oversee the E-Health strategy, investment and the execution of the national components of the E-Health work program. The E-Health entity's operating model should support discrete functions focused on strategy, investment management, work program execution, standards development and E-Health solutions compliance. The national E-Health entity should be overseen and governed by the national E-Health governing board

- **National E-Health regulation function –** Establish a national E-Health regulatory function to implement and enforce national E-Health regulatory frameworks. Regulatory frameworks should cover areas such as the establishment and implementation of unique health care identifiers for individuals, care providers and care provider organisations, the integrity, privacy and security of personal health care information, and the licensing conditions and compliance arrangements for electronic health record operators. The E-Health regulatory function will need to coexist with existing regulatory and privacy bodies and should have an independent reporting relationship to Commonwealth, State and Territory Ministers.

The New 'National E-Health Entity'

The national E-Health Entity should have the following set of responsibilities.

Strategy – the review and monitoring of E-Health strategy outcomes and the development of strategic recommendations and priorities for consideration by the E-Health Governing Board.

Investment – the development of E-Health investment submissions and business cases for consideration by the E-Health Governing Board, and the budgeting and tracking of national E-Health investment funds.

Execution – the coordination of specific project initiatives across the foundations, adoption and change and E-Health solutions work streams, focusing on the delivery of on time and on budget projects, the reporting of project progress, and the management of project dependencies, risks and issues.

Standards Development – the definition, maintenance and enhancement of national E-Health standards and the implementation of a consistent process for undertaking this work.

Solutions Compliance – the testing of whether E-Health software products and solutions satisfy nationally agreed certification criteria and standards.

These functions should initially reside within the one E-Health entity to allow them to be established in a coordinated manner. Once the functions have matured, consideration can be given to separating those functions that may best operate as distinct entities in the long term.

The Way Forward

Given the strong national consensus for action and the amount of E-Health activity occurring at a national, State and Territory, regional and local level, there is a need to move quickly to establish an appropriate long term E-Health governance regime. A pragmatic option is to leverage the existing NEHTA organisation and legal structure as the basis for creating the new E-Health Entity. In NEHTA, Australia has created and invested in a vehicle for the progression of the national E-Health agenda and, whilst the journey to date has at times been problematic, it represents the best foundation upon which to build momentum behind a national E-Health work program.

In order to ensure there is a clear distinction between the new E-Health Entity and NEHTA, there should be a formal six to nine month transition process to implement required changes to NEHTA's constitution, board and operating model.

4 E-Health Implementation Roadmap

4.1 Planning Horizons

The first step in defining an implementation roadmap for the National E-Health Strategy is to define the planning horizons. While there is strong pressure from passionate and committed stakeholders for tangible E-Health action, international experience consistently points to a journey of 10 years or more to deliver a national E-Health strategy.

Given the long time horizon over which E-Health will need to be delivered and the realities of Australia's 3-4 year political cycles, breaking the journey down into 3, 6, and 10 year planning horizons will provide the program with an ability to remain focused by delivering incremental and tangible blocks of capability.

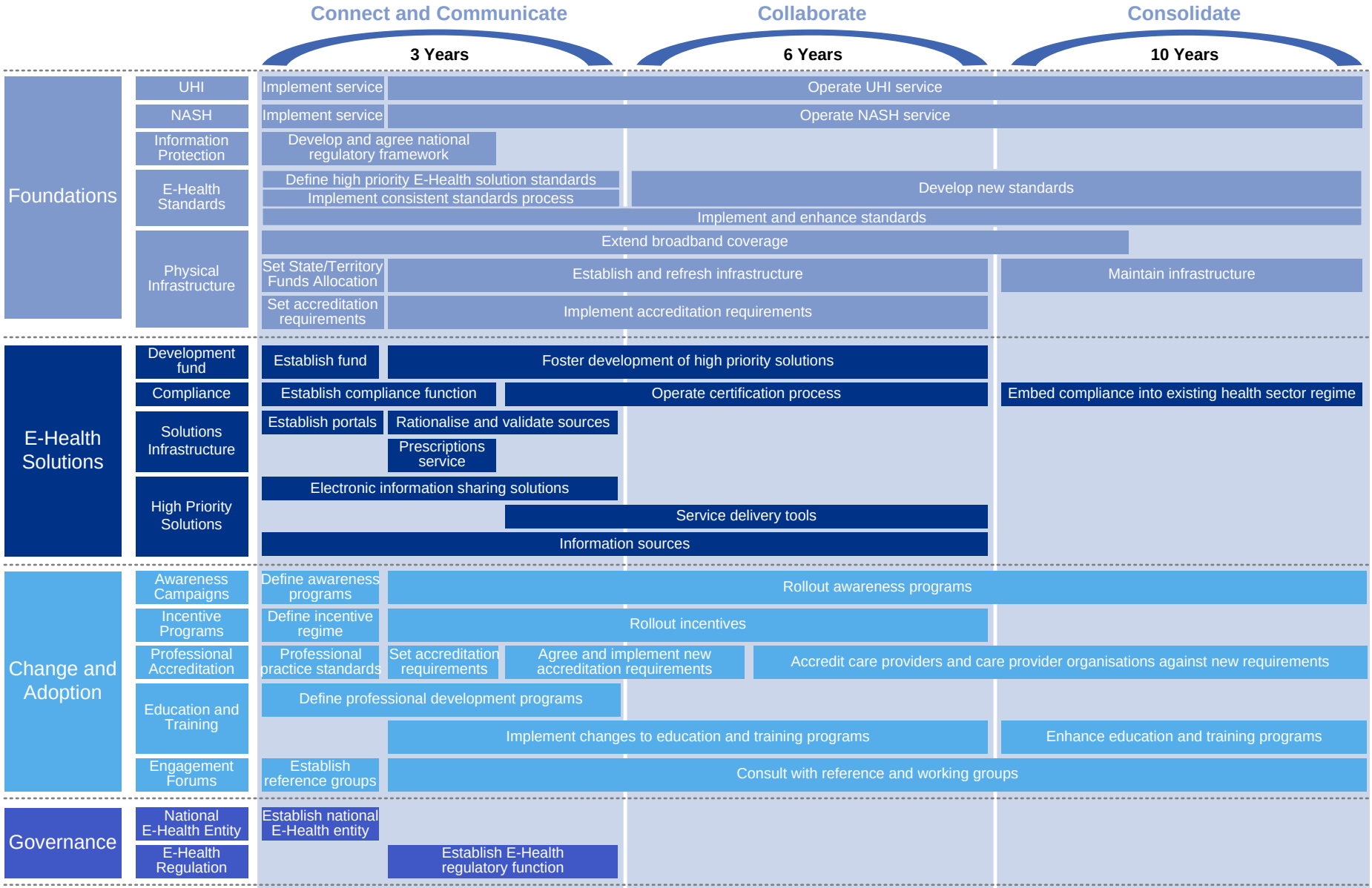
These planning horizons are focused on achieving three progressive states of maturity in information sharing:

- **Connect and communicate –** in which the focus is on establishing the foundations for E-Health and providing basic connections that allow information sharing to occur between care providers and across the health sector;
- **Collaborate –** in which the focus shifts from basic communication to collaboration, joint care planning and multi-disciplinary care delivery through more extended information sharing; an
- **Consolidate** - in which E-Health becomes part of business-as-usual for health care provision. In this stage there is a focus on maintaining and enhancing a sustainable health information sharing environment that supports ongoing innovation and the development of future models of care based on rich and extensive information sharing.

4.2 Implementation Roadmap

The following diagram summarises the national E-Health strategy work program over these three, six and ten year planning horizons.

FIGURE 5: E-Health Implementation Roadmap



5 E-Health Outcomes

5.1 E-Health Implementation Targets

The national E-Health strategy identifies indicative targets for the advancement of E-Health adoption across consumers, care providers, health care managers and vendors over the next 10 years. Achieving these targets will mean that Australia will have realised substantial improvements in the way health information is used to deliver safer, more effective and more efficient health care.

In 10 years time, we will be able to measure the success of the national E-Health strategy for each of the key stakeholder groups as follows.

Consumers

- Online interaction with the health sector has become commonplace. Rollout out of consumer identifiers is complete and high speed broadband connectivity is available to 98% of Australian consumers
- Consumer adoption of IEHRs has been driven to a tipping point, particularly among high priority consumer segments such as mothers and infants, those suffering chronic disease and the elderly. Over 90% of consumers, or their carers, have access to an individual electronic health record and over 50% actively access and use these records to manage their health and interact with the health system
- Consumers increasingly find their interactions with care provider are supported by E-Health. Electronic communication of health information is commonplace with over 80% of prescriptions, test orders/results and referrals being performed electronically
- Up to 20% of consultations use electronic consultation or telehealth capabilities
- The National Consumer Portal is viewed as a world class source of comprehensive and up to date health information and also provides access to IEHR information from organisations such as Medicare.

Care Providers

- The rollout of national identifiers is complete and they are being used for over 90% interactions between consumers and care providers. Broadband connectivity is available to all Australian care providers
- Over 95% of Australian care providers have appropriate levels of computing infrastructure in place to support the electronic exchange of health information. Maintenance of an acceptable baseline of physical computing infrastructure has been made a care provider accreditation requirement with criteria and accreditation processes in place
- Professional responsibilities for electronically collecting and sharing health information have been fully adopted by care provider practices and organisations and have been embedded in professional accreditation requirements
- Over 90% of care providers have adopted and are utilising standards compliant patient, clinical and practice management systems that support E-Health priority solutions such as the electronic transfer of prescriptions, test orders/results, referrals and event summaries
- The National Clinician Portal is viewed as a world class source of comprehensive and up to date clinical treatment and evidence information
- Care provider IT and health informatics education programs have been established and are producing a new breed of technology aware health care practitioners who

understand the value and use of E-Health solutions. Specific qualifications are recognised for health informatics professionals.

Health Care Managers

- Health Care Managers have access to high quality, comprehensive longitudinal and aggregated datasets for improved analysis, decision making and research
- Health Care Managers utilise sophisticated data reporting and analysis tools which support the real time monitoring of Australian health system activities and outcomes
- The vast majority of reporting data is collected through normal E-Health enabled care delivery processes and a significant consolidation and rationalisation of data collections has been completed.

Vendors

- Vendors have a clearly defined and stable set of national E-Health standards on which to base product development. 100% of vendors in the Australian marketplace are delivering E-Health standards compliant solutions
- Vendors are bringing scalable and E-Health standards compliant solutions to market more quickly. The majority of vendors have twice yearly enhancement cycles that are aligned with national E-Health standards and priorities.

5.2 E-Health Benefits

There is a growing amount of local and international research available to highlight the potentially important role E-Health may play in delivering Australians a higher quality, safer, more equitable and more efficient health system. From a macro, top down perspective, E-Health should be considered a means to potentially address the ever increasing costs of Australian health care. With the proportion of health care spending as a proportion of Australian GDP expected to grow from 9% today to an estimated 16 to 20% of GDP by 2045, any ability to constrain growing health care costs will directly support the future sustainability of the Australian health care system.

A nationally coordinated approach to E-Health will contribute to this outcome by improving the capacity of the Australian health system to do more with existing resources and by enabling these resources to be deployed against real need. This will result from improving system quality and safety (and therefore reducing avoidable demand for health care services), improving system accessibility and improving system processing and cost efficiency.

E-Health will improve the quality and safety of the Australian health system by:

- Empowering consumers to better manage their own health
- Providing care providers with access to decision support tools and up to date consumer information and knowledge sources at the point of care
- Reducing the number of medically avoidable adverse events
- Providing care providers and health care managers with access to better quality datasets of treatment effectiveness
- Supporting care providers with the ability to automatically monitor individual care plans and health status
- Providing health care managers with access to timely and comprehensive data to enable the more effective surveillance and management of public health.

E-Health will support a more accessible and equitable health system by:

- Providing consumers with better visibility of the location of care providers, the services offered and their availability
- Allowing care providers to readily know who and where other providers are located to facilitate referrals and timely access to care
- Providing rural, remote and disadvantaged communities with better access to a range of health care services through the use of technologies such as telehealth
- Supporting health care managers with access to quality data sources to inform service and workforce planning.

E-Health will improve system efficiency by:

- Reducing the time consumers and care providers spend manually booking appointments, ordering treatments, and repeating and sharing information across the health sector
- Reducing the time and cost spent undertaking unnecessary or duplicated treatment activities such as diagnostic tests
- Reducing the time and cost spent addressing avoidable medical errors or avoidable degradation of chronic conditions
- Reducing the amount of required travel to / from rural and remote communities
- Enabling health care managers to more effectively identify and address system inefficiencies.

The ultimate benefit achieved from implementation of a national E-Health strategy will be a safer and more sustainable health system that is suitably equipped to respond to emerging health sector cost and demand pressures. Improvements in the Australian health care system will also drive stronger workforce productivity and will therefore be integral to Australia's long run economic prosperity. The biggest challenge facing the nation is therefore to decide where to spend on E-Health rather than how much.

The stakeholders engaged in the development of the E-Health strategy have created a workable plan that defines the major initial steps that Australia should take on the E-Health journey. The E-Health strategy is pragmatic, balances different priorities and will lead Australia towards the delivery of a safer, better connected and more sustainable health care system.