

A National Telehealth Strategy For Australia – For Discussion

Michael Gill

A National Telehealth Strategy for Australia

Preface

This document has been prepared by a sub-committee¹ of the Australian National Consultative Committee on Electronic Health (ANCCEH) and has been supported by Global Access Partners. It is an endorsed document of the committee and may be circulated. The ANCCEH represents the major ICT industry players and other stakeholder groups and has been meeting for six years. The Committee aims to raise issues of national importance, to influence government policy and to support the interests of its members.

The following telehealth strategy details our thinking as to what is important in telehealth from a systemic national perspective. Telehealth is not a local issue but offers the health system, both public and private, the opportunity to provide new models of care efficiently. Key principles and observations include:

- The requirement to regard the carriage of telehealth data, voice an image as a utility;*
- Such carriage needs to be based on open standards and of consistent quality irrespective of geographic location*
- Service content needs to be focused nationally on the main four or five key medical conditions which offer most return to the community*
- Telehealth services need to be combined with other services in order to achieve widespread adoption by the clinical community.*

We emphasise the fact that telehealth itself is less of a technical issue than it is a clinical workflow issue, especially in primary care environments. The current discussion often focuses on the rural-to-urban use of telehealth. We suggest that is less important than the use of telehealth to break down the divide between general practitioners, allied health, specialists and the acute sector. Telehealth is fundamentally about enhancing team based care, collaboration and patient access.

The views contained in this document are those of the committee and its member individuals and do not necessarily represent those of the organisations to which they belong.

Michael Gill

Chair

migill@organisationperformance.com.au

¹ NeHTA, IBM, Microsoft, RSL Care and BUPA

Introduction

Telehealth as a concept is interchangeable with telemedicine in terms of utility and addresses the collection and/or exchange of information electronically between doctors, allied health and patients in both synchronous and asynchronous modes. It ranges from telephone call centres to vital sign monitoring to video imagery for the delivery of health-at-a-distanceⁱ. Telehealth has particular relevance for aged care, disaster situations, individual clinician support and for team based support for complex conditions. As such, telehealth in Australia is ideally placed to support major national programs associated with dementia, mental health, diabetes and regional concerns related to rehabilitation, acute waiting list relief and outpatient support.

Research shows that Telehealth can enhance quality of care by better supporting chronic disease management, application of best practices, and improvements of knowledge and skill development in local care providers and improvement of care coordination. Telehealth demonstrated improvements in timeliness of care, leading to improved outcomes. Furthermore, there were numerous examples of Telehealth being the catalyst for leading practice changes which result in better quality of careⁱⁱ.

Visit-based care in healthcare practices and institutions is the most expensive form of care delivery and physicians the most expensive (and scarce) resource. “By extending the healthcare system using other communication and collaboration technologies and making the best use of all clinicians and staff in the healthcare system, we can develop a scalable healthcare system that will be a model of the care delivery system of the future”ⁱⁱⁱ.

Systemic Focus and Pressure Points

“Telehealth around the world, and in Australia, is currently focussed on specialist consultation to patients in rural and remote locations. It concentrates on selected medical specialties, which are least compromised by the limitations associated with video-consultation. In most services, (relatively expensive) hardware video-conferencing equipment is utilised” (page 5, UniQuest Report 16807, Telehealth Assessment Final Report, 28 June 2011).

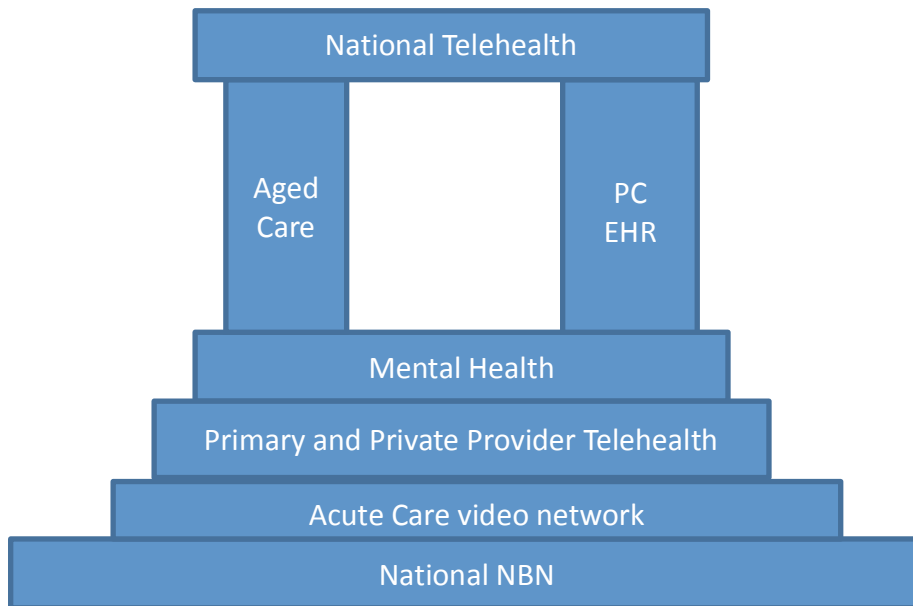
Our scan of global online health strategies do not reveal a common or core group of services that should be provided by *national* telehealth services. Service evolution appears to gain prominence from first mover advantage, from clearly defined rural demands and from political “favourites” funding. What is clear is that in-situ medico-political turbulence provides the impetus and government provides some or all of the funding. The private sector, as a general rule, tends to be idiosyncratic and driven by value add opportunities. By way of example, the Indian private health care market delivery via video is more advanced than is the case in Australia with Apollo Health being the leading exponent.

The main systemic expansion areas associated with the Australian health system are:

- A well funded desire to address mental health service divides especially between rural and urban areas with a focus on depression.
- A restructure of the aged care system and strengthening the current policy setting associated with aging in place

- Deliberate but undirected funding for telehealth
- Under funding for a personally controlled electronic health record (PCEHR)
- The emerging opportunities to deliver health and wellness services via the National Broadband Network
- The plan to coalesce the current jurisdictional video networks to form a national fabric for the public acute sector.

As illustrated below:



The above diagram has one major limitation and that is the inclusion of the private health providers including GP's, Specialists', private hospitals and private insurance. Private health has yet to engage in the telehealth debate in this country in any significant way. The opportunity for this group probably relates to aggregating and coordinating value add services such as post operative follow-up and extending practice revenue opportunities.

A national telehealth framework must deliberately focus on a set of manageable telehealth services that will deliver the greatest health and wellness outcome. Our scan of the available material and our understanding of the Australian health system leads us to make the following recommendation as regards whole-of-system focus areas.

Recommendation 1- Focus Areas

Broad health system areas of high impact relate to:

- Encouraging home based access to care for the aged, the disabled and selected others
- Addressing acute sector waiting lists by providing on line bookings and status alerts
- Improving access to specialists for rural GP's and allied health providers
- Need to support national programs proving new care delivery models for mental health and aged care
- Integration of primary and allied health

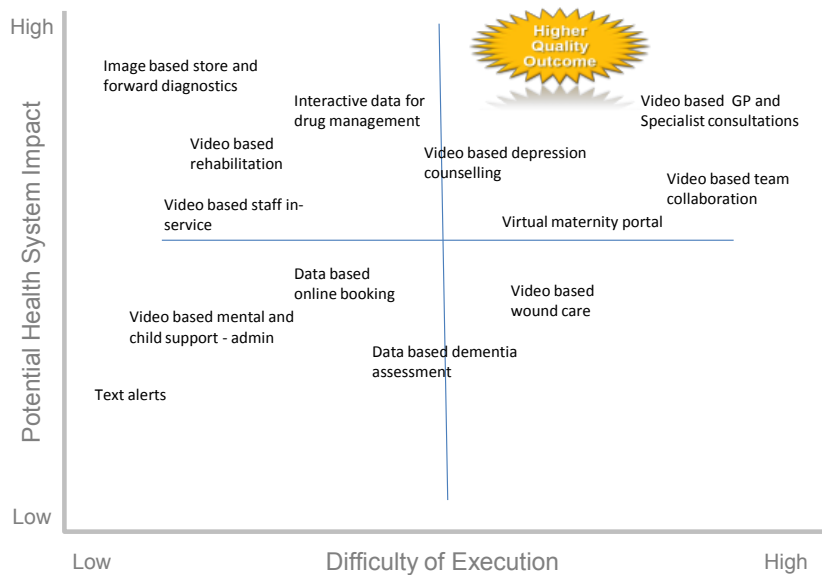
- Specialist access for key conditions such as oncology
- Pre and post natal maternity services

These concerns translate to health care delivery processes in the following areas:

- Home based rehabilitation, drug management and post operative wound care
- Acute care services booking online and improved collaboration for team based care delivery via joint coordination and electronic alerts
- Access and reach to key services in rural areas associated with mental health (depression counselling in particular), dementia assessment and care and clinical staff in-service training.
- Improved coordination and provision of mental health services and aged care support services in metropolitan and regional areas
- The ability of GP's, specialists and those clinicians in the public health sector to collaborate and consult in both real time and via store and forward methods.
- Provide patients in both rural and urban areas with better access to specialist services, educational material and online peer group support via portals – example being virtual maternity and aged care.

The relative impact of each focus area is displayed below:

Proposed Focus Areas



ANCCEH 2011

The widespread use of the internet means that availability of innovative web tools and processes (Web 2.0²) to assess, monitor, evaluate, collaborate and explore medical conditions by **both** patients and practitioners is a reality. There are a wealth of sites and tools currently available but the level of innovation is yet to explode.

There is a quiet revolution going on. It is a revolution about information access, equity of access and participatory medicine. The old adage that the ‘doctor knows best’ is being questioned, initially by those of the baby boomer generation but especially by the millennials. The huge increase in the incidence of complex chronic disease means that primary care practitioners simply are unable to keep up with the latest research, new modes of treatment and, in Australia, rarely participate in team based care provision. Our primary model is one of lone practitioners providing services in sequence.

The ability of Web 2.0 technologies and social networking sites to merge and mix health data, personal information and other types of information (commonly known as mash-ups) combined with the increasing popularity of mobile devices suggests that medical doctors, nurses, allied health professional and patients along with their carers may well be pushed down innovative ways of building new health care delivery models. What is increasingly evident is that demand by patients and their carers for better access, for better tools and to engage in the dialogue about their own care is strong and increasing.

These considerations suggest that telehealth is more than the delivery of healthcare services. It is about tailoring social networking to support health and wellness activities of both providers and receivers. The increasing use of telemonitoring such as a patient wearing a 24 hour ECG pack will increase and will stimulate greater patient participation. There are literally hundreds of software tools available for users of smart phones addressing everything from fitness to pain management.

It is our view that telehealth as a series of delivered solutions will soon be taken over by platform based services offering a variety of tools and customisable services including social networking. The current debate around Cloud computing is reflective of this transition. One significant implication of this is that data collected at the platform level can potentially be repurposed and reused across a variety of health and fitness settings.

National coordination

The situation in Australia is that there are many hundreds of pilot tests and demonstration telehealth services scattered across the country in both acute and primary care. Some combine voice, data and video while others concentrate on monitoring data capture and transmission. The vast majority of these innovations are personality lead by one or a few highly energetic clinicians, operating on a shoe-string budget without any detailed plans for scalability or sustainability. In other words, these flowers of innovation will and do whither quickly. The fundamental question as a nation is to define the key priority areas and focus resources towards these.

In order to do this effectively all proposals and innovations need to address the following four key issues:

² http://en.wikipedia.org/wiki/Web_2.0

Recommendation 2 – Selection Criteria

1. Potential for long term sustainability of the service
2. Ability to integrate public and private aspects of the health system in recognition of the patient’s journey through both systems.
3. Addressed and published clinical protocols specifically for video
4. Adequate professional indemnity insurance provisions reflective of the change in the locus of care telehealth may provide

There is a requirement to ensure that clinicians are given appropriate guidance on the implementation, set-up and use of telehealth services. Addressing the use aspect, clinical protocols and medical insurance are closely aligned. When not to use video consultation is essential to understand. When to include follow-up is also critical. For example, during an oncology video consultation the specialist may be consulting with a rurally based patient and their family in addition to a local clinician. After the consultation it may be essential that the specialist provide the drug dose information discussed to all parties in written form via email.

National coordination would be greatly enhanced if the following were provided:

- National directory for telehealth,
- Support for a competitive market of interoperable telehealth solution suppliers,
- Consumer oriented solutions
- Development of gateways between existing state and territory networks
- The establishment of a one-stop shop for telehealth information

Recommendation 3 - Insurance

We also believe that the Australian government should consider providing a ceiling providing national indemnity cover for all forms of video consultations. The industry providing insurance services to clinicians is fragmented and not aligned to emerging national priorities. Leadership is required to ensure that clinical protocols for telehealth are understood and covered by the numerous insurance providers.

The current large video networks available in each of the public health jurisdictions are to be integrated with the northern areas of Australia beginning the process this year. In addition to this movement the National Broadband Network (NBN) will be deployed with a major health services component. These two significant public sector actions offer enormous potential for interconnectivity and the consequently offer the ability to provide much greater national reach for health services delivery. The NBN provides the catalyst to ensure that telehealth carriage is standards based and is treated as a utility for all to access.

Aged Care

Telehealth is emerging as a strong enabler for the Aged Care industry and will continue to strengthen as our population continues to age and we move towards care for this age group being executed outside the four walls of acute facilities. The growing number of gated aged care communities that include both low and high levels of care evidence this. For the rest of this section the phrase ‘aged care’ should be considered as including the disability sector as both

groups require care-in-place as a first outcome and later residential care environments may be required.

Earlier this year, the Federal Government has identified Aged Care as a ‘telehealth trailblazer’. There are a wide range of aged care-related telehealth possibilities ranging from people using a computer to send details about their blood pressure or sugar levels over the internet to a community nurse, to video consultations with the patient able to see and speak to a doctor without leaving their own home; to assisted living solutions that help track medicine consumption, fitness, nutrition and also providing cognitive training. Many of the above elements can occur in the home and as such, relate to current policy settings supporting of care-in-place.

The Productivity Commission’s ‘Caring for Older Australians’ draft report noted the difficulty that aged care facilities currently face in getting doctors to visit, or having specialist doctors make home visits to elderly patients. While the report notes that technology will not significantly reduce the demand for labour in aged care, it did view it as a way to provide better in-home care more economically.

On July 1 2011, the Australian Government introduced the telehealth initiative. This initiative aims to address the barriers to accessing medical services for eligible telehealth areas. Telehealth provides financial incentives to eligible residential aged care services that enable patients to participate in a telehealth consultation with a specialist, consultant physician or consultant psychiatrist. Whilst a step forward, the General Practitioner, who provides the bulk of aged care services, is excluded from this initiative. Also excluded are key Allied Health providers such as Occupational Therapists, psychologists and clinic nurse coordinators, to name a few. We regard this exclusion as unhelpful. The view is that all community care programs could also potentially incorporate telehealth services and equipment in the future.

In an Access Economics ‘Telehealth for Aged Care’ report dated November 2010, a cost benefits analysis (CBA) was provided around the introduction of telehealth intervention into existing aged care programs. Three pilot sites were modelled; an area of Townsville in Queensland’s mid-north; the coastal communities of Minnamurra and Kiama Downs south of Wollongong, NSW; and an area of west Armidale, NSW. Results demonstrated that over the course of the intervention (2012-2013/2013-2014), net financial benefits are expected to be \$6.6 million. This is equivalent to a benefit-cost ratio (BCR) of 1.61 to 1 (a 61% return on investment). From the Australian Government perspective, the BCR is 1.17 to 1 (a 17% return on investment). In addition, benefits to patients in terms of improved health outcomes are estimated to be \$9.5 million in Net Present Value (NPV) terms.

Based on these proposed attractive return on investment percentages, ‘Telehealth for Aged Care’ should remain a government focus, with more targeted and aligned funding moving forward, ie. for areas such as GP consultations and Community Nurse/Nurse Practitioner consultations. Some specific current and new areas for focus across the aged care continuum include:

- Wound management
- Dementia support
- Mental health support related to social isolation
- Comprehensive geriatric assessments

- Home monitoring
- Community nursing
- Ambient Assisted Living

One new area of focus is ‘Ambient Assisted Living (AAL)’. This is where ICT is used to assist people with disabilities and the ageing population to remain at home whilst increasing their quality of life. It includes safety, security, healthcare in the home (monitoring of chronic diseases, medicine consumption, fitness, nutrition, cognitive training), social networking and entertainment. Currently, there is a lack of standards, lack of standard solutions, poor interoperability (devices, communication protocols, data formats, application environments) and high development costs. AAL is striving to provide a universal open platform and reference specification that can consolidate telehealth projects. Currently, projects in Australia are limited to pilots with no single open universal platform available that will allow devices to interoperate and information to be shared.

Underlying all of this is the issue with technology literacy in relation to the average age of people in residential care and their mixed abilities to manage technology. At the residential community end of the scale are 65 year olds ranging to the high-end residential care receivers aged over 84 years. This cohort is not currently technologically aware and poses a significant challenge. Along with the roll out of technology, there also needs to be a major campaign developed around health literacy and digital literacy for this emerging group of people.

Recommendation 4 – Aged Care

From a practical perspective we see telehealth (essentially video consultation) for residential aged care communities as being the first stage followed by aged care in the home being the next. Both will require:

- A choice between mobile and non-mobile telehealth video installation
- A mechanism to reward GP’s for video consultations with both the elderly and the nurse carers involved (home and residential care)
- The ability of specialists to support residential aged care without GP’s in attendance and possibly with GP referrals
- Aged care is essentially a team based activity due to comorbidities. As such both point-to-point and point-to-multipoint telehealth services (especially involving allied health) need to be provided along with adequate quality of service.
- Service provision via telehealth needs to be widened to include clinical discussions (such as pre-acute admission issues, case conferencing and dementia assessment) and for improved administrative coordination.
- Supporting enhanced clinical care in-situ where nurses can obtain telehealth based support from other clinicians (i.e. for palliative care) and to better co-ordinate treatment
- An understanding that the burden on nurses will increase with increasing telehealth deployment and, as such, nurses required greater support.
- A recognition that the facility service fee for aged care establishments using video consultation (\$60 per session) is unlikely to be an aid in adoption as the average size of an aged care facility in Australia is 71 beds.

Standards

The opportunity for the exchange of patients vital sign data, of video imagery, static imagery and of associated voice communications across national networks such as those detailed previously will require the definition and articulation of appropriate standards that allow interchange between networks. These interchange points are known as gateways and need to be architected in a standardised manner across all networks. This is essential for the accurate and reliable transport of video signals and to ensure service reliability.

Much of the current limited debate is concerned with the delivery of health services between two points, typically doctor to specialist. In reality, the experience of many across the system and the current policy setting encourage team based care. This necessitates the design in terms of connectivity architecture of networks to enable point to multipoint services. For example, a post operative patient at home in a rural area dealing with a metropolitan based specialist and a regionally based community nurse.

There is a requirement for a body that is respected by both industry and government to perform a mixed role related to standards developments and industry catalyst. Such a body would be required to:

- Develop specifications, conformance tests and acting as a catalyst for standards development.
- Develop requirements and architectural designs for new national infrastructure, such as a national telehealth directory service
- Harmonize clinical and technical standards, as may be appropriate
- Supporting consumer and community participation
- Supporting the development of infrastructure

Recommendation 5 - Standards

As a consequence we strongly adopt the position of a standards based approach and open architecture standards developed in harmony with prevailing world best practices and not developed simply for Australia.

We also support the role of NeHTA in this arena.

Risk Mitigation

Risk can be divided into adoption, financial and legal risks. Each of these risks has interdependencies.

Adoption

Ultimately, the introduction of any new technology in health is a change management challenge. The aim in this case being to change the way clinicians deliver services and along with the way patients consume them. Clinicians and consumers tend to be motivated by similar objectives, but with different thresholds for change requiring different approaches. A consumer is more likely to embrace a new technology on the promise of its benefit, than clinicians who will tend to wait on the evidence of impact being widely accepted. Technology companies and Governments can

learn a lot from the industry most adept at changing clinician behaviour, the Pharmaceutical industry.

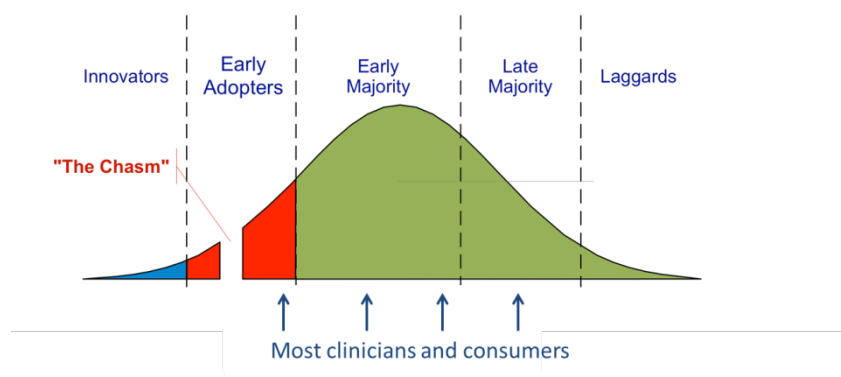
The Pharmaceutical industry understands that clinicians are motivated by the following:

1. Maximizing patient care
2. Clinical evidence supporting efficacy
3. Peer group support

Remuneration as a variable is only important when the above characteristics are unclear.

It is the clinician who needs to be convinced that Telemedicine meets each of the three criteria above. For telemedicine to take its place in mainstream medicine, the body of evidence will need to be expanded to demonstrate statistically significant clinical outcomes.

Being able to capture and communicate the value of participation to consumers and clinician alike requires a pragmatic approach. We would do well to remember the principles of ‘crossing the chasm’ published by Geoffrey Moore (below). Change agents know that although most people are interested in innovation, the majority of people will only adopt a product or service when the value proposition can be clearly communicated (even better if by word of mouth) and significantly exceeds their perceived risk of participation.



Financial

Scale is predicated on a sustainable business model. The financial advantage to payers of moving services online does imply an investment by them in harvesting the benefit. It is unreasonable however, to expect Insurers and Government's bear the full participation cost. There will need to be a reliance on co-pay by the consumer in the acquisition of devices, in fee for service and in the use of web-conferencing technologies already pervasive in the home.

Current trends point to a willingness by consumers to cover some of these costs. A range of consumer devices are sold each year which provide a rich landscape for including telemonitoring in a telemedicine service. The 'internet of things' continues to grow across the mobile platform and consumer health devices.

We believe that financial incentives for participation need to be clear and easily communicated. If we are to rely on the medical workforce to sell the benefits of telemedicine to consumers, we need to make sure it is easy to explain payments and savings from participation.

Deployment

The plethora of available video conferencing solutions with differing performance characteristics and functionality, and varying degrees of standards compliance, tends to confound the choice of a 'best' or even 'top few' systems. The existing range of videoconferencing services includes both high-end proprietary systems, which would have the advantage of connecting with corresponding systems in public sector health enterprises (e.g. state or hospital systems), and low complexity simple web-based systems, which are more affordable and still able to provide a fit for purpose consultation.

During the video consultation there may be a clinical need to obtain a record of some aspect of the patient's appearance such as skin condition or to record output from a device (e.g. digital stethoscope), or check medication guidelines. It may also be necessary to record case notes and exchange these or to confirm via text drug types and dosage information. These tasks are unlikely to be possible using existing systems already in most clinician's offices. There are two other key considerations; being able to video consult with multiple parties at the same time (multi-point conferences); and the ability to 'see and book' participants (presence capability).

Technical Standards

Video consultation using video conferencing, in simple terms, involves bi-directional, synchronous, real-time communication of video and audio (and possibly other data) streams between two or more parties.³ The industry battle between open and proprietary standards is without a victor and what Australia finally ends up with will, in the main, be as an outcome of larger multinational interests. Key issues relate to interoperability between different video systems, standards around quality of service specific for health and the ability to 'plug and play' different input devices at any of the end points in use. As part of this effort, the Continua Health Alliance was developed and has since begun distributing design guidelines (the Continua Health Alliance Version One Design Guidelines) to its nearly 200 member organizations (which include industry bellwethers such as Intel, Medtronic, Baxter, Qualcomm, Nokia, IBM, GE, and Novartis). These organizations have integrated the Continua design protocols into their devices, and the alliance recently has begun to certify devices built under these standards.

Listed below are our recommendations based on the current environment in Australia. These align with those detailed in **Guidance on Security, Privacy and Technical Specifications for Clinicians**, Draft for Consultation 31 August 2011 by DoHA.

Recommendation 5

- **H.323 Videoconferencing and/or SIP Videoconferencing**
- For interoperability between videoconferencing devices.

³ DoHA, **Telehealth Technical Standards Position Paper**, Draft for Consultation 31 August 2011

- H.225 – Call Signalling, Registration, Admission and Status (RAS) H.245 – Control Signalling RTP/RTCP – Transmission of audio and video traffic H.460 – Firewall traversal. H.239 – dual stream video conferencing capability
 - Video **Codecs** H.261, H.263, H.263+, H.263 Interlaced, and H.264
 - **Audio Codecs** G.711, G.722, G.722.1, G.728, G.729 including Annex A and B, G.723.1, G.722.1 (Annex C), AAC-LD, and AAC-LC
- Advanced Encryption Standard (AES)
 - Secure Real-Time Transport Protocol (SRTP) for SIP encryption

Conclusion

“The question around telehealth is not whether, but how and at what pace^{iv}.”

Telehealth is not a single, uniform type of technology; rather it is a targeted approach appropriate to the individual’s needs, combining process, organisational and responsibility changes supported by monitoring and collaboration technologies. It requires:

- Clinical leadership
- Policy alignment
- Abandonment of the pilot approach
- Change management

As in all areas of e-health change management, there is a demand for clear, concise communication, education and targeted change management for telehealth. This could be addressed through the development of a specific change and adoption program that aims to achieve a critical mass of clinical champions and develops material for those practices and hospitals that are integrating telehealth into their daily work. This approach would address the gaps around health systems and usability of telehealth.

The usability of telehealth applications should be a key focus of action in this area. The commitment by NBN Co to the establishment of telehealth sites provides an opportunity to integrate a program of continuous improvement and learning into the telehealth rollout. This could be addressed through the formal establishment of a program of evaluation, measurement and reporting, as well as the funding of other innovative research into telehealth. This would address the gaps around innovation capture. New investments in the system should also be evaluated and monitored for effectiveness

We emphasise the fact that telehealth itself is less of a technical issue than it is a clinical workflow issue, especially in primary care environments. The current discussion often focuses on the rural-to-urban use of telehealth. We suggest that is less importance than the use of telehealth to break down the divide between general practitioners, allied health, specialists and the acute sector. Telehealth is fundamentally about enhancing team based care, collaboration and patient access.

There is no national governance body for the deployment and development of telehealth from a national perspective. We would argue that such a body should exist and look forward to tripartite participation from national government, private health and private industry.

Appendix: Background

About The ANCCeH

The **Australian National Consultative Committee on Electronic Health** (ANCCeH) is a powerful group of business, government and academia interests which contribute to the debate regarding public and private health provision in Australia. The Committee seeks to explore, define and promote improved patient and health system outcomes through the application of information technology. The group also provides a forum for the creation of public-private partnerships to promote industry development and improve efficiency, safety and productivity.

ANCCeH was created as a result of the *GAP Forum on Better Health Care Through Electronic Information* organised by **Global Access Partners (GAP)** in Sydney in September 2004.

Cross-jurisdictional and bi-partisan by nature, the Committee engages in extensive stakeholder consultation, prepares policy submissions and reports, initiates projects and, in association with GAP, hosts major national conferences.

The ANCCeH's member organisations are, in alphabetical order:

- Australian Centre for Health Research
- Bupa Australia
- Care Innovations
- Citrix Systems
- Global Access Partners
- Health Informatics Society of Australia
- HP Enterprise Services
- IBM
- Information Integrity Solutions
- Integrated Wireless
- Medibank Private
- Michael Gill & Associates Pty Ltd
- Microsoft
- National e-Health Transition Authority
- Pharmacy Guild of Australia
- Precedence Health Care
- Southern Pacific Consulting Group
- TCG Group
- Telstra Business

GAP

GAP is a proactive and influential network that initiates high-level discussions at the cutting edge of the most pressing commercial, social and global issues of today. Through conferences, missions, advisory boards and the online think tank, [Open Forum](#), it facilitates real and lasting change for our stakeholders, partners and delegates, sharing knowledge, forging progress and creating input for Government policy.

GAP promotes Australia's capacity to find novel solutions to the challenges facing the global community, and translates these innovative solutions into business opportunities. It focuses on practical economic outcomes for government and business, and offer a landmark opportunity for those involved in the GAP process to discuss Australia's future in a high level environment.

www.globalaccesspartners.org/about.html

ANCCeH Subcommittee members and co-authors:

Dr. David Dembo, Asia & Pacific - Business Development Executive - Microsoft Health Solutions Group

Mr. Michael Gill, Committee Chair and CEO of Michael Gill and Associates Pty Ltd

Dr. Stan Goldstein, Head of Clinical Advisory, BUPA

Ms. Megan Kennedy, Health Industry Lead - Software Solutions, IBM

Mr. Robert Lippiatt, Chairman, RSL Care Limited and Executive Director of Southern Pacific Consulting Group

Dr. John Zelcer, Head of Strategy, NeHTA

ⁱ Collaboration devices include video conferencing and telephony devices, such as smartphones. Medical telemetry devices include stethoscopes, diagnostic cameras, EKG devices and so on. Physical form factors may range from fixed kiosk or cubicle like arrangements, movable configurations similar to an IV pole, or vehicular units or mobile tablets.

ⁱⁱ Canada Health Infoway, Telehealth Benefits and Adoption-Connecting People and Providers Across Canada, May 2011, page 10.

ⁱⁱⁱ Cisco Systems, IBSG, Ascension Health Care-at-a-Distance Strategy, May 2011

^{iv} John Cruickshank, Health Care Without Walls, November 2010