

National Digital Health Strategy

A submission to the
Australian Digital Health Agency

by the
Australasian Telehealth Society

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1 Summary

This submission aims to describe the benefits telehealth in respect to the Digital Health landscape supporting healthcare over a distance, and suggests ways in which these benefits can be achieved.

Several of the challenges being faced by the health system are summarised, including inequality of access, an ageing population, chronic disease, maintenance of safety and quality, workforce issues and indigenous health. Aspects of all of these challenges can be addressed through a coordinated approach to the use of telehealth, within a national digital health strategy.

There are a number of evidence based international models for national health networks all of which have represented that the main health service innovation will need to be encouraged, supported and strategically directed in order to develop new models for health care delivery and become relevant clinical applications and service the customer regardless of location. Case studies that represent evidence of success using real time communication technologies to enable clinical supervision for remote an isolated clinicians, create agility in the workforce (including multi-disciplinary teams and groupings can extend networks, exchange learnings and provide peer support can help ensure safety and quality. All this should be part of a Digital Health Strategy, built into long-term healthcare reform.

One of the strongest recommendations for the Digital Health Strategy is to recognize that telehealth is an enabler; the submission works to support the case that healthcare at a distance is a considerable factor in driving the need for digitalized healthcare. We need to have secure electronic messaging and a medical record that the follows the customer, we need to increase health literacy and develop self-management and monitoring skills within the population, we need to provide more solutions for the population to encourage health as a lifestyle option. This is a healthcare industry revolution, national policy will need to adapt, new funding models will be required to create systematic change and appropriate incentives should be applied including payment by outcomes instead of payment by status quo.

The healthcare revolution is also supported by the knowledge revolution that is at the fingertips of citizens and health providers through the use of mobile applications (apps), wearable devices and an ever increasing expanse in clinical information through the use of online resources, some safe some not (aka Dr Google). Some of which are safe and some are not. Our healthcare system needs to provide safe advice and guidance to our citizens to give them confidence in the safety and security of health provision.

2 Introduction

2.1 The Australasian Telehealth Society

This submission was prepared by the Executive Committee of the Australasian Telehealth Society,

The Australasian Telehealth Society was formed in 2008 to fill a long-felt need to create a forum for all of those involved in telehealth in Australia and New Zealand. It is the National Member for Australia and New Zealand of the International Society for Telemedicine and eHealth (ISfTeH).

Some of its roles include:

- Bringing together a community which was previously fragmented and did not have a single forum for sharing of issues. It brings researchers, telehealth practitioners, clinicians and industry partners together in a unique interdisciplinary grouping. It is the only -Australasian organisation specifically addressing the needs of the telehealth community.
- Creating a credible channel for bringing issues effecting TeleHealth to the attention of decision makers and encouraging the use of Telehealth models and services to address issues confronting the Australian and New Zealand health systems.
- Recommending guidelines and standards of practice for telemedicine services ensuring that Quality /Safety and optimal patient care are maintained.
- Assisting in resolving such issues as billing for telemedicine or the delivery of services across jurisdictional boundaries.
- Investigating and influencing policy /legislative opportunities to integrate telemedicine into mainstream healthcare.
- Keeping our members aware of developments in telehealth.
- Making Australia a part of the international telehealth community, through membership of the International Society for Telemedicine and eHealth (ISfTeH) and other relevant international organisations.
- Organising an annual peer-reviewed national conference.

The Australasian Telehealth Society is an Incorporated Association registered through the New South Wales Department of Fair Trading. Its Australian Business Number (ABN) is 42734632603. More information about the Australasian telehealth Society can be found at www.aths.org.au. Membership currently consists of 494 members across Australia and New Zealand.

2.2 What is telehealth

The term *Telehealth* refers to healthcare delivery, or closely-related processes (such as education), when some of the participants are separated by distance and information and communications technologies are used to overcome that distance. The term *Telemedicine* is sometimes used in a slightly more restricted sense to denote the actual delivery of (medical) health care, but the two terms are commonly used interchangeably.

There is considerable diversity in the nomenclature used in this field of research. Telehealth, telemedicine, mhealth and ehealth are all used to refer to initiatives using some form of information technology in healthcare throughout this document we will refer to them all as telehealth. The reasons for this may be that different terms have by chance gained currency within professional groups and organizations.

The International Standards Organization in the publication ISO/TS 13131:2014 Health informatics — Telehealth services — Quality planning guidelines, defines telehealth as:

information and communications technologies to deliver healthcare and transmit health information over both long and short distances [1]

Almost every medical specialty, including General Practice and Nursing, Allied health, and Aboriginal Health Practitioners, are making use of telehealth but on a small scale. Image-based specialties (such as teleradiology, teledermatology and telepathology) are the most mature applications but even this field could be better developed through the use of more innovative models of practice such as R-Bay utilized overseas. A model similar to the popular eBay marketing model whereby specialist resources form a centralized pool which allowed images to be sent for assessment.

While consultations built around teleconferencing (such as telepsychiatry) are becoming increasingly common. Specialists can easily “participate” in visits by medical teams to remote communities, especially indigenous communities, while a telehealth consultation can eliminate the need for a family to make a long journey for a routine visit to their doctor.

3 Challenges for the health system

Health systems throughout Australia are struggling to cope with increasing demands and expectations. While new technologies can usually be shown to improve health care outcomes, the cost of these technologies can place extra burdens on limited health budgets, most are expected to be adopted into clinical practice without any key business drivers or direct remuneration. Many of the current challenges facing our health sector can be at least partially addressed through appropriate application of telehealth technologies, and later sections of this document will address some of these in more detail. We also assert that the implementation via an improved National Broadband Network, which is still to meet its target of broadband for all, has the potential to further enhance the deployment of many of these technologies.

3.1 Inequality of access to healthcare

Australia’s health systems are capable of providing healthcare which is internationally recognised as being of a high standard [2], and most Australians regard access to such healthcare as one of their fundamental rights as citizens. But Australia’s large distances and widely distributed demographics create challenges in providing this equity of access. In a recent study of men’s health [3], the Australian Institute of Health and Welfare found that life expectancy for non-indigenous males living outside major cities was three years less than the life expectancy for their metropolitan counterparts. These inequalities become more significant for people living further away from major metropolitan cities.

3.2 Ageing population

The ageing of the population in Australia and most advanced countries will place large burdens on health systems. Currently, more than a quarter of Australian government spending is directed to health, age-related pensions and aged care. Australian government spending on these areas is projected to increase significantly, pushing their share of total spending to almost half by 2049-50 [4]. The concept of “Ageing in Place” encourages the elderly to remain independent for as long as possible. This has obvious social benefits for the elderly, and produces economic benefits for providers of health and aged care. Information and communications technologies have played a role in aged care since the introduction of wireless personal alarms. Recent systems can provide various forms of interaction for the subjects (such as high quality videoconferencing with a carer), as well as automated systems for monitoring vital signs and other measures of well-being.

3.3 Chronic disease

Most industrialised countries are facing an increase in long-term and chronic disease, such as diabetes or chronic obstructive pulmonary disease. Many of these conditions can be managed by the patients themselves with careful monitoring and prompt intervention when necessary. As with aged care, the use of ICT for vital signs monitoring and videoconferencing can assist patients in self-management and ensure that intervention, when necessary, is responsive and reduces serious harm [5].

3.4 Safety & Quality

Despite the high quality of health care in Australia, “adverse events” in the hospital system have been estimated to cost the nation between \$1billion and \$2billion annually [6], with a large proportion of such events seen to be preventable. In a number of recent, well-publicised cases, medical practitioners in regional areas were found to have been practising beyond their level of training, and without adequate supervision or contact with their peers. There is likely to be a role for telehealth in creating such contacts, and providing facilities for mentoring and monitoring the performance of isolated practitioners.

3.5 Stretched workforce

While telehealth cannot create new health professionals, it can play a role in ensuring that the existing workforce is used efficiently and to its full capacity. For example, a specialist located in one hospital can deliver some services across a number of centres, helping to maintain facilities such as intensive care units in centres which might not be large enough to make use of such a specialist on a full time basis.

While workforce issues are most prominent outside capital cities, there are many hospitals with minimal specialist cover in metropolitan areas, and telehealth can play a role in sustaining such smaller metropolitan hospitals by having specialists deliver some services through telehealth, even when the distances involved are a few kilometres.

3.6 Indigenous health

Australia’s indigenous population has some of the worst health outcomes in the world. Many of the conditions suffered by the indigenous population are well-controlled and are not life-threatening in the broader population. The publication *Closing the Gap; Prime Minister’s Report 2011* [8] reported that the current gap in life expectancy is estimated at 11.5 years for males and 9.7 years for females. Approximately 70% of this gap is attributable to chronic disease.

Many indigenous Australians live in rural and remote regions. In the Northern Territory, 81% of the indigenous population live in remote or very remote areas, and in Western Australia this figure is 41% [9]. This makes very difficult the delivery of any services, especially health, and care delivery by telehealth is hampered by the lack of suitable networks.

4 The current state of Telehealth

4.1 Context

Technologies do not exist in isolation from the health system, society or cultures. Different technologies will work best in different situations and be suitable for different groups, clinical specialties or models of care. Health services should consider:

- customising technologies to be fit for purpose within different contexts
- enabling health professionals to rapidly apply technologies with their area of health expertise
- providing flexible guidelines for the safe, efficient and effective deployment of information and communication technologies.

Telehealth has sometimes been characterized for its uneven deployment and the use of pilot projects to test changes in technologies and processes. A more considered view is that every new technology and process will be tested and implemented at different rates, with different degrees of success in different groups, clinical specialties or models of care.

States and territories have been developing telehealth programs for over 10 years across Australia. In more coordinated models such as Queensland, Northern Territory and Western Australia, these models have become robust. However, they have existed due to the remoteness of their patients where telehealth just makes sense. In more populated areas with less issues around remoteness the argument for telehealth is a different one. In these more populated areas the use of mobile technologies is what is driving the need for a more integrated health service to the day to day needs of the consumer.

These mobile technologies have not been adopted by the health system. There is an opportunity to leverage this knowledge revolution to promote wellness and help stem the rising tide of healthcare costs and demand. There is an opportunity to use these devices to allow patients to monitor their own, or family member's, health and only report those exceptions to the GP. Putting the onus of healthcare provision back to the community where the worried well can use an increased health literacy to manage what is happening to their own health. This is an opportunity for the health system to leverage Digital Health.

5 Vision for Telehealth

The technologies employed by telehealth services are diverse and rapidly changing. Health related data is growing at an exponential rate. This is creating new opportunities for healthcare delivery at a distance on a daily basis.

Some of the clinical activities that can be supported by telehealth include:

- Preemptive health care management, helping manage chronic disease before acute attacks
- Promote wellness amongst the community through the use of 'safe' consumer products
- diagnosis, pre-treatment and post treatment care
- team based health care service provision
- telemonitoring and telecare

- integrated mHealth including standardised data sets self-management / participatory health
- preventative health and wellness
- targeted care for health cohorts e.g. chronic disease, aged care.

Telehealth services are primarily about delivering care at a distance and promoting wellness. This care is most efficient, effective and safe when supported by quality information systems such as:

- electronic health records
- health decision support and care management processes
- health education and self-care advice.

Telehealth can be used to enable new models of health care and management such as healthcare homes that will

- move the focus of health care closer to the consumer and their primary care team and back to the community
- improve access and equity, reducing pressure on acute and specialist facilities
- raise quality of health care with better continuity of care and patient management
- provide scalable and sustainable solutions able to integrate with current services.

There are significant opportunities for telehealth to reduce the costs associated with healthcare delivery and to improve the equity of access to services, particularly in rural and remote areas of Australia, as well as in other under-served areas. Telehealth services should become a normalised part of mainstream healthcare integrated into the coordination of care for individuals.

The way the health system when supported by telehealth technologies, might work is described from two points of view; the health system, and the people who are contribute to of benefit from healthcare, the medical practitioner, patients and the health consumer.

5.1 The Health system

From the point of view of health administrators, the health system of the future will be less constrained by geography, since more medical services will be delivered over a distance. It will no longer be as important as it is now to cluster all specialities in a small number of very large hospitals; smaller hospitals will be able to offer specialist advice to other hospitals in the same cluster. For example, ICU services can be offered even where there is not the patient load to support a full time intensivist. By distributing services, systems can achieve greater efficiencies through specialists offering services outside their immediate geographical area. There will be savings in not moving as many patients physically from one hospital to another, or paying for patient to attend clinics in major centres.

There will be greater continuity of care since patients can be followed both through online consultations and through access to electronic patient records, from their home to their GP, through hospital stays and post discharge. For complex and chronic conditions, this continuity of care will allow health systems to better tailor treatment to the patient's condition, independent of where they live.

Chronic disease and lifestyle management skills and resources are important to the whole population. For disadvantaged sectors of the population access to these skills and resources is especially important. These sectors include:

- rural residents
- indigenous people
- aged care residents
- people with disabilities; and
- socio-economically disadvantaged populations

Support schemes and resources provided for support of these national priority areas and disadvantaged sectors can be leveraged and be augmented by telehealth technologies.

Recommendation 1

Health services, primary health care organisations, professional bodies and agencies should ensure that chronic disease and lifestyle management programs are supported by:

- telehealth and telemonitoring options available in care packages which are funded by care or capitation payments for health professionals providing chronic disease management;
- telehealth and telemonitoring options included in hospital avoidance programs and out-patient services;
- health information and promotion services delivered by internet technologies, including telehealth and mobile device applications;
- technology based health services are resourced to become a routinely available to all sections of society and communities in formats that are linguistically and culturally appropriate.

Health services, primary health care organisations, professional bodies and agencies should apply multi-layered and collaborative approaches when developing and operating new health services supported by telehealth technologies by resourcing:

- customisation of technologies and support for health professionals to rapidly apply technologies that specifically support the desired models of care and pathways;
- development of multidisciplinary teams to support technology adoption by telehealth based services;
- extension of health and safety guidelines to enable development of risk based quality management processes for telehealth services; and
- development of flexible guidelines, prototype templates for patient journeys and clinical pathways for the safe, efficient and effective deployment of telehealth technologies.
- encouraging an appropriate level of interoperability between telehealth technologies used in health services;
- encouraging appropriate linkages between public and private health technology based services such as health records, medical imaging and pathology testing.

5.2 Medical Practitioners, Patients and Consumers

The health professions are adept at applying technology whenever it can improve care. Many information and communication technologies are evolving quickly. Mobile devices and the applications

they host are becoming more versatile and powerful. Internet based communications are become faster and more reliable. Application of these technologies in healthcare should become routine. Information and communications technologies should be adopted in healthcare if they:

- extend health service population coverage
- support the safe delivery of care
- improve the efficiency and effectiveness of healthcare.

The medical practitioners should be able to have short video consultations with patients who might live several hours drive away. If the practitioner has a visiting position at the local hospital (where they might be the only doctor on call), they can respond to calls for help at any time of the day or night, without necessarily having to physically visit the hospital.

If their patients move from one place to another frequently (as is the case with some indigenous cultures) they will be able to maintain continuity of care with that patient, or hand them over to another practitioner. For some specialist services, a practitioner living in a remote area will be able to deliver services outside their area, even into metropolitan areas; this could be a further incentive to attract such professional to remote areas.

The use of eHealth and telehealth will be sufficiently ubiquitous that tomorrow's medical practitioner will take it for granted that healthcare will be delivered in this way; their training will ensure that they are as familiar with this type of equipment as they are with the stethoscope or scalpel.

Patients and the health consumer will take his or her rightful place at the centre of the health delivery system, enabled by eHealth, including telehealth. People will be personally empowered and encouraged to take more control of their own healthcare, especially preventative strategies. Control of and access to his or her own health record will help drive this shift in emphasis from treating illness to maintaining health.

Recommendation

Health services, primary health care organisations, professional bodies and agencies should ensure that the population can access health services by:

- promoting telehealth as a collaboration with existing rurally-based health services to ensure that telehealth complements and supports these services;
- modifying Medicare rules so that rural GPs can initiate video consultations with patients normally seen personally in their practice that are in their catchment area and residing in remote or difficult to access locations such as farms, smaller rural centres, aged care centres which are served by that practice;
- customising health services for indigenous communities services so that primary care, specialist and hospital outreach services can be supported by telehealth options;
- resourcing aged care facilities to offer telehealth based consultations with general practitioners and specialists where appropriate;
- resourcing disability care organisations to offer telehealth based services where appropriate.

6 Resourcing Telehealth

6.1 Health Record Systems

Recommendation 1

Health services, primary health care organisations, professional bodies and agencies should extend the coverage, safety, efficiency and effectiveness of health services by using telehealth services and by resourcing:

- easy to use online interaction between patients and health services for bookings, enquiries, reminders, referrals, prescribing and pre-consult assessments; and
- personal health portals as a means for individuals to access and interact with health data about themselves that are able to communicate desired information to other health information systems;

6.2 The National Broadband Network

The National Broadband Network represents a massive infrastructure investment by the Australian Government, and it is often asserted that this expenditure can be justified on the basis of efficiencies in health care delivery. Some pre-NBN studies indicated that access to adequate broadband was one of key barriers to the uptake of telehealth (Hanlen, L and Robertson, P. *Telemedicine in the context of the National Broadband Network*, NICTA, Sydney, 2010 http://www.nicta.com.au/research/research_publications/show?id=4421). Completion of the NBN will remove this barrier. Indeed, with Australia's large distances, small population and high expectations for standards of healthcare, the NBN's impact on healthcare for Australians living outside metropolitan areas could exceed that of the introduction of the Royal Flying Doctor Service last century.

One of the main benefits of the NBN will be to deliver high quality home-based healthcare to Australians independent of where they live. With the rapidly ageing population, this will represent an increasing focus of healthcare. An evidence base for the benefits of healthcare delivery via the NBN has emerged through the Telehealth Pilots program of the Australian Department of Health, in which home-based healthcare programs were trialed in a number of NBN-connected communities. Demonstrated benefits of the CSIRO trial included a 46% reduction in costs under the Medical Benefits Scheme, and a 26% cost reduction to the Pharmaceutical Benefits Scheme. Hospital admissions were reduced by 53% with a 76% reduction in length of stay for those who were admitted (Home monitoring of chronic disease in aged care, CSIRO 2016).

The NBN is the greatest single enabler of telehealth expansion in Australia, and will be the technical centerpiece of the telehealth component of a national Digital Health strategy. However, the view of the Australasian Telehealth Society is that provision of this facility alone will not allow it to achieve its potential. Some actions which can be taken include:

An appropriately constituted Commonwealth body such as ADHA, in collaboration with States and Territories, should be charged with implementing a national telehealth strategy built around the NBN, with terms of reference to encompass such issues as security, interoperability, standards of practice, practice across jurisdictional borders and remuneration.

An increased research effort should be mounted to advise it on such things as process change, training requirements, new clinical applications and cost-benefits of telehealth.

The National Broadband Network can be of enormous benefit to healthcare, especially in a country such as Australia, with its large distances, small population and high expectations for standards of healthcare. Its impact on healthcare for Australians living outside metropolitan areas could exceed that of the introduction of the Royal Flying Doctor Service last century. However, this benefit will not be realised simply by merely building the network and making it available for healthcare. In order to realise the benefits to healthcare to be derived from the NBN, the Australasian Telehealth Society recommends:

1. Potential health applications should be taken into consideration when deciding which communities should be connected. This is particularly relevant to indigenous communities.

2. A National Health Network should be established using the NBN infrastructure, incorporating appropriate security, central video conferencing connectivity and quality of service.
3. The Australian Government should develop and adopt a National Telehealth Strategy in conjunction with industry, aimed at improving health outcomes, especially through more widespread adoption of health delivery via telehealth.
4. An appropriately constituted Commonwealth body, in collaboration with States and Territories, should be formed to devise and implement the telehealth strategy, with terms of reference to encompass such issues as interoperability, standards of practice, practice across jurisdictional borders and remuneration.
5. An increased research effort should be mounted in close consultation with the new Body, to advise it on such things as process change, training requirements, new clinical applications and cost-benefits of telehealth.

Fragmentation of the current network infrastructure is one of the barriers to the wider adoption of telehealth in Australia. Concerns about security and privacy have also limited the more widespread deployment of telehealth in Australia. "The successful delivery of eHealth using the NBN will require the health sector to take the relatively minor additional step of implementing a national health network that sits over NBN infrastructure and maximises the potential to ensure end to end real time performance of connections between practitioner and patient. Without this layer eHealth applications will be largely constrained to messaging services adequate for medical records and databases but incapable of reliably sustaining real time patient practitioner interactions."

Such a network could be implemented at very small incremental cost, but could supply the security and quality of service demanded by the users of health networks. However, as a virtual network, it would be able to take advantage of the ubiquitous nature of the NBN. Unlike current telehealth networks, it would be a national network, facilitating interstate consultations now difficult to set up for specialists who need to consult with colleagues or patients across state boundaries. Such a network could also work with a different funding model from that of the rest of the NBN.

Recommendation

Health services, primary health care organisations, professional bodies and agencies should extend the coverage, safety, efficiency and effectiveness of health services by using telehealth services and by resourcing:

- broadband technologies that can provide reliable use of video consultation and health monitoring applications irrespective of location;

6.3 Personal Devices and Applications

In 2016 across the number of consumer landscape health focussed consumer apps has soared in the past 2 years, with more than 165,000 mHealth apps now available in the Apple iTunes and Android app stores. A recent study¹ showed healthcare as the top 3 biggest mobile trends for 2016.

Across the USA two-thirds of Americans have already shown a referent for digital health management instead of physical care. The study also shows 79 percent of Americans said they would be willing to use a wearable device to manage their health, where a 45 percent wanted tracking of symptoms while 43 percent wanted it to manage a personal health issue or condition.

These pervasive technologies are not only allowing technology savvy patients to actively monitor their health, but sensors are now being developed to allow our patients to passively monitor health and wellbeing.

¹ <https://www.mobilestrategies360.com/2015/12/11/mobile-will-be-top-health-industry-trend-2016>

In support of this clinicians are now prescribing apps to help patients manage their care.

The home computer can be augmented with easy-to-use devices for carrying out simple medical tests, such as ECG and blood pressure measurements. These measurements can be supplemented by broadband videoconferencing links to nurses, GPs or even specialists if the condition demands it. Family members can also form part of this online support network. Adverse trends requiring intervention can be detected long before complex treatment (e.g. hospitalisation) is required.

Unnecessary visits to doctors (requiring long journeys outside metropolitan areas) can be avoided, but intervention when needed can occur more rapidly. Elderly patients can be fitted with unobtrusive wearable devices which can automatically detect adverse trends or specific events (such as falls). Hospitals will maintain post-discharge contact with patients; indeed the home portal will be a general health portal and the patient might well be unaware of which part of the health system is supplying which part of their care.

Recommendation

Health services, primary health care organisations, professional bodies and agencies should extend the coverage, safety, efficiency and effectiveness of health services by using telehealth services and by resourcing:

- increased use of low cost consumer grade technologies in telehealth services
- easy to use online interaction between patients and health services for bookings, enquiries, reminders, referrals, prescribing and pre-consult assessments; and
- personal health portals as a means for individuals to access and interact with health data about themselves that are able to communicate desired information to other health information systems;

6.4 People

The Cultural Revolution is here; people are becoming increasingly aware of the fact that Healthcare has been notoriously slow in adopting new technology, and has often been compared unfavourably with industries such as banking. In the healthcare context, from many health care professionals' information and communications technologies are notoriously "disruptive", and are sometimes seen as threatening the complex interrelationships in this sector. There is also an expectation that the healthcare sector will adopt new services without solid revenue base. The exception to the above generalization is in consumer health, where the adoption, in particular, of "m-health" technology has been particularly rapid. Some would say that this was due to the fact that the technology is disassociated from the industry; mHealth meets the needs of the consumer and provides responsive data relating to an individual's own health performance and outcomes. Patients enabled as a co-designer of interventions that improve health are always going to be more successful than ones provided as a general approach.

The disruptive nature of eHealth is particularly notable in telehealth, which creates new channels of communication among health workers and patients, where information flow has been traditionally linked to a hierarchical structure. Telehealth fosters a collaborative, team-based, patient-centric approach to health care delivery. Patient centricity is a world-wide trend in healthcare towards healthcare models able to adapt more to the needs of the patient, who is able to exert more direct control of the nature and location of health service delivery. Patient-centric health care models are facilitated telehealth technologies through the ability to replace tradition healthcare enterprises with virtual enterprises that empower the individual and support the patient.

The need to develop new care models has been a barrier to the uptake of telehealth beyond pilot projects facilitated by local champions. A recent paper (J.Li and L.S.Wilson. Telehealth trends and the challenge for infrastructure. Telemedicine and eHealth, 19, pp 772-779 (2013)) has pointed out that progress in telehealth implementation needs to take place simultaneously in three domains:

- (a) Technical development
- (b) Clinical applications
- (c) Care models.

If telehealth is to achieve its potential, there needs to be significant progress in all three domains, but the most difficult may well be the process change which needs to accompany such large scale implementation. Categories of care models can include training, protocols, standards of practice and business models. Underlying these categories should be clear demonstrations of the value proposition of telehealth in a given situation, through evaluation and economic modelling.

Recommendation

Health services, primary health care organisations, professional bodies and agencies should extend the coverage, safety, efficiency and effectiveness of health services by using telehealth services and by resourcing:

- extension of health and safety guidelines to enable development of risk based quality management processes for telehealth services;
- cross disciplinary collaborative research into improvement of telehealth technologies and their application within specific contexts.
- resourcing open access professional development and training programs for telehealth based services; and
- support for telehealth communities of practice.

6.5 Costs and Benefits

Most studies of the costs versus benefits of telehealth do not take into account the overall benefit to the patient, family and health system which is realised through the use of telehealth. This is often because the economic benefits are not realised by the funders of the telehealth implementation; they might (in the same way as preventative strategies) be realised in terms of such things as longer life expectancy or a reduced rate of admission to hospital in later life.

There is a clear need for a better understanding of the benefits which can be realised through the use of telehealth, and a research effort in this area should be part of a National Digital Health Strategy.

Recommendation

- considering removal of regulations or funding arrangements that treat technology supported care as a special case.

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