Developing a comprehensive Telehealth Policy for Australia

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1. Executive summary

With the approaching tsunami of ageing people and the increase in the number of people with chronic diseases we need to find smarter ways to manage the health needs of Australians. In response to the looming demand for care we see the rapid adaptation of existing medical devices, and development of new applications for monitoring and treating health conditions in the home, that can respond to this demand. The time is right for Australia to develop a telehealth policy that integrates utilisation of the wide range of technologies that fall under the telehealth umbrella, to deliver healthcare in a structured, innovative and cost effective way.

The need for a comprehensive telehealth policy for Australia

- Dozens of Australian pilots have proven the efficacy of telehealth
- Hundreds of published studies have demonstrated the clinical benefits of telehealth in large, international populations
- There is growing evidence to support cost neutrality and cost effectiveness of telehealth
- There is no broad-based comprehensive policy that facilitates equitable patient access to telehealth services (including assistive technologies, vital signs monitoring and remote patient monitoring)
- Multiple groups/committees/networks are pushing the same agenda.

2. Background

Australia is facing an increase in the demand for hospital and aged care services and healthcare staff. A wide range of medical devices have wireless capabilities and can be used to monitor patients in their homes. The conditions most suitable for home monitoring include many of those which are more prevalent with age, such as diabetes and cardiovascular disease.

Telehealth is the delivery of medical services through information technology and telecommunications. It is an overarching definition that includes remote monitoring or the exchange of medical data between a patient who is at home and a healthcare professional based (usually) in a medical centre or call centre. A number of surgically implanted devices can be monitored remotely for clinical or device assessment (e.g. pacemakers). Remote monitoring is particularly well-suited to Australia which has approximately one-third of the population living in rural and remote areas.

3. Telehealth technologies to manage healthcare in the home

Technologies	Examples
Assistive technologies	Ambient assisted living Smart homes Smart phone medical apps
Emergency care	Alarms/alerts
Vital signs monitoring	Pulse oximeters Spirometers Heart rate monitors Sphygmanometers Peak flow meters Drug delivery/infusion pumps Electrocardiogram (ECG) Home haemodialysis monitors
Assessment/diagnostic	Smart incontinence management Sleep apnea management
Implantable medical devices with remote monitoring capabilities	Cardiac devices Continuous glucose monitors Cochlear implants

4. Clinical benefits associated with telehealth

A PubMed search of telehealth brings up over 15,000 articles. Examples of the clinical benefits associated with telehealth and remote monitoring are numerous; a small number are listed below.

- A 45% reduction in mortality rates and a 20% reduction in emergency room (ER) admissions in the UK Total Systems Demonstrator Trial, the largest randomised control trial of telehealth in the world (n=6,191 patients and 238 General Practitioner (GP) practices)[1]
- A 71% reduction in emergency room admissions in respiratory patients who had oxygen saturation monitored daily[2]
- A 25% reduction in numbers of bed days of care and a 19% reduction in hospital admissions in 17,025 veterans with chronic disease who were enrolled in a home telehealth program[3]
- A 43% reduction in hospitalisations in cardiac patients who transmitted daily electrocardiogram and blood pressure data[4]
- A 50% reduction in mortality in a large sample (n=69,556) of patients with implantable cardiac devices who were remotely monitored[5].

[1] London DHS. (2011). Whole Systems Demonstrator Programme: Headline Findings – December 2011.

[2] Vitacca, M. et al. (2009). Tele-assistance in chronic respiratory failure patients: a randomised clinical trial. *European Respiratory Journal, 33:*411-8.

[3] Darkins, A. et al. (2008). Care Coordination/Home Telehealth: The systematic implementation of health informatics, home telehealth, and disease management to support the care of veteran patients with chronic conditions. *Telemedicine and e-Health, 14(10):*1118-26.

[4] Goernig, M. et al. (2009). Ambulatory disease management in cardiac patients: 12 month follow-up of home care telemedicine in Thuringia by the management program Zertiva®. *Physikatische Medizin, Rehabilitationsmedizin, Kurortmedizin, 19:*9-13.

[5] Saxon, L.A. et al. (2010). Long-term outcome after ICD and CRT implantation and influence of remote device follow-up. The ALTITUDE survival study. *Circulation, 122:*2359-67.

5. Funding considerations

There are two cost considerations. The first is the cost of medical consumables or devices. In many cases these are already funded via home care packages, medical consumables schemes or the Prostheses List (in the case of privately-insured patients). It is possible that other components such as peripheral devices (e.g. vital signs monitors) could be rented and remain the property of the supplier. The second is the cost of the service (data transmission and monitoring). These costs are either inconsistently funded, or not funded at all.

6. Current funding for telehealth

- MBS items for telehealth were introduced in July 2011, however the definition of telehealth was limited to video consultations
- Geographical eligibility for telehealth items has been recently restricted
- Consultations between GPs and patients in their home are *not* funded
- Vital signs and remote monitoring of medical devices are *not* funded.

7. What is needed

- Comprehensive telehealth policy that incorporates funding for a range of home consultations and assistive medical technologies - including remote monitoring of vital signs and implantable medical devices.

Remote monitoring of vital signs and medical devices is a health equity issue. It is also an issue about the future sustainability of the healthcare system. Currently rural and remote patients do not have equal access to health services. Long term follow-up of patients with implantable medical devices is necessary to monitor and optimize device function and to identify clinical and/or device-related problems. Studies have shown that remote monitoring can be used to replace 50–63% of in-clinic visits without adversely affecting patient outcomes[6]. Approximately 90% of cardiac patients who attend a clinic for routine monitoring do not require changes to either their device or their medical treatment[7]. A range of implantable medical devices can now be monitored remotely for clinical or device assessment. In Australia the only tangible barrier to the use of such technologies is lack of reimbursement.

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[6] Crossley, G.H., et al. and CONNECT investigators (2011). The CONNECT (Clinical Evaluation of Remote Notification to Reduce Time to Clinical Decision) Trial: The Value of Wireless Remote Monitoring With Automatic Clinician Alerts. *Journal of the American College of Cardiology, 57:*1181-89.
[7] Heidbüchel, H. et al. (2008). Potential role of remote monitoring for scheduled and unscheduled evaluations of patients with an implantable defibrillator. *Europace, 10:*351-7.

8. How can telehealth be funded?

A range of medical devices can be used for telehealth and remote monitoring. In some cases a nurse, GP or allied health professional may be able to assess data, but in the case of implantable medical devices a specialist would need to review data. For this reason MBS item numbers need to be flexible enough to cover data monitoring by a range of health professionals.

Three options could be considered to achieve these outcomes:

1. MBS item numbers based on existing items with an included loading for remote monitoring
2. Capitated costing model, whereby a clinician is paid once per year per patient to provide the service.
3. Improved capitated model (flat fee per quarter).

Proposed reimbursement models are designed to ensure that the overall budget impact is cost neutral and predictable. Option 1, whilst simple, may result in over-servicing of patients. Capitated models, on the other hand, ensure there is no over servicing as healthcare professionals are paid for a service regardless of the number of data transmissions or reviews. Option 2, the capitated costing model, is budget neutral proposing an annual fee based on current utilisation. The flat fee per quarter model, option 3, proposes significant long term cost savings to the Commonwealth budget by limiting the number of claims and reducing unnecessary office visits.

9. Healthcare Efficiencies

Telehealth can achieve considerable health system efficiencies and reduce costs in a number of ways:

- Reducing visits to specialists
- Avoiding symptom exacerbations that lead to hospitalisations
- Decreasing the number of hospitalisations
- Reducing potentially preventable hospitalisations
- Reducing emergency room visits
- Reducing nursing home admissions
- Keeping low-care residential patients in their homes
- Decreasing the burden on healthcare professionals
- Reducing patient transport costs.

10. Conclusion

Vital signs and remote monitoring maintain safety and improve patient care, decrease unnecessary follow up visits, address workforce shortages, contribute to a culture of sustainability in healthcare provision and offer potential savings to the healthcare budget. The Productivity Commissions report: Caring for Older Australians viewed technology as a way to provide better care in the home, more economically. MTAA strongly argues that the provision of care that enables individuals to be treated in the home environment is far more cost effective than *all* other alternatives. Numerous pilot studies have been undertaken in Australia with excellent outcomes; however there is no policy for scale or sustainability of telehealth services.

Early in 2012 the Federal Government identified ageing as a telehealth trail blazer. Comprehensive telehealth policy would fit with emerging priorities such as the Aged Care Reform plan[8] and the roll-out of the National Broadband Network (NBN). The Aged Care Reform plan aims to better link aged care and health systems and to assist projects with a focus on prevention of hospitalisation and improvements of multidisciplinary care models for older Australians. This is also inline with the $3.3m aged care telehealth program recently announced by the Federal Government which will provide patients in residential care facilities virtual access to GPs.

The roll out of the National Broadband Network (NBN) will improve the delivery of telehealth solutions to remote regions of Australia[9]. The mortality rate in remote areas of Australia has been reported as twice as high as in large cities[10]. The Digital Regions Initiative has funded a wide range of telehealth trials and projects enabled by the NBN[11]. These include a diabetes telehealth trial in Townsville and a home telehealth trial in NSW. Recently the Department of Health and Ageing invited interested parties to apply to funding for the NBN Enabled Telehealth Pilots Program which will demonstrate how the NBN will enhance telehealth capabilities such as services in the home for aged care, cancer care and palliative care[12].

For many Australians, comprehensive telehealth policy that provides access to assistive technologies, remote consultations, vital signs monitoring and remote monitoring of implantable medical devices would provide practical, reliable and affordable access to medical care in the home. There are a variety of courses of action that can be taken to provide telehealth services in a cost neutral manner or even realizing inherent cost savings to the Commonwealth budget.

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[8] www.health.gov.au/internet/publications/publishing.nsf/Content/ageing-aged-care-reform-measures-toc~ageing-aged-care-reform-measures-chapter1-htm
[9] www.csiro.au/satellitehealth
[10] Australian Government Department of Health and Ageing (DoHA). (2012). Rural and Regional Health (2012) Australia. National Strategic Framework for Rural and Remote Health.
[11] www.dbcde.gov.au/funding_and_programs/digital_regions_initiative.
[12] http://health.gov.au/internet/main/publishing.nsf/Content/ehealth-nbntelehealth-pilots