



Telehealth in Australia: Equitable Health Care for Older People in Rural and Remote Areas

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BACKGROUND

Australia is a rapidly ageing society. By 2021 the number of people in Australia aged 65 and over is expected to double. Older people seek medical help more often than any other aged group; how we care for our older people has long been flagged as the single biggest challenge facing our health service as we move into the next century - yet medical undergraduates have been taught geriatric medicine only in the last decade. Over the same period, health services in rural and remote Australia have been systematically downgraded, which has led to fewer newly graduated doctors trained in geriatric medicine willing to relocate to rural and remote areas where there is little or no peer support and only limited access to ongoing professional education. Thus equitable health care for older people in rural and remote areas presents its own unique challenge.

INFORMATION TECHNOLOGY AND HEALTH COMMUNICATIONS

The introduction of Information Technology (IT) has revolutionised the transfer of information. The convergence of IT, media and telecommunications is acknowledged as having the potential to offer users, particularly those living in rural and remote areas, equitable, real time access to a wide range of services. Examples already widely accepted include banking, shopping, electronic commerce (e-commerce) and information management - all now commonly accessed by computer, via the Internet. It has also provided a pathway for rural and remote consumers to access services which improve their quality of life. Telehealth is one of them.

How does telehealth work?

Telehealth - known as telemedicine in the USA, where transfer of information via IT was first used in medicine more than 30 years ago - is broadly defined in the US telemedicine bible, *Telemedicine - a guide to assessing telecommunications in health care* (Field, et al, 1996) as “the use of electronic information and communication technologies to provide and support health care when distance separates the participants”.



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Is telehealth the best option for the delivery of equitable health care to older people in rural and remote Australia?

The best option would be for governments to pump enough money into rural and remote health care to attract general practitioners (GPs) and other health providers trained in geriatric medicine to relocate to country areas assured of peer support, opportunities for on-going professional education, and appropriate local facilities for managing illnesses associated with ageing. Telehealth offers a viable option because specialised services delivered via IT are already established here, and there is reliable evidence to show they work and that consumers accept and may even prefer them to face-to-face consultations.

The efficacy of telehealth has been demonstrated in Australia by Queensland's Professor Peter Yellowlees and South Australia's Dr Fiona Hawker who pioneered the use of IT to provide ground breaking telepsychiatry programs servicing rural and remote areas, and telepsychiatry centres with educational and consulting links that cross State borders. Also by Western Australia's Dr Jann Marshall, who met the challenge of delivering a multidisciplinary contemporary health service in Western Australia (WA), where diverse groups are clustered in some of our most remote regions, with a telehealth system using a mixture of telephony, from POTS (plain old telephone service) to WANs (wide area networks accessed by computer). It could be argued, though, that telehealth happened in Australia well before the advent of IT as we now know it. In 1917, the postmaster at Halls Creek, WA, operated on a stockman with abdominal injuries under instructions from a surgeon, transmitted by Morse Code from the Perth GPO; and in 1927, the Royal Flying Doctor Service (RDFS) introduced pedal-powered radio to communicate with remote settlements.

While the National Telehealth Committee, in *Status Report: Telehealth* (1998) now lists 53 telehealth projects in Australia that contribute to the diagnosis and treatment of a range of illnesses not exclusively associated with ageing but also seen in older people, there has as been only one devised to provide specialised assistance in the clinical diagnosis and treatment of illnesses specifically associated with ageing.

Ageing Online - a pilot project devised and developed by Professor Robert Helme at the National Ageing Research Institute (NARI) in Melbourne, in collaboration with the Royal Australian College of General Practitioners (RACGP), and funded by the Department of Human Services, Victoria, commenced in 1996 to provide participating GPs with online assistance in the clinical diagnosis and treatment of illnesses including osteoporosis, dementia, post-herpetic neuralgia, balance failure and incontinence, and advice on local resources to manage illnesses in certain patients. GPs could access advice from specialists at NARI and its affiliate, the North West Hospital, via the Internet using a computer and confidential access codes. There was also an educational component based on interactive computer assisted learning packages (ICLPs). The project has stalled for lack of continuing funding to address essential research into learning behaviours required to access telehealth programs.



In the USA, telehealth services now offer specialist support to people in rural and remote areas utilising digital stethoscopes, graphics cameras, and miniature hand-held dermatology cameras enabling specialists to examine ears, skin lesions and other delicate medical problems, as well as real time videoconsulting and other IT applications to diagnose and treat a variety of illnesses from arthritis to cancer. They are widely accepted by US health providers and consumers and may be seen to signpost future telehealth development in Australia. So, too, could the US mind-set on telehealth for older people. Back in 1996, Dr Donald A. Lindberg, Director of the US Library of Medicine and a pioneer in health care computing and communication issued a National Institutes of Health news alert stating, "Telemedicine has particular promise for the provision of home care to the elderly and chronically ill. Remote 'visiting' nurses can reach homebound patients and avoid more costly interventions and premature institutionalisation...".

Barriers and initiatives to overcome them

Barriers to the expansion of telehealth services in Australia are acknowledged. They include computer illiteracy and lack of training and support, lack of *opportunity* for training and support, and initial cost outlays for technologies: setup, upgrades and telecommunications charges; medico-legal issues relating to the provision of health care at a distance, including registration and responsibility, privacy, and security of information; and payment for telehealth services - still not officially recognised by the Federal Government's Medical Benefits Scheme (MBS).

But these issues are being addressed. The RACGP and the Australian Medical Association (AMA) recently negotiated a \$15 million Federal Government funding package for the implementation of their *Strategic Framework* program to promote IT and IT training, and fund a jury comprised of medical practitioners and representatives of the software industry and State and Federal governments to explore coding options for payment of telehealth services via the MBS. Legal issues are being examined by health organisations, government, legal counsel, and community groups.

TELEHEALTH FOR OLDER PEOPLE IN RURAL AND REMOTE AUSTRALIA: THE OUTLOOK

It is unlikely governments will increase funding for rural and remote health care services to provide optimal health care for older people in their own locations in the foreseeable future. So unless we can come up with a viable alternative, they must continue to undertake stressful and often debilitating journeys, over significant distances, to undergo examinations and treatment in an unfamiliar environment. So why not opt for telehealth? We know it works and that consumers accept - and indeed, sometimes prefer - health care via IT in the absence of local specialised care; and while there is no evidence to support the notion that telehealth will provide a better health service for older people in rural and remote areas at less cost per capita than traditional delivery does now, it



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may be seen to improve the delivery of ongoing community based care and so reduce the impact of more people needing full time in the future, as they otherwise surely will.

In order to achieve this, we may have to change our attitude to health care funding to encourage corporate partnerships bringing in venture capital and leading, eventually, to self-sustaining programs. This is already happening in the USA, with self-sustaining programs based on mutually beneficial contracts between health care providers, IT service providers, local governments, local businesses and others. This may offend purists here, but it can be argued that it is better to have a fully equipped rural telehealth centre with real time teleconsulting, teleconferencing, and IT education and training facilities supported by say, golden arches, than no telehealth centre at all.

But the critical factor in the successful expansion of telehealth services to include specialist care for older people in rural and remote areas is support for the role of local GPs and other primary health care providers - collectively, rural health workers - as gatekeepers in their delivery. While there seems to have been relatively little research into the needs and wants of older health consumers, specifically, in rural and remote Australia, the collective wisdom, supported by anecdotal evidence and US research, indicates older people form strong bonds with primary health care providers, and benefit from continuing provider-consumer relationships.

THE ROLE OF THE RURAL HEALTH CARE WORKER IN TELEHEALTH

The role of rural health care workers in telehealth is characterised by their key role as a primary provider of health care for their communities. As a first point of contact for many patients, rural health care workers need the skills to assess and deal with a wide variety of problems. Their role as gatekeepers for referral to other levels of health care will increasingly bring them into contact with telehealth now, and will do so more often in the future. They will also have an increasingly important role in helping the communities that they work in and resist the pressure for telehealth services delivered remotely to potentially be used by health funders as a rationale to reduce local clinical services.

For most rural health care workers the common facilitators of telehealth now are the telephone and the fax. These almost ubiquitous technologies are used every day by rural health care workers in a myriad of ways that all fall into the definition of telehealth. If other communication technologies are to be widely adopted by rural health care workers for telehealth, the challenge is to make these technologies as transparent in their use as the telephone. Needless to say, it may be some time before this is the case.

In the literature to date, there is little or no evaluation of the role of telehealth in primary care reported and very small numbers of patient numbers in those papers that reported on trials. One reason for this is that telehealth has been designed and developed for the secondary/tertiary levels of delivery of health care. At these levels, specialised health care is usually technically intensive



(which makes it easier to add another layer of technology in the form of telehealth), often high cost (therefore easier to justify the potential return on investment) and there are plenty of enthusiasts to drive the trials of technology. Finally, and not entirely tongue in cheek, at these levels patients often present clinicians with more tractable problems that more often than not are well defined - i.e. more science than art in the practice of health care.

Considering all this, is there any reason for primary health care workers in rural and remote areas to be interested in telehealth? The answer is an almost unqualified “yes” particularly for those who are caring for aged persons. Consider how the three elements of telehealth – teleconsultation, telemonitoring and teleinformation might relate to the work of a primary health care worker in the near future.

Teleconsultation

Teleconsultation (the client and local worker undertake a consultation with a remote provider via videoconference) will probably not be seen often for some time in full blown applications on the rural health care worker's desk. This is mainly because it relies on realtime videoconferencing, which means it is limited by the constraints of cost and time barriers. For some rural and remote rural health care workers, especially those supported by State Health Authorities, teleconsultation is now becoming an essential support for their practice, including geriatric team assessments.

Telemonitoring

Telemonitoring (the use of communication/information technologies to monitor a client in a remote location from the primary care provider) has a broader role for rural health care workers. The attraction of telemonitoring for rural health care workers is that they can use lower end technologies that are easier and cheaper to use. Therefore it is more readily available to those practitioners with an interest in IT, but not the big budget to support this interest. End users can use more economical methods of capturing data (eg digital still and video cameras, other digital data capture tools) that can be attached to a wide range of instruments and then forwarded to the health professional responsible for patient care or to a colleague for an opinion.

A good example of telemonitoring is the home monitoring of patients with chronic illnesses. This is becoming big business for the Health Maintenance Organisations in US, because it much cheaper and less risky than sending a health professional out on home visits in urban areas (most savings are in workers compensation payments for reduced assaults and accidents!). In Australia, Professor Branko Celler's trials on home monitoring in Sydney have been reported by him elsewhere. The District Nursing Service (DNS) in Melbourne is using hand held computers to augment home based care. Potential applications for telemonitoring are limited only by technologies used to capture and transmit data. Common chronic illnesses of the elderly that can be telemonitored include hypertension, ischaemic heart disease, airways disease, and diabetes. For most of these applications, low end technologies can be used.



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Cable in US is the most popular, and the DNS mentioned above uses Macintosh Newton's. All of the conditions listed can easily be monitored using communication technologies available to any rural health care worker from the radio telephone to satellite phones

Teleinformation

It is teleinformation (the use of communication/information technologies to seek and provide health related information), however, that has great potential for rural health care workers to develop an active role in telehealth. Rural health care workers have the potential now to download reports into computerised health records from other providers. Work is progressing to provide discharge summaries direct to any health care workers from the hospital as soon as the patient is discharged. This is a significant advance in the timely provision of key information that until now has often not been available.

Rural health care workers, however, have great opportunities with teleinformation to be involved in a different dimension with their clients and other carers. Email offers the most effective means, as it can be used for informal (or even formal) exchange of information with and about your clients. Being asynchronous, email is probably more convenient than trying to chase others with telephone calls. For that matter, the same applies to how health workers communicate with their clients. Does the health worker have to rely on notes written on scraps of paper to try to remember to keep ringing a number that is not answering? Or is it easier to reply to an email, with the knowledge that the reply will be reasonably secure, and picked up by the client when it suits them?. Anecdotal evidence is emerging that the elderly are increasingly using the Internet to counter isolation. This offers the health worker an opportunity to involve them via teleinformation, potentially overcoming distance barriers to accessing information. The message for rural health care workers is to get connected, and start using the technology to provide a wider, and maybe better, choice of communication options for themselves and the people they communicate with. A word of caution about the World Wide Web (WWW) though. While there are innumerable health resource available on the WWW, it can be difficult to verify the authority and reliability of these resources. Local health workers can play an important role in helping their local communities access reliable information on the WWW.

The key role in telehealth for the primary health care worker is as the gatekeeper of information for and on behalf their clients. In this respect, it must be recognised that the role of primary health care worker in telehealth is no different than in other, more traditional, methods of patient referral/information management in use now.



USEFUL READING

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