

# The ageing population accessing services with the help of technology

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The population of Queensland is currently 4,279,400 million, which is 20% of the Australian population and the proportion of those aged greater than 65 years now accounts for 13.3%.<sup>(1)</sup> This is expected to increase to 25%, or one in every four Queenslanders, during the next 50 years. While many of these residents are located in the southeast corner of the state, significant numbers are living in rural and regional locations and have limited access to aged care services. There is currently, a major shortage of Geriatricians and Rehabilitation Specialists providing services within the public health care system. However, with the help of videoconferencing (VC), these services are becoming more widely available to those living in rural and remote communities.

## Queensland Health—CaSS, Statewide Telehealth Services

Queensland Health (QH) division of Clinical and Statewide Services (CaSS) has a dedicated unit specialising in videoconferencing technology, which is Statewide Telehealth Services (STS). The term Telehealth represents an extension of the way people can communicate with patients, nurses, doctors and other specialists, by simply using a TV screen and a digital camera. The telephone has brought people closer together, then the internet and email further removed distance. Now in Queensland Health, telehealth is removing physical and social distances between health professionals and their patients. Queensland Health has one of the largest videoconferencing networks in Australia. The network supports over 600 end points (video coder/decoder devices) and project teams supply: technical support; advocacy; policy advice; project management expertise; and, training. Most health facilities in rural and remote areas have access to videoconferencing and this technology allows interactive communications in real-time for clinical, educational and general communication purposes.

Videoconferencing technology was first introduced to Queensland Health in 1995 to support clinical services for mental health assessments. By 1999, the technology was being used clinically for mental health, foetal monitoring, and paediatric care, in addition to education and administration uses. Capturing still images from digital cameras and video-scopes, along with the changes in the storing and transferring of images in the late 1990's, has also led to an increase in the store and forward of images for diagnostic and secondary advice. This mode of transmission is used for radiology, ophthalmology, ENT (Ears Nose and Throat), dermatology, burns, wound management, and now also for aged care. Other technologies such as web-based applications, digital peripheral devices (ie otoscope, stethoscope), videophones, and home monitoring units are also being evaluated within clinical settings. The use of videoconference applications has continued to increase since 1997, with over 760 sessions per month undertaken.

To help improve aged care services, Telehealth has implemented a TeleGeriatrics model of service with two different hub locations in Cairns and Hinterland Health Service District and Sunshine Coast and Wide Bay District. The Telehealth service being delivered is utilising a hub and spoke model, with a hospital acting as a central hub providing a service through smaller centres, (spokes) that radiate outward from the hub. A videoconferencing system is located in each location and is used for case conferencing, team meetings, patient assessments and staff training. These aged care services are provided by Geriatricians, Transition Care Teams and Aged Care Assessment Teams (ACAT).

## The ageing population

The distribution of people during the last 50 years was analysed by the Australian Bureau of Statistics in the publication '*2008 Year Book Australian*'.<sup>(2)</sup> This publication illustrated the proportions of age groups within the population is reversing, with a decline in numbers of people between the ages of 0 to 19, while the group aged over 70 years experienced an increase.<sup>(2)</sup> There is also a peak between the ages of 40 to 65 years.<sup>(2)</sup> This proportionate shift in age demographics demonstrates the need to improve both the availability and quality of aged care services. This will be vital, not only for the needs of the current population aged over 70, but in preparation for the baby boomer generation, (people born between 1946-1964) who will be aged over 70 years in less than 10 years time. The population of Australia has been increasing at a rate of around 11% since the year 2000, and Queensland has the second fastest growing population at 2.3%, after Western Australia.<sup>(3)</sup> In Queensland, the ageing population over the age of 85 years, is also increasing at an average of 5 to 7% per annum.<sup>(2)</sup> The majority of the population of Queensland is located between the Gold Coast, Brisbane, the Sunshine Coast and West Moreton.<sup>(4)</sup> Health care services are easily accessible in these locations when compared with those in rural and remote parts of the state.

## Aged Care Health Service

It is publicly acknowledged that the Queensland health sector is experiencing a shortage of doctors. This shortage has also had an impact on the availability of aged care services, with limited numbers of specialists practising outside of the South-East corner of Queensland. In mid-2003, the number of residential aged care workers in Australia was 156 823, which equated to only 1.5% of the entire Australian workforce.<sup>(5)</sup> There are only 337 Government operated residential aged care facilities, other than hospitals, currently available to the Australian population.<sup>(5)</sup> This is a total of only 11.7%<sup>(5)</sup> of all available Government facilities for older people, who make up 13.3% of the population.<sup>(6)</sup> There are a number of different services currently available for older people, however this report will focus on Geriatric Medicine and Transition Care. There are three types of specialists within Geriatric Medicine. These are Geriatricians, Psycho-Geriatricians, who focus on psychological disorders in older people, and aged care Rehabilitation Specialists. Many of these specialists also practise general medicine in their professional duties, thus limiting the time available for Geriatric work.

Geriatricians work with the local Transition Care and ACATs in order to help the progress of patients returning to their homes. The ACATs participate in case conferences with the Geriatricians. The in-person conferences do not directly involve the patient; however, they are used to determine the level of in-home support required by the patient. Case conferences also determine whether a patient can safely return home, or whether they require rehabilitation or residential aged care. Similarly, the Transition Care Teams conduct in-person meetings with each facility whenever possible in order to provide short-term support and active management for older people when they have been discharged from hospital. These patients still require support to return to their optimum functional capacity. Introducing a Telehealth model of service has also allowed the Geriatricians, Transition Care Teams and ACATs to increase the level of contact with each facility and reduce the amount of travel by specialists.

In 2008, the Federal Government released a 'Productivity Commission Research Paper—Trends in Aged Care Services: some implications', which outlines some of the difficulties facing the providers of aged care services.<sup>(5)</sup> This paper also explored the issues surrounding the development of the aged care services workforce with the current restraints being experienced, and the improvements needed in aged care and workforce training. In particular, several productivity improvements were detailed where using Telehealth could correlate to a flexible service delivery model. The two key points outlined were:

- adopting advances in information technologies to improve the efficiency of administration and care outcomes.<sup>(5)</sup>
- increasing the use of assistive technologies to improve workforce outcomes and client independence.<sup>(5)</sup>

## Telehealth Model of Services in Queensland

The University of Queensland (UQ) conducted a study relating to the provision of Geriatric services via videoconference, with the Specialist located at Princess Alexandra Hospital providing a service to patients in the Toowoomba Base Hospital. A VC unit was physically wheeled around a ward to the patient's bedsides, with the Geriatrician assessing the patient through video consultation and observing real-time movements. The Geriatrician also had a comprehensive online assessment tool (CeGA-online software) running on a separate monitor, allowing the Geriatrician to simultaneously refer to and record clinical notes. The VC unit is attached to a light weight trolley, and consists of a video screen providing an image of the Geriatrician to the patient and a small camera to capture and transmit the patient's image to the consultant. This service has now become part of the routine weekly clinics, with approximately 11 patients receiving a consultation via VC each week. Without the availability of this technology the specialist would be required to travel 125km from Brisbane to Toowoomba, thereby reducing the total number of clinical hours being provided. The study also concluded that if the specialist is required to travel more than 1½ hours, a Telehealth model of service is ideal to provide a more cost effective and comprehensive service delivery method.

As a result of the success of the model used in this study, Statewide Telehealth Services was approached and asked to deliver and support a similar model of ongoing service. This project is being conducted as a collaborative approach with UQ, STS, and the QH Policy Branch—Office for Older People's Health. The Federally funded Medical Specialist Outreach Assistance Program (MSOAP) has also provided some financial support to fund the time of the Specialists involved. This approach not only enables patients to receive specialist aged care service, but also allows local ACATs and Transition Care Teams to have increased access to Geriatricians via case conferencing. This has increased the quality of service available to patients, as well as the level of support for the staff providing aged care and rehabilitation services.

During 2008, the Policy Branch funded an investigation into the current aged care status in Queensland, and concluded that majority of the public service Geriatricians are based along the coastline of the Queensland. The two areas that have demonstrated a desire to pioneer a QH-Telehealth service delivery method were Cairns and Nambour, where there are locally based Geriatricians who, with support from their District, will provide a service to the surrounding rural areas via telehealth.

## TeleGeriatrics Project—Cairns and Hinterland Health Service District

The Cairns and Hinterland region has an ageing community which accounts for 7% of the local population, with only three Geriatricians and one Psycho-Geriatrician providing a service to an area over 40,000km<sup>2</sup>. These specialists currently travel throughout the District providing an aged care service to community. However, some patients only receive monthly or even half yearly onsite visits. During 2006-07 the hospitals involved in this model, had 2547 patients admitted who were over the age of 70 years, with a length of stay (LOS) greater than three days. This equated to an average of 15.9 beds being occupied on a weekly basis.<sup>(7)</sup>

Hospital	Total hospital beds	Number of episodes per year >70 years with LOS >3 days <sup>(6)</sup>	Beds occupied per week by >70 years (average)	Total distance from Cairns (kms)
Cairns Base	302	1748	33.6	-
Innisfail	43	461	8.8	90
Mareeba	61	338	5.5	65

The TeleGeriatric model of service was introduced to Innisfail and Mareeba Hospitals during early 2009 with the hub services provided by Cairns Base Hospital. The Cairns (hub) based Geriatrician, Transition Care Team, are providing a service to the Mareeba and Innisfail Hospitals (spokes). At each rural hospital has the Telehealth VC equipment setup in a meeting room, with one of the Cairns based Geriatrician having a private desk mounted system. This private system is vital as the Geriatrician uses an online aged care assessment tool, (CeGA-online software) which is provided by UQ. The software was used successfully in the PA Hospital to Toowoomba trial and is being used by some Queensland Health facilities. Initially, the Geriatrician utilised the Telehealth system up to three times per week, which is in addition to the in-person meetings, providing a timely and responsive service. The Geriatrician held case conferences with the multidisciplinary staff at each Hospital to discuss patient management, including support to non-Specialist medical staff. It is predicted that these videoconferences will increase in number and frequency during the next 12 months.

The Cairns Transition Care Team, (hub) have used the VC equipment to discuss patient discharges with the Geriatrician and with the Hospital staff. There are Transition Care members based at each Hospital who were only meeting as a district team two or three times per year. The introduction of a Telehealth VC system has provided a benefit not only to patients, but to Queensland Health staff who now participate in monthly district team meetings. It has also expanded the means of receiving education, with remote training sessions becoming available and allowing the clinicians in each discipline to support and train their rural based members of staff.

The Transition Care Team (hub) proposed to use the VC equipment to discuss patient case conferences and discharges with the Geriatrician. There are Transition Care members based at Innisfail Hospital and Mareeba Community Health who have not yet met as a District team with the Cairns 'hub'. It is proposed that the introduction of the Telehealth VC system will provide a benefit not only to patients, but to Queensland Health staff who now participate in monthly district team meetings. It has also proposed to expand the means of receiving education, with remote training sessions becoming available and allowing the clinicians in each discipline to support and train their rural based members of staff.

It is proposed That the Cairns based staff will support the 'spokes' who do not have designated staff to provide clinical consultations with clients, via Telehealth VC equipment, for example staff such as Social Workers, Speech Pathologists and Dieticians. These consultations will be facilitated by the local staff who arrange for the client to use the health care facility and link into a videoconference with the Allied Health professional, using the Telehealth VC equipment.

The future of the Cairns based TeleGeriatric model is to continue to provide a Telehealth aged care service to the existing sites; conduct a review after 6 months and investigate the opportunities for expansion including technical advancements. The ACATs and Transition Care wish to be involved and see potential for a service to the Cape York and Torres Strait where family education sessions are already taking place. Other communities and rural hospitals of interest include the Atherton and Tully. The district team meetings and educational sessions will continue, and hopefully encourage other disciplines to explore and incorporate similar service delivery methods.

## Sunshine Coast and Wide Bay Health Service District Model of Service

The ageing population in the Sunshine Coast and Wide Bay Health Service District has only seven Geriatricians, two Psycho-Geriatricians, and two Rehabilitation Specialists, providing a service to residents within an area of approximately 84,000km<sup>2</sup>. The majority of these Specialists are located on the Sunshine Coast and travel extensively throughout the district. The main Hospital which will benefit from this Telehealth model of service is the Maryborough Hospital and Yaralla Place (spokes), an aged care facility located near Maryborough Hospital. They will receive the specialist service from Nambour Hospital (hub). During 2006-07 the Hospitals involved in the Nambour model had 4354 patients admitted over the age of 70 years with a length of stay (LOS) greater than three days, equating to an average 23.7 beds occupied on a weekly basis.<sup>(7)</sup> Maryborough Hospital receives a significant number of transfer patients from the Hervey Bay Hospital, and these figures are included below. The table excludes data from Yaralla Place as the majority of patients are long-term residents.

Hospital	Total hospital beds	Number of episodes per year >70 years with LOS >3 days <sup>(8)</sup>	Beds occupied per week by >70 years (average)	Total distance from Nambour (kms)
Nambour General and Noosa	345	2627	50.5	-
Maryborough	88	637	12.2	160
Hervey Bay	104	1090	20.9	185
Yaralla Place	96	99*	96	160

\* Total number of licences, majority of patients are long term residents.

The Telehealth VC equipment has helped to increase the number of assessments by Geriatricians and now there is Geriatrician input into the multidisciplinary team meetings within the district. It has also allowed for the introduction of remote Geriatric training for staff.

A Nambour based Geriatrician and his team has been a key driver for the uptake of this project, as he saw the potential this service could have, not only on patients but on the medical staff within the region. It was introduced at both locations for a weekly Geriatric and Transition Care clinic. Prior to this, the Geriatricians only provided an onsite service yearly. Now with the help of telehealth, they are able to see real-time video of patients on a weekly basis, which has improved the method of patient management. The actually equipment was set up at Yaralla Place and Maryborough Hospital to be moved from bed to bed, reducing the need for patients to move to a separate room for the consultation. It has also enabled the involvement of a Geriatrician during the weekly multidisciplinary weekly team meeting by using the Telehealth equipment.

Training was also identified as a key to the success of a Telehealth service. The Senior Medical Officers rotate between Maryborough and Hervey Bay Hospitals, and they saw the introduction of Geriatric training as a vital asset to the medical coverage at both hospitals. This training has also been extended to nursing and intern staff with training provided by a Nurse Educator from Nambour.

The future of this model is the continuation of an aged care service by using Telehealth VC technology for clinical and training purposes; conducting a 6 month review and investigating the potential for expanding the model.

Technology has advanced dramatically and changed over the years from the telephone to now being able to see specialists, using a TV screen and a digital camera. The technology is reducing the barriers of distance and lessening the impact of the shortage of medical specialists. This TeleGeriatric model of service incorporated into Queensland Health aged care services, have demonstrated the success of Telehealth within another clinical services. Telehealth is being integrated into everyday practices in more

health care areas each year. Statewide Telehealth Services is helping to redefine the way health care services are delivered, and is allowing true equity of access to more health care services for all Queenslanders.

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## Presenter

**Tiffany Cordwell** is a senior project officer for the implementation of telehealth projects throughout Queensland Health. During 2008 she won a Queensland Government award for Staff Excellence—Personal Qualities. She has also project managed ICT collaborations between Queensland-based companies, IBM and the state governments. Prior to this she worked within the National Health Service in England. Tiffany has eight years' project management experience and has completed a Bachelor of Commerce majoring in eCommerce and marketing in 2006. Tiffany continues to promote the use of telehealth and her keen interest in this area has lead her to undertake telehealth research.