THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

Centre for Online Health

CRICOS PROVIDER NUMBER 00025B

5 May 2014

The Research Director
Health and Community Services Committee
Parliament House
George Street
BRISBANE QLD 4000

Dear Sir/Madam,

Inquiry into Telehealth Services in Queensland

The Centre for Online Health wishes to contribute to the deliberations of the Health and Community Services Committee's inquiry into telehealth services in Queensland, through this submission. The submission is deliberately brief, seeking to highlight the key points that we consider important to the advancement of telehealth. Formal references to the work described in this report may also be provided upon request.

On behalf of the Centre for Online Health, we thank the committee for the opportunity to contribute to this important process.

Yours faithfully,

Professor Len Gray

Director, Centre for Online Health

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The Centre for Online Health

The Centre for Online Health (COH) is a Research Centre within the School of Medicine within the Faculty of Medicine and Biomedical Sciences at The University of Queensland. The COH is situated in Brisbane, with bases at the Princess Alexandra Hospital and the Royal Children's' Hospital.

The COH is a world class academic research, teaching and service delivery enterprise in telehealth and e-Healthcare with over fourteen years of experience in the field. It leads research in telehealth within UQ, which, in turn, is the world's all-time leading university in scientific research publications in telehealth and telemedicine.

The COH's multidisciplinary team of clinicians, academic researchers, educators, technicians, engineers and administrators brings together a broad mix of skills to deliver telehealth services, research and education programs.

The COH holds service level agreements with respective Health and Hospital Services to support telehealth services at two major tertiary hospitals in Brisbane. At the Royal Children's Hospital (RCH), the COH has been responsible for managing and coordinating the telepaediatric service since November 2000 - the Queensland Telepaediatric Service is one of the largest reported paediatric telehealth services in the world.

In 2012, the COH, in conjunction with the Princess Alexandra (PA) Hospital established the Princess Alexandra Hospital (PAH) Telehealth Centre for the delivery of adult and aged care telehealth services. The COH currently operates this expanding service on behalf of the PAH.

The NHMRC Centre of Research Excellence in Telehealth

The COH hosts the National Health and Medical Research Council Centre of Research Excellence in Telehealth (CRE), established in 2013.

The CRE research program is themed across home-based care, aged care, small rural hospitals and Indigenous health and considers technology, modalities, change management and health economics across each of these themes.

This proposal brings together an **internationally recognised team** from four research groups actively engaged in telehealth research at The University of Queensland (UQ): The Centre for Online Health (COH), the Centre for Research in Geriatric Medicine (CRGM), the Telerehabilitation Research Unit (TRU), and the Dermatology Research Centre (DRC).

The team is strengthened by Investigators with expertise in indigenous health, technology, health economics, management, health informatics, engineering, health workforce and statistics to address special interest areas and provide quantitative evidence of viability and sustainability of the telehealth service models proposed. The team has representation from 4 Australian states.

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Our vision for telehealth

Broadly, the COH is interested in developing and evaluating innovative models of health service delivery utilising telehealth. More specifically, the COH explores the complex challenges in developing new services - which improve access to health care and enhance health outcomes for rural and remote communities.

Collaborative and cooperative relationships are key to achieving significant and sustainable change. The COH is driven to achieve strong and constructive work relationships which consider and consult with local stakeholders and communities.

As a research centre, the COH wants to evidence the benefits of change by monitoring, measuring and evaluating the health service to validate service models against their objectives.

Telehealth is much more than video-conferencing

Video-conferencing is the most tangible form of telehealth. Its strength is its ability to emulate conventional health conversations between patients and health professionals and among health professionals. As such, it is a logical solution for patients who are located in rural and remote communities to enable interaction with health professionals in regional and metropolitan centres. Since it closely resembles conventional practice, it is easy to fund on the same basis as normal consultations – the Commonwealth (Medicare) and the Queensland Health have incorporated video-consultation into their funding schedules on this basis.

However, telehealth incorporates other strategies: store and forward (where information is presented to a health professional and they respond at a later time), and tele-monitoring (where information is assembled directly from the patient for review by a health professional or service). These approaches to telehealth are exciting in so far as they provide the potential to re-engineer health care delivery:

- Dermatologists can provide reliable advice to patients and GPs on the basis of review of photographic images

- Endocrinologists (and GPs) can monitor the status of glucose control of patients with diabetes, with reduced need for in person consultations

- Hospital services can monitor the status of patients who are unwell at home, in regard to vital signs and symptoms, thus reducing the need for home visiting, and in some cases, avoiding hospitalisations

- Pharmacists can perform medication reviews online, avoiding the need to visit a patient in a nursing home.

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These strategies can be partnered with video-conferencing to provide an array of solutions to assess and treat patients at a distance. While telehealth was born out of the need to provide health care at great distances, these examples indicate that there may be a powerful future for telehealth even in the shadow of a major hospital.

Our key propositions in relation to the Inquiry

We have 3 key propositions in regard to the Inquiry:

1. The Queensland Government should continue to invest strongly in telehealth systems because telehealth has the potential to transform the delivery of health care.

2. Recent changes to funding arrangements within QH provide an important opportunity to better exploit the potential of telehealth, at least in its video-conference format.

3. Given the enormous potential of telehealth, and the current level of uncertainty around how best to organise it, a strong research and development program is required over at least 5 years.

Why invest in telehealth?

Historically, the primary rationale for telehealth has been to use video-conferencing to emulate conventional doctor – patient interactions, thus improving access to the doctor for people living in rural and remote communities. While this is important, telehealth systems and strategies open the door to a multitude opportunities to re-engineer the way in which health care is delivered. Effective implementation will result in the following benefits:

1) Improved health care
   a) Access for persons living in rural and remote communities; and disabled persons everywhere.
   b) Remote support by professionals; remote monitoring; and improved compliance with treatment.
2) Reduced costs of service delivery
   a) Reduced on road time for health professionals
   b) Reduced travel time and cost; less time allocated for health encounters for patients
   c) Less reliance on physical health care infrastructure
   d) Reduced demand for emergency department and hospital services
   e) Increased self-sufficiency of rural health care agencies, with consequent reduced reliance on regional and metropolitan health services.

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Facilitating the evolution of telehealth

The uptake of telehealth services to date has been sporadic and generally small in scale. When investment in the requisite infrastructure has been made available to clinicians, it is often underutilised.

In Australia, the use of telehealth is modest outside of the public hospital system. Similar experience is reported internationally.

Health system transformation, underpinned by telehealth, will take time.

A combination of important ingredients is required to establish and maintain a sustainable and effective telehealth service. These include:

- Suitable technical infrastructure to support the delivery clinical services

- Ability to share or distribute clinical records across distances

- Ability to interact seamlessly within and outside of the Queensland Health network, enabling interactions between hospitals, primary care practitioners and community health services

- Clinical decision support systems (software) to facilitate case preparation, case review and reporting

- Suitably trained personnel at both ends of interactions to support the delivery of telehealth services

- Administrative systems which support business processes such as referral management, scheduling, billing and record keeping

- Payment systems that support activity and incentivise development.

The COH can assist in development of telehealth in Queensland

The COH and its collaborators - currently expanding substantially with the instigation of the Centre of Research Excellence in Telehealth - constitutes the largest academic group of telehealth experts in Australia, and is likely to extend its pre-eminence as a research and development enterprise world-wide.

The work of this group is strongly grounded in clinical practice, as many of the staff are involved in development and operation of services. Many are practising telehealth clinicians. The researchers have skills in clinical care, health management, health informatics, business systems, organisational psychology, engineering and information technology. The group has expertise in the creation and evaluation of new service models; and in design and execution of experiments to determine the acceptability, reliability, safety, cost and clinical efficacy of telehealth. This information is vital to gain an understanding of the value of substantive investments in telehealth.

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COH is anxious to contribute its expertise to the advancement of telehealth in Queensland. The combination of strong government investment and academic expertise at COH has the potential to place Queensland at the forefront of telehealth development worldwide. If Queensland can attain such recognition there are not only opportunities to improve internal clinical service quality and efficiency, but also the potential to secure educational and commercial opportunities across Australia and the world.

Recommendations

COH wishes to offer 5 recommendations to the Review:

1. Sustained investment is required in technical infrastructure (tailored to clinical requirements), administrative support systems (referral and scheduling systems), business development, demonstrations and evaluation to fully exploit the benefits of telehealth for Queensland.

2. The recently implemented funding arrangements to facilitate telehealth within Queensland Health need to be sustained for a sufficient period to explore their efficacy – at least several years. This initiative demands careful evaluation to understand clinical effectiveness, return on investment and value for money.

3. Investment in telehealth should be expanded beyond video-conferencing to other telehealth modalities, such as store and forward and remote monitoring, to best exploit the potential of telehealth to re-engineer health care delivery.

4. As new models of service delivery emerge, adjustment to the activity based funding arrangements should be considered to encourage system change and remove perverse incentives.

5. A formal relationship between the UQ Centre for Online Health and the Queensland Government has the potential to place Queensland in a position of great strength in telehealth development worldwide.

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Appendix

Examples of Telehealth Projects led by the COH

Queensland Telepaediatric Service

(http://www.uq.edu.au/coh/telepaediatrics)

- COH has earned international recognition as a pioneer in the field of telepaediatrics (i.e. the delivery of paediatric health services at a distance).

- In collaboration with the Royal Children's Hospital, the COH provides routine telepaediatric services for children all throughout Queensland – involving a broad range of specialties including burns care, cardiology, endocrinology, ENT, neurology, psychiatry and surgery.

- Since the service began in November 2000, more than 19,000 telehealth consultations have been conducted for patients and families living in regional and remote towns throughout Queensland.

- The Queensland Telepaediatric Service (QTS) is one of the largest reported services of its kind in the literature.

- This QTS has been supported by a successful research programme, which demonstrates a unique method of coordinating telehealth services for children and families in Queensland.

- The critical care telemedicine service developed by the COH for neonatal retrieval advice (NEMO), received recognition by the Queensland Government and was awarded the Health Minister's award for Innovation in 2011.

Mobile videoconference robots

(http://www.uq.edu.au/coh/telepaediatric-robots)

- In 2006, the COH developed a mobile videoconference system for use in the paediatric ward at Gladstone Hospital. The mobile system was used to deliver specialist paediatric support to the hospital which had no paediatrician on staff.

- The mobile system was designed in a child-friendly robot configuration. The system could be positioned next to the bedside of the patient allowing interactive videoconference sessions to take place between the patient, the family, local clinicians and the specialist in Brisbane (via videoconference).

- This model of bedside telehealth consultations is now being used by the health department in a variety of settings.

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Indigenous health screening

(http://www.uq.edu.au/coh/health-e-screen-4-kids)

- Since 2004, the COH has been working with the Cherbourg Community Health Service; through a collaborative effort to improve local health screening services and access to specialists based in Brisbane.

- In 2008, the COH established a mobile telemedicine program to deliver routine ear and hearing screening services; alongside a visiting outreach program which delivered surgical services within the community.

- Since the commencement of the telemedicine service in 2008; routine health screening has been carried out at 21 schools for around 1250 children. The proportion of children being screened for chronic ear conditions has increased from around 38% to over 85% of all eligible cases in the community.

- The mean waiting time from referral to actual specialist appointment has been reduced from 73 days in 2009 to 29 days in 2011.

- Pre and post-implementation hospital referral records has shown significant change in referral data - the mean number of outpatient appointments at the tertiary hospital reduced from 54 to 22 cases per year; and the mean number of surgical procedures performed in the Indigenous community increased from 6 to 39 cases per annum.

- The longevity of the program demonstrates community acceptance, clinical usefulness and sustainability of routine telehealth services which now receives recurrent funding from the health department.

Adult telehealth services

(http://www.uq.edu.au/coh/pah-telehealth)

- In 2011, the COH was contracted to provide expert advice regarding the design and construction of a purpose built state-of-the-art telehealth centre at the Princess Alexandra Hospital (PAH) in Brisbane.

- The PAH Telehealth Centre was officially opened by the State and Federal ministers at a launch in November 2012 and currently stands as the best facility of its kind in Australia.

- The COH maintains a service provider agreement with the PAH to help establish new telehealth services and manage day to day telehealth activity in the centre.

- Services currently available through the PAH Telehealth Centre include endocrinology (diabetes care), cardiology, dermatology and geriatrics.

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Telegeriatrics

(www.resecare.com.au)

- The COH has broadened the scope of research by applying telehealth experience to other specialty groups, including adults and residents in aged care facilities.

- In partnership with the UQ Centre for Research in Geriatric Medicine (CRGM), the COH has contributed to the development of a comprehensive electronic records system for aged care assessments.

- The COH and the CRGM have tested the use of high definition mobile wireless video consultations between specialists and Residential Aged Care Facilities (RACFs), and have developed protocols to support geriatric care using telehealth.

- The COH has developed a commercial business (RES-e-CARE) to provide regular specialist geriatric consultations with participating RACFs, fully supported by purpose built video conferencing studios, high-quality electronic data systems and clinical support staff trained in telehealth.

Telehealth education and training

(http://www.proact.net.au/)

- The COH is one of the leading providers of telehealth education in Australia, offering fully accredited undergraduate and postgraduate courses in e-Healthcare.

- Around 300 students each year complete the courses offered by the COH.

- The COH has also developed a unique CPD course in telehealth – called *pro*ACT. The *pro*ACT portal provides clinical telehealth information, resources and education to healthcare professionals in Australia. *pro*ACT supports an integrated approach to the delivery of effective, high-quality healthcare services using telephone, email and videoconferencing.

- Funded by the Department of Health and Ageing's Telehealth Support Program, the *pro*ACT web portal was launched at the end of January, 2013.

- The COH also supports students undertaking higher research degrees including MPhil and PhD qualifications in telehealth.

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Government consultancies

The COH has secured several major tenders recently for projects through the Queensland and Australian Government on a range of telehealth topics. Examples include:

Telehealth guidelines for Medicare Benefits Schedule (2010-2011)

- In preparation for the inclusion of telehealth items on the Medicare Benefits Schedule from July 2011, the Centre for Online Health were commissioned by the Commonwealth Government Department of Health and Ageing to provide expert advice.

- The deliverables of this work included two reports entitled "Telehealth Business Case Advice and Options" and "Telehealth Assessment Report".

Telehealth Coordination Models in the Queensland Health Department (2011)

- The COH were contracted to develop a comprehensive report on the various options available for the coordination of telehealth services, with a primary focus on centralised and decentralised configurations in public health facilities.

Telehealth Education and Training Program for Clinicians (2012-13)

- The COH were contracted to develop a continuing professional development (CPD) program for clinicians wanting to establish and/or deliver telehealth services. The aim of this initiative was to promote clinical telehealth with an appropriate and highly relevant training program. The proACT training program is delivered online.

The International Successes and Failures in Telehealth Conference

(www.sftconference.com)

- For more than a decade, the COH has convened the International Conference on Successes and Failures in Telehealth (SFT) - a unique forum which explores both successes and failures in telehealth. The conference attracts prominent national and international speakers and delegates worldwide.

- SFT conferences are attended by up to 200 delegates including academics, doctors, nurses, allied health professionals, government representatives, policy advisers, managers and technicians.