Electronically enhancing health care to rural children: the health-e-kids project

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Introduction

The Occupational Therapy (OT) Department at the Royal Children’s Hospital (RCH) in Melbourne is running a broadband teleconsultation project aimed at electronically enhancing health care to rural children. This project, health-e-kids, uses the existing broadband network in the south west of Victoria — the South West Alliance of Rural Health (SWARH) — to enable clinical consultations to take place. This allows therapists at RCH to link with those working across the south west region. Health-e-kids aims to: pilot the use of broadband teleconsultations to supplement existing modes of communication in clinical practice to support the clinical care of children and their families, and support rural therapists in working with children with complex conditions.

Current paediatric OT practice in Victoria—linking city to country

The RCH is a public hospital caring for children across Victoria, southern NSW, Tasmania and the Pacific Rim countries. It has 250 beds, and treats approximately 32 000 inpatients each year. A total of 280 000 children are treated at the hospital annually. RCH is a centre of excellence for clinical, academic and advocacy services for infants, children and young people. In association with the Murdoch Children’s Research Institute, it is internationally recognised as a leading centre for research and education.

The clients of occupational therapists at RCH are generally children with complex congenital or medical conditions, or those who have sustained major trauma. After their immediate acute care it is considered best practice that the children return home, or close to home, whilst continuing to receive the necessary medical, nursing and allied health services to facilitate their recovery. Many children need to return to the hospital for follow-up, review or specialist treatment, some requiring frequent review appointments. These trips have a major impact on rural families. They are faced with significant travel and often accommodation costs, and the parents need to make arrangements for their absence from their work, home and family duties.

In our experience, rural therapists are often in sole positions, with a broad generic role. Many work across all age ranges, and with a wide variety of conditions. Rural therapists may miss out on the benefits of being in a larger team of colleagues where professional information can be exchanged and various assessments and interventions discussed or demonstrated. As complex paediatric conditions are generally not a common part of rural therapists’ caseloads, they need to be able to go outside of their local network to seek professional information and support. Current practice consists of telephone, written and email liaison and information exchange between RCH OTs and rural OTs. This may be around discharge planning, pre-planned admission preparation, or ongoing review of an outpatient. This communication is important in delivering optimal clinical care, however it can be difficult via telephone or in writing to liaise regarding particular assessments or detailed interventions without the child or family present.

What is broadband teleconsultation?

Broadband teleconsultation is one mode of telehealth practice. The electronic provision of health care and information services for the benefit of patients and their families has been rapidly evolving over the past decade as computer and information technologies have become increasingly accessible and affordable.1 Broadband teleconsultation technology has recently emerged and been acknowledged as a clinically appropriate and cost-effective means of providing health care across distances.2,3,4 The high
speed telecommunications networks now available in some regions make possible the detailed observation of clinical performance. Australian federal and state governments are currently funding an extensive roll-out of broadband technologies throughout most rural and remote regions of Australia.

Telehealth has been used to allow remote clients greater access to specialised information and services. There is an abundance of literature available on the use of telehealth in the field of medicine, however, very limited literature available applications in occupational therapy. Both the American Occupational Therapy Association and the Canadian Association of Occupational Therapy have expressed their support for the future use of telehealth as an effective, efficient and accessible mode of occupational therapy service. The literature shows however that practitioners are not always confident using this technology. In Victoria, SWARH is a leading provider of telecommunications in health care. The SWARH network of telecommunication facilities links over 200 health care facilities in the region via a high quality digital visual and auditory communication broadband network, and provides technical and training support to staff. The RCH is now linked to this network.

**The health-e-kids project**

The health-e-kids broadband teleconsultation project aims to improve communication, co-ordination of care packages, and access to specialist knowledge and skill sharing between RCH and rural therapists. Through training and experience of broadband teleconsultation the project further aims to equip therapists with the know-how and confidence to use the broadband telecommunication technology available in their health care facilities. The William Buckland Foundation provided a $101 000 grant in 2006 to the RCH OT Department to trial and evaluate the use of broadband teleconsultations linking health care professionals at the RCH and health care professionals, parents and children in the south west region of Victoria.

The equipment installed at each site includes a Polycom camera, which can be controlled remotely by participants at either site, and a television screen. These are linked via the broadband network established by SWARH. This network is different to the internet, and is a private and secure system with controlled access. The advanced technology is such that the cameras can be zoomed in for close up views, or panned out to view a child in an activity, or to include all participants in the consultation. The broadband teleconsultations take place either with the child and parents located at RCH or in their local health care facility, with OTs involved at both sites.

**Establishment of the project**

The first stage in the project involved the recruitment of a project leader, administrative assistant, and independent evaluators. Ethical approval was required as it is a service development project collecting feedback from therapists, children and families. This was obtained from RCH, Barwon Health and SouthWest Healthcare ethics committees. Technical equipment was purchased, and installed to ensure compatibility with the SWARH network. The project was promoted within RCH and south west region paediatric OT services, and information and training sessions undertaken with therapists. Ongoing support and guidance has been provided for all clinicians from project personnel and SWARH representatives, and this includes face-to-face contact, email and electronic newsletters. Broadband teleconsultation is now being undertaken, with the involvement of other health professionals when indicated by the clinical needs of the children.

The LIME Management Group have been appointed as independent evaluators and involved in developing evaluation procedures with the clinical leader and OT manager. Methodology for evaluation includes: clinician survey and focus groups pre- and post-service trial; and telephone survey of parents (and children where appropriate) of the experience of broadband teleconsultation. Final evaluation aims to report on the experiences of clinicians and families in terms of individual impressions of usability and applications of the technology. From the clinician’s perspectives the benefits and challenges to use in practice will be evaluated in order to inform long term applications.
Potential benefits expressed thus far by therapists include reduction of therapists and families travel time, clinical support and education for rural therapists, and further applications of the technology to facilitate support networks between therapists. Barriers include lack of familiarity with the equipment, and ease of access at both ends of a consultation. Further information will come to light as the final data is gathered and analysed.

**Beyond health-e-kids—using broadband teleconsultation technology in everyday practice**

When this project is completed in June 2007 we will publish our findings and will be pleased to share our experiences and knowledge with others to enhance the uptake of the many uses and benefits of the telecommunication infrastructure being rolled out throughout Australia. The broadband teleconsultation technology being trialled in the health-e-kids project has the potential to be used long term in facilitating collaborative health care across Victoria. Benefits may include enhance clinical support, guidance and education for rural therapists, reduction in burden of hospital appointments and reviews for families, and improved ease of transfer of care packages from hospital to home.

**References**


**Presenter**

Lin Oke is the Manager of the Occupational Therapy Department at the Royal Children’s Hospital in Melbourne. For many years she was the National CEO of OT Australia and the Executive Officer of the (then) Health Professionals Council of Australia. Her first position as an OT was in a rural setting in Victoria and she empathises with rural health workers and health consumers. In early 2006 she received two grants ($101 000 and $215 000) to trial telehealth technology for consultancy services for rural therapists and clients and for the provision of clinical observations for undergraduate allied health students.