

## Chapter 19

# Telepaediatrics in Queensland: Evidence for Quality, Reliability and Sustainability

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### ABSTRACT

*Telemedicine has been shown to be an effective alternative technique to provide health services to rural and remote communities. Although the interest in telemedicine is growing, there is little evidence to show the quality and reliability of telemedicine techniques. This chapter describes the telepaediatric service in Queensland, Australia outlining some evidence for quality, reliability and sustainability.*

### INTRODUCTION

The provision of health care at distance using information and communication technologies (ICT) i.e. e-health (telemedicine) is believed to be an effective alternative way of providing health services to rural and remote communities (Edirippulige, Smith, Bensink et al., 2009). However, there is little evidence available on the quality and reliability of this technique. Similarly, there is no much evidence about the sustainability. This paper provides an overview of telemedicine services established by the University of Queensland Centre for Online Health (COH) to provide care to children and adolescent in rural Queensland. The

chapter will provide some evidence on the quality and reliability of this program while examine the factors related to the design and development of these services that helped for the sustainability of this service.

### BACKGROUND

#### Health Care in Rural Queensland

Substandard healthcare in rural and remote communities is not a new phenomenon. Rural communities have less health facilities and a lack of health workforce, particularly specialist health professionals. This is true to both developed and developing countries. Geographical isolation and

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restricted access to specialist health services are main contributing factors to the inequality of health care around the world. This is more relevant to countries like Australia where communities are scattered across huge land-mass. A recent report by the Australian Institute of Health and Welfare indicated that the people in regional and remote areas are at greater risk of cancer, chronic diseases, alcohol and drug addiction and obesity. The report also noted that the life expectancy in regional areas is one to two years lower and in remote areas up to 7 years lower compared to their urban counterparts. There is a significant difference in the health status of indigenous people – the majority live in regional and remote Australia – compared to the non-indigenous population (Australian Institute of Health and Welfare, 2008).

Queensland is the second largest state in Australia with a population of about 4.2 million. Whilst two-thirds of the Queensland population lives in the south-east region of the state, the remainder is spread in major towns along the east coast (18%) or in remote townships (15%). The distances separating these communities with urban centres are vast. Because most specialist health centres are located in Brisbane, patients living in rural and remote communities usually have to travel to see the specialist if a referral is made.

Delivering specialist care to children living in the regional Queensland is challenging. Often these children are required to travel to tertiary centres for specialist consultations. In some circumstances, specialists travel to regional hospitals to conduct outreach clinics. These traditional methods of providing services are associated with numerous negative consequences including cost for health services and families, stress and discomfort for patients, families and providers.

To mitigate some of these difficulties, the health department in Queensland subsidises the travel costs incurred by regional patients through a patient travel subsidy scheme (PTSS) funded by the State government. This is the conventional model of delivering specialist health services to

patients living in non-metropolitan areas. Doctors in regional areas are able to refer patients to a specialist, which then makes them eligible for support through the scheme. In 2007, the travel scheme cost the Queensland health department approximately \$32 million (Queensland Health, 2008).

Specialist outreach clinics are also arranged for groups of patients in selected rural and remote communities. These clinics involve specialist teams who travel out to communities to see patients periodically throughout the year. These clinics are well received in these areas and offer specialist staff valuable insight into the needs and resources available within these communities. Nonetheless, the cost, travel time and inconvenience involved in these outreach clinics are considerable.

## **What is Telemedicine?**

The use of information and communication technologies to deliver health services at distance is known as telemedicine (Edirippulige & Wootton, 2006). A number of different terms such as telemedicine, telehealth, online health and e-health are often used interchangeably. In this chapter, we will use telemedicine to denote this mode of health delivery.

Telemedicine services may be categorised according to method used – i.e. either real-time or store and forward. Parties involved in a real-time telemedicine consultation communicate synchronously via a telecommunication network. Telephone discussions or videoconferencing sessions are examples of real-time applications. The primary advantage of real-time telemedicine is that there is usually no detectable time delay between the information being transmitted and received, that is the parties concerned can interact as though they were present in the same room.

Store and forward telemedicine involves the transmission of stored information from one site to another over a period of time. Store and forward telemedicine, which is sometimes referred

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