The Case of Telepsychiatry Adoption and Diffusion in a Healthcare Organization in New Zealand

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EXECUTIVE SUMMARY

This research investigated telemedicine adoption and usage in psychiatry in one hospital in New Zealand (NZ). This research utilized the technological innovations theories as a guiding theoretical framework to develop a set of determinants of telemedicine adoption in healthcare organizations. The research looked at two stages in the case study concerning the adoption process of telemedicine, utilizing the video conferencing technology (TMVC). Prior to TMVC adoption, the findings suggested that TMVC was adopted according to its relative advantage and cost effectiveness, along with other facilitating factors such as image enhancement. None of the deterring factors seemed to impede the adoption decision of TMVC. Results from the post-adoption stage suggested that TMVC was used minimally in the case study. The superficial assessment of important factors such as complexity and compatibility, prior to TMVC adoption, further suggested this weakness. In comparison with the literature, the incompatibility of TMVC in psychiatry stood as a unique cultural identifier pertaining to TMVC adoption in the NZ case study.

Keywords: case study; culture; healthcare communications; innovation theories; knowledge worker; one-on-one; organization managers; teleconsultations; telemedicine adoption; telepsychiatry; video conferencing

ORGANIZATIONAL BACKGROUND

Information systems (Austin, Trim & Sobczak, 1995; Conrad & Shorttel, 1996; Neame, 1995; NZHIS, 1995a, 1995b, 1996), information technology (IT) (Bomba, Cooper & Miller, 1995) and technology (Little & Carland, 1991) have been emphasized as strategic tools for enhancing healthcare delivery and improving performance, leading to optimized services and efficiencies (Telehealth, 2002).

However, in view of the New Zealand (NZ) studies (Neame, 1995; NZHIS, 1995a, 1995b), it was indicated that the health sector is relatively devolved, with purchasing contracts being the
main vehicle to drive sector-wide change at the provider level. Much of the information needed is unavailable in the form needed or at the time that it is most needed. This, in part, is related to gaps in the conceptual understanding of service delivery, which in this sector is a very complex business spanning what has been an extensive range of relatively autonomous functional areas. But it is also due to a lack of reliable information about outcomes, effectiveness, and actual costs on which improvements can be based. Because of this lack of empirical data, the tools for dealing with this complexity and for understanding what happens and why are deficient (NZHIS, 1996). Various organizational issues and the lack of coordination at the national level also were identified. Expertise in health information management and systems is limited. Currently, few health and disability sector personnel have the knowledge or skills to understand the issues or to make informed judgments about the validity of the advice they obtain.

However, NZ is not alone in this situation, and the literature suggested that different countries in the world face similar difficulties (Austin, 1992; Bakos & Tracy, 1986; Bangs et al., 2003; Conrad & Shortell, 1996; Shortell, Morrison & Friedman, 1990; Topping & Hernandez, 1991). This literature pointed to different organizational, technological, and environmental impediments in adopting and making use of IS/IT in healthcare organizations (Austin, 1992; Austin, Trimm & Sobczak, 1995; Ward, Griffiths & Whitmore, 1990). For example, Bangs, et al. (2003) pointed to a similar situation in describing the status of information systems in National Health Services (NHS) in the UK. They found that medical information about patients is stored in various places and that access to such information is restricted at various levels of care. They suggested a telemedicine solution based on store-and-forward and real-time video as one of the viable solutions to such fragmentation in healthcare delivery at the national level in the UK.

### The Importance of Telemedicine to NZ Healthcare Organizations

*The philosophy underlying the National Telehealth1 Plan is that telehealth should be mainstreamed as far as possible. That is, telehealth is not an end in itself, but rather it should be utilized as an alternate delivery mechanism for mainstream services, or to enhance the effectiveness and efficiency of mainstream services.* (Telehealth, 2002, iii)

Diminishing funds from the government and cost control have led to the need for alternative and more cost-effective means of providing healthcare (Al-Qirim, 2003a, 2003b, 2005; Bangs et al., 2003; Edelstein, 1999; Neame, 1995). In many cases, this has become necessary for survival (Edelstein, 1999) in order to sustain the increased competition among healthcare providers. The business of healthcare has become so competitive that many small rural hospitals are trying to align themselves with larger tertiary care centers in a community health-information network, a telemedicine network, or some other type of partnership in order to survive and to retain their local patients (Huston & Huston, 2000). Within these challenges, telemedicine emerges as one possible solution to NZ health providers, for example, in reaching out to rural patients (Charles, 2000; Harris, Donaldson & Campbell, 2001), in areas where patient volumes for certain services are limited (Edelstein, 1999) in order to conduct administrative and clinical meetings and to conduct different training courses to patients (e.g., smoke treatment centers), doctors, nurses, and other medical staffs (Perednia & Allen, 1995; Wayman, 1994). Therefore, telemedicine improves the access to healthcare services and the overall quality and cost-effectiveness of these services (Guedemann, 2003) and even to a level where telemedicine could be used to promote disease prevention, lifestyle management, and well-being (Lymberis & Olsson, 2003).

Telemedicine means medicine from a distance where distant and dispersed patients are brought closer to their medical providers through the means of telecommunication technologies.
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