Chapter IV
A Telehealth Technology Model for Information Science in Rural Settings

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ABSTRACT

Examined is the application of telehealth technology in a rural community clinical and educational system. Telehealth is viewed as the removal of time and distance barriers in the provision of healthcare and patient education to underserved populations (Nickelson, 1996). Presented is a clinical consultation model of healthcare for underserved populations and where professional consultation with a team of professionals may benefit rural educational systems and their students. Offered are specific applications within a broad spectrum of services utilizing telehealth technology. Finally, shifts in administrative paradigms, clinical models, and educational information technology for healthcare services through telehealth technology are explored.

INTRODUCTION

Examined is the application of telehealth technology in a rural community clinical and educational system. Telehealth is viewed as the removal of time and distance barriers in the provision of health care and patient education to underserved populations (Nickelson 1996). Presented is a clinical consultation model of health care for underserved populations and where professional consultation

with a team of professionals may benefit rural educational systems and their students. Offered are specific applications within a broad spectrum of services utilizing telehealth technology. Finally, shifts in administrative paradigms, clinical models, and educational information technology for healthcare services through telehealth technology are explored. Educational technology has provided society with new applications for clinical and educational consultation that enhance the quality of services offered to rural school systems through telehealth (National Advisory Committee on Rural Health, 2004). Whitten, Cook, Shaw et al. (1998), Sargent (1999), Miller & Miller (1999) Shaw, Goodwin, Whitten, & Doolittle (1999) and Whitten & Cook (1999) Miller, Miller, Sprang, & Kraus (2003), Sammons & DeLeon (2004), Miller, DeLeon, P., Morgan, Penk, Magaletta, (2006) have all addressed telehealth service application for rural school districts, their students and families. Through this medium of service delivery, children and adults in need of specialized care that might not be readily available to them can receive the specialty consultation of experts using telehealth technology. The purpose of this chapter is to provide a consultation model for health related delivery services for children and adults in rural and underserved geographical areas.

Telehealth, or the use of telecommunication technology to provide access to health assessment, diagnosis, intervention, consultation, supervision, education, and information across distance, has become a well recognized vehicle for delivering services and disseminating information to a variety of consumer populations as well as professionals and practitioners (Nickelson, 1998; Miller & Hutchins 2008)). Given its ability to transcend many of the economic, cultural, and geographic barriers that often prohibit or restrict the provision of health care, the use of telehealth has begun to reshape traditional systems of care. Moreover, due to its unique capacity to negate many of the traditional obstacles in service delivery, telehealth is often a desirable option for the provision of health care to rural, confined, underserved and isolated groups (Miller & Holcomb 2007).

As a result, a large proportion of telehealth studies have focused on evaluating the effectiveness of telecommunications technology in delivering health services to rural and specialty populations (Wood, 2000). Numerous studies suggest that telehealth applications can be utilized to deliver health care services that are accessible to rural or underserved populations that the quality of care delivered via telehealth is similar to or surpasses that of face-to-face services (Bischoff, Hollist, Smith, & Frank, 2004; Miller, Miller, Kraus, & Sprang, 2003; Norman, 2006) and that both consumers and providers are satisfied with services rendered via telehealth

Since its inception, one of the major advantages of telehealth has been its ability to improve access to health care services for people living in rural or remote areas where health care professionals are often scarce or absent. In the words of Nickelson (1998), "Telehealth is simply a tool that… makes it easier to practice already established professional skills across distance and to serve individuals and organizations who may not, but for telehealth, have access to such services" (p. 527). This ability to transcend geographic barriers has been the basis for three decades worth of demonstration projects targeted at rural populations. The use of telehealth to improve access to health care has since expanded to include other isolated groups, such as inner city families (McLaren, Blunden, Lipsedge, & Summerfield, 1996; Straker, Mostyn, & Marshall, 1976), prison inmates (Ax et al, 2007), and homebound elderly (Maheu, Whitten, & Allen, 2001). Overall, these projects suggest that the use of telehealth is an effective means of improving access to both health care services as well as improving the exchange of information between providers (Blackmon, Kaak, & Ranseen, 1997). Efforts to assess the quality of telehealth services compared to traditional face-to-face services indicate that there is little difference in diagnostic and assessment

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