

# Adopting and Implementing Telehealth in Canada

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## INTRODUCTION

Canada spans 9,976,140 square kilometers and has an approximate population of 32 million people (Statistics Canada, 2001). More than 90% of Canada's geography is considered rural or remote (Government of Canada, 2001). Despite the highly dispersed population, and, indeed, because of it, Canada is committed to the idea that a networked telehealth system could provide better access and equity of care to Canadians. Growing evidence of the feasibility and affordability of telehealth applications substantiates Canada's responsibility to promote and to develop telehealth.

Telehealth is the use of advanced telecommunication technologies to exchange health information and provide healthcare services across geographic, time, social, and cultural barriers (Reid, 1996). According to a systematic review of telehealth projects in different countries (Jennett et al., 2003a, 2003b), specific telehealth applications have shown significant socioeconomic benefits to patients and families, healthcare providers, and the healthcare system. Implementing telehealth can impact the delivery of health services by increasing access, improving quality of care, and enhancing social support (Bashshur, Reardon, & Shannon, 2001; Jennett et al., 2003a). It also has the potential to impact skills training of the health workforce by increasing educational opportunities (Jennett et al., 2003a; Watanabe, Jennett, & Watson, 1999). Therefore, telehealth has a strong potential to influence improved health outcomes in the population (Jennett et al., 2003a, 2003b).

Fourteen health jurisdictions—one federal, 10 provincial, and three territorial—are responsible for the policies and infrastructure associated with healthcare delivery in Canada. This article presents a telehealth case study in

one of Canada's health jurisdictions—the province of Alberta. The rollout of telehealth in Alberta serves as an example of best practice. Significant milestones and lessons learned are presented. Progress toward the integration of the telehealth network into a wider province-wide health information network also is highlighted.

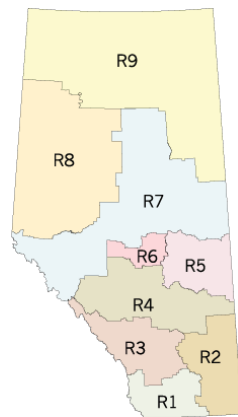
## BACKGROUND

Canada's province of Alberta has a geography that is well suited to using telehealth technologies. Previous telehealth pilot projects throughout the province provided evidence of potential benefits from telehealth applications (Doze & Simpson, 1997; Jennett, Hall, Watanabe, & Morin, 1995; Watanabe, 1997). Alberta is the westernmost of Canada's prairie provinces with a total area of 661,188 km<sup>2</sup>. Approximately 3 million people live in this western province, with two-thirds of the population living in two major cities in the lower half of the province; 19.1% of the population is distributed over the northern remote areas and southern rural communities (Figure 1) (Alberta Municipal Affairs, 2004; Statistics Canada, 2001).

In Alberta, health regions assume responsibility for acute care facilities and continuing and community-based care facilities, including public health programs and surveillance. The population sizes of health regions vary, as do their service census populations (Figure 1). The province has approximately 100 hospitals and more than 150 long-term care facilities. Health professionals are located largely in the urban centers, leaving many rural and remote areas with limited access to a variety of healthcare providers and services. In the mid-1990s, there was a physician-to-population ratio of 1:624 (Alberta Health, 1996). Most

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Figure 1. Health regions in Alberta (Government of Alberta, 2004)



Health Region	Region # on Map of Alberta	Population*	% of Alberta Population	# of Videoconferenc- ence Sites
Chinook	R1	152,636	4.9	8
Palliser	R2	98,074	3.1	9
Calgary	R3	1,122,303	35.9	34
David Thompson	R4	286,211	9.2	27
East Central	R5	109,981	3.5	10
Capital Health	R6	978,048	31.3	28
Aspen	R7	176,580	5.7	18
Peace Country	R8	130,848	4.2	24
Northern Lights	R9	69,063	2.2	16
<b>TOTAL</b>		<b>3,123,744</b>	<b>100</b>	<b>174</b>

\*Population listed is as of April 1, 2003, except R3 & R4, which were updated December 1, 2003.

physicians are compensated on a fee-for-service basis by the provincial government (Alberta Health, 1997).

During the last decade, health reforms and restructuring have taken place in Canada, both at the federal (Kirby, 2002; National Forum on Health, 1997; Romanow, 2002) and provincial (Clair, 2000; Fyke, 2001; Mazankowski, 2001; Ontario Health Services Restructuring Commission, 2000) levels. These reforms were conducted in response to important trends challenging the Canadian Medicare system, such as escalating costs for new technologies and drugs, aging population, and increasing public expectations. Furthermore, health reforms addressed the issue of access to healthcare services for some groups, such as Aboriginal people and populations living in rural and remote parts of the country (Romanow, 2002).

Major challenges include the scarcity and isolation of healthcare professionals in many communities because of Alberta's large landmass; varied, extreme, and unpredictable climate; and population dispersion. Such realities were recognized as principal factors motivating the consideration of a provincial health information network. Alberta began to plan such a network in the mid-1990s, with the objectives of exploiting health information technologies and linking physicians, allied health professionals, hospitals, clinics, health organizations, and Alberta Health and Wellness (the provincial government's department of health) (Government of Alberta, 2003; Jennett, Kulas, Mok, & Watanabe, 1998). This network, entitled Alberta Wellnet, was a joint initiative by Alberta Health and Wellness and stakeholders in the health system. Initially, a core set of priority initiatives consisted of a

pharmacy information network, telehealth, a healthcare provider office system, continuing and community care services, service event extract, population health and surveillance, and diagnostic services information sharing. This article describes the development of the provincial telehealth network in Alberta.

## THE PROVINCIAL DEVELOPMENT OF THE TELEHEALTH NETWORK

Just prior to the establishment of Alberta Wellnet, an anonymous philanthropic foundation expressed interest in exploring the feasibility of developing an integrated, province-wide telehealth network based on need, capability and support. One of the authors (ES) initiated discussions with the foundation through an intermediary, and a small team of content experts was assembled to begin dialogue. The foundation requested a letter of intent and a presentation of concept to substantiate the benefits of allocating funds to telehealth. Following internal review and external consultation, the foundation allocated \$525,000 for the preparation of a telehealth business plan. A project planning team was formed to serve as the province-wide planning group and to oversee the preparation of the business plan. This team incorporated representatives from the RHAs, the health sector, the universities, and the community. Two province-wide focus groups were held with representatives from the stakeholder groups to discuss content and approach, and a number of meetings were held between the CEOs (chief

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