

The Ontario Telehomecare Strategy Phase One Program: An innovative model for chronic disease management



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AS THE PREVALENCE OF CHRONIC ILLNESSES IN ONTARIO CONTINUES TO RISE, THERE IS AN URGENT NEED FOR A STRATEGY TO COMBAT THE BURDEN ON THE HEALTH CARE SYSTEM AND ON CAREGIVERS. THE ONTARIO TELEMEDICINE NETWORK IS CURRENTLY IMPLEMENTING THE FIRST PHASE OF THE ONTARIO TELEHOMECARE PROGRAM: AN INNOVATIVE, COLLABORATIVE MODEL OF CHRONIC DISEASE MANAGEMENT WHICH COMBINES THE USE OF TECHNOLOGY WITH SELF-MANAGEMENT EDUCATION IN ORDER TO PROVIDE CARE THAT IS BOTH HIGH IN QUALITY AND EFFICIENCY.

The growing demands of the aging population and those with chronic diseases are placing increasing strain on the Ontario healthcare system. The Ontario Telehomecare Strategy brings healthcare directly to a patient's home by remotely monitoring their condition through information technology. This innovation has been found to be cost-effective and user-friendly, while providing improved, timely access to healthcare without sacrificing quality. Telehomecare has the potential to provide care to high-risk patients at home who are currently cared for in hospitals.

Ontario faces increasing challenges in striving to meet the needs of people with chronic diseases. As a result of the growing aging population, conditions such as asthma, diabetes, congestive heart failure (CHF), arthritis and chronic obstructive pulmonary disease (COPD) are becoming more prevalent (Ontario Ministry of Health and Long-Term Care, 2005). This poses a great financial burden to the healthcare system, as almost 80% of Ontarians aged 45 and over have a chronic condition, and approximately 70% of these individuals suffer from two or more chronic illnesses (Statistics Canada, 2003). Effective management and prevention of such conditions is thus crucial, as one chronic disease can lead to another if left untreated (Ontario Telemedicine Network, 2007). In adherence to evidence-based guidelines, the Ontario Telehomecare Strategy has been developed as a collaborative, innovative approach to managing chronic disease. With this strategy, healthcare is brought directly to a patient's home through remote monitoring of the patient's condition via advanced communications and information technology. The Ontario Telehomecare Strategy aims to ensure that "patients across the province have access to effective care in a timely, integrated manner that is responsive to individual and local challenges and needs" (Ontario Telemedicine Network, 2007).

WHAT IS CHRONIC DISEASE MANAGEMENT?

The term "disease management", first introduced in the early 1990's, has been defined as "a systematic, population-based approach to identify persons at risk, intervene with specific programs of care, and measure clinical and other outcomes" (Gilbert, 2007). In this sense, chronic disease management is any program encompassing assessment, diagnosis, treatment, education and follow-up for a patient with a specific condition. By educating patients about their disease, including available treatment options and self-management strategies, these specialized programs for managing chronic diseases have the potential to improve health in a cost-effective manner (Wong et al., 2004). The creation of such programs has corresponded with a growing interest in evidence-based medicine and the development of best-practice guidelines by consensus conferences. Clinical guidelines provide recommendations for optimal patient care based on relevant literature and consensus among clinical experts. These guidelines are continually reviewed and revised based on emerging research, thus assisting physicians in the prevention, diagnosis and treatment of a specific chronic condition (Wong et al., 2004). Research indicates that successful chronic disease management programs share common characteristics in that they:

- are evidence-based
- employ multiple strategies and interventions
- are patient-centred
- empower individuals to increase control over and improve their health
- promote collaboration among providers, organizations, individuals, families and community groups

- include an evaluation component to ensure that programs are achieving their objectives (Ontario Ministry of Health and Long-Term Care, 2005).

THE ONTARIO TELEHOMECARE STRATEGY

In compliance with the above guidelines, the Ontario Telehomecare Strategy Phase One Program will focus on chronic disease management and improved self-management of CHF and COPD. In Ontario, CHF is the most common diagnosis resulting in hospital admission of patients aged 65 or older. COPD is projected to be the third leading cause of death by 2020, and is currently the seventh most common cause of hospitalization (Ontario Telemedicine Network, 2007). While telemedicine applies technology to provide healthcare over a distance, telehomecare is a form of telemedicine based in the patient's home. Studies show that telehomecare can reduce strain on the healthcare system by decreasing the number of emergency room visits, hospitalizations, hospital bed days of care, and nursing home admissions (Meyer et al., 2002). It is a communication and clinical information system that enables the interaction of voice, video, and health-related data over ordinary telephoned lines (Bowles & Baugh, 2007). Ontario's newly-established interprofessional Family Health Teams (FHT), in collaboration with local Community Care Access Centres (CCAC), will be primarily responsible for the care of patients eligible to participate in this program. The Phase One Program of this strategy is being piloted from March 2007 until October 2008 and will be delivered to 600 patients in six FHTs. A specialized Telehomecare Registered Nurse (RN) situated within each FHT will conduct eligibility assessments for patients in that region, and will also be responsible for the remote monitoring

of their clinical status. Participants in this program will have a telemonitoring device installed in their home, which may include a blood pressure monitor, a heart rate monitor, a pulse oximeter, a breath sound auscultation, and a glucometer (Figure 1). Based upon data generated from these devices, the Telehomecare RN will work within the established

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clinical guidelines for COPD and CHF, in consultation with the patient's primary healthcare provider (Figure 2). The project manager for the Phase One Program is the Ontario Telemedicine Network (OTN), one of the most comprehensive telemedicine networks in Canada (Ontario Telemedicine Network, 2007).

WHY TELEHOMECARE?

Although the use of telehomecare in chronic disease management is a relatively new development, research shows this model to be cost-effective and user-friendly, while providing improved, timely access to healthcare without sacrificing quality (Dansky et al., 2001). The Ontario Telehomecare Strategy promotes interprofessional collaboration and complies with evidence-based guidelines of successful chronic disease management programs.

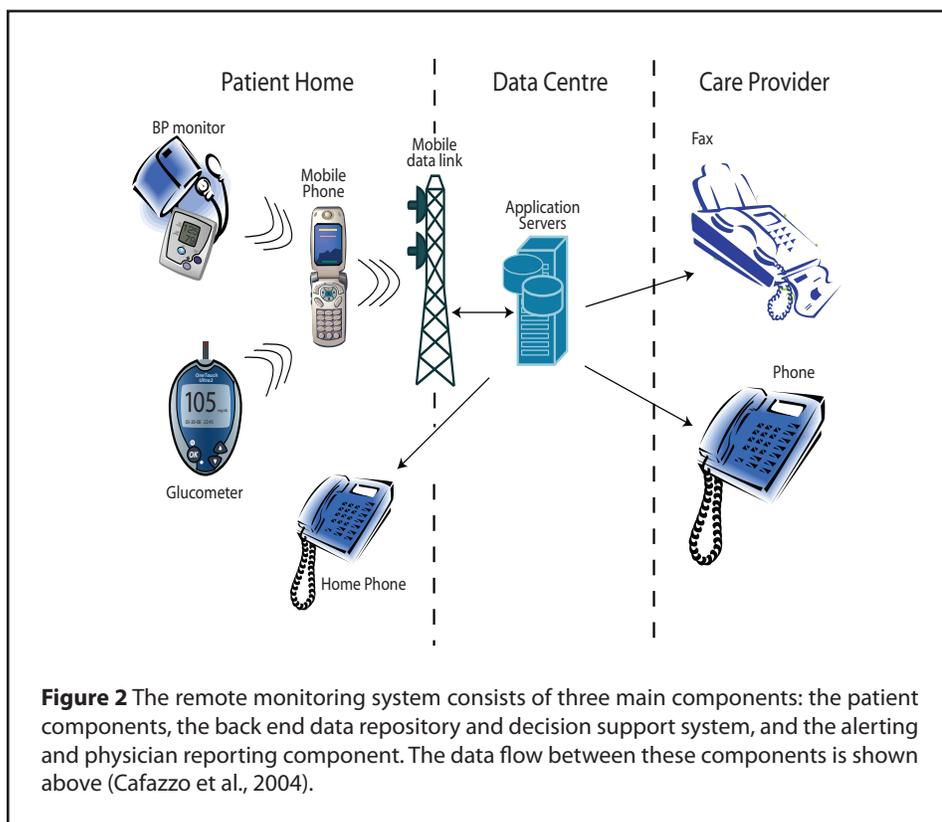
An Integrated Model

In Canada, hospital care has traditionally been distinct from community care, and the transition of

patients across these sectors has been challenging (Young et al., 2004). In Ontario, chronic disease management programs are often affiliated with hospitals; this is unfavourable due to continuing hospital budget deficits (Ontario Ministry of Health and Long-Term Care, 2005). The Ontario Telehomecare Strategy is a more sustainable model as it enables the coordination of care across multiple providers by promoting communication among clinicians, health organizations and the community. Patient care largely becomes the responsibility of primary care networks, as the local FHT and CCAC play a vital role in providing chronic disease management activities (Ontario Ministry of Health and Long-Term Care, 2005). As a means of program support, collaboration among healthcare providers is further encouraged via monthly videoconferences among FHTs and Telehomecare RNs. (Ontario Telemedicine Network, 2007).

Self-management

Chronic disease management is a means of empowering people with chronic conditions to take responsibility for their health and well-being. Patients learn how to recognize signs and symptoms, how to control these symptoms through lifestyle modification, when to take medication, and when to seek medical attention (Gilbert, 2007). With this knowledge, patients can avoid unnecessary hospital admissions and emergency room visits (Bourbeau et al., 2006). Education is thus an integral component of the Ontario Telehomecare Strategy, as the Telehomecare RN is responsible for providing patients with teaching materials and educating them about important strategies to manage their conditions (Ontario Telemedicine Network, 2007). In this way, participants benefit from the sense of independence and control that they achieve through



self-management, which also relieves the burden on the caregiver. Additionally, patients learn how to prevent acute exacerbations by enabling them to recognize and avoid possible triggers of COPD flare-ups (Bourbeau et al., 2006). This provides increased benefits to the healthcare system, as there is decreased reliance on healthcare professionals and acute care services (Gilbert, 2007). As Phase One of this program is a time-limited intervention, patients can graduate from the program once they are properly educated and thus create room for new eligible participants (Ontario Telemedicine Network, 2007). This concept is also important for program sustainability (Wong et al., 2004).

Patient Satisfaction

There is substantial evidence that the application of telehomecare to a chronic disease management program yields high patient satisfaction. Research shows that when telehomecare is used to help manage COPD, both patients

and caregivers were able to use the technology comfortably and without difficulty (Bowles & Baugh, 2007; Calazzo et al., 2004). Encouragingly, Jenkins and McSweeney found that the majority of participants in their study perceived the telehomecare experience as comfortable and useful, and described the physical examination as adequate. Both patients and nurses found that videoconferencing resulted in quicker and more frequent clinical consultations (Bowles & Baugh, 2007). While concerns have been raised that this use of technology could have a detrimental effect on the patient-provider relationship, research consistently shows that patients are very satisfied in substituting home visitations with video consultations (Dansky et al., 2001). In one study of patients receiving healthcare at home, the control and intervention groups both received routine home healthcare visits; however, the intervention group also participated in video consultations. After taking into account the rehospitalization rates,

analysis indicated there was a cost savings of \$63.00 per patient in the intervention group. Results showed no differences in quality indicators, demonstrating that telehomecare is capable of maintaining quality of care in a cost-effective manner (Dansky et al., 2007).

CONSIDERATIONS

Mental Health Issues

Depression is very common in the elderly, and its prevalence increases in patients suffering from CHF or COPD. In fact, depression may even be a result of these diseases (van Manen et al., 2002). It is estimated that 40% of people with COPD are affected by clinical depression, while up to 42% of patients suffering from CHF are also depressed (Ng et al., 2007; Guck et al., 2003). However, depression often goes undiagnosed by healthcare providers, as patients may be unwilling to report symptoms, or depressive symptoms may be attributed to the pre-existing chronic condition (van Manen et al., 2002). In both COPD and CHF, depression is an independent risk factor for readmission to hospital, longer hospital stays, functional decline, and mortality (Ng et al., 2007; Guck et al., 2003). While telehomecare is correlated with increased adherence to chronic disease management programs, depressed patients are less likely to comply with the program's self-management strategies and lifestyle modifications (Cafazzo et al., 2004; Ng et al., 2007; Guck et al., 2003). Therefore, it is recommended that guidelines to manage depression also be established, in order to maximize program adherence, cost-effectiveness, and quality of life.

Confidentiality

Research indicates that participants in telehomecare programs are not concerned with confidentiality issues involved with communicating

private health-related information via telephone lines (Bowles & Baugh, 2007; Cafazzo et al., 2004). Nonetheless, the implementation of measures to ensure confidentiality of patient data is a crucial component of the program design, as substantial portions of the monitoring system operate in an uncontrolled environment (Cafazzo et al., 2004).

Barriers to Access

The number of patients that can be reached and the time during which this intervention will take place are both limited because the Phase One Program is the initial step in establishing a sustainable model of chronic disease management. In this phase, only English-speaking patients who have a working telephone line in their homes will be eligible for participation (Ontario Telemedicine Network, 2007). However, as the model expands, the allocation of funds to assist patients from low socioeconomic backgrounds, and the use of technology which can overcome language barriers, will be necessary in order to equalize access to healthcare.

CONCLUSION

An aging population has prompted a push for more efficient delivery of services and increased access to healthcare at home. In addition to monitoring patients with chronic diseases such as CHF and COPD, telehomecare has the potential to provide care to high-risk patients at home who are currently cared for in hospitals. Telehomecare can also aid disabled persons, increase patient compliance, enhance caregivers' effectiveness, and connect socially isolated individuals to their care providers. Several practical advantages of telehomecare are just beginning to emerge, and the evolution of this method of care will help meet a growing demand for successful and sustainable management of chronic illness (Dansky et al., 2001). ■

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