

Chapter 13

Remote Care Delivery Technologies: An Applications Framework for Chronic Disease Management in Older Adults

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ABSTRACT

This chapter presents a guided framework for describing Remote Care Delivery Technologies (RCDT) in the processes of healthcare management among older patients diagnosed with chronic disease. To date, a process framework for the application of RCDT for chronic health conditions has not been systematically described, although much of the literature in RCDT, including telemedicine and telehealth, has focused on intervening with issues that involve the monitoring of chronic disease symptoms and the coordination of ongoing care. To elucidate how this process framework operates in managing chronic health conditions examples are provided from the published literature to clarify and differentiate each of the steps of this framework. A final section describes guidelines informed by this framework for providing RCDT in the management of chronic disease.

INTRODUCTION

Remote Care Delivery Technologies: Strategies for Addressing Health Issues in Older Adults

Remote Care Delivery Technologies (RCDT), defined as the application of advanced technology for the delivery of healthcare, offers the promise of an accessible and cost-effective method to meet the ever increasing need for healthcare services in the United States. A current focus of RCDT is telehealthcare that has been characterized in the published literature as technology-driven personalized care delivery to patients in remote and rural regions (McLean, Protti, & Sheikh, 2011).

Through in-home RCDT it is possible to connect every American household linked through wire or the air waves to a medical provider. Industry advocates including telemedicine device manufacturers and national telemedicine organizations have for more than a decade championed various forms of telehealthcare as a best practices venue for patient-centered care. This latter point is underscored by the expanding number of medical specialties employing telemedicine delivery approaches.

The impact of RCDT in the form of simple telephone-mediated services through POTS (Plain Old Telephone Lines) or through more sophisticated devices and transmission infrastructure such as the Internet (Mead & Dunbar, 2004) has been documented to be at least as effective as traditionally delivered in-person face-to-face services especially for routine medical tasks such as monitoring health symptoms or diagnosing disease. Of the unique contributions that this technology affords is its reach to those in remote and underserved regions. In fact, the extent to which RCDT achieves its full impact will be in serving persons who, for various reasons, are unable to make use of standard facility-based medical care even though they may have the social and/or fiscal resources to receive such care.

A high proportion of persons living in rural and underserved regions are adults over the age of 60 years. Demographic studies suggest that older rural adults are less likely than their counterparts in urban settings to leave their homes when they have health issues or to seek out healthcare options outside of their immediate community even when the resources to treat their condition do not fully exist within their local community healthcare infrastructure. Further, older residents of rural communities may have less access to necessary services because in rural settings those services rely more heavily on private transportation than would be the case in more urban settings (Collelo, 2007). The interaction of older adult demographic characteristics and features of RCDT suggests that this approach could have some distinct advantages especially in linking expert medical care to patient health concerns. The barriers presented for older persons when contemplating the adoption of this technology, however, are sizeable and must be negotiated to actualize the full benefits of the RCDT.

On the positive side, an example of an area where the impact of RCDT on older adult patient health has already been recognized as having substantial value is in the coordination of services and information for older adults who are homebound with substantial chronic care needs (Luptak, et al., 2010). This is especially true when the care is for ongoing monitoring of chronic disease symptoms—an area where RCDT is already in wide use and where intervention requires multiple processes including patient education, the monitoring of that patient's ongoing health status, and ongoing follow-up (Karunanithi, 2007). The following case illustration highlights the challenges faced by persons with chronic illness:

Steve is a 75 year old Vietnam veteran. He lives in northeastern Nevada with a stepdaughter. For most of his life Steve has viewed himself as very independent and has managed to keep a roof over his head in spite of multiple challenging personal situations. As of late, however, Steve has started

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