Understanding Dimensions of Complexity in Nurse Case Managers’ Workflow in a Telemedicine Program

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ABSTRACT
Telehealth can provide powerful self-management tools for patients with chronic illness. A methodological framework for evaluating nurse case manager workflow is proposed. The framework focuses on work practices, cognitive tasks and artifacts. It is illustrated in the context of an analysis of telehealth video visits. There is a need to better understand the dimensions of complexity in order to engineer a more optimal user experience and enhance the nurse-patient interaction.

Introduction
Patient-centered home telemedicine is a medium that can provide resources to educate and motivate individuals who suffer from chronic illness to greater levels of self management. The opportunities for transforming healthcare are great, but the challenges are manifold. IDEATel is a telemedicine project for medically underserved seniors with diabetes in rural and urban areas of New York State [1]. An important part of the intervention is a monthly video visit with nurse case managers designed to promote better adherence to treatment and lifestyle regimens as well as identify potential problems. This paper presents a methodological framework for characterizing workflow in the context of the video visit.

Methodological Framework
We have developed a distributed cognition framework for characterizing 1) work practices in the context of a video visit, 2) representations of patient information as embodied in computer displays and 3) task complexity. The framework was based on 25 hours of observations and 28 video visits, interviews with nurses and other participants. As illustrated in Figure 1, the nurse coordinates multiple applications and non-electronic artifacts including patients’ charts, in the course of the video consultation. We can partition a video visit into 3 phases: 1) the pre-visit involving preparatory activities, 2) the visit with patient, and 3) and the post-visit phase which includes the documentation process and a review of the dossier with an endocrinologist. Each phase can be characterized by a series of tasks involving the interplay of various resources and systems. The systems in turn mediate the interaction with the patient. The analyses document the ways in which the interaction is enhanced as well as impeded by the ensemble of artifacts in the context of task completion.

Conclusions
Home telemedicine is emerging as a powerful tool for promoting enhancing health in chronically ill patients and promoting self-management. However, it’s a nascent approach to heath care and there is a need to understand the dimensions of complexity that characterize the work practices and artifacts used in the nurse-patient interaction. This could lead to improvements in the design and workflow process.

References