PAPER

Technology for Health

W. SUN, D. DORAN. Using mobile health technologies to support safer client care in the community. Gerontechnology 2018;17(Suppl):141s; https://doi.org/10.4017/gt.2018.17.s.137.00 **Purpose** The purpose of this paper is to describe the development of remote patient monitoring on promoting safer client care for older adults in the community. It was specifically to investigate the user interface design and data fusion strategies for integrating bio-mobility information, about home care clients as they go about their daily lives, with a point-of-care (POC) decision support system for health care providers. The research study focused on the integration of (1) non-intrusive monitoring approaches, using binary and analogue sensors, developed at Carleton University, and (2) a cell phone-based GPS-supported monitoring system to track patients' daily life events and health conditions, with (3) a prototype web-based software application that equips clinicians with handheld units to assist in the collection and utilization of bedside patient data and provide real-time feedback, such as suggested best-practice guidelines, tailored to an individual patient's needs. That software was adapted specifically for the homecare clinicians' environment. This study focused the knowledge gained through those three initiatives to evaluate a wireless patient monitoring and data collection system for use by health professionals for point-surveillance (e.g., falls risk), to record patients' vital signs data, to provide immediate feedback to clinicians, and to facilitate virtual healthcare management. The goal is to improve the efficiency and safety of homecare services through technological innovations that will reduce the demand on scarce and expensive human resources. There is increasing concern to support older adults who want to live independently in their own homes. This study investigated the integration of non-intrusive approaches to monitoring home care clients' activity level, along with access to best practice guidelines for clinicians at the point of care. A prototype Remote Activity Monitoring and Guidelines System has been developed that uses a GPS-equipped Blackberry to monitor an elderly client's mobility outside the home. The System includes a pressure-sensitive mat that is placed under a regular bed mattress and can monitor sleep disturbances, and how long it takes to enter and exit the bed. **Method** Client over the age of 65 with chronic health issues were invited to carry a Blackberry, and to use a pressure sensitive mat to collect data about the client's physical activity. After a period of 7 days, nurses made home visits to the clients, where the research member observed clinicians interacting with the prototype System in the client's home. **Results & Discussion** The findings indicated the value of the mobility-related data to health practitioners when they plan care to address the aging needs of their home care clients. The results also suggested the usefulness and placement of the Best Practice Guidelines in the electronic user interface. The observational data generated information about the clinicians' needs and interaction with the prototype in actual home care setting. This study provides important implications about the value of adopting remote monitoring technology in providing clinical support to assist health practitioners' decision-making process when planning care for seniors in home care. It also provided valuable information about the feasibility and effectiveness of integrating bio-mobility information obtained through remote monitoring with decision support technologies to support safer client care for older adults.