Integrating mHealth into Patient-Provider Chronic Disease Management - a Sociotechnical Perspective. Challenges and Lessons learned from the PocketPATH Synergy

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Advances in technology enable innovative approaches to enhance patient-provider communication and engage patients as active members of the care team. Despite the recent explosion of mobile applications designed to help with disease management and health promotion, few are designed to link patients with their healthcare providers, and even fewer have been scientifically validated. But even when an application has been scientifically demonstrated to support better health outcomes, effective use requires specific attention to workflow and stakeholder dynamics. This report summarizes the challenges and lessons learned during a pilot study of an mHealth tool that had been carefully crafted using iterative user interface design and human factors principles with much input from both clinical and patient users throughout the design and implementation process. PocketPATH®: Personal Assistant for Tracking Health is among the first patient-oriented mobile health applications shown through a randomized controlled trial to benefit patients’ self-care behaviors and health outcomes compared to usual care. It is also one of the first systems designed with both patient and clinician interfaces (PocketPATH® Link). Patients use the PocketPATH® smart phone to enter and track key self-monitored healthcare data, which are then synched to the PocketPATH® Link website. The website is a secure and encrypted online tracking and communication system with which the care team can monitor self-reported patient data and provide follow-up, teaching, and active care management. The combined system, PocketPATH® Synergy, has the potential for greater impacts on patient outcomes by enabling patient-provider communication and information sharing beyond the confines of an office visit or phone call. Sittig & Singh's 8-dimensional model, designed to address the socio-technical challenges involved in design, development, implementation, use, and evaluation of eHealth tools, was used as a framework to evaluate the PocketPATH® Synergy pilot study. A three month open trial of PocketPATH® Synergy was conducted with 27 patient-care team dyads. This report concludes with practical quality and safety considerations for healthcare providers and system administrators should an mHealth system such as PocketPATH® Synergy be fully implemented for chronic disease management. Some examples include confirming that relevant information is effectively presented to both patients and providers, ensuring that the information is actionable through the strategic and personalized use of alerts and filters, and anticipating changes in the care team dynamics and workflow including the patient-provider interaction.