New Data From Partners Center For Connected Health Demonstrates Wireless Mobile Technology Improves Patient Engagement, Outcomes

PR Newswire

A recent study conducted by the Center for Connected Health demonstrated that wireless mobile technologies can positively impact patient engagement, clinical outcomes and operational workflow in remote monitoring programs. Patients using wireless mobile devices to collect and transmit their data to the Center's secure database more frequently measured their blood pressure and uploaded their data, than patients using telephone modem-based devices. This study was published in the Journal of Diabetes Science and Technology (Volume 7, Issue 3, May 2013). The Center for Connected Health is a division of Partners HealthCare.

"The results of this study show that data transmission technologies may potentially create barriers to patient engagement in remote monitoring programs, and that wireless devices are far more user-friendly than the older modem-based devices," said Kamal Jethwani, MD, MPH, Corporate Manager, Research and Innovation, Center for Connected Health. "Key success factors for wireless devices include ease-of-use, real-time transmission of data and increased device portability within patients' homes. We are learning how patients engage in remote monitoring programs based on the type of technology they use, which can impact program design, operational workflow and clinical outcomes."

The Center offers remote monitoring programs for chronic disease self-management in diabetes, hypertension and heart failure. Two types of data transfer technology are used in the Diabetes Connect and Blood Pressure (BP) Connect programs: telephone modem-based devices and wireless-based devices. Individual patient data is collected and transmitted from the patient's home to a secured database at Partners HealthCare. The transmitted data are processed and displayed in a user-friendly format on a secure Web portal, where patients can view and monitor trends in their readings. Providers also have access to their patients' data to monitor patients' progress and to provide timely feedback based on the objective data captured.

In this retrospective study, patients enrolled in the BP Connect program using wireless-based devices recorded significantly more frequent blood pressure readings and data uploads than patients using modem-based devices. Thirty patients from three clinical practices within the Partners HealthCare network participated; median age of the study population was 61.7 years.

Participants who used a wireless-based device engaged more frequently, and recorded a significantly higher number of measurements per day versus those in the modem-based group (median = 0.66 versus 0.2 measurements/day; $p = .01$). Similarly, the number of uploads per day was significantly higher in the wireless-

based group versus the modem-based group (0.46 versus 0.01 uploads/day; $p < .001$, respectively). Participants who used a wireless device engaged earlier in the program, demonstrated by their significantly lower time to first upload (median = 4 versus 7 days; $p = .02$). Time to first BP measurement, however, did not differ significantly between the groups (median = 2 versus 1 day; $p = .98$).

"Our findings demonstrate that the less obtrusive the upload process, the better the level of patient engagement, and provides clinicians with timely data to facilitate improved patient-provider communication and more timely intervention," added Joseph C. Kvedar, MD, Founder and Director, Center for Connected Health. "As mobile technologies are becoming more affordable and acceptable, this is an opportune time to widely adopt mobile technology to engage patients in the self-management of chronic diseases. Adopting the right technology should be a priority. Our goal is to sustain this initial interest and help patients continually and consistently engage in the program."

This retrospective analysis was supported by a grant from the Verizon Foundation [1], which supports technology-enabled patient care programs improving quality and access to care for underserved communities.

The Center for Connected Health had previously reported that the Blood Pressure Connect program decreased systolic BP by 6 mmHg and diastolic BP by 2 mmHg. Just a 5mmHg decrease in blood pressure can reduce mortality due to stroke and heart disease by 14% and 9%, respectively. Patients who engaged in the Diabetes Connect program achieved an average hemoglobin A1c drop of 1.5% over a one year period.

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[1] http://www.verizonfoundation.org/