

## Abstract

# Evaluating the Impact of a Blood Pressure Remote Telemonitoring Program (BP Connect)

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## Abstract

**Background:** The prevalence of hypertension is around 30-45% among the general population. Hypertension contributes to 1 out of 7 deaths in the United States and approximately 70% of persons who have a first heart attack or stroke. Timely treatment and optimal management of hypertension is associated with substantial reductions in stroke incidence (35-40%), myocardial infarction (20-25%), and heart failure (>50%). Additionally, remote monitoring with active intervention by medical professionals (telemonitoring) improves drug compliance and increase the target blood pressure (BP) achievement rate.

**Objective:** BP Connect is a remote monitoring program to augment care and disease self-management in hypertensive patients. The program aims to engage patients in self-care by providing a secure web-based platform to record and track their BP. In addition, care providers can view the uploaded data, thereby, ensuring the continuum of care beyond the hospital setting.

**Methods:** A total of 288 adult patients diagnosed with hypertension (baseline blood pressure of  $\geq 140$  mm Hg systolic or  $\geq 90$  mm Hg diastolic) were recruited from primary care and specialty clinics within the Partners Healthcare network of hospitals (Faulkner, Renal, Endocrinology and Cardiology departments at Brigham and Women's Hospital and Massachusetts General Hospitals Women's Health Association). The primary outcome was the impact of BP Connect on blood pressure as measured by the change in the proportion of patients with controlled BP (ie,  $< 140/90$  mm Hg) from the initial visit to the 3-month clinic visit. Secondary outcomes included the change in systolic blood pressure (SBP) and diastolic blood pressure (DBP) at close-out.

**Results:** Among the 149 patients from primary care clinics who completed the program to-date 48.0% of patients had uncontrolled BP ( $> 140/90$  mm Hg) vs 64.0% at baseline ( $P=.01$ ). At 3 months, there was a significant decline in the mean SBP ( $-10.1$ ,  $P<.01$ ) and the mean DBP ( $-4.3$ ,  $P<.01$ ). Among the 139 patients from specialty clinics who completed this program, BP was controlled at 3 months in 43.2% of patients compared with 11.2% patients at baseline ( $P=.001$ ). A significant decrease in the mean SBP ( $-5.2$ ,  $P<.001$ ) and in the mean DBP ( $-2.5$ ,  $P=.01$ ) were also noted.

**Conclusions:** Overall, the BP Connect program shows potential to improve clinical outcomes in hypertensive patients. The program provides an opportunity for participants to track their BP measurements on a web platform to foster patient participation in their own disease management that may improve patient outcomes and decrease burden on the care providers.

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## Multimedia Appendix 1

Full poster.

[[PDF File \(Adobe PDF File\), 861KB-Multimedia Appendix 1](#)]

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