

Does Home Blood Pressure Telemonitoring Increase the Number of Diabetes Patients at Goal Blood Pressure?

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OBJECTIVE To compare the effectiveness of home blood pressure telemonitoring versus home blood pressure measurement to achieve goal blood pressure in diabetic primary care patients. **DESIGN** Single site randomized controlled trial. **SETTING** Academic primary care internal medicine practice, Rochester, MN, USA, 2011- 2012. **PARTICIPANTS** 50 primary care diabetic patients with a history of uncontrolled hypertension (BP > 140/90) were randomized to either home blood pressure telemonitoring (intervention, n=25) or home blood pressure measurement (control, n=25). **INTERVENTION** Nurse care manager support (all participants), including periodic review of blood pressure, clinical assessment, and facilitated access to primary care providers. The intervention group received a commercially available home blood pressure telemonitoring device capable of real time data relay to a nurse care manager, and care-modifying instruction display in response to their blood pressure measurements. The control group received a home blood pressure monitoring device and usual care. Study visits and blood pressure measurements occurred at baseline, 3 months, and 6 months. **MAIN OUTCOME MEASURES** The primary outcome was goal blood pressure achieved at 6 months. The secondary outcome was change in blood pressure. **RESULTS** At 6 month follow-up, goal blood pressure was achieved in 68% of the intervention group (13 at goal of 19 total) versus 64% in the control group (16 at goal of 25 total); relative risk of intervention achieving goal blood pressure 1.07 (95% CI 0.70 to 1.63, p=0.99). The intervention group achieved a mean change in systolic BP of -6 mm Hg (95% CI -12.4 to 0.4 mm Hg, p=0.06) and diastolic BP of -0.6 mm Hg (-9.1 to 7.9 mm Hg, p=0.9) versus systolic BP +2.7 mm Hg (-11.1 to 5.6 mm Hg, p= 0.5) and diastolic BP +1.7 mm Hg (-2.2 to 5.7 mm Hg, p=0.4) in the control group. **CONCLUSIONS** Diabetic patients in primary care setting with a nurse care manager who received home blood pressure telemonitoring were not more likely to achieve goal blood pressure or lower mean blood pressure compared with patients receiving home blood pressure measurement without telemonitoring.

Keywords: telemonitoring, hypertension, blood pressure, diabetes