

## A Cluster Randomized Trial of Blood Pressure Telemonitoring With Medication Therapy Management

The following is a synopsis of “Key components of success in a randomized trial of blood pressure telemonitoring with medication therapy management pharmacists,” which was published August 1, 2018, in the Journal of the American Pharmacists Association.



### What is already known on this topic?

Team-based care, which includes health professionals other than physicians (such as pharmacists or nurses), can improve outcomes for chronic conditions like hypertension (HTN). Team-based care, combined with home blood pressure (BP) monitoring and additional patient support, with team members who are empowered to make independent medication management decisions, is recommended in the 2017 U.S. hypertension treatment guidelines. Team-based care has been shown to reduce systolic blood pressure (SBP) by an average of 6 mmHg at 12 months when combined with nurse or pharmacist interventions, doubling the probability of blood pressure control. Telehealth can also improve HTN management when home BP monitoring is used in conjunction with lifestyle counseling and medication management. One example of telehealth is telemonitoring, in which a team of clinicians, including pharmacists, monitor and analyze a patient's wirelessly measured blood pressure.

### What is added by this article?

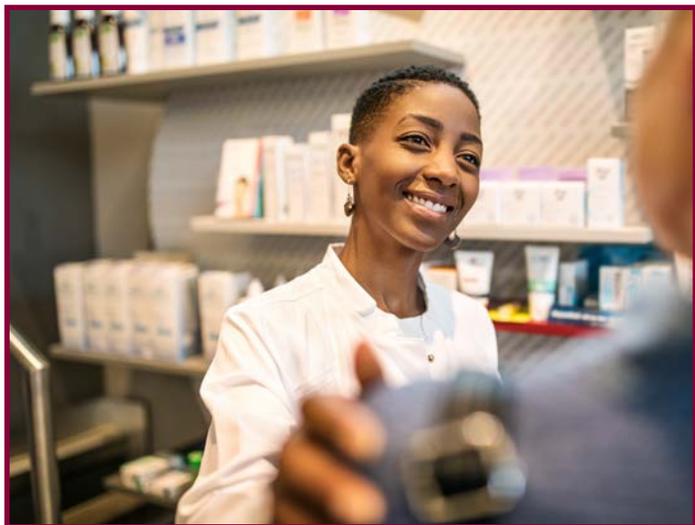
This two-arm cluster randomized trial examined a process of care that improved the time course to reduction of BP. The study enrolled 450 patients out of 14,692 adult patients who had uncontrolled BP ( $\geq 140/90$  mmHg or, for patients with diabetes or kidney disease,  $\geq 130/80$  mmHg). A medication therapy management pharmacist attended each

of the 16 HealthPartners primary care clinics each week. A collaborative practice agreement allowed pharmacists, under certain parameters, to prescribe and change antihypertensive medications. The study team randomly assigned the 16 clinics to either a telemonitoring intervention group or a usual care group; patients, who were blinded to their treatment, self-reported their clinic visits. To learn about both groups' experiences, the study team divided 23 patients from the intervention arm into five groups and asked about their experiences with HTN, medications and adverse effects, home BP monitoring, and patients' relationships with the pharmacist and care team. The team interviewed pharmacists four times to discuss how they explained their role to patients, interactions with physicians, patient relationships, and conversations with patients about medications and adverse drug effects.

The team-based intervention approach began with a baseline patient clinic visit before an initial 1-hour in-person visit with a pharmacist. During this first visit, the pharmacist reviewed the patient's medical history, established a blood pressure goal, and educated the patient on the appropriate use of the BP monitoring system. Patients in the intervention group sent six BP readings to the pharmacist each week through a wireless device. The patients also had telephone calls with the pharmacists, every 2 to 4 weeks in the first 6 months and every 2 months thereafter, to discuss antihypertensive drug therapy, medication adherence, and lifestyle changes. Based on the information gathered, pharmacists adjusted patients'



medication regimens, using a guideline-based treatment algorithm and any reports or documentation of adverse drug events. Patients in the control group received usual care from their primary care physicians, using conventional home BP measurements.



In the intervention group, home measurements of systolic blood pressure declined from 143 mmHg to 122 mmHg, and diastolic blood pressure decreased from 85 mmHg to 72 mmHg over 12 months; the greatest decrease was seen in the first 3 months. Medication adherence improved from 49% at baseline and remained above 90% at the first telephone visit. Patients reported that a strong pharmacist–patient rapport, frequent follow-ups, and individualized treatment improved their satisfaction, understanding of hypertension, and medication adherence. A minority of patients questioned their pharmacists’ expertise and felt that their physicians should be consulted about all medication changes. Some physicians did not feel comfortable with having pharmacists managing their patients’ medications, although both patients and physicians became more comfortable with it over time.

## What are the implications for public health practice?

Compared to usual care, combining home BP telemonitoring with pharmacist case management improved blood pressure control at both 6 and 12 months, and improvement continued at 17 months. Patients who received the intervention had an 11.3 mmHg reduction in

systolic blood pressure and greater adherence to blood pressure monitor use.

## What are the applications for these findings?

Implementing a team-based care approach that uses home telemonitoring, pharmacist-led medication therapy management, and patient care support can improve blood pressure control, medication adherence, and patient–pharmacist relationships. Public health departments could use these findings to discuss and inform the potential options, applicability, and feasibility of incorporating this intervention within their communities.

## Resources:

1. American Society of Hospital Pharmacists. ASHP Statement on Telepharmacy. Bethesda, MD: American Society of Hospital Pharmacists; 2018:22–4.
2. American Pharmacists Association. Telehealth. Washington, DC: American Pharmacists Association. 2018.
3. Centers for Disease Control and Prevention. Telemedicine Interventions for Chronic Disease Management. Atlanta, GA: Centers for Disease Control and Prevention, U.S. Department of Health and Human Services; 2014.

## Citation

Beran M, Asche S, Bergdall A, Crabtree B, Green BB, Groen SE, et al. Key components of success in a randomized trial of blood pressure telemonitoring with medication therapy management pharmacists. *J Am Pharm Assoc*. 2018. doi:10.1016/j.japh.2018.07.001 blood pressure control, cardiovascular health, and health outcomes.

*The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.*



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