

## Web-Based Home Blood Pressure Monitoring with Pharmacist Support

The following is a synopsis of “A Pharmacist-Led, American Heart Association Heart360 Web-Enabled Home Blood Pressure Monitoring Program,” published in the March 2013 issue of *Circulation: Cardiovascular Quality and Outcomes*.



### What is already known on this topic?

High blood pressure is a major risk factor for cardiovascular disease, the leading cause of death in the United States. One in three American adults has high blood pressure, yet only about half of these individuals have their blood pressure under control.

One way to help improve blood pressure control is to include home blood pressure monitoring (HBPM) in outpatient care. HBPM differs from clinic-based and ambulatory blood pressure monitoring because it allows patients to regularly monitor their blood pressure outside the clinical setting. Previous studies involving pharmacist- or nurse-led HBPM have shown improvements in blood pressure control. However, these interventions may have limited application for routine practice because of complex HBPM protocols, required office visits, exclusion of high-risk patients (i.e., patients with diabetes or chronic kidney disease), use of proprietary software to support telemonitoring, or continual involvement of health care providers.

### What is added by this article?

The authors evaluated the effectiveness of a pharmacist-led, web-based HBPM intervention using the American Heart Association's **Heart360** tool compared with usual care for patients with uncontrolled high blood pressure. The intervention used a simple protocol, did not require patients to make office visits, did not exclude high-risk patients, and used a widely available and free web-enabled software for monitoring. Patients in the intervention group were under the care of a clinical pharmacy specialist, who reviewed their current blood pressure medication regimen, provided counseling on lifestyle changes, and adjusted or changed antihypertensive medications as needed after reviewing HBPM records.

After 6 months, the HBPM intervention group had significantly better outcomes than the usual care group, including greater blood pressure reductions, better blood pressure control, and higher satisfaction with care. (See table on next page)

The effect of the HBPM intervention on achieving blood pressure goals was even greater among patients with diabetes or chronic kidney disease.

## What are the applications and implications for these findings?

The success of this intervention can be attributed to several factors:

- ▶ Clinical pharmacy specialists are well-suited to deliver the intervention because of their expertise in medication therapy management.
- ▶ The Heart360 website provides patients with a simple, efficient way to share blood pressure measurements with clinical pharmacy specialists and engages patients through educational information and feedback on progress toward reaching blood pressure goals.
- ▶ Blood pressure summary reports through Heart360 allow clinical pharmacy specialists to focus on medication changes for patients with elevated HBPM readings, whereas patients with normal HBPM numbers can access graphic representations of their readings.

Outcome	HBPM	Usual Care
Mean systolic blood pressure	128.1 mmHg	137.4 mmHg
Mean diastolic blood pressure	79.1 mmHg	83.1 mmHg
Addition of antihypertensive medication	70%	25%
Dose increase of existing antihypertensive medication	43%	12%
Achieved blood pressure goal	54.1%	35.4%
High satisfaction with care	58%	42%

Future research should focus on translating the intervention to other settings and patient populations and evaluating ways to ensure the intervention is sustainable and cost-effective.

## Resources

Centers for Disease Control and Prevention  
*High Blood Pressure*  
[www.cdc.gov/bloodpressure](http://www.cdc.gov/bloodpressure)

American Heart Association  
*Heart360*  
[www.heart360.org](http://www.heart360.org)

Million Hearts®  
*Self-Measured Blood Pressure Monitoring: Action Steps for Public Health Practitioners*  
[http://millionhearts.hhs.gov/Docs/MH\\_SMBP.pdf](http://millionhearts.hhs.gov/Docs/MH_SMBP.pdf)

*Heart360 Fishbowl*  
[http://millionhearts.hhs.gov/aboutmh/innovation\\_exchange/Magid](http://millionhearts.hhs.gov/aboutmh/innovation_exchange/Magid)

## Citations

Magid DJ, Olson KL, Billups SJ, Wagner NM, Lyons EE, Kroner BA. A pharmacist-led, American Heart Association Heart360 web-enabled home blood pressure monitoring program. *Circ Cardiovasc Qual Outcomes*. 2013;6(2):157–63.

*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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