



## Increasing Patients' Self-Monitoring of Blood Pressure in Safety Net Settings

*Working with patients and clinical teams to co-design and implement an effective self-measured blood pressure monitoring program with clinical support and then evaluating its effectiveness.*

### Study Overview

**Problem:** Nearly half of adults in the United States have hypertension, and rates are highest among non-Hispanic Blacks.<sup>1</sup> Hypertension is a key risk factor for heart disease and stroke, contributing to thousands of deaths and billions of dollars in healthcare costs each year.<sup>1,2,3</sup> Self-measured blood pressure (SMBP) monitoring with clinical support is a proven method for helping people with hypertension lower their blood pressure (BP);<sup>4</sup> however, there are multiple barriers to its adoption in safety net settings.

**Main Objective:** To determine the effectiveness of patient- and clinic-level implementation strategies to increase the adoption of SMBP monitoring with clinical support in primary care safety net settings.

**Approach:** The research team will co-design strategies to increase the use of SMBP with clinical support. To do this, the team will first hold a series of focus groups with patients who have hypertension (including English-, Spanish-, and Chinese-speaking patients) and with clinical staff who treat hypertension (i.e., clinicians, pharmacists, nurses). The team will then compare two patient-level implementation strategies: (1) a low-intensity approach that provides patients with one-time training on how to use their BP monitor and its affiliated mobile app; and (2) a high-intensity approach that includes attendance at group support sessions with other patients and proactively encourages patients to engage their caregivers or support persons in SMBP monitoring. The team aims to enroll 330 patients, randomized to the two intensity levels, across six primary care clinics and compare changes in systolic BP at 12 months and the number of home BP values measured over 12 months.

The team will also use a clinic-level strategy to train clinicians on how to effectively use SMBP data and electronic health record (EHR) tools to support adoption of SMBP monitoring. To evaluate the effectiveness of the clinic-level strategy, the team will assess the change in clinic-wide BP control and the frequency of documented patient-collected BP values.

The team will also collect clinical and patient-reported outcomes and conduct a cost analysis of the implementation strategies and intervention type.

**Results:** The research team gained insights from focus groups with patients and clinicians to help refine their implementation strategies:

- Although many patients already used home BP monitors, many had not received any formal training. Patients reported wanting in-person training upfront and then ongoing access to resources about how to use home BP monitors.



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- Patients were hesitant to cause additional burden by including their support persons in their BP care. Instead, patients preferred that their support persons receive the same educational materials and resources as they do.
- Clinicians identified barriers across the clinical workflow that prevented the recommendation and adoption of SMBP.

The team mapped pain points in the clinical workflow related to SMBP implementation and developed a list of solutions for the clinic-level strategy:

- Training to help clinicians identify patients who could benefit from SMBP.
- Developing standardized EHR tools to track which patients have a home BP monitor, and whether the monitor has been validated.
- Training clinicians and creating multi-lingual handouts to support standardized patient education about SMBP.
- Having clinicians enter all patient-reported BP readings into the same structured EHR field so that the information is uniformly accessible.

Additional findings from this study are forthcoming and will be shared in future publications, which will be posted [here](#).

## Primary Care Relevance

This research will contribute to an understanding of effective implementation strategies to increase rates of SMBP monitoring among patients receiving primary care from safety net clinics. The findings can advise implementation efforts in other safety net clinics to help reduce rates of hypertension and subsequent risks for cardiovascular disease and stroke in a range of patient populations.

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1. Centers for Disease Control and Prevention. Estimated hypertension prevalence, treatment, and control among US adults. Reviewed May 12, 2023. <https://millionhearts.hhs.gov/data-reports/hypertension-prevalence.html>
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  3. Wang Y, Lee JS, Pollack LM, Kumar A, Honeycutt S, Luo F. Health care expenditures and use associated with hypertension among U.S. adults. *Am J Prev Med*. 2024 Dec;67(6):820-831. doi: 10.1016/j.amepre.2024.07.005. Epub 2024 Jul 11.
  4. Self-measured blood pressure (SMBP) monitoring. Million Hearts. Reviewed August 1, 2024. <https://millionhearts.hhs.gov/tools-protocols/tools/smbp.html>.