Appendix 8:
Patient Self-Measured Blood Pressure Monitoring (SMBP): A Provider’s Guide

Adapted from Patient Self-Monitoring of Blood Pressure: A Provider’s Guide
by New York City Department of Health and Mental Hygiene

Patient self-monitoring of blood pressure is a valuable addition to the management of hypertension, supported by the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNC-7), the American Heart Association, and the American Society of Hypertension.

- Self-monitoring, with additional clinical and health coaching support, is especially useful for patients with poorly controlled hypertension.
- It can be used to titrate medications, improve control, and screen for white-coat hypertension.
- Home readings may be an equal or better predictor of cardiovascular risk and of target organ damage than office readings.
- Self-monitoring, with support, can enable and motivate patient participation in managing a condition that is often asymptomatic.

While self-monitoring can be done by most patients, it may be contraindicated for those with certain conditions: cardiac arrhythmias, and certain physical and mental disabilities. Because home monitors are not covered by most insurance plans, cost may be a barrier.

Introducing Self-Monitoring to Your Patient

1. **Explain the value of the home monitor in controlling high blood pressure.**
   Encourage patients to “know their numbers,” and describe what the numbers mean.

2. **Provide guidance on selecting a monitor.**
   Recommend:
   - A validated monitor only. For a list, see: www.dableducational.org/sphygmomanometers/devices_2_sbpm.html#UpperArm
   - A brachial cuff model. Wrist and finger models are often used incorrectly.
   - A monitor with a fully automated—rather than a manual—inflection cuff.
   - An appropriate sized cuff. (Standard adult cuffs are too small for about a third of patients.)
   - Models equipped with printers or memory may improve reliability in record keeping, though they are also more expensive.

*Note: Underlined text indicates a link. Refer to page 127 for the full set of web addresses used in this toolkit.*
3. **Validate the monitor.**
   Ask your patient to bring it in so you can check it against your office equipment. After that, check for accuracy about every 6 months (or per monitor instructions) and/or if faulty readings are suspected.

4. **Teach patients proper techniques.**
   - Rest 5 minutes before taking your blood pressure.
   - Don’t smoke or drink caffeinated beverages for at least 30 minutes before.
   - Take your blood pressure before (not after) you eat.
   - Sit comfortably with your back supported and both feet on the floor (don’t cross your legs).
   - Elevate your arm to heart level on a table or a desk.
   - Use the proper sized cuff. It should fit smoothly and snugly around your bare upper arm. There should be enough room to slip a fingertip under the cuff. The bottom edge of the cuff should be one inch above the crease of the elbow.
   - Ideally, take 3 measurements at one sitting and record the average.

5. **Provide self-blood pressure monitoring tools for patients to easily keep track of their numbers at home.**

**Prescribe Self-Monitoring Frequency**
Initially, blood pressure measurements should be taken in the morning and evening for 3–4 consecutive days. Disregard the first day when averaging outpatient readings. Home blood pressures are generally lower than office pressures (mean 8/6 mmHg lower).

**Self-Measured Blood Pressure Monitoring (SMBP)**

The Agency for Healthcare Research and Quality (AHRQ) found strong evidence that self-measured blood pressure monitoring—plus additional clinical support—was more effective than usual care in lowering blood pressure among patients with hypertension.

**Additional support strategies for SMBP**
The type of additional support in the studies examined by AHRQ varied widely and fell into three main categories: regular one-on-one counseling, web-based or telephone support tools that did not involve one-on-one interaction, and educational classes.

- **One-on-one counseling:** Examples included regular telephone calls from nurses to manage blood pressure-lowering medication and in-person counseling sessions with trained community pharmacists.

**Note:** Underlined text indicates a link. Refer to page 127 for the full set of web addresses used in this toolkit.
• **Web-based or telephone support:** Examples included an interactive computer-based telephone feedback system and secure patient website training, plus pharmacist care management delivered through web communication, both in response to patient-reported blood pressure readings.

• **Educational classes:** Examples included telephone-based education by nurses on blood pressure-lowering behaviors, delivered only when patients reported poor blood pressure readings, and small group classes on SMBP technique and lifestyle changes that help lower blood pressure, taught by physician assistants.

**Patient-Provider/Health Coach Feedback Loop Using SMBP**

*Adapted from Centers for Disease Control and Prevention, Self-Measured Blood Pressure Monitoring: Action Steps for Public Health Practitioners. Atlanta, GA; Centers for Disease Control and Prevention, US Department of Health and Human Services; 2013.*