

## Introduction

*A Joint Policy Statement From the American Heart Association and  
American Medical Association*

Self-measured blood pressure (SMBP) monitoring, the regular measurement of blood pressure (BP) by the patient outside the clinical setting, either at home or elsewhere, is a validated approach for out-of-office BP measurement. Several national and international hypertension guidelines **endorse the use of SMBP monitoring for the diagnosis and management** of high BP. **Best practices** of SMBP monitoring include the use of **validated devices** with **appropriately sized cuffs** and a **standardized protocol** for BP measurement and monitoring.

Many patients who may have elevated office blood pressures have normal blood pressures when measured outside of the office (**white-coat** hypertension). There are other patients with normal office blood pressure readings who have elevated blood pressures when measured outside of the office (**masked** hypertension). Out-of-office measurements provided through **SMBP monitoring help exclude these misclassifications** and ensure patients are diagnosed more accurately. SMBP monitoring is also **associated with a reduction in BP and improved BP control**. Additional evidence indicates that the **benefits of SMBP are greatest when given along with co-interventions** (e.g. educational materials or classes, behavioral change management, medication management, telemonitoring, etc.)

## Staff Training and Competency

- All staff supporting SMBP programs will need to know how to use the BP monitor(s) and how to properly measure BP, and be prepared to provide an overview of HTN, the importance of management, and the goals and expectations of a home monitoring program (also see [SMBP patient training checklist](#)).
- At initial training and **all** check-ins: Review BP monitoring tips (see next page) and proper use of the BP monitor. Verify patient understanding using teach-back method and allow them to demonstrate.
- For new diagnoses or uncontrolled HTN, a minimum of 3 to 7 days of daily monitoring is recommended. For controlled HTN, 1 to 3 days per week is sufficient (see “Scheduling and Tracking BP Readings” section, next page).
- For staff competency checklists, [see this resource](#) (MA training pages 17-23, Nursing competency pages 25-27).

## Introducing SMBP to the Patient

Acknowledge	Individual BP readings may vary substantially over the course of the day, and from day to day. Significant left/right inter-arm differences may exist so instruct patient to measure BPs in the arm with <b>higher</b> readings.
Recommend	Validated, automated <b>upper arm cuff</b> with memory storage capacity is recommended per clinical guidelines ( <a href="#">see BILHPN resource</a> , or <a href="#">US Blood Pressure Validated Device Listing</a> ). See last page for insurance coverage information.
Ensure	Appropriate cuff size ( <a href="#">see resource</a> ) – <b>Important!</b> Over- or under-treatment is possible if too small or too large. Most standard size cuffs will work for small to large arm sizes (XL arm sizes need a larger cuff)
Validate	Devices not on <a href="#">US Blood Pressure Validated Device Listing</a> should ideally have their accuracy checked in-office by doctor, nurse or pharmacist after purchase ( <a href="#">AMA reference on how to check a home BP cuff for accuracy</a> ).

**See next page for BP monitoring tips and important information about digital devices**

## Patient Education for Accurate BP Measurement

### Blood Pressure Monitoring Tips

- Avoid smoking, caffeinated beverages, or exercise within 30 minutes of measuring BP
- Empty bladder
- Rest quietly for at least 5 minutes without talking, texting, or distractions
- Take at least 2 measurements each time, 1 minute apart
  - The number of BP readings per day should be customized based on individual clinical and personal considerations.

### Digital Arm Cuff Use

- Seated position, back supported (ideally a straight-backed dining chair)
- Both feet flat on ground
- Cuff on bare arm, directly above the bend of the elbow (antecubital fossa), pulled taut
- Place the center of the cuff bladder (commonly marked on the cuff) over the arterial pulsation of the patient's bare upper arm (about midpoint)
- The arm with the cuff should be supported on a flat surface at about heart level

### Wrist Cuffs

- **NOT** recommended for clinical decision making. Advise patient to replace with a digital arm cuff.
- Proper technique is essential, but *difficult*. Improper use will result in inaccurate readings.
- If a wrist cuff is necessary, it should be from the [US Blood Pressure Validated Device Listing \(VDL\)](#), it should be validated in office, and proper technique must be observed ([see proper wrist cuff use](#)).

### Factors that Impact Blood Pressure

Factor	Impact on Systolic BP (mmHg)	Factor	Impact on Systolic BP (mmHg)
Cuff too small	+ 10-40	Anxiety/white coat hypertension	+ up to 30
Cuff over clothing	+ or - 10-40	Patient talking	+ 10-15
Back/feet unsupported	+ 5-15	Labored breathing	+ 5-8
Legs crossed	+ 5-8	Full bladder	+ 10-15
Arm tense	+ 15	Pain	+ 10-30
Not resting 3 – 5 minutes	+ 10-20	Arm below or above heart level	+ or - 10 (for every 1cm above or below heart level, BP varies by 0.8 mmHg)

### Important Patient Resources

- After patient training, be sure to provide the appropriate resources in case they have questions at home
  - Information that helps with proper preparation, positioning, and measurement
    - American Medical Association (AMA) SMBP infographic in [English](#) and [Spanish](#)
    - Patient video (AMA [English](#), [Spanish](#) or BIDMC [English](#), [Spanish](#), [Chinese](#) (**not** compatible with Internet Explorer))
  - Device user manual
  - SMBP recording log with space for at least 7 days of readings with at least 2 readings per day ([AMA SMBP sample recording log](#))

## Scheduling and Tracking BP Readings

- Conduct SMBP Monitoring whenever BP assessment is desired (e.g., confirm a diagnosis, every 2 to 4 weeks if BP uncontrolled, the week prior to clinic visit, or physician discretion)
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|------------------------|---|
| Frequency of Readings  | <a href="#">AHA guidelines</a> recommend that patients measure their BP twice daily to look for potential fluctuations (AM before medications, PM before supper), with at least two measurements each time, 1 minute apart. However, the number of blood pressure readings per day should be customized based on individual clinical and personal considerations to maximize patient adherence to a monitoring routine. |
| Duration of Monitoring | For new diagnoses or uncontrolled HTN: 7 days of monitoring recommended; 3 days (i.e., 12 readings) minimum. May add extra day (8 days or 4 days) if first day of readings is excluded (sometimes recommended).<br>For controlled HTN: sufficient to monitor 1 to 3 days per week   |
| Tracking Readings      | Use <a href="#">SMBP recording log</a> or machine's digital memory if single user or has multiple user memory setting   |

## Analyze, Interpret, Document, and Act

- Determine how/when patients will share results, what to do in the event of unexpected results or questions, and when/who to call.

1. Analyze	For each monitoring period, average all systolic & all diastolic BP for clinical decision-making ( <a href="#">SMBP averaging tool</a> ). It may be useful to average morning and evening readings separately.
2. Interpret	With an existing diagnosis of hypertension: SMBP < 135/85 or Office BP < 140/90 = Controlled With cardiorenal comorbidities or high ASCVD risk ( <a href="#">see ACC Risk calculator</a> ): SMBP/Office BP < 130/80 = Controlled (See <a href="#">page 4 of reference</a> for further details on classifications )
3. Document	<p>For clinical decision-making, document weekly BP averages in the chart note. For the quality measure, document BP obtained that day, or most recently. SMBP CPT codes may be used, but reimbursement is inconsistent. See <a href="#">AMA SMBP CPT Coding reference</a>.</p> <p><b>*Patient reported blood pressures must be obtained by an automated/digital/electronic cuff and NOT a manual cuff at home.</b></p> <pre> graph TD     A[Patient Reported Blood Pressures] --&gt; B[No Provider Visit]     A --&gt; C[Day of Provider Visit]     B --&gt; D[Automated BP obtained by the patient with automatic electronic data transfer from the cuff to the EHR.]     B --&gt; E[BPs via Portal Message]     B --&gt; F[Phone Call]     C --&gt; G[Obtain automated BP value from the patient either verbally or from the portal during or prior to the visit]     D --&gt; H[In standard fields list BP value, date of the reading, and "taken by an automated digital monitoring device"]     E --&gt; I[In standard fields list BP value, date of the reading, and "taken by an automated digital monitoring device"]     F --&gt; J[In standard fields list BP value, date of the reading, and "taken by an automated digital monitoring device"]     G --&gt; K[In standard fields list BP value, date of the reading, and "taken by an automated digital monitoring device"]     </pre> <p>Beth Israel Lahey Health Performance Network</p>
4. Act	Controlled → Continue treatment, BP check in 1 to 6 months, per physician discretion Uncontrolled → Initiate or intensify treatment per <a href="#">AHA guidelines</a> , check BP within 4 weeks

## Insurance Coverage Information

- MassHealth:** Covered if specific steps are followed:
  - Prescribe “Automated Blood Pressure Monitor Kit”
  - Include in sig: “Check blood pressure daily. Please dispense automated upper arm cuff (Omron or A&D preferred). Diagnosis code I10”. Include arm size (exact measurement, not a range or general size e.g. “medium”)
  - Call or fax to Sullivan’s Medical Supply: Phone 617-325-0013; Fax 617-687-8507
  - They process the Rx, call the patient to verify address. The patient must verify or it will not be sent.
- Commercial:** Rarely covered. Direct patient to their employee programs to see if a program supports home BP cuff purchasing. The patient may use health savings account (HSA) or flexible savings account (FSA) funds.
- Medicare:** Covered in Stage 4 CKD

## Establishing an SMBP Loaner Program\*

Eligible Patients	<ul style="list-style-type: none"> <li>Patients willing to assess BP at home</li> <li>Patients with barriers to buying their own cuff</li> <li>Patients who present with elevated BP during office visit (with or without a diagnosis of HTN)</li> </ul>
Monitors & Cuffs	<ul style="list-style-type: none"> <li>Two to three devices per provider and at least one XL cuff (standard cuffs can accommodate small to large arm sizes) (<a href="#">see cuff size guide</a>)</li> <li>Recommended device features: (<a href="#">see BILHPN resource</a>) <ul style="list-style-type: none"> <li>Upper arm cuff device</li> <li>Automatic inflation</li> <li>Memory to store at least 30 BP readings</li> <li>XL cuff compatible motor</li> <li>Date and time stamps for reviewing readings</li> <li>Large screen for patients with poor eyesight</li> <li>Clinically tested for accuracy (<a href="#">see list of validated devices</a>)</li> </ul> </li> </ul>
Device Maintenance	<ul style="list-style-type: none"> <li>Every time device is returned to the office following patient use, it should be cleaned following the manufacturer's guidance and validated for accuracy</li> <li>Determine how/when patients will share BP results and what to do in the event of unexpected results or questions</li> <li>Develop a plan for how to process BP readings from patients participating in the program</li> </ul>
Device Loaner Program Outline	<ul style="list-style-type: none"> <li>Create a letter for the patient outlining the details of the loan.</li> <li>Suggested contents: (<a href="#">see sample AMA loaner agreement</a>, may remove requirement for signature) <ul style="list-style-type: none"> <li>Lender Information (name, address, phone)</li> <li>Patient information (name, MRN, phone/email)</li> <li>Equipment information (device ID, manufacturer and model)</li> <li>Return Date</li> <li>Any extra equipment given to patient (power cords, XL cuffs, carrying case, etc.)</li> </ul> </li> </ul>
SMBP Device Tracking Log	<ul style="list-style-type: none"> <li>Develop a log to keep track of each device and cuff (see sample AMA device tracker), or utilize EMR functionality to track patients if available</li> <li>Suggested tracker contents: <ul style="list-style-type: none"> <li>Device ID</li> <li>Patient name</li> <li>Cuff size</li> <li>Disinfection date</li> <li>Loan date</li> <li>Due date</li> <li>Return date</li> <li>Function check date</li> </ul> </li> </ul>

\*These programs may be resource intensive, but are helpful to establish if a practice is unable to distribute devices for patients to keep. For more information, see [Loaning out Devices | Target: BP \(targetbp.org\)](#)

### References:

- 2020 International Society of Hypertension Global Hypertension Practice Guidelines. Thomas Unger, Claudio Borghi, Fadi Charchar, Nadia A. Khan, Neil R. Poulter, Dorairaj Prabhakaran, Agustin Ramirez, Markus Schlaich, George S. Stergiou, Maciej Tomaszewski, Richard D. Wainford, Bryan Williams, Aletta E. Schutte. [AHA Guideline Link](#)
- American Heart Association / American Medical Association Target BP Website: [Website Link](#)
- The American Medical Association. Self-Measured Blood Pressure Monitoring at Home: A Joint Policy Statement From the American Heart Association and American Medical Association. Circulation 2020; 142(4): e42-63 [AMA SMBP at Home Link](#)
- American Medical Association: 7-step self-measured blood pressure (SMBP) quick guide: [AMA 7-Step SMBP Link](#).
- Centers for Disease Control and Prevention. Self-Measured Blood Pressure Monitoring: Actions Steps for Clinicians. Atlanta, GA: Centers for Disease Control and Prevention, US Dept. of Health and Human Services; 2014. Available at: [HHS SMBP Action Steps Link](#)