HIGH BLOOD PRESSURE RESOURCE TOOLKIT

Brought to you by the Heart Disease and Stroke Taskforce
Through the Chronic Disease Prevention and Health Promotion Section of the Nevada Division of Public and Behavioral Health

NEVADA Wellness

NVWellness.org

American Heart Association | American Stroke Association
life is why

HealthInsight

SNHD Southern Nevada Health District

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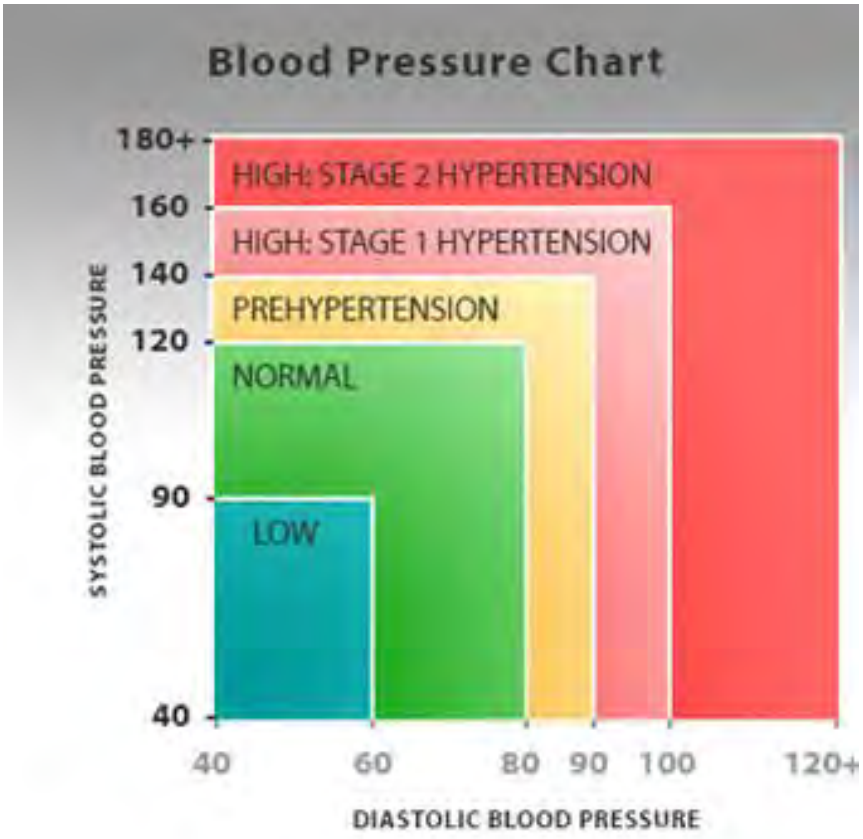
High Blood Pressure Toolkit: Prevention, Control, and Improving the Patient's Health

The Nevada Heart Disease and Stroke Taskforce, comprised of clinicians, providers, organization leadership, public health professionals, and local health authorities has developed a high blood pressure resource toolkit.

As a health care provider you are well positioned to advise and educate your patients about high blood pressure management and control. We invite you and your staff to incorporate the materials included in this toolkit when caring for patients who are at-risk or who have hypertension, heart disease and/or suffered a stroke.

The Taskforce researched, reviewed, and identified key material to include in the toolkit. These materials were chosen based on quality of information, effectiveness, and evidence-based best practices. The information included within this toolkit aims to meet the needs of providers and clinicians to supply quality reference materials for patients. All materials are copyrighted by the source organizations and are reprinted with permission.

Please follow the links below to download the materials for providers, staff, and patients. If you wish to add a resource or request additional materials, please contact the Heart Disease and Stroke Prevention Coordinator, Vicky Kolar, EMT-P, at (775) 687-7582 or vkolar@health.nv.gov.



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Million Hearts® Begins with You

WORKING TOGETHER TO PREVENT ONE MILLION HEART ATTACKS AND STROKES

1 of every **3** deaths is caused by heart disease and stroke

Health care costs for heart attack and stroke: **$312.6 BILLION**

Leading cause of **PREVENTABLE DEATH** in people 40–65 years of age

2 MILLION+ heart attacks and strokes each year

To prevent 1 million heart attacks and strokes, health care professionals and public health workers should do what we know works:

FOCUS ON THE ABCS

Aspirin when appropriate
Blood pressure control
Cholesterol management
Smoking cessation

USE HEALTH IT

Use **electronic** health records and other health IT to identify patients who need support to improve their ABCS and then track their progress over time.

USE TEAM-BASED CARE

Use clinical innovations, including:

- Use everyone who interacts with patients to the top of their skills and license
- Self-measured blood pressure monitoring with clinical support
- Reward and recognize excellence in the ABCS

By doing what we know works, health care professionals, health care systems, and public health organizations can help prevent 1,000,000 heart attacks and strokes and meet these goals by 2017:

- **47% to 70%** increase in aspirin use for secondary prevention
- **46% to 70%** increase in blood pressure control
- **33% to 70%** increase in cholesterol management
- **23% to 70%** increase in help for those who want to quit smoking
- **20%** reduction in sodium consumption
- **50%** reduction in trans fat consumption

* For more information on effectiveness of team-based care, visit: **www.thecommunityguide.org/cvd/teambasedcare.html**

www.cdc.gov/media/dpk/2013/dpk_13_in_2013.html
www.millionhearts.hhs.gov

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

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Overview of Toolkit Resources

Resource	Overview
Provider/Clinician Resources	
Obtaining a Blood Pressure Accurately	Follow these steps to measure blood pressure accurately.
BP Obtaining Guide	A brief explanation of the importance of obtaining blood pressures accurately and the different category levels.
Hypertension Protocol	A clinical best practice hypertension protocol for adoption and adherence.
Protocol Implementation	A clinical implementation resource for hypertension protocols.
Community Health Worker (CHW) Resource	A resource guide offering examples of CHW incorporation into hypertension efforts.
Discussion Guide for Pharmacists	Pharmacists can help improve efforts for hypertension control with the help of this discussion guide.
Pharmacist Drug Adherence Work-Up	This tool will help pharmacists start important conversations with their patients regarding medication adherence and hypertension.
Hypertension Clinician Guide	This comprehensive resource will help providers and clinicians review and implement a comprehensive treatment plan for hypertension patients.
Self-Measured Blood Pressure for Clinicians	Self-monitoring is an important tool for improving hypertension. This guide helps clinicians and providers prepare for important conversations with patients.
Supporting Patients With High Blood Pressure Visit Checklist	A great reference tool to navigate hypertension patient visits.
Patient Empowerment Tip Sheet English Spanish	Everyone knows patient participation is the key to success. This tip sheet will assist clinicians with empowering patients when it matters most.
Loved One Empowerment Tip Sheet English Spanish	Family support can be an integral key to success with patients. Use this tip sheet to inspire the families of patients to be involved.
Patient Handouts	
Blood Pressure Tracker	Help your patients remember to record their blood pressure readings with this tracking log.
Medication Record	This medication record will help your patients organize and remember their medications at each visit.
Blood Pressure Fact Sheet	A simple, patient-friendly fact sheet to explain the importance of blood pressure control.
My Blood Pressure Journal	This journal will help patients understand the importance of blood pressure control, medication maintenance, and living healthy lifestyles.

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Steps to Obtaining an Accurate Blood Pressure

- Choose the right size cuff
- Seat your patient so their back is supported
- Make sure the patient's feet are resting on a flat surface
- The patient's legs should be uncrossed
- The patient should not be speaking while obtaining the pressure
- Make sure your patient's left arm is raised to heart level and supported
- Expose the patient's bare arm
- Inflate the cuff to 160 mm Hg of pressure (only proceed higher if the patient is known to have high blood pressure)
- Place the diaphragm over the brachial artery and clear of obstruction

American Heart Association Recommended Blood Pressure Stages		
Blood Pressure Category	Systolic (mm Hg)	Diastolic (mm Hg)
Normal	Less than 120	Less than 80
Prehypertension	120-139	80-89
High	140 or greater	90 or greater
Stage 1	140-159	90-99
Stage 2	160 or higher	100 or higher

NEVADA Wellness

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BLOOD PRESSURE TRACKER – INSTRUCTIONS

- You should have your monitor's accuracy tested once a year by a healthcare professional.
  Date of last test: _____
- Make sure the cuff fits: measure around your upper arm and choose a monitor that comes with the correct size cuff.
- It's important to take the readings at the same time each day, such as morning and evening, or as your healthcare professional recommends.

- Don't smoke, drink caffeinated beverages or exercise within the 30 minutes before measuring your blood pressure.

American Heart Association | American Stroke Association

- Sit with your back straight and supported (on a dining chair, for example, rather than a sofa). Your feet should be flat on the floor; don't cross your legs. Your arm should be supported on a flat surface (such as a table) with the upper arm at heart level. Make sure the middle of the cuff is placed directly over your brachial artery as shown in the picture or your monitor's instructions, or have your healthcare provider show you how.
- Each time you measure, take two or three readings, one minute apart, and record all the results. Your doctor can calculate your average blood pressure from all of your readings, tell you what category you fall into, look at all your risk factors and give you a blood pressure goal.

American Heart Association recommended blood pressure levels

Blood Pressure Category	Systolic (mm Hg)		Diastolic (mm Hg)
Normal	less than 120	and	less than 80
Prehypertension	120–139	or	80–89
High			
Stage 1	140–159	or	90–99
Stage 2	160 or higher	or	100 or higher

Blood pressure higher than 180/110 mm Hg is an emergency. Call 9-1-1 immediately. If 9-1-1 is not available, have someone drive you to the nearest emergency facility immediately.

Heart rate or pulse is the number of times your heart beats per minute. The average resting heart rate is 60–80 beats per minute, but it's generally lower in physically fit people and it usually rises with age.

BLOOD PRESSURE TRACKER – PRINTABLE TRACKER

INSTRUCTIONS:

- Take your pressure at the same time each day, such as morning or evening, or as your healthcare professional recommends.
- Sit with your back straight and supported and your feet flat on the floor.
- Your arm should be supported on a flat surface with the upper arm at heart level.
- Make sure the middle of the cuff is placed directly over your brachial artery. Refer to the Instructions page of this tracker for a picture, or check your monitor's instructions, or have your healthcare provider show you how.
- Each time you measure, take two or three readings, one minute apart, and record all the results.

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NAME:_____ MY BLOOD PRESSURE TARGET GOAL IS:___/____mm Hg

DATE/TIME	READING 1		READING 2		READING 3		COMMENTS
	BLOOD PRESSURE	HEART RATE (PULSE)	BLOOD PRESSURE	HEART RATE (PULSE)	BLOOD PRESSURE	HEART RATE (PULSE)	
EXAMPLE 1/1/08 8:00pm	132/85 mm Hg	81 Beats Per Min.	130/80 mm Hg	70 Beats Per Min.	126/80 mm Hg	72 Beats Per Min.	at pharmacy
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Blood pressure higher than 180/110 is an emergency. Call 9-1-1 immediately. If 9-1-1 is not available to you, have someone drive you to the nearest emergency facility immediately.

BLOOD PRESSURE TRACKER – WALLET CARD

INSTRUCTIONS:

- Take your pressure at the same time each day, such as morning or evening, or as your healthcare professional recommends.
- Sit with your back straight and supported and your feet flat on the floor.
- Your arm should be supported on a flat surface with the upper arm at heart level.
- Make sure the middle of the cuff is placed directly over your brachial artery. Refer to the Instructions page of this tracker for a picture, or check your monitor's instructions, or have your healthcare provider show you how.
- Each time you measure, take two or three readings, one minute apart, and record all the results.
- Cut this card out, fold it and keep in your wallet for use when you are traveling or away from home.

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	BLOOD PRESSURE	HEART RATE (PULSE)
DATE/TIME		
READING 1		
READING 2		
READING 3		
COMMENTS		
DATE/TIME		
READING 1		
READING 2		
READING 3		
COMMENTS		
DATE/TIME		
READING 1		
READING 2		
READING 3		
COMMENTS		
DATE/TIME		
READING 1		
READING 2		
READING 3		
COMMENTS		

fold

	BLOOD PRESSURE	HEART RATE (PULSE)
DATE/TIME		
READING 1		
READING 2		
READING 3		
COMMENTS		
DATE/TIME		
READING 1		
READING 2		
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COMMENTS		

fold

	BLOOD PRESSURE	HEART RATE (PULSE)
DATE/TIME		
READING 1		
READING 2		
READING 3		
COMMENTS		
DATE/TIME		
READING 1		
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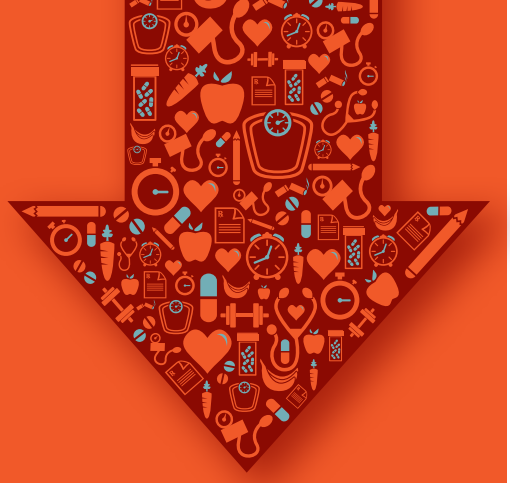
COMMENTS		

Blood pressure higher than 180/110 is an emergency. Call 9-1-1 immediately. If 9-1-1 is not available to you, have someone drive you to the nearest emergency facility immediately.



If you are using a manual device use these quick tips to help you take an accurate and consistent blood pressure reading.

Million Hearts™
Team Up. Pressure Down.

Taking Blood Pressure Manually

1. **Check the condition of the device and the cuff size to ensure the reading is accurate.** A small hole or crack in any part of the device e.g., rubber tubing, bulb, valves, and cuff can lead to inaccurate results. A cuff that is too small or too big may produce an incorrect high blood pressure reading.
2. **It's important the patient feels comfortable and relaxed.** Reassure the patient that there are no risks or complications associated with this screening.
3. **Have the patient relax and sit with their arm slightly bent on the same level as their heart and resting comfortably on a table or other flat surface.**
4. **Place the inflatable blood pressure cuff securely on the upper arm (approximately one inch above the bend of the elbow).** Make sure the cuff is touching the skin. You may have to ask your patient roll up their sleeve, or remove their arm from the sleeve.
5. **Close the pressure valve on the rubber inflating bulb, and pump the bulb rapidly to inflate the cuff.** The cuff should be inflated so that the dial reads about 30 mm Hg higher than your patient's at-rest systolic pressure. (**TIP:** If at-rest pressure is unknown, inflate the cuff to 210 mm Hg or until the pulse at the wrist disappears).
6. **If using a stethoscope, place the earpieces in your ears and the bell of the stethoscope over the artery, just below the cuff.** If the cuff has a built-in stethoscope bell, be sure to position the cuff so the bell is over the artery. The accuracy of a blood pressure recording depends on the correct positioning of the stethoscope over the artery, and making sure the stethoscope bell does not rub on the cuff or the patient's clothing.
7. **Now slowly release the pressure by twisting or pressing open the pressure valve, located on the bulb.** Some blood pressure devices can automatically control the rate at which the pressure falls, but generally the patient's pressure should decrease about 2 to 3 mm Hg per second. Listen through the stethoscope and note on the dial when you ***first start to hear a pulsing or tapping sound***—this is the ***systolic blood pressure***. If you have trouble hearing the start of the pulse, you can find the patient's systolic blood pressure by asking your patient to tell you when they can start to feel the pulse in their wrist and noting the level on the dial.
8. **Continue letting the air out slowly.** The pulsing or tapping sounds will become dulled and finally disappear. Note on the dial ***when the sounds completely stop***—this is the ***diastolic blood pressure***. Finally, release the remaining air to relieve all pressure on your patient's arm.
9. **Suggest the patient write down their numbers along with the date and time.** They can use the ***Team Up. Pressure Down.*** journal to keep track. Remind the patient to take their blood pressure regularly to ensure their medications are working appropriately.

What the Readings Mean

Use this chart to help interpret blood pressure readings and provide recommendations to your patient. Remember, more than one reading is needed to accurately measure blood pressure and offer the greatest benefits.

STAGE 2 HYPERTENSION			RECOMMENDATIONS
Systolic blood pressure		Diastolic blood pressure	Patient has hypertension and should seek medical care as soon as possible. If patient is not currently under the care of a physician, refer him/her to a primary care provider, and offer to make the call for them. If patient is currently taking hypertension medication(s), determine if he/she is adherent to the prescribed drug regimen. If adherent, make therapeutic suggestions to the patient and his/her provider to improve control. If not, determine existing adherence barriers and suggest ways for the patient to improve their compliance.
> (or equal to) 160 mmHg	*OR*	**> (or equal to) 100 mmHg**	

STAGE 1 HYPERTENSION			RECOMMENDATIONS
Systolic blood pressure		Diastolic blood pressure	Patient has hypertension and should seek medical care. If patient is not currently under the care of a physician, refer him/her to a primary care provider. If patient is currently taking hypertension medication(s), determine if he/she is adherent to the prescribed drug regimen. If adherent, make therapeutic suggestions to the patient and his/her provider to improve control. If not, determine existing adherence barriers and suggest ways for the patient to improve compliance.
140-159 mmHg	*OR*	**90-99 mmHg**	

PREHYPERTENSION			RECOMMENDATIONS
Systolic blood pressure		Diastolic blood pressure	Patient has an increased risk of future hypertension. Suggest that the patient make lifestyle modifications and regularly monitor blood pressure.
120-139 mmHg	*OR*	**80-89 mmHg**	

NORMAL			RECOMMENDATIONS
Systolic blood pressure		Diastolic blood pressure	Encourage healthy behaviors and lifestyle modifications to keep blood pressure in normal range.
< 120 mmHg	*AND*	**<80 mmHg**	

Resource: Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (2003). Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure JNC Express (NIH Publication No. 03-5233). Bethesda, MD: U.S. Department of Health and Human Services.

Be one in a MILLION HEARTS™

Preventing 1 million heart attacks and strokes over 5 years

The Problem

Americans suffer almost 2 million heart attacks and strokes each year. Heart disease and stroke (sometimes called a brain attack) are the first and fourth leading causes of death in the United States. They cause about 30% of all deaths. But there's good news! The major risk factors for heart disease and stroke—high blood pressure, cholesterol, smoking, and obesity—*can* be prevented and controlled.

Our Goals

Help Americans make healthy choices, such as quitting smoking and lowering the amount of sodium (salt) and trans fat we eat. Healthy choices from the start mean that fewer people will need to take medicines to control their blood pressure or cholesterol. When it comes to heart health, it is never too late to lower risk! We control our choices.

Community Health Workers and Million Hearts™

Million Hearts™ is a national program to prevent 1 million heart attacks and strokes in the United States by 2017. The Centers for Disease Control and Prevention (CDC) and the Centers for Medicare and Medicaid Services (CMS) are the lead federal agencies for this initiative.

Community health workers (CHWs)/promotores de salud, community health representatives, and others can work together with CDC and CMS to help reach the program's goal. For those at risk for high blood pressure and high cholesterol, CHWs can play an important role in prevention.

To support people in their health care needs, CHWs can—
TEACH community members that they need to get screened for high blood pressure and cholesterol. Most of the time, people at risk do not feel sick and are not aware they have these conditions.
TEACH community members to ask for and know their blood pressure and cholesterol numbers and to know what healthy levels should be.
ENCOURAGE community members to ask their doctor what their goals should be for blood pressure and cholesterol.
TEACH community members how important it is for them to control their blood pressure and cholesterol.
TEACH community members that uncontrolled high blood pressure and cholesterol can damage their eyes, kidneys, heart, blood vessels, and brain. High blood pressure can also lead to chronic kidney failure requiring dialysis.
TEACH community members that high blood pressure and cholesterol will put them at high risk for heart attack, heart failure, and stroke.
HELP community members who have diabetes understand the importance of controlling the disease and regularly taking their diabetes medications.
INTRODUCE community members to social workers and others who can help them apply for programs and insurance that can help pay for health care.

To help promote better lifestyle choices, CHWs can—
HELP community members learn how to reduce their daily intake of sodium (salt).
WORK with community members to find easier, less expensive ways to increase the intake of fruits, vegetables, and lower sodium and whole grain foods in the community, at schools, and at work.
HELP people stay active and fit and maintain a healthy weight.
HELP people choose a diet low in saturated fat and trans fat.
HELP people learn to bake, broil, or roast food instead of frying.
ENCOURAGE those who drink alcohol to consume no more than one drink a day for women and no more than two for men. One drink is 1 oz. of hard liquor, 4 oz. of wine, or 12 oz. of beer.
ENCOURAGE people to quit smoking and not use tobacco to reduce risks for diseases and improve health in general.
LEARN how to help community members apply for programs and insurance that can help pay for health care and other needs.

Remember Your ABCS! What Does That Mean?

A is for aspirin. Sometimes people who have heart problems or who have had a stroke need to take aspirin to help their heart. CHWs can remind people to take aspirin as advised by their doctor.

B is for blood pressure control. CHWs can encourage people to take their blood pressure medicines regularly and have their blood pressure checked to make sure that it is within the normal range. This step also tells people whether their blood pressure medicine is working.

C is for cholesterol management. CHWs can teach people why it is important to have their cholesterol checked.

S is for smoking cessation. CHWs can teach community members about the harmful effects that smoking has on the person smoking and on others around them. CHWs can also teach people about how smoking puts people at risk for heart attack, heart disease, and stroke. CHWs can teach people about other ways to manage stress and depression.

Visit **millionhearts.hhs.gov** for more information about Million Hearts™.
Remember, CHWs are part of the solution.

Stay connected

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twitter.com/@MillionHeartsUS

Resource: CHW Sourcebook

www.cdc.gov/dhdsp/programs/nhdsp_program/chw_sourcebook/pdfs/sourcebook.pdf

Pharmacist Pocket Guide

Team up to help your patients manage hypertension.

Million Hearts™

Team Up. Pressure Down.

You are a key member of the health care team for people with chronic conditions such as hypertension.

Numerous studies have shown that patients can achieve significant improvements in controlling their blood pressure by expanding their health care team to include pharmacists. You can use your knowledge and skills to help them reduce their risk of heart attack and stroke and live better, healthier lives. Often, these brief discussions—whether during the first visit or at follow-ups—will help your patients feel more at ease and prompt them to ask additional questions about their condition.

Here are some easy ways you can team up with your patients to help control their hypertension:

Start a relationship. Get to know your patients so you can determine their levels of awareness about hypertension. Ask simple questions such as, “Do you have questions about your prescription(s)?” to help you judge if patients understand their condition, risks, and the importance of medication adherence.

Talk about their medication(s). As you know, hypertensive patients tend to be on more than one drug. Talk about the unique role each drug plays, and the importance of taking them as directed and getting refills on time. If your patients have adherence issues, understand why and suggest they use a reminder aid or a pillbox to organize their medication(s). Inform patients of any possible side effects. If they’re experiencing side effects, suggest ways to manage symptoms, and encourage them to speak directly with their doctor to see if they need changes in treatment. Emphasize the dangers of not taking medications exactly as prescribed without talking to you or their doctor first.

Discuss a plan for patients to regularly monitor blood pressure. Make sure patients know their blood pressure goals and suggest they regularly monitor their blood pressure. Recommend they get at-home monitoring equipment or use your pharmacy in-store monitoring device (if available). Suggest that the patient check blood pressure twice per day for at least a week—once in the morning before they take their medication(s) and once in the evening—and log that information in the *Team Up. Pressure Down.* blood pressure journal. Offer to review their blood pressure results during their next visit to see if the medication is working correctly.

Educate patients about helpful lifestyle changes. Talk about how a low-sodium diet, exercise, weight loss, and limiting alcohol can help lower blood pressure and protect the heart. Ask about current lifestyle behaviors, such as smoking, that are major risk factors for hypertension. Offer additional counsel and resources such as the DASH eating plan and getting at least 2 hours and 30 minutes of exercise each week to help patients stay on track.

Keep it simple but direct. When offering counsel, keep things simple. Avoid unnecessary details or medical terms that can cause confusion.

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Team Up. Pressure Down.

To learn more about other ways you can team up to get your patients' blood pressure down, visit:

http://millionhearts.hhs.gov

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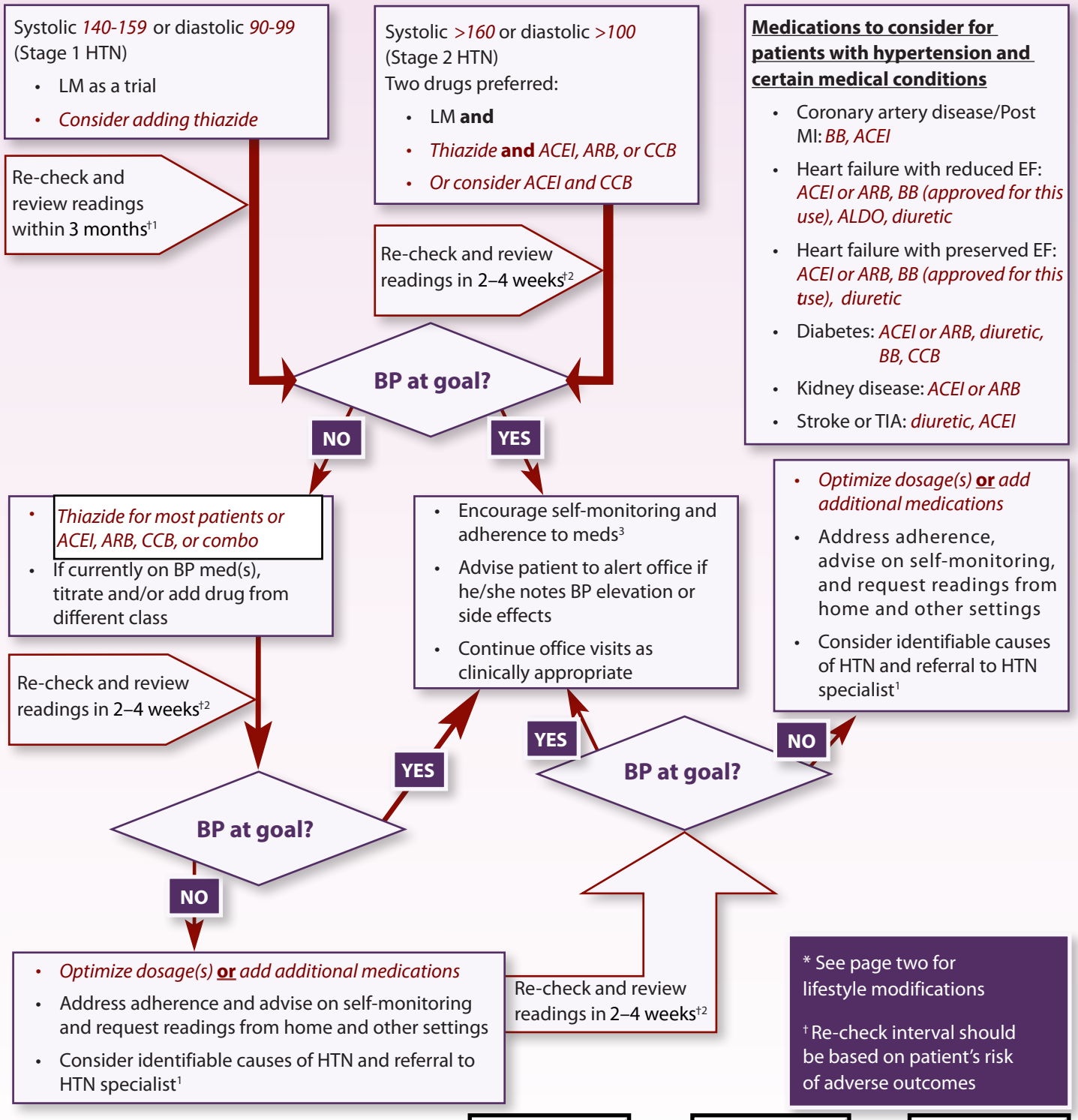
The red, italicized text may be modified by the user to provide specific drug names.

Reset Form

Name of Practice

Protocol for Controlling Hypertension in Adults[1]

The blood pressure (BP) goal is set by a combination of factors including scientific evidence, clinical judgment, and patient tolerance. For most people, the goal is <140 and <90; however some individuals may be better served by other BP goals. Lifestyle modifications (LM)* should be initiated in all patients with hypertension (HTN) and patients should be assessed for target organ damage and existing cardiovascular disease. Self-monitoring is encouraged for most patients throughout their care and requesting and reviewing readings from home and community settings can help in achieving and maintaining good control. For patients with hypertension and certain medical conditions, specific medications should be considered, as listed in the box on the right below.



* See page two for lifestyle modifications

† Re-check interval should be based on patient's risk of adverse outcomes

Print Form

Save Form

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Instructions for use of the template

1. **Gather clinical staff to make consensus decisions about:**
   - Specific medications to be prescribed for most patients with hypertension
   - Medications to consider for patients with hypertension and certain medical conditions
   - Starting dosages and dosage increases with each titration
   - Time intervals for follow-up and titration
2. **Customize the template by accepting the variables in red or modifying them with other drug names, dosages, and titration**
   - As needed, develop separate protocols for subpopulations with different treatment goals
3. **Adopt the protocol across the practice or system and revise it over time to meet the needs of patients and staff**

*Lifestyle Modifications[1] (LM)

Modification	Recommendation	Approximate SBP** Reduction (Range)††
Weight reduction	Maintain normal body weight (body mass index 18.5–24.9 kg/m^2)	5–20 mm Hg/10kg
Adopt DASH††† eating plan	Consume a diet rich in fruits, vegetables, and lowfat dairy products with a reduced content of saturated and total fat	8–14 mm Hg
Dietary sodium reduction	Reduce dietary sodium intake to no more than 100 mmol per day (2.4 g sodium or 6 g sodium chloride)	2–8 mm Hg
Physical activity	Engage in regular aerobic physical activity such as brisk walking (at least 30 min per day, most days of the week which may be broken into shorter time intervals such as 10 minutes each of moderate or vigorous effort)	4–9 mm Hg
Moderation of alcohol consumption	Limit consumption to no more than 2 drinks (e.g. 24 oz. beer, 10 oz. wine, or 3 oz. 80-proof whiskey) per day in most men, and to no more than 1 drink per day in women and lighter weight persons	2–4 mm Hg

**SBP – systolic blood pressure
†† The effects of implementing these modifications are dose and time dependent, and could be greater for some individuals
†††DASH – Dietary Approaches to Stop Hypertension

Abbreviations

- ACEI – Angiotensin-Converting Enzyme Inhibitor
- ALDO – Aldosterone Antagonist
- ARB – Angiotensin II Receptor Blocker
- BB – Beta Blocker
- CCB – Calcium Channel Blocker
- EF – Ejection Fraction
- MI – Myocardial Infarction
- TIA – Transient Ischemic Attack

References

[1] National Heart, Lung and Blood Institute, National Institutes of Health. *The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure - Complete Report*. National Heart, Lung, and Blood Institute, National Institutes of Health. NIH Publication No. 04-5230, 2004.

[2] Jaffe MG, Lee GA, Young JD, Sidney S, Go AS. Improved Blood Pressure Control Associated with a Large-Scale Hypertension Program. *JAMA*. 2013;310(7);699-705.

[3] 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 Dept of Health and Human Services; 2013.

Other Resources

Sacks FM, Svetkey LP, Vollmer WM, et al. Effects on blood pressure of reduced dietary sodium and the Dietary Approaches to Stop Hypertension (DASH) diet. DASH-Sodium Collaborative Research Group. *N Engl J Med*. 2001;344:3-10.

US Department of Health and Human Services. 2008 physical activity guidelines for Americans. 2008. http://www.health.gov/PAGuidelines. Accessed November 4, 2013.

Suggested Citation

Centers for Disease Control and Prevention. *Protocol for Controlling Hypertension in Adults*. Atlanta, Georgia. 2013.

Print Form Save Form CS243702

- List medicines here.
- Keep it up to date.
- Carry it with you.
- Share with your doctor/ pharmacist.
- Always take your medicine as directed.

For helpful tips and resources, visit **ScriptYourFuture.org** today.

Million Hearts
Team Up. Pressure Down.

SCRIPT YOUR Rx FUTURE

QUESTIONS

to ask my doctor/pharmacist

1. What's my medicine called and what does it do?
2. How and when should I take it? And for how long?
3. What if I miss a dose?
4. Are there any side effects?
5. Is it safe to take it with other medicine or vitamins?
6. Can I stop taking it if I feel better?

Million Hearts
Team Up. Pressure Down.

SCRIPT YOUR Rx FUTURE

I WILL

SIGN HERE

TAKE MY MEDS.

MY MEDICINES

including prescriptions, over-the-counter medicines, vitamins and supplements

MEDICINE	WHY I TAKE IT	START DATE	REFILL DATE	HOW MUCH DO I TAKE?	WHEN DO I TAKE IT?
EXAMPLE: Naproxen	Arthritis	6/1/11	7/1/11	1 tablet, 250 mg	twice a day

Million Hearts®

Hypertension Control

ACTION STEPS for Clinicians

A MILLION HEARTS® ACTION GUIDE

Acknowledgments

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To reduce the burden of heart attack and stroke in the United States, the Department of Health and Human Services launched Million Hearts®. The goal of this initiative is to prevent one million heart attacks and strokes by 2017 by implementing proven and effective interventions in clinical settings and communities. Million Hearts® brings together communities, health systems, nonprofit organizations, federal agencies, and private-sector partners from across the country to fight heart disease and stroke.

High blood pressure is one of the leading causes of heart disease and stroke.[1] One in every three U.S. adults (67 million) has high blood pressure, and only about half of these individuals have their condition under control.[2] Of the 36 million Americans who have uncontrolled hypertension, most have a usual source of care (89.4%), received medical care in the previous year (87.7%), and have health insurance (85.2%).[3]

The purpose of this document is to deliver tested strategies for busy clinicians to aid in efforts related to hypertension control. These strategies were gathered from the published scientific literature (evidence-based) or found to be effective in clinical settings (practice-based). The strategies are organized into three categories of actions to improve delivery system design (Table 1), improve medication adherence (Table 2), and optimize patient reminders and supports (Table 3). This document contains additional resources and references where more information can be found for each action step.

Strategies for Hypertension Control

Table 1. Actions to Improve Delivery System Design
Implement a standardized hypertension treatment protocol.[4] ▸ Support titration of hypertension medications by clinical team members via a physician-approved protocol.[5,6]
Designate hypertension champions within your practice or organization.[7]
Proactively track and contact patients whose blood pressure is uncontrolled using an electronic health record (EHR)-generated list, patient registry, or other data source.[7–9]
Create a blood pressure measurement station where all patients can rest quietly for 5 minutes before measurement and that is designed to support proper measurement techniques (e.g., feet on floor, proper arm position, multiple cuff sizes conveniently located).[9]
Have care team members review a patient's record before the office visit to identify ways to improve blood pressure control.[7]
Proactively provide ongoing support for patients with hypertension through office visits or other means of contact until blood pressure is controlled.[10]
Implement systems to alert physicians about patterns of high blood pressure readings taken by support staff.[11,12] ▸ Place a sign or magnet on the outside of the examination room. ▸ Build clinical decision supports into the EHR.
Provide feedback to individual clinicians and clinic sites on their hypertension control rates. Provide incentives for high performance, and recognize high performers.[4]
Provide blood pressure checks without a copayment or appointment. Train clerical personnel in proper blood pressure measurement technique so they are capable of obtaining drop-in blood pressure readings.[4,13]
Encourage clinicians to take continuing education on hypertension management and care of resistant hypertension.[4,14]

Table 2. Actions to Improve Medication Adherence

Encourage patients to use medication reminders.[15–18] ▸ Promote pill boxes, alarms, vibrating watches, and smartphone applications.
Provide all prescription instructions clearly in writing and verbally.[19] ▸ Limit instruction to 3–4 major points. ▸ Use plain, culturally sensitive language. ▸ Use written information or pamphlets and verbal education at all encounters.
Ensure patients understand their risks if they do not take medications as directed. Ask patients about these risks, and have patients restate the positive benefits of taking their medications.[19]
Discuss with patients potential side effects of any medications when initially prescribed and at every office visit thereafter.[20]
Provide rewards for medication adherence.[21] ▸ Praise adherence. ▸ Arrange incentives, such as coupons, certificates, and reduced frequency of office visits.
Prescribe medications included in the patient's insurance coverage formulary, when possible.[22]
Prescribe once-daily regimens or fixed-dose combination pills.[23–26]
Assign one staff person the responsibility of managing medication refill requests.[27] ▸ Create a refill protocol.
Implement frequent follow-ups (e.g., e-mail, phone calls, text messages) to ensure patients adhere to their medication regimen.[15,28–30] ▸ Set up an automated telephone system for patient monitoring and counseling.

Table 3. Actions to Optimize Patient Reminders and Supports

Provide patients who have hypertension with a written self-management plan at the end of each office visit.[12,31] ▸ Encourage or provide patient support groups. ▸ Use all staff interactions with patients as opportunities to assist in self-management goal-setting and practices. ▸ Print visit summaries and follow-up guidance for patients.
Generate lists of patients with hypertension who have missed recent appointments. Send phone, mail, e-mail, or text reminders.[13]
Contact patients to confirm upcoming appointments, and instruct them to bring medications, a medication list, and home blood pressure readings with them to the visit.[7]
Send a postcard to or call patients who have not had their blood pressure checked recently. Invite them to drop in to have their blood pressure checked by a medical assistant, nurse, or other trained personnel without an appointment and at no charge.[12]
Send patients text messages about taking medications, home blood pressure monitoring, or scheduled office visits.[30]
Encourage patients to use smartphone or Web-based applications to track and share home blood pressure measurements.[32,33]
Encourage home blood pressure monitoring plus clinical support using automated devices with a properly sized arm cuff.[7,34,35] ▸ Advise patients on choosing the best device and cuff size. ▸ Check patients' home monitoring devices for accuracy. ▸ Train patients on proper use of home blood pressure monitors.
Implement clinical support systems that incorporate regular transmission of patients' home blood pressure readings and customized clinician feedback into patient care.[35] ▸ Train staff to administer specific clinical support interventions (e.g., telemonitoring, patient portals, counseling, Web sites). ▸ Incorporate regular transmission of patient home blood pressure readings through patient portals, telemonitoring, log books, etc., to clinicians and EHR systems. ▸ Provide regular customized support and advice (e.g., medication titration, lifestyle modifications) based on patient blood pressure readings.

Resources

Resources for Delivery System Design

American Academy of Family Physicians. Using a Simple Patient Registry to Improve Your Chronic Disease Care.

American Medical Group Foundation. Provider Toolkit to Improve Hypertension Control.

Centers for Disease Control and Prevention. Protocol for Controlling Hypertension in Adults.

Washington State Department of Health. Improving the Screening, Prevention, and Management of Hypertension—An Implementation Tool for Clinical Practice Teams.

Resources for Medication Adherence

American Academy of Family Physicians. Improving Patient Care: Rethinking Refills.

American College of Preventive Medicine. Medication Adherence Time Tool: Improving Health Outcomes.

Centers for Disease Control and Prevention. Medication Adherence Educational Module.

Script Your Future. Adherence Tools.

Surescripts. Clinician's Guide to e-Prescribing: 2011 Update.

Resources for Patient Reminders and Supports

Agency for Healthcare Research and Quality. Electronic Preventive Services Selector (ePSS).

American Heart Association. Heart360. An Online Tool for Patients to Track and Manage Their Heart Health and Share Information with Healthcare Providers.

Institute for Healthcare Improvement. Partnering in Self-Management Support: A Toolkit for Clinicians.

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Million Hearts® is a U.S. Department of Health and Human Services initiative that is co-led by the Centers for Disease Control and Prevention and the Centers for Medicare & Medicaid Services, with the goal of preventing one million heart attacks and strokes by 2017.

millionhearts.hhs.gov

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What You Need to Know

High Blood Pressure

You have the power to lower your blood pressure and live a healthy, full life. High blood pressure, also called hypertension, raises your risk for heart disease, stroke, kidney disease, and damage to your eyes. This worksheet will give you tips on how to eat less salt, check your blood pressure at home, and learn about your medicines.

Know your blood pressure numbers

What do these numbers mean?

157 / 98

Systolic (upper):
This is the amount of pressure it takes for the heart to squeeze blood to the body.

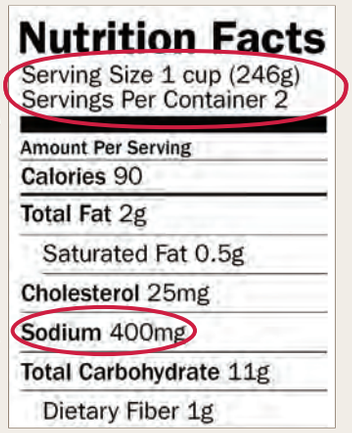
Diastolic (lower):
This is the amount of pressure when the heart is relaxed and filling with blood.

Normal blood pressure	Less than 120 and less than 80
Prehypertension	120-139 and 80-89
High blood pressure	140 or higher or 90 or higher

Write your recent numbers here: ____ / ____

Eat less salt

Eating less salt can help lower your blood pressure. Salt is also called sodium on food labels. Try to eat no more than 1500mg of sodium a day. 1 teaspoon of salt has 2300mg of sodium. Don't add salt to food while cooking or eating.



How to read a food label:

1. Look at the serving size and servings per container. This can has 2 servings.
2. Look at the mg of sodium. In this can, a 1 cup serving has 400mg of sodium. This whole can has 800mg of sodium.

☑ Check off the things you will do:

- ☐ Eat more fresh fruits and vegetables.
- ☐ Cook with fresh herbs and spices or use vinegars and lemon juice for flavor.
- ☐ Rinse canned foods like vegetables, beans, and tuna with water to remove salty liquid.
- ☐ For salads, choose oil and vinegar. When eating out, ask for dressing on the side.
- ☐ When shopping, choose reduced sodium, low sodium, light sodium, or sodium free foods.

Foods to avoid:

- Fast food like pizza, tacos, burritos, cheeseburgers, fries, and fried chicken
- Ham, bacon, corned beef, hot dogs, sausage, salt pork, packaged meats, and cheese
- Salty foods in cans and jars like pickles, sauces, dips, salad dressings, soups, and broths
- Packaged foods like salty snacks and chips, mixes for sauces, rice and noodle meals
- Frozen meals and foods that contain soy sauce or are marinated, smoked, or cooked in broth

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Check your blood pressure at home

Checking your blood pressure at home will help you and your doctor or nurse see if your numbers are normal or high. Ask your doctor or nurse to help you find a home blood pressure monitor. Don't use finger or wrist monitors.

The first time you take your blood pressure at home, do it on both arms. After that, use the arm that had the highest numbers.

How to check your blood pressure:

1. Use a cuff that fits your arm (example: adult, large, or extra large). Ask your doctor or nurse what size to use.
2. Rest for 5 minutes before you take your blood pressure.
3. If you drink alcohol, smoke, or exercise, wait for 30 minutes before you take your blood pressure.
4. Sit with your back against a chair and both feet on the floor. Rest your arm on a table at heart level. Don't cross your legs.
5. Take your blood pressure 2 times a day at the same time for 7 days. Save your numbers on the machine or write them down. Show these numbers to your doctor or nurse.

View product ratings of blood pressure monitors at www.pcna.net/patients

Learn about your medicines

Most people with high blood pressure need 2 or 3 medicines to lower blood pressure.

Your doctor or nurse may need to change your medicines to find what works best for you. This is normal.

☑ Check off the things you will do:

- ☐ Ask your doctor or nurse if there is a best time to take your medicines, like before or after a meal, in the morning, or at night.
- ☐ Always use a pill box, even if you only take 1 medicine each day.
- ☐ Ask your family or friends to remind you to take your medicines.
- ☐ Write down your medicines and always carry this list with you. Show it to your doctor or nurse at each visit.
- ☐ At the pharmacy, ask for bottles with large print and tops that are easy to open.
- ☐ If you feel bad after taking a medicine, talk with your doctor or nurse right away.
- ☐ Don't stop taking your medicines until you talk with your doctor or nurse.

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stakeholder insights

Elements Associated with Effective Adoption and Use of a Protocol

Insights from Key Stakeholders

Simple, evidence-based treatment protocols are an essential tool for improving blood pressure control among practices and health care systems. To accelerate the adoption and implementation of protocols, Million Hearts® convened a group of stakeholders who recognize that the use of protocols is key to their success in blood pressure control. Stakeholders consist of protocol owners, key organizations and health care providers who have successfully used protocols within their system. This document is a compilation of comments and insights gained from the stakeholder discussions in fall 2013 about adopting and using hypertension protocols.

Audit and Feedback

- Identify a key influencer to serve as a champion.
- Identify mentors to provide consultation on implementation.
- After baseline data are collected, discuss and set a goal, such as "Increase by 10% the number of hypertensive patients aged 18 years or older whose blood pressure is under control."
- Use an electronic or paper registry that identifies patients with high blood pressure and allows tracking over time.
- Use electronic health records to collate and analyze clinical information.
- Provide regular and timely feedback on performance to the entire health care team.
- Make performance data transparent and learn from those who are reaching the goal.
- Celebrate early wins.

Team-Based Care

- Make hypertension control a priority.
- Fully use the expertise and scope of practice of every member of the health care team: physician, advanced practice nurse, physician's assistant, nurse, hospital and community pharmacist, medical assistant, care coordinator, and others.
- Include the patient and family as key members of the team.
- Conduct pre-visit planning to make the most of the care encounter, such as ensuring that patients bring in their home readings and ask questions or express concerns, including about access to medications and monitoring equipment, adverse effects of medications, and challenges with diet and exercise.
- Learn about community resources and recommend them to patients.
- When hypertension is not controlled, look for opportunities to check in with patients between visits and adjust medication dose as needed.

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Stakeholder insights

Professional and Patient Education

- Provide the health care team with the evidence base for adopting and using protocols.
- Train the health care team on how to use the protocol.
- Offer ongoing training to staff on how to measure blood pressure accurately.
- Calibrate and inspect equipment at regular intervals to ensure correct blood pressure measurement during patient visits.
- Emphasize the value of home blood pressure monitoring.
- Incorporate coaching and self-management into patient education and follow-up visits.

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Million Hearts®

Self-Measured **Blood Pressure** Monitoring

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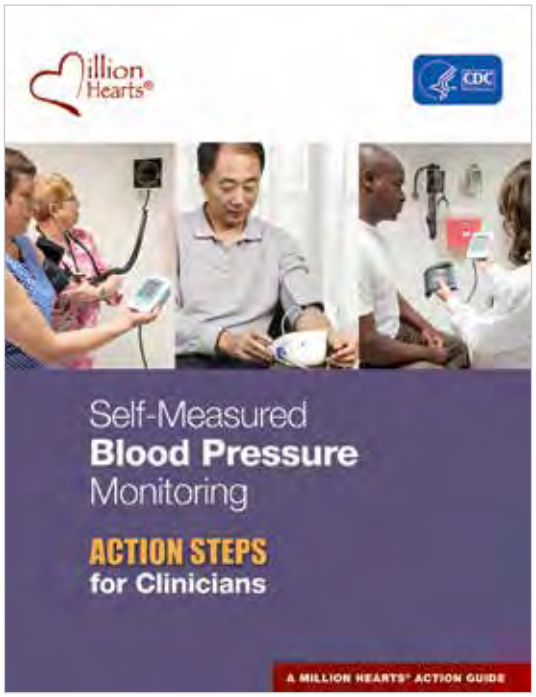
Contents

Executive Summary

Million Hearts® is a U.S. Department of Health and Human Services initiative, co-led by the Centers for Disease Control and Prevention (CDC) and the Centers for Medicare & Medicaid Services (CMS), with the goal of preventing one million heart attacks and strokes by 2017. To help achieve this goal, Million Hearts® aims to increase by 10 million the number of people in the United States whose blood pressure is under control.[1] Self-measured blood pressure monitoring (SMBP) plus additional clinical support* is one strategy that can reduce the risk of disability or death due to high blood pressure. SMBP is defined as regular measurement of blood pressure by the patient outside the clinical setting, either at home or elsewhere. It is sometimes called "home blood pressure monitoring." Additional clinical support includes regular one-on-one counseling, Web-based or telephonic support tools, and educational classes and is further defined on page 9.

This guide provides action steps and resources on SMBP for clinicians and is not meant to replace individual clinical judgment. It includes the following elements:

- Action steps clinicians can take to implement SMBP plus additional support.
- A description of the burden of hypertension.
- A summary of the scientific evidence establishing the significance and effectiveness of SMBP plus additional support.
- An explanation of additional support strategies for SMBP.
- Types and costs of home blood pressure monitors used for SMBP.
- Current health insurance coverage for SMBP.



The purpose of this guide is to facilitate the implementation of SMBP plus clinical support in four key areas: Preparing care teams to support SMBP, selecting and incorporating clinical support systems, empowering patients, and encouraging health insurance coverage for SMBP plus additional clinical support. For each area, the guide lists actions that can facilitate the implementation of SMBP plus additional support. Beside each action step, it provides corresponding electronic resources to assist with these actions. It also includes appendices that describe proper SMBP preparation and technique, clinical support interventions that are effective when used with SMBP, the proper way to check a home blood pressure monitor for accuracy, and the burden and cost of hypertension.

*** In July 2012, the Agency for Healthcare Research and Quality (AHRQ) published a comparative effectiveness review of SMBP. The only finding with strong evidence of effectiveness was the implementation of SMBP with additional clinical support; that is, evidence was not sufficient to support SMBP alone as an effective intervention for improving blood pressure.**

Self-Measured Blood Pressure Monitoring

Definition and Indications

SMBP plus additional clinical support is one alternative to traditional office care that could improve access to care and quality of care for individuals with hypertension while making blood pressure control more convenient and accessible across the population. SMBP, or home blood pressure monitoring, is the regular measurement of blood pressure by a patient at home or elsewhere outside the clinic setting using a personal home measurement device.[2] A Joint Scientific Statement from the American Heart Association (AHA), American Society of Hypertension (ASH), and Preventive Cardiovascular Nurses Association (PCNA) encourages increased regular use of SMBP by clinicians for the majority of patients with known or suspected hypertension[3] as a way to increase patients' engagement and ability to self-manage their condition, enabling the care team to assist in timely achievement and maintenance of control and preventing heart attacks and strokes. It further states that SMBP may be particularly useful in certain types of patients, including the elderly, people with diabetes or chronic kidney disease, pregnant women, and those with suspected or confirmed white coat hypertension.[3]

A Joint Scientific Statement from AHA, ASH, and PCNA encourages increased regular use of SMBP by clinicians for the majority of patients with known or suspected hypertension[3] as a way to increase patients' engagement and ability to self-manage their condition.

Although public education campaigns can encourage patients to monitor their blood pressure at home, clinician support is critical for empowering patients, training them on proper measurement techniques, monitoring home readings, and providing timely advice on needed medication titrations and lifestyle changes.

Action Steps for Clinicians

Clinicians are key to the widespread implementation of SMBP plus additional clinical support. Although public education campaigns can encourage patients to monitor their blood pressure at home, clinician support is critical for empowering patients, training them on proper measurement techniques, monitoring home readings, and providing timely advice on needed medication titrations and lifestyle changes. **This guide provides a comprehensive plan and resources for clinicians who want to support SMBP in their practices and health care systems.** Figure 1 lists evidence-based strategies that clinicians can use to implement a comprehensive SMBP initiative. The strategies are organized into four categories of actions:

- Preparing care teams to engage patients in SMBP (Table 1)
- Selecting and incorporating clinical support systems for SMBP (Table 2)
- Empowering patients to use SMBP (Table 3)
- Encouraging coverage for SMBP plus additional clinical support (Table 4)

By incorporating all of these strategy types into their workflow, clinicians can make SMBP a seamless part of routine care for patients with hypertension.

Figure 1. Steps to Implementing a Comprehensive SMBP Program

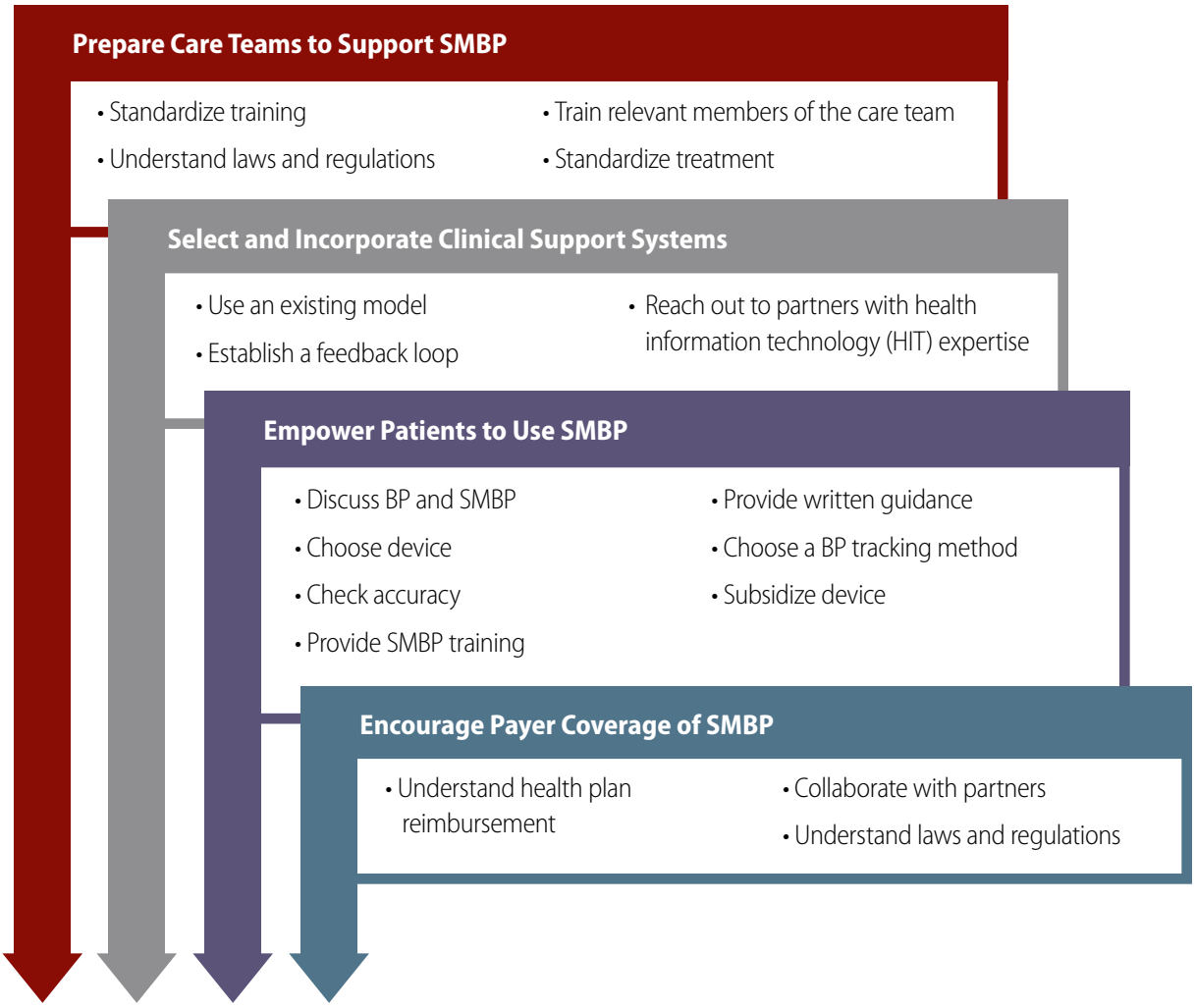


Table 1. Actions to Prepare Care Teams to Support SMBP

Recommended Actions	Resources
Standardize training of clinicians to take blood pressure readings and teach SMBP techniques to their patients. • Conduct an initial clinician competency exam for pertinent staff and new employees to demonstrate proper technique in: ◊ Cuff selection. ◊ Patient positioning. ◊ Measurement without talking. ◊ Accurate observation of the blood pressure level.[4] • Consider additional competency training for all employees at regular intervals.	• Appendix A: Proper SMBP Preparation and Technique • American Medical Group Foundation. Measure Up/Pressure Down Provider Toolkit (p. 13): *http://bit.ly/1rwuHaa* • New England Journal of Medicine. Blood-Pressure Measurement (video): *http://bit.ly/1CnW6RM* • Washington State Department of Health. Improving the Screening, Prevention, and Management of Hypertension—An Implementation Tool for Clinic Practice Teams (pp. 69–100): *http://go.usa.gov/fjq3*
Learn how state laws and regulations relating to scope of practice and licensing of telemedicine providers affect clinician roles in SMBP support (e.g., which clinician types may titrate medications and in which states, and whether telemedicine provider services can cross state lines).	• CDC. Select Features of State Pharmacist Collaborative Practice Laws: *http://go.usa.gov/fbsG* • U.S. Public Health Service. Improving Patient and Health System Outcomes through Advanced Pharmacy Practice: *http://bit.ly/ZFQNAF* • CDC. Self-Measured Blood Pressure Monitoring: Action Steps for Public Health Practitioners: *http://go.usa.gov/fbsz* • American Academy of Physician Assistants. PA Scope of Practice Prescriptive Authority: *http://bit.ly/1xUm2DW* • Barton Associates. NP Scope of Practice Laws: *http://bit.ly/1sW44SE* • HealthIT.gov. Are There State Licensing Issues Related to Telehealth? *http://go.usa.gov/fbM5*
Train relevant team members (e.g., PAs, NPs, nurses, pharmacists) to lead the clinical support piece of SMBP interventions. Clinical support programs should be delivered only by clinicians specifically trained for the intervention.[5] Incorporate this clinical support into existing disease management programs.	• Appendix C: How to Check a Home Blood Pressure Monitor for Accuracy • Clinical Advisor. How to Implement Home Blood Pressure Monitoring: *http://bit.ly/1017uHD*
Implement standardized hypertension treatment protocols and related order sets and referral templates to enable the full care team to titrate medications. • Use preferred clinical guidelines to define entry criteria, treatment goals, preferred medications, and management of side effects.[6–8]	• CDC. Million Hearts® Protocol Resources: *http://go.usa.gov/fbsP* • American Medical Group Foundation. Measure Up/Pressure Down Provider Toolkit (p. 29): *http://bit.ly/1rwuHaa* • Joint National Committee 7: Full Report and Physician Reference Card, Slide Shows, and Free Patient Education Materials: *http://go.usa.gov/fbJH*

Table 2. Actions to Select and Incorporate Clinical Support Systems for SMBP

Recommended Actions	Resources
Explore existing evidence-based clinical support models for SMBP and determine the most feasible type of support for your work environment. Consider: • Staff (e.g., physicians, nurses, PAs, NPs, pharmacists, cardiology department, medical assistants). • HIT capacity (e.g., electronic health record [EHR] functionality, patient portals, secure e-mail). • Budget.	• Appendix B: Clinical Support Interventions That Are Effective with SMBP
Establish a secure feedback loop that follows the Health Insurance Portability and Accountability Act (HIPAA) regulations. Use an existing product or newly developed health information technology for regular communication of SMBP readings and timely treatment advice/adjustments between patients and clinicians. Incorporate it into your EHR system if possible. Examples include: • Secure patient portals that can: ◊ Receive patient SMBP readings. ◊ Request medication refills. ◊ Make appointments. ◊ Use secure messaging to contact health care team members. ◊ Provide clinic visit summaries with instructions for patients when they leave the clinic. • Personal health records that interface with the EHR. • Secure e-mail between patients and clinicians. • Telemedicine devices that transmit readings from patients to clinicians, paired with follow-up counseling. • Handwritten logs that are routinely shared.	• AHA. Heart360 Patient Portal: *http://bit.ly/1rwunYJ* • NextGen. Patient Portal: *http://bit.ly/1wad0DA* • Microsoft HealthVault: *http://bit.ly/1sL0wBo* • HealthIT.gov. Patient Portal Increases Communication Between Patients and Providers: *http://go.usa.gov/fbhR* • Direct Project: *http://bit.ly/1rwuQtZ* • U.S. Department of Health and Human Services. Summary of the HIPAA Privacy Rule: *http://go.usa.gov/fbhd* • Figure 2: Feedback Loop Between Patients and Clinicians Supporting SMBP
Reach out to partners with HIT expertise: • Regional Extension Centers can advise clinicians in all phases of electronic health record implementation. • Health Center Controlled Networks (HCCNs) exchange information and establish collaborative mechanisms to meet HIT and clinical quality objectives. • State departments of health may have informatics or analytic expertise (e.g., epidemiologists, data analysts). • Quality Improvement Organizations (QIOs) support Cardiac Learning and Action Networks that clinicians can join. • Local users' groups for your EHR system may exist in your area.	• HealthIT.gov. Listing of Regional Extension Centers: *http://go.usa.gov/fbHW* • Health Resources and Services Administration. Health Center Controlled Networks: *http://go.usa.gov/fbzT* • State and local government websites and health officials: ◊ State, County, and City Government Website Locator: *http://bit.ly/11q5hG4* ◊ State Associations of County and City Health Officials: *http://bit.ly/1wad6el* • QualityNet. QIO Directories: *http://bit.ly/1npLBvW* • CMS. QIO Fact Sheet: *http://go.usa.gov/fbHC*

Table 3. Actions to Empower Patients to Use SMBP

Recommended Actions	Resources
Discuss with your patients[9]: • The importance of effectively controlling high blood pressure (BP). • The link between measuring BP and controlling high BP. • Adherence to strategies aimed at managing hypertension, such as lifestyle and dietary modifications and medication. • How SMBP enables patients to actively and appropriately manage their BP rather than overmanaging based on a single reading.	• AHRQ. Effectiveness of Self-Measured Blood Pressure Monitoring in Adults With Hypertension: *http://go.usa.gov/fbs4* • AHRQ. Measuring Your Blood Pressure at Home: A Review of the Research for Adults: *http://go.usa.gov/fjqT*
Review the types of available SMBP devices and work with patients to choose the best option.	• Page 11: Home Blood Pressure Monitors and Cuffs Used for SMBP • Clinical Advisor. How to Implement Home Blood Pressure Monitoring: *http://bit.ly/1017uHD*
Check the home device for accuracy by comparing readings to a reliable office device.	• Appendix C: How to Check a Home Blood Pressure Monitor for Accuracy • Clinical Advisor. How to Implement Home Blood Pressure Monitoring: *http://bit.ly/1017uHD*
Train patients on proper SMBP technique. Explain: • How to operate the device. • Patient preparation. • Proper positioning and technique. • When to measure BP (time of day/frequency).	• Appendix A: Proper SMBP Preparation and Technique • American Medical Group Foundation. Measure Up/ Pressure Down Provider Toolkit: *http://bit.ly/1rwuHaa*
Suggest a method patients can use to track BP values: • Electronic trackers: ◊ Patient portal. ◊ Heart360. ◊ Smartphone applications. ◊ Paper trackers Patients should communicate all BP records to a clinician.	• AHA. Heart360 Patient Portal: *http://bit.ly/1rwunYJ* • AHA. Printable Log to Record Home Blood Pressure Measurements: *http://bit.ly/1sUFssq*

Recommended Actions	Resources
Provide written information or videos for patients on how to properly perform SMBP. Include links to online materials in patient portals.	• Washington State Department of Health. How to Check Your Blood Pressure: *http://go.usa.gov/fbhF* • AHA. Instructional Video: Monitoring Blood Pressure at Home: *http://bit.ly/1pffQBp* • AHA. How to Monitor and Record Your Blood Pressure: *http://bit.ly/1vfP4hS*
Provide a contact at the practice for patients to call with questions.	
If patient access/cost is a barrier, purchase high-quality devices in bulk.[10] Sell them to patients at cost, or loan them to patients at no cost.	

Table 4. Actions to Encourage Coverage for SMBP Plus Additional Clinical Support

Recommended Actions	Resources
Understand how the health plans you work with reimburse for SMBP devices and remote counseling services. Medicare Accountable Care Organizations (ACOs) may have the flexibility to cover remote monitoring as an extended benefit under their population management mandate.	• Page 13: Table 7. Current Insurance Coverage/ Reimbursement of Home Blood Pressure Monitors and Additional Support • CDC. Self-Measured Blood Pressure Monitoring: Action Steps for Public Health Practitioners (Appendix A): *http://go.usa.gov/fbsz*
Work with payers, public health practitioners, and professional medical associations to promote coverage of SMBP devices and remote clinical support: • Ask payers to provide benefit coverage for fully automated, upper arm home BP monitors with properly sized cuffs. • Ask payers to reimburse for services related to SMBP, such as time spent training patients on selecting an accurate monitor, proper cuff size, and measurement techniques, as well as time spent checking the monitor for accuracy, interpreting SMBP readings, and providing medication and lifestyle adjustments and counseling. • Healthcare Common Procedure Coding System (HCPCS) code S9110 can be used by private insurers, but not CMS, for home telehealth reimbursement.	• CDC. Self-Measured Blood Pressure Monitoring: Action Steps for Public Health Practitioners: *http://go.usa.gov/fbsz* • Home Health News Source. Information on Code S9110 to Reimburse for Home Telehealth: *http://bit.ly/1rwuPXb*
Understand how state and local laws and regulations relating to scope of practice and telehealth affect reimbursement for aspects of SMBP support (e.g., which clinician types can be reimbursed for remote counseling).	• Page 13: Table 7. Current Insurance Coverage/ Reimbursement of Home Blood Pressure Monitors and Additional Support • National Conference of State Legislatures. State Coverage for Telehealth Services: *http://bit.ly/1wacS6X* • CDC. Self-Measured Blood Pressure Monitoring: Action Steps for Public Health Practitioners (Appendix A): *http://go.usa.gov/fbsz*

Burden of Hypertension

Prevalence and Consequences of Hypertension

Hypertension is the most common reason for a person with any chronic condition to visit a clinician,[11] and it is a major risk factor for heart disease, stroke, and kidney disease. Even small increases in blood pressure increase the risk for cardiovascular disease and mortality; the risk of death from ischemic heart disease and stroke doubles for every 20 mmHg increase in systolic blood pressure (SBP) or 10 mmHg increase in diastolic blood pressure (DBP).[3,12,13] Hypertension affects almost one-third of American adults aged 18 or older (72 million people) and is uncontrolled in nearly half of those (35 million people).[14] This population with uncontrolled hypertension represents a large pool of patients for whom clinicians could consider further clinical intervention, including SMBP. For more information on the burden and cost of hypertension, see Appendix D.

> Replacing some face-to-face primary care visits with other forms of care, such as electronic and phone communication, could make care safer and more effective, patient-centered, timely, and efficient.[22]

Health Reform and the Health Care System

The clinical care workload is expected to increase by 29% between 2005 and 2025 as 80 million baby boomers retire and become Medicare eligible[15]; currently, 68% of people over the age of 65 have hypertension.[14] Moreover, the volume of hypertensive patients in the primary care system[16] is expected to increase with the expansion of insurance coverage to more than 30 million U.S. residents through the Patient Protection and Affordable Care Act[17] by 2019. At the same time, the United States is facing a shortage of primary care physicians, warranting new models of care to improve preventive care delivery and reduce time pressures on physicians.[15,18–21]

Face-to-face visits will likely continue to be an important form of interaction for relationship building and physical examination, but many face-to-face visits may not be wanted or needed. Replacing some face-to-face primary care visits with other forms of care, such as electronic and phone communication, could make care safer and more effective, patient-centered, timely, and efficient.[22] Electronic, telephonic, and other forms of non-face-to-face communication also may allow clinicians to spend more of their time improving the quality of the face-to-face visits that do occur.[22]

Traditional office-based and fee-for-service models of health care delivery and payment reimburse clinicians only for office-based visits and services. Thus, new delivery and care models, such as patient-centered medical homes, ACOs, and bundled/episode-based payments, are needed.[23] These models may provide opportunities for health plans to promote SMBP plus clinical support interventions through unique features such as incentives, care management fees, and shared savings/risk tied to performance on quality measures.[24] For SMBP interventions to be successful at a population level, clinicians must have innovative methods to streamline data into user-friendly reports so they can focus care delivery.[25]

Evidence for SMBP Plus Additional Clinical Support

A 2012 comparative effectiveness review by AHRQ examined the effectiveness of SMBP alone compared to SMBP plus additional support to usual care.[2,26] Patients using SMBP at home only took readings themselves or had a caretaker take them. They then shared the readings with

clinicians in a variety of ways. AHRQ found strong evidence that SMBP plus additional clinical support was more effective than usual care in lowering blood pressure and improving control among patients with hypertension.[2] In the studies AHRQ examined, all six "quality A" trials reported statistically significant reductions in blood pressure among patients using SMBP plus additional support (see Appendix B for a detailed table of select effective clinical support interventions). The mean net reduction in SBP ranged from 3.4 to 8.9 mmHg, and the mean net decrease in DBP ranged from 1.9 to 4.4 mmHg at up to 12 months follow-up.[27–32]

Additional Clinical Support Strategies for SMBP

The type of additional support in the studies AHRQ examined varied widely but fell into three main categories: regular one-on-one counseling,[7,28,29,31,33,34] Web-based or telephonic support tools that did not involve face-to-face interaction,[27,30–32,35,36] and educational classes.[29,37,38]

- **One-on-one counseling:** Examples included regular telephone calls from nurses to manage blood pressure–lowering medication[7] and in-person counseling sessions with trained pharmacists.[34]
- **Web-based or telephonic support:** Examples included an interactive computer-based telephone feedback system[30] and secure patient website training plus pharmacist care management delivered through Web communications,[31] 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,[29] and small-group classes on SMBP technique and lifestyle changes that help lower blood pressure, taught by PAs.[37]

> AHRQ found strong evidence that SMBP plus additional clinical support (defined below) was more effective than usual care in lowering blood pressure and improving control among patients with hypertension.[2]

More research is needed to determine whether one form of support is most effecitve.[2] However, with one exception, all forms of additional support in the trials that successfully lowered patients' blood pressure were administered by clinicians (e.g., pharmacists, NPs, PAs) specifically

Common Elements of Successful SMBP Support

Many different kinds of SMBP plus additional support interventions have successfully lowered blood pressure in patients with hypertension. Common elements of successful SMBP plus additional support interventions for patients are[7,27–38]:

- Delivery of intervention by trained clinicians (e.g., pharmacists, NPs, PAs, health educators).
- Regular patient communication of SMBP readings to clinicians.
- A patient/clinician "feedback loop" in which clinician support and advice are customized based on patients' reported information (see Figure 2).

When SMBP is done at home, it could help reduce hypertension-related disparities among vulnerable populations because clinicians can collect information about patients' blood pressure, medications, and health behaviors without requiring them to pay for and travel to a doctor's office for every blood pressure reading.[7,27–32,35,37]

trained to deliver the intervention, and the intervention content was adjusted based on patients' reported SMBP readings. Upon additional analysis of the interventions, multiple common elements were noted across all types of clinical support (see Common Elements of Successful SMBP Support below).[7,27–38]

If maintained over time, interventions using SMBP plus additional support could contribute to improved blood pressure control for many patients with hypertension. The delivery and components of successful SMBP plus additional clinical support interventions vary widely, and this flexibility may mean clinicians can implement interventions across numerous health care settings and patient populations. However, more formal evaluation of these approaches is needed.

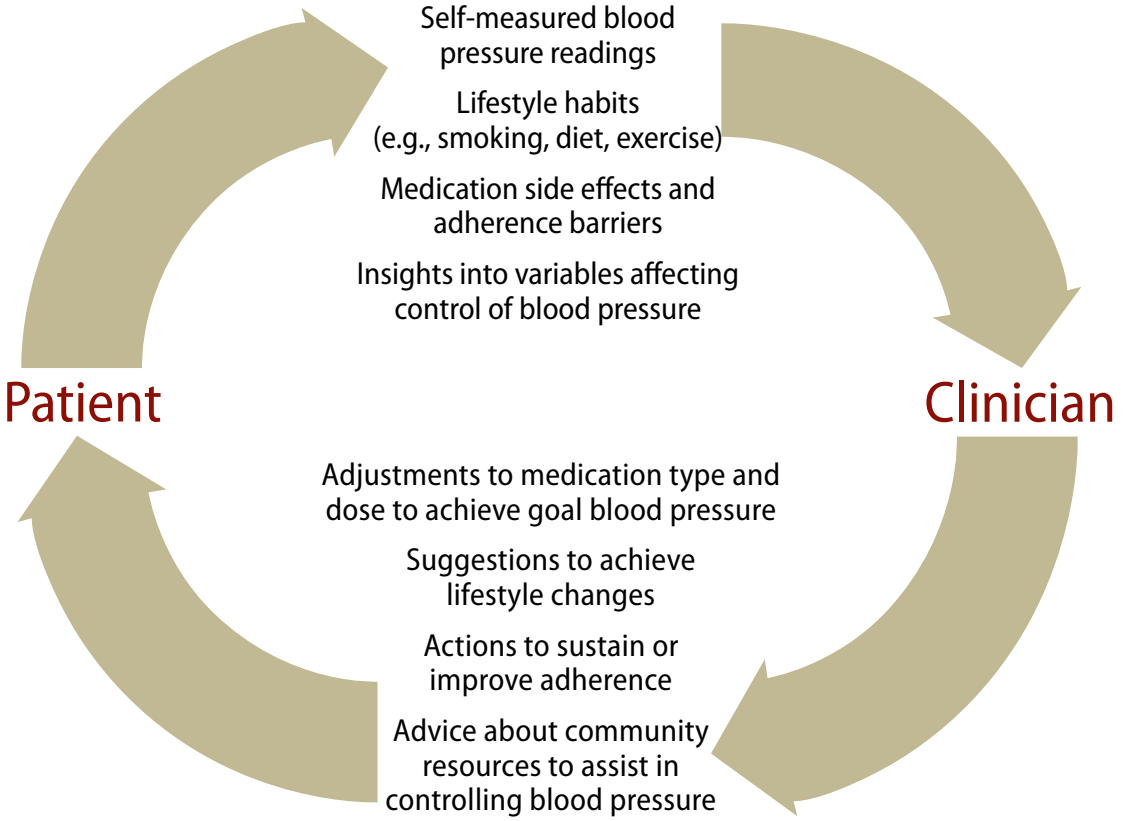


Figure 2.
Feedback loop between patients and clinicians supporting SMBP

Some studies suggest that when SMBP is done at home, it could help reduce hypertension-related disparities among vulnerable populations because clinicians can collect information about patients' blood pressure, medications, and health behaviors without requiring them to pay for and travel to a doctor's office for every blood pressure reading.[7,27–32,35,37] One challenge is the current requirement that clinicians deliver services in person to be reimbursed. This may become less of an issue as payment models transition from fee-for-service to pay-for-value. See Table 7 for information on current coverage.

Home Blood Pressure Monitors and Cuffs Used for SMBP

Available home blood pressure monitors range from manual (auscultatory) devices to partially or fully automated (oscillometric) devices.[39] Automated devices require less skill than manual devices, are widely available, and are likely to reduce the risk of error in home blood pressure measurements.[3,39] Although upper arm, wrist, and finger monitors are available, upper arm monitors are recommended by AHA, ASH, and PCNA, among others, for accuracy of measurement.[39]

Patients should expect to pay in the range of $50 to $100 for an accurate upper arm home blood pressure monitor.[3,40] Wrist cuffs may be used as an alternative for patients who are obese or have other difficulties using upper arm cuffs, but the accuracy of readings may be inconsistent.[3] Finger cuffs are not accurate and should not be used.[3,39] For a summary of preferred home blood pressure monitor features, see Table 5.

To choose the best option for the patient, consider

- Preferred monitor characteristics (Table 5).
- Cuff size measurement (Table 6).
- Insurance coverage (Table 7).

Clinicians should encourage patients to bring home blood pressure monitors in for comparison with in-office readings taken by a trained clinician (see Appendix C for detailed instructions). Such visits are also a good opportunity to educate patients and their family members about the proper use of their SMBP devices (see Appendix A). Patients with atrial fibrillation or other types of irregular heartbeat (arrhythmias), as well as those with certain physical or mental conditions, may have difficulty taking accurate readings using automated home blood pressure monitors.[3] However, this does not mean that

Table 5. Preferred Characteristics of a Home Blood Pressure Monitor[3]

Preferred	Not Preferred
Automated	Manual
Upper arm cuff	Wrist cuff*
Properly sized cuff	Too-large or too-small cuff
Memory storage capacity	No memory storage
Printing capacity	No printer
Ability to upload BP readings to computer or other electronic device	No ability to upload
Accuracy checked by clinician after purchase	Patient uses monitor without consulting clinician

* Wrist cuffs may be used as an alternative for patients who are obese or have other difficulties using upper arm cuffs, but the accuracy of readings may be inconsistent.

Table 6. Proper Cuff Size for Accurate Measurement of Blood Pressure[4]

Adult Arm Circumference	Recommended Cuff Size
22–26 cm / 8.7–10.2 in	12 × 22 cm (small adult)
27–34 cm / 10.6–13.4 in	16 × 30 cm (adult)
35–44 cm / 13.8–17.3 in	16 × 36 cm (large adult)
45–52 cm / 17.7–20.5 in	16 × 42 cm (adult thigh)
> 52 cm / 20.5 in	Wrist cuff

SMBP is contraindicated in these patient populations. Rather, clinicians must remember that these patients' blood pressure values may vary depending upon where systole occurs during the measurement.[41]

The most common error in blood pressure measurement is use of an improperly sized cuff. The bladder length recommended by the AHA is 80% of the patient's arm circumference, and the ideal width is at least 40%.[4] See Table 6 for recommended cuff sizes.

For correct cuff placement, the midline of the cuff bladder (commonly marked on the cuff by the manufacturer) should be positioned over the arterial pulsation in the patient's upper arm following palpation of the brachial artery in the antecubital fossa. For an obese patient whose arm does not easily fit inside a standard cuff, a wrist cuff may be preferable, as long as proper technique is followed.[4]

Experts from AHA, ASH, and PCNA have recommended that payers cover both the purchase of validated home blood pressure monitors and the time that clinicians spend training patients in SMBP techniques, validating patients' measurement techniques, interpreting SMBP readings, and providing counseling based on SMBP readings.[3]

New Technology in Blood Pressure Monitoring

Increasing use of technology has resulted in many mobile blood pressure monitoring devices that can be used with smartphones, tablets, etc. One example of these devices is a mobile arm cuff that plugs directly into a smartphone and, with a downloadable application, can measure and record blood pressure onto the phone. Multiple companies are beginning to market such devices, some of which are FDA approved or validated with the EHS test protocol. Cuffless blood pressure monitoring using heartbeat and pulse data captured with smartphone microphones is another new technology being developed.[42] Most of these strategies have not yet been properly validated by international standards. Another type of device that is widely available is the blood pressure kiosk, often found in pharmacies, worksites, and retail stores. Current kiosks may be inaccurate and unreliable.[43] These machines allow patients to save their blood pressure readings and track them over time or share them with their clinicians. Such devices could play a large role in SMBP in the future, but current research in this area is limited.

Current Insurance Coverage of Home Blood Pressure Monitors and Additional Support

Insurance benefits for SMBP vary by payer: for example, some payers may cover monitors but not additional support services provided by clinicians. Traditional office-based and fee-for-service models of health care delivery and payment reimburse clinicians only for office-based visits and services (see Table 7). For patients whose insurance does not cover the purchase of home blood pressure monitors, the cost of a monitor may be reimbursed under a health care flexible spending account.[44]

Conclusion

Clinicians can play an integral role in the widespread implementation of SMBP plus additional clinical support. Clinician support is key to seamlessly integrate SMBP plus clinical support into routine care by changing systems and empowering patients. This guide provides a comprehensive plan and resources for clinicians who want to support SMBP in their practices and health care systems, outlining four categories of evidence-based strategies that clinicians can use to implement a comprehensive SMBP initiative:

- Preparing care teams to support SMBP.
- Selecting and incorporating clinical support systems.
- Empowering patients to use SMBP.
- Encouraging coverage for SMBP plus additional clinical support.

By incorporating actions from these strategies into their regular workflow, clinicians can make SMBP plus clinician support a regular part of patient care, which can improve outcomes for patients with hypertension.

Table 7. Current Insurance Coverage/Reimbursement of Home Blood Pressure Monitors and Additional Support

Coverage Type	Benefits
Medicare Part B (Traditional fee-for-service Medicare)	• Covers ambulatory blood pressure monitoring.[3] • Covers physician interpretation of results for the diagnosis of white coat hypertension.[3] • Does not cover home blood pressure monitors used for SMBP. • Does not cover clinician interpretation of readings for treatment of hypertension.
Medicare Part C (Medicare Advantage Plans)	• Not mandated, but may cover supplemental coverage of home blood pressure monitors or additional support programs for enrollees.[45]
Medicaid	• Coverage for home blood pressure monitors and additional support varies by state.
Private insurance carriers and self-insured employers	• Decision to cover home blood pressure monitors and additional support is made by each individual plan • Some private insurance plans provide these types of benefits only for beneficiaries who are enrolled in disease-management programs for hypertension or other medical conditions that increase the risk of heart disease and stroke.[46] • HCPCS code S9110 can be used by private insurers, but not CMS, for home telehealth reimbursement.

Resources

For Clinicians

AHA. Heart360 Patient Portal: *http://bit.ly/1rwunYJ*

AHRQ. Effectiveness of Self-Measured Blood Pressure Monitoring in Adults With Hypertension: *http://go.usa.gov/fbs4*

AHRQ. Self-Measured Blood Pressure Monitoring: Comparative Effectiveness: *http://go.usa.gov/fbsk*

American Academy of Physician Assistants. PA Scope of Practice Prescriptive Authority: *http://bit.ly/1xUm2DW*

American Medical Association. Physician Resource Guide to Patient Self-Management Support: *http://bit.ly/1rdFq9z*

American Medical Group Foundation. Measure Up/Pressure Down Provider Toolkit: *http://bit.ly/1rwuHaa*

ASH. Hypertension Guidelines: Eight Sets of Guidelines from U.S., European, and International Societies: *http://bit.ly/1npL1hw*

Barton Associates. NP Scope of Practice Laws: *http://bit.ly/1sW44SE*

CDC. Million Hearts® Protocol Resources: *http://go.usa.gov/fbsP*

CDC. Select Features of State Pharmacist Collaborative Practice Laws: *http://go.usa.gov/fbsG*

CDC. Self-Measured Blood Pressure Monitoring: Action Steps for Public Health Practitioners: *http://go.usa.gov/fbsz*

Clinical Advisor. How to Implement Home Blood Pressure Monitoring: *http://bit.ly/1017uHD*

CMS. QIO Fact Sheet: *http://go.usa.gov/fbHC*

Direct Project: *http://bit.ly/1rwuQtZ*

HealthIT.gov. Are There State Licensing Issues Related to Telehealth? *http://go.usa.gov/fbM5*

HealthIT.gov. Listing of Regional Extension Centers: *http://go.usa.gov/fbHW*

HealthIT.gov. Patient Portal Increases Communication Between Patients and Providers: *http://go.usa.gov/fbhR*

Health Resources and Services Administration. Health Center Controlled Networks: *http://go.usa.gov/fbzT*

Home Health News Source. Information on Code S9110 to Reimburse for Home Telehealth: *http://bit.ly/1rwuPXb*

Joint National Committee 7: Full Report and Physician Reference Card, Slide Shows, and Free Patient Education Materials: *http://go.usa.gov/fbJH*

Microsoft HealthVault: *http://bit.ly/1sL0wBo*

National Association of Community Health Centers. Health Center Information: *http://bit.ly/1stbBFL*

National Conference of State Legislatures. State Coverage for Telehealth Services: *http://bit.ly/1wacS6X*

New England Journal of Medicine. Blood-Pressure Measurement (video): *http://bit.ly/1CnW6RM*

NextGen. Patient Portal: *http://bit.ly/1wad0DA*

QualityNet. QIO Directories: *http://bit.ly/1npLBvW*

Robert Wood Johnson Foundation. Partnering in Self-Management Support: A Toolkit for Clinicians: *http://bit.ly/1wLoqMc*

State Associations of County and City Health Officials: *http://bit.ly/1wad6el*

State, County, and City Government Website Locator: *http://bit.ly/11q5hG4*

The Community Guide. Cardiovascular Disease Prevention and Control: Team-Based Care to Improve Blood Pressure Control: *http://bit.ly/ZFQGVZ*

U.S. Department of Health and Human Services. Summary of the HIPAA Privacy Rule: *http://go.usa.gov/fbhd*

U.S. Public Health Service. Improving Patient and Health System Outcomes through Advanced Pharmacy Practice: *http://bit.ly/ZFQNAF*

Washington State Department of Health. How to Check Your Blood Pressure: *http://go.usa.gov/fbhF*

Washington State Department of Health. Improving the Screening, Prevention, and Management of Hypertension—An Implementation Tool for Clinic Practice Teams: *http://go.usa.gov/fjq3*

For Clinicians to Give to Patients

AHA. Blood Pressure Monitoring: *http://bit.ly/11q5Gs8*

AHA. How to Monitor and Record Your Blood Pressure: *http://bit.ly/1vfP4hS*

AHA. Instructional Video: Monitoring Blood Pressure at Home: *http://bit.ly/1pffQBp*

AHA. Printable Log to Record Home Blood Pressure Measurements: *http://bit.ly/1sUFssq*

AHRQ. Measuring Your Blood Pressure at Home: A Review of the Research for Adults: *http://go.usa.gov/fjqT*

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Appendix A: Proper SMBP Preparation and Technique

Proper patient positioning is important for blood pressure accuracy (Table 8). In addition, exercise, smoking, alcohol consumption, muscle tension, urinary bladder distension, room temperature, and background noise can affect measurement. Table 9 shows the effects of these factors on blood pressure readings.

Suggested SMBP Measurement Protocol

To help manage blood pressure for patients with uncontrolled hypertension, clinicians can use SMBP readings to help assess the effects of antihypertensive treatment, including medication changes and lifestyle modifications. Multiple international guidelines[47–51] suggest that the optimal protocol for obtaining an accurate picture of a patient's blood pressure using SMBP includes

- Taking two or three measurements, each 1 minute apart, in the morning and again in the evening.
- Monitoring blood pressure preferably for 7 days and at least for 3 days.
- Recording an average of these measurements.

Guidance on how often well-controlled hypertensive patients should perform regular SMBP as part of long-term follow-up remains a matter of debate. Thus, there is a need for future research on this topic.

Retraining Clinicians

To maintain correct blood pressure measurement technique, clinicians must pay careful attention to all steps in the protocol and to retraining. Federally funded multisite clinical trials of hypertension care and control have set the standard for retraining, requiring all blood pressure observers to be retrained at regular intervals. Retraining involves checking a clinician's competency in several aspects of measurement technique[4]:

- Cuff selection.
- Patient positioning.
- Allowing no talking.
- Accurate auditory or visual observation of the patient's blood pressure level.

Table 8. Proper Patient Positioning for Blood Pressure Accuracy[4]

• Have the patient sit quietly for 5 minutes before taking blood pressure.
• Place the cuff on a **bare arm**.
• Use the **proper size cuff**. If two cuff sizes fit, use the larger one.
• Place the artery marker over the **brachial artery**.
• Apply the cuff carefully, allowing room for no more and no fewer than **two fingers** underneath.
• Make sure the patient's **back is supported and relaxed**.
• Make sure the patient's **feet are supported and legs are uncrossed**.
• Keep the **upper arm supported, relaxed, and at heart level**.
• Ask the patient the **keep the arm still and not talk** during the measurement.

The American Medical Group Foundation created a toolkit of materials on how to train direct care staff to properly take blood pressure measurements. The toolkit can be found on the group's Measure Up/Pressure Down website (*http://bit.ly/1rwuHaa*); "Plank 1" includes the following tools for training direct care staff in accurate blood pressure measurement:

- Hypertension Medical Assistant Training
- Checking Blood Pressures Nursing Competency
- Competency Checklist Blood Pressure Measurement
- Competency Checklist Orthostatic Blood Pressure Measurement
- Correct Blood Pressure Measurement Technique Handout
- Blood Pressure Measurement: What Not to Do
- Blood Pressure Measurement: The Proper Way
- New Employee Blood Pressure Measurement Competency Checklist
- Blood Pressure Champion and CDS Education and Auditing Process for New Staff
- Quarterly Blood Pressure Auditing Tool
- Blood Pressure Accuracy and Variability Quick Reference
- Staff Engagement Poster
- Correct Blood Pressure Technique Poster

Table 9. Blood Pressure Variability[52]

Factor	Systolic (mmHg)
Cuff too small	10–40 ↑
Cuff over clothing	10–40 ↑ or ↓
Back/feet unsupported	5–15 ↑
Legs crossed	5–8 ↑
Arm tense	15 ↑
Not resting 3 to 5 minutes	10–20 ↑
Anxiety/white coat hypertension	As much as 30 ↑
Patient talking	10–15 ↑
Labored breathing	5–8 ↑
Full bladder	10–15 ↑
Pain	10–30 ↑
Arm below or above heart level	10 ↑ or ↓ For every 1 cm above or below heart level, blood pressure varies by 0.8 mmHg.
Factor	**Diastolic (mmHg)**
Arm extended and unsupported	Diastolic ↑ 10%

▷ Accurate Blood Pressure Measurement Video

Appendix B: Clinical Support Interventions That Are Effective with SMBP

Implementing an already-investigated model that you believe is promising and feasible for your practice can help reduce heterogeneity in SMBP monitoring and additional support protocols you use. The table below lists examples of additional support interventions that have been successfully implemented in a variety of settings. AHRQ conducted a comparative effectiveness review that included 24 studies; the review found the interventions in 11 of these studies to be effective. Table 10 below includes interventions from four studies rated "quality A", AHRQ's highest quality rating, according the AHRQ's review methodology; two "quality A" studies were not included because their interventions could not feasibly be translated into clinical practice. Two additional effective studies were published after the AHRQ review; they were deemed "quality A" by two independent reviewers and are thus included in the table. None of the studies found to have ineffective interventions employed the interventions in the table. All studies provided patients with a free, automated, upper arm cuff home blood pressure monitor and proper training on SMBP. Please refer to individual studies for full descriptions of the study populations, interventions, and results.

Table 10. Additional Support Interventions for Implementation in a Variety of Settings

Additional Support Intervention	Intervention Staff	BP Measurement Frequency	HIT/BP Transmission	Cost
Telephone-based nurse counseling at regular intervals, covering lifestyle modification and medication adherence[28]	Nurse Primary care physician (PCP)	3 days a week, once a day in the morning	A telemedicine device connected to the home BP monitor transmitted readings to a server, which compiled reports and sent them to the PCP and nurse.	No cost data available
Nurse-delivered patient-specific behavioral intervention OR nurse- and physician-led medication management intervention OR combination of both[29]	Nurse PCP	Every 2 days	A telemedicine device connected to the home BP monitor transmitted readings to a server.	$947 for behavior management $1,275 for medication management $1,153 for combination
Patient portal Web training + automated reminders + counseling and medication management by pharmacists[25]	Clinical pharmacy specialist PCP	At least three times a week	Patients uploaded BP readings to Heart360 patient portal connected to office EHR.	No cost data available

Additional Support Intervention	Intervention Staff	BP Measurement Frequency	HIT/BP Transmission	Cost
Telemonitoring of BP readings + pharmacist counseling and medication management via phone[53]	Pharmacist PCP	At least six readings a week (three in the morning and three in the evening)	The BP monitor transmitted readings via modem to a secure website	Direct program costs: $1,045/ patient for 12 months. About half was for care management services; remainder was for telemedicine services (discounted rate).
Web training + pharmacist care management to develop action plan and medication management, delivered through Web communications[31]	Clinical pharmacist PCP	At least 2 days a week (two measurements each time)	Patients e-mailed BP readings to physicians.	No cost data available
Telemonitoring of home BP measurements with clinician alert + self-titration of antihypertensive drugs following titration schedule designed by PCP[32]	PCP	Two measurements per morning (5 minutes apart), daily for 1 week each month	A telemedicine device connected to the home BP monitor transmitted readings.	No cost data available

Appendix C: How to Check a Home Blood Pressure Monitor for Accuracy

The first step in choosing an accurate monitor is to choose one that has passed a formal validation protocol; all SMBP devices sold in the United States meet Food and Drug Administration–required testing standards.[4] However, even a device that has passed an accepted validation test will not provide accurate readings in all patients; the error may be consistently ±5 mmHg in many individuals, especially elderly or diabetic patients.[4] For this reason, clinicians should encourage patients to take any home blood pressure monitor they use to their doctor's office to measure its accuracy against a mercury sphygmomanometer or comparable device before the readings are accepted. A simple version of the European Society of Hypertension International Protocol has been developed for this purpose and can be done quickly by the physician or other health care clinician and the patient.[3] The following steps to ensure accuracy take approximately 10 minutes[4]:

1. Have the patient sit down with his or her arm at heart level. The arm should be completely relaxed.[13,41]
2. Allow the patient to rest for 5 minutes.[41]
3. Avoid any conversation during the measurements to prevent an increase in blood pressure.[41]
4. Take a total of five sequential same-arm blood pressure readings, no more than 30 seconds apart.[41]
5. Have the patient take the first two readings with his or her device.[41]
6. The healthcare clinician takes the third reading, preferably with a mercury sphygmomanometer or comparable device.[41]
7. Have the patient take the fourth reading.[41]
8. The fifth and final reading is taken by the healthcare clinician.[41]
9. Compare the difference between the readings from the two cuffs.
10. BP readings will usually decline over the five measurements. The final SBP reading may be as much as 10 mmHg systolic BP lower than the first.[41]
11. If the difference is 5 mmHg or less, the comparison is acceptable.
12. If the difference is greater than 5 mmHg but less than 10 mmHg, do the calibration again.
13. If the difference is greater than 10 mmHg, the device may not be accurate.
14. Repeat this procedure annually.[41,54] Though there is no established target for how close the readings from the patient's cuff should be to those from the clinician's cuff, this exercise can provide a general sense of the SMBP device's accuracy, which can be taken into consideration for future measurements recorded at home.[41] To further ensure accuracy, consider statically calibrating the clinic and home devices following the National Health and Nutrition Examination Survey (NHANES) Health Tech/Blood Pressure Procedures Manual.[55]

Appendix D: Additional Burden and Cost of Hypertension

Of the 35 million people in the United States with uncontrolled hypertension

- Approximately 13 million are not aware that they have hypertension.
- Approximately 5 million are aware of their hypertension but are untreated.
- Approximately 17 million are aware of their hypertension and are on treatment, but their hypertension is still uncontrolled (see Figure 3).[14]

Costs of Hypertension

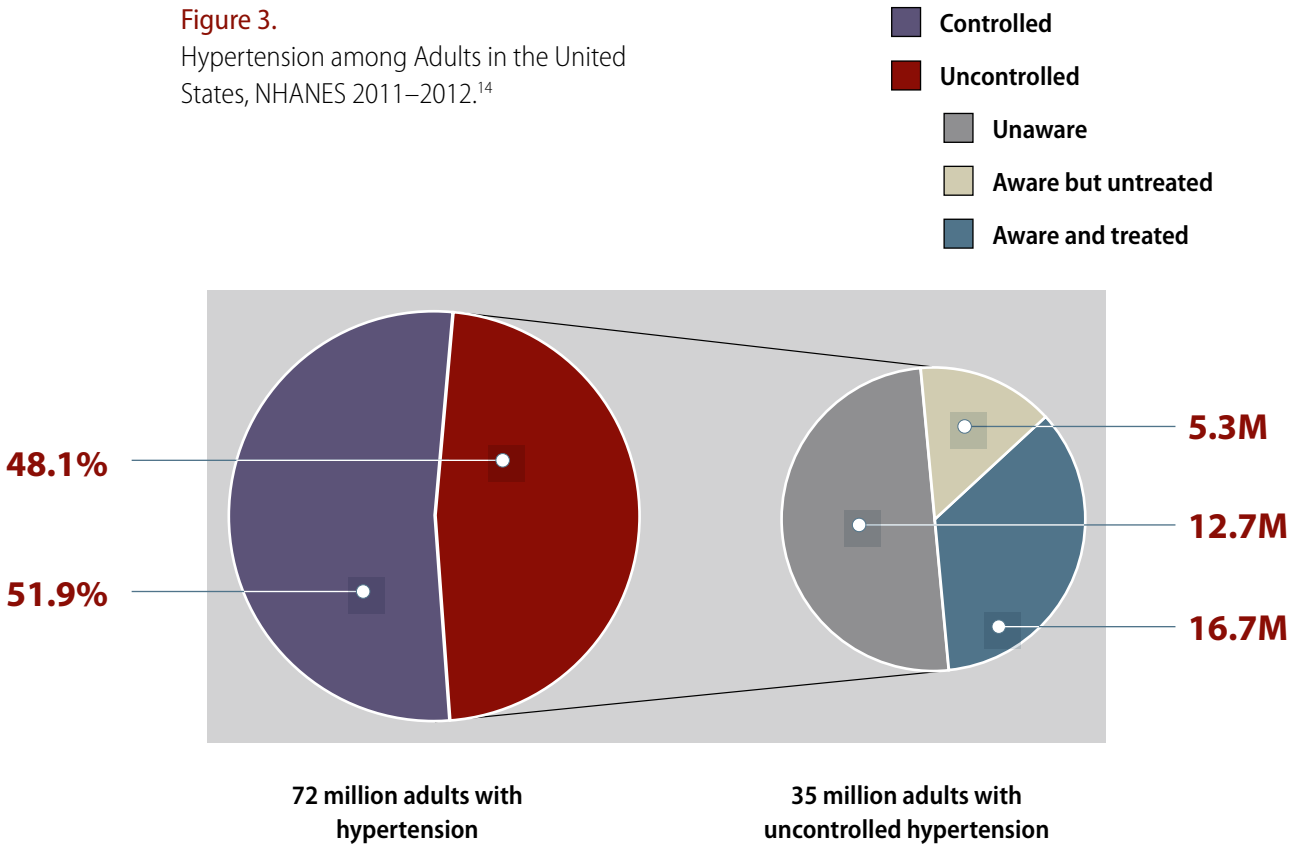
Along with increased cardiovascular morbidity and mortality, hypertension is associated with increased use of health care resources.[13] Direct health care costs related to hypertension amount to approximately $131 billion each year.[56] Moreover, treatment for cardiovascular disease is estimated to account for 12% of annual spending by both private insurers and Medicaid and for nearly 30% of annual Medicare spending.[57]

Hypertension-attributable costs are almost 7% of total medical expenditures in the United States.[4] A 2007 study using the 2000–2003 Medical Expenditure Panel Survey estimated that the hypertension-attributable cost per person with hypertension was $1,598[57]:

- $781 per person receiving Medicare.[57]
- $1,608 per person receiving Medicaid.[57]
- $845 per person with private insurance.[57]

The prevalence of untreated and uncontrolled hypertension does not arise from a lack of health care coverage. Of adults with uncontrolled hypertension, more than 28 million have health insurance (see Figure 4), 30 million have a usual source of care, and almost 25 million have been seen by physicians at least twice in the last 12 months.[14]

Figure 3.
Hypertension among Adults in the United States, NHANES 2011–2012.[14]



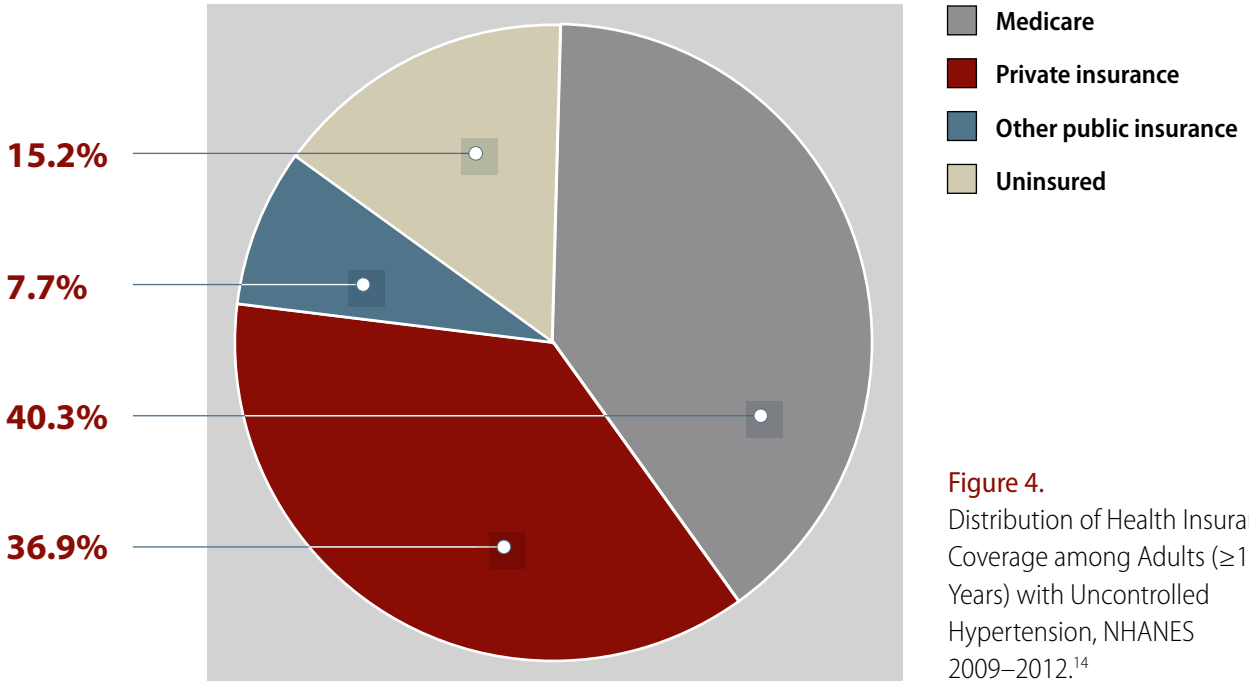


Figure 4.
Distribution of Health Insurance Coverage among Adults (≥18 Years) with Uncontrolled Hypertension, NHANES 2009–2012.[14]

Acronyms

ACA	Patient Protection and Affordable Care Act
ACO	Accountable care organization
AHA	American Heart Association
AHRQ	Agency for Healthcare Research and Quality
AMGF	American Medical Group Foundation
ASH	American Society of Hypertension
BP	Blood pressure
CDC	Centers for Disease Control and Prevention
CMS	Centers for Medicare & Medicaid Services
EHR	Electronic health record
FDA	Food and Drug Administration
FSA	Flexible spending account
HCCN	Health Center Controlled Network
HIPAA	Health Insurance Portability and Accountability Act
HRSA	Health Resources and Services Administration
HIT	Health information technology
MUPD	Measure Up/Pressure Down
NHANES	National Health and Nutrition Examination Survey
NP	Nurse practitioner
PA	Physicians assistant
PCMH	Patient-centered medical home
PCP	Primary care physician
PCNA	Preventive Cardiovascular Nurses Association
QIO	Quality improvement organization
REC	Regional extension center
SMBP	Self-measured blood pressure monitoring

Million Hearts® is a U.S. Department of Health and Human Services initiative that is co-led by the Centers for Disease Control and Prevention and the Centers for Medicare & Medicaid Services, with the goal of preventing one million heart attacks and strokes by 2017.

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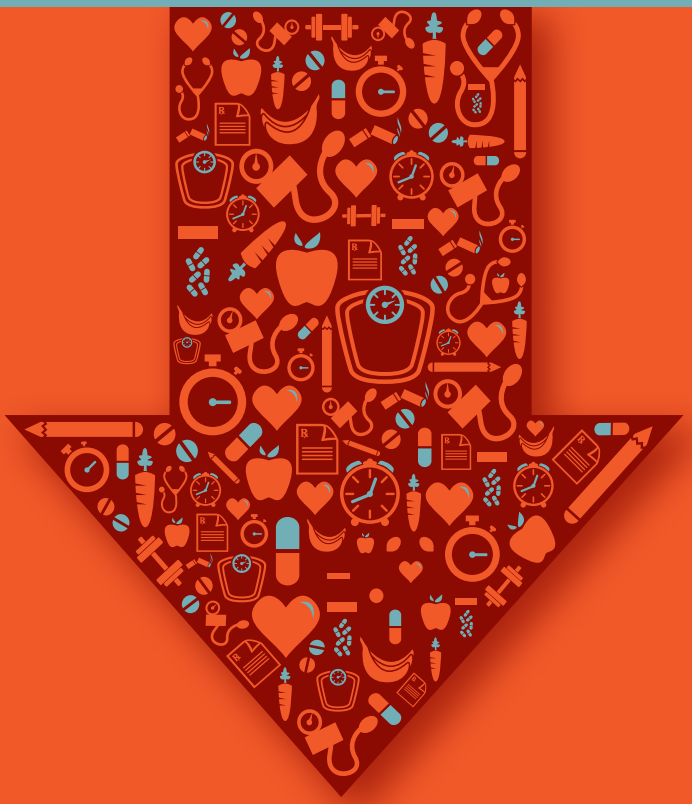
A JOURNAL TO HELP YOU MANAGE HIGH BLOOD PRESSURE



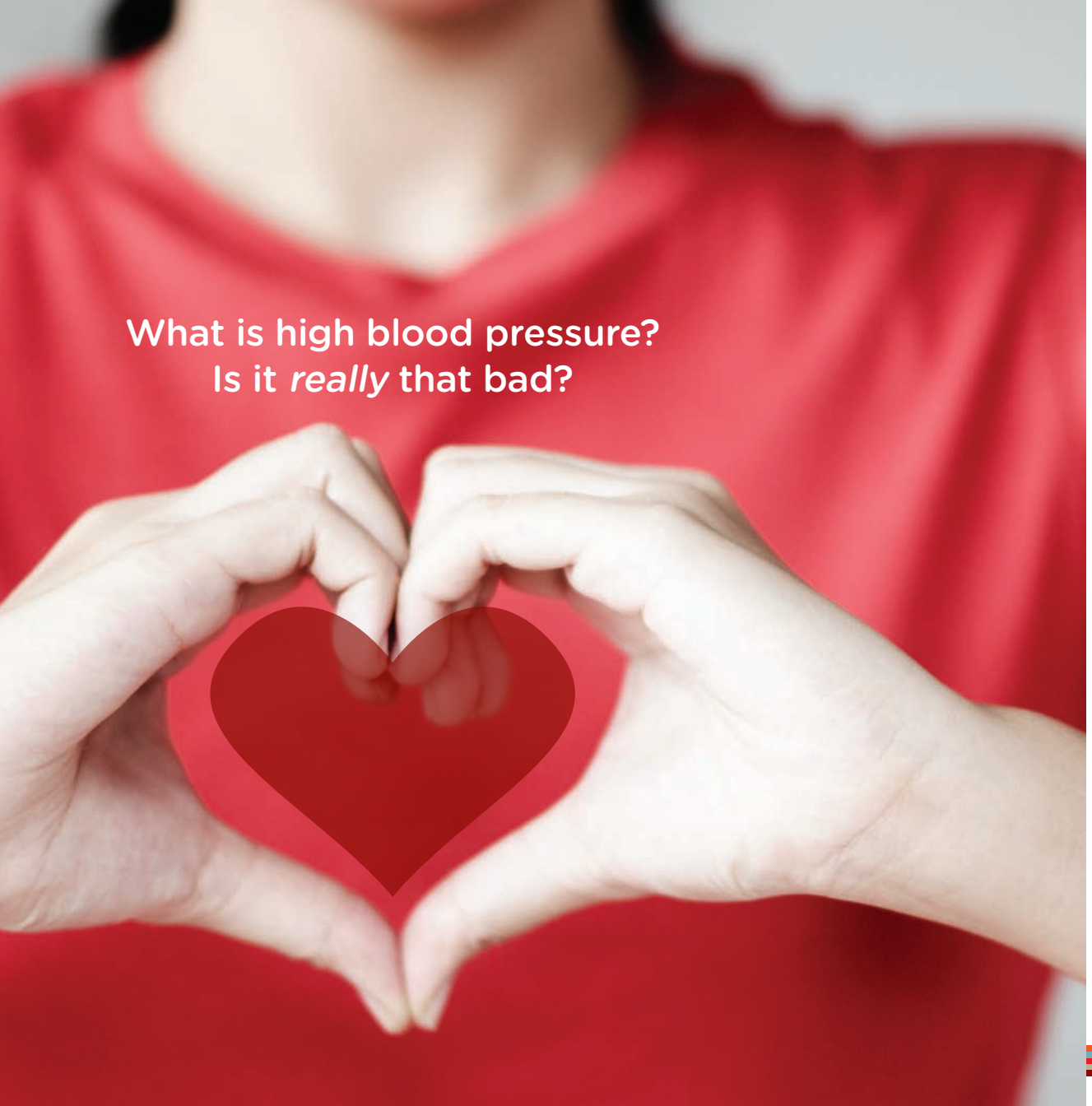
Blood pressure can be controlled. Make it a team effort.

High blood pressure, also called hypertension, raises your risk of heart disease, stroke, and other serious conditions. So it's very important to take the medication your doctor has prescribed. Those are the first steps to getting your high blood pressure under control.

You also need the support of family, friends, and health care professionals, such as your pharmacist. Your pharmacist can help answer questions about high blood pressure, your medications, and offer tips to help you maintain a healthy blood pressure.

With the help of this journal, you'll learn how you can manage and control your high blood pressure. You will also learn what questions to ask your pharmacist or doctor if you are worried about your condition or medication. And, you'll get tips on healthy habits that can help save your life. Use this journal on a daily basis to help you reach your blood pressure and health goals.

So team up with your pharmacist, doctor, and loved ones to get—and keep—your high blood pressure down.



What is high blood pressure? Is it *really* that bad?

If you have high blood pressure, you're not alone. About 67 million U.S. adults have high blood pressure. Nearly half do not have it under control. High blood pressure, a common cause of heart attack and stroke, contributes to nearly 1,000 deaths a day.

"Blood pressure" measures the force of your blood pushing against the walls of your arteries. Your blood pressure naturally goes up and down throughout the day. If it remains high for a long time, you could have high blood pressure.

High blood pressure is unsafe because it makes your heart work harder to pump blood. This can cause damage to the arteries and makes you more likely to experience a heart attack or stroke.

What causes high blood pressure?

The causes of high blood pressure vary from person to person. Risk factors, such as certain traits, conditions, and habits, can raise your risk. There are two types of risk factors: those you can control and those you cannot control.

For some people, certain medical conditions and medications can cause or add to the risk. For others, habits such as smoking or drinking too much alcohol may cause high blood pressure.

Risk factors you can control include:

- Being over a healthy body weight
- Eating too much salt
- Drinking too much alcohol
- Not being physically active
- Smoking
- Too little potassium
- Diabetes
- Stress

Risk factors you cannot control include:

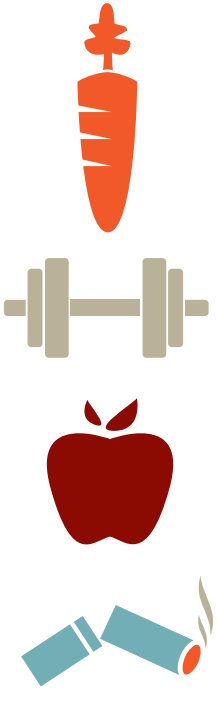
- **Age.** Blood pressure tends to rise as people get older.
- **Race/ethnicity.** High blood pressure is more common among African Americans than Caucasians or Hispanic-American adults.
- **Gender.** Fewer adult women have high blood pressure than adult men.
- **Family history.** You are more likely to have high blood pressure if someone in your family has it.

What are the signs of high blood pressure?

High blood pressure is also called the "silent killer," because many people have it for years and don't know it. Often, high blood pressure has no warning signs. By the time it is noticed, it may have already caused serious damage to the heart, blood vessels, and more.

The good news is, when discovered early, high blood pressure can be treated and controlled.

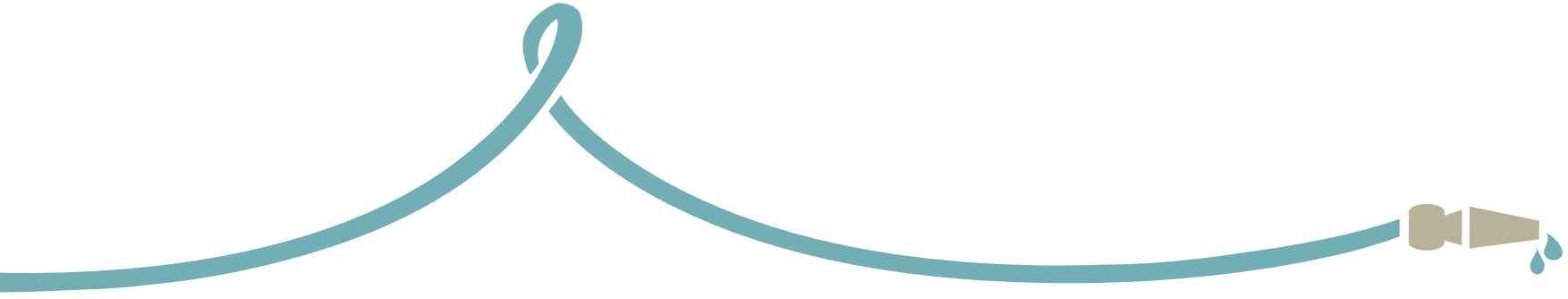
Lifestyle changes can help lower and maintain a healthy blood pressure. Staying on a healthy diet, being physically active, keeping a healthy weight, and not smoking can help you stop or delay problems related to high blood pressure. Keep in mind, the more risk factors you have, the more likely you are to get high blood pressure.



How is high blood pressure measured?

When you get your blood pressure taken by a professional, it's helpful to know what is being measured. You should also know what it means for your health and how you can track your blood pressure regularly.

Blood pressure is when the heart fills up with blood and then squeezes to push the blood into the blood vessels. Your blood pressure is made up of two numbers—systolic pressure and diastolic pressure. The systolic pressure measures the total pressure it takes the heart to pump blood to the body. When the heart relaxes between beats and fills again with blood, this is diastolic pressure. Blood pressure numbers are written with the systolic number above or before the diastolic number, such as 140/90 mmHg. It is usually measured in millimeters of mercury (mmHg).



Work with your pharmacist or doctor to learn what your numbers mean for your health. Depending on your starting level of systolic blood pressure you can, lower your risk of heart attack or stroke by bringing that number down by at least 5mmHg.

To help you picture how blood pressure works, think of water running through a garden hose.

The hose is your blood vessels, and the water running through it is your blood. Just as you need plenty of water to grow your garden, your cells need enough blood to circulate in your body to carry oxygen and other things the body needs to stay alive. If you were to turn on the water to your garden hose, you would see it flow freely from one end to the other.

Now, if you were to narrow the flow of water by squeezing or stepping on the hose, the water pressure would build up. The faucet has to "work harder" to get the water through the hose to your garden. This causes extra stress on the faucet, which could cause it to leak or break and not work correctly. Similarly, if you have high blood pressure, it is like squeezing the garden hose. This makes your heart work harder to pump blood and your blood pressure rises. The extra work your heart has to do can cause stress on your heart and lead to a heart attack or stroke.

Who takes my blood pressure?

Taking your blood pressure is easy and painless. Your doctor or nurse will take it each time you visit—and maybe more than once. It is also important for you to regularly monitor your blood pressure. Many pharmacies have blood pressure machines where you can test yourself. You can also buy an easy-to-use blood pressure monitor from your drug store to use at home. To get the best picture of your blood pressure, measure it twice a day for at least a week. Take it once in the morning before you take any medications, and again in the evening.

It's important to take the readings at the same time each day, because your blood pressure changes during the day, and tends to rise when you are excited, nervous, or active. Here are a few steps you can take to make sure your blood pressure reading is correct:

- Don't drink coffee or smoke cigarettes for at least 30 minutes before the test. Doing either can cause a brief rise in blood pressure. Keep in mind, smoking is a common cause of high blood pressure. If you do smoke, there are steps you can take to quit. Visit **http://millionhearts.hhs.gov** for tips and resources.
- Be sure to go to the bathroom before the test. A full bladder can affect your blood pressure reading.
- Sit quietly for five minutes before the test. Movement can cause a brief rise in blood pressure.

Save your numbers on the machine, write them down in the chart on the next page, or record them on the wallet card available at http://millionhearts.hhs.gov. Include the time of day and how and where the reading was taken. Take these numbers along the next time you visit your pharmacist or doctor to help him/her determine if your medications are working well.

TIP: Make copies of this page before you write down your first reading, so you'll have clean copies for future use.

DATE/TIME	LOCATION	BLOOD PRESSURE
DATE: TIME:		
DATE: TIME:		
DATE: TIME:		
DATE: TIME:		
DATE: TIME:		
DATE: TIME:		
DATE: TIME:		
DATE: TIME:		
DATE: TIME:		
DATE: TIME:		
DATE: TIME:		
DATE: TIME:		
DATE: TIME:		

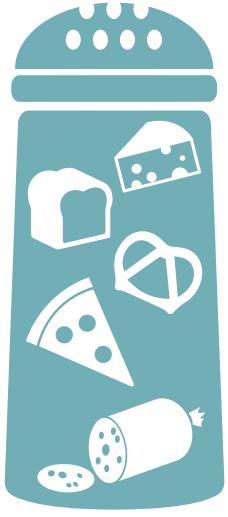
How is high blood pressure controlled?

For some people, making healthy changes in their lives can help lower blood pressure. For others, medication may be needed as well. If your doctor gives you one or more medications as part of a treatment plan, be sure to take them as directed.

Awareness and treatment are the best chances you have to control your high blood pressure and avoid a heart attack or stroke. Work with your pharmacist and doctor to make a plan that works best for you.

Some blood pressure medications work to remove fluid and sodium (salt) from the body. Too much sodium in your diet can cause your body to hold in fluid, which can raise blood pressure.

You can reduce your sodium levels by eating less canned and processed foods, ordering healthy meals when you eat out, and seasoning your food with herbs and spices instead of salt.



Other medications slow your heartbeat and relax blood vessels to improve blood flow. Your doctor will prescribe the type of medication that is best for you.

It is unlikely that you will have serious side effects from blood pressure medications. If you do have side effects that are troubling or don't go away, be sure to talk to your pharmacist or doctor right away before you stop taking your medications as prescribed. They may change the dose or give you a different medication that will work better for you.

DATE	PRESCRIPTION MEDICATION

Your pharmacist can help you manage your high blood pressure.

Did you know that your pharmacist can answer your general high blood pressure questions, and even help you take your blood pressure? Your pharmacist is not only trained to fill your prescriptions, but can help you better understand your condition and the medications you are taking.

If you are starting medication for the first time or if your treatment has changed, talk to your pharmacist. Here are some questions you may want to ask:

- What is the name of my medication? Is that the brand name or generic name?

- What is the dosage of the medication? Are there any special instructions? How will it react in my body?

- Can this medication be taken with other prescription and nonprescription medications?

- Should this medication be taken with or without food? Are there any foods or drinks to stay away from when taking this medications?

- What should I do if I take too much or miss a dose of this medication?

- What side effects should I watch for? If I contact you about possible side effects will you share that information with my doctor or do I need to contact my doctor separately?

- Should I make sure to stay away from certain activities while taking this medication?

- What time of day should I take my medication?

- Are there any other things (such as blood pressure cuffs, pain medication, or vitamins) that may help me manage my blood pressure?

- What can I do if I lose or run out of medication?

- Where can I find out more about this drug(s) or my condition (on the Internet or in health and medical articles)?

- Where on my pill bottle can I find the above information?

Notes from my talk with my pharmacist:

Questions for my pharmacist on my next visit:

It's hard to remember to get your medications refilled. Use the space below to write important information about your prescription and pharmacy. Use the space below to list information from the label of your pill bottle(s). It will help you keep all the important information about your medication and your pharmacy in one place when you go to refill your medications.

MY RX NUMBER(S):	
PHARMACIST NAME:	
PHARMACY PHONE NUMBER:	

MY RX NUMBER(S):	
PHARMACIST NAME:	
PHARMACY PHONE NUMBER:	

MY RX NUMBER(S):	
PHARMACIST NAME:	
PHARMACY PHONE NUMBER:	

MY RX NUMBER(S):	
PHARMACIST NAME:	
PHARMACY PHONE NUMBER:	

Taking your medications as directed.

There are many reasons why you may not take your medications as prescribed, but remember it is very important to follow your doctor's directions. Ask your pharmacist to remind you what your doctor told you about your prescription. Not taking your medicines as prescribed can have a serious impact on your overall health. If you are concerned about bad reactions or side effects, the high cost, or are overwhelmed by the number of medicines you have to take, talk with your pharmacist. He/she can discuss them with your doctor and together they might suggest:

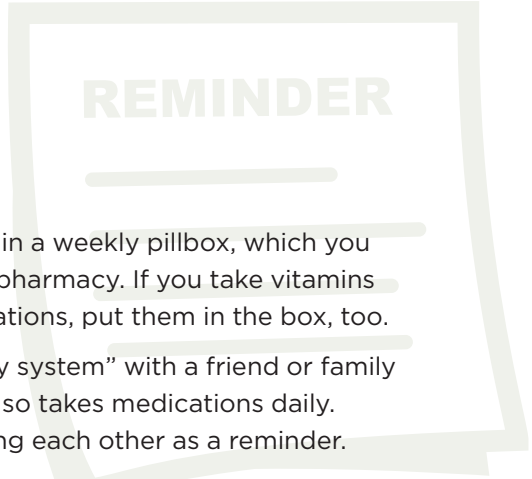
- Other prescription medications or over-the-counter treatments that may have fewer side effects.

- Ways to simplify your daily medication routine to cut down on the number of times a day and/or medications you take.
- Generic medications available at a lower cost, or recommend a prescription assistance program to help you afford your medication.

What if I miss a day of taking my medications?

In general, missing one day isn't serious. Ask your pharmacist what to do if that happens. Of course, it's best to take your medicine(s) regularly and as prescribed. Here are some helpful ways to remind yourself:

- Keep your medications somewhere that you will see them—on the night-stand or next to your toothbrush.
- Take them at the same time(s) every day, and connect them with established routines like brushing your teeth.
- Put "sticky notes" on the refrigerator, bathroom mirror, or front door.



- Place your pills in a weekly pillbox, which you can find at the pharmacy. If you take vitamins or other medications, put them in the box, too.
- Set up a "buddy system" with a friend or family member who also takes medications daily. Take turns calling each other as a reminder.
- If you have a computer or cell phone, set a reminder or sign up for a free service that will send you a daily reminder e-mail.
- Remember to refill your prescriptions. Make a note to order more medication one week before you run out.
- Ask your pharmacy if they have an automatic refill service or if they can call and remind you when refills are due.
- If you are going on a trip, count out the number of pills you'll need to make sure you have enough. Make sure you take the original labeled containers with you, in case you need to tell someone about the medications you're taking.

Are there natural ways to control blood pressure?

Medication is not and should not be the only way of managing high blood pressure. Lifestyle changes play a big part in controlling blood pressure—especially when combined with medication. Team up with your loved one and engage in healthy activities to reduce blood pressure. Here's what you can do:

- **Enjoy a healthy diet.** Include plenty of fruits, vegetables, whole grains, low-fat dairy, fish, lean meats and poultry. Also make sure to get plenty of potassium. Bananas, orange juice, raisins, and baked potatoes are rich in potassium.
- **Eat a low-sodium diet.** Sodium (salt) raises blood pressure by keeping fluid in the body. Look carefully at the labels of processed foods (canned soups and frozen dinners), which are often very high in sodium. If you are 51 or older, limit sodium to 1,500 milligrams a day or less.
- **Keep your weight down.** Losing even five pounds can lower blood pressure.
- **Get moving.** Being active helps control weight and contributes to better circulation. Take quick-paced walks around the neighborhood or mall to be sure you're getting at least 2 hours and 30 minutes of exercise each week.
- **Limit alcohol.** No more than one drink a day for women and two drinks a day for men.
- **Don't smoke.** If you do, consider quitting.
- **Manage stress.** Learn muscle relaxation and deep-breathing skills, and get plenty of sleep.

Remember to "team up, pressure down."

Through medication, healthy life changes, and working closely with your health care team, you can get—and keep—your blood pressure under control. That's a message to take to heart.

Glossary

Here are some commonly used terms that relate to high blood pressure and/or your medication.

Atherosclerosis: The hardening and narrowing of the arteries. This can block arteries and limit blood flow.

Cardiovascular disease: Refers to conditions that involve narrowed or blocked blood vessels. It can result in a heart attack, chest pain, or stroke.

Blood pressure monitor: A device used to measure blood pressure. It consists of an arm cuff, dial, pump, and valve.

Diastolic blood pressure: The pressure of blood in the blood vessels when the heart is relaxed between beats. It is the "bottom number" in a blood pressure reading. For example, if your blood pressure is 140 over 90 or 140/90, the diastolic measurement is 90.

Heart attack: Damage to the heart muscle from lack of blood flow for a long time.

Heart disease: The broad term that refers to several different types of heart conditions.

Hypertension: High blood pressure.

Stroke: Damage to brain tissue from a cutoff of the blood supply in the brain. The lack of blood can be caused by clots that block blood flow, or by bleeding in the brain from a burst blood vessel or a major injury.

Systolic blood pressure: The pressure of blood in the blood vessels when the heart beats or squeezes blood into the vessels. It is the "top number" in a blood pressure reading. For example, if your blood pressure is 140 over 90 or 140/90, the systolic measurement is 140.

Million Hearts™
Team Up. Pressure Down.

Team up with a spouse or loved one to help bring your blood pressure down.

You're working with your doctor and pharmacist to take care of your blood pressure. But there is a key third member to your health care team: your spouse or other loved one. This person can help you with the day to day support needed to help you manage your condition, medications, and lifestyle changes.

So take out this page from your journal and have an honest talk with your team member. You can discuss the kind of support you can give each other.

Learn more how you can help at http://millionhearts.hhs.gov

Million Hearts™ @MillionHeartsUS

Team up to help keep your loved one's blood pressure down.

Your loved one needs your support to help manage his/her high blood pressure (also called hypertension). If left uncontrolled, it can lead to more serious issues including a potentially fatal heart attack or stroke. Here are some ways you can be part of the team:

- Help your loved one remember to take his/her high blood pressure medications as directed by the doctor. Work with him/her to set up a schedule or routine. This will help ensure medications are taken as prescribed and doses are not missed.
- If needed, help keep track of doctors' visits and prescription refill dates.
- Help your loved one regularly check his/her blood pressure. There are blood pressure machines in the pharmacy or grocery store that are free to customers. There are also at-home monitors for purchase that allow your loved one to keep track of their numbers between visits to the doctor or pharmacist. Help your loved one take readings at the same time each day, such as morning and evening. Encourage him/her to track the readings in the journal and speak with the pharmacist or doctor if his/her blood pressure is high. The pharmacist or doctor can recommend or make changes to his/her treatment.
- Help your loved one with important lifestyle habits such as maintaining a healthy weight. This will help lower blood pressure and reduce risk for other health problems. Get ideas for how to encourage your loved one to engage in healthy activities in upcoming sections.
- Remember that as a spouse and/or loved one, you're a key team member and source of support. Use the space below to write down any notes from your discussion with the pharmacist, or any questions you might have for them during your next visit to the pharmacy:

Team up with the pharmacist.

The pharmacist is also an important member of your loved one's health care team. Talk with the pharmacist—he/she is there to help. Here are some tips on getting started:

- **Meet the pharmacist.** Go with your loved one to the pharmacy when a prescription is ready. Ask to speak to the pharmacist and let him/her know how you are part of your loved one's health care team.
- **Bring a list of medications.** Write down a list or bring all past and current medications your loved one takes. This includes prescriptions, over-the-counter medications, and vitamins used on a normal basis. Share this list with the pharmacist. Talk with the pharmacist about any possible side effects and to make sure the medications are safe to take with each other.
- **Ask questions.** The pharmacist is an expert on medications and how they work. Refer to page 21 of your loved one's journal for some questions to ask.

Million Hearts™
Team Up. Pressure Down.

Don't forget, you, your loved one, the doctor, and the pharmacist are all on the same team. The team that will help get—and keep—your loved one's blood pressure down.

Learn more how you can help at
http://millionhearts.hhs.gov

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Pharmacist Drug Adherence Work-up Tool (DRAW©)

PATIENT INFO: Name _____ Age_____ ☐ Male ☐ Female **METHOD OF WORK-UP:** ☐ In Person ☐ Over the Phone

Directions: Choose **four** of the patient's medications where adherence may be a problem. For each medication, ask each question, and **check the circle for a "YES" response**. For each YES, consider the suggested actions using the guides on the next page. Take action and document it in the space provided.

Pharmacist initials _____ **Date of work-up** _____ **How long did this DRAW work-up take?** _____ **(minutes)**

PATIENT INTERVIEW	YES	SUGGESTED ACTIONS	ACTION TAKEN OR PLAN
1. Please tell me how you take your medication every day.	N/A	Verify adherence; Identify any discrepancies; Add to their knowledge	
2. Do you feel like you have too many medications or too many doses per day?	○	Reduce number of meds per day by stopping/ changing medications; Simplify regimen — A C D	
3. Do you sometimes forget to take your medication on routine days?	○	Adherence aid, alarm or specialized packaging; Med calendar; Memory aid; Rule out anticholinergic meds — A E	
4. Do you forget on non-routine days such as weekends or when traveling?	○		
5. Are you concerned that your medication is not helping you?	○	Patient education; Guided counseling — B C	
6. Do you feel that you do not need this medication?	○		
7. Have you had any side effects?	○	Guided counseling; Switch medications; Symptom management; Adjust regimen — B C	
8. Are you concerned about side effects?	○		
9. Is the cost of this medication too much?	○	Switch to less costly medication; cost reduction strategy — D	
PHARMACIST: **10.** At any time during this interview, did you sense an issue about decreased cognitive function?	○	Rule out anticholinergics; Discuss with other area providers; Referral to assistance resource; Recommend or support medication assistance including aids and/or caregivers — A E	
11. Is there a limitation on instrumental activities of daily living to affect adherence and/or use of adherence aids?	○		
FOLLOW-UP: • **If any non-adherence issue exists, schedule a follow-up.**	○	Plan a follow-up; Discuss at next refill, follow-up phone call, face-to-face visit — F	

Million Hearts™
Team Up. Pressure Down.

Pharmacist Drug Adherence Work-up Tool (DRAW©)

A

Reminder tools, adherence aids or alarms range from helping the patient set a cell phone alarm to an automated medication dispensing machine. Aids typically organize, prompt or both. To view a wide range of compliance aids, go to **www.epill.com**.

- Use specialized organizers, such as the day/time pill containers;
- Use of special blister packs if available;
- Institute a medication calendar if patient can and will use it.

Simplifying regimen includes:

1. Using long acting drugs where possible
2. Reducing number of medications

B

Patient education addresses any identified knowledge deficiencies. Refrain from reiterating that their physician ordered it. Positive reinforcement of the benefits sounds better than being told about the negative outcomes from non-adherence.

C

Guided counseling addresses concerns about the effectiveness or necessity of the medication.

- Helping a person resolve their medication issues requires you to listen well and understand their concerns in order to work with the patient.
- Use open-ended questions to understand their concerns and motivations. Example: Ask, "On a scale of 1 to 10, 10 being the most important, how important is it that you take this medication?" If the score is low, a follow-up question could be, "What can I do to help you raise your score to a 9 or 10?" Upper range is used to induce a dialogue with patient.
- Listen for indicators of the patient's DESIRE, their ABILITY, their REASONS, and their NEED to make changes. Also listen for their COMMITMENT and TAKING STEPS to make changes. When you hear these, they are motivators or actions to encourage.
- For more information, see **www.motivationalinterview.org.**

Symptom management:

- Consider if the symptoms are consistent with side effects of medications the patient is taking.
- Consider if the symptoms need to be treated or if there is a need to make a change in treatment.
- For memory decline, refer to section E.

D

Cost reduction strategies:

- Reducing number of medications
- Use of combination drugs when possible
- Tablet splitting
- Generic substitution
- Therapeutic interchange

E

Cognitive issues: Patient may require additional assistance from alternative care givers such as a competent relative, visiting nurse, assisted living, other community resources that provide assistance for daily activities in order to maintain medication regimen. Action options include 1) referral to a geriatric assessment unit, 2) discussion of available options with other area providers with appropriate referral to a local resource. Maintaining a current list of local and/or best available resources is recommended.

Anticholinergics: Consider whether or not: 1) anticholinergics could be contributing to cognitive memory decline, 2) any cholinesterase inhibitors are being counteracted by anticholinergics. Consider a substitute for the anticholinergic medication and recommend physician/patient resolution.

Instrumental activities of daily living (IADL): Consider if the patient is able to prepare their meals, phone for refills, or use an adherence aid without assistance. Consider any visual restrictions, quality of hearing, as well as their dexterity when considering the type of compliance aid. The ability to recognize the correct medication is essential. A caregiver may need to implement one or more aids. Maintaining a current list of local and/or best available resources is recommended.

F

Follow-up: Adherence interventions require a follow-up visit with your patient to verify ease of use, usefulness and effectiveness of the intervention method(s) employed.

Presión arterial alta
Cómo hacer que controlarla sea su meta

¿Sabía usted que...?

De los 67 millones de estadounidenses adultos que tienen presión arterial alta, 16 millones saben que tienen este problema y reciben tratamiento, pero su presión arterial sigue estando demasiado alta.

Una encuesta reciente de los Centros para el Control y la Prevención de Enfermedades descubrió que más de la cuarta parte (26.1 %) de la población hispana informó tener presión alta.

Casi el 30 % de aquellos con presión arterial alta no tomaba los medicamentos que podrían reducir su riesgo de tener un ataque cardiaco o un accidente cerebrovascular.

De usted depende mantener su presión arterial alta bajo control, pero no tiene por qué ser una tarea abrumadora. Puede dar pasos pequeños y fáciles de manejar para que controlar su presión arterial se convierta en **su** meta. Aquí le ofrecemos algunos consejos para lograrlo.

Involucre a todos los profesionales de la salud que lo atienden

Controlar la presión arterial es un trabajo de equipo. Involucre a todos los profesionales de la salud que lo atienden (no solo a su médico de cabecera o cardiólogo). El farmacéutico, el cardiólogo, el personal de enfermería y los demás especialistas de la salud pueden ayudarlo a controlar la presión arterial alta.

La próxima vez que vaya al médico, lleve una lista con las preguntas que quiera hacerle al profesional de la salud. Por ejemplo:

- ¿Qué presión arterial debo a aspirar a tener?
- ¿Cuáles son las mejores maneras de alcanzar esa meta?
  - Cuéntele lo que ya está haciendo con el fin de tener la presión arterial bajo control, como hacer ejercicio, cambiar su alimentación o tomar medicamentos según se lo hayan indicado.
  - Sea honesto y realista con usted mismo y con el equipo de profesionales de la salud acerca de los cambios en el estilo de vida que está preparado para hacer y los que todavía no está preparado para hacer.
  - Fíjese una meta y comience a trabajar para alcanzarla. Cuando logre alcanzarla y tenga más confianza en sus capacidades, fíjese otra meta.

Tome los medicamentos sistemáticamente

El equipo de profesionales a cargo de su salud ha elaborado un plan de medicamentos específico, para ayudarlo a controlar su presión arterial. Si bien quizás no recuerde tomar los medicamentos todos los días o, tal vez, los efectos secundarios le causen dificultades, recuerde que los medicamentos son importantes para controlar la presión arterial y mantenerla en los niveles deseados.

Estos son algunos consejos que lo ayudarán a cumplir con su plan de medicamentos:

- Hable con su médico acerca de los efectos secundarios que tenga debido a los medicamentos. De ser necesario, hablen sobre otras opciones de tratamiento. **Nunca abandone el tratamiento por su cuenta.**

La historia de Estela

Estela se sentía mareada y débil, tenía dolores de cabeza constantes y, frecuentemente, no tenía apetito. Como sus síntomas le preocupaban cada vez más, programó una visita al médico. Durante la visita, el médico le diagnosticó presión arterial alta. Eso ocurrió hace 34 años. Desde entonces, ha hecho cambios en su estilo de vida para controlar su afección.

La primera prioridad de Estela fue cambiar su alimentación. Dejó de comer alimentos fritos y evitó el consumo de sal. A los 74 años, Estela lleva una vida activa y disfruta de hacer caminatas y pasar tiempo con sus nietos. Su familia juega un papel importante en ayudarla a mantener su presión arterial bajo control. La ayudan a preparar comidas saludables, le recuerdan que tome los medicamentos y la acompañan a las visitas médicas. Estela se atiende con el mismo médico desde hace más de 25 años, por lo que confía en la relación que tienen y le gusta que los dos trabajan juntos para controlar su presión arterial alta. Estela —con el apoyo de su familia y su médico— convirtió al control de la presión arterial en su meta y lleva una vida más feliz y más sana.

- Haga un cronograma y establezca un sistema para recordar tomar los medicamentos regularmente, por ejemplo, utilizar un pastillero para colocar todas las píldoras de cada día o usar una aplicación en el teléfono inteligente que le recuerde que debe tomar los medicamentos.
  - Si su seguro de salud le ofrece el servicio de entrega por correo, utilícelo y pida que le envíen medicamentos para 90 días.
  - Si no tuviera este servicio disponible, pida que le entreguen todos los medicamentos el mismo día del mes en una sola farmacia para poder recogerlos todos juntos.

Vigile su presión arterial

¿Qué presión arterial aspira a tener? Prepare un plan para tomar la presión arterial regularmente, no solo en el consultorio del médico, sino también en su casa o en la farmacia. Lleve un diario o registro de los resultados para así vigilar su progreso.

Elija opciones saludables

- El ejercicio puede ser una excelente manera de ayudar a controlar la presión arterial. Busque un lugar seguro donde pueda caminar o hacer actividad física. Aumente la duración y la intensidad de la actividad física a medida que vayan progresando.
- Compre más frutas y verduras frescas y granos enteros, y menos alimentos preparados con alto contenido de sodio, colesterol, grasas saturadas y grasas *trans.*
- Aprenda a leer las etiquetas y elija los alimentos que tengan menos sodio. Reducir el sodio reducirá también la presión arterial.
- Deje de fumar. Hay muchas herramientas disponibles para ayudarlo a dejar de fumar. Llame al 1-855-DÉJELO-YA (seleccione la opción 2 para hablar con un representante en español) o visite **smokefreeespañol** para recibir asistencia.

Encuentre y descargue otros materiales que lo ayudarán a controlar la presión alta en el sitio web **Million Hearts® en español**.

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espanol.millionhearts.hhs.gov

Supporting Your Patients with High Blood Pressure
Visit Checklist

Questions to Ask

Consider using these to get a discussion going:

- What have you been doing since our last visit to control your blood pressure?
- What concerns you the most about your high blood pressure?
- What specifically would you like to work on to manage your high blood pressure?
- How confident are you that you could do [behavior] to help control your blood pressure?
- What might get in the way or keep you from being successful?
- What do you think would make it easier to control your high blood pressure?

Million Hearts® is a national initiative to prevent 1 million heart attacks and strokes by 2017. It is led by the Centers for Disease Control and Prevention and the Centers for Medicare & Medicaid Services, two agencies of the Department of Health and Human Services.

Effective provider-patient communication improves health and saves time. Use this checklist as a guide during visits with patients working to control high blood pressure.

- ☐ Explain roles of members of the health care team.
- ☐ Ask, "What is most important for you to accomplish during your visit today?" The answer helps set the agenda.
- ☐ Review blood pressure goal against current reading(s).
- ☐ Have an open conversation about goals, achievements, confidence, and barriers. See sidebar for some examples.
- ☐ Help set small, achievable goals based on patients' answers. For example, if the patient is working to improve diet, establish a goal to swap out favorite food items for lower-sodium versions. This can build over time to more heart-healthy meals, cooked at home.
- ☐ Use the "Ask-Tell-Ask" technique to address actions for each behavioral goal:
  - ○ **Ask** permission to provide information on a specific topic. For example, for medication adherence, you might say, "There are several things I want to tell you about your new medication. Is that okay?"
  - ○ **Tell** the patient what they need to know (e.g., when they should take the medication, expected side effects, importance of taking it as directed). Use simple words and diagrams or pictures.
  - ○ **Ask** the patient to repeat back the information in his or her own words.
- ☐ Provide the patient with the following tools:
  - ○ **Blood pressure tracker** with target numbers written prominently
  - ○ Home blood pressure monitoring instructions—**review this helpful guide**
  - ○ Healthy diet information
  - ○ Community options for exercising
  - ○ Support groups to join
- ☐ Remind the patient to record blood pressure readings between office visits and share with the team by phone, fax, or e-mail as well as at the next office visit.

Tools and Resources

- **American Medical Group Foundation's Provider Toolkit to Improve Hypertension Control** includes printable assessments for patients around goal-setting and assessing self-management knowledge (see pages 49 and 51).
- **California Health Care Foundation's Helping Patients Manage Their Chronic Conditions** guide further discusses the "Ask-Tell-Ask" approach as well as motivational interviewing and goal-setting.
- Visit the **Million Hearts®** website for more information and resources for helping patients control hypertension.

Million Hearts®
millionhearts.hhs.gov

Make control **your** goal.

High Blood Pressure
How to Make Control Your Goal

It's up to you to successfully manage and control your blood pressure. But it doesn't have to be a daunting task. You can take small, manageable steps to make blood pressure control **your** goal. Here are some tips to show you how.

Engage your health care team

Blood pressure control is a team effort. Engage all of your health care professionals—not just your primary care physician or cardiologist. Your pharmacist, nurses, and other health care specialists can help you control your high blood pressure.

Next time you go in for a visit, make a list of questions you want to ask your health care professional. For example:

- What is my blood pressure goal?
- What are the best ways to reach my goal?
  - Mention what you're already doing to work toward control, including exercising, changing your diet, or taking medications as prescribed.
  - Be honest and realistic with yourself and your health care team about what lifestyle changes you're ready to make and the ones you're not quite ready for.
  - Pick one goal to start working toward. As you achieve success and build confidence, choose another goal to tackle.

Take your medications faithfully

Your health care team has put together a specific medication schedule to help control your blood pressure. You might forget to take your medicine every day, or maybe you're having trouble dealing with the side effects. Remember that your medication is important to control and maintain your blood pressure.

Here are some tips to help you stick with your medication plan:

- Talk to your doctor about any side effects you experience with your medications. If necessary, discuss other treatment options. **Never stop treatment on your own.**
- Make a schedule and set up a system to remind you to take your medications regularly—use a pillbox for every pill, every day, or use smartphone "app" reminders.
  - If your insurance provides mail order delivery, set it up and request a 90-day supply of medications.
  - If this service is not available, schedule all your refills at the same pharmacy at the same time each month so you can pick them up all at once.

Did you know?

Of the 67 million American adults who have high blood pressure, 16 million know they have the condition and are receiving treatment, but their blood pressure still remains too high.

Don's Story

As an avid runner, Don thought he was great shape. When he was diagnosed with high blood pressure during a routine physical exam more than 30 years ago, Don was frustrated. High blood pressure is a common condition among men in his family. Don's grandfather, father, and two younger brothers all had high blood pressure. Because he knew he couldn't control his family history, Don focused on what he could control.

Don committed to understanding his condition and working with his heath care team to improve diet, exercise more, and manage stress. Because of his busy work schedule as a veterinarian and his limited cooking skills, Don's wife supports his efforts by preparing healthy meals with low sodium. No longer able to run marathons, Don walks several times a day with his 15-year-old dog, Sophie. To help relax, Don meditates every day. He also volunteers at a local hospice and shares his love for animals by instructing and evaluating animal assisted therapy volunteers and working with two animal outreach groups.

Don knows that he plays the most important role in controlling his high blood pressure; that's why he's made control his goal. He works closely with his health care team and has a strong support system in his family and colleagues.

Monitor your blood pressure

What's your blood pressure goal? Develop a plan to regularly check your blood pressure, not just at the doctor's office, but at home or at a pharmacy. Track your results in a log or diary to monitor your progress.

Make healthy choices

- Exercise can be a great way to help control your blood pressure. Find a safe place to walk or be more active. Increase the time and intensity of your physical activity as you progress.
- Shop for more fresh fruit, vegetables, and whole grains and fewer prepared foods with high sodium, cholesterol, saturated fat, and trans fat.
- Learn to read labels and choose foods lower in sodium. Lowering your sodium will lower your blood pressure.
- Quit smoking. There are many tools available to help you. Call 1-800-QUIT-NOW or visit **Smokefree.gov** for help.

Tools and resources

Million Hearts®, in partnership with the American Heart Association/American Stroke Association, has developed online tools to help you track and manage your heart health, including your blood pressure, and provide helpful advice and information. Check out:

- **Heart360®**
- **My Life Check®**

Find and download additional materials to help control your high blood pressure at the **Million Hearts®** website.

millionhearts.hhs.gov

Supporting Your Loved One with High Blood Pressure

Having the support of a friend or family member sometimes is the deciding factor for an individual struggling to manage and control high blood pressure successfully. You can make a difference.

Of the 67 million American adults who have high blood pressure, 16 million are aware they have the condition and are receiving treatment, but their blood pressure continues to be high. If this sounds like someone you know and love, team up to help him or her to make blood pressure control **your** goal, too.

Here are tips on how you can help:

Start the conversation

Find out what your loved one is already doing to control their high blood pressure and what you can do to support them immediately. Ask questions like:

- What is hardest for you about controlling your high blood pressure?
- What is easiest?
- Have you set specific goals with your health care team?
- What can I do to help you? This might include: go with you to health care visits; help you monitor your blood pressure; remind you to take your medications; work together to cook low-sodium meals.

Provide emotional support

- Be positive. Help your loved one remember that this is a marathon, not a sprint, and that control is possible.
- If you are concerned about your loved one, ask him or her questions.
- Don't forget to take care of yourself. As a family member or friend taking care of a loved one with high blood pressure, you may experience periods of stress, anxiety, depression, and frustration. Remember, taking care of your own emotional health and physical needs helps you take care of your loved one.

Set a reminder to get your loved one's blood pressure checked—at home, at the doctor's office, or at a pharmacy. Track results in a journal or diary that your loved one can take to health care visits.

Be positive. Help your loved one remember that this is a marathon, not a sprint, and that control is possible.

Make control *your* goal

Take action to help your loved one make healthy lifestyle changes for better blood pressure control. For example, you can:

- Help your loved one set up a routine to take medications regularly.
  - If your loved one's insurance provides mail order delivery, set it up and request a 90-day supply of medications.
  - If this service is not available, pick a convenient pharmacy to get all of the medications. Request that refills occur at the same time each month so your loved one can pick them all up at once.
  - Start a reminder system. Use a pillbox for every pill, every day. Or find and use a smartphone app.
- Set a reminder to get your loved one's blood pressure checked—at home, at the doctor's office, or at a pharmacy. Track results in a journal or diary that your loved one can take to health care visits.
- Help your loved one eat better.
  - Go grocery shopping together. Focus on more fresh fruit, vegetables, and whole grains and fewer prepared foods that have high sodium, cholesterol, saturated fat, and trans fat.
  - Help cook healthy, tasty meals at home more often. Bring home-cooked meals to your loved one.
- If your loved one smokes, help him or her quit.
  - Help your loved one identify reasons to quit.
  - Learn about and improve upon your loved one's previous attempts to quit.
  - Suggest a quit line like 1-800-QUIT-NOW.
- Be more active with your loved one.
  - Schedule easy exercises into your daily or weekly get-togethers—even just a walk around the block is enough to get the ball rolling.
  - Keep track of your daily and weekly physical activity by using a log or diary.
  - Increase the time and intensity of your physical activity gradually as you progress.

Find and download additional materials to support loved ones in controlling high blood pressure at the **Million Hearts**® website.

millionhearts.hhs.gov

Cómo apoyar a un ser querido con Presión arterial alta

Contar con el apoyo de un amigo o familiar es a veces el factor decisivo para alguien que lucha por manejar y controlar su presión arterial alta. Usted puede ayudar.

De los 67 millones de adultos con presión arterial alta en los Estados Unidos, 16 millones saben que tienen esta afección y están recibiendo tratamiento, pero siguen teniendo la presión alta. Si esto le recuerda a algún ser querido o a alguien que usted conoce, póngase de su lado y haga que el control de la presión arterial también sea **su** meta.

A continuación hay algunos consejos sobre cómo puede ayudar:

Inicie la conversación

Averigüe qué está haciendo su ser querido para controlar la presión arterial alta y qué puede hacer usted para apoyarlo inmediatamente. Haga preguntas como las siguientes:

- ¿Qué es lo que te resulta más difícil para controlar la presión arterial alta?
- ¿Qué es lo más fácil?
- ¿Has establecido metas específicas con tu equipo de salud?
- ¿En qué te puedo ayudar? (Esto puede incluir acompañarte a las citas médicas, ayudarte a tomar la presión arterial, recordarte que te tomes los medicamentos, cocinar juntos comidas con bajo contenido de sodio).

Dé apoyo emocional

- Sea positivo; ayude a su ser querido a recordar que esto es una maratón, no una carrera, y que es posible controlar la presión arterial alta.
- Si está preocupado por su ser querido, hágale preguntas.
- Recuerde que usted también tiene que cuidarse. Al cuidar a un familiar o a un amigo con presión arterial alta, usted puede pasar por periodos de estrés, ansiedad, depresión y frustración. Recuerde que prestar atención a su propia salud emocional y atender sus propias necesidades físicas lo ayudan a cuidar a su ser querido.

En una reciente encuesta de los Centros para el Control y la Prevención de Enfermedades, más de un cuarto (26.1 %) de los hispanos reportó tener presión arterial alta. Casi el 30 % de aquellos con presión arterial alta no estaba tomando medicamentos que podrían reducir su riesgo de tener un ataque cardiaco o un accidente cerebrovascular.

Sea positivo; ayude a su ser querido a recordar que esto es una maratón, no una carrera, y que es posible controlar la presión arterial alta.

Haga que el control sea *su* meta

Tome medidas para ayudar a su ser querido a hacer cambios saludables en su estilo de vida para controlar mejor la presión arterial. Por ejemplo, usted puede:

- Ayudar a su ser querido a establecer una rutina para que se tome sus medicamentos con regularidad.
  - Si el seguro médico de su ser querido ofrece entrega a domicilio, programe el envío y pida que le manden medicamentos para 90 días.
  - Si este servicio no está disponible, escoja una farmacia que quede cerca para conseguir todos los medicamentos. Pida que le entreguen los surtidos en la misma fecha, cada mes, para que se puedan recoger todos al mismo tiempo.
  - Establezca un sistema recordatorio: use un pastillero para cada pastilla, todos los días, o busque y use una aplicación (app) para el teléfono inteligente.
- Hacerse un recordatorio para que a su ser querido le tomen la presión arterial en su casa, en el consultorio del médico o en una farmacia. Anote los resultados en un diario o cuaderno que su ser querido pueda llevar a las citas médicas.
- Ayudar a su ser querido a alimentarse mejor.
  - Vayan al juntos al supermercado. Compren más frutas frescas, verduras y cereales integrales, y menos comidas preparadas que tienen altos niveles de sodio, colesterol, grasas saturadas y grasas trans.
  - Ayude a cocinar en casa comidas sanas y sabrosas con más frecuencia. Llévele a su ser querido comidas hechas en casa.
- Ayudar a su ser querido a dejar de fumar.
  - Ayúdelo a encontrar razones para dejar de fumar.
  - Infórmese sobre los intentos que ha hecho su ser querido para dejar de fumar y trate de hacer cosas que puedan funcionar mejor.
  - Recomiéndele que llame a una línea telefónica de ayuda para dejar de fumar como 1-855-DÉJELO-YA. Seleccione la opción 2 para hablar con un representante en español.
- Ser más activo con su ser querido.
  - Programe hacer ejercicios fáciles cuando se vean diariamente o cada semana. Incluso salir a caminar alrededor de la cuadra es suficiente para empezar.
  - Lleve un registro diario y semanal de la actividad física en un cuaderno o diario.
  - Aumente gradualmente la duración e intensidad de la actividad física a medida que vayan avanzando.

Encuentre y descargue materiales adicionales para ayudar a su ser querido a controlar la presión arterial alta en el sitio web **Million Hearts® en espanol.**

espanol.millionhearts.hhs.gov