



**Measure Up
Pressure Down**

PROVIDER TOOLKIT

TO IMPROVE HYPERTENSION CONTROL

American Medical Group Foundation

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INTRODUCTION

INTRODUCTION



High blood pressure (hypertension) is one of the most important risk factors for heart disease, stroke, kidney failure, and diabetes complications. Nearly one of three American adults has high blood pressure, and the costs, including healthcare services, medications and missed days of work are estimated at a staggering \$156 billion.

We've known about the risks of poorly controlled high blood pressure for over a century and effective treatments have been available for over 50 years. Yet according to the Centers for Disease Control and Prevention, less than half of the 67 million American adults with high blood pressure have their condition under control. Why has blood pressure control been so challenging, and what can we do to fix it now?

Blood pressure control has been challenging mainly because it is a silent condition. For this reason, patients may not adhere to recommended medication or lifestyle regimens, physicians may not treat hypertension as an urgent issue, and high blood pressure may not get the public recognition and "call to action" that other diseases receive. In addition, our current health system was designed to address acute medical problems, and chronic conditions require team-based, longitudinal care with advanced information technology and patient-centered care at its core.

To help you address many of the common challenges associated with effectively treating and managing high blood pressure, the American Medical Group Foundation (AMGF) and American Medical Group Association (AMGA) has produced this provider toolkit as part of our Measure Up/Pressure Down three-year national campaign. The goal of Measure Up/Pressure Down is to mobilize doctors, nurses and the entire healthcare team to work together to achieve 80% of their patient population with high blood pressure in control by 2016.

In this toolkit, you'll find useful tools, tips, and resources to help you jump-start your hypertension quality improvement initiative and get you on the road to achieving better control rates. The toolkit is organized around each of the eight campaign planks (care processes).

For each plank you will find:

- Concise one-pagers with guidance including actionable steps and suggested resources for implementing the plank
- Best practices tools used by some of the nation's leading healthcare organizations
- A recommended case study from AMGA's *Best Practices in Managing Hypertension Compendium* for details on how the plank was implemented by medical groups that achieved significant improvements in their control rates

This toolkit is a living document and will be updated throughout the campaign. A downloadable version as well as new content added to the toolkit can be accessed on the campaign website at www.MeasureUpPressureDown.com. We hope that you find the toolkit useful and consider sharing it with your colleagues.





ABOUT AMGA AND AMGF

The American Medical Group Association represents some of the nation's largest, most prestigious medical practices, independent practice associations, accountable care organizations, and integrated healthcare delivery systems. AMGA's mission is to support its members in enhancing population health and care for patients through integrated systems of care. More than 125,000 physicians practice in AMGA member organizations, providing healthcare services for 130 million patients (nearly one in three Americans). Headquartered in Alexandria, Virginia, AMGA is the strategic partner for these organizations, providing a comprehensive package of benefits, including political advocacy, educational and networking programs, publications, benchmarking data services, and financial and operations assistance. www.amga.org

The American Medical Group Foundation is the philanthropic arm of AMGA. As a nonprofit 501(C)(3) organization, its mission is to foster quality improvement in group practice through education and research programs in clinical quality, patient safety, service, operational efficiency, and innovation. In addition to research and demonstration projects, the Foundation helps support learning collaboratives and presents educational grants and awards to medical groups that demonstrate improvements in practice, quality, and patient care. www.amga.org/foundation



ACKNOWLEDGEMENTS

AMGF expresses our sincere gratitude to the medical groups and health systems that submitted tools for review and publication in this document and in our *Best Practices in Managing Hypertension Compendium*. Many of the tools presented in this toolkit were previously published in the aforementioned case study compendium.

We would like to thank the Measure Up/Pressure Down Provider Toolkit Review Committee for contributing their time and expertise in reviewing and recommending tools for inclusion.

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DISCLAIMER

This toolkit is intended for healthcare professionals to consider in managing the care of patients with hypertension. While the toolkit describes recommended courses of intervention, it is not intended as a substitute for the advice of a physician or other knowledgeable healthcare professional. Several of the tools presented in this toolkit were previously published in AMGA's *Best Practices in Managing Hypertension Compendium* and may have been updated or no longer in use by the medical groups since the initial publication of the compendium.

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TABLE OF CONTENTS

Introduction	1
About AMGA and AMGF	2
Acknowledgements	3
Disclaimer	3
About Measure Up/Pressure Down	7
Campaign Model: Achieving Optimum Hypertension Control	8
Section I: Getting Started	
Complete the Assessment Survey	9
Choosing the Planks/Care Processes	11
Section II: Implementing the Planks	
Plank 1 - Direct Care Staff Trained in Accurate BP Measurement	13
Tool: Hypertension Medical Assistant Training (Providence Medical Group)	15
Tool: Checking Blood Pressures Nursing Competency (Sharp Rees-Stealy Medical Group)	25
Plank 2 - Hypertension Guideline Used and Adherence Monitored	29
Tool: Hypertension Treatment Algorithm (Kaiser Permanente)	31
Tool: Treatment Guidelines for Hypertension (Sharp Rees-Stealy Medical Group)	33
Plank 3 - BP Addressed for Every Hypertension Patient at Every Primary Care or Cardiology Visit	35
Tool: Methodology for Identifying HTN Patients (PriMed Physicians)	37
Plank 4 - All Patients Not at Goal or with New Hypertension Rx Seen within 30 Days	39
Tool: Morisky Scale (Mercy Clinics, Inc.)	41
Tool: Hypertension Standing Orders (Mercy Clinics, Inc.)	43
Plank 5 - Prevention, Engagement and Self-Management Program in Place	45
Tool: BP at Goal Patient Questionnaire (Fletcher Allen Healthcare/University of Vermont)	47
Tool: BP at Goal Physician Questionnaire (Fletcher Allen Healthcare/University of Vermont)	49
Tool: 5As Encounter Form (Mercy Clinics, Inc.)	51
Tool: After Visit Summary (Cleveland Clinic)	53
Tool: Patient Education Flyer (Cleveland Clinic)	55
Tool: BP Tracking Sheet (Fletcher Allen Healthcare/University of Vermont)	57
Tool: Patient Participation Handouts—English (Sharp Rees-Stealy Medical Group)	59
Tool: Patient Participation Handouts—Spanish (Sharp Rees-Stealy Medical Group)	61
Plank 6 - Registry Used to Track Hypertension Patients	63
Plank 7 - All Team Members Trained in Importance of BP Goals and Metrics	65
Tool: HTN Report (Kaiser Permanente—Mid Atlantic States)	67
Tool: Clinical Level Performance Report (Mercy Clinics, Inc.)	69
Tool: Quarterly Status Report (Kaiser Permanente—Mid Atlantic States)	71
Tool: Physician Quality Report Card (Cleveland Clinic)	73
Plank 8 - All Specialties Intervene with Patients Not in Control	75
Tool: Guideline for Treatment of HTN (Sharp Rees-Stealy Medical Group)	77
Tool: Standard Workflow for BP Check (ThedaCare)	79
Tool: Walk-in Medical Assistant Blood Pressure Check Protocol (Kaiser Permanente)	81
Key Contacts	85





The Issue

One in three or nearly 68 million U.S. adults have high blood pressure and less than half of patients have it adequately controlled. High blood pressure is a leading cause of doctor visits and a major risk factor for heart disease, stroke, kidney failure, and other serious conditions—contributing to nearly 1,000 deaths a day. Costs to the nation due to high blood pressure are estimated at \$156 billion in healthcare services, medications, and missed days of work. Without timely action, by 2030, an estimated 100 million adults in the U.S. will have high blood pressure, resulting in staggering increases in healthcare costs, disability, and lost productivity. Improving blood pressure control will require an expanded effort and an increased focus from healthcare systems, clinicians, patients, employers, and the entire nation.

The Campaign

Created by the American Medical Group Foundation, Measure Up/Pressure Down is a three-year national campaign to reduce the burden of high blood pressure by leveraging the coordinated care delivery systems of members of the American Medical Group Association, which collectively deliver care to 130 million patients (nearly one in three Americans).

The campaign mobilizes medical groups and health systems to work toward achieving 80 percent of high blood pressure patients with their condition in control by 2016. To achieve this ambitious goal, groups joining the campaign will adopt one or more evidence-based care processes known to improve care and patient outcomes. The eight processes (“campaign planks”) are based on best practices derived from AMGA’s high blood pressure learning collaboratives, case studies, and in consultation with the campaign’s National Steering Committee and Scientific Advisory Council. Participating groups will report quarterly on blood pressure control rates to enable AMGF to evaluate campaign implementation and outcomes.

To date, more than 135 medical groups and health systems delivering care to more than 40 million patients have joined the campaign. Measure Up/Pressure Down will also engage patients, employers, and other key stakeholders in a wide-reaching effort to raise awareness and empower individuals and communities to tackle one of the nation’s most important public health challenges. By improving care and patient outcomes, Measure Up/Pressure Down aims to achieve lasting improvements that lead the way to greater health, productivity, and cost savings.

Supporting Organizations and Sponsors

AMGF also has teamed up with the U.S. Department of Health and Human Services Million Hearts initiative, Institute for Healthcare Improvement, American Heart Association, American Stroke Association, American Society of Hypertension, American Kidney Fund, Association of Black Cardiologists, Institute for Health and Productivity Management, and other national groups to raise awareness among patients, communities, employers, policymakers, and media about the importance of blood pressure control.

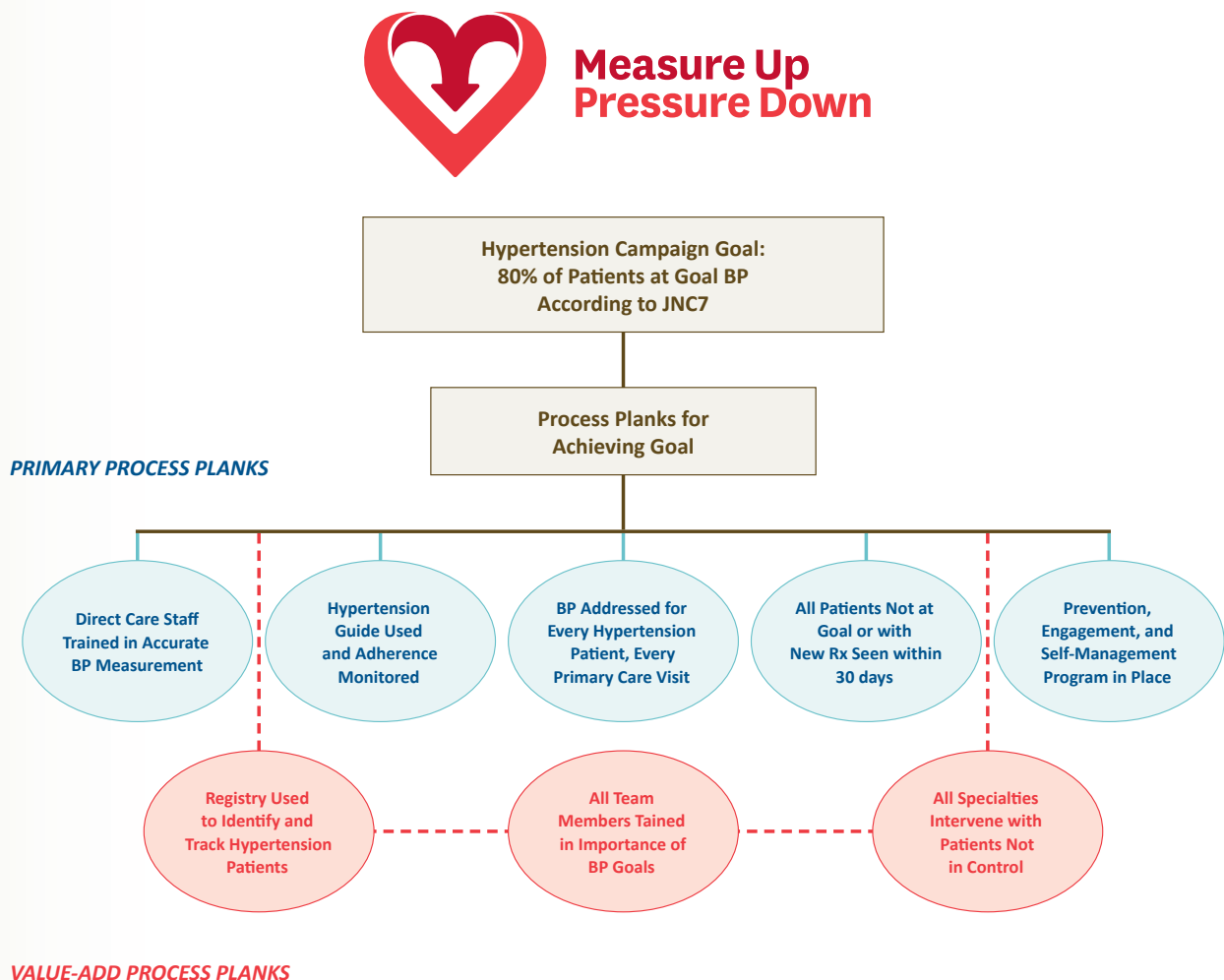
Measure Up/Pressure Down is generously supported by contributions from Novartis Pharmaceuticals Corporation and Daiichi Sankyo, Inc.



CAMPAIGN MODEL:

CAMPAIGN MODEL: Achieving Optimum Hypertension Control

Each participating organization is asked to implement as many of the following **Primary Process Planks** as possible, to meet the Campaign Goal of 80 percent of Hypertension Patients at Goal BP, according to national standards (JNC 7). To achieve breakthrough results organizations may find it necessary to implement one or more of the following **Value-Add Process Planks**.





SECTION I

GETTING STARTED

GETTING STARTED

COMPLETE THE ASSESSMENT SURVEY

The Measure Up/Pressure Down Assessment Survey is the first step in getting started with implementing the campaign planks. This five-question assessment survey will not only help us better position the program for success, but will also provide you with valuable insight as you begin the challenge of bringing 80 percent of your hypertension patients to goal. The survey is also essential for beginning the data collection component of the project.

A link to the online survey has been provided to the key contact at each medical group. Please check with your internal Measure Up/Pressure Down campaign coordinator to ensure that the survey has been completed. The assessment is provided here for information purposes only.

I. How Are You Organized?

- How many PCPs (Family or Internal Medicine) do you have in your organization?
- How many practice sites do you have where there is a PCP (FM or IM)?
- Have you created a quality team for hypertension? ☐ Yes ☐ No
If yes, please describe:

II. Quality Projects

- Have you already adopted any of the planks of the AMGF campaign? ☐ Yes ☐ No
If yes, please specify which one(s):
 - ☐ Direct Care Staff Trained in Accurate BP Measurement
 - ☐ Hypertension Guideline Used and Adherence Monitored
 - ☐ BP Addressed for Every Hypertension Patient at Every Primary Care or Cardiology Visit
 - ☐ All Patients Not at Goal or with New Hypertension Rx Seen within 30 Days
 - ☐ Prevention, Engagement and Self-Management Program in Place
 - ☐ Hypertension Registry Used to Track Patients
 - ☐ All Team Members Trained in Importance of BP Goals and Metrics
 - ☐ All Specialties Intervene with Patients Not in Control
- Have these planks been adopted system-wide or only within certain practice sites?
 - ☐ Adopted System-wide
 - ☐ Only within certain practice sites
 - ☐ N/A
- Has your organization formally adopted performance goals for hypertension? ☐ Yes ☐ No
If yes, please specify them (example: X percent control in X time period for which patient populations)

III. Measurement

- Do you have a system-wide EHR? ☐ Yes ☐ No
If yes, please specify:



- What percent of primary care physicians (FM/IM) are on EHR?
- Do you have a group-level hypertension measurement (e.g., percent of patients in control)?
☐ Yes ☐ No
- Do you report hypertension results to any external organization? ☐ Yes ☐ No
If yes, please name external organization.
- Do you have a searchable clinical repository or data warehouse that includes blood pressure readings? ☐ Yes ☐ No

IV. Key contacts

- Quality:
Name of key quality contact:
Email of key quality contact:
Phone of key quality contact:
- Data:
Name of key data contact:
Email of key data contact:
Phone of key data contact:



CHOOSING THE PLANKS / CARE PROCESSES

These simplified steps are meant to help medical groups organize their approach, especially if the AMGF national hypertension campaign is one of their first major quality initiatives. The steps are not meant to be comprehensive, nor prescriptive—but helpful to your group in developing a systematic, logical method to improve the health care you deliver. For groups more experienced in quality improvement techniques and methodologies, the following steps may be redundant to your current processes.

STEP 1

Determine hypertension control rates

A baseline measurement of performance is the first step for most quality initiatives. You will need to know where you stand before any interventions are planned. A well-thought-out measurement system will also allow you to monitor your progress. Numbers will drive your success.

There are several ways to get the blood pressure control measurement for your population. If you have an EHR, you can extract blood pressure measurements for a defined population. You will need information technology support to identify the structured BP fields in your system and measurement specifications to guide the numerators and denominators. Contact AMGA for assistance on measurement specifications. (see page 85). As an alternative, you could develop or purchase a registry. A registry is a database containing patient and measurement information that facilitates data reporting. Finally, you could perform a random sampling methodology, measuring a small segment of the population on a regular basis.

If you have questions about how to get started with the baseline measurement, AMGA will assist groups with assessing blood pressure control rates. (see page 85).

STEP 2

Identify areas for improvement

Once you have your baseline hypertension control rates, you will want to begin to understand and prioritize areas for improvement. Form a team that will evaluate the baseline results and determine some of the root causes of poor control. Team composition is critical—pick enthusiastic team members and plan on regular meetings to develop and monitor your plan. The team may include physicians, nurses,

pharmacists, key administrators involved in operations, and data collection staff. Tools that can assist the team analyze the factors influencing blood pressure control include the fishbone diagram, impact/effort matrix, and brainstorming. These tools are available on the campaign website.

STEP 3

Create flowchart of current process

Flowcharts are used in analyzing, designing, documenting, or managing a process or program. A flowchart of the current patient process will allow the team to better understand how blood pressure is measured and treated in your system. Document the step-by-step activities a typical patient and the care team take, from arrival at the office or telephone call to medication choices and follow-up care. The resulting diagram will assist the team in visualizing the order of patient flow and perhaps also in discovering flaws, bottlenecks, or gaps in care.

STEP 4

Decide as a team which process planks will fill identified gaps in care

Read each of the AMGA plank outlines and review the tools and the references included. Find the best match for the AMGA planks and the areas your team identified for improvement. Start with one plank that seems achievable before adopting the next one, but plan on adopting more planks over time. Modify your baseline flowchart to incorporate the changes you will make to adopt the care process plank. Be specific—note on your chart who will do what and when they will do it. Your team will also want to think through how you will monitor the revised process to make sure the change is truly implemented.



STEP 5

Securing buy-in from team members and stakeholders

A communication strategy that motivates and inspires will be critical to your success. Leaders must share why the hypertension campaign is important, how the group will achieve the goal, and what specific changes each physician or staff person will need to make in order for the project to be successful. Set clear goals and communicate them to everyone. Have team members create and practice the “elevator speech”—a quick way to communicate objectives in a clear, compelling manner. The communication plan needs to be more than a “kick-off” meeting—consistently use various channels of communication that resonate with all participants. A physician champion appointed by the Board of Directors to lead the quality initiative has been found by many groups to be instrumental in driving results. Share ongoing results transparently in order to instill high levels of accountability and to provide a public way to motivate the entire organization.

STEP 6

Assign specific responsibilities to team members

Define roles and expectations clearly. Each team member should be assigned specific responsibilities that are clearly documented into written performance expectations. Some new processes may require skills development to assure that everyone is prepared and well trained for new duties. Practice with the care team the new processes to build confidence and competency. Build accountability for senior leaders, physicians, and staff by creating control plans that specify how you will monitor the consistent implementation of the new processes. And be prepared for resistance and slippage, as culture change can be slow.

STEP 7

Share your choices with AMGF for tailored support, monitoring, and evaluation

Notify AMGF which plank(s) you have adopted and what additional support you might need. Ongoing webinars and best practice materials from other AMGA groups will be made available throughout the campaign to assist your team in successfully achieving your goal.



SECTION II

IMPLEMENTING THE PLANKS

PLANK 1

Direct Care Staff Trained in Accurate BP Measurement

All team members involved in direct patient care should be trained in taking blood pressures according to a standard process. An annual evaluation/certification should involve both the ability to follow the process and the accuracy of blood pressure measurements. The entire on-site team should, through training, be aware of the importance of hypertension management and target blood pressures.

Retraining and evaluation on blood pressure measurement technique should be required at least annually, including assessment of blood pressure measurement competency through:

- Knowledge of proper technique and different types of observer bias
- Process to properly maintain and calibrate equipment
- Interpretation of measurements including an understanding of the variability of blood pressure depending on time of day, exercise, and timing of medications
- Demonstration of accurate technique of patient positioning, selection of cuff size, obtaining a valid blood pressure measurement, recording it accurately, and reporting abnormal results

Tips for Obtaining Accurate Blood Pressure Measurement

1. Ask if the patient avoided caffeinated beverages and smoking for at least 30 minutes before the examination.
2. Have the patient sit calmly for five minutes with back supported and feet flat on the floor.
3. Patient's arm should be bare. Cuff may be applied over a smoothly rolled-up sleeve, provided there is no tourniquet effect.
4. Support the patient's arm on a firm surface at heart level, slightly flexed at elbow.
5. Both the healthcare team member and the patient should refrain from talking while BP is measured.
6. Use appropriate cuff size. The inflatable part should be long enough to encircle at least 80% of arm and wide enough to encircle 40% of arm at midpoint. When in doubt, select the larger size.

RECOMMENDED CUFF SIZES	
Arm Circumference	Adult Cuff Size
22 to 26 cm	Small adult (12X22 cm)
27 to 34 cm	Adult (16X30 cm)
35 to 44 cm	Large adult (16X36 cm)
45 to 52 cm	Adult thigh (16X42 cm)

7. Wrap the cuff snugly around bare upper arm. The lower edge should be centered two finger widths above the bend of the elbow, and the midline of the bladder should be over the brachial artery pulsation.
8. The aneroid dial or mercury column should be clearly visible and facing you.
9. Using light pressure, position stethoscope over brachial artery and not touching the cuff.
10. "Round numbers" are not acceptable : measure and record to the nearest 2 mm Hg.



Supporting Literature and Resources

1. Blood Pressure Measurement Toolkit: <http://dhs.wisconsin.gov/health/cardiovascular>
Comprehensive tool kit with detailed implementation tools for improving blood pressure procedure, including staff educational materials, checklists, training tools, equipment review, and evidence-based references.
2. Blood Pressure Simulators: www.anatomywarehouse.com
Online store to purchase anatomical models, patient education charts, and blood pressure simulators.

Suggested AMGA Case Study

Cleveland Clinic: The Hypertension Improvement Project
www.amga.org/Research/Research/Hypertension/Compendiums/cleveland.pdf



PLANK 1

TOOL: Hypertension Medical Assistant Training (Providence Medical Group)

TASK QUALIFICATION TRAINING PACKET

VOLUME 1

DATE _____

PERFORMING BLOOD PRESSURE CHECKS	
SUBJECT AREA	Vital Signs
EQUIPMENT REQUIRED	Blood Pressure cuff, stethoscope, and a watch with a second hand
TRAINING REFERENCE(S)	<i>Lippincott Manual of Nursing Practice</i> , Current Edition (Lippincott Williams & Wilkins); and Blood Pressure Cuff Operating Instructions in <i>Bates' Guide to Physician Examination and History Taking</i> , Current Edition (Lippincott Williams & Wilkins)
OBJECTIVE	The trainee will successfully demonstrate without error the performance aspects of measuring Blood Pressure.

EVALUATION INSTRUCTIONS

1. After the trainee has received instruction, allow sufficient practice on each part of the task.
2. Trainee should be evaluated on this task by the manual method of measuring the blood pressure.
3. The evaluator will **STOP** the procedure immediately and correct the trainee if performance could become detrimental to patient safety at any time.
4. Document task competency upon completion of the evaluation in the trainee's OJT (on the job training record).
All reoccurring training should be documented annually in the OJT.
5. Use the performance checklist to ensure all steps of the task are accomplished.
6. Document task competency upon completion of the evaluation on the trainee's record.



PLANK 1

TOOL: Hypertension Medical Assistant Training (Providence Medical Group)

MEDICAL ASSISTANT TRAINING LESSON PLAN

1. The importance of Blood Pressure measurement

- a. Hypertension or high blood pressure means that there is a higher than normal pressure in the arteries. This is important because the arteries carry blood to all of the organs and tissues in the body including the heart, the brain, and the kidneys. Pressure in the arteries causes pressure on the organs, which causes organ damage.
- b. High blood pressure is a major cause of heart attacks, heart failure, kidney damage, and strokes.
- c. Treatment of high blood pressure can dramatically decrease the risk of a poor outcome.
- d. Treatment of high blood pressure is especially important in diabetic patients.
- e. Depending on your practice setting, up to one out of every five patients you see is likely to be hypertensive and in need of treatment.

2. Importance of measuring an accurate blood pressure

- a. The blood pressure is used to initiate treatment and monitor the effects of drug therapy.
- b. A false low reading may lead to under treatment, which will lead to more organ damage.
- c. A false high reading may lead to over treatment and the possibility of drug-induced side effects.
- d. The most accurate blood pressures are taken by trained medical personnel using the manual method.

3. Describing the Blood Pressure

- a. Two pressures are detected
 - (1) Pressure in the arteries while heart is pumping = systolic blood pressure (SBP).
 - (2) Pressure in the arteries while heart is resting between beats = diastolic blood pressure (DBP).
- b. Systolic blood pressure is heard first, diastolic blood pressure is heard second.
- c. Blood pressure is measured in millimeters of mercury (abbreviated mmHg).
- d. The blood pressure is written systolic/diastolic (e.g. 140/86).
- e. There should also be an indication of the position (standing or sitting) and which arm was used.
- f. There is no such thing as a "normal blood pressure."
 - (1) In general, a blood pressure of less than 130/85 is usually acceptable.
 - (2) Systolic Blood Pressure over 140 or a diastolic over 90 indicates a need for further evaluation.
 - (3) A systolic blood pressure of >180 or a diastolic blood pressure > 110 should be brought to the physician's attention.
 - (4) At a systolic blood pressure of less than 90 there may not be enough pressure to push blood into the brain and the patients may have symptoms of dizziness or, in severe cases, the patient can pass out. In these cases patients are often placed reclining with the head down and feet up to keep blood flowing to the brain.

4. Anatomy and Physiology of Blood Pressure

- a. Blood pressure is usually taken in the brachial artery which runs down the inside of the arm, closest to the body.
- b. The pulse in the brachial artery can be felt just above the elbow crease.
- c. Inflation of the blood pressure cuff puts pressure on the brachial artery until the artery is completely compressed, and the circulation to arm is cut off (you should not be able to feel a pulse at this point).
- d. As the cuff is deflated, pressure in the artery increases. When the pressure in the artery is equal to the pressure in the cuff, the first sound can be heard. The sounds continue with each pulse until the pressure in the artery is less than the cuff pressure, at which point the sounds disappear. This is the resting or diastolic blood pressure.

5. Anatomy and Physiology of the Pulse

- a. The pulse reflects the number of times the heart beats in one minute (the heart rate or ventricular rate).
- b. The pulse is helpful to the physician in choosing which medication to use, the effects of therapy, and adverse effects.
- c. The pulse should be measured with every blood pressure.



6. Steps for taking the Blood Pressure

a. Positioning the Patient

- (1) The patient should be resting for at least 5 minutes before the blood pressure is taken.
- (2) Legs should not be crossed- this may falsely elevate the blood pressure.
- (3) The patient should not be talking during blood pressure measurement. This may falsely elevate the blood pressure.

b. Choose the appropriate cuff size

- (1) Cuff size is determined by the circumference of the arm.
- (2) Cuff sizes are marked on the inside by a measuring line and a size: Pediatric, Adult Regular, Adult Large, and Thigh Cuff.
- (3) Measure the cuff on the arm to make sure it is appropriately sized for the person.
- (4) If the cuff is too small—the blood pressure will be falsely high.
- (5) If the cuff is too large- the blood pressure may be falsely low.

c. Choose the appropriate arm.

- (1) You should not use an arm:
 - (a) That has a dialysis shunt placed
 - (b) On the same side as a mastectomy
 - (c) On the side affected by a stroke
- (2) You should try to use the same arm each time the blood pressure is taken.

d. Palpate the pulse in the brachial artery.

e. Remove any obstructive clothing from between the blood pressure cuff and the arm. A shirt sleeve can decrease the ability to hear the pulse sounds, and may lead to inaccurate measurement.

f. Place the cuff on the arm, checking the size and placement by use of the arrow or symbol on the cuff that should be over the artery.

g. Loosen the stopcock on the bulb by turning it several times before tightening closed. This is to be sure you can loosen the stopcock easily with one hand.

h. Place the blood pressure gauge in good view.

i. The patient's arm should be placed at level even with his or her heart. If the patient is seated, rest the arm on the table. If the patient is standing, hold the arm up with your hand (see demonstration).

- (1) If the arm is left below the heart, particularly if the patient is standing, the blood pressure can be elevated by as much as 20 mmHg.

j. The cuff should be pumped to 10 to 20 mmHg above the usual blood pressure or, if no previous blood pressures are recorded, pump to 160 to 180 mmHg.

k. Loosen the stopcock on the bulb so that the pressure decreases by 2-3 mmHg per second. Listen carefully for the first sound.

- (1) If sounds are heard right away, deflate the cuff immediately.
- (2) Let the arm rest for at least 2 minutes or switch arms if possible.
- (3) Repeat at step J but increase the inflation target to 220 mmHg.

l. Note the pressure at which the first sound is heard. This is the systolic pressure.

m. Continue to deflate the cuff at 2–3 mmHg per second.

n. Note the point at which the sounds disappear. This is the diastolic pressure.

- (1) In some patients the diastolic pressure never completely disappears.
- (2) In these patients note the point at which the sounds muffle.

o. Record in the chart as systolic/diastolic and position of patient and which arm was used.

7. Taking the Pulse

a. The pulse should be taken with each blood pressure.

b. The pulse is best felt with the first two fingers placed at the wrist in a straight line down from the index finger.



- c. Feel for a few seconds to note whether the pulse is regular or irregular.
- d. Ideally, the number of beats should be measured for one full minute.
 - (1) In practice it is more common to take the pulse for 15 seconds and multiply by 4 or for 30 seconds and multiply by 2.
 - (2) However, if the pulse is not regular, the pulse should be taken for at least 30 seconds to get a more accurate measurement.
- e. The pulse is recorded in beats per minute or B/min.
- f. Note next to the pulse whether it is regular or irregular (Note: this is required under Medicare rules).

P = 72 reg.

8. Orthostatic Blood Pressures

- a. Orthostatic blood pressures are done when we are suspecting postural changes in blood pressure.
- b. As you move from sitting to standing the blood pressure should not change. The body reacts to push blood flow back to the heart and keep blood flowing to the brain.
- c. Some patients lose this natural response and the blood pools in the lower extremities and there is less perfusion to the brain. The patient may complain of dizziness or lightheadedness upon standing.
 - (1) This may happen naturally with age or certain diseases or conditions.
 - (2) This can also mean an excessive effect of blood pressure medication.
- d. Checking orthostatic blood pressure:
 - (1) May be done lying to sitting to standing, but usually done sitting to standing
 - (2) It is important to start in the “down” position- the patient (i.e., sitting position)
 - (3) Follow the normal procedures for blood pressure and pulse measurement
 - (4) Carefully document the blood pressure and pulse rate and the position
 - (5) Leave the cuff in position
 - (6) Have the patient stand up, being careful to support from the back and front in case of dizziness
 - (7) Let the patient stand for 1-2 minutes
 - (8) Repeat the blood pressure and pulse measurement standing, careful to keep the arm at heart level
 - (9) Record the standing blood pressure and pulse. Indicate which blood pressure was done first
 - (10) A drop in the blood pressure by 20 mmHg systolic or 10 mmHg diastolic with an increase in the pulse by at least 10 B/min indicates orthostatic blood pressure changes

160/90		Rt.	P = 72 B/min (reg)
↓			
130/80		Rt.	P = 116 B/min (reg)

9. Case Examples

- a. A 38 year old ex-football player is concerned because at a health screening they told him his blood pressure was high at 170/90. He is overweight but still lifts weights. Why could he have a falsely elevated blood pressure?
 - (1) He likely has increased arm size. If a small cuff was used the pressure could be falsely elevated.
 - (2) If the arm was left dangling when the blood pressure was taken it may be falsely elevated.
 - (3) His legs may have been crossed.
 - (4) He may have been talking during the blood pressure measurement.
 - (5) All of the above together.



PLANK 1

TOOL: Hypertension Medical Assistant Training (Providence Medical Group)

MEDICAL ASSISTANT TRAINING WRITTEN TEST

1. High blood pressure may lead to:

- a. Heart Attacks
- b. Stroke
- c. Kidney Damage
- d. All of the above

2. Accurate measurement of blood pressure is important because:

- a. You are likely to see several hypertensive patients throughout the day
- b. Blood pressure is used to diagnose and guide therapy
- c. Inaccurate blood pressure may lead to organ damage
- d. All of the above

3. Which of the following is true?

- a. The diastolic blood pressure is always greater than the systolic blood pressure
- b. The systolic blood pressure is the first sound heard
- c. Blood pressure is measured in mmH2O
- d. The vast majority of patients have a normal blood pressure

4. Blood pressure is measured using:

- a. The brachial artery
- b. The radial artery
- c. The main vein
- d. A pulse oximeter

5. Which of the following is true?

- a. It is ok to ask the patient questions while you are measuring the blood pressure
- b. The patient should cross their legs, right over left, before the blood pressure is taken
- c. A pulse is only necessary if the blood pressure is very low
- d. The marking on the blood pressure cuff should be placed over the brachial artery

6. In taking the blood pressure:

- a. You should not use the arm on the same side that was affected by a stroke
- b. The cuff should be deflated at a rate of 2-3 mmHg per minute
- c. The blood pressure should never be taken in a standing position
- d. A and B only

7. In taking the blood pressure:

- a. The cuff should never be placed on the bare arm
- b. The arm should always be below the level of the heart
- c. If the the sounds never disappear, the point at which the sounds muffle is used for the diastolic pressure
- d. None of the above

8. In taking the pulse:

- a. You should only note whether it is regular or irregular if the blood pressure is taken while standing
- b. You should only note the pulse if the blood pressure is abnormal
- c. If the pulse is regular you can measure the number of beats in 15 seconds and multiply by 10 to get the pulse rate in B/min
- d. The pulse indicates how many times the heart beats in one minute

9. If sounds are heard immediately when deflating the blood pressure cuff:

- a. The cuff pressure was too high
- b. You need to deflate the cuff and start over at a higher pressure target
- c. The diastolic blood pressure is too high
- d. All of the above

10. In checking a patient for orthostatic pressure:

- a. You should check sitting then standing
- b. The highest blood pressure should be recorded
- c. You should check standing then sitting
- d. A and B only

**BLOOD PRESSURE
WRITTEN TEST
ANSWER KEY**

- 1. d
- 2. d
- 3. b
- 4. a
- 5. d
- 6. d
- 7. c
- 8. d
- 9. b
- 10. a



PLANK 1

TOOL: Hypertension Medical Assistant Training (Providence Medical Group)

MEDICAL ASSISTANT TRAINING PERFORMANCE CHECKLIST

PERFORMANCE ITEMS	SAT	UNSAT
01 Greet patient and/or family member		
02 Explain procedure/treatment/task to patient and/or family member		
03 Select appropriate size cuff		
04 Inspect cuff for serviceability		
05 Palpate artery before applying cuff		
06 Attach cuff to appropriate body location with arrow pointing towards artery		
07 Choose appropriate stethoscope bell size according to patient's body size		
08 Place stethoscope ear piece in ears and bell directly over artery		
09 Ensure BP cuff valve stem is in closed position		
10 Inflate cuff until beats cannot be heard		
11 Open valve stem slowly to release pressure from cuff		
12 Listen for systolic beat		
13 Listen until diastolic beat is heard		
14 Open wide BP cuff valve stem to release air pressure from cuff		
15 Repeat steps 8-14, if unable to ascertain systolic/diastolic beats		
16 Ensure cuff has been completely deflated and there has been at least a 10 second delay before redoing above steps		
17 Remove BP cuff from patient		
18 Document appropriate forms or medical records		
19 Repeat BP in opposite arm, if reading is abnormal		
20 Inform nurse/patient care provider, if BP is abnormal		
FINAL RESULTS		

Trainer _____

Trainee _____

(Note: The information in the box below must be included at the end of all QTPs.

FEEDBACK: Using this checklist as a source of information, discuss the trainee's performance indicating strengths, weaknesses, suggested improvements, etc. If the trainee performed all steps of the task satisfactorily, document the results in the trainee's OJT record.



PLANK 1

TOOL: Checking Blood Pressures Nursing Competency (Sharp Rees-Stealy Medical Group)

CHECKING BLOOD PRESSURES NURSING COMPETENCY

OBJECTIVES FOR THIS SKILL STATION

1. Participant will demonstrate appropriate cuff selection and placement on patient's arm.
2. Participant will accurately measure and record blood pressure as verified by teaching stethoscope.
3. Participant will verbalize technique for measuring orthostatic blood pressure.
4. Participant will verbalize the normal range of adult blood pressures and determine if reading is in a normal range for the individual patient.

BLOOD PRESSURE

Blood pressure is the force exerted by the blood on the walls of the arteries. This vital sign gives us information regarding a patient's overall status. Systolic pressure is the greatest force caused by the contraction of the left ventricle of the heart and is recorded as the first and highest number. Diastolic pressure occurs during the relaxation phase between heartbeats and is recorded as the second and lowest number (e.g. 120/70).

Goal blood pressure in a healthy adult varies between 100-139 mm Hg systolic and 60-89 mm Hg diastolic. Goal blood pressure for individuals with Diabetes Mellitus is 100-129/60-79. Goal blood pressure for individuals with Chronic Kidney Disease is 100-129/60-79. Blood pressure can vary with age, sex, and states of physical/mental stress and fatigue. A reading above these goals is consistent with hypertension.

CHECKING BLOOD PRESSURE

I. What is Blood Pressure?

- A. Blood pressure is the force of the blood pushing against the walls of the arteries. It correlates with how hard the heart has to work to pump blood throughout the body and how stiff the blood vessel walls are.
- B. It is an important indicator of cardiovascular health:
 1. Systolic - pressure in arteries when heart is contracting
 2. Diastolic - pressure in arteries when heart is relaxed and filling

II. Equipment

- A. Stethoscope that picks up sounds easily
- B. Blood Pressure Cuff (Sphygmomanometer)
 1. Correct size for patient:
 - a. Adult—width of bladder should be roughly 40% the circumference of the arm and length of bladder should cover about 80% of the circumference of the arm
 - b. Child—cuff should cover approximately 2/3 upper arm or thigh

III. Positioning Patient and Cuff

- A. Arm slightly flexed/comfortably supported.
- B. Cuff wrapped smoothly/evenly/snugly over the skin of the arm directly, not over clothing. A loose cuff gives inaccurate reading.
 1. Approximately 1" above bend in elbow
 2. Center of bladder over brachial artery unless otherwise marked
- C. Cuff should be level with heart.
- D. Patient's palm up.
- E. Prior to inflation, gage must point within small calibration box on dial or reading will be inaccurate. Change equipment if needed.



- F. Use index and middle fingers to palpate brachial artery.
- G. Hold stethoscope over pulse point. Sounds are heard best with the bell side of the stethoscope.
- H. Patient should sit with feet flat, not crossed at ankles, with back supported in a chair.

IV. Reading Blood Pressure

- A. Inflate bladder quickly to 24–30 mm Hg above patient’s usual systolic pressure (if known). If patient’s usual systolic is not known, then first estimate the systolic pressure by palpating over the brachial artery and inflating the cuff until the brachial pulse disappears. This will estimate the patient’s systolic blood pressure.
- B. Inflate the cuff 24–30 mm above pt’s usual or estimated systolic pressure. While listening over the brachial artery, release air slowly at 2–4 mm Hg per second; faster can distort reading.
- C. The first two beats heard is the systolic pressure. As air is released, the pulse may fade and then reappear 10–15 mm Hg later. This is called an “auscultatory gap” and it is why it is important to estimate the systolic pressure by palpating the brachial artery first. Knowing the approximate systolic blood pressure by palpation will prevent underestimating a systolic blood pressure because of insufficient cuff inflation.
- D. Sound muffling is first diastolic.
- E. Sound disappearing is second diastolic.
- F. Record systolic and second diastolic as the patient’s blood pressure.
- G. If repeated readings needed:
 - 1. Deflate cuff fully
 - 2. Venous congestion could distort reading with slow or repeated inflations
 - 3. May elevate arm 1–2 minutes before readings
 - 4. Difference of 2–4 between readings is not unusual
- H. Readings between arms can vary as much as 10 mm Hg. Record the lowest reading. If pressure varies more than 10 mm Hg between arms, inform the physician and record each arm’s pressure.
- I. Factors That Influence Blood Pressure Reading:
 - 1. “White coat Syndrome”
 - 2. Nervousness, stress, anger, illness, long waiting time
 - 3. Lifestyle: diet, exercise, age, sex, ethnic background; smoking
 - 4. Air in cuff/cuff size
 - 5. Unevenly wrapped cuff
 - 6. Deflating cuff too quickly
 - 7. Auscultatory Gap (pulse disappears then reappears while deflating cuff)
 - 8. Looking at gauge at an angle
 - 9. Not inflating cuff high enough
 - 10. Too wide a cuff will underestimate BP
 - 11. Too narrow a cuff will overestimate BP

V. Orthostatic Blood Pressure:

- A. Patient lies supine for 3 minutes, take BP and pulse
- B. Patient sits up, after 3 minutes take BP and pulse: ask if light-headed
- C. Patient stands, after 3 minutes take BP and pulse; ask if light-headed
- D. Document findings and comments regarding light-headedness



POINTS TO REMEMBER:

1. Correct sizing is key:
 - A) Adult cuff width should be roughly 40% the circumference of the arm and length of bladder should cover approximately 80% of the arm circumference.
 - B) Child cuff should cover approximately 2/3 of upper arm or thigh.
2. Position cuff 1 inch above the antecubital area and at least 1 inch below axilla.
3. Patient's arm should be slightly flexed and comfortably supported with palm up.
4. Cuff must be wrapped smoothly, evenly and snugly.
5. The center of the bladder should be positioned over the brachial artery (unless cuff is marked differently).
6. The gauge must point within calibration box before inflation or reading will be inaccurate.
7. Place blood pressure cuff on the skin of the arm directly, not over clothing.
8. Inflate bladder quickly 24–30 mm Hg above usual systolic, then release air slowly.
9. If a repeat reading is needed, deflate cuff completely and wait 1–2 minutes before taking again or change arms.
10. Orthostatic BP patient lies supine for 3 minutes, take BP and pulse while patient lying down. Have pt sit up for 3 minutes, take BP and pulse again. Have patient stand for 3 minutes, take BP and pulse again. Record all measurements. Question patient regarding symptoms with each positional change and record in EHR.

PLANK 2

Hypertension Guideline Used and Adherence Monitored

Each organization will adopt and deploy a process or algorithm to guide therapy in accordance with evidence-based guidelines. The JNC 7 and ADA goal for patients with diabetes and chronic kidney disease (<130/80) should be included.

What Are Clinical Practice Guidelines?

“Clinical practice guidelines are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances” (Institute of Medicine, 1990). The guidelines contain recommendations that are based on evidence from a rigorous systematic review and synthesis of the published medical literature. Guidelines help clinicians and patients make appropriate decisions about health care, by:

- Describing a range of generally accepted approaches for the diagnosis, management, or prevention of specific diseases or conditions; and
- Defining practices that meet the needs of most patients in most circumstances.

The recommendations are not fixed protocols that must be followed. For individual patients, the judgment of responsible clinicians remains paramount. Clinicians and patients need to develop individualized treatment plans, tailored to the specific needs and circumstances of the patient.

Tips for Adopting a Clinical Practice Guideline

- Many medical groups or healthcare systems create a Guidelines Committee to evaluate and make recommendations for the organization.
- Guidelines Committees are usually multidisciplinary and may form expert workgroups around specific topics or guidelines.
- Buy-in by physicians and other practitioners is essential, which means they must be actively engaged in guideline development and review.
- Guidelines may become obsolete as new evidence emerges, so a systematic process for periodic review is required.
- National guidelines are often quite long and detailed; many organizations have created practical summaries that are brief, actionable, and written in “plain English.”

Adoption Is Not Enough

- Train physicians and other practitioners on guideline use.
- Clinical decision support in an EHR is a systematic way to incorporate guidelines into workflow, although it must be implemented judiciously to avoid “alert fatigue.”
- Monitor adherence or reasons for lack of adherence to the guideline. Creating a feedback loop will help the organization understand the effectiveness of guideline training and possible needs to revise the guidelines.
- Enable and promote comparative data sharing among physicians and practitioners. To change practice culture, beliefs, and habits, data collection and data sharing are essential.



Supporting Literature and Resources

1. JNC 7: www.nhlbi.nih.gov/guidelines/hypertension/

Full version of The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. Also includes physician reference card, slide shows, and free patient education materials for download

2. American Society of Hypertension list of guidelines:

www.ash-us.org/About-Hypertension/Hypertension-Guidelines.aspx

List of eight hypertension guidelines from US, European, and international societies.

3. Clinical Decision Support resources:

www.himss.org/ASP/topics_clinicalDecision.asp

Clinical decision support toolkit, case studies, and webinars, developed by HIMSS

Suggested AMGA Case Study

Billings Clinic: Creating Best Practices in Managing Hypertension

www.amga.org/Research/Research/Hypertension/Symposium/billings.pdf



PLANK 2

TOOL: Hypertension Treatment Algorithm (Kaiser Permanente)

care management | institute

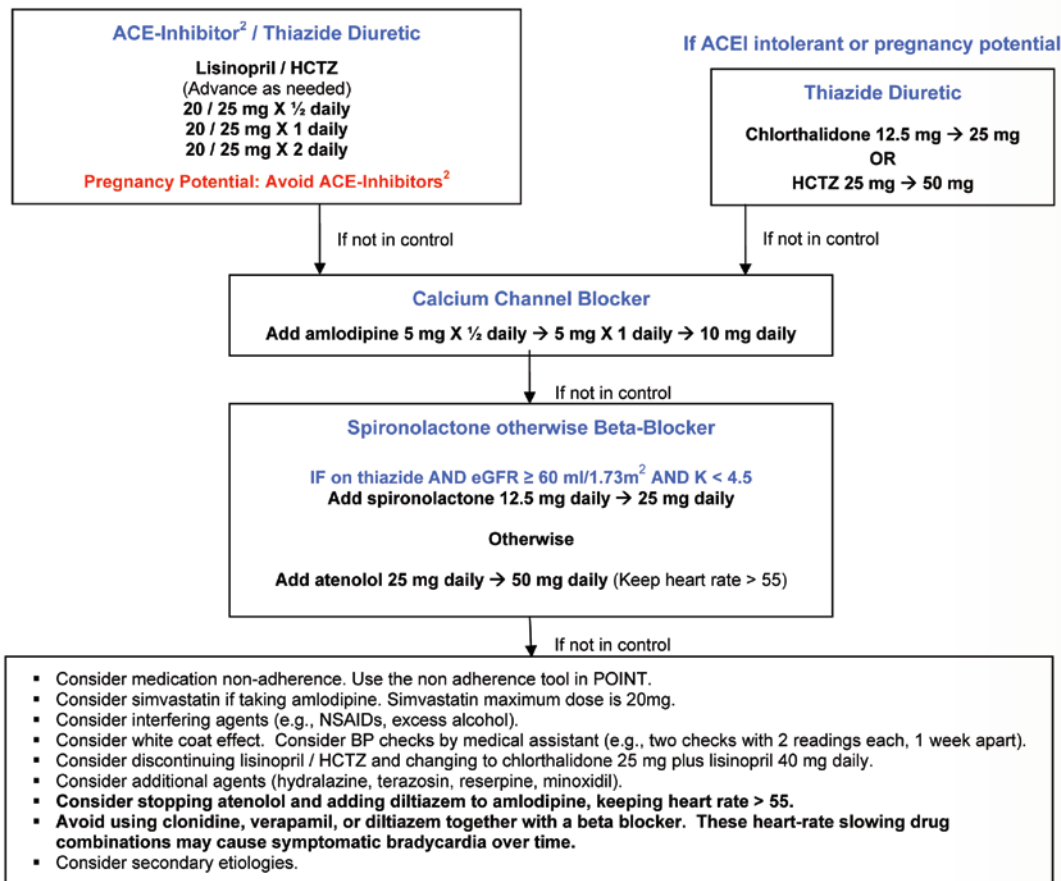
Management of Adult Hypertension¹

BLOOD PRESSURE (BP) GOALS

≤ 139 / 89 mm Hg

Uncomplicated HTN, Diabetes, CVA, TIA, CKD Stages 1–3

NNT CVA³ = 63
NNT MI³ = 86
NNT CVA or MI³ = 36



- Includes essential hypertension, DM and Stage 1-3 CKD, CVA, TIA; excludes CAD, Heart Failure, Stage 4 CKD, and pregnancy.
- ACE-Inhibitors are contraindicated in pregnancy and not recommended in most child-bearing age women.
http://cl.kp.org/pkc/national/cmi/programs/hypertension/practice_resource/htn_pregnancy_practice_resource.pdf OR Clinical Library → National tab → Interregional Guidelines and Practices Resources → Hypertension: Treatment of Hypertension in Women
- NNT = number needed to prevent one event, maintaining hypertension control for at least 5 years. (See Appendix A of Hypertension Guidelines for age-based NNT analysis: <http://cl.kp.org/pkc/national/cmi/programs/hypertension/guideline/index.html> OR Clinical Library → National tab → National Evidence-Based Guidelines → Hypertension Guidelines → Background → Appendix A).



PLANK 2

TOOL: Hypertension Treatment Algorithm (Kaiser Permanente)

care management | institute

- Medication up-titrations are recommended at 2 – 4 week intervals (for most patients) until control is achieved. Consider follow up labs when up-titrating or adding lisinopril / HCTZ, chlorthalidone, HCTZ, or spironolactone.
- Use lipid lowering therapy according to Dyslipidemia Management in Adults Guideline.*
- If pregnant, refer to OB / GYN for hypertension management. If on ACEIs, ARBs, or spironolactone, discontinue immediately.

Lifestyle changes are recommended when SBP > 119 and / or DBP > 79 mm Hg

- DASH diet (low in fat, and high in fruit, vegetables and low-fat dairy products).
- Sodium restriction (≤ 2.4 gm sodium daily).
- Weight reduction if BMI ≥ 25 kg/m².
- Exercise (at least 30 min ≥ 4 times per week).
- Limit daily alcohol to no more than 1 drink (women) or 2 drinks (men).
- Smoking cessation is strongly recommended; counsel tobacco users on the health risks of smoking and the benefits of quitting.

For patients with ACEI cough intolerance, switch to losartan. Avoid losartan/HCTZ (generic Hyzaar) due to HCTZ underdosing in this combination drug.

SELECTED ANTIHYPERTENSIVE MEDICATION**

Usual Dosage Range

Thiazide-type Diuretics	Chlorthalidone (Hygroton)	12.5 – 25 mg daily
	Hydrochlorothiazide (HCTZ) (Esidrix)	25 – 50 mg daily
Thiazide Combinations	Lisinopril/HCTZ (Prinzide)	10/12.5, 20/12.5, 20/25 mg daily
	Spironolactone/HCTZ (Aldactazide)	25/25 mg daily
ACE Inhibitors (ACEI)	Lisinopril (Zestril, Prinivil)	10 – 40 mg daily
	Captopril (Capoten)	12.5 – 50 mg BID
Long-Acting Dihydropyridine Calcium Channel Blockers (CCB)	Amlodipine (Norvasc)	2.5 – 10 mg daily
	Felodipine ER (Plendil)	2.5 – 20 mg daily
	Nifedipine ER (Nifedipine XL)	30 – 90 mg daily
Beta-Blockers (BB)	Atenolol (Tenormin)	25 – 100 mg total, taken daily or BID
	Carvedilol (Coreg)	3.125 – 25 mg BID
	Metoprolol (Lopressor)	25 – 100 mg BID
	Metoprolol ER (Toprol XL)	25 – 200 mg daily
Aldosterone Receptor Blocker	Spironolactone (Aldactone)	12.5 – 25 mg daily
Potassium-sparing Diuretic	Amiloride	5 – 10 mg total, taken daily or BID
Angiotensin II Receptor Blockers (ARB)	Losartan (Cozaar)	25 – 100 mg daily
Direct Vasodilators	Hydralazine (Apresoline)	25 – 100 mg BID
	Minoxidil (Loniten)	2.5 mg daily – 20 mg BID
Alpha Blockers	Terazosin (Hytrin)	1 – 20 mg daily
	Doxazosin (Cardura)	1 – 16 mg daily
	Prazosin (Minipress)	1 – 10 mg BID
Alpha-2 Agonists	Clonidine (Catapres)	0.1 mg – 0.4 mg BID
Peripheral Adrenergic Inhibitor	Reserpine	0.05 – 0.2 mg daily

* <http://cl.kp.org/pkc/scal/cpg/cpg/html/Dyslipid.html> OR Clinical Library → National tab → National Evidence-Based Guidelines → Dyslipidemia Management in Adults

** Availability of medications may vary depending on regional formularies.

This guide is based on the 2009 National Hypertension Guideline. It is not intended or designed as a substitute for the reasonable exercise of independent clinical judgment by practitioners. A PDF of this document can be downloaded from Clinical Library → National tab → National Evidence-Based Guidelines → Hypertension Guideline → Clinician Tools → Management of Adult Hypertension [OR link here](#).



PLANK 2

TOOL: Treatment Guidelines for Hypertension (Sharp Rees-Stealy Medical Group)

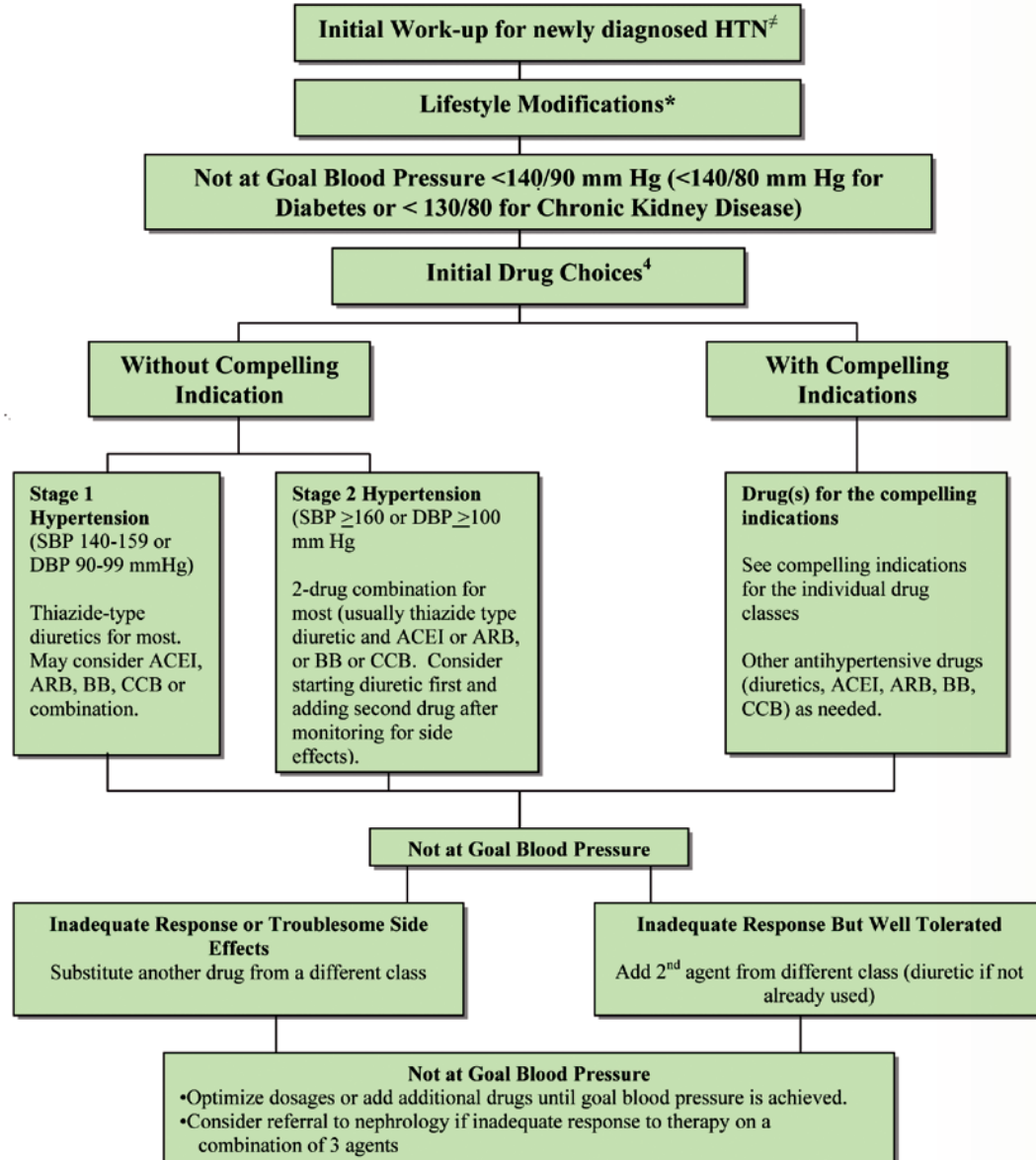
SHARP REES-STEALY CLINICAL GUIDELINES COMMITTEE

Title: Guideline for the Treatment of Hypertension (Page 1 of 2)

Approval Date: 10/12/01

Revision Date: 6/22/2010

Disclaimer: Sharp Rees-Stealy clinical guidelines are designed to assist clinicians in the evaluation and treatment of the more common medical problem. They are not intended to replace clinical judgment or establish a protocol for all patients. The clinical approach described by this guideline will not fit all patients and will rarely establish the only appropriate approach to a problem.



Note:

- Start with a low dose of a long-acting, once-daily drug and titrate dose.
- Low-dose combinations may be appropriate (ACEI + HCTZ or ACEI + CCB)

Page 1 of 2



PLANK 2

TOOL: Treatment Guidelines for Hypertension (Sharp Rees-Stealy Medical Group)

SHARP REES-STEALY CLINICAL GUIDELINES COMMITTEE

Title: Guideline for the Treatment of Hypertension (page 2 of 2)	Approval Date: 10/12/01 Revision Date: 1/2002
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*Initial Work-Up for Newly Diagnosed HTN

Thorough History and physical including BMI, BP in both arms, listening for subclavian and renal bruits, retinal exam etc. If not done within the past year, check CBC, fasting BMP, LFT, lipid panel, TSH, UA, ECG. There is no need for an echocardiogram unless the ECG is abnormal or there is a physical exam abnormality such as an S3, murmur etc.

Compelling Indication	Initial Therapy options
Diabetes Mellitus (type 1) with proteinuria or >1 CV risk factor¹	ACEI ⁺
Heart Failure	<i>Asymptomatic:</i> ACEI⁺ or BB (Carvediolol, Metoprolol Succinate) <i>Symptomatic or End stage heart disease:</i> ACEI⁺, BB (Carvediolol, Metoprolol Succinate) or Aldosterone antagonist ± loop
Post Myocardial infarction	BB ACEI ⁺
- Chronic Kidney disease - Recurrent Stroke prevention	ACEI ⁺ Diuretic or ACEI ⁺
⁺ Use ARB if ACEI not tolerated	

*Lifestyle Modification Recommendations⁴

- Lose weight if overweight. (Target BMI 18.5 – 24.9 kg/m²)
- Limit alcohol intake. Men ≤ 2 drinks/day or 30 ml (1 oz) of ethanol as contained in 720 ml (24 oz) of beer, 300 ml (10 oz) of wine), or 90 ml (3 oz) of 80-proof whiskey. Amount should be reduced by one-half in women and lighter weight men.
- Regular aerobic physical activity – at least 30 minutes per day, most days of the week.
- Reduce dietary sodium intake to ≤ 100 mmol/day (2.4 g of sodium or 6g of sodium chloride).
- Adopt a diet rich in fruits, vegetables and lowfat dairy products with reduced content of saturated and total fat.
- Smoking cessation.

References:

1. HOPE study Lancet. 2000;355:253-259
2. SHEP Cooperative Research Group, JAMA 1991; 265:3255
3. ALLHAT trial JAMA. 2000;283:1967-1975. *J Clin Hypertens* 2(3): 222-224, 2000.
4. The Seventh Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure. (JNC7)



PLANK 3

BP Addressed for Every Hypertension Patient at Every Primary Care or Cardiology Visit

This will occur without exception, and processes are in place to monitor adherence. Although patients with hypertension may visit a primary care physician or cardiologist for non-hypertension chief complaint, standardized processes are created to assure that hypertension is evaluated and/or treated at every visit.

Physician office visits are a key opportunity to evaluate and treat hypertension, yet studies have indicated that physicians often fail to address hypertension in poor control during an office visit. Why?

Nearly one-third of all American adults have high blood pressure, and more than half of them do not have it under control. Many patients with uncontrolled high blood pressure do not even know they have it. Achieving blood pressure control can be challenging because it is “silent”—there are no symptoms that alert the patient or physician that BP is not in control. There are many missed opportunities during primary care and cardiology office visits to address high blood pressure readings by talking with patients about taking prescribed medicines, adjusting current medicines, and/or encouraging lifestyle changes. This lack of aggressive treatment despite poor blood pressure is called clinical inertia.

What Is Clinical, or Therapeutic, Inertia?

Clinical inertia is lack of treatment intensification, within a defined period of time, in a patient who has not achieved major evidence-based goals for care. Three factors typically underlie clinical inertia: clinician overestimation of care provided; use of “soft” reasons to avoid intensification of therapy; and lack of education, training, and practice organization aimed at achieving therapeutic goals.

Tips to Overcome Clinical Inertia

- Clinical goals of care must be adopted and accepted by the entire practice (see Plank 2). Clarity about goals and creating a culture where goal achievement is the norm is the first step toward changing clinical inertia.
- Address physician and practitioner issues:
 - Physicians and other practitioners may make “soft excuses” to avoid intensifying care. These include blaming patients, citing lack of time at office visits, or suggesting that the clinician can tell (without asking or trying) that the patient will resist any suggestion to intensify therapy.
 - Physicians and other practitioners typically overrate the quality of the care they already deliver and substantially underestimate the number of patients in need of intensified pharmacotherapy.
 - Physicians and other practitioners may lack the relevant knowledge, tools, training, and care systems to support active care of those with chronic diseases.
 - Adopt and systemize specific treatment and medication titration protocols.



- Create office systems
 - Create point-of-care triggers that remind both patient and provider if hypertension is not under control (e.g., alerts in the EHR or the patient portal).
 - Embed clinical decision support into practice workflow, and create standardized processes that assure blood pressure is addressed at every visit for a patient with high blood pressure.
 - Monitor adherence to blood pressure being addressed at every visit by electronic or manual audits.
 - Provide frequent performance feedback on adherence to process at the group, office (or site), and provider levels.

Supporting Literature and Resources

1. Faria C et al. "A narrative review of clinical inertia: focus on hypertension." *J Amer Soc Hypertension*. 2009; 3(4): 267–76.
2. O'Connor PJ. "Overcome clinical inertia to control systolic blood pressure." *Arch Intern Med*. 2003 Dec 8;163(22):2677–78.

Suggested AMGA Case Study

PriMed Physicians: Hypertension Best Practices

www.amga.org/Research/Research/Hypertension/Symposium/priMed.pdf



PLANK 3

TOOL: Methodology for Identifying HTN Patients (PriMed Physicians)

PriMed Physicians Methodology for Identifying Hypertensive Patients

All patients with a current or previously assigned diagnosis of HTN in the billing system database who are seen in a given month are pulled. The diagnostic codes include all of the 401.0-401.9 codes and all of the 405.00-405.99 codes plus 997.91.

All of the encounters for patients who have a HTN code, per the above, are grouped by physician and randomized and 50 outpatient encounters per physician per month are identified. The chart is pulled for each encounter (the encounters are specific to a date of service) and the findings recorded.

There is a further check then to see whether the patient has a diabetes diagnosis or a renal failure diagnosis in which case the threshold BP is reduced to $\leq 129/79$ per JNC-7.

Each patient is either “at goal” or “not at goal” in exact terms. Even a BP that is one point in excess of the JNC-7 standard is “not at goal” (i.e. a non-diabetic patient with a BP of 140/89 would be “not at goal”).



PLANK 4

All Patients Not at Goal or with New Hypertension Rx Seen within 30 Days

When patients are not at goal or have had a new prescription or a change in prescribed therapy, they should be scheduled for a return visit within 30 days. In some cases, these visits may be handled by someone on the healthcare team other than a physician or may occur through e-visits or by phone. Visit reminders may be useful in ensuring that patients keep their appointments.

Current national guidelines (JNC 7) recommend that patients with elevated blood pressures be followed within one month. In a large, retrospective study of hypertension patients, blood pressure control was demonstrated to be faster and achieved sooner in patients with shorter encounter intervals. In fact, the greatest benefit was observed at visit intervals less than two weeks. “I want to see you in two weeks” (or, a specific person on the care team will call you in two weeks) sends an unspoken message that this is important: you should fill this prescription and start taking this medication now; you can’t put it off.

Higher frequency of encounters may provide more opportunities for:

- treatment intensification
- treatment adherence
- patient education and engagement in self-management

Tips to Improve Visit Frequency

1. Return visits may not need to be face-to-face with a physician. Consider group visits, scheduled nurse visits, e-messaging, or telephonic follow-up visits.
2. Openly discuss access issues with your primary care physicians and consider creative ways to increase capacity. For example, nurse practitioners or pharmacists, using titration protocols, could manage many follow-up hypertension visits.
3. Create a reminder system via EHR, patient portal, or a simple calendar program to track patients who need follow-up.
4. Consider home blood pressure monitoring and patient report via e-messaging or telephone.

Supporting Literature and Resources

1. Turchin A, et al. Encounter Frequency and Blood Pressure in Hypertensive Patients with Diabetes Mellitus. *Hypertension*. 2010; 56: 68-74. <http://hyper.ahajournals.org/content/56/1/68.full>.
2. Guthman R, et al. Visit Frequency and Hypertension. *J Clin Hypertens*. 2005;7:327–332.<http://onlinelibrary.wiley.com/doi/10.1111/j.1524-6175.2005.04371.x/pdf>
3. Jones DW, Hall JE. Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension*. 2004;43:1–3. www.nhlbi.nih.gov/guidelines/hypertension/jnc7full.pdf

Suggested AMGA Case Study

The Vanderbilt Medical Group: My Health Team at Vanderbilt

www.amga.org/Research/Research/Hypertension/Symposium/vanderbilt.pdf



PLANK 4

TOOL: Morisky Scale (Mercy Clinics, Inc.)

The Morisky scale is a validated scale designed to estimate the risk of medication non-adherence. It has been cited in over 70 articles since its publication in 1986. It's used for many different diseases such as hypertension, hyperlipidemia, asthma, and HIV. Scores are based on patient responses to four, Yes or No questions.

Morisky Scale Questions

1. Do you ever forget to take your medicine?
2. Are you careless at times about taking your medicine?
3. When you feel better, do you sometimes stop taking your medicine?
4. Sometimes if you feel worse when you take the medicine, do you stop taking it?

Scoring the Morisky Scale

Yes=0 and No=1

- Zero is the lowest level of medication adherence
- 4 is the highest level of medication adherence
- Patients scoring 0 or 1 would benefit most from pharmacist intervention
- Goal: screen for those in which your pharmacist time should be spent on enhancing adherence

SOURCE: Morisky DE, Green LW, Levine DW. Concurrent and predictive validity of a self-reported measure of medication adherence. *Medical Care* 1986;24:67-74.



PLANK 4

TOOL: Hypertension Standing Orders (Mercy Clinics, Inc.)

TEST	INTERVAL	CONDITIONS
Office Visit	6 months	If BP controlled to <140/90
	1 month	If BP >140/90
Lipid Profile	1 year	
Basic Metabolic Profile	1 year	
Urine Alb/Creat. Ratio	1 year	Patients with no Hx of Abn UACR
	6 months	If UACR was ever >30

Complete these labs on all my patients with hypertension whenever the Standing Orders are due.

Signature

Date



PLANK 5

Prevention, Engagement, and Self-Management Program in Place

There is a program to educate patients on lifestyle, diet, exercise, and the importance of taking anti-hypertension medications. The program emphasizes engagement of patients in their care and teaches self-management skills.

Patients should be encouraged to be active participants in their own health and do what they can to more effectively manage their blood pressure at home. The Mayo Clinic recommends that every hypertensive patient be aware of ten things:

1. Lose extra pounds and watch their waistline. Men are at risk if their waist measurement is greater than 40 inches (102 cm); women greater than 35 inches (89 cm).
2. Exercise regularly—at least 30-60 minutes most days of the week.
3. Eat a healthy diet rich in whole grains, fruits, vegetables and low-fat dairy products, and low on saturated fat and cholesterol—also known as the DASH diet. [Dietary Approaches to Stop Hypertension]
4. Reduce sodium in the diet—a limit of 2,300 mg a day for people <51 years, 1,500 mg a day for >51 years.
5. Limit the amount of alcoholic beverages consumed—generally one drink a day >65, or two a day <65.
6. Avoid tobacco products and secondhand smoke.
7. Cut back on caffeine.
8. Reduce stress by taking breaks for deep-breathing exercises, getting a massage, or practicing yoga or meditation.
9. Monitor blood pressure at home.
10. Get support from family and friends.

Tips for Implementing a Self-Management Program

1. Determine the extent to which individual patients understand what hypertension means and how involved they want to be in their self-management. A readiness-for-change tool may assist in the evaluation of the role of the patient in their self-management.
2. Articulate the role the care team will take in managing their hypertension and what role the patient can take in helping keep their blood pressure in control including diet, exercise, stress management, and medication adherence.
3. Consider adding the role of health coach to the care team.
4. Provide patients with their current blood pressure and what their target blood pressure should be. It is helpful to provide this in writing.
5. Teach patients how to take their blood pressure at home and encourage them to monitor their blood pressure daily until they are at goal and then weekly.
6. Begin self-management at a level that each patient is comfortable. Goal-setting exercises are helpful in determining to what extent the patient is willing to engage.



Supporting Literature and Resources

1. A New Definition of Patient Engagement: What is Engagement and Why is it Important? Center for Advancing Health, www.cfah.org
Selection of patient materials to guide patients in participating and engaging in their health care.
2. American Heart Association. High Blood Pressure.
www.mayoclinic.com/health/high-blood-pressure
Patient education materials on high blood pressure including handouts, calculators, videos, blood pressure trackers, and patient e-newsletter
3. Prochaska JO, Norcross J, DiClemente C. *Changing for Good: A Revolutionary Six-Stage Program for Overcoming Bad Habits and Moving Your Life Positively Forward*. William Morrow Paperbacks. 1995. www.amazon.com/Changing-Good-Revolutionary-Overcoming-Positively/dp/038072572X/ref=la_B001H9VXJ0_1_2?ie=UTF8&qid=1357817150&sr=1-2
Three acclaimed psychologists studied more than 1,000 people who were able to positively and permanently alter their lives. They discovered that change does not depend on luck or willpower. It is a process that can be successfully managed by anyone who understands how it works.
4. Greene J, Hibbard JH. Why Does Patient Activation Matter? An Examination of the Relationships Between Patient Activation and Health-Related Outcomes. *J Gen Intern Med* 2011;27(5):520–6.
<http://link.springer.com/article/10.1007%2Fs11606-011-1931-2>

Suggested AMGA Case Study

Mercy Clinics, Inc: Hypertension Best Practices

www.amga.org/Research/Research/Hypertension/Symposium/mercy.pdf



PLANK 5

TOOL: BP at Goal Patient Questionnaire (Fletcher Allen Healthcare/University of Vermont)

Please circle one answer for each question

1. Do you consider your BP to be under control?

yes no don't know

2. At what value would you consider your BP to be under control?

120/70

130/80

140/90

150/100

don't know

3. What problems do you see that stops your BP being controlled?

Circle all that apply

a. I do not know my BP goal

b. I do not know what my BP is or how to measure it

c. I do not know how to decide if my BP is well controlled

d. I do not know what to do when my BP is not at goal

e. I do not know how to talk to my doctor about BP control

f. My blood pressure medications make me feel bad

g. My blood pressure medications are too expensive

h. I do not have time or do not like to exercise

i. I do not know what diet to follow

j. I have difficulty following the diet prescribed by my doctor

k. I have too many other things to worry about

Date _____



PLANK 5

TOOL: BP at Goal Patient Questionnaire (Fletcher Allen Healthcare/University of Vermont)

QUESTIONNAIRE EVALUATING PHYSICIAN'S ASSESSMENT OF THE PATIENT'S KNOWLEDGE AND BEHAVIORS ABOUT BLOOD PRESSURE

BP AT GOAL PATIENT QUESTIONNAIRE

Mark on the corresponding scale of 0-10 with 0 being least important and 10 being most important your assessment of your patients' perception of the following barriers to their BP being at goal.

- a. I do not know my BP goal
0 _____ 10
- b. I do not know what my BP is or how to measure it
0 _____ 10
- c. I do not know how to decide if my BP is well-controlled
0 _____ 10
- d. I do not know what to do when my BP is not at goal
0 _____ 10
- e. I do not know how to talk to my doctor about BP control
0 _____ 10
- f. My blood pressure medications make me feel bad
0 _____ 10
- g. My blood pressure medications are too expensive
0 _____ 10
- h. I do not have time or do not like to exercise
0 _____ 10
- i. I do not know what diet to follow
0 _____ 10
- j. I have difficulty following the diet prescribed by my doctor
0 _____ 10
- k. I have too many other things to worry about
0 _____ 10

Date _____



PLANK 5

TOOL: 5As Encounter Form (Mercy Clinics, Inc.)

MERCY CLINIC 5AS ENCOUNTER FORM – SELF-MANAGEMENT EDUCATION

Assess patient's knowledge, beliefs, behaviors, and clinical data.
Does patient have the desire to change behavior? ☐ Yes ☐ No

Advise about health risks and benefits of change – consider health literacy.
Topics Discussed: ☐ Diet ☐ Exercise ☐ Smoking ☐ Other

Agree on a goal based on patient priorities.

*Patient Goal: _____

Assist to develop a personal action plan.

1. Specific behavior changes
2. Identified barriers (i.e., depression)
3. Options to address barriers
4. Follow-up plan – *When:* _____ *How:* ☐ Phone *Other* _____

Educator Signature: _____

Arrange to contact the patient between visits.

* Follow-up Contact: Completed on – Date: _____

1. Results of behavior changes
2. Barriers encountered
3. Options to address barriers

Follow-up plan – *When:* _____ *How:* ☐ Phone *Other* _____

Follow-up Signature: _____

*Required to bill insurance company



PLANK 5

TOOL: After Visit Summary (Cleveland Clinic)

AFTER VISIT SUMMARY				
PATIENT INFO		ENCOUNTER DATE: <u>Male</u> <u>14</u>		
Patient's Name		DOB	Sex	Age
VISIT INFORMATION	<u>09/01/2007</u>			
	Date & Time	Provider	Department	Encounter#
REASON FOR VISIT	<u>Flu 6 Month</u>			
VITALS LAST RECORDED	<u>122/62</u>	<u>75</u>	<u>96.4°F (35.8°C)</u> <u>Tympanic</u>	<u>Right 198 lbs.</u> <u>(89.8 kg)</u>
	BP	Pulse	Temp (Src)	Weight
ALLERGIES AS OF 09/07/2007	<u>NO LATEX ALLERGY</u> <u>Date Verified 09/01</u> <u>03/16/2005</u> <u>Not Noted</u>			
	Agent	Noted	Reactions-Comments	Type
OUTPATIENT CURRENT MEDICATIONS 09/07/2007	<u>candesartan (ATACAND)</u> <u>16mg ORAL Tab LIPITOR 10mg TAB</u> <u>ASPIRIN TABLET 81 MG PO</u>		<u>Take one (1) tablet daily in the morning.</u> <u>Take one (1) tablet daily.</u> <u>1.0 tablet Oral qd</u>	
	Prescription	Dosage		
PRESCRIPTION INFORMATION	<u>ATACAND 16 MG TAB</u>			
	Printed Prescriptions			
PATIENT INSTRUCTIONS	<u>NONE</u>			
VISIT DISPOSITION	<u>Return in approximately 6 months.</u>			
	Disposition			
Thank you for coming to see me today. I appreciate your confidence in choosing _____ for your medical care. If you have any questions about your visit today, please call our office and my staff will forward your message to me. I will get back to you as soon as possible.				



PLANK 5

TOOL: Patient Education Flyer (Cleveland Clinic)

HYPERTENSION (HIGH BLOOD PRESSURE)

Goal Blood Pressure is less than 140/90

*NOTE: DIABETICS BLOOD PRESSURE GOAL IS LESS THAN 130/80

American Heart Association recommended blood pressure levels			
Blood Pressure Category	Systolic (mmHg)		Diastolic (mmHg)
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

Ten Ways to Control Your High Blood Pressure

1. Know your blood pressure. Have it checked regularly.
2. Know what your weight should be. Keep it at or below that level.
3. Don't use too much salt in cooking or at meals. Avoid salty foods.
4. Eat a diet low in saturated fat according to the American Heart Association Recommendations.
5. Control alcohol intake. Don't have more than one drink a day if you're a woman or two a day if you're a man.
6. Take your medicine exactly as prescribed. Don't run out of pills even for a single day.
7. Keep appointments with the doctor.
8. Follow your doctor's advice about physical activity.
9. Make certain your parents, brothers, sisters and children have their blood pressure checked regularly.
10. Live a normal life every other way.

Blood Pressure Tracker Use this tool to keep track of your blood pressure levels.			
Date	Blood Pressure	Weight	Notes/How I Feel



PLANK 5

TOOL: BP Tracking Sheet (Fletcher Allen Healthcare/University of Vermont)

BP TRACKING SHEETS AND TABLE FOR ASSESSING IF BP WAS AT GOAL FOR PATIENTS PARTICIPATING IN THE PATIENT DIRECTED ARM

IS MY BLOOD PRESSURE AT GOAL

RECORD YOUR BLOOD PRESSURE

Write a "1" in column 1 (green) if your SBP is 130 or lower

Write a "1" in column 2 (red) if your SBP is higher than 130

Column 1

Column 2

Date	Time	SBP Systolic (Top)	DBP Diastolic (Bottom)	Pulse	SBP 130 or Lower	SBP Higher than 130
	Am					
	Pm					
	Am					
	Pm					
	Am					
	Pm					
	Am					
	Pm					
	Am					
	Pm					
	Am					
	Pm					
	Am					
	Pm					
	Am					
	Pm					
	Am					
	Pm					
	Am					
	Pm					
	Am					
	Pm					
Your Name				Totals		

If your BP is not at goal, contact Renal Services or mail this sheet to us.

Please bring this sheet to your next doctor's visit if you have not mailed it.

ADD UP EACH COLUMN
If this total is HIGHER
You are at YOUR BP GOAL

ADD UP EACH COLUMN
If this total is HIGHER
You are at NOT at your BP GOAL



PLANK 5

TOOL: Patient Participation Handouts—English (Sharp Rees-Stealy Medical Group)

SIDE 1—ENGLISH

High Blood Pressure

How am I doing?

Blood Pressure Goals

- Systolic (upper number): 139 or less
- Diastolic (lower number): 89 or less

My Blood Pressure

Today's Date _____

Systolic (upper number): _____

Diastolic (lower number): _____

High Blood Pressure may affect your

- ✓ Kidneys— increases your risk of kidney failure and need for dialysis
- ✓ Heart— increases your risk of heart attacks and heart failure
- ✓ Brain— increases your risk of strokes

Keeping your blood pressure under control will keep you healthy and prevent complications

SHARP Rees-Stealy Medical Centers



PLANK 5

TOOL: Patient Participation Handouts—English (Sharp Rees-Stealy Medical Group)

SIDE 2—ENGLISH

High Blood Pressure

High blood pressure usually causes no symptoms. That is why you can have high blood pressure for years and not even know it. Medicine is usually needed to control high blood pressure.

How do I know I have high blood pressure?

The only way to find out is to have your blood pressure checked regularly

How do I treat my high blood pressure?

- Stop smoking
- Physical activity (the goal is 30 minutes per day)
- Maintain a healthy weight
- Avoid salty foods (such as canned and processed foods)

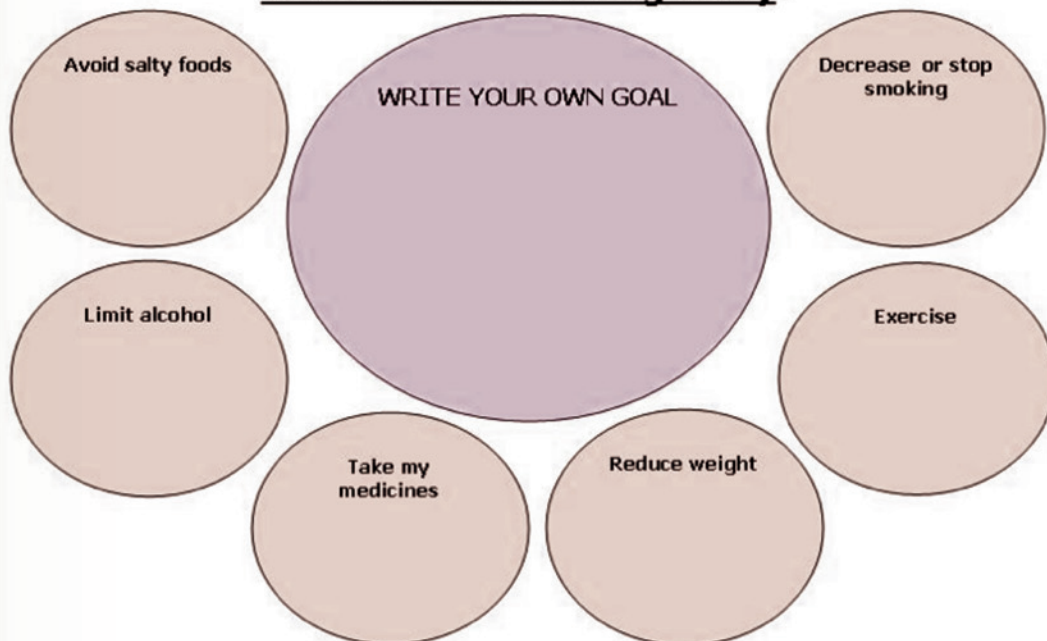
Will I need to take medicines?

- YES. Most people with high blood pressure need to take medicines.

Why are medicines important?

- Taking your medicine daily is important to achieve consistent control of your blood pressure. This will help prevent heart attack, stroke, and kidney failure.

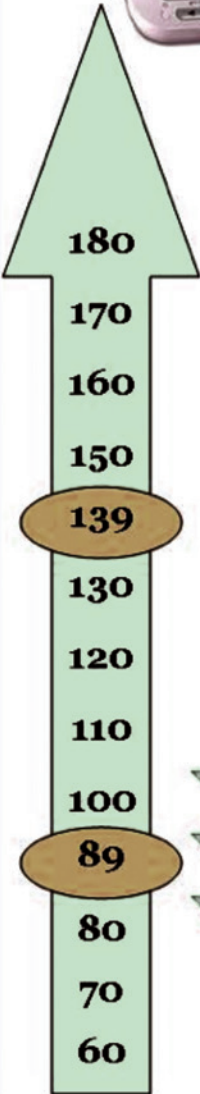
What will I do starting today?



PLANK 5

TOOL: Patient Participation Handouts—Spanish (Sharp Rees-Stealy Medical Group)

SIDE 1—SPANISH



Hipertensión

¿Como esta mi presión arterial?

Objetivos de la presión arterial

Sistólica (número superior): 139 o menos

Diastolica (número menor): 89 o menos

Mi presión arterial

Fecha de hoy _____

Sistólica (número superior): _____

Diastolica (número menor): _____

Hipertensión puede afectar su

- ✓ **Riñones** — aumenta su riesgo de insuficiencia renal y la necesidad de diálisis
- ✓ **Corazón:** aumenta el riesgo de ataques cardíacos y la insuficiencia cardíaca
- ✓ **Cerebro**— aumenta su riesgo de embolias

Mantener su presión arterial y su diabetes bajo control es importante para mantenerse saludable y prevenir complicaciones

SHARP Rees-Stealy Medical Centers



PLANK 5

TOOL: Patient Participation Handouts—Spanish (Sharp Rees-Stealy Medical Group)

SIDE 2—SPANISH

Hipertensión

Alta presión arterial (hipertensión) generalmente no causa síntomas. Por eso, usted puede tener alta presión arterial durante años y no estar enterado. Generalmente se necesitan medicamentos para controlar la alta presión arterial.

¿Cómo sé que tengo hipertensión?

La única manera para averiguar es tomando su presión arterial regularmente.

¿Cómo trato mi hipertensión?

- Dejando de fumar
- Manteniendo un régimen de actividad física (el objetivo es de 30 minutos por día)
- Manteniendo un peso saludable
- Evitando alimentos con alto contenido de sal (tales como comidas enlatadas y alimentos procesados)

¿Necesito tomar medicamentos?

- SÍ. La Mayoría de las personas con hipertensión necesitan tomar medicamentos.

¿Por qué son importantes los medicamentos?

- Tomar sus medicamentos diariamente es importante para lograr un control constante de la hipertensión. Esto ayudará a prevenir ataque al corazón, embolias o la insuficiencia renal.

¿Qué hará a partir de hoy?



PLANK 6

Registry Used to Track Hypertension Patients

A method is in place to identify all hypertension patients before each visit and to note whether they have co-morbid conditions that could affect their BP control, whether they are at goal, and whether there are gaps in care. Outreach should be performed to patients who miss scheduled appointments or are overdue for a follow-up visit, according to protocol.

What Is a Registry?

Effective chronic illness care is virtually impossible without information systems that assure ready access to key data on individual patients as well as populations of patients. A comprehensive clinical registry can enhance the care of individual patients by providing timely reminders for needed services, with the summarized data helping to track and plan care. At the practice population level, a registry can identify groups of patients needing additional care as well as facilitate performance monitoring and quality improvement efforts. Specific functions that registries provide often include:

1. Patient lists, a “population” view that includes all patients who have a particular chronic condition or should be receiving certain types of preventive care, such as screenings and immunizations
2. Decision support tools used at the point of care, making providers aware of the patient’s status on preventive measures and recommended care for chronic conditions, even if the current visit is for an unrelated acute problem
3. Exception reports to identify patients who are not meeting management goals, ideally with some form of priority ranking, which can be used to drive patient outreach initiatives
4. Predictive analytics, identifying those patients who are at greatest risk for poor outcomes or unusually high resource use over the coming months, which can be used to prioritize individualized case management interventions
5. Progress reports to examine provider and staff performance in delivering recommended care
6. Population-level reports that monitor patient status and outcomes, which can be helpful in quality improvement and resource planning
7. Benchmarking reports and population dashboards
8. Risk stratification of patients
9. Automated notifications and communications

What Should I Look for in a Registry?

Conceptually, Electronic Health Registries (EHRs) and disease registries are complementary. EHRs focus on the care of individual patients, while registries provide a population view. EHRs focus on patients who are being seen, while registries identify patients who are not being seen but should be.

Early registries were separate from EHRs and varied from Excel spreadsheets to large-scale databases, but increasingly, EHR vendors are integrating registry functionality. This avoids duplicate data entry, which is costly and error-prone, as well as duplicate maintenance of chronic care guidelines.

A key issue is how the registry data are populated. Are patients included solely on the basis of problem lists or diagnosis codes on claims, or does the system search clinical data such as lab results and prescribed medications to identify patients who may have a chronic condition but no problem list entry or diagnosis code?



Supporting Literature and Resources

Office of the National Coordinator for Health IT (ONC). What is a disease/immunization registry?

www.healthit.gov/providers-professionals/faqs/what-diseaseimmunization-registry

Introduction to disease registries and criteria for selection with resources from AHRQ, HRSA, and the Office of the National Coordinator for Health Information Technology.

Suggested AMGA Case Study

Providence Medical Group: Developing Effective Interventions to Support Patient and Provider Co-Management of Hypertension

www.amga.org/Research/Research/Hypertension/Compendiums/providence.pdf

Because of the complexity of setting up registries and the variety of EHRs used at healthcare organizations, no tool is provided for this plank.



PLANK 7

All Team Members Trained in Importance of BP Goals and Metrics

The entire onsite care team should, through training, be aware of the importance of hypertension management and blood pressure goals. Team members should be encouraged to comment to patients on their progress and on the importance of medications and medication adherence, especially when patients are not at goal.

Team-based Care

In 2012, the Community Preventive Services Task Force, an independent body appointed by CDC, recommended team-based care to improve blood pressure control. The Task Force found that team-based care improved blood pressure control on the basis of strong evidence of effectiveness in improving the proportion of patients with controlled blood pressure and in reducing systolic and diastolic blood pressure. Evidence was considered strong, based on findings from 77 studies of team-based care, organized primarily with nurses and pharmacists working in collaboration with primary care providers, patients, and other professionals.

A care team can complement the role of the physician by supporting and sharing responsibilities for hypertension care, such as medication management, patient follow-up, and helping the patient adhere to their blood pressure control plan, including health behavior change. Principles of team-based care include:

- **Shared goals:** The team—including the patient and, where appropriate, family members or other support persons—works to establish shared goals, and the entire team is aware of the goals for each patient.
- **Clear roles:** There are clear expectations for each team member's functions, responsibilities, and accountabilities.
- **Mutual trust:** Team members earn each other's trust, creating strong norms of reciprocity and greater opportunities for shared achievement.
- **Effective communication:** The team prioritizes communication, including thorough but concise documentation, and continuously refines its communication skills.
- **Measurable processes and outcomes:** The team agrees on—and receives feedback on—successes and failures in both the functioning of the team and achievement of the team's goals.

Tips to Train Your Team

- Create team blood pressure control goal and report progress to goal on regular basis.
- Have regular team meetings that facilitate communication and coordination of care among the various team members.
- Define roles for each team member based on the use of evidence-based guidelines.
- Establishing structured ways to monitor patients' progress and schedule additional patient visits.
- Support patients in following their treatment plan by providing them with self-management tools and resources (see Plank 5).



Supporting Literature and Resources

1. Institute of Medicine, Core Principles & Values of Effective Team-Based Healthcare:
www.iom.edu/~media/Files/Perspectives-Files/2012/Discussion-Papers/VSRT-Team-Based-Care-Principles-Values.pdf
Key principles in creating effective care teams with excellent case study examples.
2. Community Preventive Services Task Force. Team-Based Care to Improve Blood Pressure Control: www.thecommunityguide.org/cvd/teambasedcare.html
Systematic review of the evidence-based literature that supports the use of a multidisciplinary team to improve the quality of hypertension care for patients.

Suggested AMGA Case Study

Essentia Health: RN Hypertension Management Pilot
www.amga.org/Research/Research/Hypertension/Symposium/essentia.pdf

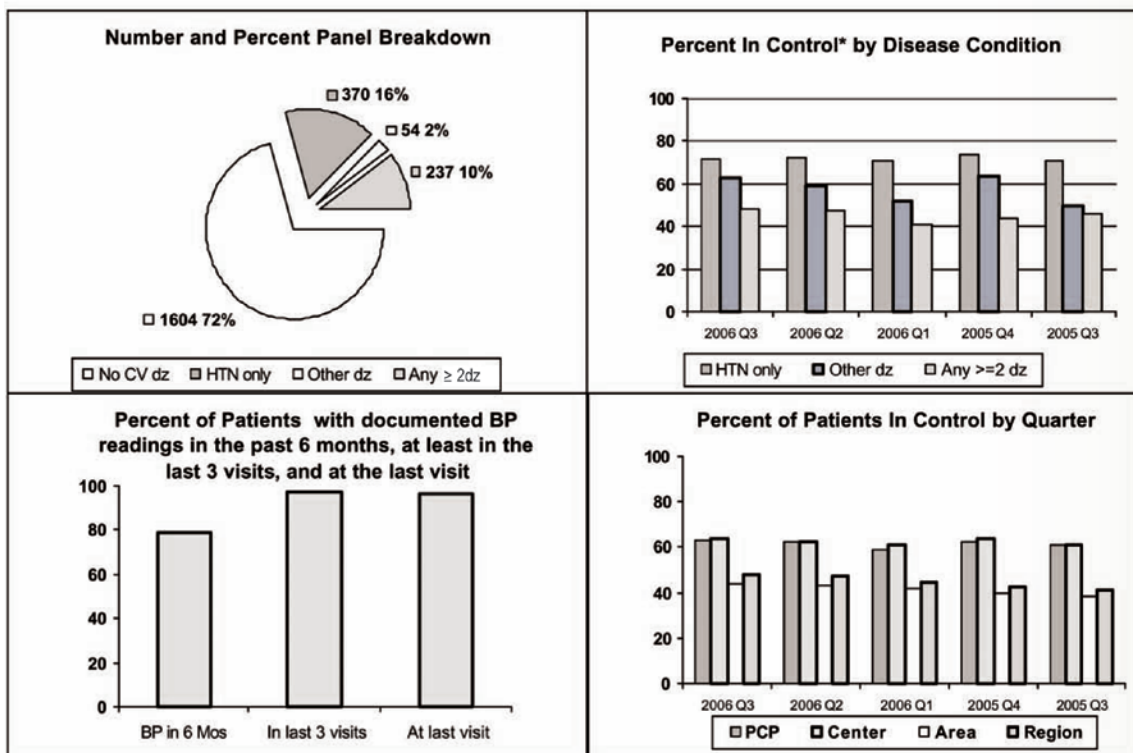


PLANK 7

TOOL: HTN Report (Kaiser Permanente—Mid Atlantic States)

KAISER PERMANENTE HYPERTENSION REPORT – ONE-PAGE SUMMARY FOR PRIMARY CARE PHYSICIAN

Hypertension Report			
Specialty: INTERNAL MEDICINE	Provider Type: PHYSICIAN		
Provider: 1112	Area: BALTIMORE	Center: ANNAPOLIS	
Current Panel Size for Month Ending 200609	2265	Total Patients with either HTN, Chronic Kidney Disease (CKD), CAD, HF, or Diabetes	661



Notes:

Disease conditions HTN only: Members with Hypertension only
 Other dz: Members with one chronic condition other than HTN (Chronic Conditions for this report are defined as Diabetes, Chronic Kidney disease, CAD, HF)
 Any≥2 dz: Members with 2 or more chronic conditions including HTN, e.g. HTN & CAD or DIAB & HF
 No dx CV dz: Members without any cardiovascular disease or at-risk disease for Hypertension

*In control – Patients with CKD or Diabetes with BP readings below 130/80, all others below 140/90 and having documented BP readings in the Encounter system in the past 12 months from primary care, endocrinology, nephrology, cardiology, obstetrics, neurology encounters

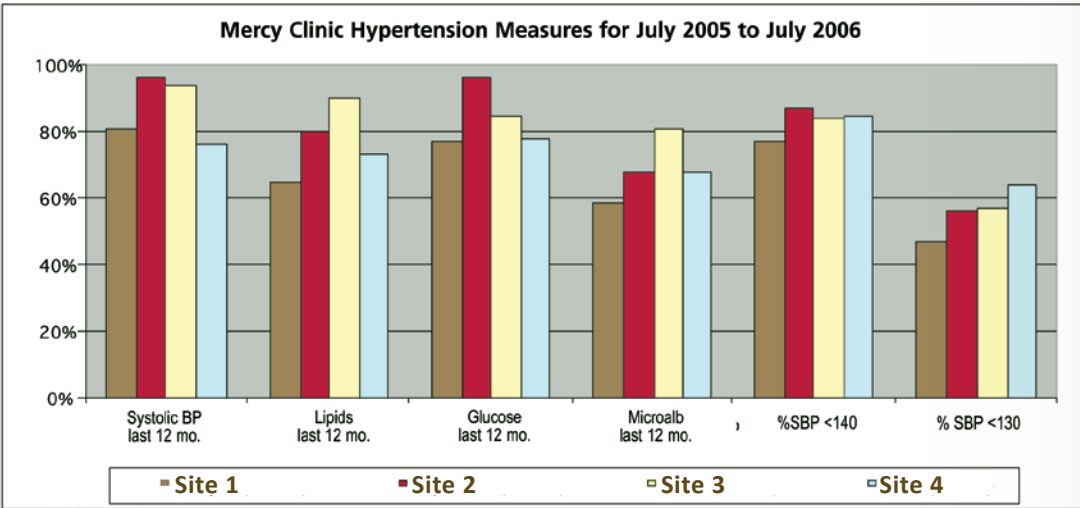
Graphs by Quarter start with most recent quarter and go backwards in time.



PLANK 7

TOOL: Clinical Level Performance Report (Mercy Clinics, Inc.)

MERCY CLINIC INDIVIDUAL CLINIC LEVEL PERFORMANCE REPORT



PLANK 7

TOOL: Quarterly Status Report (Kaiser Permanente—Mid Atlantic States)

Hypertension Summary								
Area and Center	Hypertension* Condition	In*** Control	Not in Control	Total** Disease patients	Total patients w HTN	% Disease Pts of Total	Total Center Members	% Disease Patients In Control
CITY								
Site 1	HTN only	432	185	617				
	Other disease	61	29	90				
	HTN and other chronic disease	179	170	349				
		672	384	1056	966	23.98	4403	63.64
Site 2	HTN only	374	555	929				
	Other disease	39	73	112				
	HTN and other chronic disease	113	272	385				
		526	900	1426	1314	23.42	6090	37.57
Site 3	HTN only	491	274	765				
	Other disease	77	66	143				
	HTN and other chronic disease	122	180	302				
		690	520	1210	1067	14.99	8071	56.75
Site 4	HTN only	758	428	1186				
	Other disease	82	65	147				
	HTN and other chronic disease	325	337	662				
		1165	830	1995	1848	24.84	8031	58.51
Site 5	HTN only	811	776	1587				
	Other disease	113	99	212				
	HTN and other chronic disease	318	490	808				
		1242	1365	2607	2395	25.11	10382	47.49
Site 6	HTN only	1283	1250	2533				
	Other disease	122	136	258				
	HTN and other chronic disease	477	873	1350				
		1882	2259	4141	3883	28.64	14457	45.37
Site 7	HTN only	1185	1276	2461				
	Other disease	120	135	255				
	HTN and other chronic disease	365	906	1271				
		1670	2317	3987	3732	27.26	14625	41.40
TOTAL CITY	HTN only	5334	4744	10078				
	Other disease	614	603	1217				
	HTN and other chronic disease	1899	3228	5127				
		7847	8575	16422	15205	24.86	66059	47.78
OUTSIDE CITY								
Site 8	HTN only	2820	2967	5787				
	Other disease	263	306	569				
	HTN and other chronic disease	921	2039	2960				
		4004	5312	9316	8747	25.87	36015	42.60
Site 9	HTN only	1577	1100	2677				
	Other disease	205	169	374				
	HTN and other chronic disease	481	596	1077				
		2263	1865	4128	3754	20.72	19926	54.64
Site 10	HTN only	489	414	903				
	Other disease	70	60	130				
	HTN and other chronic disease	133	242	375				
		692	716	1408	1278	20.29	6940	48.93

Notes: * Hypertension - Members with a hypertension diagnosis 401.xx-405.xx from past Encounters and Claims, includes Pediatric and Adult members

** Disease conditions: Members with chronic conditions defined as HTN, CAD, Diabetes, Heart Failure and Chronic Kidney Disease

***In Control - Percent of Patients with CKD or Diabetes with BP readings below 130/80, and patients with HTN, CAD or HF below 140/90 and documented BP readings in the Encounter system the past 12 months from primary care, endocrinology, nephrology, cardiology, obstetrics and neurology encounters



PLANK 7

TOOL: Physician Quality Report Card (Cleveland Clinic)

PHYSICIAN QUARTERLY QUALITY REPORT CARD

QUARTER 1 Physician Site RMP					QUARTER 2 Physician Site RMP			QUARTER 3 Physician Site RMP			QUARTER 4 Physician Site RMP		
Cervical Cancer S													
% Screened	93%	93%	84%	84%	94%	85%	80%						
Patient Count	1017	7734	57469		994	6555	63342						
Chlamydia Screen													
% Screened	43%	23%	28%	25%	26%	23%	24%						
Patient Count	52	151	5669		50	88	6385						
Colorectal CA Screen													
% Screened	81%	89%	79%	72%	90%	81%	70%						
Patient Count	848	8412	69045		867	7785	79403						
Diabetes													
Patient Count	161	1237	10479		115	731	9112						
Comprehensive Measure*	11%	14%	13%		20%	17%	14%						
Hba1c Order Count	97%	93%	89%	89%	99%	95%	95%						
*Hba1c < 7%	69%	64%	57%	54%	63%	54%	53%						
Hba1c < 8%	85%	83%	80%	77%	83%	81%	78%						
Hba1c > 9%	96%	7%	11%	11%	7%	9%	11%						
*LDL < 100	46%	49%	61%	60%	46%	62%	59%						
LDL < 130	74%	82%	87%	85%	82%	85%	85%						
LDL Order Rate	93%	89%	86%	85%	96%	92%	90%						
MicroAlb Screen	90%	90%	83%	75%	96%	89%	80%						
Rate of BPs < 130/80	63%	50%	46%	42%	63%	50%	44%						
Rate of BPs < 140/90	91%	85%	76%		92%	85%	77%						
Rate of BPs done	100%	100%	99%	99%	99%	99%	98%						
Rate of Eye Exams	70%	66%	59%	53%	77%	70%	55%						
Diabetes Screen													
Patient Count	1195	11863	97385		1211	10916	111976						
Rate of Diabetes Screen	85%	63%	68%	73%	96%	93%	89%						
HTN													
Patient Count	579	4427	38157		539	3840	41891						
Rate of BPs < 140/90	85%	85%	79%	71%	87%	80%	73%						
Lipid Screen													
Patient Count	1756	18286	154547		1756	16244	174829						
Rate of Lipid Screen	89%	89%	80%	75%	91%	83%	74%						
Mammogram													
Patient Count	878	5989	45194		889	5380	51331						
% Tests	93%	94%	88%	85%	95%	89%	84%						
Osteoporosis Screen													
% Screened	98%	99%	92%	86%	99%	93%	83%						
Patient Count	323	2359	18611		332	2229	22089						
Pneumovax													
Patient Count	366	3879	31549		372	3682	37429						
Rate of Pneumovax	99%	98%	95%	94%	99%	96%	92%						



PLANK 8

All Specialties Intervene with Patients Not in Control

All specialty departments should routinely take blood pressures on all adult patients and refer patients who are not at goal to primary care (or the patient's cardiologist, if the patient is already seeing a cardiologist). When possible, a primary care appointment should be made before the patient leaves the specialty appointment.

Care Coordination

The Agency for Healthcare Research and Quality has defined care coordination as “the deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of healthcare services.” The lack of coordination can be unsafe, even fatal, when abnormal test results are not communicated correctly, prescriptions from multiple doctors conflict with each other, or primary care physicians do not receive critical information about their patients. Coordination of care is especially critical for patients with a chronic disease like hypertension, who are often expected to navigate a complex healthcare system. Having all specialists involved in coordination of hypertension care addresses potential gaps in care by taking advantage of all opportunities to intervene when blood pressure control is not at goal.

The National Quality Forum has endorsed a framework for care coordination with five domains:

- Healthcare “Home”: Serves as the patient's main point of contact for health care and a clearinghouse for all information about a patient's health status
- Proactive Plan of Care and Follow-up: The plan of care is jointly created and managed by the patient/family and the entire healthcare team
- Communication: All care team members are aware of tests and services coordinated within the plan of care, and results are readily available to all
- Information Systems: Standardized, integrated electronic information systems with functionality to support care coordination
- Transitions or Handoffs: Transitions between settings or providers of care are critical; mishaps often occur that can make care unsafe

Tips for Involving Specialists in Blood Pressure Control

1. Discuss and clarify group philosophy toward population health. Begin dialogue on shared accountability, patient-centered approach for individuals with chronic care needs.
2. Make the case. Involve specialty leaders in the conversation about the importance of BP control for the population and their vital role in care coordination.
3. Create policies, procedures, and accountabilities to support effective collaborations between primary care and specialist providers.
4. Train specialty care staff in proper BP measurement (see Plank 1).
5. Create and disseminate a guideline (see Plank 2) that indicates “handoff” expectations for specific ranges of BP.



Supporting Literature and Resources

1. National Quality Forum, Preferred Practices and Performance Measures for Measuring and Reporting Care Coordination:

www.qualityforum.org/Publications/2010/10/Preferred_Practices_and_Performance_Measures_for_Measuring_and_Reporting_Care_Coordination.aspx

Extensive document on preferred practices and consensus standards in the key domains of care coordination.

2. Patient-Centered Primary Care Collaborative. Core Value, Community Connections: Care Coordination in the Medical Home:

www.pcpcc.net/sites/default/files/media/carecoordination_pcpcc.pdf

Case examples of programs to promote coordination of care in a variety of practice settings.



PLANK 8

TOOL: Guideline for Treatment of HTN (Sharp Rees-Stealy Medical Group)

BLOOD PRESSURES FOR NON-PRIMARY CARE PATIENT VISITS

To provide safe care for all patients of Sharp Rees-Stealy, Blood Pressures (BP) will be taken on all patients, including those patients being seen in non-primary care areas. The following are guidelines for those patients with elevated blood pressure.

If patient's BP is elevated, please have patient sit for 5 minutes and repeat BP. If the BP remains elevated, please notify specialty physician, prior to implementing any of the following scenarios.

1. Systolic 140-179 or diastolic 90-109. Ask the patient to schedule a routine follow-up with their primary doctor. ALSO, send a task to the primary doctor including the BP. This can be completed by any level of clinical staff.
2. Systolic 180-209 or diastolic 110-119. Have the patient wait in the office and a licensed clinical staff will call the primary or doctor on call for advice.
3. Systolic over 210 or diastolic over 120. Have the patient wait in the office, and call the primary care physician. Treat as emergent. This communication will be physician to physician.



PLANK 8

TOOL: Standard Workflow for BP Check (ThedaCare)

	Steps	Tips/Helpful Hints
1	Pt arrives for BP check	
2	Obtain BP and Pulse - If BP result is greater than or equal to 140/90, repeat BP in 5 minutes. - After 5 minutes, if BP is less than 140/90 route nurse encounter to PCP as an FYI. For Diabetic patient - If BP is greater than or equal to 130/80, repeat BP in 5 minutes. - After 5 minutes, if BP is less than 130/80 route nurse encounter to PCP as an FYI.	Take BP in both arms and record the BP from the arm with the higher value. Have patient rest quietly in the exam room before rechecking their blood pressure. Recheck from the arm that had the higher value. Normal BP: SBP < 120 DBP < 80 Prehypertension: SBP 120 - 130 DBP 80 - 89
3	If SBP is greater than or equal to 140-179 (or above patient's target SBP) OR DBP is greater than or equal to 90-109 (or above patient's target DBP) Ask if patient is able to stay.	Stage 2 Hypertension: SBP equal to or > 160 DBP equal to or > 100
	3A If patient is able to stay - Route nurse encounter to PCP AND - Communicate BP results with PCP face to face. - If PCP is not working, notify on-site on-call provider. - Document that you have talked with the PCP or on-site on-call provider. - Send patient home after receiving plan of care from provider. 3B If patient is able to stay. - Route nurse encounter to PCP AND - Communicate BP results with PCP face to face. - If PCP is not working, notify on-site on-call provider. - Document that you have talked with the PCP or on-site on-call provider. - Call patient with plan of care.	Approach PCP or on-site on-call provider in between patients with the BP result of the patient.
4	If SBP is 180 or greater OR DBP is 110 or greater route nurse encounter to PCP AND alert PCP immediately If PCP is not working - Notify on-site on-call provider. - Do not send patient home until PCP or on-site on-call provider has addressed the plan of care. - Document that you have talked with the PCP or on-site on-call provider.	Stage 2 Hypertension: SBP equal to or > 160 DBP equal to or > 100 Patient must be evaluated immediately. Approach PCP or on-site on-call provider face to face with BP result of the patient. PCP or on-site on-call provider to determine plan of care before sending patient home.
5	If patient does not need to see the provider - Go to Order Entry Screen - Enter service level "RN No Charge" and a diagnosis to match the visit encounter	
6	Close the Encounter	



PLANK 8

TOOL: Walk-in Medical Assistant Blood Pressure Check Protocol (Kaiser Permanente)

KAISER FOUNDATION HOSPITAL
SOUTHERN CALIFORNIA PERMANENTE
MEDICAL GROUP
POLICY AND PROCEDURE

Section	OPERATIONS	NUMBER	2008
Title	BLOOD PRESSURE MONITORING - Blood Pressure Check Visit	EFFECTIVE DATE	9/91
		REVISION	11/09, 1/11
		PAGE NUMBER	1 of 4

PURPOSE

To promote health maintenance and improve patient care through appropriate blood pressure monitoring.

POLICY

1. All adult patients presenting for an appointment or procedure will have their blood pressure measured when instructed to do so by the Proactive Office Encounter automated alert
2. Take and document a second blood pressure when indicated
3. Give the After Visit Summary (AVS) to all patients

AUTHORIZED PERSONNEL

1. Provider - MD, PA, NP, CNM, CRNA
2. Pharm D
3. RN
4. LVN/MA/Ortho Tech

EQUIPMENT/SUPPLIES NEEDED

1. Sphygmomanometer or Automated Blood Pressure Machine
2. Appropriate-sized blood pressure cuff
3. Stethoscope
4. Chair with back support
5. Table to support arm at heart level

PROCEDURE

*Refer to Vital Signs P&P

Adult Primary Care Departments (scheduled provider visit):

1. Using appropriate technique, take the patient's sitting BP and enter in KPHealthConnect™ in the "Vitals Section". The date and time will automatically populate. After each documented measurement and at completion of vitals documentation click the "Close" button in the "Vitals" section to ensure capture of all values.
2. The HTN "Best Practice Alert" will populate when the BP is elevated: greater than 139 systolic and/or greater than 89 diastolic instructing the staff to repeat the blood pressure.
3. If the BP is elevated, wait one (1) minute and repeat. If the patient is 70 years of age or older take the second blood pressure in the standing position. Enter the new BP in KPHealthConnect™ in the "New Set of Vital Signs" section. The date and time will automatically populate. Click the "Close" button in the "Vitals" section. If the BP was standing, click on "Doc Flowsheet" in upper right corner. Under the recent BP, in the "BP Patient Position" box, select the paper icon, select standing then "Accept".
4. Inform the member of their blood pressure.
5. The HTN "Best Practice Alert" will be addressed by the provider.

Module Blood Pressure Check scheduled appointment or walk-in (provider visit not scheduled):

Note: As with any visit, if the patient expresses any complaints or questions, the MA must refer the patient to the RN or Provider

1. Open the patient's chart from the resources schedule using Allied Health Encounter.
2. Using appropriate technique, take the patient's sitting BP and enter in KPHealthConnect™ in the "Vitals Section". The date and time will automatically populate. After each documented measurement and at completion of vitals documentation click the "Close" button in the Vitals section to ensure capture of all values.
3. The HTN "Best Practice Alert" will populate when the BP is elevated: greater than 139 systolic and/or greater than 89 diastolic instructing the staff to repeat the blood pressure.



PLANK 8

TOOL: Walk-in Medical Assistant Blood Pressure Check Protocol (Kaiser Permanente)

KAISER FOUNDATION HOSPITAL SOUTHERN CALIFORNIA PERMANENTE MEDICAL GROUP POLICY AND PROCEDURE

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Title	BLOOD PRESSURE MONITORING - Blood Pressure Check Visit	EFFECTIVE DATE	9/91
		REVISION	11/09, 1/11
		PAGE NUMBER	2 of 4

4. If the BP is elevated, wait one (1) minute and repeat. If the patient is 70 years of age or older take the second blood pressure in the standing position. Enter the new BP in KPHealthConnect™ in the "New Set of Vital Signs" section. The date and time will automatically populate. Click the "Close" button in the "Vitals" section. If the BP was standing, click on "Doc Flowsheet" in upper right corner. Under the recent BP, in the "BP Patient Position" box, select the paper icon, select standing then "Accept".
5. Inform the member of their blood pressure.
6. Follow procedure in Table A based on the lowest BP reading.

Specialty Care Departments:

1. Using appropriate technique, take the patient's sitting BP and enter in KPHealthConnect™ under the "Vitals Section". Click the "Close" button in the Vitals section.
2. The HTN "Best Practice Alert" will populate when the BP is elevated: greater than 139 systolic and /or greater than 89 diastolic instructing the staff to repeat the blood pressure.
3. If the BP is elevated, wait one (1) minute and repeat. If the patient is 70 years of age or older take the second blood pressure in the standing position. Enter the new BP in HealthConnect™ in the "New Set of Vital Signs" Section. Click the "Close" button in the Vitals section. If the BP was standing, click on "Doc Flowsheet" in upper right corner. Under the recent BP, in the "BP Patient Position" box, select the paper icon, select standing then "Accept".
4. If BP greater than 139/89, open the nursing note to document the elevated BP.
5. Inform the member of their Blood Pressure
6. Forward encounter to PCP by opening Follow up
 - 7.1. Add PCP to recipient list
 - 7.2. Enter .HBP in Routing Comments
 - 7.3. Exit the work space
7. If NO PCP assigned (this will not be consistent in every medical center) refer to HTN Hotline, if one is available, or PC DOD.

ADULT BLOOD PRESSURE CATEGORIES and ACTIONS (Table A)

CATEGORY	SBP	DBP	Action
Low	109 or less		MA/LVN: • Recheck BP with patient standing. • Standing SBP is 110 or greater, follow Action in "Controlled" category in this table. • Standing SBP is 109 or less, refer to RN for evaluation. • Release patient as directed by RN or provider with BP recheck appointment in 2 months. Close encounter. RN: • SBP 100 – 109 without symptoms and previous SBP 110 or greater: Instruct staff to make follow up BP check appointment in 2 months, route encounter to PCP with smart phrase ".vs" in "Routing Instructions" and release pt. • SBP 100 – 109 without symptoms and previous SBP 100 – 109, discuss with provider for possible medication adjustment and timeframe for follow up BP check.



PLANK 8

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		REVISION	11/09, 1/11
		PAGE NUMBER	3 of 4

			- SBP 100 – 109 with symptoms or SBP 99 or less without symptoms, discuss with provider for possible medication adjustment and timeframe for follow up BP check. - SBP 99 or less with symptoms, instruct staff to schedule pt to see provider today
Controlled	110-139	≤ 89	MA/LVN: Direct the patient to follow-up with another blood pressure check in about 6 months. Release the patient. Close encounter
Stage 1 Hypertension	140-159	90-99	MA/LVN: Depending on module workflow - Make BP recheck appointment in 2-4 weeks and release the patient. Route to PCP using ".HBP" in "Routing Instructions". OR - Inform provider pt is waiting for further instructions OR - Inform module RN that pt is waiting for further instructions
Stage 2 Hypertension	160 - 179	100 - 109	MA/LVN: - Refer patient to RN or provider for evaluation prior to releasing the patient. Release the patient as directed by the RN or provider. Schedule the patient for a BP recheck in 1-2 weeks. Route to PCP using ".HBP" in "Routing Instructions" RN: - No symptoms: Instruct MA/LVN to release patient with instructions above. - Symptoms: Instruct MA to schedule pt to see provider today
Stage 2 Hypertension Urgent	≥180	≥110	Refer to provider for evaluation. Do not release the patient.

SmartPhrase List: Suggested RN Documentation Phrases (Table B)

Stage 1 hypertension

.BP4 – BP 140-159/90-99

Lowest BP 140-159/90-99. Blood pressure elevated. Current treatment to be continued. The staff is instructed to please inform patient of his/her blood pressure today. Tell patient to continue current medications and that today's visit will be routed to their PCP for review. We will notify them if doctor orders a change in medication. Prior to patient leaving, schedule appointment for blood pressure recheck in 2-4 weeks. The PCP was messaged with his/her last 3 encounter BP readings.

Stage 2 hypertension: RN to discuss case with provider to determine if medication adjustment needed prior to release of patient

.BP2 - BP 160-179/100-109

Lowest BP 160-179/100-109. The staff is instructed to schedule an appointment for blood pressure recheck in 1-2 weeks before he/she leaves. Please inform patient of his/her blood pressure today. Tell patient to continue



PLANK 8

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		REVISION	11/09, 1/11
		PAGE NUMBER	4 of 4

current medications and that today's visit will be routed to their PCP for review. PCP was messaged with his/her last 3 encounter BP readings..

.BPTODAY - BP $\geq$ 180/110

Lowest Systolic BP greater than or equal to 180 and/or Diastolic BP greater than or equal to 110. His/Her blood pressure is elevated, requiring evaluation today. The staff is instructed to schedule him/her to see a provider for blood pressure evaluation today.

.MABP

Please have patient come in for an MA blood pressure check in *** week(s).

Low Blood Pressure

.BP low OK – SBP 100 - 109 standing asymptomatic on antihypertension medications

Systolic BP 100 – 109 standing, he/she is asymptomatic and he/she is on hypertension medications. His/Her PCP was messaged with his/her last 3 encounter BP readings. The staff is instructed to schedule him/her an appointment with his/her PCP for follow-up in three months.

.BP low – 1) Systolic BP less than 100 standing, symptomatic or asymptomatic or (2) Systolic BP 100 – 109 standing and symptomatic The staff is instructed to schedule him/her to see a provider for blood pressure evaluation today.





KEY CONTACTS

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