



Mayor Edwin M. Lee

BHS Adult Blood Pressure Monitoring Guidelines

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PURPOSE

Monitoring blood pressure is a basic tool to screen for pre-hypertension and to monitor blood pressure control for clients with hypertension. Client screening of blood pressure is important in the behavioral health setting as clients are at significant risk for developing metabolic syndrome; risk factors include treatment with antipsychotic medications, poor diet, sedentary lifestyle and obesity. Implementation of annual height, weight and blood pressure for all clients who receive medication support services is a meaningful use criterion BHS has adopted.

1. MEASURING BLOOD PRESSURE

Technique for measuring blood pressure:

1. Patient position:
 - a. Seated and back supported
 - b. Both feet flat on the floor
 - c. Left arm preferred. Arm at rest, supported at the level of the heart
 - d. Palm facing upwards
 - e. Choose appropriate cuff size to ensure accurate reading
 - f. Ideally, at rest for 5 minutes
 - g. If possible, turn blood pressure monitor away from patient
2. If using an automatic Welch Allyn machine:
 - a. Place "artery index marker" on above the artery, which is located on the medial side of arm. Grey cord should lie in the middle part of the arm.
 - i. If measuring vitals on patient's right arm, rotate the cuff upside down and follow the same positioning.
 - b. Wrap cuff around arm and secure with Velcro.
 - c. Check cuff size. The cuff is the correct size if the "artery index marker" line lies within the middle of the white horizontal size check line.
 - d. Press reading button to start measurement. Measurement should take 10-15 seconds
 - e. Machine can be left plugged in after use.

Trouble shooting:

1. If taking two BP measurements during the same visit:
 - a. Wait 5 min between measurements OR
 - b. Switch cuff to the right arm or other arm
 - c. Use the lower reading if multiple BP measurements are taken
 - d. **NOTE:** Resting between readings can significantly drop blood pressure
2. If the reading is much higher than patient's baseline, check cuff size. Small cuff may provide falsely high readings.

Documentation:

Document blood pressure results in the patient medical record.

Scope of practice:

1. Blood pressure should be measured only by staff that have received training and have blood pressure monitoring included in their scope of practice

2. FREQUENCY OF MONITORING

1. All clients receiving medication support services should have at minimum a yearly blood pressure taken.
2. For clients prescribed an atypical antipsychotic, follow the atypical antipsychotic guidelines, which may involve more frequent monitoring.

3. RESPONSE TO BLOOD PRESSURE RESULTS

Table 1. Shows the guidelines for responding to blood pressure results. Referral to "primary care" includes referral to clinic behavioral health homes, if available.

Table 1: Recommendations for follow up based on initial blood pressure measurements for adults without end organ damage:

Category	SBP mmHg	DBP mmHg	Follow-up
Normal	<120	and <80	Recheck in 1 year or sooner based on BHS guidelines.
Pre-hypertension	120-139 patients <60 years, or with DM or CKD	or 80-90	Recheck in 1 year. Refer patient to primary care for follow-up in 6-12 months.
	120-149 patients \geq 60 years, without DM or CKD		
Stage one hypertension	140-159 patients <60 years, or with DM or CKD	or 90-99	Recheck/confirm within 2 months. Refer patient to primary care within 2 months.
	150-159 patients \geq 60 years, without DM or CKD		
Stage two hypertension	\geq 160	or \geq 100	Refer patient to primary care within 1 month
Hypertensive Urgency	\geq 180	or \geq 110	Refer patient to urgent care within 2 days, or send to ER by ambulance if exhibiting: confusion or altered mental status, chest pain, or difficulty breathing; irregular heart rate or appearance of severe illness
Pregnancy	\geq 140	\geq 90	Refer patient to prenatal provider, or urgent care if she doesn't have a provider, within 48 hours.

DM = Diabetes Mellitus

CKD = Chronic Kidney Disease

Reference: "2014 Evidence-Based Guideline for the Management of High Blood Pressure in Adults Report From the Panel Members Appointed to the Eighth Joint National Committee (JNC 8)," US Department of Health and Human Services, National Institutes of Health, National Heart Lung and Blood Institute

3. Lifestyle Modification Recommendations from 2013 AHA/ACC Guideline on Lifestyle Management to Reduce Cardiovascular Risk

Modification	Recommendation	Average SBP Reduction Range
Weight reduction	Maintain normal body weight (BMI range: 18.5-24.9 kg/m ²)	5-20 mmHg/10 kg
DASH eating plan	Diet high in fruits, vegetables, and low fat dairy products. Diet low in saturated and total fat. Diet that limits sweets, sugar sweetened beverages and red meat.	8-14 mmHg
Dietary sodium reduction	Reduce sodium to no more than 2,400 mg per day. Further reduction to 1,500 mg per day can result in greater BP reduction. Even without achieving these goals, reductions of 1000 mg per day lower BP.	3-7 mmHg
Aerobic physical activity	Regular aerobic physical activity 3- 4 days per week, lasting 40 minutes per session, and involving moderate to vigorous activity	2-5 mmHg
Moderation of alcohol consumption	Men: no more than 2 drinks/day Women: no more than 1 drink/day	2-4 mmHg
Stop Smoking	Avoid Smoking	

¹“2013 AHA/ACC Guideline on Lifestyle Management to Reduce Cardiovascular Risk,” American College of Cardiology/American Heart Association Task Force on Practice Guidelines

APPENDIX 1: Information on the Welch Allyn Blood Pressure Machine

Welch Allyn Machine Maintenance:

1. Wash cuff and Velcro with soap and water periodically. Note, the Velcro portion contains the most bacteria and debris
2. After 5000 BP readings, service the device for calibration by calling facilities department who will set up service with Welch Allyn.
 - a. To check number of readings on machine, go to “cycle count”

Welch Allyn Machine Features:

1. “Review” feature saves the last 50 readings with date and time stamp.
2. “Cycle Count” keeps a log of all readings.
3. Machine utilizes SureBP technology and will measure blood pressure “on the way up,” taking the diastolic pressure prior to the systolic pressure.
 - a. As a default setting, the machine will divert to “step deflation” where it will increase the pressure up to 160mmHg, then measure blood pressure on the way down.

APPENDIX 2: General Do's and Don'ts when measuring blood pressure

Do's:

1. Have patient remove clothing on arm. Skin should be in contact with the cuff. Clothing over the arm may cause an inaccurate reading. Ask patient about caffeine consumption, smoking, or exercising within the last hour.
2. Wait for patient to be in a relaxed state and avoid measurements if patient is anxious, nervous, or agitated.

Don'ts:

1. Patient should not be talking during measurement
2. Patient should not be chewing any gum.

Patient should not be out of breath when taking BP measurement.

APPENDIX 3: JNC 8 Blood pressure goals

	Goal SBP mmHg	Goal DBP mmHg
Patients age \geq 60 years	< 150	< 90
Patients age < 60 years	< 140	< 90
Patients (all ages) with DM or CKD	< 140	< 90

Reference: "2014 Evidence-Based Guideline for the Management of High Blood Pressure in Adults Report From the Panel Members Appointed to the Eighth Joint National Committee (JNC 8)," US Department of Health and Human Services, National Institutes of Health, National Heart Lung and Blood Institute