BHS Adult Blood Pressure Monitoring Guidelines

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. Measurement of annual height, weight and blood pressure for all clients who receive medication support services is a meaningful use criterion BHS has adopted.

1. FREQUENCY OF BLOOD PRESSURE MONITORING
   1. All clients receiving medication support services should have at minimum a yearly blood pressure taken. Blood pressure monitoring is the responsibility of the psychiatric prescribing clinician.
   2. For clients prescribed an atypical antipsychotic, follow the atypical antipsychotic guidelines, which may involve more frequent monitoring.

2. MEASURING BLOOD PRESSURE
   Technique for measuring blood pressure:
   1. Client 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 client
   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.
      f. See Appendix 2 for additional information on the use and maintenance of the Welch Allyn Blood Pressure machine.

MUIC Approved March 7th, 2019
3. **General Do’s and Don’ts when measuring blood pressure**
   a. **Do:**
      i. Have patient remove clothing on arm. Skin should be in contact with the cuff. Clothing over the arm may cause an inaccurate reading.
      ii. Ask patient about caffeine consumption, smoking, or exercising within the last hour. If yes to any of the above, consider checking BP at the end of the visit.
      iii. Wait for patient to be in a relaxed state and avoid measurements if patient is anxious, nervous, or agitated.
   b. **Don’t:**
      i. Patient should not be talking during measurement
      ii. Patient should not be chewing gum.
      iii. Patient should not be out of breath when taking BP measurement.

4. If BP is elevated (>140/90), wait at least five minutes, then repeat measurement.
   a. If repeating BP measurements during the same visit:
      i. Wait 5 min between measurements
      ii. Consider switching cuff to the other arm
      iii. Use the lower reading if multiple BP measurements are taken
      iv. **NOTE:** Resting between readings can significantly drop blood pressure
   b. 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. If using Avatar, be sure to enter results using the Vitals Entry Form.

**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.
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: See Appendix 1 for Target Blood Pressure Goals. Below are recommendations for follow up based on initial blood pressure measurements for adults without end organ damage:

<table>
<thead>
<tr>
<th>Category</th>
<th>SBP mmHg</th>
<th>DBP mmHg</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt;120</td>
<td>and &lt;80</td>
<td>Recheck in 1 year or sooner based on BHS antipsychotic guidelines.</td>
</tr>
<tr>
<td>Pre-hypertension</td>
<td>120-139</td>
<td>or 80-90</td>
<td>Recheck in 1 year. Refer patient to primary care for follow-up in 6-12 months.</td>
</tr>
<tr>
<td></td>
<td>patients &lt;60 years, or with DM or CKD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>120-149</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patients ≥60 years, without DM or CKD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage one hypertension</td>
<td>140-159</td>
<td>or 90-99</td>
<td>Recheck/confirm within 2 months. Refer patient to primary care within 2 months.</td>
</tr>
<tr>
<td></td>
<td>patients &lt;60 years, or with DM or CKD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>150-159</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patients ≥60 years, without DM or CKD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage two hypertension</td>
<td>≥160</td>
<td>or ≥100</td>
<td>Refer patient to primary care within 1 month</td>
</tr>
<tr>
<td>Hypertensive Urgency</td>
<td>≥180</td>
<td>or ≥110</td>
<td>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</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>≥140</td>
<td>≥90</td>
<td>Refer patient to prenatal provider, or urgent care if she doesn’t have a provider, within 48 hours.</td>
</tr>
</tbody>
</table>

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

Clinicians should encourage clients to follow the lifestyle recommendations below.

<table>
<thead>
<tr>
<th>Modification</th>
<th>Recommendation for ideal</th>
<th>Average SBP Reduction Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weight reduction</strong></td>
<td>Achieve or maintain normal body weight (BMI range: 18.5-24.9 kg/m²)</td>
<td>5-20 mmHg/10 kg</td>
</tr>
<tr>
<td><strong>DASH eating plan</strong></td>
<td>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.</td>
<td>8-14 mmHg</td>
</tr>
<tr>
<td><strong>Dietary sodium reduction</strong></td>
<td>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.</td>
<td>3-7 mmHg</td>
</tr>
<tr>
<td><strong>Aerobic physical activity</strong></td>
<td>Regular aerobic physical activity 3-4 days per week, lasting 40 minutes per session, and involving moderate to vigorous activity</td>
<td>2-5 mmHg</td>
</tr>
</tbody>
</table>
| **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                                                                             |                              |

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

See Client Educational Materials.
APPENDIX 1:
JNC 8 Blood pressure goals

<table>
<thead>
<tr>
<th>Patients age &gt; 60 years</th>
<th>Goal SBP mmHg</th>
<th>Goal DBP mmHg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 150</td>
<td>&lt; 90</td>
</tr>
<tr>
<td>Patients age &lt; 60 years</td>
<td>&lt; 140</td>
<td>&lt; 90</td>
</tr>
<tr>
<td>Patients (all ages) with DM or CKD</td>
<td>&lt; 140</td>
<td>&lt; 90</td>
</tr>
</tbody>
</table>

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

APPENDIX 2:
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.