Providing Support to Patients Diagnosed with Hypertension

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Purpose

• Define hypertension and identify the burden if untreated
• Define undiagnosed hypertension
• Identify the modifiable/unmodifiable risk factors for hypertension
• Identify the lifestyle changes and resources that improve hypertension control
• Discuss the role home BP monitoring plays in improving hypertension control
• Review the role Health Home Care Manager can play with assisting patients
• Provide guidance on special consideration for women of reproductive age (up to 55 years old)
Blood Pressure Stages

Blood pressure is the force that moves blood through our arteries.

High Blood Pressure (BP) occurs when the force of the blood is consistently greater than 140/90 mm Hg.

Hypertension diagnosis occurs when two separate readings at two separate visits is greater than or equal to 140/90 mmHg

Uncontrolled hypertension is defined as BP readings greater than or equal to 140 and or 90 mm Hg

<table>
<thead>
<tr>
<th>Blood Pressure Category</th>
<th>Systolic mm Hg (upper #)</th>
<th>Diastolic mm Hg (lower #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low blood pressure (Hypotension)</td>
<td>less than 80</td>
<td>or</td>
</tr>
<tr>
<td>Normal</td>
<td>80-120</td>
<td>and</td>
</tr>
<tr>
<td>Prehypertension</td>
<td>120-139</td>
<td>or</td>
</tr>
<tr>
<td>High Blood Pressure (Hypertension Stage 1)</td>
<td>140-159</td>
<td>or</td>
</tr>
<tr>
<td>High Blood Pressure (Hypertension Stage 2)</td>
<td>160 or higher</td>
<td>or</td>
</tr>
<tr>
<td>High Blood Pressure Crisis (Seek Emergency Care)</td>
<td>higher than 180</td>
<td>or</td>
</tr>
</tbody>
</table>

Source: American Heart Association
Burden of Hypertension

United States
• 75 million adults (30.9%)
• 1 of every 3 adults
• Only half (54%) are controlled
• Cost: 46 billion each yr. (health care services, meds, missed work days)

New York State
• 4.8 Million adults (31.5%)
• 1 of every 3 adults
• Only 63% have their BP controlled

# Burden of Hypertension

## Age and Gender

<table>
<thead>
<tr>
<th>Age</th>
<th>Men (%)</th>
<th>Women (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-34</td>
<td>11.1</td>
<td>6.8</td>
</tr>
<tr>
<td>35-44</td>
<td>25.1</td>
<td>19.0</td>
</tr>
<tr>
<td>45-54</td>
<td>37.1</td>
<td>35.2</td>
</tr>
<tr>
<td>55-64</td>
<td>54.0</td>
<td>53.3</td>
</tr>
<tr>
<td>65-74</td>
<td>64.0</td>
<td>69.3</td>
</tr>
<tr>
<td>75 and older</td>
<td>66.7</td>
<td>78.5</td>
</tr>
<tr>
<td>All</td>
<td>34.1</td>
<td>32.7</td>
</tr>
</tbody>
</table>

## Race and Ethnicity

<table>
<thead>
<tr>
<th>Race of Ethnic Group</th>
<th>Men (%)</th>
<th>Women (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Americans</td>
<td>43.0</td>
<td>45.7</td>
</tr>
<tr>
<td>Mexican Americans</td>
<td>27.8</td>
<td>28.9</td>
</tr>
<tr>
<td>Whites</td>
<td>33.9</td>
<td>31.3</td>
</tr>
<tr>
<td>All</td>
<td>34.1</td>
<td>32.7</td>
</tr>
</tbody>
</table>
Undiagnosed HTN

**What is it?** There are about 11.5 million people in the U.S. who don’t realize they have hypertension. This person has BP readings above 140/90 mmHg but have never been told they have hypertension.

**How is it identified:** Any patient with two or more readings above 140 and or 90 mmHg during two separate office visits during the past year.

**Next steps:** Identify these patients through the use of patient registries and follow-up for reevaluation and possible diagnosis.

- HH Care Managers should ask about the patient’s BP readings and can assist to determine if there is a concern

- 80.9% have health insurance
- 82.7% report having a usual source of care
- 63.3% have received care two or more times in the past year
Burden if left untreated

- High BP often has no symptoms/silent condition
- Major risk factors for heart attacks and stroke
## Risk Factors

<table>
<thead>
<tr>
<th>Non-Modifiable</th>
<th>Modifiable</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Gender</td>
<td>• Overweight/Obesity</td>
</tr>
<tr>
<td>• Age</td>
<td>• High Sodium Diet</td>
</tr>
<tr>
<td>• Race (AA at greater risk)</td>
<td>• Excess use of alcohol</td>
</tr>
<tr>
<td>• Family history</td>
<td>• Lack of physical activity</td>
</tr>
<tr>
<td></td>
<td>• Smoking</td>
</tr>
<tr>
<td></td>
<td>• Stress</td>
</tr>
<tr>
<td></td>
<td>• Pregnancy planning/contraception</td>
</tr>
</tbody>
</table>
# Lifestyle Modifications that Lower BP

*Lifestyle Modifications*¹ (LM)

<table>
<thead>
<tr>
<th>Modification</th>
<th>Recommendation</th>
<th>Approximate SBP** Reduction (Range) † ††</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight reduction</td>
<td>Maintain normal body weight (body mass index 18.5–24.9 kg/m²)</td>
<td>5–20 mm Hg/10kg</td>
</tr>
<tr>
<td>Adopt DASH††† eating plan</td>
<td>Consume a diet rich in fruits, vegetables, and lowfat dairy products with a reduced content of saturated and total fat</td>
<td>8–14 mm Hg</td>
</tr>
<tr>
<td>Dietary sodium reduction</td>
<td>Reduce dietary sodium intake to no more than 100 mmol per day (2.4 g sodium or 6 g sodium chloride)</td>
<td>2–8 mm Hg</td>
</tr>
<tr>
<td>Physical activity</td>
<td>Engage in regular aerobic physical activity such as brisk walking (at least 30 min per day, most days of the week which may be broken into shorter time intervals such as 10 minutes each of moderate or vigorous effort)</td>
<td>4–9 mm Hg</td>
</tr>
<tr>
<td>Moderation of alcohol consumption</td>
<td>Limit consumption to no more than 2 drinks (e.g. 24 oz. beer, 10 oz. wine, or 3 oz. 80-proof whiskey) per day in most men, and to no more than 1 drink per day in women and lighter weight persons</td>
<td>2–4 mm Hg</td>
</tr>
</tbody>
</table>

SBP – systolic blood pressure

†† The effects of implementing these modifications are dose and time dependent, and could be greater for some individuals

†††DASH – Dietary Approaches to Stop Hypertension
Lifestyle Modification Guidance and Resources

Healthy Weight: USDA Choose My Plate (www.choosemyplate.gov)
Lifestyle Modification Guidance and Resources


- Diet that emphasizes fruits, vegetables, fat free or low fat milk and milk products, whole grains, fish poultry, beans, seeds, and nuts. Also contains less sodium, sweets added sugars and beverages containing sugars, fats, and red meats.

Sodium Reduction

- Most of the sodium we consume comes from prepared foods such as deli meats; pizza; salad dressings; taco or package seasonings; soups; packaged rice or pasta dishes; sauces and gravies
- Lower the amount of sodium by:
  - Reading nutrition fact labels
  - Buy low sodium or reduced sodium or no-salt-added products
  - Look for fresh, frozen or canned veg. without added sauces or seasonings
  - Choose fresh or frozen poultry and leans meats
  - Cook more often at home
  - Use herbs and spices instead of salt to your recipes and dishes
Lifestyle Modification Guidance and Resources

– Moderate drinking: 1 drink per day for women and up to 2 drinks per day for men.
– Heavy drinking is defined as 8 drinks or more for women and 15 or more for men per week.
– Standard Drink:
  • 12 ounces of beer (5% alcohol content).
  • 8 ounces of malt liquor (7% alcohol content).
  • 5 ounces of wine (12% alcohol content).
  • 1.5 ounces or a “shot” of 80-proof (40% alcohol content) distilled spirits or liquor (e.g., gin, rum, vodka, whiskey).
– There is no known safe amount of alcohol use during pregnancy or while trying to get pregnant.

- Adults need at least:
  - For extensive health benefits: 300 minutes (5 hours) a week of moderate-intensity aerobic physical activity
  - Healthy women should get at least 150 minutes (2 hours and 30 minutes) per week of moderate-intensity aerobic activity, such as brisk walking, during and after their pregnancy. It is best to spread this activity throughout the week
  - Healthy women who already do vigorous-intensity aerobic activity, such as running, or large amounts of activity can continue doing so during and after their pregnancy provided they stay healthy and discuss with their health care provider how and when activity should be adjusted over time

### Lifestyle Modification Guidance and Resources

<table>
<thead>
<tr>
<th>Min /week</th>
<th>Intensity</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 min (2hr /30min)</td>
<td>Moderate</td>
<td>Brisk Walk; Bike Flat; Mowing the Lawn</td>
</tr>
<tr>
<td>Muscle Strengthening 2 or more days per week</td>
<td>Working all major muscle groups</td>
<td>Legs, Hips, Back, Abdomen, Chest, Shoulders, and Arms</td>
</tr>
<tr>
<td>75 min (1hr/15 min)</td>
<td>Vigorous</td>
<td>Running/ Jogging, Bike Hills</td>
</tr>
</tbody>
</table>
Lifestyle Modification Guidance and Resources
Role of a HH Care Manager - Lifestyle Modification Guidance and Resources

- Health Home Care Managers have an opportunity to assist patients
- Knowing and understanding the risk factors and the lifestyle of patients you serve
- Connecting patients to resources and solution focus services
- Ability to connect patient’s lifestyle with wellness and well-being outcomes
- Focus on risk avoidance can lead to avoidable hospitalization and other life threatening issues i.e. strokes
Clinical Protocol for Controlling HTN
Best Practices to Improve HTN Control

• Adopt a HTN treatment protocol
• Promote self-management and lifestyle modification
• Create HTN Registry with reporting functionality
• Assess for medication adherence  
  – Morisky Scale 4 part question
• Adopt a team based approach to care
• Train staff on accuracy in BP measurement
• Refer patients to HBPM with provider F/U  
  – Train patients on how to take an accurate BP
Blood Pressure Self-Monitoring

- Self-measured BP monitoring sometimes called home BP monitoring is a patient performed measurement of their own BP outside of the clinical setting.
- It's different from the ambulatory BP 24 hour monitoring.
- Should always be used with additional support from a health care professional.
- Is proven to improve BP control when a patient/clinician feedback loop is used.
Patient/Clinician Feedback Loop

**Patient**
- Self-measured blood pressure readings
- Lifestyle habits (e.g., smoking, diet, exercise)
- Medication side effects and adherence barriers
- Insights into variables affecting control of blood pressure

**Provider**
- Adjustments to medication type and dose to achieve goal blood pressure
- Suggestions to achieve lifestyle changes
- Actions to sustain or improve adherence
- Advice about community resources to assist in controlling blood pressure
Accuracy in BP Measurement

- **Put Cuff on Bare Arm**: Cuff over clothing adds 10–40 mm Hg
- **Don’t Have a Conversation**: Talking adds 10–15 mm Hg
- **Empty Bladder First**: Full bladder adds 10–15 mm Hg
- **Support Arm at Heart Level**: Unsupported arm adds 10 mm Hg
- **Support Back**: Unsupported back adds 5–10 mm Hg
- **Keep Legs Uncrossed**: Crossed legs add 2–8 mm Hg
- **Support Feet**: Unsupported feet add 5–10 mm Hg

**7 Simple Tips to Get an Accurate Blood Pressure Reading**

BP Loaner Program
## BP Loaner Program

### Self-measured blood pressure monitoring program: Engaging patients in self-measurement

<table>
<thead>
<tr>
<th>Page</th>
<th>Name of document</th>
<th>Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Measuring accurately: Self-measured blood pressure monitoring</td>
<td>X</td>
</tr>
<tr>
<td>6</td>
<td>Clinical competency: Patient self-measured blood pressure at home</td>
<td>X</td>
</tr>
<tr>
<td>8</td>
<td>Measure accurately: A guide for blood pressure measurement</td>
<td>X</td>
</tr>
<tr>
<td>9</td>
<td>How to check a home blood pressure monitor for accuracy</td>
<td>X</td>
</tr>
<tr>
<td>10</td>
<td>Patient selection criteria for a blood pressure monitor loaner program</td>
<td>X</td>
</tr>
<tr>
<td>11</td>
<td>Patient enrollment process for a blood pressure device loaner program</td>
<td>X</td>
</tr>
<tr>
<td>12</td>
<td>Patient participation and blood pressure device loaner agreement</td>
<td>X</td>
</tr>
<tr>
<td>13</td>
<td>Diagnosis, communication, documentation and management</td>
<td>X</td>
</tr>
<tr>
<td>15</td>
<td>Recommended infection prevention process for blood pressure monitors loaned to patients</td>
<td>X</td>
</tr>
<tr>
<td>16</td>
<td>BP monitor loaner log</td>
<td>X</td>
</tr>
<tr>
<td>17</td>
<td>High blood pressure (hypertension) overview</td>
<td>X</td>
</tr>
<tr>
<td>19</td>
<td>Self-measured blood pressure at home</td>
<td>X</td>
</tr>
<tr>
<td>21</td>
<td>Self-measured blood pressure technique: How to take your own blood pressure</td>
<td>X</td>
</tr>
<tr>
<td>22</td>
<td>Self-measured blood pressure monitoring at home – flow sheet</td>
<td>X</td>
</tr>
<tr>
<td>23</td>
<td>Self-measured blood pressure patient log (wallet card)</td>
<td>X</td>
</tr>
</tbody>
</table>
Special Considerations for Women of Reproductive Age

- **Approximately 45% of births nationally are unintended** (mistimed, unplanned or unwanted at the time of conception)
- Unintended pregnancies minimize the ability to prepare for a healthy pregnancy and have proactive conversations with health care providers
- It is important to start a **universal focus on the importance of preconception care** to begin to reduce maternal mortality and morbidity
- Ask about pregnancy intention at each health care visit
- Preconception care is important for all, but crucial for those with chronic conditions, such as hypertension
# Unintended Pregnancy

<table>
<thead>
<tr>
<th>Mistimed</th>
<th>Unwanted</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Woman did not want to become pregnant at the time pregnancy occurred but <strong>did want to become pregnant at some point in the future</strong>&lt;br&gt;  - 27% of all pregnancies</td>
<td>- Woman <strong>did not want to become pregnant then or at any time in the future</strong>&lt;br&gt;  - 18% of pregnancies</td>
</tr>
</tbody>
</table>

## Potential Health Impacts of Chronic Disease
Preconception/Prepregnancy Counseling

– Desires pregnancy:
  • Discuss with primary health care provider
  • May refer to maternal-fetal medicine specialist
  • Blood pressure under stable control
  • On medication that is safe for use with pregnancy

– Does not desire pregnancy:
  • Refer to primary health care provider or women’s health care provider for contraceptive counseling
  • Discuss availability of effective and highly effective contraception
Contraceptive Methods

Effectiveness of Family Planning Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implant</td>
<td>0.05%</td>
</tr>
<tr>
<td>Reversible IUD</td>
<td>&lt; 0.1%</td>
</tr>
<tr>
<td>Male Sterilization</td>
<td>&lt; 0.1%</td>
</tr>
<tr>
<td>Permanent Sterilization</td>
<td>&lt; 0.1%</td>
</tr>
<tr>
<td>Injectable</td>
<td>&gt; 50%</td>
</tr>
<tr>
<td>Pill</td>
<td>&gt; 90%</td>
</tr>
<tr>
<td>Patch</td>
<td>&gt; 90%</td>
</tr>
<tr>
<td>Ring</td>
<td>&gt; 90%</td>
</tr>
<tr>
<td>Diaphragm</td>
<td>&gt; 90%</td>
</tr>
</tbody>
</table>

How to make your method most effective:
- After procedure, little or nothing to do or remember.
- Vasectomy and hysterectomy: Use another method for first 3 months.

Injectable: Get repeat injections on time.
Pills: Take a pill each day.
Patch, Ring: Keep in place, change on time.
Diaphragm: Use correctly every time you have sex.

Contraceptive Methods

- Male Condom
- Female Condom
- Withdrawal
- Sponge

Fertility awareness-based methods: Attribut or use condoms on fertile days. Newest methods (Standard Days Method and Two Day Method) may be the easiest to use and consequently more effective.

Spermicide

Condoms, spermicide, withdrawal, spermicides: Use correctly every time you have sex.

Fertility awareness-based methods: Attribute or use condoms on fertile days. Newest methods (Standard Days Method and Two Day Method) may be the easiest to use and consequently more effective.

Condoms should always be used to reduce the risk of sexually transmitted infections.
Importance of Preconception Care

• Important opportunities to improve outcomes for mother and baby
• Requires active patient participation and individualized management plans
• Topics addressed include: diet, weight, exercise, smoking, use of alcohol and drugs, environmental risks, vaccination status
• Management of medical conditions
HH Care Manager’s Role - Women of Reproductive Age

- HH Care Managers should discuss with women of reproductive age their pregnancy considerations
  - Especially since the patients served by HHs have chronic conditions
- Ask about pregnancy intention
- Connect the patient or ensure involved providers are discussing preconception care with the patient
  - How will the patient’s chronic condition be impacted by a pregnancy?
- If the patient is or becomes pregnant, ensure connection to providers that can work with the patient to address chronic condition and the pregnancy
  - Ensure prenatal services are in place
### Characteristics Associated with Maternal Deaths: Provider-Identified Risk Factors

<table>
<thead>
<tr>
<th>Category</th>
<th>2006-2008 (n=125)</th>
<th>2012-2013 (n=60)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least one risk factor identified</td>
<td>64%</td>
<td>85%</td>
</tr>
<tr>
<td>Hematologic</td>
<td>19% (n=29)</td>
<td>25% (n=15)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>17% (n=26)</td>
<td>17% (n=10)</td>
</tr>
<tr>
<td>Cardiac</td>
<td>13% (n=20)</td>
<td>18% (n=11)</td>
</tr>
<tr>
<td>Pulmonary</td>
<td>9% (n=13)</td>
<td>18% (n=11)</td>
</tr>
<tr>
<td>Endocrine</td>
<td>8% (n=12)</td>
<td>17% (n=10)</td>
</tr>
<tr>
<td>Psychiatric disorders</td>
<td>5% (n=8)</td>
<td>12% (n=7)</td>
</tr>
</tbody>
</table>

*Preliminary 2012-2013 data*
Best Practices for Pregnancy

Before Pregnancy
• Lifestyle Changes: limit salt intake, get regular physical activity, lose weight if overweight/obese
• Take prescribed medications

While Pregnant
• Obtain prenatal health care on regular basis
• Avoid alcohol and tobacco
• Avoid OTC medications without medical care provider’s consent
Best Practice Resources

Professional Resources

- AMA/Johns Hopkins SMBP Monitoring Program
- Million Hearts
- Accuracy in BP Measurement-training module (Contact Tiana Wyrick for information)
- CHW online training module
  - HTN
  - Asthma
  - Diabetes
  - PreDiabetes
  - Self-Management
- CVD Health and Risk Reduction Guidelines & HTN Guidelines for Children and Adolescents

Patients Community Based Resources

- YMCA- BPSM, Health Heart Ambassadors
  - Westchester, Yonkers, Syracuse
  - Albany and Yates County (coming soon)
- Chronic Disease Self-Management Programs: Contact Celest Harp at: managemyhealth@health.ny.gov
  - January 2018 Webinar
- Home BP Monitoring
Resources for Contraception and Hypertension During Pregnancy

Contraceptive Counseling and Resources:

- https://www.cdc.gov/mmwr/volumes/65/rr/rr6503a1.htm

Hypertension During Pregnancy:

- https://www.nhlbi.nih.gov/health/resources/heart/hbp-pregnancy
Additional Patient Educational Resources

• Million Hearts Tools: https://millionhearts.hhs.gov/tools-protocols/tools.html
• AHA: http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/KnowYourNumbers/Monitoring-Your-Blood-Pressure-at-Home_UCM_301874_Article.jsp#.WawkBOSWyUk
• Physical Activity https://www.cdc.gov/physicalactivity/index.html
• Birth Control: https://www.bedsider.org/
• Planning for Pregnancy: https://www.cdc.gov/preconception/planning.html
Thank You!

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