Hello everyone and thank you for attending today’s webinar. It is my hope that through today’s training you will better understand the effectiveness and importance of blood pressure self-measurement and how to support the management of HTN.

I want to thank all of my colleagues in the Heart Disease, Stroke, and Diabetes Prevention program for all of their hard work and support in producing today’s webinar.

And I also want to thank Colette Rush and Lilia Gomez for the foundational groundwork they did in creating the platform for this training today.
Today’s Presenters

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Heart Disease, Stroke, and Diabetes Prevention
Community-Based Prevention
Office of Healthy Communities
Prevention and Community Health
Washington State Department of Health
Special Note

Information contained in this presentation is not medical advice. Every individual needs to consult with their primary health care provider regarding their medical conditions, blood pressure, medications and any other medical concerns.
What will we review today?
-we will learn or better understand the relationship between the heart and blood pressure and what the blood pressure numbers mean.
-we will understand why controlling blood pressure is so important for each of us and our community.
Let’s review some commonly used words that occur when we talk about hypertension.

**Hypertension**

Also known as elevated or high blood pressure, is a chronic condition. The blood vessels have persistently raised pressure which makes the heart work harder in order to pump blood. If left uncontrolled, it can lead to damage of the heart, the brain and kidneys.
Other terms you may hear are:

**CVD** – disorders that affect the circulatory system

**Heart Disease** – impairs the structure or function of the heart.
The next terms we have are...
A blockage that is not treated within a few hours causes the affected heart muscle to die. Myocardial infarction (MI) causes a severe decrease in the pumping function of the heart. Often this leads to an irregular heartbeat - called an arrhythmia. A blockage can lead to damage to the heart (myocardium) (i.e., heart attack/myocardial infarction (MI), an enlargement of the heart and eventually heart failure, blood vessel damage [e.g., aneurysms (bulges in blood vessels)], weak spots due to the increase high pressure-ruptures, and clots), the brain, and kidneys.

Stroke
Also called cerebrovascular disease or a brain attack, is the interruption of blood supply to the brain due to either an obstruction or rupture of a blood vessel.
Can lead to some level of cognitive or physical disability if not fatal.
Continuing with our terms:

**Peripheral Vascular Disease (PVD)**

The cause of PAD is **atherosclerosis**. This happens when plaque builds up on the walls of the arteries that supply blood to the arms and legs. Plaque is a substance made up of fat and cholesterol. The main risk factor for PAD is smoking. Other risk factors include older age and diseases like diabetes, high blood cholesterol, high blood pressure, heart disease, and stroke.

**Chronic Kidney Disease (CKD)**

Means kidneys are damaged and can't filter blood as they should. Diabetes and high blood pressure are the most common causes of CKD. Also, chronic kidney disease can cause high blood pressure.

**HBP causes artery damage, and the kidneys are packed with arteries.**

Kidneys are supplied with dense blood vessels, and high volumes of blood flow through them. Over time, uncontrolled high blood pressure can cause arteries around the kidneys to narrow, weaken or harden. These damaged arteries are not able to deliver enough blood to the kidney tissue.

Healthy kidneys produce a hormone to help the body regulate its own blood pressure. Kidney damage and uncontrolled high blood pressure each contribute to a negative spiral.
These are our final two terms:

**Angina Pectoris**
Commonly known as angina
Your heart muscle needs the oxygen that the blood carries. Angina may feel like pressure or a squeezing pain in your chest. It may feel like indigestion. It is a symptom of coronary artery disease.

**Arrhythmias**
Many factors can affect your heart's rhythm, such as having had a heart attack, smoking, congenital heart defects, and stress. Some substances or medicines may also cause arrhythmias.
Do not let this picture overwhelm you!

The heart has upper chambers called atrium and lower chambers called ventricles.

The heart has a right atrium which receives blood coming from all over the body. It flows into the right ventricle that then pumps the blood into the lungs to collect \( \text{O}_2 \).

The blood then comes back into the left atrium and flows down into the left ventricle; the left ventricle pumps blood out to the body.

Like a faucet sending water through a garden hose, your heart pumps blood through your blood vessels.

Blood carries oxygen and food to every part of your body, keeping it alive and healthy.

Three layers of tissue form the heart wall. The outer layer of the heart wall is the epicardium, the middle layer is the myocardium, and the inner layer is the endocardium. The myocardium of the heart wall is a working muscle that needs a continuous supply of oxygen and nutrients to function efficiently. For this reason, cardiac muscle has an extensive network of blood vessels to bring oxygen to the contracting cells and to remove waste products.
Blood Pressure is the pressure exerted by the blood against the walls of the blood vessels.
Blood Pressure is the pressure exerted by the blood against the walls of the blood vessels.

**Question:** What would increase the pressure in the blood vessels?

**Answer:**
1. The amount of blood being pumped out of the heart;
2. How hard the heart is pumping the blood;
3. How narrow the blood vessels causing increased resistance.

**Example:** Water in a balloon being squeezed or water hose example
Here’s how the American Heart Association categorizes Hypertension, as well as pre-hypertension.

**What Do The Numbers Mean?**

**Systolic BP** – (top number) – is the amount of pressure inside the blood vessel when the heart squeezes, pumping blood through the vessels to the body.

**Diastolic BP** – (bottom number) – is the amount of pressure inside the blood vessel when the heart relaxes and is not pumping.
Facts About High Blood Pressure

• **1 in 3** adults (about 70 million people) in the US has high blood pressure (HBP)
• Less than **one-half** of those with HBP have it controlled
• People with HBP may not be know, because they do not feel bad or have any symptoms
• It can lead to many chronic diseases (i.e., heart disease, stroke, chronic kidney disease)
Less than 50% of people diagnosed with hypertension (HTN) have achieved BP control, which means that more than 35 million Americans are at risk for experiencing complications due to the effects of hypertension.

HTN exacerbates chronic conditions such as diabetes, renal disease and dysfunction (hypertensive nephropathy – chronic renal failure), CAD (myocardial infarction/heart attack), heart failure (hypertensive cardiomyopathy), and can lead to a shortened life expectancy.
When the force of the blood hitting the walls of the blood vessels is higher than normal it...
1- Damages the walls of the blood vessels
2- Fatty substances stick to the walls
3- Vessels get clogged and narrow
4- Blood pressure goes up even more
5- More damage and higher BP occurs... a vicious cycle

**HBP affects the blood vessels of the heart, brain, kidneys, and legs**
This can cause diseases in these organs – chronic diseases and puts you at risk for heart attack, stroke, kidney failure, or peripheral vascular disease

**HBP is a sign that the heart and blood vessels are being overworked.**

If untreated, the disease can lead to atherosclerosis and congestive heart failure.
This slide reminds us of how significant HTN is as a risk factor for cardiovascular disease.

Cardiovascular disease is the leading cause of death for men and women in the United States.

Accounting for 1 in 3 deaths, and the annual national costs are estimated at $315.4 billion dollars.
Who Is At Higher Risk?

- People with a family history of high blood pressure
- African Americans, Native Americans, and Alaskan Natives
- People 35 years or older
- People who are not at a healthy weight
- People who use tobacco
- People who eat foods with too much salt
- People who do not eat enough fruits and vegetables
- People who drink too much alcohol
- Women who use birth control pills
- People who do not exercise
- Pregnant women
So when we look at what is happening in our state and to our residents, this is what we are seeing...

Looking at this data, we see that heart disease and stroke are currently the 2nd and 6th leading causes of death, respectively. These two conditions were the #1 cause of death for Washingtonians representing a quarter of all deaths in 2013.
Remember that hypertension is a major risk factor!

Heart attack signs in women:

**Uncomfortable pressure**, squeezing, fullness or pain in the center of your chest. It lasts more than a few minutes, or goes away and comes back.

**Pain** or discomfort **in one or both arms, the back, neck, jaw or stomach**.

**Shortness of breath** with or without chest discomfort.

Other signs such as breaking out in a cold sweat, nausea or lightheadedness.

As with men, women’s most common heart attack symptom is chest pain or discomfort. But **women are somewhat more likely than men to experience** some of the other common symptoms, particularly **shortness of breath, nausea/vomiting and back or jaw pain**.

If you have any of these signs, call 9-1-1 and get to a hospital right away!
Remember that hypertension is a major risk factor!

Signs & Symptoms of a Stroke

- Sudden numbness of arm, face, or leg
- Sudden confusion, trouble speaking or understanding
- Sudden trouble seeing
- Sudden trouble walking
- Severe headache
FAST is an easy way to remember and identify the most common symptoms of a stroke.

Recognition of stroke and calling 9-1-1 will determine how quickly someone will receive help and treatment.

Getting to a hospital rapidly will more likely lead to a better recovery.
FDA has approved many medications to treat high blood pressure.

Many people with high blood pressure may need more than one medication to reach their goal blood pressure.

Moderation of alcohol consumption: e.g. 24 oz. beer, 10 oz. wine or 3 oz. 80-proof whiskey.
FDA has approved many medications to treat high blood pressure. Lots of different generic and other names out there... they fall into one of these categories, or may come in a combination pill.

Many people with high blood pressure may need more than one medication to reach their goal blood pressure.

**Common Medications**

- **Diuretics (Thiazide)**
  “Water pills,” which help the kidneys flush extra water and salt from your body and decrease blood volume

- **Angiotensin converting enzyme (ACE) inhibitors and Angiotensin II receptor blockers (ARBs)**
  Reduce blood pressure by relaxing blood vessels

- **Beta blockers**
  Cause the heart to beat with less force
Common Medications cont.

- Calcium channel blockers (CCBs) and other direct dilators (relaxers) of blood vessels
  Drugs that directly relax the blood vessels.
- Alpha blockers
  Reduce nerve impulses that tighten blood vessels
- Nervous system inhibitors
  Control nerve impulses from the brain to relax blood vessels
When Might A Specialist Be Needed?

When primary care unable to control hypertension after following standard protocols
Usually nephrologists, internists
Cardiologists only involved when heart disease is present
Before Measuring Blood Pressure

- Do not drink coffee for at least 30 minutes before measuring.
- Do not use tobacco products for at least 30 minutes before measuring.
- Do not exercise or eat a large meal two hours before measuring.
- Use the rest room. A full bladder can affect the reading.

Examples: 1-arm above the heart – increases the SBP by +2;
2-feet not flat on the floor – increases the SBP by +5 to 15 mmHg;
3-back not supported – increases the SBP by +5 to 15 mmHg;
4-legs crossed – increases the SBP by +5 to 8 mmHg;
5-patient doesn’t rest 3 to 5 minutes before having their BP taken – increases the SBP by +10 to 20 mmHg;
6-tobacco or caffeine use – increases the SBP by +6 to 11 mmHg;
7-patient talking – increases the SBP by +10 to 15 mmHg; and
8-a full bladder – increases the SBP by +10 to 15 mmHg
Wrist cuff types of blood pressure monitors have not been found to be as accurate as the upper arm cuffs.

Common errors in taking BP can occur and when they do...it affects the BP reading.
Seating Posture and Proper Cuff Placement
Blood pressure changes during the day, so it is best to take your readings at the same time every day. (Give personal examples...)

Take BP on arm with the highest reading
Take your BP 2 times and wait 2 minutes between readings

One of the best things a person can do to manage their BP is to Check it at home!

Record your BP readings in a notebook or on a BP Tracker
Take your BP Monitor with you to your doctor appointment to make sure it is calibrated properly; Take your readings with you to each clinic visit and share the information with your medical provider; Ask questions/Encourage the client you are working with to ask questions and follow up with their provider regularly.
Other Place to Have BP Taken

- Search on win211.org
- Provider office
- Fire stations
- Drug stores/Pharmacies
Find out what your provider told you about your blood pressure and what actions to take to better control HTN.
Websites for Tracking Measurement

- American Heart Association
  - Heart360.org
- Healthy Circles
  - Healthycircles.com
Blood Pressure – an important measurement for evaluating your health

Remember that High Blood Pressure is a major risk factor for both Heart Disease and Stroke, which together were responsible for 25% of all deaths in WA State in 2013. So your work as care coordinators supports people in your communities with blood pressure support and can help improve the health of those within your communities.
The Benefit of Care Coordination on Blood Pressure Measurement

- Health Home Care Coordinators can help clients by
  - providing coaching and education
  - encouraging clients to include blood pressure measurement in the Health Action Plan
- Health Home Care Allied Staff can help by reminding and encouraging clients to use their home BP Monitor
Individual and Family Support: one of the core HH services

- Health Home (HH) Care Coordinators can:
  - Provide health promotion and education
  - Locate resources
    - Chronic Disease Self-Management Program
    - Places to check blood pressure
    - Physical activity supports
    - Healthy eating supports
    - Mental health supports
  - Support the client to remember appointments and schedule transportation
  - Assist the client in setting up a system to take medications as prescribed
  - Encourage blood pressure self-measurement
This is not a required screening for Health Home clients. It may be helpful to use when indicated to assist your clients in assessing their self-efficacy. This can helpful when developing or revising their Health Action Plan (HAP).
Tie the goals and action steps based on the client’s, parents’, or caregiver’s level of activation.

Suggestions for Short Term Goals

• Follow up with primary care provider
• Learn how to accurately measure blood pressure
  – Action step: Care Coordinator will provide a paper tracker for client to record BP
  – Action step: Care Coordinator will help client locate an application for their computer or phone to track BP (Heart360.org, Healthycircles.com)
• Ask pharmacist or doctor what my medications are and what they do
Suggestions for Short Term Goals

- Caregiver will accompany client to medical appointments
- Client will attend a Chronic Disease Self-Management course
- Client will reduce sodium in their diet
- Client will work towards 30 minutes/day of moderate activity
- Client will begin to check for sodium, fat and saturated fat on food labels
Resources

Health Home Care Coordinators Toolkit:
Resources cont.

American Heart Association:
http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/Nutrition/The-American-Heart-Associations-Diet-and-Lifestyle-Recommendations_UCM_305855_Article.jsp#Vx_5QX_2blU
This is the Department of Health’s website. It contains resources on not only cardiovascular disease but other chronic diseases such as diabetes. Please visit the website to find out what educational resources may be available for your clients.
This is the website that contains information about the Chronic Disease Self-Management classes.
Resources cont.

Living a Healthy Life with Chronic Conditions by Lorig, Sobel, Gonzalez, and Minor
This blood pressure tracker is located on the Department of Health’s website. It is also available at the Care Coordinators Toolkit located online at DSHS.
Resources cont.

Printables

Blood Pressure Tracker

BLOOD PRESSURE TRACKER - PRINTABLE TRACKER

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

NAME: ____________________________
MY BLOOD PRESSURE TARGET GOAL IS _____ / _____ mm Hg

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Recommended Videos for Your Client and You

• Unnatural Causes Video clip.  
  https://www.youtube.com/watch?v=bXBkOYMCArO

• Blood Pressure Demo "MILLION HEARTS INITIATIVE" by the UCD School of Pharmacy.  
  https://www.youtube.com/watch?v=Blqeii6_s6J0
References

- American Family Physician; Practice Guidelines – New AHA Recommendations for Blood Pressure Measurement; Vol 72, Number 7, Oct. 2005
- JNC-7 Express: www.nhlbi.nih.gov/guidelines/hypertension/express.pdf
- Million Hearts website (http://millionhearts.hhs.gov/resources/toolkits.html#bpToolkit)
- American Heart Association website (http://www.heart.org/HEARTORG/)
Certificate of Completion
Hypertension and Cardiovascular Disease

presented by Cheryl Farmer and Sara Eve Sartiker
Washington State Department of Health
Lacey, Washington

Webinar aired on: June 9, 2016 in Lacey, Washington
for Health Home Care Coordinators and Allied Staff

Training Credit of 1 Hour

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