





HYPERTENSIVE DISORDERS OF PREGNANCY TOOLKIT

An Implementation Guide for Home
Visitors and Healthcare Providers



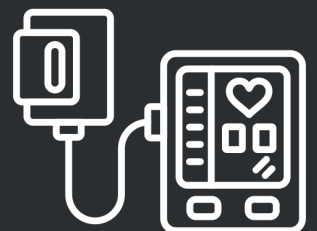
Working together to reduce maternal
health disparities and pregnancy-related
deaths in Michigan



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What are Hypertensive Disorders of Pregnancy (HDP)?

High blood pressure (also called hypertension) before, during, and after pregnancy can lead to serious health risks. These include preeclampsia, seizures, stroke, kidney failure and other potentially life-threatening complications. Hypertensive disorders of pregnancy (HDP) are among the leading causes of maternal mortality and can endanger both mother and baby, increasing the risk of complications throughout pregnancy and beyond. Affected women are also at increased risk for cardiovascular disease later in life.¹ The table below lists and describes five major conditions of HDP.

Hypertensive Disorders of Pregnancy

Condition	Description
Chronic Hypertension	High blood pressure that is present before pregnancy or diagnosed before 20 weeks of pregnancy. Women who have chronic hypertension can also develop preeclampsia.
Gestational Hypertension	High blood pressure that develops at or after 20 weeks of pregnancy without evidence of protein in the urine or other heart or kidney problems. Gestational hypertension usually improves after delivery. However, some women with gestational hypertension have a higher risk of developing chronic hypertension in the future.
Preeclampsia	Occurs when a woman with previously normal blood pressure suddenly develops high blood pressure and protein in the urine or other problems (e.g., low platelet count, impaired liver function) after 20 weeks of pregnancy. Women who have chronic hypertension can also develop preeclampsia.
Eclampsia	Some women with preeclampsia can develop seizures. Eclampsia is a medical emergency.
Hemolysis Elevated Liver Enzymes and Low Platelet Count (HELLP) Syndrome	HELLP syndrome is a life-threatening condition that can occur during pregnancy or soon after delivery. It can cause high blood pressure and seizures and can lead to a potentially fatal liver disorder or stroke if left untreated.

<https://millionhearts.hhs.gov/tools-protocols/tools/hypertension-disorders-pregnancy.html>

Why is Addressing HDP Important?

Hypertensive disorders of pregnancy have become more common, affecting approximately 15% of women during their reproductive years, in part as a result of advanced maternal age at first pregnancy, increasing prevalence of cardiometabolic risk factors (e.g., obesity, prediabetes), and structural barriers to care, often amplified by maternal chronic stressors.^{1,2} Structural barriers to prenatal and postpartum care include delays in gaining pregnancy-related Medicaid coverage, challenges finding providers who would accept Medicaid, lack of provider continuity, transportation and childcare hurdles, and legal system concerns.³



The prevalence of preeclampsia has increased over the last 20 years, with the highest prevalence among non-Hispanic Black, non-Hispanic American Indian and Alaska Native individuals. Black individuals are at increased risk for cardiovascular-related morbidity and mortality, particularly from complications of HDP.⁴

In addition, women with a family history of preeclampsia and/or hypertension, with lower socioeconomic status, and who live in areas with higher neighborhood deprivation, have higher rates of HDP. Women in rural areas have higher rates of HDP as well as morbidity and mortality than women in urban areas. This is partly attributed to limited access to healthcare prior to, during, and after pregnancy.⁵

The prevalence of hypertension in pregnancy has been rising in recent years, and in Michigan, nearly one in five persons reported having high blood pressure during pregnancy. From 2016-2020, HDP was the 4th leading cause of pregnancy-related deaths (8.5%) and 74.5% of all pregnancy-related deaths were determined to be preventable.⁶

While best practices exist for HDP diagnosis and treatments, it is delays in identifying, seeking, reaching, and receiving timely care that is one of the most complex maternal health problems to resolve. Such delays account for many women reaching available expert care late and in worse clinical condition.⁷

The good news is that hypertensive disorders of pregnancy can be prevented or treated, which makes it even more important to develop innovative strategies in maternal health to tackle HDP. Home visitors, such as Community Health Workers (CHWs), represent a vital yet underrecognized resource in addressing HDP and improving maternal outcomes.

Purpose of the Hypertension Intervention

In partnership with three Michigan sites, a standardized, multilevel hypertension intervention and training program was developed and implemented by existing home visiting programs and a group prenatal care program. Services were delivered by a nurse, social worker, dietician, and/or CHW. Designed to be adaptable to other clinical and community settings (e.g., doula care, group prenatal care), the program empowers pregnant and postpartum women through education, practical tools, and resources—all aimed at reducing maternal health disparities.

The aims of the hypertension intervention were to reduce delays in identifying, seeking, reaching, and receiving timely quality care and improve access to care by focusing on three key strategies:

1. Empowering Women and Their Support Networks
 - a. Educate all pregnant and postpartum women about HDP.
 - b. Empower women and their support networks to know the urgent maternal warning signs and to speak up when they have concerns, as well as to encourage everyone, including providers, caregivers, friends, and family to listen and act.
 - c. Create individualized action and safety plans for timely HDP care.
 - d. Strengthen communication skills to support meaningful and potentially life-saving



dialogues with providers, clinic, and health system staff.

2. Equipping Home Visitors to Deliver Preventive and Early Intervention HDP Care
 - a. Provide education, skill-building tools, and resources to empower clients in managing and caring for their HDP.
 - b. Integrate self-measured blood pressure (SMBP) monitoring into home visiting services.
 - c. Support the provider's treatment plan and client's adherence to prescribed medications.
 - d. Facilitate interactive training for participants to build skills and engage in shared learning and decision-making.
3. Strengthening System Connections
 - a. Increase identification and enrollment of individuals at greater risk for HDP into community-based home visiting and other supportive services.
 - b. Improve coordination between home visitors, their programs, and prenatal/postnatal care providers.

Purpose of the HDP Toolkit

Based on the implementation of the HDP improvement strategies, this toolkit is designed for community-based home visitors and healthcare providers who work directly with pregnant and postpartum clients/patients. While the intervention focused on providers who have access to Medicaid insured pregnant and postpartum women and whose care included home and/or telehealth visits, the content and materials can be adapted for a wide range of settings. Hypertension prevention education—including recognizing urgent maternal warning signs, establishing a plan for seeking immediate care, and learning to self-monitor blood pressure at home and when to seek care—benefits all women, both prenatal and postpartum, as well as their partners, friends, and family.

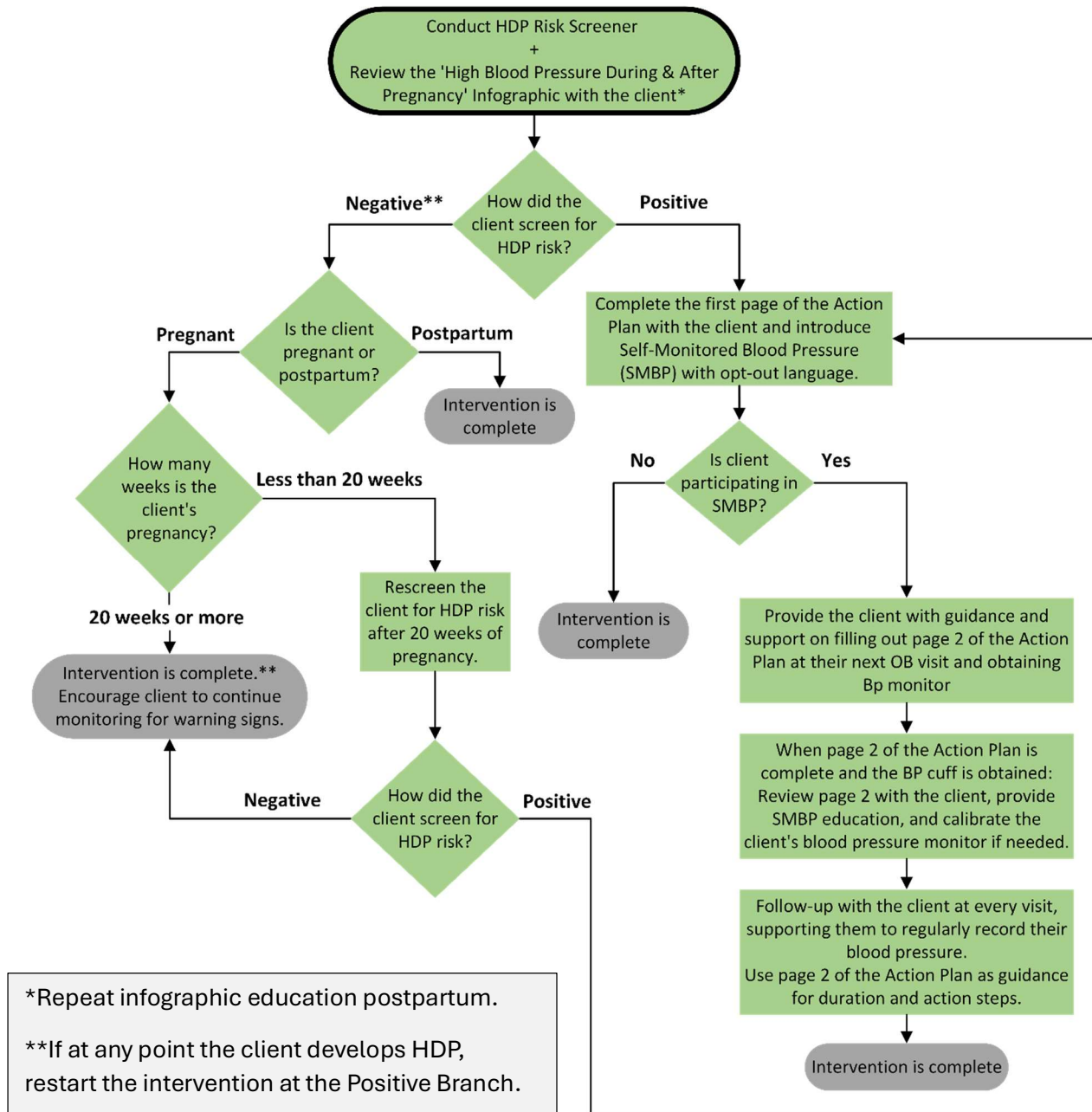
The toolkit presents key components, recommendations, and lessons learned from successful intervention implementation and is organized into five modules:

- Module 1: Planning and Implementation Process
- Module 2: Educating Clients/Patients Using the “High Blood Pressure During & After Pregnancy” Infographic
- Module 3: Self-Monitoring Blood Pressure (SMBP)
- Module 4: Training Home Visitors and Providers for the Hypertension Intervention
- Module 5: Lessons Learned

Finally, throughout the five modules, you'll find personal stories and quotes from individuals who have participated in the hypertension intervention. Their experiences bring lessons to life, offer insight, encouragement, and a sense of shared journey. We are deeply grateful to each participant who generously shared their story, their voices are invaluable.



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Module 2: Educating Clients/Patients Using the “High Blood Pressure During & After Pregnancy” Infographic

The High Blood Pressure During & After Pregnancy Infographic is a two-sided educational handout designed to inform clients and patients about blood pressure and HDP throughout pregnancy and postpartum. It's a versatile resource ideal for use during home visits, clinic appointments, and other healthcare settings. The infographic is available in English, Arabic, French, Kinyarwanda, Spanish and Swahili.

The first page highlights key information about high blood pressure during and after pregnancy. The content is organized into the following three sections, making it easy to understand and navigate.

Section 1: HDP Warning Signs – Lists the key urgent maternal warning signs of HDP, such as preeclampsia, and to seek medical care right away if experiencing any symptoms.

WARNING SIGNS
GET MEDICAL CARE RIGHT AWAY IF YOU START HAVING ANY OF THESE WARNING SIGNS:

- Severe stomach pain that won't go away
- Severe swelling of the hands and face
- Severe headache that won't go away
- Severe nausea and throwing up (not like morning sickness)
- Dizziness or fainting
- Chest pain or fast-beating heart
- Changes in vision
- Trouble breathing

This does not list every warning sign you might have. If something doesn't feel right, contact your health care provider.

“I recently had a telehealth visit with my community worker. She was telling me and explaining to me about all the warning signs and things to look out for with hypertension and preeclampsia. I realized when I was at work prior to my prenatal care visit...I noticed my vision going blurry and very spot like, and I began to sweat all over. I had to immediately sit down before I passed out. It was the worst and scariest feeling ever. Even after sitting for about 20 minutes and drinking water standing was a small but difficult task, I was still seeing spots and had slight blurred vision. I text my doctor immediately through my chart and they explained how I needed to go to the emergency asap. I later found out that my iron level was extremely low and now will be needing an iron infusion which I'm grateful for. Had I not known the warning signs from my healthcare worker I wouldn't have been able to recognize what was going on whether I had preeclampsia or hypertension.”

– Home Visiting Client



Section 2: High Blood Pressure – Explains what high blood pressure is, outlines the health risks associated with it, and highlights potential complications for both mother and baby during and after pregnancy.

“I learned that when your blood pressure is too high that means too much blood is pressing against your vessels. And always take blood pressure medication as prescribed by your provider and follow the instructions on the bottle.”
- Home Visiting Client

HIGH BLOOD PRESSURE:

High blood pressure (also called hypertension) happens when your blood pushes too hard against the walls of your blood vessels. High blood pressure does not usually cause symptoms until a severe or life-threatening stage. It can start before you get pregnant, while you are pregnant, or after your pregnancy.

RISKS FOR HAVING HIGH BLOOD PRESSURE

- | | |
|--|--|
|  Not being physically active |  Having a close relative with high blood pressure |
|  Smoking | |
|  Being pregnant for the first time |  Blood pressure issues with a previous pregnancy |

Also, being overweight and having diabetes.

RISKS TO YOU AND YOUR BABY

- | | |
|-----------------|---|
| • Preeclampsia | • Your baby being born too early or being too small |
| • Stroke | |
| • Heart disease | |

PREECLAMPSIA:

Preeclampsia is high blood pressure with signs of other problems. Some of these signs can be protein in your urine or seizures. Your provider will test your blood and urine to see if you are having these problems.

Preeclampsia can happen after the 20th week of pregnancy. It can also happen after giving birth, even if you did not have high blood pressure during pregnancy.

RISKS FOR HAVING PREECLAMPSIA

- | | |
|---|--|
|  Diabetes* |  Being pregnant with more than one baby |
|  Chronic high blood pressure |  Autoimmune conditions (like lupus) |
|  Being overweight* |  Preeclampsia with a previous pregnancy |
|  Kidney disease | |

**Also a risk for developing high blood pressure.*

RISKS TO YOU AND BABY

- | | |
|----------------|----------------------------------|
| • Stroke | • Death |
| • Seizures | • Your baby being born too early |
| • Organ damage | |

Section 3: Preeclampsia – Provides an overview of preeclampsia, including when it can occur (after the 20th week of pregnancy or during the postpartum period). It also highlights maternal risk factors and outlines potential health complications for both mother and baby.

“I learned about the warning signs of preeclampsia.”
- Home Visiting Client



The second page of the infographic is focused on the needs of women who have been diagnosed with HDP, provides guidance on managing high blood pressure during and after pregnancy and is divided into two main topics:

Take Care of Yourself – Provides healthy lifestyle tips focused on healthy eating, physical activity, and other ways to support self-care.

TAKE CARE OF YOURSELF		
NUTRITION Focus on eating: <ul style="list-style-type: none"> • Fruits and veggies • Whole grains (oatmeal and whole grain bread/pasta) • Low-fat milk, yogurt and cheese • Skinless chicken and fish • Nuts, peas and beans <p>Fresh, canned, and frozen fruits and veggies are all healthy choices.</p> <p>Look for veggies labeled low-sodium, reduced-sodium, or no-salt-added.</p>	PHYSICAL ACTIVITY* 5 days a week, 30 minutes a day is best. But, even just 10 minutes a day can help. Pick a few exercises that work for you. Examples - walk, dance, yoga, or find simple exercises online. <i>*Talk with your provider before changing your activity levels.</i>	MANAGING STRESS It's normal to experience stress during and after pregnancy. To help manage stress: <p>Make a list. What needs to be done and what can wait?</p> <p>Try deep breathing or meditation.</p> <p>Remember, it's okay to ask for help.</p> <p>Work with your provider to address any mental health concerns you may have.</p>
	DON'T SMOKE, USE DRUGS, DRINK ALCOHOL, OR USE MARIJUANA PRODUCTS.	

"My patient shared that she increased her vegetables and switched to leaner meat choices. She has decreased her junk food and has been monitoring her BP via monitor (we provided). Her BP's have been within normal limits, her urine no longer has that "sweet smell," and she has not had any gall bladder flare ups. My patient also explained having the BP monitor has been really helpful for her, and she has decreased vaping!"

– Home Visiting Nurse

Work With Your Provider – Emphasizes the importance of staying engaged with your healthcare provider throughout your pregnancy journey. This includes regularly attending prenatal and postpartum appointments, practicing self-measured blood pressure monitoring at home, consistently sharing your BP readings, and closely collaborating to manage medications safely and effectively.

"I learned "I learned that checking your blood pressure daily is important for maintaining your health."

– Home Visiting Client



WORK WITH YOUR PROVIDER

MONITOR YOUR BLOOD PRESSURE AT HOME

If you are taking your own blood pressure at home, talk with your provider about important things to know.

What symptoms could mean I'm having problems with my blood pressure? What should I do if I'm having symptoms?

If a reading is higher than normal, when should I call the provider's office or go to the emergency room?

What is a healthy blood pressure reading for me?

GO TO YOUR APPOINTMENTS


Your provider will monitor your blood pressure readings, symptoms and changes in your urine and blood.

MEDICATION

If you and your provider decide that medication is needed:

- Do not stop taking it without talking to your provider.
- Follow the directions written on your bottle.
- Talk with your provider about side effects and how to manage them.

SHARE YOUR BLOOD PRESSURE LOG



Use a blood pressure log to write down your readings. Share this log with your provider at appointments.

Created by Michigan State University and Strong Beginnings, a Federal Healthy Start Program. This project was supported in part by funding from the Michigan Department of Health and Human Services. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Department.

Module 3: Self-Monitoring Blood Pressure (SMBP)

Self-monitoring blood pressure is when individuals check their own blood pressure outside of a clinic setting, typically at home, using a validated device. For a list of validated blood pressure devices approved by the American Medical Association (AMA), please visit: <https://www.validatebp.org>.

SMBP helps women measure and track their blood pressure over time, providing a more accurate picture than occasional readings in clinical settings, especially for identifying conditions such as white coat hypertension.

Accurate blood pressure measurements are vital to the management of HDP and for identifying new-onset hypertension during pregnancy. SMBP in women with chronic or gestational

hypertension is an essential strategy to managing changes in hypertension.⁵ Providing SMBP education enables pregnant and postpartum women who are at greater risk for HDP, to take an active role in managing their health by consistently tracking, recording, and sharing their blood pressure readings with their healthcare provider over time. As more clinical practices adopt technology for patient-reported blood pressure readings, home visiting providers can play a key role in reinforcing SMBP practices and ensuring timely follow-up.

“My client is postpartum and experienced preeclampsia and hypertension during pregnancy. Client is self-monitoring for hypertension. Client is following strict diet from PCP. Blood pressure medication was recently reduced. Client continues to work at losing weight to eliminate need for blood pressure medication.”

– Community Health Worker



SMBP Action Plan

This two-sided educational handout is designed to empower women to take an active role in their care and strengthen communication between their healthcare providers for improved hypertension management. The SMBP Action Plan is available in English, Arabic, French, Kinyarwanda, Spanish and Swahili.

During a home visit, the first page of the SMBP Action Plan is completed collaboratively with the client.

Questions include:

- *What concerns you most about high blood pressure?*
- *What is most important to you about managing your high blood pressure?*
- *What 1-3 goals can you complete over the next two weeks?*
- *Who are your support people?*
- *How sure are you that you can follow this plan?*

SELF-MONITORING BLOOD PRESSURE ACTION PLAN

What concerns you most about high blood pressure?
What is most important to you about managing your high blood pressure?
Choose 1-3 goals that you can do over the next two weeks: <input type="checkbox"/> Monitor my blood pressure <input type="checkbox"/> Make changes in my diet to manage my blood pressure <input type="checkbox"/> Be more active <input type="checkbox"/> Manage stress/Practice self-care <input type="checkbox"/> Quit smoking <input type="checkbox"/> Take medications given to me by my doctor <input type="checkbox"/> Other:
Some things that may stop me from completing my goals are:
If this happens, I will:
My support people are:
How sure are you that you can follow this plan? <input type="checkbox"/> Very Sure <input type="checkbox"/> Sure <input type="checkbox"/> Somewhat sure <input type="checkbox"/> Not sure at all
MY CARE TEAM
OB / Health Care Provider:
Home Visitor(s):

Clients are encouraged to bring the partially completed plan to their appointment and collaborate with their provider to complete the second side together. The purpose is to help guide their conversation with their provider and ask key questions such as:

- *Can you write me a prescription for a blood pressure monitor/cuff?*
- *Should I start taking a daily low-dose aspirin (75-100 mg) between 12 and 28 weeks of my pregnancy to prevent preeclampsia?*
- *When should I report my readings to you and what is the best way to report them?*
- *What is a healthy blood pressure for me?*
- *If my reading is higher than this, when should I call your office?*
- *When should I go to the emergency room?*
- *What symptoms could mean I am having problems with my blood pressure?*
- *What should I do if I am having symptoms?*

"Patient was denied a BP cuff by her Medicaid HMO because the diagnosis did not meet their requirements, BP cuff given and teaching done. Patient took BP and found it to be running high and notified physician, got into appointment 2 weeks sooner than scheduled and was diagnosed with pre-eclampsia."

– Home Visitor

"I thought taking blood pressure was hard, but it was very easy and I liked getting a blood pressure cuff I could take home."

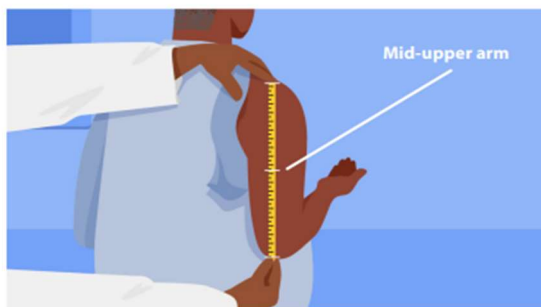
– Home Visiting Client



Choosing the Proper Blood Pressure Cuff Size

Accurate blood pressure (BP) measurement is essential for diagnosing and managing hypertension. One of the most common and preventable sources of error is using the wrong cuff size. Using the wrong cuff size can lead to significant inaccuracies. This can result in misdiagnosis or inappropriate treatment.⁸ Validated upper arm blood pressure devices for at-home use often come with an adjustable large cuff (9 – 17 inches).

The correct BP cuff size can be determined by measuring the mid-point of the upper arm (between the shoulder and elbow) with a tape measure and choosing a cuff size based on arm circumference.



Arm circumference		Recommended cuff size
centimeters (cm)	inches (in)	
22-26	8.7-10.2	Small adult
27-34	10.6-13.4	Adult
35-44	13.8-17.3	Large adult
45-52	17.7-20.5	Extra-large adult

Modified from Table 3 in: Muntner P, Shimbo D, Carey RM, Charleston JB, et al. Measurement of blood pressure in humans: a scientific statement from the American Heart Association. *Hypertension*. 2019;73:e35–e66. doi: 10.1161/HYP.0000000000000008.

Measuring, Recording, and Reporting Blood Pressure Readings for SMBP

There are several easy and flexible ways to log and track blood pressure readings for SMBP. Clients can choose the method that works best for them based on their comfort with technology, access to resources, and daily routine. Here are six methods:

- 1) Paper Log:
 - Simple and accessible—just a piece of paper & pen or printed chart.
 - Ideal for clients who prefer writing by hand or don't use digital tools.
- 2) Digital Spreadsheet:
 - Can use a pre-formatted Excel or Google Sheet on a phone or computer.



- Makes it easy to track trends and share records electronically.
- 3) Mobile Apps:
 - Blood pressure apps (e.g., Heart Habit, SmartBP, or OMRON Connect) often allow clients to enter readings and generate reports.
 - Some apps can sync with home BP monitors via Bluetooth.
- 4) Device Memory:
 - Many BP monitors automatically store readings.
 - Clients can bring the device to appointments and share readings directly from the machine.
- 5) Photographs:
 - Clients can snap a photo with their phone of their BP monitor screen after each reading.
 - Useful for clients who prefer simplicity and visual record-keeping.
- 6) Patient Portals:
 - Some health systems/clinics allow patients to enter BP readings directly into their patient portal. Patients can also message their providers about bp readings and concerns via patient portal.
 - Encourages real-time provider access and support.

We have a patient who was very open to self-monitoring her blood pressure. She uses the logs and actually did am and pm readings. She took her log to her OB's and documented THEIR bp readings on her log and wrote OB next to them. The doctor could see what the program was doing and how involved and aware this patient was.

– Home Visitor

SMBP Education

To support effective hypertension management and empower clients/patients in self-monitoring, the following educational tools are available.

How to Measure Your Blood Pressure at Home – Infographic (American Medical Association)

This instructional handout educates clients and patients on best practices for accurate blood pressure measurement at home. It offers simple, step-by-step guidance on preparing for a reading, positioning the body correctly, selecting the proper cuff size, and using a blood pressure monitor effectively to ensure reliable results.

<https://www.ama-assn.org/system/files/2020-11/smbp-infographic.pdf>

Self-Measured Blood Pressure: Seven-day recording log (AMA / MAP^{BP})

A downloadable handout from the American Medical Association, this log is designed for clients and patients who are tracking their blood pressure at home. It provides a structured format to record daily readings over a seven-day period to support accurate monitoring and communication with healthcare providers. It includes instructions and is available in several different languages.

<https://map.ama-assn.org/resources/7-day-blood-pressure-recording-log>



Blood Pressure Categories Chart (American Heart Association)

This color-coded chart from the American Heart Association helps patients and providers quickly identify blood pressure levels and understand what they mean for heart health. It outlines five categories—**Normal**, **Elevated**, **High Blood Pressure Stage 1**, **High Blood Pressure Stage 2**, and **Hypertensive Crisis**—based on systolic and diastolic readings. Each category includes specific numerical ranges and guidance on when to seek medical attention or make lifestyle changes to manage blood pressure effectively. It is available in English and Spanish.

Blood Pressure Categories



BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120-129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130-139	or	80-89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER
HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120

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heart.org/bplevels

English version: <https://www.heart.org/-/media/files/health-topics/high-blood-pressure/hbp-rainbow-chart-english.pdf>

Spanish version: <https://www.heart.org/-/media/files/health-topics/high-blood-pressure/hbp-rainbow-chart-spanish.pdf>

Blood Pressure Next Steps Chart

A decision tool used to support home visitors in guiding clients through blood pressure readings and identifying appropriate follow-up actions. It can be printed and laminated for convenient, repeated use during client visits. This resource was informed by the *Hypertension in Pregnancy* recommendations from the Gynecology and Obstetrics MSD Manual, Professional Edition.



Blood Pressure Next Steps				
Blood Pressure Category	Systolic mm Hg (upper number)		Diastolic mm Hg (lower number)	Action
Acceptable	<140	And	<90	No need to notify provider
Elevated	140-159	Or	90-109	Contact provider. If symptoms, send to ER or OB Triage
Critical	≥160	Or	≥110	Seek immediate medical care: Gestational age ≥20 weeks → OB Triage Postpartum OR Gestational age <20 weeks → ER

Device Calibration Test for SMBP (AMA / MAP^{BP})

The downloadable resource from the American Medical Association (AMA) provides a detailed process for calibrating a patient's SMBP device to ensure accurate readings. It includes specific steps and examples to guide healthcare providers through the calibration process.

<https://www.ama-assn.org/system/files/smbp-device-calibration-test.pdf>

Module 4: Training for the Hypertension Intervention

A comprehensive 2-hour training was developed and is designed to equip participants with the knowledge, skills, and resources needed to effectively deliver HDP and SMBP education and provide ongoing support to women and their families.

The training content is continuously updated to reflect the latest evidence-based practices for preventing and managing HDP. The training can be customized to align with the unique needs and interests of your audience.

Training Topics:

- **Background / Health Disparities**
 - National and Michigan-specific data on maternal mortality rates, health disparities, and HDP prevalence
 - Challenges in addressing maternal mortality and HDP
- **Intervention Framework**
 - Goals, intended outcomes, and documenting measurable impacts of the intervention
- **Educational Materials**
 - Introduction to the "Hypertension During & After Pregnancy" infographic
 - Overview of the Self-Monitoring Blood Pressure (SMBP) Action Plan
- **Home Visitor Workflow**
 - Workflow example
 - Describing responsibilities for home visitors involved in delivering the intervention
- **Understanding HDP and Urgent Maternal Warning Signs**
 - Scope of disease of HDP
 - Preeclampsia risk factors, signs/symptom, and long-term maternal complications
 - CDC Hear Her Campaign materials/messages



- **HDP Prevention and Management**
 - Strategies for preventing and treating HDP, including evidence-based interventions like aspirin therapy
- **SMBP Education and Skill Development**
 - Comprehensive training on SMBP with hands-on demonstration and practice to build participant confidence
 - Recording and reporting blood pressure readings to healthcare provider(s)
 - Device calibration guidance
- **Additional Support Resources for Home Visitors, Providers and Clients/Patients**

The PowerPoint slide deck and facilitator notes are available at:

<https://maternalhealthlab.chm.msu.edu/tools>.

Module 5: Lessons Learned

Several key lessons were learned during the development and implementation of the intervention:

Building System Supports for Implementation

- Engaging each partner agency in the planning phase before implementation is crucial for buy-in and ownership. It also gave them the opportunity to co-develop their implementation workflows and adjust them as needed throughout the implementation process.
- Establishing clear workflows and well-defined roles for home visitors is key to the successful implementation of the hypertension intervention.
- Initial implementation strategies often required adjustments. Adopting a “test and learn” approach and then refining processes based on direct feedback from all stakeholders, was important for program success.

Providing Comprehensive Trainings for Home Visitors and Providers

- Providing a robust training before the intervention launch, equipped home visiting staff and providers with HDP knowledge and hands-on experience in SMBP, and built their confidence to deliver consistent, high-quality services.
- Regular refresher trainings helped reinforce key skills, kept staff aligned with current best practices in hypertension care, and helped address the impact of staff turnover.

Fostering Collaborative Relationships with Clinicians

- Establishing strong, trust-based partnerships with prenatal clinicians, particularly for those that serve Medicaid-insured women, is vital to effectively address hypertension and ensure timely, high-quality care.
- Coordinating meetings with practice managers and providers to introduce the hypertension intervention, describe home visitors’ roles, and establish referral pathways can facilitate successful program implementation.
- It’s important to consider practice workflows and be mindful of clinicians’ time constraints when implementing the intervention tasks.



- Creating open lines of communication via collaborative phone calls between home visitors and healthcare providers proved valuable for addressing client barriers, establishing timely care, and supporting hypertension management.
- When home visiting program staff and clinical teams communicated effectively and worked in tandem to improve client/patient outcomes, they were better able to:
 - Help clients develop and follow through on personalized action plans.
 - Empower patients to communicate confidently with their healthcare providers.
 - Ensure clients received timely care when symptoms or warning signs emerged.

"I had a client call me over the weekend. When I saw her call Monday, I knew it was something out of the norm for her so I called her right away. She said she has started labor pains every 5-7 minutes for almost 2 hours on Saturday night, so she went to take a shower and started heading to the hospital. On her way to the hospital everything stopped, and she decided to tell her husband to bring her back home. She started feeling "off" and noticed she was getting very swollen.

On Sunday morning she woke up very swollen to her hands, feet, and face. She was also having headaches. Her hands and feet were very swollen and would hurt to step or make a fist. She said her Dr. office had told her swollenness could be normal in 3rd trimester, so she was just going to wait for her appt later this week.

I asked if she has checked her BP and she said it has been high but it runs high on her. I kept her on the line while we called the Doctor together because I didn't feel she would call on her own because of the language barrier. Once I spoke to the nurse, they needed her to go to triage immediately. I made sure she understood everything and the importance of getting to the hospital. I talked to her last night, and she was hospitalized because she had extremely high blood pressure.

She said baby was "distressed" and movements were very high. However, I checked in with her today and she is now withing normal range with medication and baby is doing good as well still in observation. Nurse said she might be good to go home today but to go in if it happens again right away because it can be very dangerous for both. I made sure to remind her that she can call dr. office out of business hours and they will get an interpreter. Also told her that if she is having any symptoms or doubts and can't communicate with Dr. office to head to triage but to not ignore things like this because it's dangerous.

– Community Health Worker



Promoting Early Detection Through Education

- Early recognition of elevated blood pressure during and after pregnancy is critical to preventing maternal and perinatal morbidity and mortality.
- Providing HDP and urgent maternal warning sign education early in pregnancy benefits *all* pregnant and postpartum women—not just those considered “high risk”—and promotes more equitable care and improved outcomes.
- Many participants were unaware that preeclampsia can occur up to six weeks after delivery (postpartum preeclampsia), highlighting the need for ongoing education throughout the perinatal period.

Empowering Pregnant and Postpartum Women and Families – The Home Visitor Role

- Home visitors are trusted messengers within their communities and play a critical role in addressing chronic conditions such, as hypertension, and promoting maternal health.
- Delivering client-centered care—meeting clients where they are and assessing their readiness for change—was key to driving engagement and achieving success.
- With the right training, tools, and resources, home visitors can:

- Raise awareness about HDP.
- Educate clients, their families, and support networks about urgent maternal warning signs that may occur during pregnancy and up to one year postpartum.
- Empower clients to initiate important conversations with their healthcare providers.
- Provide personalized SMBP support tailored to each client's unique needs and readiness.

“With my first pregnancy, I wasn't listened to much, and I wasn't sure what to look for and what my warning signs were. My pre-eclampsia wasn't caught or noticed despite extreme swelling and headaches. It got really difficult at the end with a 5-day induction due to high blood pressure. The providers didn't let me make many choices, which brought up previous trauma triggers and made the birth process much more complicated.

With my second, I had a lot more knowledge and information. I had seen the Hear Her campaign and was much more aware of the warning signs, and so we caught the pre-e much earlier. I was able to get the treatment I needed and was much more involved in the decisions with my care. It was still a 4-day induction with lots of interventions, but I was able to advocate for myself better and describe my symptoms in a way that got the healthcare professionals to listen to me. This skill was essential when I ended up back in the ER about a week postpartum with high blood pressure and a clot.”

– Home Visiting Client

- Home visitors play a critical role in empowering clients and their families to recognize when something feels off, to speak up, and to seek immediate care—actions that can be lifesaving.
- While there was initial hesitation to incorporate CHWs into the SMBP education workflow—largely due to perceptions that it was a clinical task reserved for nurses—they ultimately proved to be invaluable in:
 - Assisting clients in accessing validated BP monitors and properly sized cuffs.



- Providing education on accurate BP measurement and recording readings.
- Encouraging and supporting clients in reporting their BP readings to healthcare providers.

This approach helps ensure clients receive self-measured blood pressure (SMBP) education without falling through the cracks, while also extending the reach of the healthcare team—both of which are critical to improving maternal health outcomes.

Implementing the Hypertension During and After Pregnancy Infographic

- Home visitors demonstrated strong commitment to client education by actively utilizing the hypertension infographic. Initially, they were instructed to review only the hypertension and preeclampsia sections on page one during the first visit for clients who screened negative for hypertension based on the MIHP Risk Screener. However, recognizing the value of the full infographic, home visitors took the initiative to review the entire document with clients and subsequently revised their intervention workflow to enhance education and engagement.

"I have two similar stories- both patients were scored for HTN, the RNs did the full infographic, contacted the OB's while in the home and both doctors responded and were very thrilled about this service. They gave parameters and were happy when they found out the RN was going to bring out a BP cuff (the client had lost part of hers). It seems certain doctors are pretty receptive."

– Home Visitor Supervisor

Implementing the SMBP Action Plan

- Completing the SMBP Action Plan with both the client and their provider was sometimes challenging. However, both groups recognized the value of having structured conversations about blood pressure management.
- The Action Plan empowers clients with clear guidance on what steps to take when their blood pressure is elevated or when they experience symptoms, supporting timely and appropriate responses. In other words, when and where to seek care.
- When clients faced barriers accessing BP monitors/cuffs through their insurance, providing devices directly to them, free of charge, increased SMBP participation.
- Out-of-office blood pressure (BP) monitoring—such as home BP monitoring—empowers individuals to take an active role in managing their health. It also plays a key role in engaging patients in their care and providing a more accurate representation of BP levels in everyday settings.
- Clarifying blood pressure categories and thresholds—and providing education to home

"We now include all BP teaching on admission." We are not having much luck with clients taking the action plan to the provider, but the clients we have talked with that are managing, know when they need to call the provider's office, and that has to do with the conversation they have about the action plan."

– Home Visitor



visitors, providers, and clients using the BP chart and protocol—can help ensure consistent and accurate messaging across all levels of care.

- Telehealth visits are particularly beneficial for postpartum clients who may experience barriers such as limited access to transportation or childcare. When combined with self-measured blood pressure (SMBP), clients can conveniently monitor their blood pressure from home, supporting timely follow-up and continuity of care.
- Listening to patients and taking elevated BP readings seriously is critical, as program participants shared personal stories of being dismissed by clinicians, underscoring the importance of respectful, bias-free care and communication.

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Additional Supportive Resources

- <https://preeclampsia.org/>
- Hear Her Campaign: <https://www.cdc.gov/hearher/index.html>
- American Heart Association: <https://www.heart.org>
- Alliance for Innovation on Maternal Health (AIM): <https://saferbirth.org>
- American Medical Association: <https://map.ama-assn.org/resources>
- The American College of Obstetricians and Gynecologists: <https://www.acog.org>
- Hypertension in Pregnancy Change Package: <https://millionhearts.hhs.gov/index.html>
- Healthy Hearts Resources: Michigan Department of Health and Human Services (MDHHS): <https://www.michigan.gov/mdhhs/keep-mi-healthy/chronicdiseases/cardiovascular/healthy-hearts>
- National Maternal Mental Health Hotline: 1-800-TLC-MAMA <https://mchb.hrsa.gov/programs-impact/national-maternal-mental-health-hotline>



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