Addressing Inequities in Hypertensive Disorders of Pregnancy in Urban and Rural Communities in Michigan: Lessons from the Field

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Disclosures

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Learning Goals

- Describe racial, ethnic, and geographical inequities in hypertensive disorders of pregnancy (HDP).
- Adopt client self-management practices to address HDP in home visiting and group prenatal care settings.
- Access tools and strategies from home-based, HDP interventions.

What are Hypertensive Disorders of Pregnancy?

Chronic Hypertension

Gestational Hypertension

Preeclampsia, Eclampsia

Hypertension:

When your blood pushes too hard against the walls of your blood vessels. Does not usually cause symptoms until a severe or life-threatening stage. Can happen before, during, or after pregnancy.

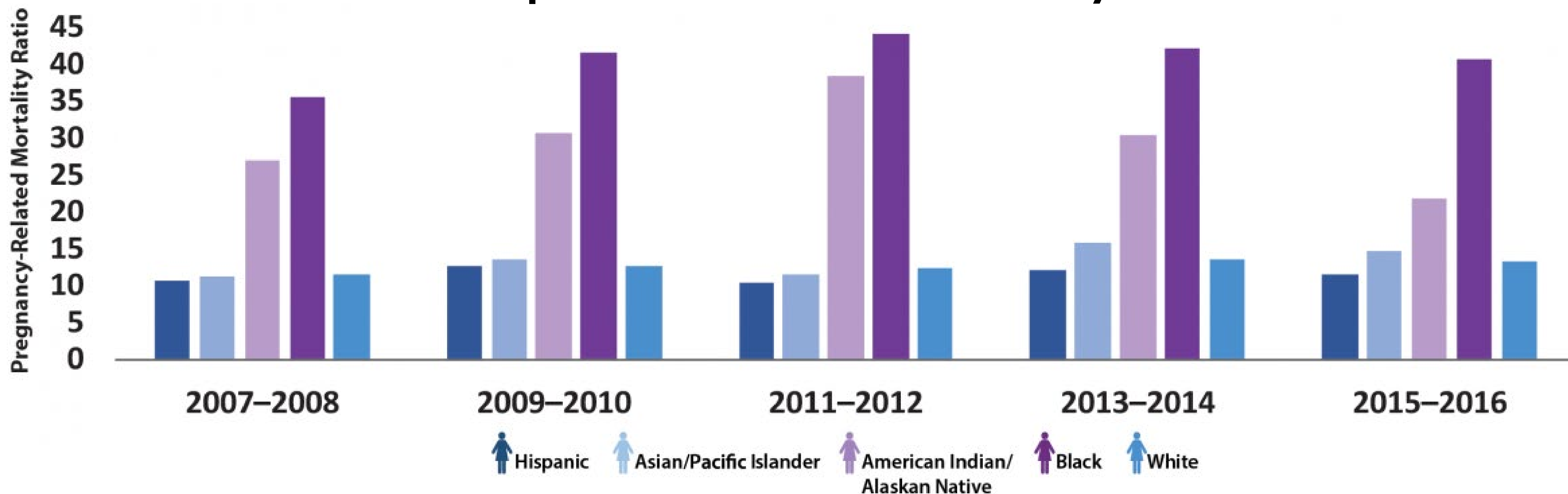
Preeclampsia:

High blood pressure with signs of other problems (protein in urine or seizures).

It can happen after the 20th week of pregnancy or after birth.

Why is Addressing HDP Important?

Equity

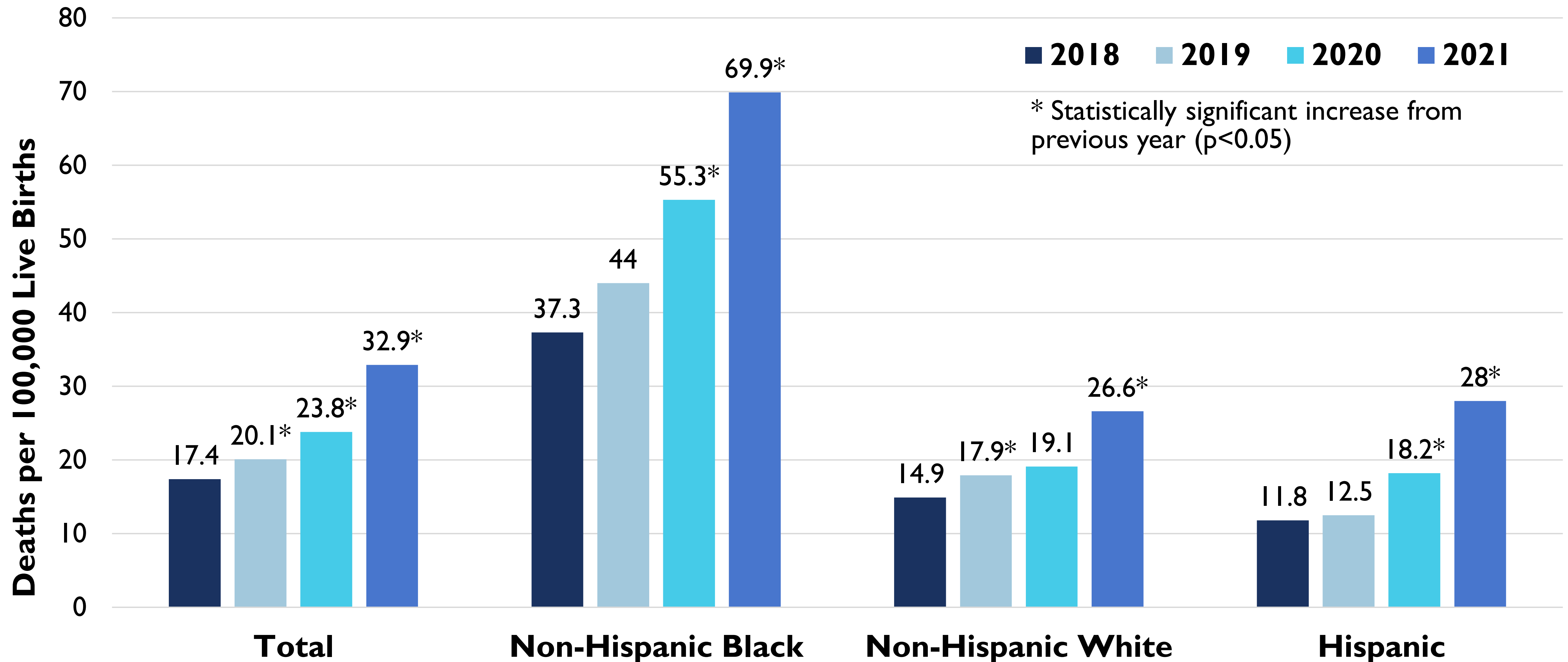


Source: Petersen EE, Davis NL, Goodman D, et al. Racial/Ethnic Disparities in Pregnancy-Related Deaths - United States, 2007-2016. *MMWR Morb Mortal Wkly Rep*. 2019;68(35):762-765. Published 2019 Sep 6. doi:10.15585/mmwr.mm6835a3. https://www.cdc.gov/reproductivehealth/maternal-mortality/disparities-pregnancy-related-deaths/infographic.html

Why is Addressing HDP Important?

Equity

Maternal Mortality by Race and Hispanic Origin: United States 2018-2021



Source: Hoyert DL. Maternal mortality rates in the United States, 2021. NCHS Health E-Stats. 2023. DOI: https://dx.doi.org/10.15620/cdc:124678.

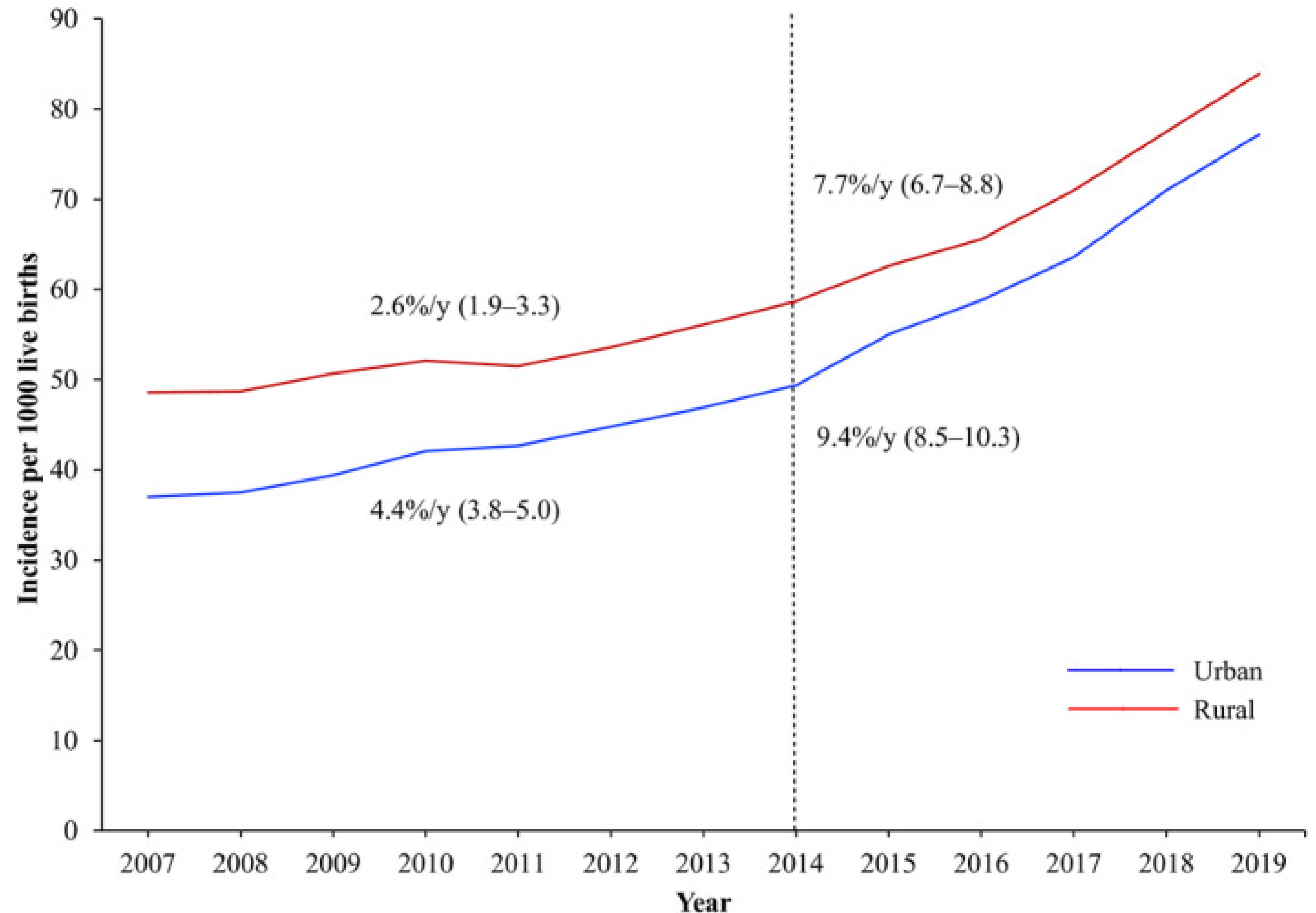
Why is Addressing HDP Important?

- In Michigan, from 2015-2019:
  - HDP was the leading cause of pregnancy-related deaths (16.9%)
  - 63.7% of all pregnancy-related deaths in were determined to be preventable

HDP: Where You Live Matters

It's a Rural and Urban Issue

Average annual percent change in rural and urban new-onset HDP (age-adjusted data)



Source: Cameron NA, Everitt I, Seegmiller LE, Yee LM, Grobman WA, Khan SS. Trends in the Incidence of New-Onset Hypertensive Disorders of Pregnancy Among Rural and Urban Areas in the United States, 2007 to 2019. *J Am Heart Assoc.* 2022;11(2):e023791. doi:10.1161/JAHA.121.023791

Challenge of Addressing Maternal Mortality and HDP

- Delays account for many individuals reaching available expert care late and in worse clinical condition.
  - Delays in patients identifying the warning signs for hypertensive disorders
  - Delays in seeking, reaching, and receiving timely care for hypertension

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Broad Strategies to Address HTN

1) ***Empower birthing persons and their families*** to recognize critical symptoms, get timely care, and help them engage providers/practices in potentially life-saving conversations;
2) ***Mobilize home visitors*** to deliver hypertension educational interventions for all, including self-monitoring blood pressure for those at greatest risk;
3) ***Make system connections among home visitors, their programs, and prenatal/postnatal clinicians*** to link care, support interventions, and increase enrollment of birthing persons with HDP.

Gaining Statewide Momentum: Home Visiting Programs Addressing HDP

Three Unique Models and Their Processes for Addressing HDP

Jaye Clement, MPH, MPP

STRONG Beginnings
Strengthening families for a Healthy Start

Celeste Sanchez Lloyd, MA

Debbie Aldridge, RN

HENRY FORD HEALTH +
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Health Sciences

Target Population

Medicaid eligible, African-American women

Over the age of 18

8 - 28 weeks gestation at time of enrollment

Detroit-area residents

Receive care at Henry Ford Medical Center - NCO

What is Group Prenatal Care (GPC)?

- Pregnant moms of similar gestational age are put into groups to receive prenatal care together in 10, 2-hour sessions
- GPC allows for more time with a provider
- Ample time to ensure moms and support partners are prepared for pregnancy, birth, and a new baby
- Traditionally facilitated by two clinicians (e.g. OB, nurse, social worker)
  - WIN Network relies on one CHW in partnership with clinician (certified nurse midwives)

CenteringPregnancy

This model has been shown **to nearly eliminate racial disparities in preterm birth.**

African American women, who are at higher risk for preterm birth in the US, experience lower risk of preterm birth when enrolled in CenteringPregnancy than in traditional care.

SOURCE: ICKOVICS JR, KERSHAW T, WESTDAHL C, MAGRIPLES U, MASSEY Z, REYNOLDS H, & RISING, S. (2007). GROUP PRENATAL CARE AND PERINATAL OUTCOMES: A RANDOMIZED CONTROLLED TRIAL. *OBSTETRICS AND GYNECOLOGY, 110*(2 PART 1), 330-339.

CHW Role in Enhanced Group Prenatal Care

- Serve as co-facilitators for GPC sessions
- Integrated with clinical team and are trained as doulas
- Provide added 1:1 support through home visits, coaching, and advocacy
- Follow-up with moms between sessions
- Involved throughout prenatal care, delivery and through baby's first birthday
- Provide warm hand-offs to resources for SDOH
- Facilitate information sharing between the clinic and community
- CHW Team Leader trained and trusted with some administrative/coordinator duties

GROUP PRENATAL CARE BIRTH OUTCOMES

Average Birth Weight: 6.89 lbs	Average GA: 38.5 weeks
LBW babies: 15 (4.6%) (smallest baby 1.8 lbs at 26 weeks)	Pre-Term babies: 20 (6.2%)
Vaginal Births: 240 (74.7%)	308 (96%) of mothers-initiated breastfeeding upon birth of baby

Data as of 03/14/23

HDP Intervention - Planning Phase

- Impetus for Change:
  - Blood Pressure monitoring an integral component of GPC
  - Increased focus on maternal health equity (beyond infant mortality work)
  - HFH + MSU Partnership
- Core Factors:
  - Woman-centered and CHW-driven interventions
  - Cultural relevance
  - Equity imperative

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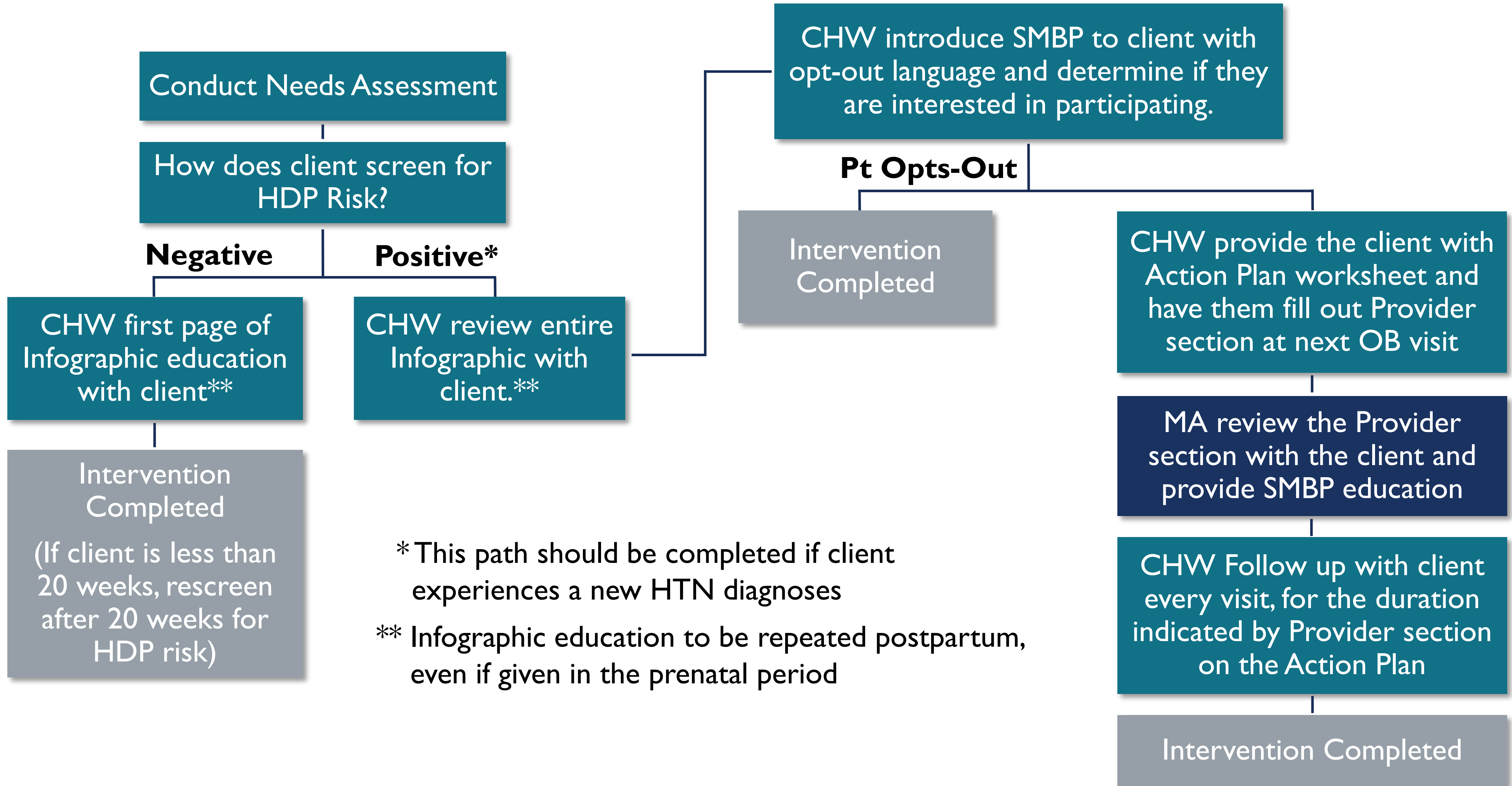
Process and Protocols

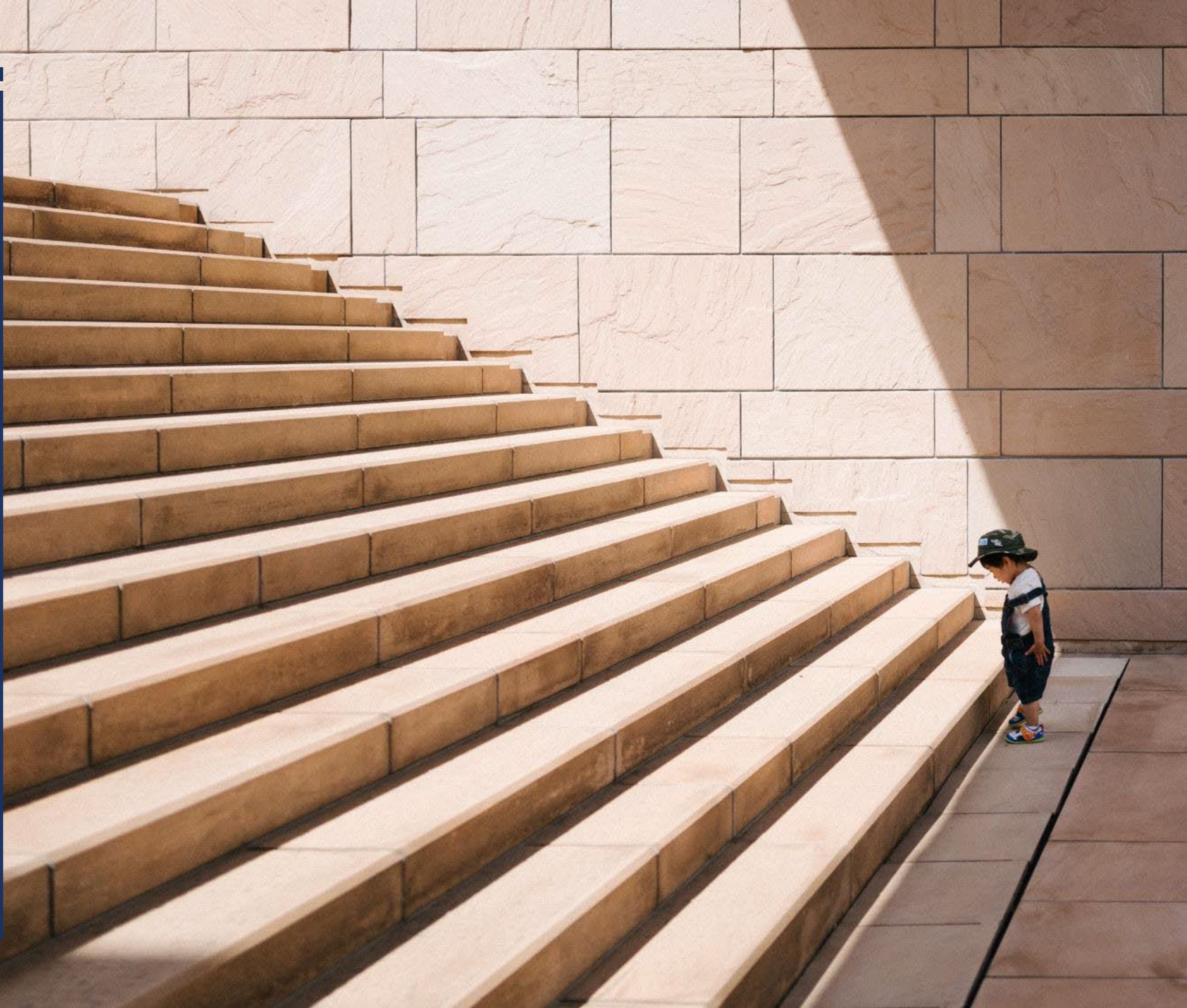
- Gauged interest and feedback from leaders in Women's Health Services and Cardiovascular Care
  - Mobile Integrated Health
  - Heart Healthy Moms
- Initial reviews with Project Planning Team/Evaluators
  - Current workflow at WIN Network - MA already teaching BP
  - Integrating SMBP into existing workflow
- CHWs reviewed processes and provided feedback



Conduct Needs Assessment
How does client screen for HDP Risk?
Negative
Positive*
CHW first page of Infographic education with client**
CHW review entire Infographic with client.**
Intervention Completed
(If client is less than 20 weeks, rescreen after 20 weeks for HDP risk)
CHW introduce SMBP to client with opt-out language and determine if they are interested in participating.
Pt Opts-Out
Intervention Completed
CHW provide the client with Action Plan worksheet and have them fill out Provider section at next OB visit
MA review the Provider section with the client and provide SMBP education
CHW Follow up with client every visit, for the duration indicated by Provider section on the Action Plan
Intervention Completed
* This path should be completed if client experiences a new HTN diagnoses
** Infographic education to be repeated postpartum, even if given in the prenatal period

NEXT STEPS

- CHW Training, Information on:
  - HDP
  - BP cuffs/monitors
  - The intervention workflow
  - The Infographic
  - The Action Plan
- Disseminate Information
- Program Implementation



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STRONG Beginnings

Strengthening families for a Healthy Start

Background

- Improve the health and well-being of Black and Latina women, men, and their babies, from pregnancy through early childhood
- Promote racial equity and eliminate disparities in birth outcomes in Kent County
- Multi-disciplinary model adds Community Health Worker services to Michigan's Maternal Infant Health home visiting program (RN, MSW, RD) and mental health services
- Includes Fatherhood Program and community education

Partners

- Arbor Circle
- Cherry Health
- Corewell Health
- Kent County Health Department
- Trinity Health
- Michigan State University
- Healthy Kent Infant Health Action Team (IHAT)

A MI Healthy Start Program: How Many Clients Have HDP?

- Strong Beginnings - federal Healthy Start program
  - **1 in 3 of Black clients have HDP** (majority have gestational hypertension, diagnosed after initial risk screening at enrollment)
- Almost 1 in 4 Black clients have a HDP diagnoses in MIHP (a state-sponsored Medicaid home visiting program)

Other Health Problems and Social Determinants of Health Needs of Black Healthy Start Clients with HDP

- 40% mental health diagnoses
- 60% housing instability
- 30% food insecurity
- 35% no reliable transportation
- 19% experienced physical abuse in the last 12 months
- 44% live in neighborhoods with highest deprivation/segregation

HIGH BLOOD PRESSURE
DURING & AFTER PREGNANCY

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.

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

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
- Seizures
- Organ damage
- Death
- Your baby being born too early

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MANAGING HIGH BLOOD PRESSURE DURING & AFTER PREGNANCY

TAKE CARE OF YOURSELF

NUTRITION

Focus on eating:

- **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**

Fresh, canned, and frozen fruits and veggies are all healthy choices.

Look for veggies labeled low-sodium, reduced-sodium, or no-salt-added.

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.

**Talk with your provider before changing your activity levels.*

DON'T SMOKE, USE DRUGS, DRINK ALCOHOL, OR USE MARIJUANA PRODUCTS.

MANAGING STRESS

It's normal to experience stress during and after pregnancy.

To help manage stress:

Make a list. What needs to be done and what can wait?

Try deep breathing or meditation.

Remember, it's okay to ask for help.

Work with your provider to address any mental health concerns you may have.

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.

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:

- ☐ Monitor my blood pressure
- ☐ Be more active
- ☐ Manage stress/Practice self-care
- ☐ Quit smoking
- ☐ Take medications given to me by my doctor
- ☐ 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?

- ☐ Very Sure
- ☐ Sure
- ☐ Somewhat sure
- ☐ Not sure at all

MY CARE TEAM

OB Provider:

MIHP Case Manager:

Community Health Worker:

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- 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:
  - Monitor my blood pressure
  - Be more active
  - Manage stress/Practice self-care
  - Quit smoking
  - Take medication given to me by my doctor
  - 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?
  - Very Sure
  - Sure
  - Somewhat sure
  - Not sure at all

SELF-MONITORING BLOOD PRESSURE OB PROVIDER VISIT

Bring this sheet to your next visit with your health care provider. Use the guide below to help start the conversation and to write down your provider's answers.

Start the Conversation (example):
"Thank you for seeing me. As you know, I've been diagnosed with high blood pressure. I'm planning to work with my home visiting providers to track my blood pressure at home. Before I start, I wanted to ask you some questions"

ASK YOUR HEALTH CARE PROVIDER AND WRITE DOWN THEIR RESPONSE.

Can you write me a prescription for a blood pressure cuff?
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'm having them?

Ask your health care provider any other questions you may have about high blood pressure.

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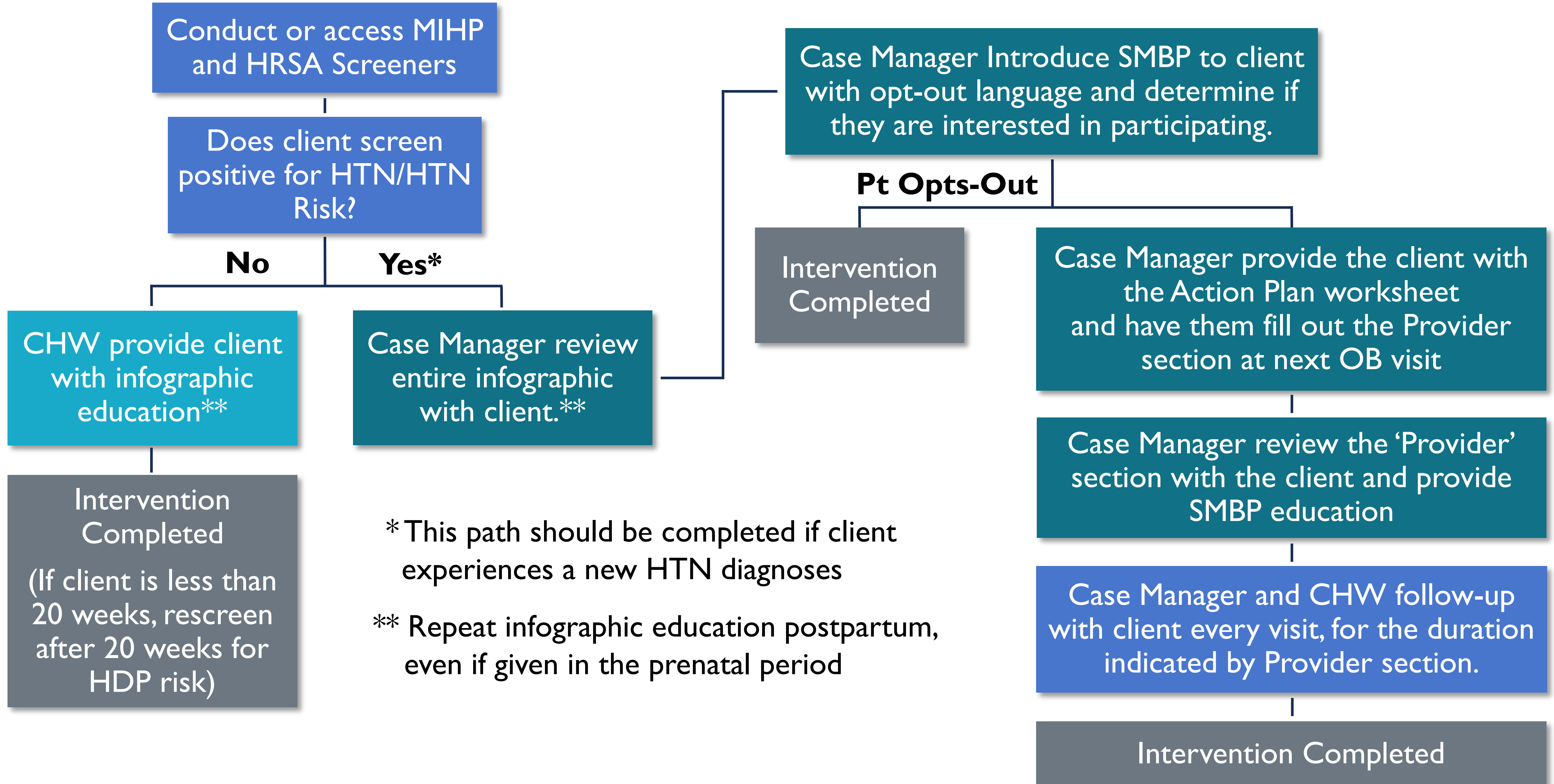
- Can you write me a prescription for a blood pressure cuff?
- When should I report my readings to you and what is the best way to report them?
- What is a healthy blood pressure for me?
- If my reading is higher than this, when should I call your office?
- When should I go to the emergency room?
- What symptoms could mean I am having problems with my blood pressure?
- What should I do if I'm having them?

Intervention Workflow



Challenges

Team Coordination

Unexpected Events

Convincing Partners

Budget

Complex Systems

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What Did You Learn From the Infographic?

"That hypertension and preeclampsia are very similar in the fact that they both deal with blood pressure, but the warning signs and outcomes can be very different."

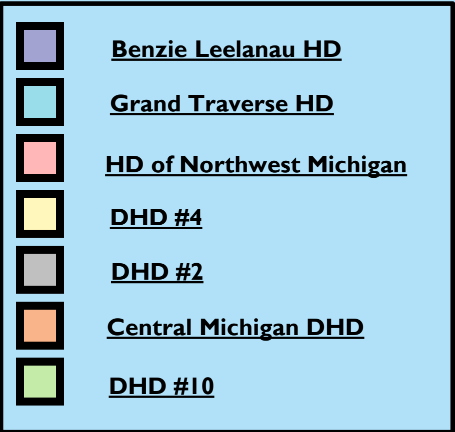
"How serious it is to be healthy and to watch out for the [warning] signs."

"That one needs to go immediately when any symptoms are present and not leave it till tomorrow or later, thinking that this will go away in a little while but rather that we need to go to the doctor right away because it could be some of the warning signs that put us at risk - including death."

healthy futures

Service Area

Healthy Futures and Health Dept. Service Area



Delivering Hospitals with data sharing agreements

- Ascension St. Joseph Hospital-Tawas (ASJHT)
- MyMichigan Medical Center-Alpena (MMCA)
- McLaren Northern Michigan (MNM)
- Munson Medical Center (MMC)
- Munson Healthcare Cadillac Hospital (MHCH)
- Munson Healthcare Charlevoix Hospital (MHCHH)
- Munson Healthcare Grayling Hospital (MHGH)
- Munson Healthcare Otsego Memorial Hospital (MHOMH)

What is Healthy Futures?

- Healthy Futures is a collaboration between Munson Healthcare, other regional hospitals, health departments, and healthcare providers
- It is for anyone who is pregnant or parenting an infant and is free to all enrollees
- The goal is to improve the health outcomes of pregnant persons and infants born in Northern Michigan through universal community-based RN care coordination, education, and support to families

Healthy Futures Model

- 5 scheduled RN contact points
- Newsletters and text messages from pregnancy-5 years old

Postpartum Hypertension - Goal

- All individuals receiving a postpartum Healthy Futures home visit will be:
  - Offered a blood pressure assessment with elevated readings reported to the client's OB provider
  - Assessed for the warning signs of post birth related complications - as a strategy to reduce preventable maternal mortality.
  - Provided education about the warning signs of post birth related complications, including hypertension and hemorrhage

Postpartum Hypertension – Action Guide

BP Category	Systolic (mm Hg)		Diastolic (mm HG)	Action
Acceptable	Less than 140	and	Less than 90	• Assess for symptoms and report to OB provider any danger signs, even if blood pressure is in this range • Provide education about warning signs
Elevated	140-160	or	90-110	• Assess for symptoms • Before the end of the day, notify the OB provider office of BP reading, as well as any reported symptoms or the absence of symptoms • Provide education of warning signs
Critical	161 or higher	or	111 or higher	• Assess for symptoms • Before leaving the home, notify the OB provider office of the BP reading, as well as any reported symptoms or the absence of symptoms • Follow up with the client to assure they had contact with the OB provider and understands the plan for follow up

Postpartum Hypertension - Data

Acceptable Range:
83%
(196)

Elevated Range:
16%
(37)

Critical Range:
1%
(4)

Total postpartum blood pressures reported by Healthy Futures nurses: 237

Implementation Stories

- 3 birthing persons readmitted to the hospital postpartum
  - None had any blood pressure concerns during their pregnancy, delivery, or postpartum hospital stay

- Several birthing persons with known HTN had their medications changed due to readings taken at home

- Several birthing person went to their OB for follow-up after elevated reading, but readings was were within normal limits at the office visit
  - We wonder if the anxiety of having a home visit and/or pain they were having from with breastfeeding may have been contributing factors

Challenges and Lessons Learned

- Started with a lower reading threshold for contacting the OB office
  - Contacting office for almost every visit
  - Concern that OB office would become desensitize to frequent reports
- Now we are reporting less often and there is often actionable follow up from the OB office

- Did not need consensus from each OB office on when to report, which made the implementation process easier
  - We did ask for input from local OB offices in the pilot site area
  - But we were able to use standing orders from the Medical Directors at local health departments

Start the Conversation: How Can You Address Hypertensive Disorders of Pregnancy?

How many clients have hypertensive disorders?

At enrollment?

During pregnancy?

Postpartum?

Listen to providers (prenatal providers, HV, community), what are their perceptions?

How could BP monitoring help?

Talk with local health care organizations; what are they worried about?

Have they run their own data?

Consider integrating hypertension education for all; train staff; engage community partners

QUESTIONS?

Access intervention tools at
www.obgyn.msu.edu/tools
or scan the QR code here:

Hannah Nelson, Project Administrator: nelsonha@msu.edu