



Healthy children in a healthy world.

We advance health and healthy living for children and families through cutting-edge research, innovative community-based programs, and dissemination of evidence-based practices.

STRATEGIC PLAN GOALS



Center Resources



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msdcenter.org



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go.uth.edu/webinars



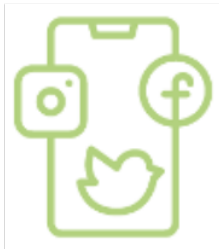
NEWSLETTER

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TX CHILD HEALTH STATUS REPORTS AND TOOLKITS

go.uth.edu/TexasChildHealth



TEXAS RESEARCH-TO-POLICY COLLABORATION PROJECT

go.uth.edu/TXRPCProject

Disclosures & Accreditation

This webinar awards **1.0 Entry-Level CHES/MCHES® credit**.

The Michael & Susan Dell Center for Healthy Living is a Designated Provider of continuing education contact hours (CECH) for Certified Health Education Specialists (CHES®) and Master Certified Health Education Specialists (MCHES®) through The National Commission for Health Education Credentialing, Inc. (NCHEC®).

Requirements for Completion:

- **Attend the session in its entirety**

My Health Beyond Pregnancy: A more comprehensive approach to postpartum care and cardiometabolic health

Ann Celi MD MPH

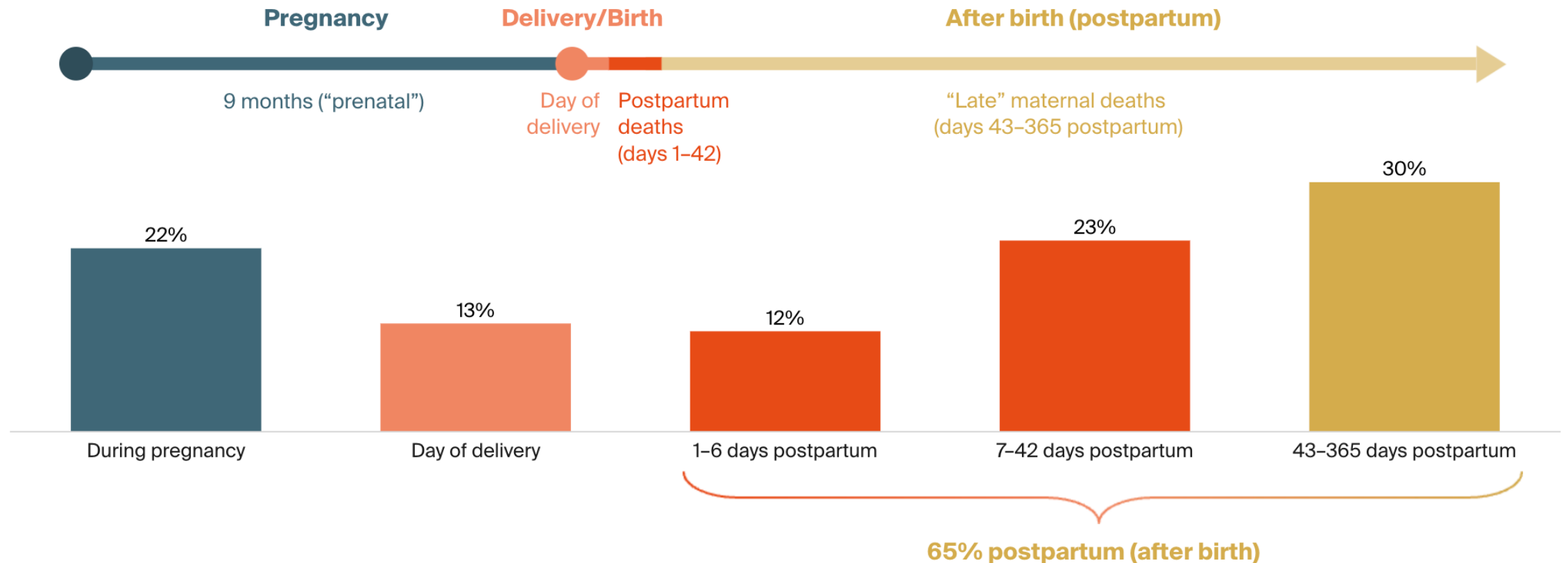
Division of General Internal Medicine and Primary Care, Division of Women's Health

Department of Medicine

Division of Maternal Fetal Medicine, Department of Obstetrics and Gynecology

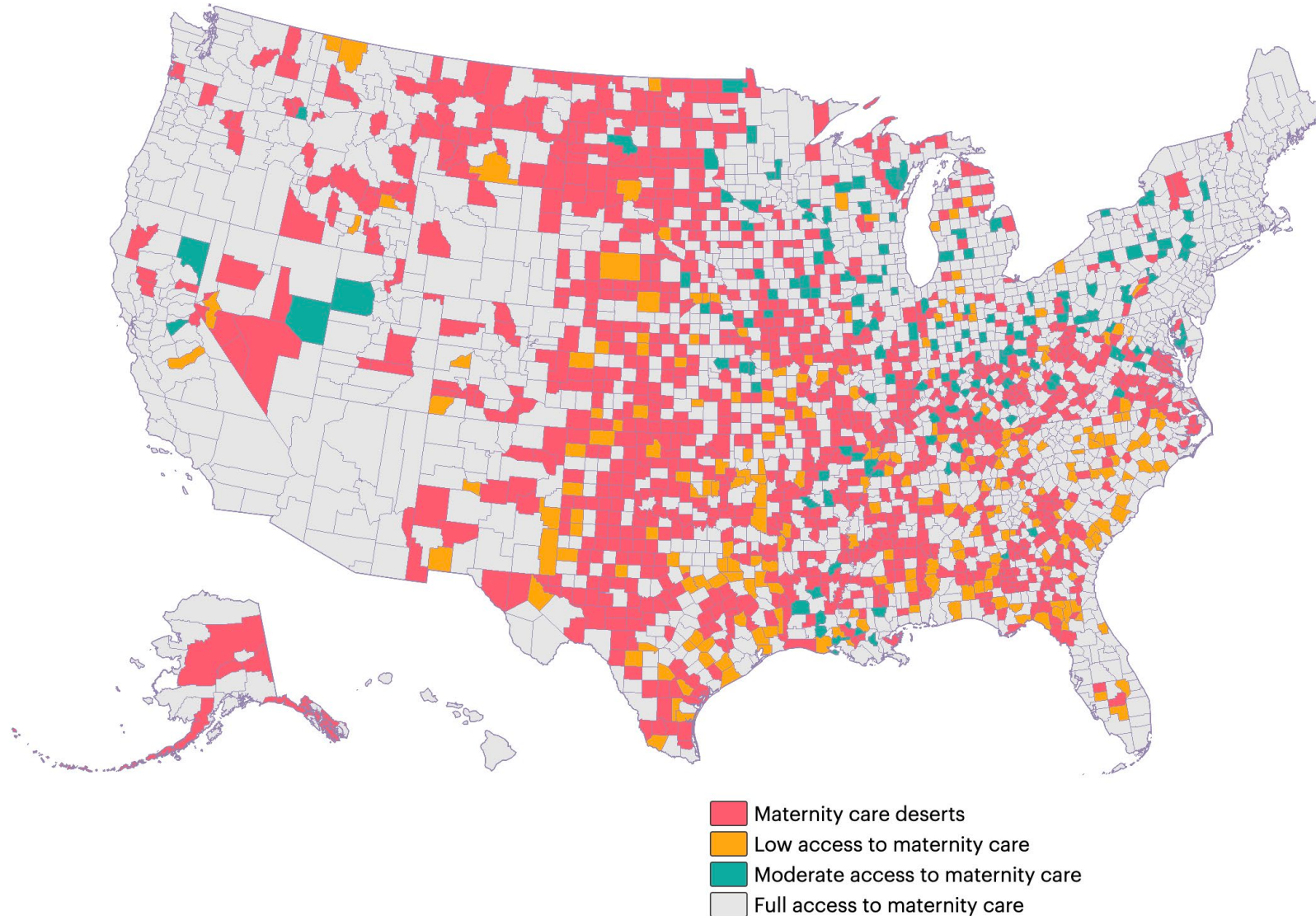
Brigham and Women's Hospital, Harvard Medical School

Pregnancy-Related Deaths – Why the Postpartum Period Matters



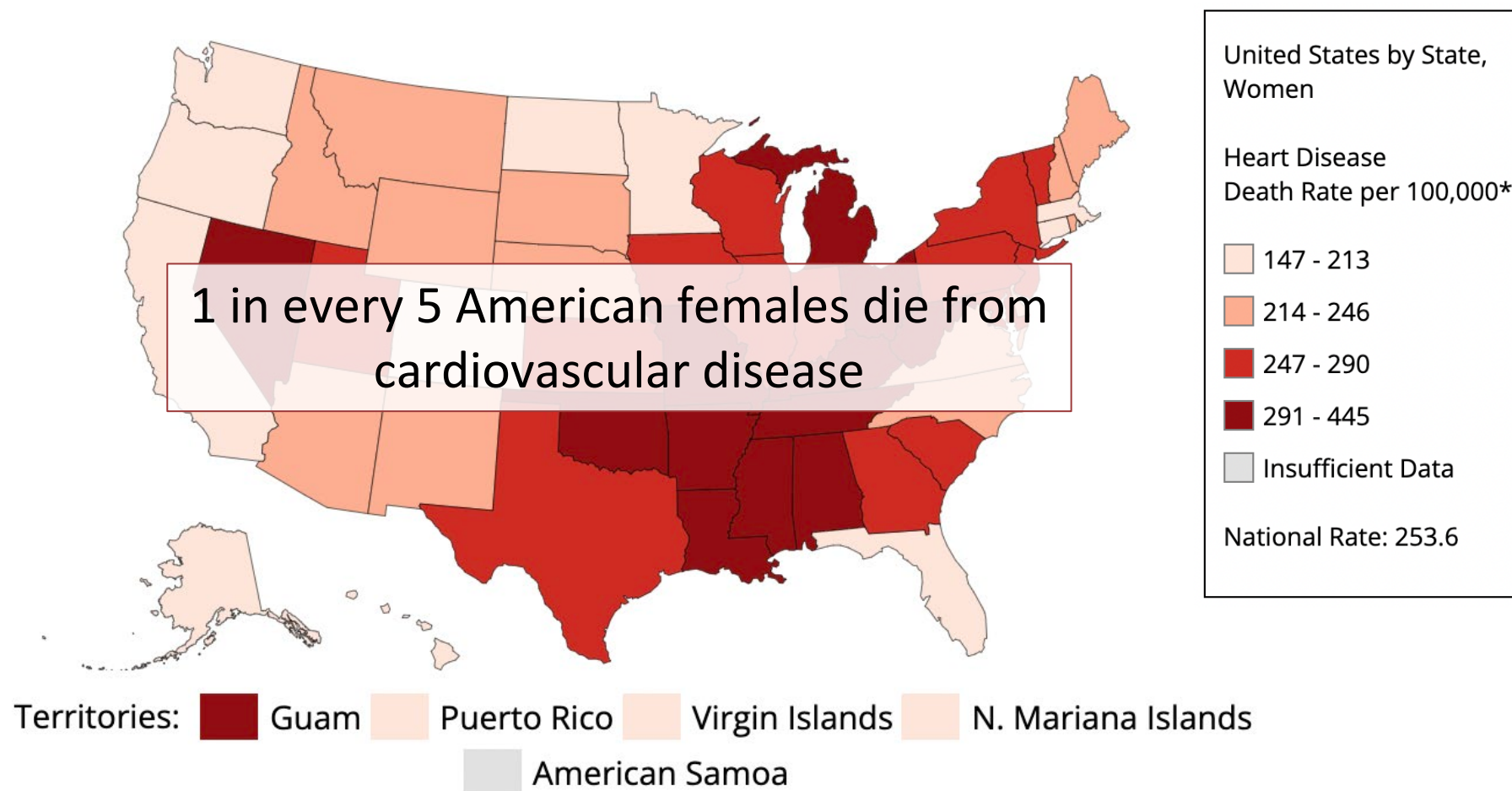
Maternity Care Deserts 2022-2023

Growing crisis of access to obstetric and reproductive health care

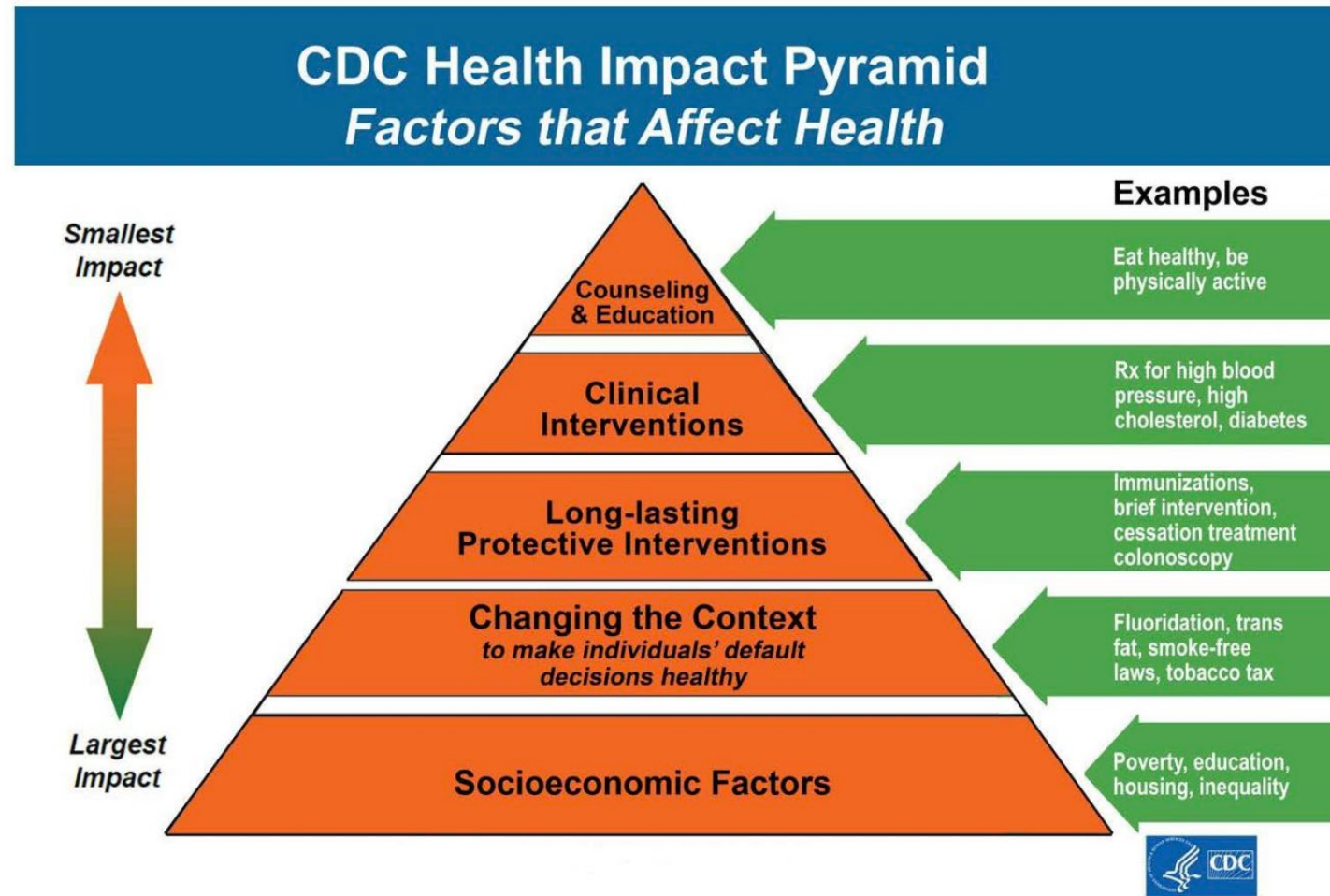


Heart Disease Death Rates

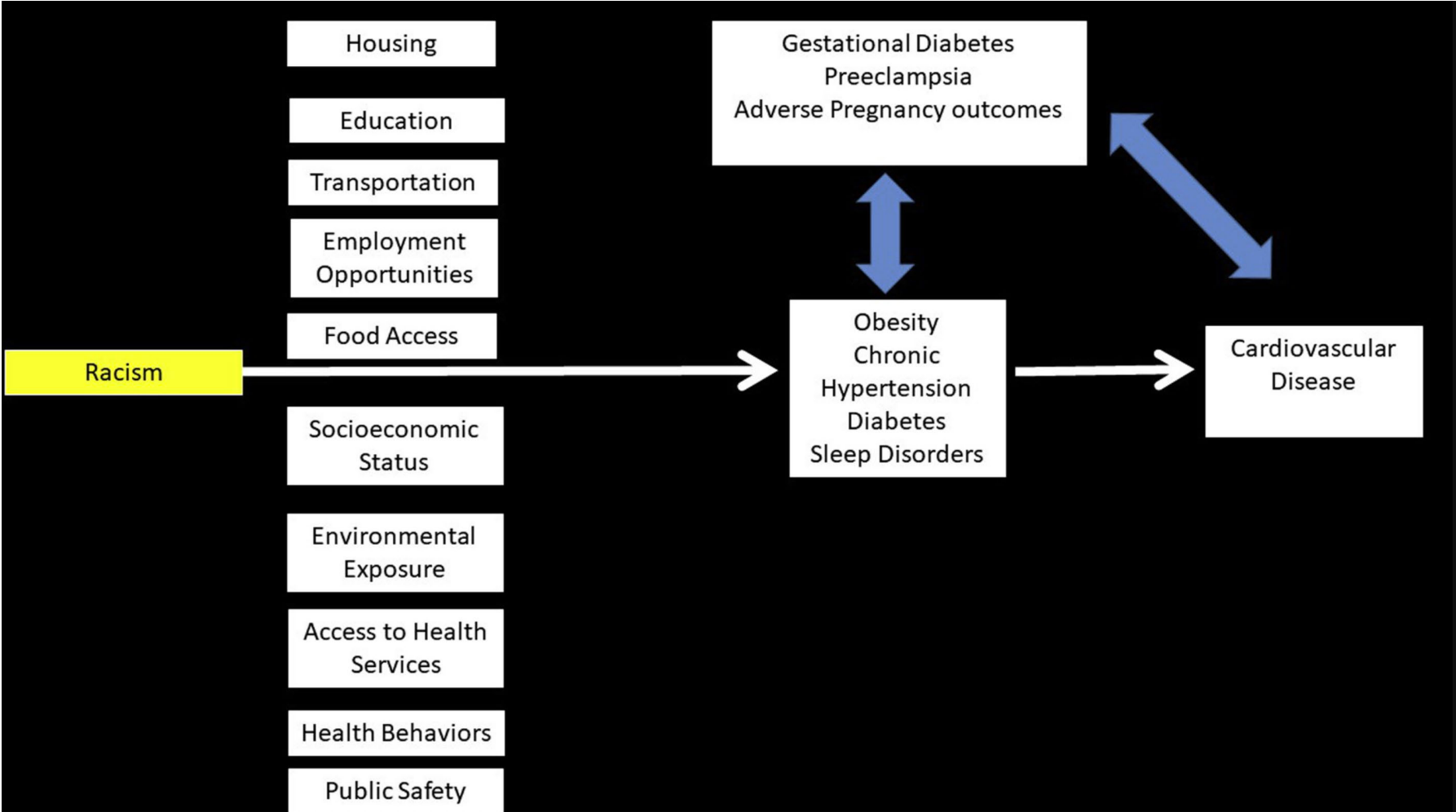
- 2019-2021, women ages 35+



Addressing Social Determinants of Health



Racial Disparities in Hypertensive Disorders of Pregnancy



Hypertensive Disorders of Pregnancy (HDPs)

>140/90
mmHg

15%

of pregnant people experience hypertensive disorders of pregnancy

Gestational Hypertension
New onset HTN after 20 weeks

Chronic Hypertension
Preexisting or onset before 20 weeks

Preeclampsia
HTN +/- lung, brain, kidney organ manifestations

Eclampsia
Preeclampsia + seizures

HELLP
Hemolysis, low platelets, LFT elevations



Hypertensive Disorders of Pregnancy (HDPs)

15%

of pregnant people experience hypertensive disorders of pregnancy

>140/90
mmHg

Hypertensive disorders of pregnancy



Hypertensive Pregnancy and Cardiovascular Risk

Circulation
Volume 123, Issue 11, 22 March 2011, Pages 1243-126
<https://doi.org/10.1161/CIR.0b013e31820faaf8>

AHA GUIDELINE

Effectiveness-Based Guidelines for the Primary Prevention of Cardiovascular Disease: A Guideline From the American Heart Association

Circulation
Volume 143, Issue 18, 4 May 2021; Pages e902-e916
<https://doi.org/10.1161/CIR.0000000000000961>

AHA SCIENTIFIC STATEMENT

Adverse Pregnancy Outcomes and Cardiovascular Disease Risk: Unique Opportunities for Cardiovascular Disease Prevention in Women: A Scientific Statement From the American Heart Association

Stroke

Stroke in Women
The American Heart Association

ORIGINAL RESEARCH

Hypertensive Disorders of Pregnancy as a Disease Risk Factor for Cardiovascular Disease: An Observational Cohort Study

Stroke

AHA/ASA GUIDELINE

2024 Guideline for the Primary Prevention of Stroke: A Guideline From the American Heart Association/American Stroke Association

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Long-Term Cardiovascular Risk in Women With Hypertension During Pregnancy

Michael C. Honigberg, MD, MPP,^{a,b,c} Seyedeh Maryam Zekavat, BS,^{c,d} Krishna Aragam, MD, MS,^{a,b,c} Derek Klarin, MD,^{b,e} Deepak L. Bhatt, MD, MPH,^f Nandita S. Scott, MD,^a Gina M. Peloso, PhD,^g Pradeep Natarajan, MD, MMS^{a,b,c}

**R/AAPA/
PhA/ASPC/
the
cholesterol**
Heart Association



Communication important between OB and Primary Care

Original Research

Recognition by Women's Health Care Providers of Long-Term Cardiovascular Disease Risk After Preeclampsia

Louise Wilkins-Haug, MD, PhD, Ann Celi, MD, Ann Thomas, PhD, Joseph Frolkis, MD, PhD, and Ellen W. Seely, MD



Caring for Women After Hypertensive Pregnancies and Beyond: Implementation and Integration of a Postpartum Transition Clinic

Ann C. Celi, Ellen W. Seely, Penny Wang, Ann M. Thomas & Louise E. Wilkins-Haug

Maternal and Child Health Journal

ISSN 1092-7875

Matern Child Health J
DOI 10.1007/s10995-019-02768-7



 Springer

BWH Cardiometabolic Clinic in Maternal Fetal Medicine

Clinical Care for Postpartum women with
complex hypertensive pregnancies
started October 2011

Interdisciplinary collaborative effort
Departments of Medicine and OBGYN



ACOG Committee Opinion: Components of Postpartum Care

Special considerations after a hypertensive pregnancy

- Mood and emotional well-being- Growing data about PTSD, treat anxiety and depression
- Infant care and feeding- Lactation safe medications, milk supply issues
- Sexuality contraception and birth spacing- address CVD risk hypertensive careful contraception
- Sleep and fatigue- **PRIORITY** address lived experiences and community support
- Physical recovery from birth- acknowledge, address, refer PRN
- Chronic disease management- PCP and specialist collaboration
- Health maintenance- identify needs and address
- **Social determinants- medical home, community, resources**



Self Monitoring Blood Pressure Correctly

Self-Monitoring of Blood Pressure Video:

<https://www.preeclampsia.org/blood-pressure>

A Collaborative project with the March of Dimes,
the Preeclampsia Foundation

Need a blood pressure monitor?

www.validatebp.org



Nutrition Support after HDP including Lactation

Postpartum [nutrition guide](#):



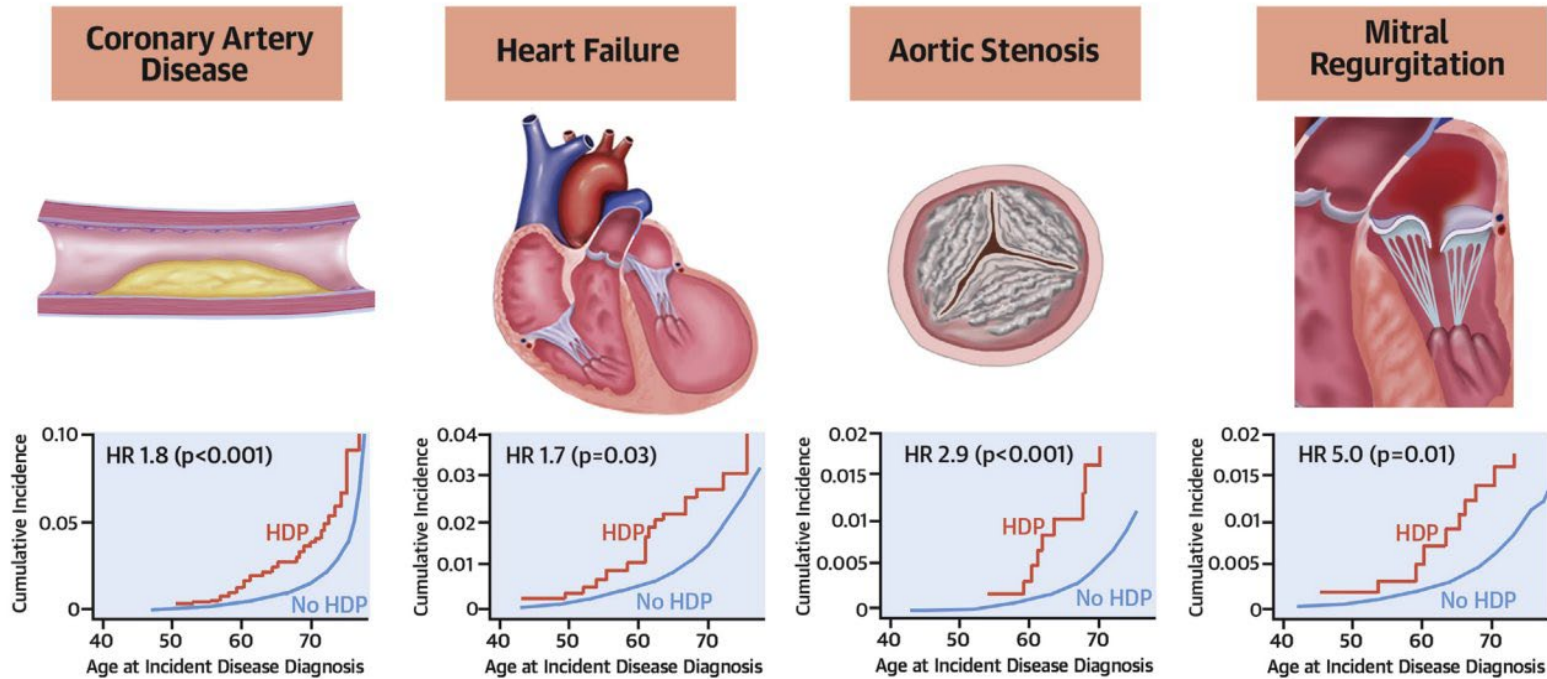
Decreasing cardiometabolic risk – Life's Essential 8

1. Eat better
 2. Be more active
 3. Quit tobacco
 4. Get healthy sleep
 5. Manage weight
 6. Control cholesterol
 7. Manage blood sugar
 8. Manage blood pressure
- Mental Health
 - Contraception
 - Breastfeeding



Hypertensive Disorders of Pregnancy and Midlife CVD Risk

CENTRAL ILLUSTRATION Hypertensive Disorders of Pregnancy Are Associated With Long-Term Risk of Diverse Cardiovascular Diseases



Honigberg, M.C. et al. J Am Coll Cardiol. 2019;74(22):2743-54.

Hypertensive pregnancy was associated with long-term risk of incident coronary artery disease, heart failure, aortic stenosis, and mitral regurgitation. The cumulative incidence plots on the **bottom** reflect incident cardiovascular disease diagnoses among women without each prevalent condition plotted against participant age on the x-axis. The hazard ratios displayed reflect results of the primary survival (Cox proportional hazards) analysis, which were adjusted for age at study enrollment and race.



Brigham and Women's Hospital
Founding Member, Mass General Brigham

Developing Our Toolkit: The My Health Beyond Pregnancy Discussion Guide

Bridging the Postpartum Gap After High-Risk Pregnancy

Mobilizing the fourth trimester to improve population health: interventions for postpartum transitions of care

Sara E. K. Phillips, MD, MPH; Ann C. Celi, MD, MPH; Alexandra Wehbe, MPH;
Jasmine Kaduthodil, BA; Chloe A. Zera, MD, MPH



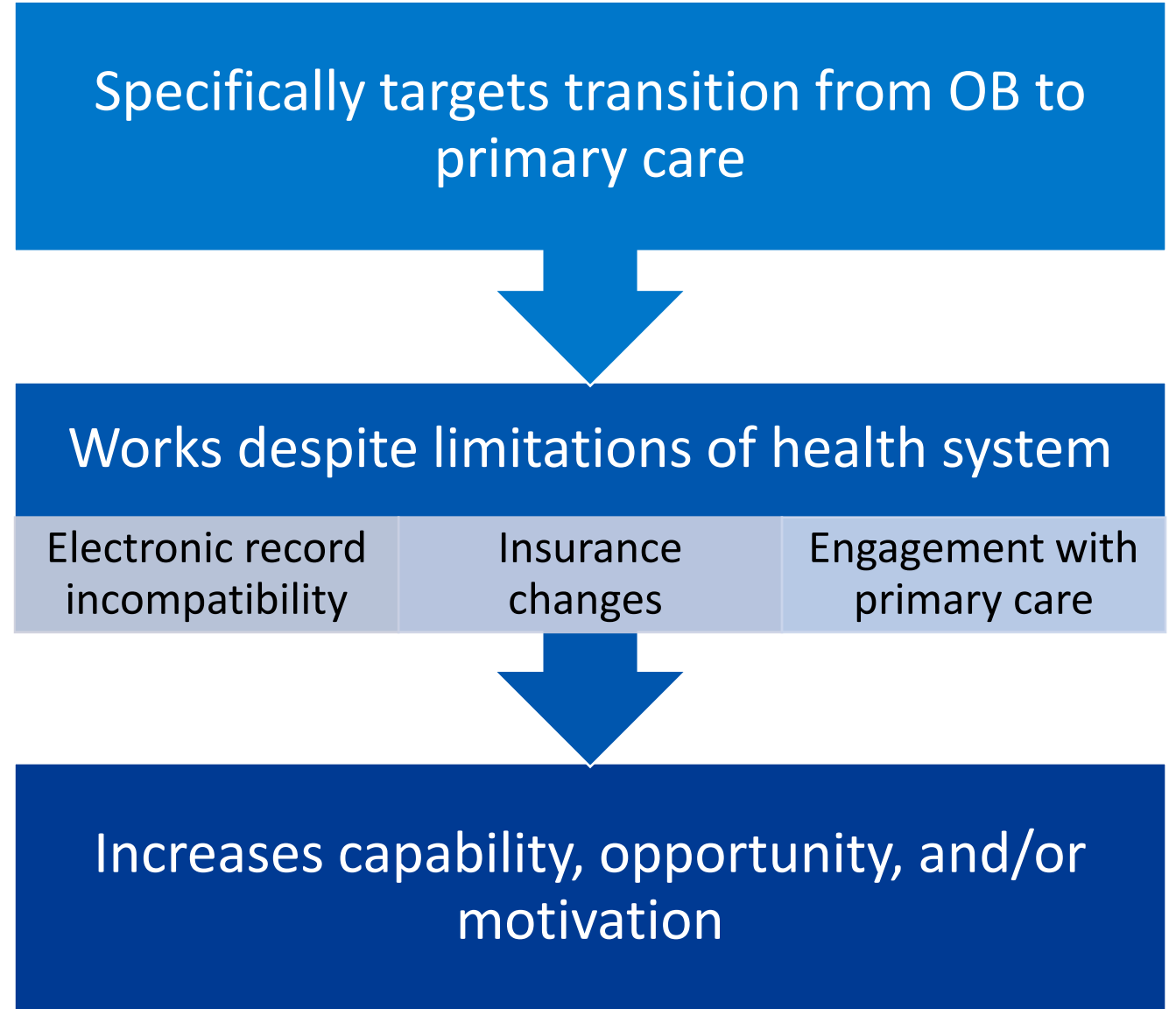
Bridging the Postpartum Gap After High-Risk Pregnancy

Improving Care Beyond Birth: A Qualitative Study of Postpartum Care After High-Risk Pregnancy

Sara E.K. Phillips, MD, MPH,¹ Ann C. Celi, MD, MPH,^{1,2} Judy Margo, DrPH, MPH,¹
Alexandra Wehbe, MD, MPH,¹ Ami Karlage, BA,¹ and Chloe A. Zera, MD, MPH^{1,3}



Educational tools to support patients and providers



Development of the tool

Key stakeholders and collaborators locally	Key stakeholders and collaborators nationally and internationally
1. Boston Medical Center 2. Beth Israel Deaconness Medical Center 3. MGB Community Care Van 4. Bridges to Moms Program 5. Stronger Generations Program 6. Spinning Babies Doula Program 7. Supportive Birth Collaborative 8. BWH HomeSafe Program 9. MGB Director of Population Health Management 10. MGB Director of Community Health 11. Birthing Gently Doula Program 12. Massachusetts Center for Health Impact 13. Mass Health Doula Services program 14. MGB United Against Racism 15. MGB Community Health Impact 16. MGB Health Equity Quality and Patient Experience 17. Partners in Contraceptive Choice and Knowledge (PICCK) 18. Ariadne Labs at the Harvard School of Public Health and Harvard Medical School 19. Health Equity Impact Massachusetts League of Community Health Centers 20. Boston Medical Legal Partnership	21. Preeclampsia Foundation 22. Society of Maternal Fetal Medicine Long Term Care Working Group and Educational Resources 23. International Society of Hypertension in Pregnancy 24. Global Pregnancy Collaborative 25. Action on Preeclampsia Ghana 26. Primary Maternity Care/Every Mother Counts/Choices in Childbirth 27. Findhelp.org 28. Postpartum Support International 29. Temple University Program for Maternal Health Equity 30. Johns Hopkins Center for Indigenous Health- 24 states, 160+ communities 31. Alaskan Native Project- 58 Yupik villages 32. Every Mother Counts, Choices in Childbirth 33. University of Wisconsin Staying Healthy After Childbirth program 34. Ancient Song- New York City-based community birth doula program 35. ALTA Interpreter program 36. Intermountain Health Care- 5 states, 32 hospitals 37. St Louis University 38. Cornell Weill Medical Center 39. Yale Health 40. Yale Medical School 41. University of New Mexico 42. SGIM Women in Medicine Commision 43. American College of Cardiology CardioObstetrics Group 44. Tennessee Maternal Fetal Medicine 45. The Maternal Health Clinic, Ontario, Canada



My Health Beyond Pregnancy Discussion Guide

MAKE A PLAN My Health Beyond Pregnancy



WHAT HAPPENS NOW?

Your pregnancy and birth experiences may have been hard because of medical issues such as hypertension and preeclampsia. You deserve physical and emotional support around you to process your experience and to understand what happens next. Make sure your body can recover and rest in a place where you can be cared for by those around you. Reach out for help with any food, safety, housing, childcare, or transportation concerns.

WHY IS MY FOLLOW-UP CARE IMPORTANT?

Telling your pregnancy story can help you get the care you need from your healthcare providers. Working together to monitor your current and future health can help prevent heart problems now and later in life.



Use this checklist to note any pregnancy complications you may wish to discuss with your healthcare provider.

My birth experience was affected by:	My baby/babies experienced:
☐ Preeclampsia	☐ Premature delivery
☐ Eclampsia	☐ Stillbirth
☐ Gestational hypertension	☐ Infant loss after delivery
☐ HELLP syndrome	☐ Small for gestational age (SGA)
☐ Gestational diabetes	☐ Fetal growth restriction (FGR)
☐ Preterm birth (<37 weeks)	☐ Neonatal intensive care unit (NICU) stay
☐ Mental health symptoms or diagnosis (e.g., depression, anxiety, PTSD)	☐ Something else: _____
☐ Something else: _____	



WHY TRACK MY BLOOD PRESSURE?

It is important to keep track of your blood pressure to help prevent medical issues due to high blood pressure in the weeks and months after delivery. Use your phone camera to scan the QR code to learn how to check your blood pressure on your own.



MAKE A PLAN My Health Beyond Pregnancy



WHAT CAN A PRIMARY CARE PROVIDER DO FOR ME NOW?

A PCP is your "go-to" healthcare provider that monitors your overall health and prevents and treats any health conditions. They can also refer you to other specialists and help screen for heart disease and other health conditions. If you do not have a PCP or health insurance, ask your pregnancy care team for options for local healthcare. You may also check out findhelp.org for other support resources.

HOW DO I TALK TO MY CARE PROVIDERS?

Sometimes it can be hard to know what questions and concerns you might wish to discuss. Here are some ideas to help get the conversation started:

- ☐ Can we consider checking my blood counts, cholesterol, glucose, and/or kidney and liver function?
- ☐ I am feeling anxious and/or blue. Can you tell me more about mental health resources available to help me feel better?
- ☐ What kind of birth control methods could work well for me?
- ☐ Do you have any advice for me to safely become pregnant again?
- ☐ I am worried about my housing, income, food security, etc. Can you tell me more about what resources may be available to help me?
- ☐ Does it make sense for me to see a specialist, such as a cardiologist? If so, can you please connect me with them?

10 TIPS FOR YOUR LONG-TERM HEALTH²



Aim for blood pressure below 130/80.



Consider taking low-dose aspirin during your next pregnancy.



Eat healthy – Include vegetables and whole grains. Watch your salt, fat, and sugar intake.



Work with a provider to find a healthy weight for you.



Talk to a healthcare provider about choosing a safe and reliable birth control method.



Aim for quality and consistent sleep, at least 7-8 hours each night.



Go for regular check-ups with screenings for heart disease and diabetes.



Reach out to a healthcare provider about mental health support if you are feeling anxious or blue.



Get moving for 20+ minutes each day.³



Live in a smoke-free environment.

Provided in partnership by:



My Health Beyond Pregnancy Discussion Guide

MAKE A PLAN My Health Beyond Pregnancy

Tracking your health and lifestyle goals can help you and your care team understand how you are recovering after a complicated pregnancy. Use this table to track your health goals beyond pregnancy and note any questions or concerns you may wish to discuss.



Tracking My Recovery Goals Beyond Pregnancy

Time Since Delivery (Date)	Blood Pressure (mmHg)	Health Provider Contact	Sleep	Healthy Eating	Physical Activity	Mental Health	Questions or Concerns I Have
3 MONTHS: _____							
6 MONTHS: _____							
12 MONTHS: _____							
2 YEARS+: _____							



WHAT FOLLOW-UP TESTING MIGHT I NEED?

Your provider can run routine tests to check how your body is recovering after pregnancy. They may test for diabetes, cholesterol, blood counts, and kidney and liver function. Use your phone camera to scan the QR code to learn more about what routine tests you may need after pregnancy.



1. Malin PC, Meisling M, Barry M, et al. Adverse pregnancy outcomes and cardiovascular risk factor management. Semin Perinatol. 2015 Jun;39(2):248-75. doi: 10.1053/j.semper.2015.05.005. Epub 2015 Jul 6. PMID: 2619741; PMCID: PMC4516636.
2. American Heart Association. Life's Essential 8. <https://www.heart.org/en/healthy-living/healthy-lifestyle/life-essential-8>
3. World Health Organization. Every move counts toward better health. <https://www.who.int/news/item/25-11-2020-every-move-counts-towards-better-health-says-who>

Collaboration partners:

- Preeclampsia Foundation
- Society of Maternal Fetal Medicine
- International Society of Hypertension in Pregnancy

Key elements:

- Gender neutral language
- Easy to understand- 6th grade reading level (Flesch-Kincaid test)
- Interactive
- Empowering
- Essential information only



Provided in
partnership by:

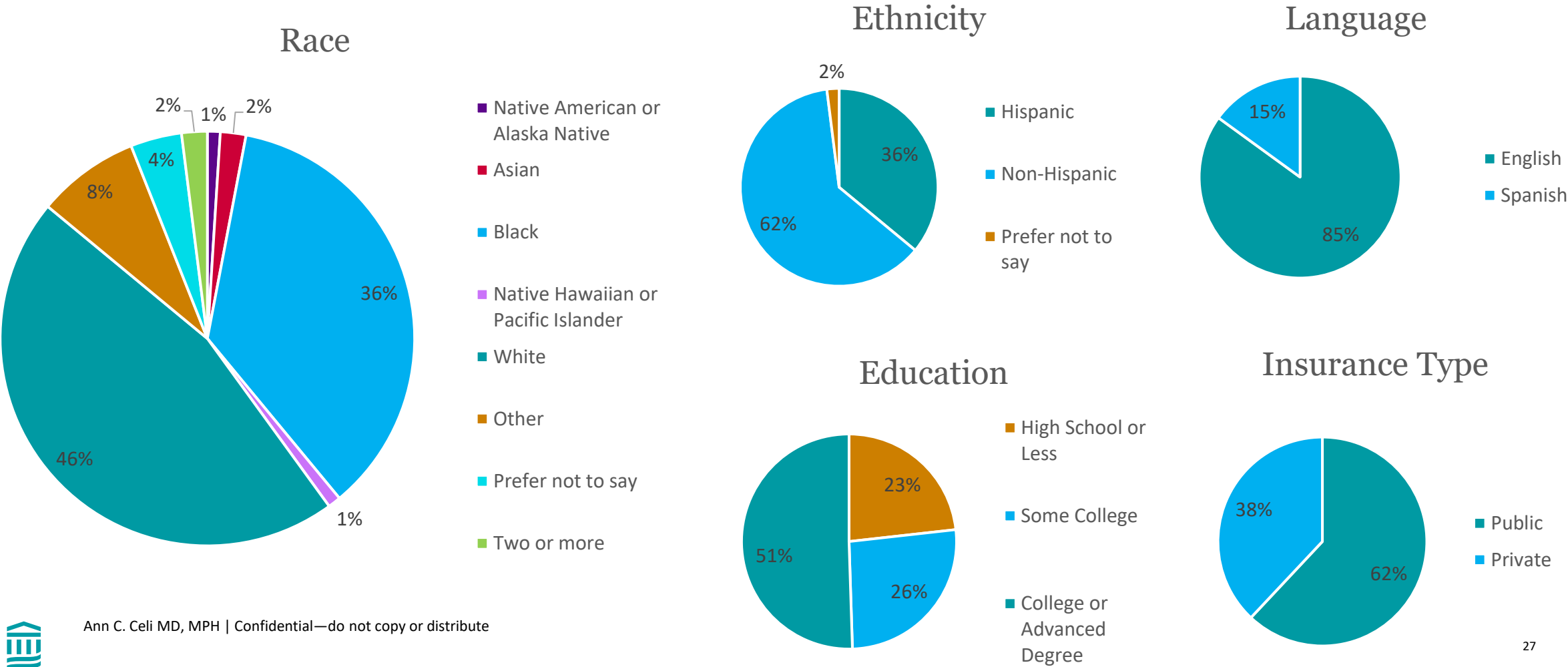


Society for
Maternal-Fetal
Medicine



Demographics - 100 Postpartum patients recruited

Average Age: 32 (*SD*=5.41) | Age Range: 18-44



Key Findings – The Numbers

Patient Knowledge and Attitudes	<i>Patient Agreement (%)</i>
I found the information helpful	100
I found the information easy to understand	100
I feel confident checking my own blood pressure	97
I feel knowledgeable about caring for my body after my pregnancy	98
I feel confident knowing what to do if I have concerns about my blood pressure or my recovery	99
I feel confident talking to my obstetric and primary care providers about any concerns after my pregnancy	100
I feel knowledgeable about ways to live a lifestyle that is healthy for my heart	99

Validated Implementation Measures	<i>Average Patient Agreement (%)</i>
<i>Acceptability of Intervention Measure (AIM)</i>	95
<i>Intervention Appropriateness Measure (IAM)</i>	96
<i>Feasibility of Intervention Measure (FIM)</i>	97



Patient feedback: the voices

"... helped me to understand the importance of checking my blood pressure regularly. I also didn't [know] I had an increased risk of heart disease and stroke before the discussion guide"

"Never thought I would need postpartum care and it helped me to think about the things I need to do after"

"Clear and easy to read, makes you feel like you can advocate for yourself in the doctor's office vs. just being passive"

"I liked that it gave examples of how to ask questions and where to ask to get the information which I will use in the future"



Patient feedback: the voices

"A lot of people forget about mom's health and only worry about [the] baby"

"Please keep this going especially for us colored women"

"Fue bastante interesante, me ayudó en algunas dudas"

It was very interesting, it helped me with some questions

"Era información que yo totalmente ignoraba. Yo no sabía eso"

It was information that I totally ignored. I didn't know that.

"Puedo saber más del hipertension ... La hipertension es peligroso, y cuando no sabes sobre la hipertension puede ser fatal"

I can know more about hypertension... Hypertension is dangerous and when you don't know about it, it can be fatal.

"Ahora se donde buscar ayuda y entiendo cosas que no sabía"

Now I know where to look for help and I understand things I didn't know



Patient feedback: the voices

"I normally throw this kind of stuff away, but this I'm going to keep. It's something you can keep coming back to"



Where to Access the Discussion Guide



<https://www.preeclampsia.org/beyondpregnancy>



ORIGINAL RESEARCH

Patient feedback on an educational tool to empower patients after hypertensive pregnancy

Ann C. Celi^{1,2,✉} | Emma M. Anghel¹ | Skylar N. Smith¹ | Sharlay K. Butler^{2,3} | Saba H. Berhie^{2,4} | Giselle Chiprez Ramirez¹ | Jill C. Doyle^{3,5} | Michelle C. Lara¹ | Margot Stone-Condry^{3,5} | Raquel M. Vargas-Vila^{3,5} | Barbara E. Wilkinson^{2,3} | Chloe A. Zera^{2,6}

¹Division of General Medicine and Primary Care, Department of Medicine, Brigham and Women's Hospital, Boston, Massachusetts, USA

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³Department of Obstetrics and Gynecology, Brigham and Women's Hospital, Boston, Massachusetts, USA

⁴Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology, Brigham and Women's Hospital, Boston, Massachusetts, USA

⁵Brigham and Women's Midwifery Group, Brigham and Women's Hospital, Boston, Massachusetts, USA

⁶Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology, Beth Israel Deaconess Medical Center, Boston, Massachusetts, USA

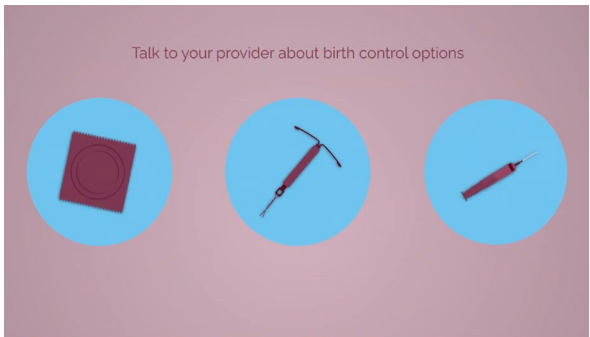
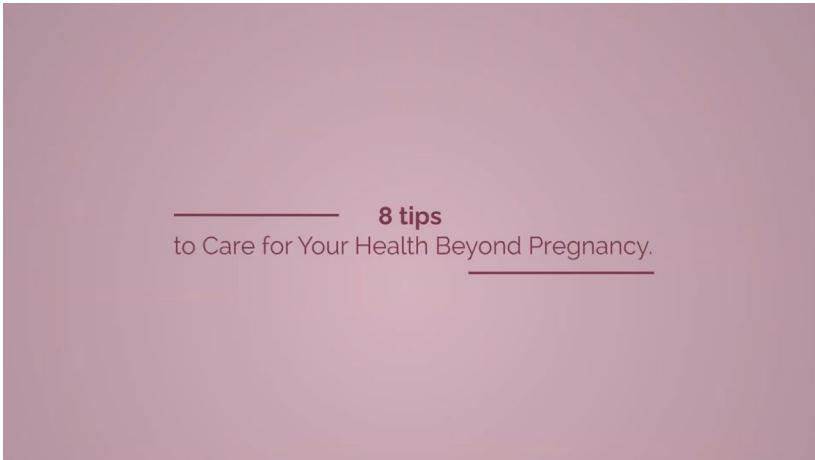
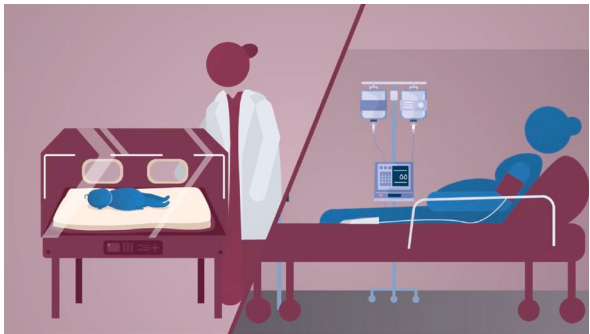
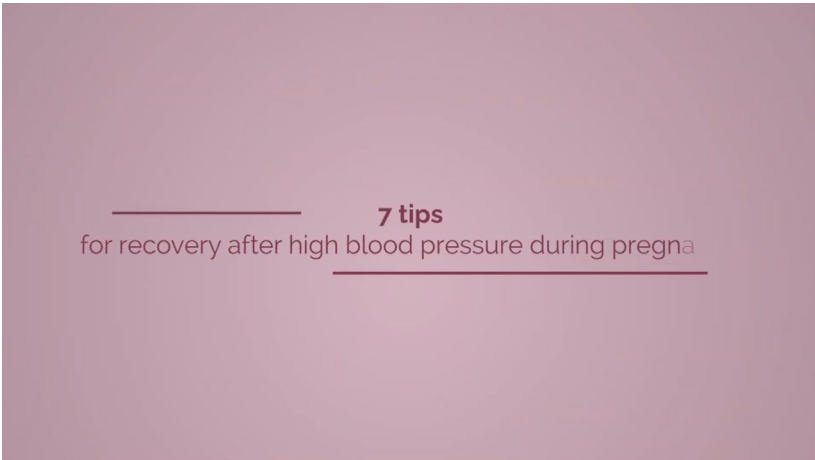


Brigham and Women's Hospital
Founding Member, Mass General Brigham

Continuing to Build Our Toolkit: Postpartum Care Videos for Patients with HDP



Educational Videos with the Preeclampsia Foundation



Stay Tuned For:

- HTN Careful Contraception
- Considerations for Breastfeeding with HDP



Continuing to Build Our Toolkit: Postpartum Care Videos for clinical and nonclinical providers



**American
Heart
Association®**

Adding to your toolkit – AHA's Advancing Maternal Health

Hypertensive Pregnancy Beyond Birth

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Beyond Birth: Long-term Opportunities to Support Car

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Partners in Postpartum Care for People with High-Risk Pregnancies

In this vodcast, experts explore the vital roles of interdisciplinary team members—such as primary care providers, doulas, and nurse midwives—in supporting patients with high-risk pregnancies during both pregnancy and postpartum.

Earn Credits: Partners in Postpartum Care for People with High-Risk Pregnancies



HEARTBEATS FROM LIFELONG LEARNING™
Hypertensive Pregnancy Beyond Birth: Compr...



HEARTBEATS FROM LIFELONG LEARNING™
Beyond Birth: Long-term Opportunities to Sup...



HEARTBEATS FROM LIFELONG LEARNING™
Partners in Postpartum Care for People with ...

30 00:00:00 30







Brigham and Women's Hospital
Founding Member, Mass General Brigham

"Listening is Medicine"

*Marika three times HDP survivor, traumatic family history of
premature CVD*

Thank you! It takes a village....

Patients in the BWH Cardiometabolic Clinic in MFM

The **Preeclampsia Foundation** team!

BWH DGIM Team Beyond Birth – Chloe Zera, Emma Anghel, Skylar Smith, Michelle Lara, Giselle Chiprez Ramirez, Ananya Tadikonda

Interdisciplinary Collaborators:

Julianna Schantz-Dunn, Saba Berhie, Shar Butler, Barbara Wilkinson, Margo Stone-Condry, Raquel Vargas-Vila, Jill Doyle

MGB Community Health and Health Equity team

Amaka Onwuzurike

Priya Sarin Gupta

BWH/MGB Community Health Centers

Southern Jamaica Plain Cristina Alexander and Abigail Ortiz

Brookside Cynthia So-Armah



Questions?

**Please post your Questions in the
Q&A !**

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