



Creating an Optimal
Environment for Quality
Healthcare for Individuals,
Families, and Communities

Innovation in Postpartum Care Equity

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Adi Hirshberg, MD, Director of Obstetrical Services, Hospital of the University of Pennsylvania, Clinical Associate Professor, Maternal Fetal Medicine, Penn Medicine

Lindsay Standeven, MD, Assistant Professor of Psychiatry and Behavioral Sciences and Clinical Education Director, Johns Hopkins School of Medicine



CMS 2024
Quality
Conference
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Quality Improvement
Technical Director, Center
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Agenda (1 of 2)

- Overview of Postpartum Care and Equity
- Innovation for Improved Compliance and Maternal Outcomes in Postpartum Hypertension
- HHS Postpartum Challenge: Integrated Perinatal Clinic
- Question & Answer



Creating an Optimal
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Overview of Postpartum Care and Equity

Kristen Zycherman, Quality Improvement Technical Director, Center for Medicaid & CHIP Services

Why Focus on Postpartum Care?

- 65% of pregnancy-related deaths occur in the postpartum period
- Opportunity to improve maternal health outcomes and intervene on disparities by improving postpartum follow-up
- The leading causes of death after six weeks postpartum include treatable conditions such as mental health conditions, cardiac and coronary conditions, infections, blood clots, and cardiomyopathy
- Individuals who experience hypertension, gestational diabetes, and cardiac problems during pregnancy are also at an increased risk of being diagnosed with a chronic disease after the postpartum period

Why Do Medicaid and Children's Health Insurance Programs (CHIP) Specifically Need to Focus on Postpartum Care?

- Nearly two out of every three adult women enrolled in Medicaid are in their reproductive years (ages 19-44), and Medicaid currently finances about 41% of all births in the United States
- 13% of postpartum individuals experienced depression, with higher rates among people of color and low-income individuals
- Average rate of postpartum care visits in 2021 for Medicaid health maintenance organization (HMO) plans was 76%, compared with 82% for commercial HMO plans
- 75% of people reported being asked about depression during postpartum visits in Louisiana, compared with 96% in Vermont
- Rates of postpartum follow-up among people with diabetes and/or hypertension ranged from 5.7% to 95.4%, with disparities linked to race, ethnicity, and lower levels of education

HHS Racial Equity in Postpartum Care Challenge

- Innovative methods to improve equity of postpartum care for Black or African American and American Indian/Alaska Native women enrolled in Medicaid or the Children's Health Insurance Program (CHIP), including follow-up care for diabetes, postpartum depression and/or postpartum anxiety, hypertension, and substance use disorders (SUD)

Other Improving Postpartum Care Resources

Tools to begin and implement postpartum care QI projects

- Driver diagram with evidence/ experience-based change ideas
- Measurement strategy
- Highlights from the Improving Postpartum Care Affinity Group
- “Getting Started with QI” short video
- Increasing Access, Quality, and Equity in Postpartum Care in Medicaid and CHIP: A Toolkit for State Medicaid and CHIP Agencies

Medicaid.gov
Keeping America Healthy

Search Medicaid.gov

Federal Policy Guidance Resources for States Medicaid CHIP Basic Health Program State Overviews About Us

Home > Medicaid > Quality of Care > Improvement Initiatives > Maternal & Infant Health > Postpartum Care

Improvement Initiatives

- Maternal & Infant Health
- Contraception
- Postpartum Care
- Low-Risk Cesarean Delivery
- Data and Measurement
- Resources
- Foster Care
- Well-Child Care
- Oral Health
- Asthma
- Reducing Obesity
- Behavioral Health
- Tobacco Cessation

Postpartum Care

Improving Postpartum Care

Postpartum care is an important part of the continuum of reproductive care across the life cycle. Care during the postpartum period involves not just a single postpartum visit but a series of visits beginning with the birthing event and transitioning to ongoing general healthcare. More than half of pregnancy-related deaths occur in the postpartum period, and 12 percent occur after six weeks postpartum. Medicaid and CHIP programs should engage in opportunities to improve postpartum care and work to eliminate preventable maternal mortality, severe maternal morbidity (SMM), and inequities. The Centers for Medicare & Medicaid Services (CMS) offers quality improvement (QI) technical assistance to help states increase access, quality, and equity of postpartum care in Medicaid and Children's Health Insurance Program (CHIP).

The technical assistance has two components:

1. [QI resources](#) to help state Medicaid and CHIP staff and their QI partners begin improving postpartum care for their beneficiaries
2. CMS's [Improving Postpartum Care learning collaborative](#), including approaches to improving postpartum care and state examples

For more information on these materials and other QI technical assistance, please email MedicaidCHIPQI@cms.hhs.gov.

Postpartum Coverage Extension Resources

- [States that have Expanded Postpartum Coverage \(Map\)](#)
- [Improving Maternal Health and Extending Postpartum Coverage in Medicaid and CHIP \(December 2021 Webinar Slides\)](#)
- [Improving Maternal Health and Extending Postpartum Coverage in Medicaid and CHIP \(SHO 21-007\)](#)

<https://www.medicaid.gov/medicaid/quality-of-care/quality-improvement-initiatives/maternal-infant-health-care-quality/postpartum-care/index.html>



Creating an Optimal
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Innovation for Improved Compliance and Maternal Outcomes in Postpartum Hypertension

Adi Hirshberg, MD

Director of Obstetrical Services, Hospital of the University of Pennsylvania

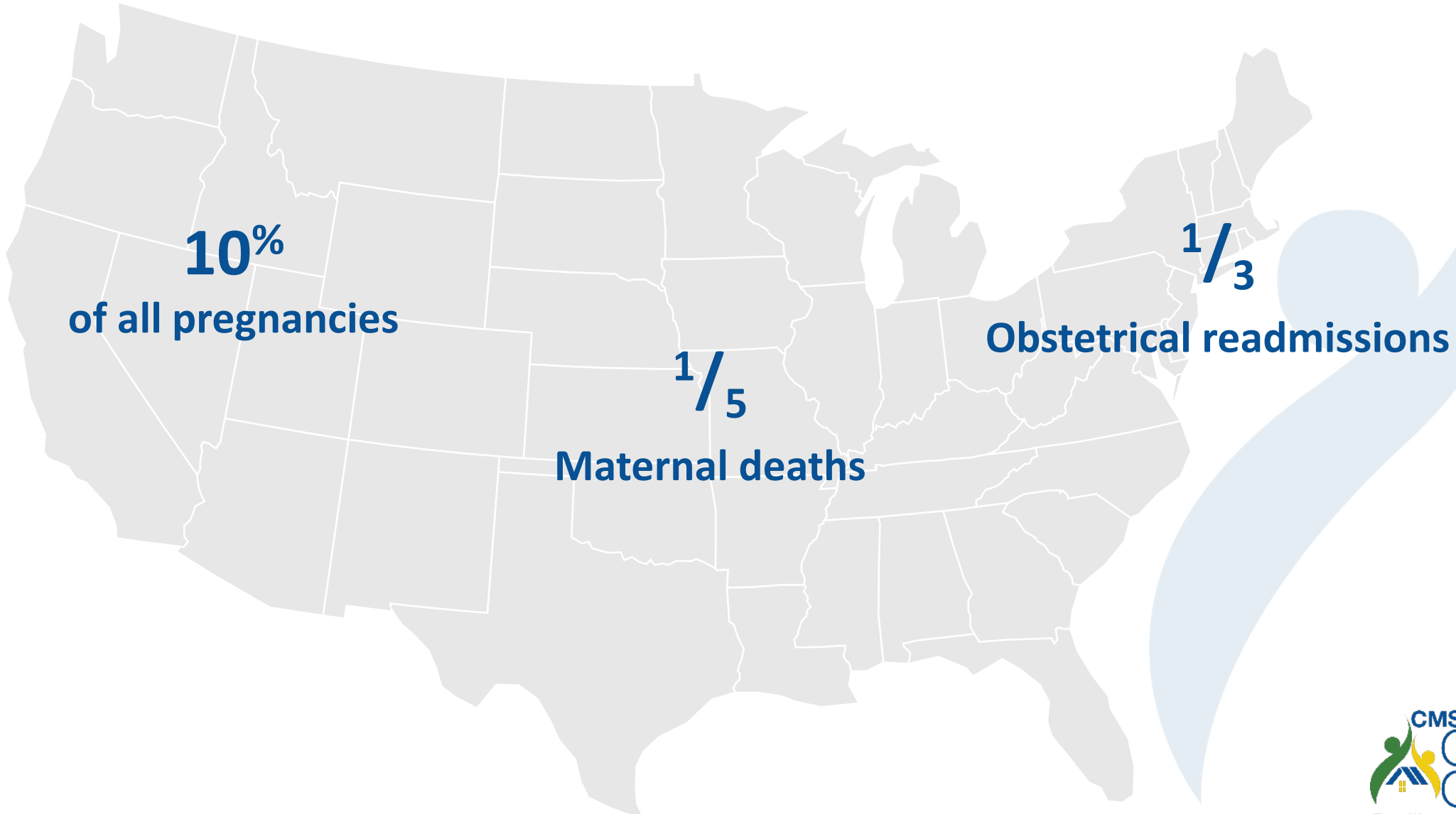
Clinical Associate Professor

Maternal Fetal Medicine

Penn Medicine

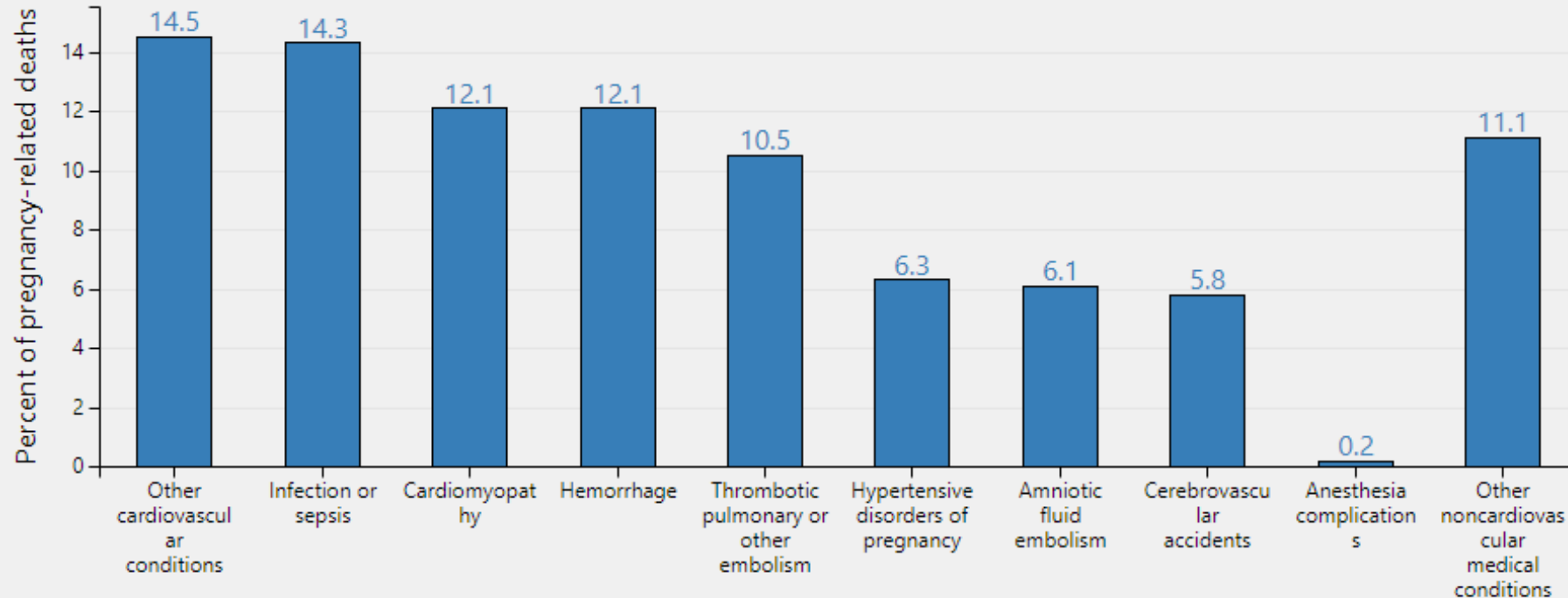


Epidemiology: Hypertension (HTN) of Pregnancy



Epidemiology: Maternal Mortality

Causes of pregnancy-related death in the United States: 2017-2019



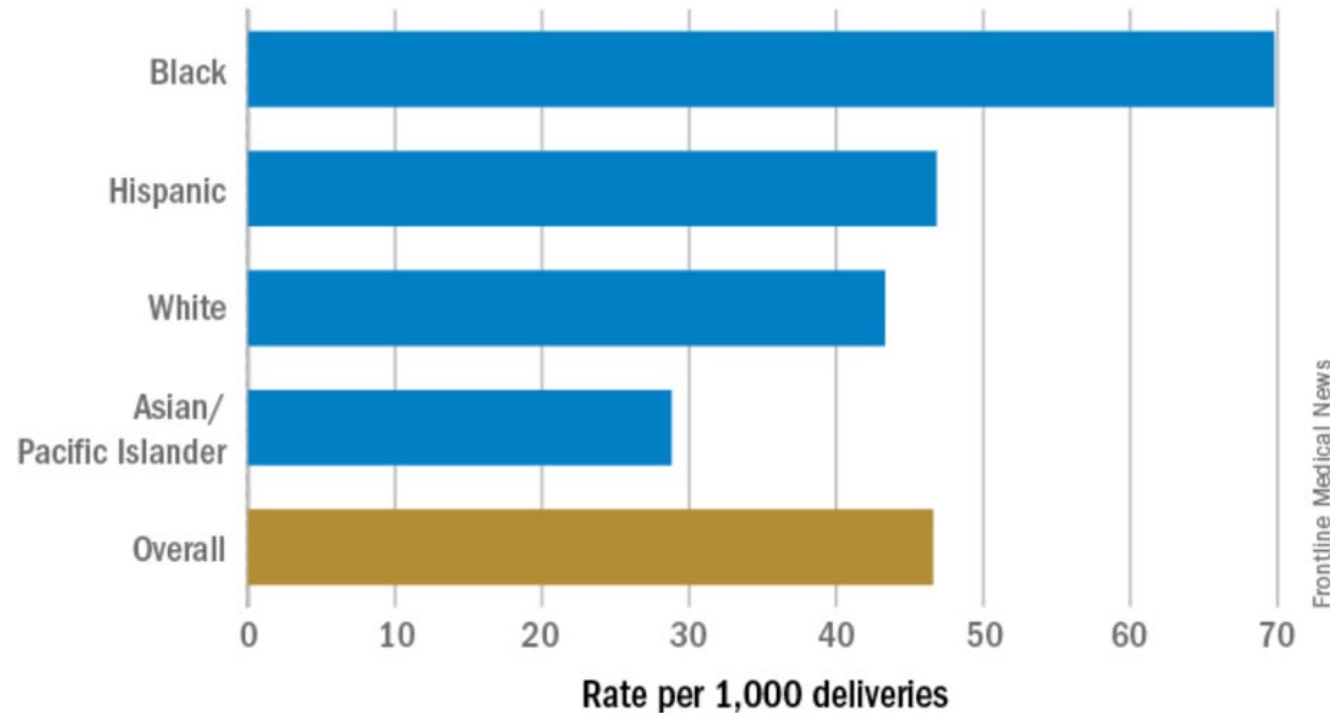
HTN and cardiovascular conditions remain a leading cause of pregnancy related deaths

Disparities in Hypertensive Disorders of Pregnancy

Preeclampsia/eclampsia rate by race and ethnicity, 2014

Black women with preeclampsia:

- 3 times more likely to die
- Increased risk of cardiac arrest and heart failure



Note: Based on data from the National Inpatient Sample.

Source: Agency for Healthcare Research and Quality

Postpartum preeclampsia

- Nearly 75% of maternal deaths associated with hypertensive disorders occur postpartum
- Nearly 40% occur > 48 hours postpartum, often after obstetrical discharge
- The highest risk for postpartum stroke is during the first 10 days after hospital discharge

ACOG Recommendations

- For women in whom gestational hypertension, preeclampsia, or superimposed preeclampsia is diagnosed, it is suggested that BP be monitored in the hospital or that equivalent outpatient surveillance be performed at least 72 hours postpartum and again 7-10 days after delivery or earlier in women with symptoms

Quality of evidence: Moderate

Strength of recommendation: Qualified

- For all women in the postpartum period (not just women with preeclampsia), it is suggested that discharge instructions include information about the signs and symptoms of preeclampsia as well as the importance of prompt reporting of this information to their health care providers

Optimizing Postpartum Care



The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

ACOG COMMIT

Number 736 • May 2018

Presidential Task Force on Redefining the Postpartum Visit Committee on Obstetric Practice

The Academy of Breastfeeding Medicine, the American College of Nurse-Midwives, the Society for Academic Specialists in General Obstetrics and Gynecology, and the Committee Opinion was developed by the American College of Obstetricians and Gynecologists and the Committee on Obstetric Practice in collaboration with task force member Martha Gulati, MD, MS.

Optimizing Postpartum Care

ABSTRACT: The weeks following birth are a critical period for a woman and her infant, setting the stage for long-term health and well-being. To optimize the health of women and infants, postpartum care should become an ongoing process, rather than a single encounter, with services and support tailored to each woman's individual

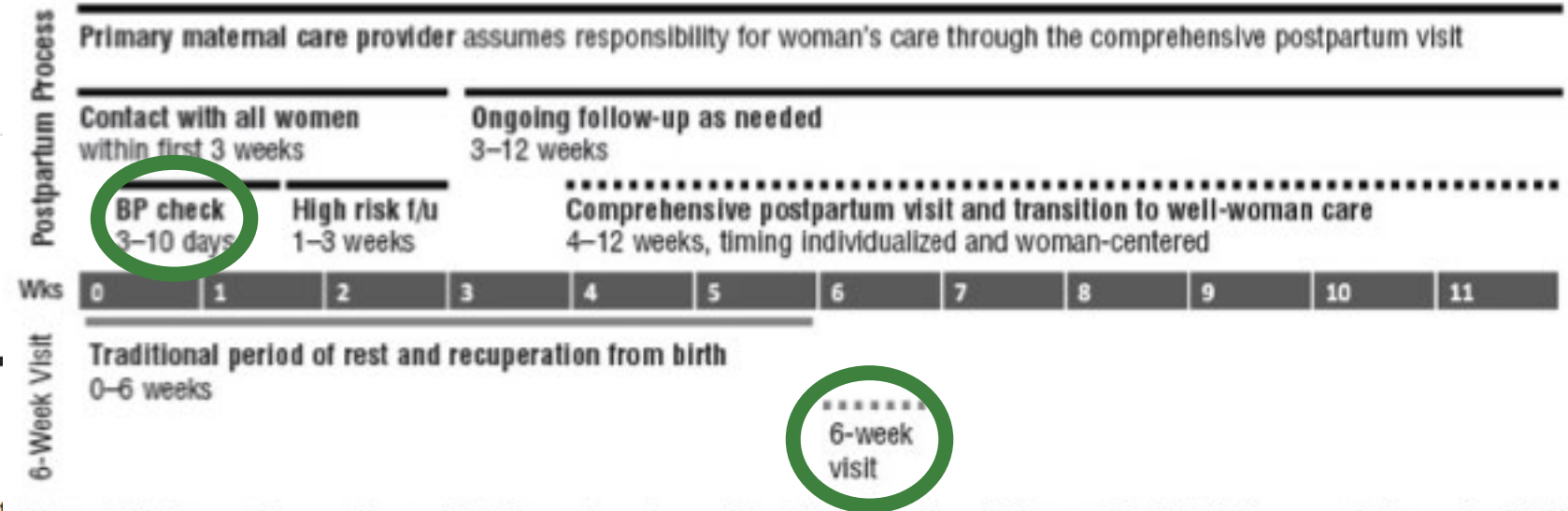


Figure 1. Proposed paradigm shift for postpartum visits. The American College of Obstetricians and Gynecologists' Presidential Task Force on Redefining the Postpartum Visit and the Committee on Obstetric Practice propose shifting the paradigm for postpartum care from a single 6-week visit (bottom) to a postpartum process (top). Abbreviations: BP, blood pressure; f/u, follow-up. ←

Only 52% of patients with severe preeclampsia attend the 6 week PP visit, 1:5 HTN [Levine et al, 2016]

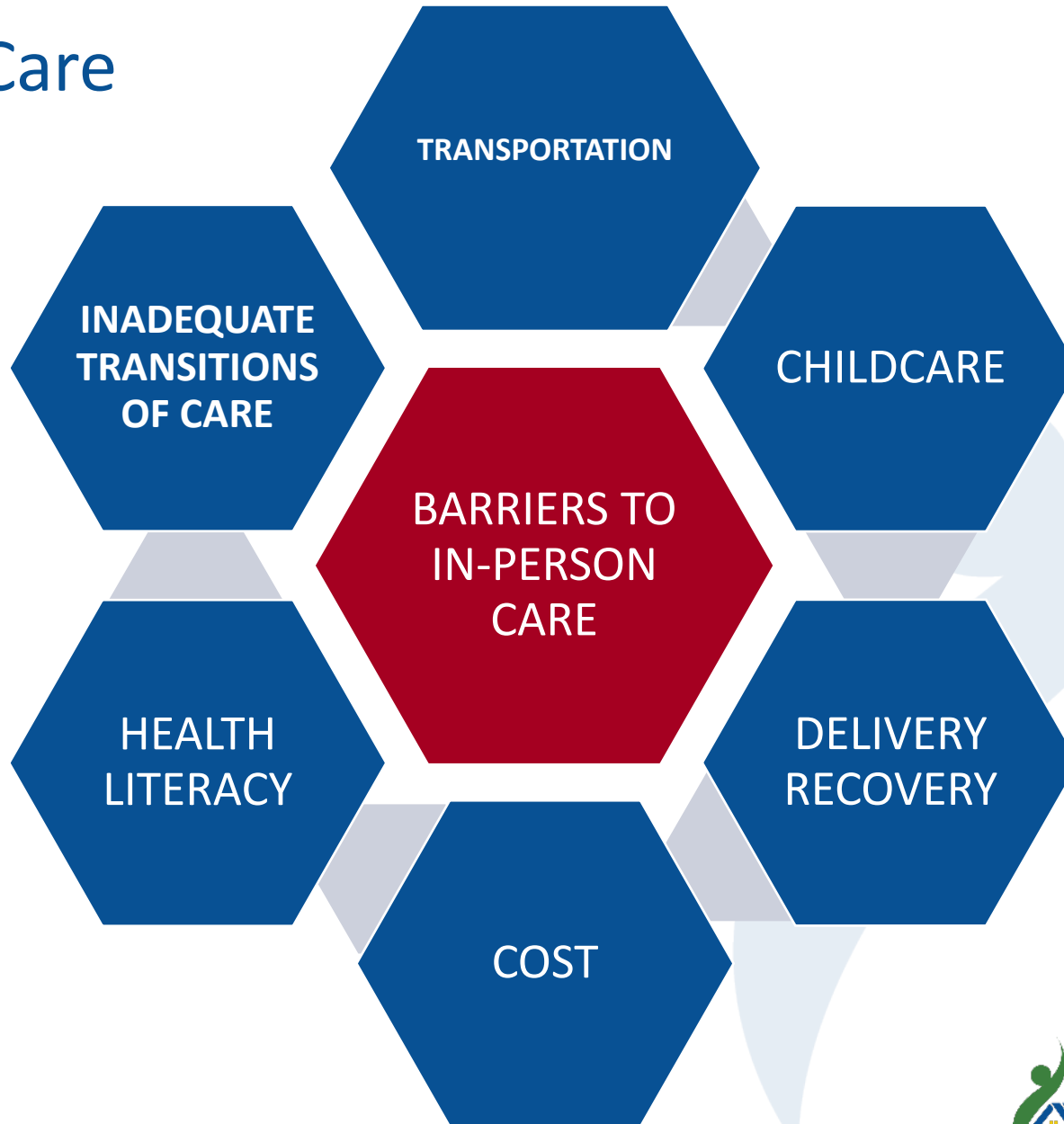
Hospital of the University of Pennsylvania Office Blood Pressure Check Attendance

	2012	2013	2014	Total
Non-black	55.6%	47.4%	33.9%	42.5%
Black	33.6%	24.6%	20.0%	24.1%

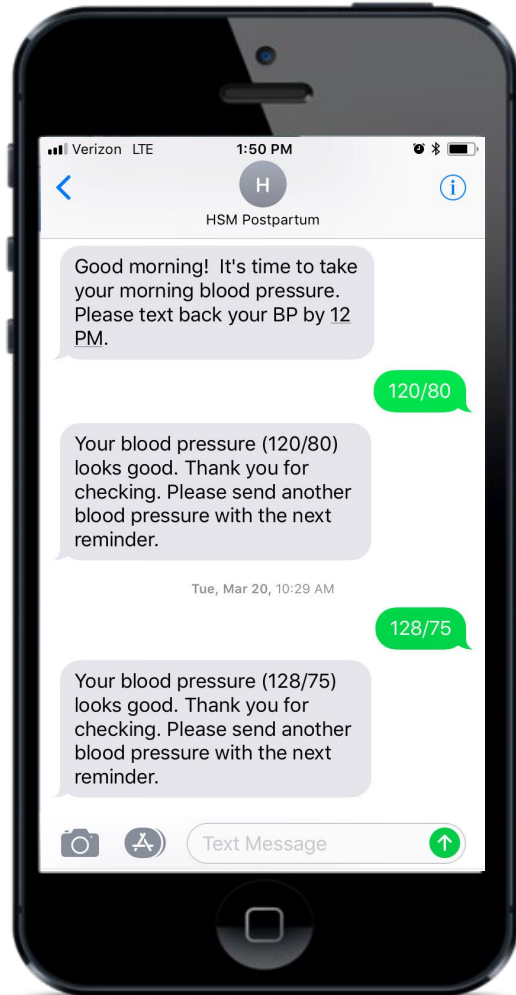
STRATEGIES

- Alternate staffing models
- Expanded office hours
- Appointments all day of the week
- Phone reminders
- Text reminders

Barriers to In Person Care



Heart Safe Motherhood (1 of 4)



Way to Health Heart Safe Motherhood Phase II - Katy Mahraj Sign Out

Manage Study Manage Participants Manage Data Reports Search User Guide or Participant ID...

Heart Safe Motherhood Phase II Dashboard

Incidents

Type	Today			Last 7 Days		Last 30 Days	
	New	Open	All	Unresolved	Average	Unresolved	Average
Medical	3	0	3	32	5	37	2
Equipment	0	0	4	0	5	0	2
Software	1	0	1	30	5	55	2
Other	0	0	0	1	1	8	1
Non-adherence	0	0	0	0	0	0	0
Patient Inquiry	0	0	0	0	0	0	0

Devices

Last Data Received

- SMS Blood Pressure Today at 1:37 PM [All Data](#)
- Clinstream Discharge Finder Today at 12:12 PM [All Data](#)

● Device has received data in last 24 Hours
● No data has been received in over 24 Hours

Enrollment

Study Arm 1 46

Step Name	Completed Today	Total Completed
Clinstream Discharge Finder	0	778
Phone # Confirmation	2	799

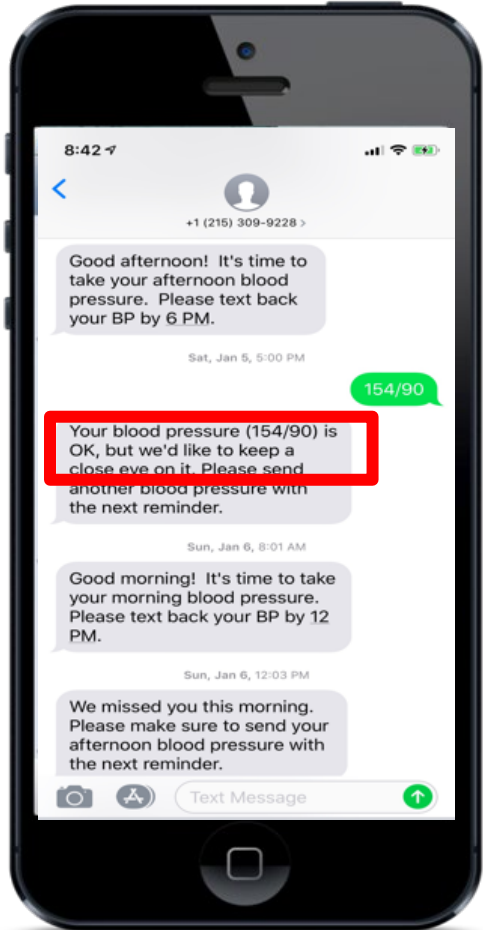
Resources

Study	Step Name	Completed Today	Total Completed
Study 1	Step 1	0	0
Study 2	Step 2	1	1
Study 3	Step 3	2	2
Study 4	Step 4	3	3
Study 5	Step 5	4	4
Study 6	Step 6	5	5
Study 7	Step 7	6	6
Study 8	Step 8	7	7
Study 9	Step 9	8	8
Study 10	Step 10	9	9
Study 11	Step 11	10	10
Study 12	Step 12	11	11
Study 13	Step 13	12	12
Study 14	Step 14	13	13
Study 15	Step 15	14	14
Study 16	Step 16	15	15
Study 17	Step 17	16	16
Study 18	Step 18	17	17
Study 19	Step 19	18	18
Study 20	Step 20	19	19
Study 21	Step 21	20	20
Study 22	Step 22	21	21
Study 23	Step 23	22	22
Study 24	Step 24	23	23
Study 25	Step 25	24	24
Study 26	Step 26	25	25
Study 27	Step 27	26	26
Study 28	Step 28	27	27
Study 29	Step 29	28	28
Study 30	Step 30	29	29
Study 31	Step 31	30	30
Study 32	Step 32	31	31
Study 33	Step 33	32	32
Study 34	Step 34	33	33
Study 35	Step 35	34	34
Study 36	Step 36	35	35
Study 37	Step 37	36	36
Study 38	Step 38	37	37
Study 39	Step 39	38	38
Study 40	Step 40	39	39
Study 41	Step 41	40	40
Study 42	Step 42	41	41
Study 43	Step 43	42	42
Study 44	Step 44	43	43
Study 45	Step 45	44	44
Study 46	Step 46	45	45
Study 47	Step 47	46	46
Study 48	Step 48	47	47
Study 49	Step 49	48	48
Study 50	Step 50	49	49

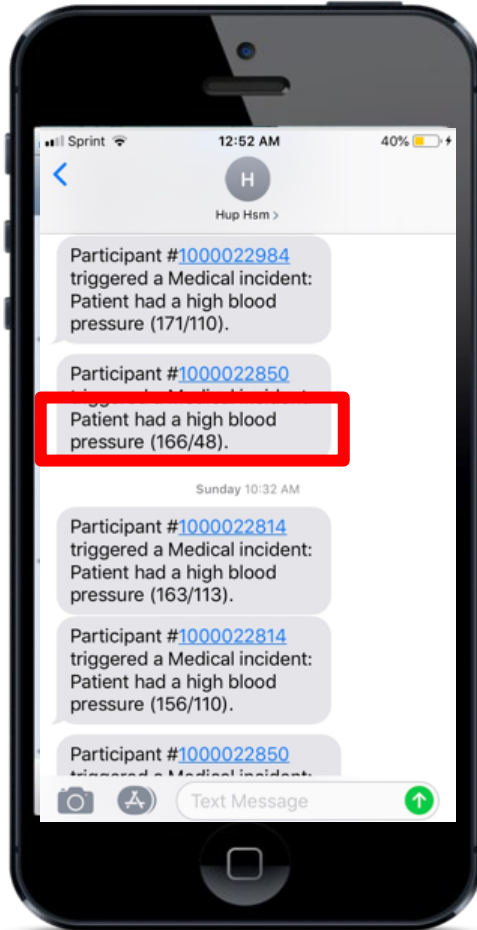
Heart Safe Motherhood (2 of 4)



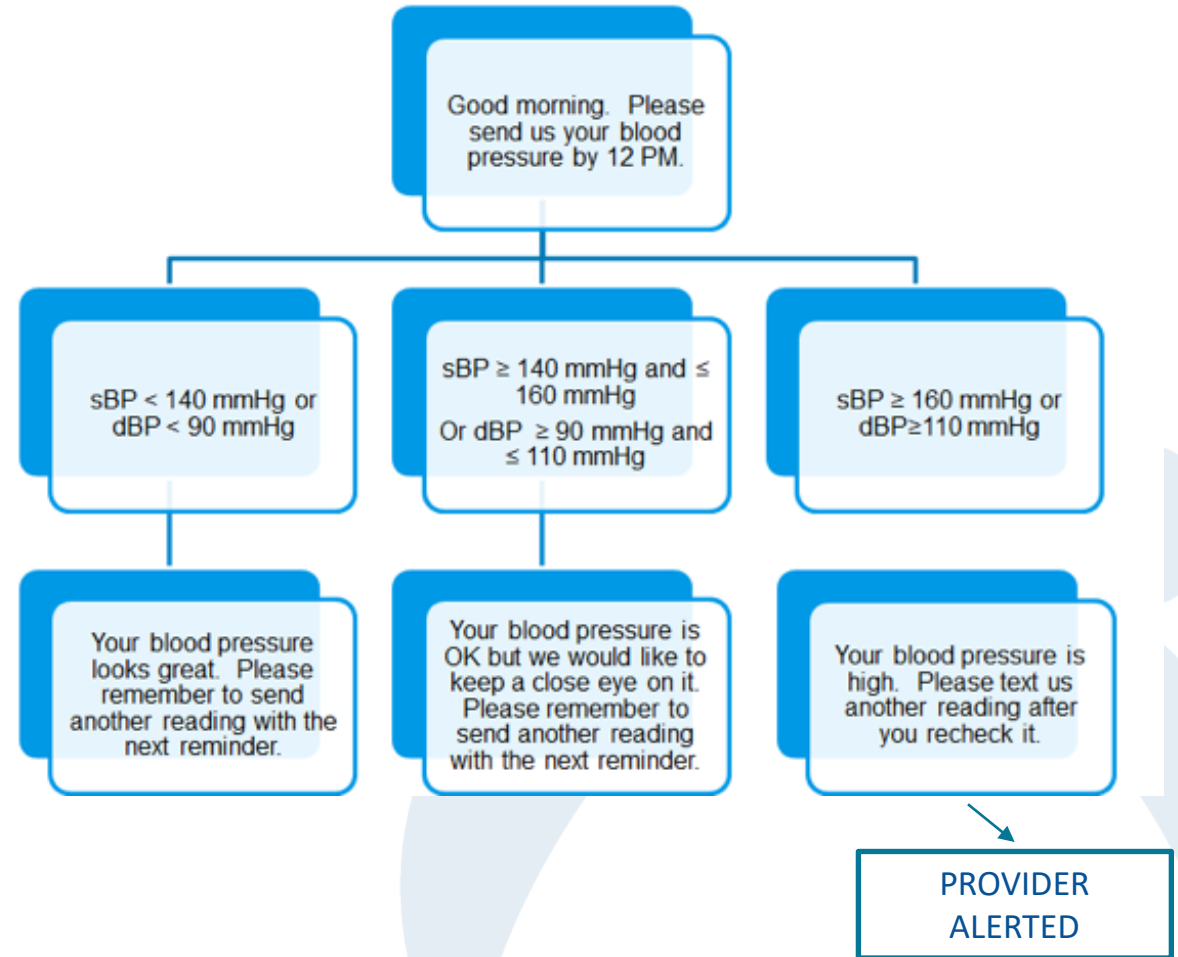
Heart Safe Motherhood (3 of 4)



PATIENT



PROVIDER



Heart Safe Motherhood (4 of 4)

Way to Health Heart Safe Motherhood HUP

Manage Study Manage Participants Manage Data Reports

SMS Blood Pressure

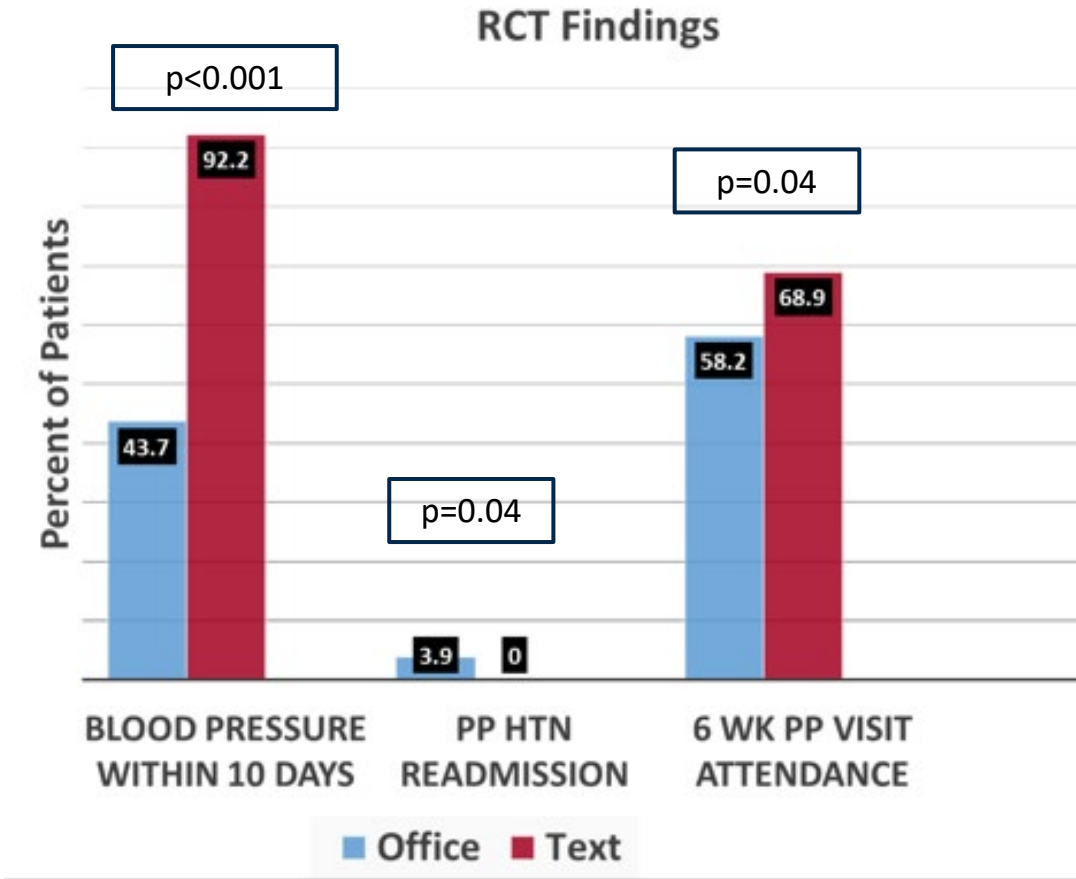
23253 results

Choose an action

Participant	Received in WTH	Attached to Event	Epic status	response_numeric
<input type="checkbox"/> 1000021677	2018/11/14 08:29 pm	Night Coverage (#1)	Not Sent	149/88
<input type="checkbox"/> 1000021617	2018/11/14 06:55 pm	Night Coverage (#6)	Not Sent	114/83
<input type="checkbox"/> 1000021461	2018/11/14 06:38 pm		Not Sent	165/84
<input type="checkbox"/> 1000021506	2018/11/14 06:14 pm	Night Coverage (#10)	Not Sent	136/92
<input type="checkbox"/> 1000021578	2018/11/14 06:07 pm	Night Coverage (#7)	Not Sent	123/84
<input type="checkbox"/> 1000021635	2018/11/14 05:51 pm	Afternoon Blood Pressure (#4)	Not Sent	142/88
<input type="checkbox"/> 1000021504	2018/11/14 05:39 pm	Afternoon Blood Pressure (#9)	Not Sent	131/88
<input type="checkbox"/> 1000021491	2018/11/14 05:24 pm	Afternoon Blood Pressure (#10)	Not Sent	115/83
<input type="checkbox"/> 1000021650	2018/11/14 04:12 pm	Afternoon Blood Pressure (#3)	Not Sent	128/87

<input type="checkbox"/> 1000021406	11/01	11/02	11/03	11/04	11/05	11/06	11/07	11/08	11/09	11/10
Morning Blood Pressure	123/77		120/74	126/79	118/76	126/82	126/78	126/82	126/82	126/82
Lunch Coverage		116/76								
Afternoon Blood Pressure	118/74	124/76	118/76	124/82		118/74		124/78	124/76	
Night Coverage					124/78		120/78			
<input type="checkbox"/> 1000021319	10/31	11/01	11/02	11/03	11/04	11/05	11/06	11/07	11/08	11/09
Morning Blood Pressure		148/98		139/95	150/1...		140/97	133/94		
Lunch Coverage			157/94			147/97			149/97	
Afternoon Blood Pressure	152/96	155/98		146/1...		143/99	143/97	143/90	139/92	151/1...
Night Coverage		155/98								
<input type="checkbox"/> 1000021331	10/31	11/01	11/02	11/03	11/04	11/05	11/06	11/07	11/08	11/09
Morning Blood Pressure	143/88	128/86	123/87	144/89		135/88	132/84	120/76	126/80	119/78
Lunch Coverage										
Afternoon Blood Pressure	149/86	134/85	132/88	146/91	119/77	128/85				121/76
Night Coverage									128/86	

Program Outcomes (1 of 6)



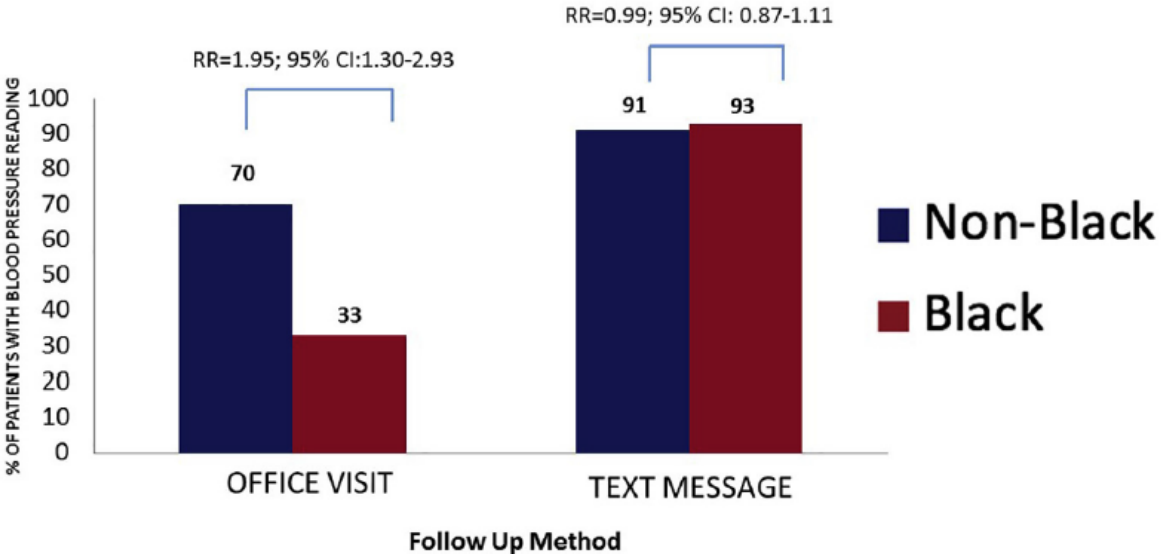
ORIGINAL RESEARCH

Comparing standard office-based follow-up with text-based remote monitoring in the management of postpartum hypertension: a randomised clinical trial

Adi Hirshberg, Katheryne Downes, Sindhu Srinivas

Program Outcomes (2 of 6)

FIGURE
Postpartum blood pressure ascertainment by race and follow-up method



CI, confidence interval; *RR*, relative risk.
Hirshberg. Text messaging remote blood pressure monitoring. Am J Obstet Gynecol 2019.

Program Outcomes (3 of 6)

Text Messaging Arm

	Black n=68	Non-black n=35	p-value
ACOG recommendations: BP at 7-10 days postpartum	57(83.8%)	31(88.6%)	0.52

Program Outcomes (4 of 6)

Antihypertensive medication or dose adjustment after discharge

Office Visit	Text Message
5/24 (20.8%)	12/63 (19.0%)



Program Outcomes (5 of 6)

Original Research

Association of a Remote Blood Pressure Monitoring Program With Postpartum Adverse Outcomes

Adi Hirshberg, MD, Yifan Zhu, PhD, Aaron Smith-McLallen, PhD, and Sindhu K. Srinivas, MD, MSCE

Table 2. Adverse Event Counts and Percentages 6 Months Postdischarge, Program Participants Compared With Those in the Asynchronous Comparison Cohort

Outcome	Program (n=1,021)	Cohort A (n=1,021)	Difference (% Difference)	P	OR (95% CI)
Composite adverse outcome	30 (2.9)	48 (4.7)	-18 (38)	.038	0.61 (0.40-0.98)
Individual outcomes					
Stroke	2 (0.20)	4 (0.39)	-2		
DIC	1 (0.10)	3 (0.30)	-2		
Eclampsia	3 (0.30)	6 (0.59)	-3		
Pulmonary edema	5 (0.49)	9 (0.88)	-4		
Renal injury or liver failure	8 (0.78)	10 (0.10)	-2		
HELLP syndrome	4 (0.39)	7 (0.69)	-3		
Myocardial infarction	3 (0.30)	4 (0.39)	-1		
Cardiomyopathy	4 (0.39)	5 (0.49)	-1		

Cohort A, asynchronous comparison group; OR, odds ratio; DIC, disseminated intravascular coagulation; HELLP, hemolysis, elevated liver enzymes, and low platelet count.
Data are n (%) unless otherwise specified.

Table 3. Adverse Event Counts and Percentages 6 Months Postdischarge, Program Participants Compared With Those in the Contemporaneous Comparison Cohort

Outcome	Program (n=1,276)	Cohort C (n=1,276)	Difference (% Difference)	P	OR (95% CI)
Composite adverse outcome	41 (3.2)	57 (4.5)	-16 (28)	.099	0.71 (0.47-1.07)
Individual outcomes					
Stroke	4 (0.31)	5 (0.39)	-1		
DIC	1 (0.08)	2 (0.16)	-1		
Eclampsia	3 (0.24)	8 (0.63)	-5		
Pulmonary edema	7 (0.55)	8 (0.63)	-1		
Renal injury or liver failure	10 (0.78)	12 (0.94)	-2		
HELLP syndrome	8 (0.63)	11 (0.86)	-3		
Myocardial infarction	3 (0.24)	4 (0.31)	-1		
Cardiomyopathy	5 (0.39)	7 (0.55)	-2		

Cohort C, contemporaneous comparison group; OR, odds ratio; DIC, disseminated intravascular coagulation; HELLP, hemolysis, elevated liver enzymes, and low platelet count.
Data are n (%) unless otherwise specified.

Program Outcomes (6 of 6)

Table 4. Health Care Utilization and Cost Outcomes 6 Months Postdischarge, Program Participants Compared With Those in the Asynchronous Comparison Cohort

Outcome	Program (n=1,021)	Cohort A (n=1,021)	Difference (% Difference)*	P	OR (95% CI)
Cardiologist visits	122 (11.9)	93 (9.1)	29 (31.9)	.037	1.35 (1.02–1.08)
Specialist visits	802 (78.5)	725 (71.0)	77 (10.6)	<.001	1.50 (1.22–1.83)
ED visits	14 (1.4)	26 (2.5)	-12 (-44.0)	.055	0.53 (0.28–1.02)
Inpatient readmissions	12 (1.2)	23 (2.2)	-11 (-50.0)	.060	0.52 (0.26–1.04)

Cohort A, asynchronous comparison group; OR, odds ratio; ED, emergency department.

Data are n (%) unless otherwise specified.

* The % difference shows the percentage differences in the number of visits between the treatment and comparison cohorts.

Table 5. Health Care Utilization and Cost Outcomes 6 Months Postdischarge, Program Participants Compared With Those in the Contemporaneous Comparison Cohort

Outcome	Program (n=1,276)	Cohort C (n=1,276)	Difference (% Difference)*	P	OR (95% CI)
Cardiologist visits	152 (11.9)	108 (8.4)	44 (41.7)	.004	1.46 (1.13–1.90)
Specialist visits	869 (68.1)	783 (61.4)	86 (10.9)	<.001	1.34 (1.14–1.58)
ED visits	21 (1.6)	36 (2.8)	-15 (-42.9)	.044	0.58 (0.33–0.99)
Inpatient readmissions	17 (1.3)	38 (3.0)	-21 (-56.7)	.005	0.44 (0.25–0.78)

Cohort C, contemporaneous comparison group; OR, odds ratio; ED, emergency department.

Data are n (%) unless otherwise specified.

* The % difference shows the percentage differences in the number of visits between the treatment and comparison cohort.

Current Heart Safe Motherhood results at Penn Sites

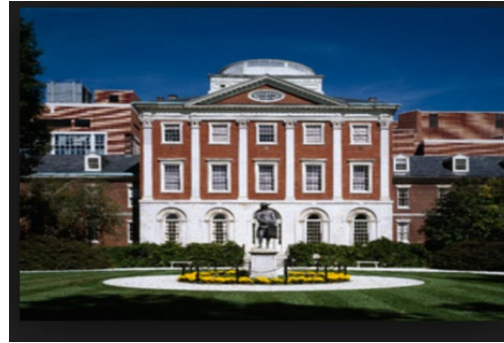


Hospital of the University of Pennsylvania

Start Date: 9/2017

patients enrolled: 8,466

% patients with at least one BP: ~86%



Pennsylvania Hospital

Start Date: 9/2018

patients enrolled: 7,132

% patients with at least one BP: ~94%



Penn Medicine Princeton Health

Start Date: 7/2019

patients enrolled: 1,532

% patients with at least one BP: ~95%



Lancaster General

Start Date: 2/2021

patients enrolled: 874

% patients with at least one BP: ~90%



Chester County Hospital

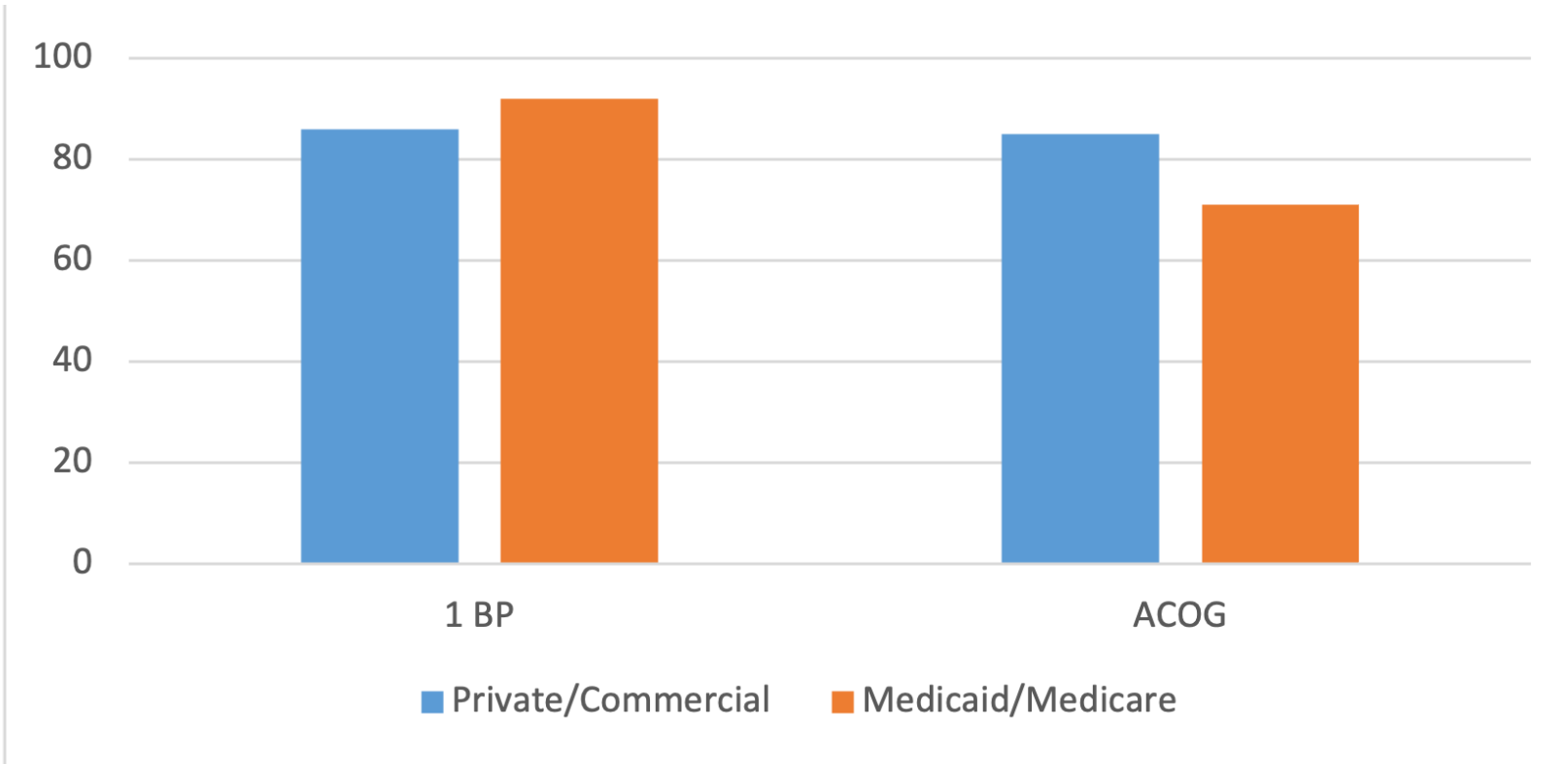
Start Date: 4/2021

patients enrolled: 66

% patients with at least one BP: ~82%

Ongoing data collection

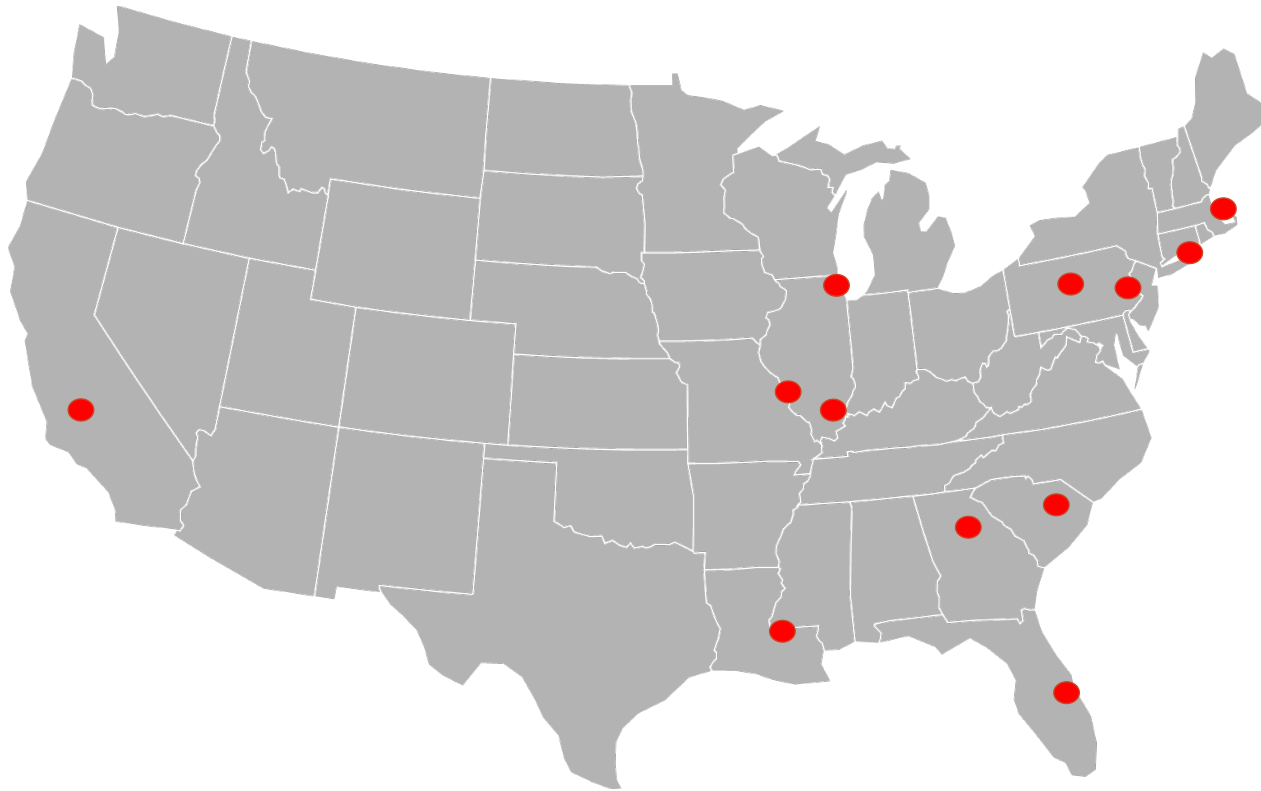
Percentage of Participants Submitting 1 Blood Pressure and Meeting ACOG Guidelines by Insurance through Heart Safe Motherhood



Patient testimonial

*“I delivered my son this past May via emergency C-section. As a participant of the Heart Safe Motherhood program, my team was able to catch post-partum pre-eclampsia which had led to liver dysfunction. **Without your program, I could have been another black maternal mortality statistic.** Again, thank you for all your hard work and dedication.”*

Scaled efforts



Heart Safe Motherhood

Current and Past Implementations:

- HUP – Standard of care
- PAH – Standard of care
- Princeton – Standard of care
- LGH – Active
- Northwestern – Study Completed
- UNC – Study Completed
- Washington University of St. Louis – Study active
- Einstein – Active
- Jefferson – Active
- Alameda – Active
- Woman’s Hospital – Implementation phase
- TGH – USF – Contracting phase

Scaling: self-measured blood pressure monitoring

- High risk vs all patients
- Individual practice vs centralized hospital model
- Nurse vs MD
- Generalist vs MFM
- Cardiology vs
- Nephrology

Who?

- Antepartum vs Postpartum
- Daily vs weekly

When?

Self-measured blood pressure monitoring

- Reduce visits
- Closer surveillance
- Patient convenience

Why?

- Automated monitor
- Wireless or Bluetooth
 - Text-message
 - APP based

How?

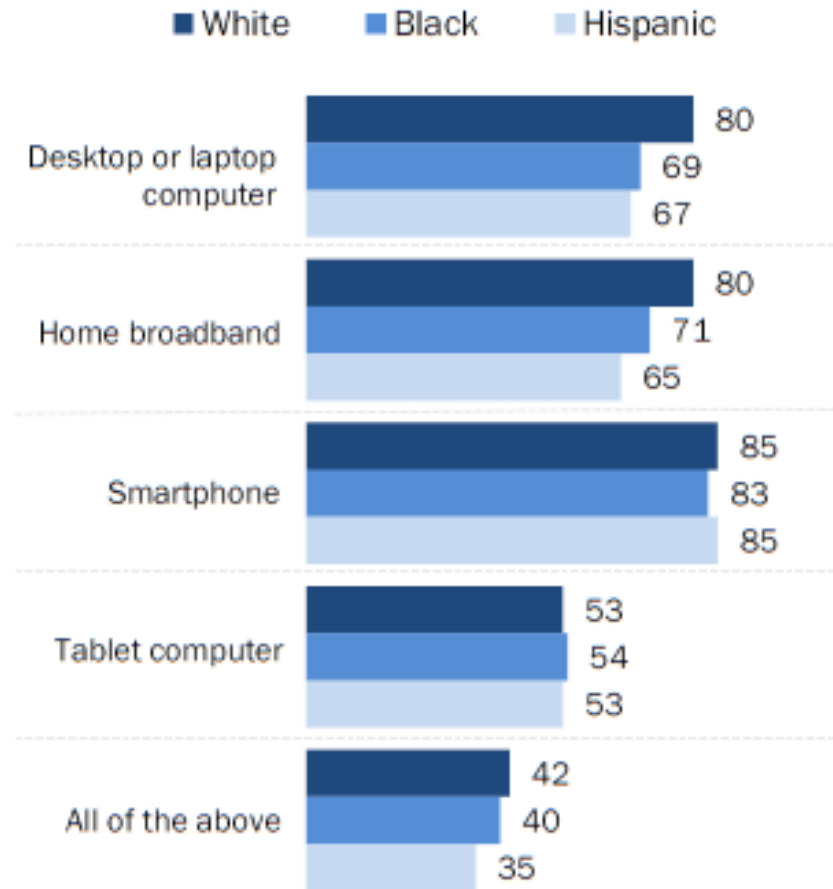


Technology and equity



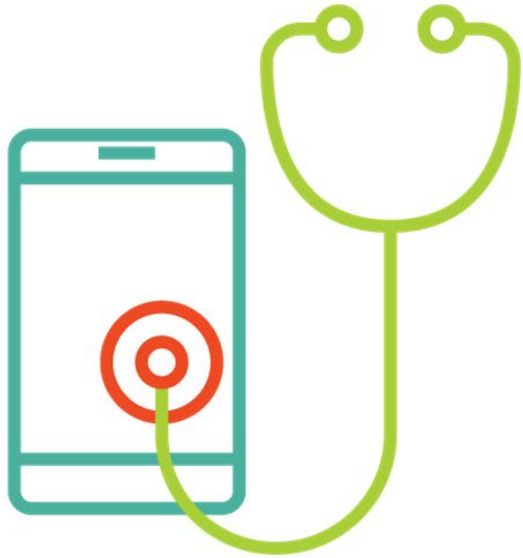
Black and Hispanic adults in U.S. are less likely than White adults to have a traditional computer, home broadband

% of U.S. adults who say they have the following



<https://pewsr.ch/3Bdn6tW>

Remote Monitoring



Advantages

Easy to use, low cost

Empowers patient

Reduced office visits/remove barriers to in-person visit

Data for BP trends/research

Limitations

Validated cuffs in pregnancy, accuracy of readings

Lack of guidance for optimal frequency and timing

Reliance on infrastructure, support on receiving end

Reimbursement

Final thoughts (1 of 2)

Pregnancy related hypertension is a leading cause of maternal morbidity, mortality, and disparities

Final thoughts (2 of 2)

We are able to monitor blood pressure for all patients

AND

reduce disparities

AND

appropriately treat with postpartum hypertension

AND

reduce maternal adverse outcomes for 6 months after delivery

AND

save money

AND

connect people to long term care

Scaling barriers

- Blood pressure cuffs
- Appropriate reimbursement for this care
 - Non-traditional
 - Not “in person” model



Reimbursement

- National efforts to support obtaining and reimbursement for blood pressure devices
- Area for continued advocacy and improvement
 - Ongoing discussions with payers for reimbursement
 - Telehealth codes for remote device monitoring and postpartum support paired with improved outcomes
 - Codes 99457 for patients contacted via phone call and > 20 minutes spent monitoring/month
 - Code 99474 for patients with minimum 12 readings (need twice daily)

Publications

1. Hirshberg A, Bittle M, Vandertuyn M, Mahraj K, Asch D, Rosin R, Bennett I, Srinivas S: Rapid cycle innovation testing of text based monitoring for management of postpartum hypertension. J Clin Outcomes Mgmt 24(2): 77-85, Feb 2017.
2. Hirshberg A, Downes K, Srinivas S. Comparing standard office-based follow-up with text based remote monitoring in the management of postpartum hypertension: a randomized clinical trial. BMJ Qual Saf. 2018 Nov;27(11):871-877. Doi: 10.1136/bmjqs-2018-007837. Epub 2018 Apr 27. PMID: 29703800.
3. Hirshberg A, Sammel MD, Srinivas SK. Text message remote monitoring reduced racial disparities in postpartum blood pressure ascertainment. Am J Obstet Gynecol. 2019 Sep;221(3):283-285. Doi: 10.1016/j.ajog.2019.05.011. Epub 2019 May 20. PMID: 31121137.
4. Triebwasser JE, Janssen MK, Hirshberg A, Srinivas SK. Successful implementation of textbased blood pressure monitoring for postpartum hypertension. Pregnancy Hypertens. 2020 Sep 10;22:156-159. doi: 10.1016/j.preghy.2020.09.001. Epub ahead of print. PMID: 32980623.
5. Janssen, Matthew K., et al. Implementation of a text-based postpartum blood pressure monitoring program at 3 different academic sites. Am J Obstet Gynecol. MFM. 3.6 (2021): 100446
6. Hirshberg A, Zhu Y, Smith-McClallen A, Srinivas SK. Association of a Remote Blood pressure Monitoring Program with Postpartum Adverse Outcomes. Obstetrics and Gynecology 141(6), June 2023. DOI: 10.1097/AOG.0000000000000519



Creating an Optimal
Environment for Quality
Healthcare for Individuals,
Families, and Communities

HHS Postpartum Challenge: Integrated Perinatal Clinic

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Disclosure

- Neither Drs. Standeven or Beal have any conflicts of interest to disclose.

AGENDA (2 of 2)

- Introduction to collaborative and integrated care models
- Overview of Johns Hopkins integrated perinatal clinic
- Outcome data from the integrated perinatal clinic
- Future directions

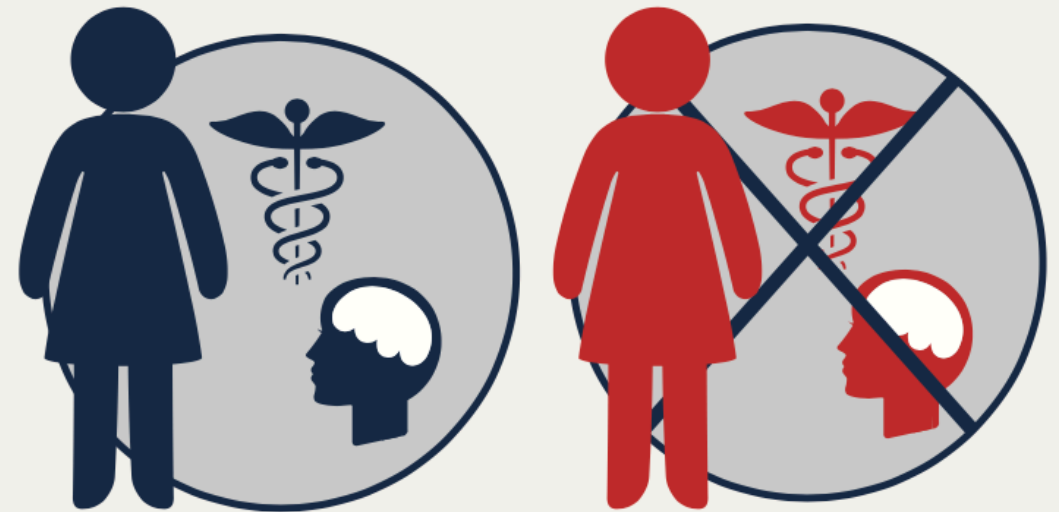
Perinatal Mood and Anxiety Disorders (PMADs)

PMADs are the **#1 complication** of pregnancy and childbirth




Nationally, PMADs affect up to **1 in 7** pregnant and postpartum women

Half of **perinatal women** with a diagnosis of depression do not get the treatment they need



Understanding risk factors of PMAD and Maternal Mental Health (MMH)

CONTRIBUTING FACTORS
Factors that may increase the risk of MMH among Black women⁴⁻⁷

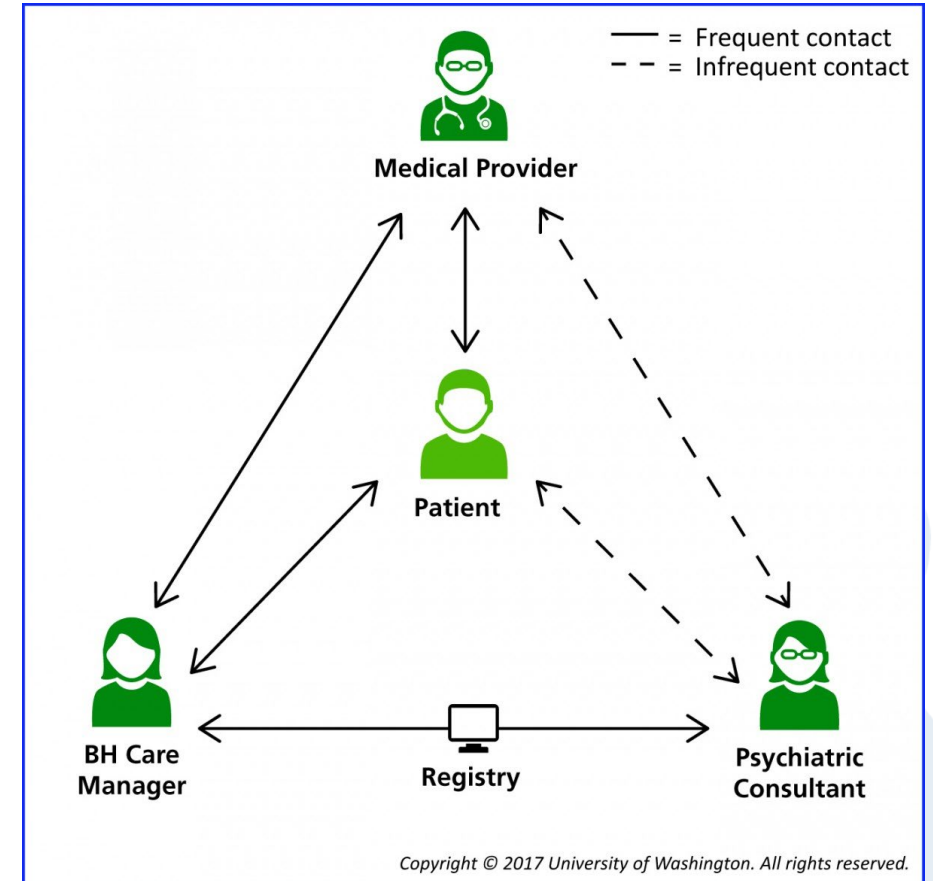


- Systemic racism
- Unemployment
- Exposure to violence
- Gaps in medical insurance
- Adverse Childhood Experiences
- Lack of access to high-quality medical and mental health care
- Lack of representation in the medical system
- Higher risk of pregnancy and childbirth complications



Collaborative Care Models

- Components:
 - Embedded in primary care settings
 - Care manager facilitates referral
 - Monitor psychiatric outcome measures
 - Patient-centered
 - Provides first-line and stepped care to increase access
- Shown improvement in depression outcomes in over 80 RCTs

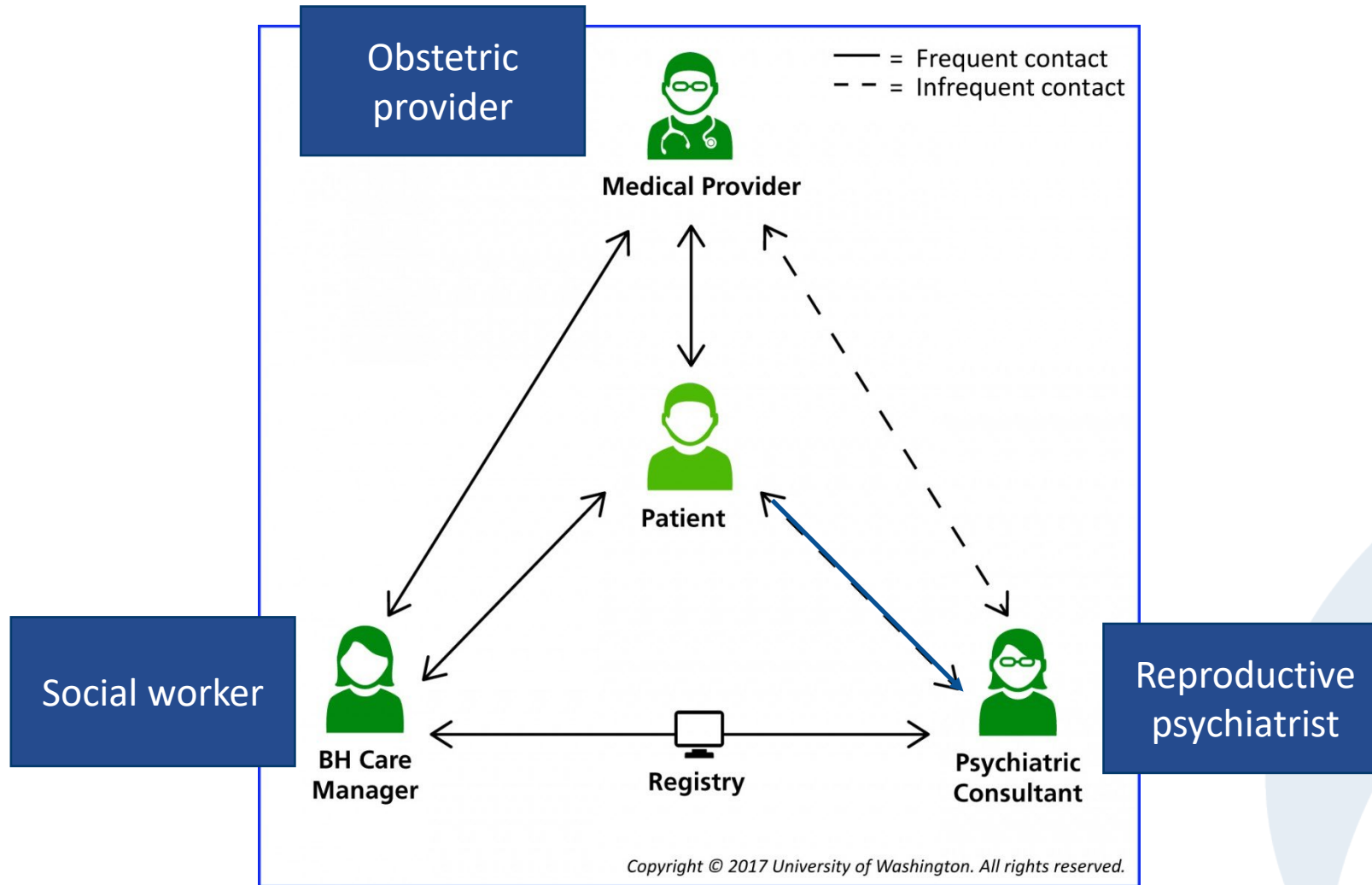


Collaborative Care in Ob-Gyn

- For patients with Medicaid or racial/socioeconomic disparities, collaborative care may:
 - Improve quality of care (Grote et al., 2015)
 - Reduce depression (Katon et al., 2015)
 - Reduce anxiety (Standeven et al., 2022), improve screening, and treatment recommendations (Miller et al., 2021)

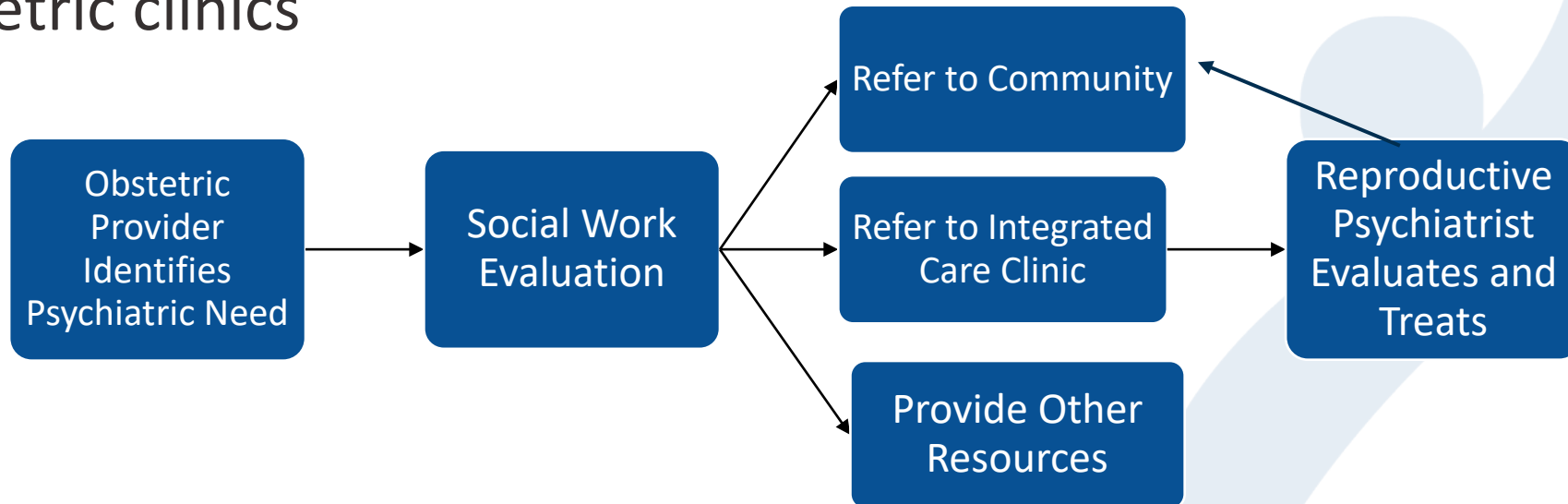


Integrated Perinatal Clinic



Integrated Perinatal Clinic at JHH

- Established in July 2016
- Two obstetric clinics



Patient Population (1 of 2)

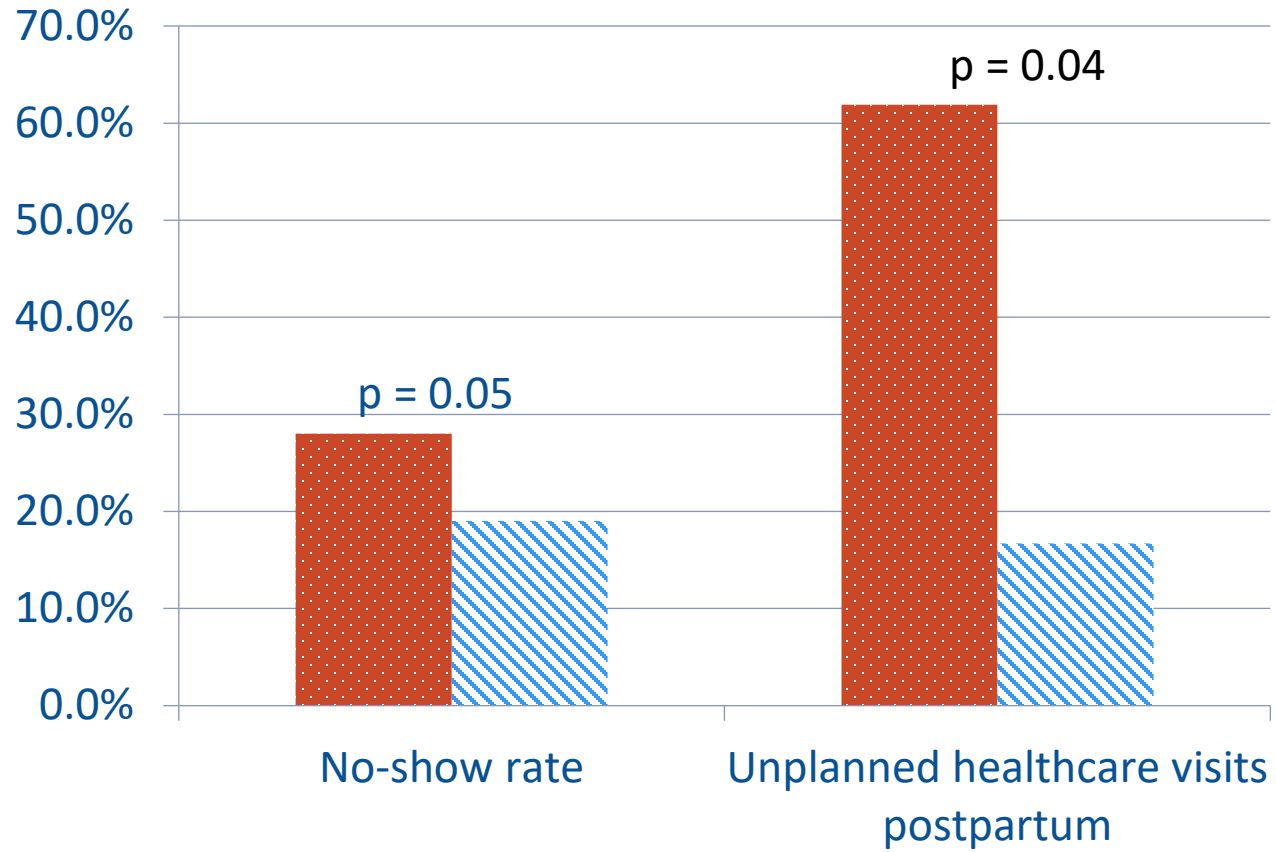
- Two cohorts
- 2016-2018
 - Healthcare utilization and obstetric outcomes
- 2018-2022
 - Depressive symptoms (measured by Edinburgh Postnatal Depression Scale or EPDS)



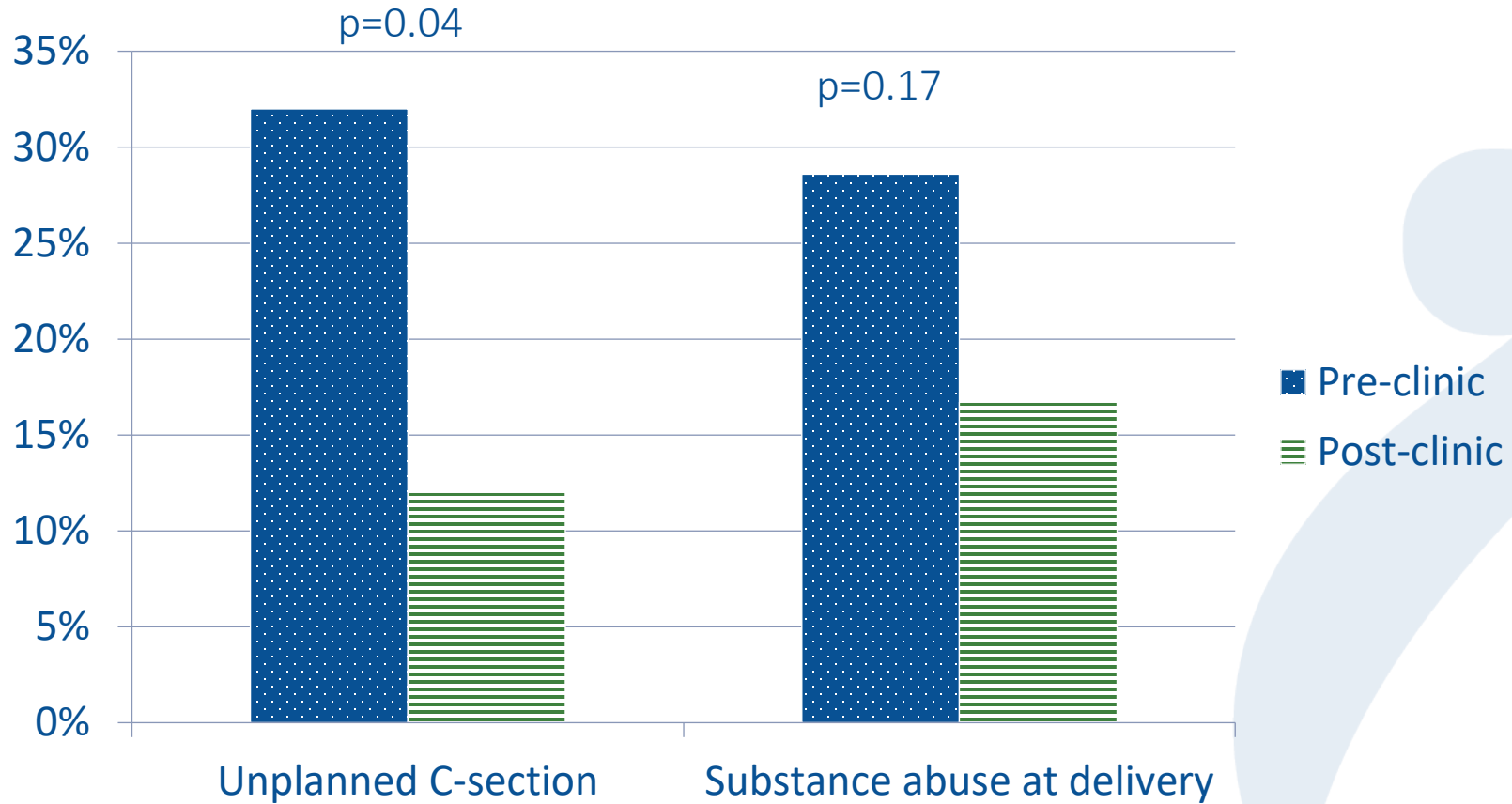
Patient Population (2 of 2)

	Control Group (n = 21)	Integrated clinic (n = 24)	P-value
Mean Age (SD)	26 (6.8)	28.2 (5.1)	0.21
Race (%)			0.16
White	2 (9.5)	4 (16.7)	
Black/AA	19 (90.5)	18 (75)	
Other	0 (0)	2 (8.3)	
Public Insurance (%)	20 (95.2)	18 (75)	0.94

Healthcare Utilization 2016-2018



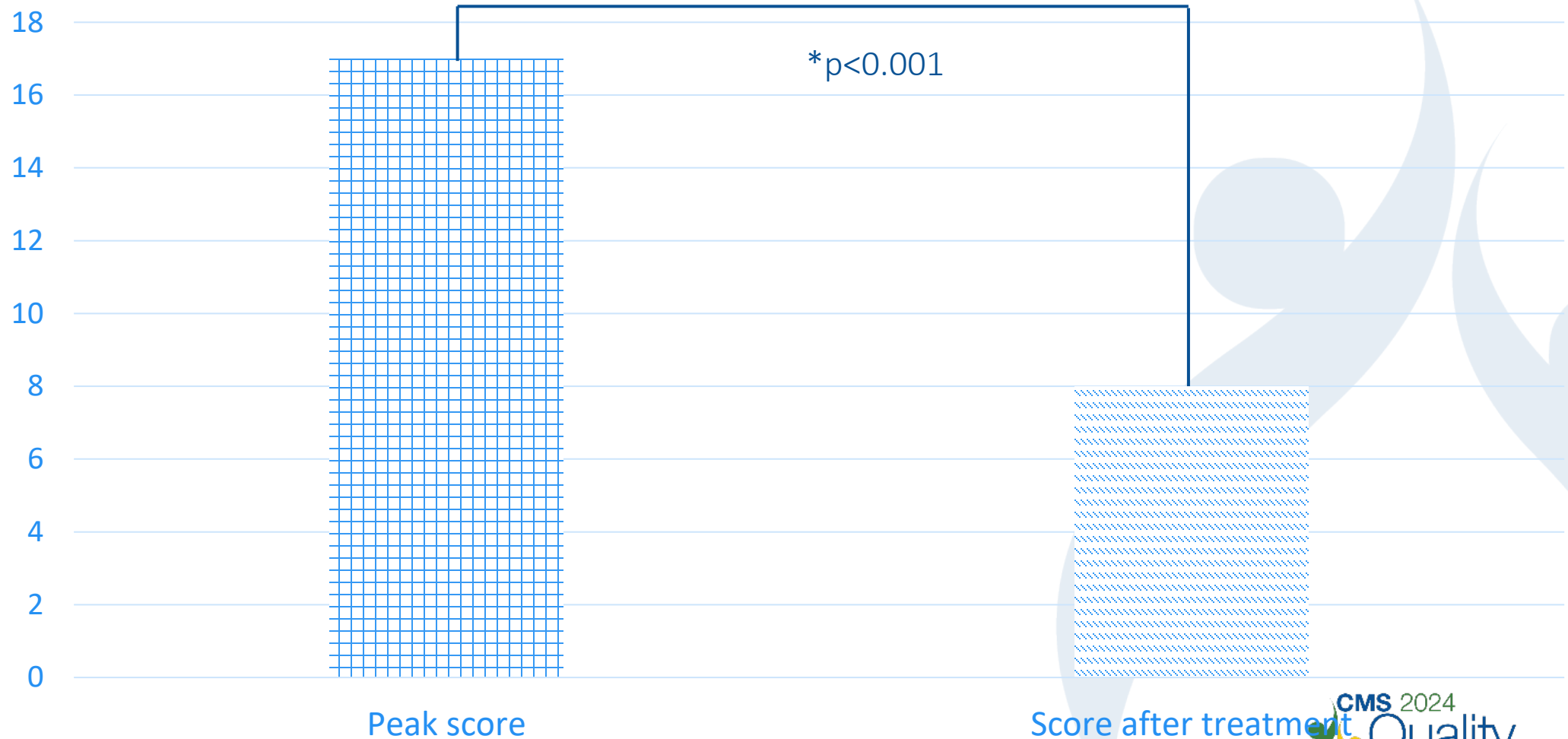
Obstetric Outcomes 2016-2018



Demographics: 2018-2022

Total Patients: (N=96)	Measures:	(N, %)
Race	White	43 (44.8)
	Black/African American	46 (47.6)
	Other	7 (7.3)
Insurance	Public insurance	46 (47.9)

Mean Change in EPDS Scores following Engagement with Integrated Perinatal Clinic – (2018-2022)



Outcomes

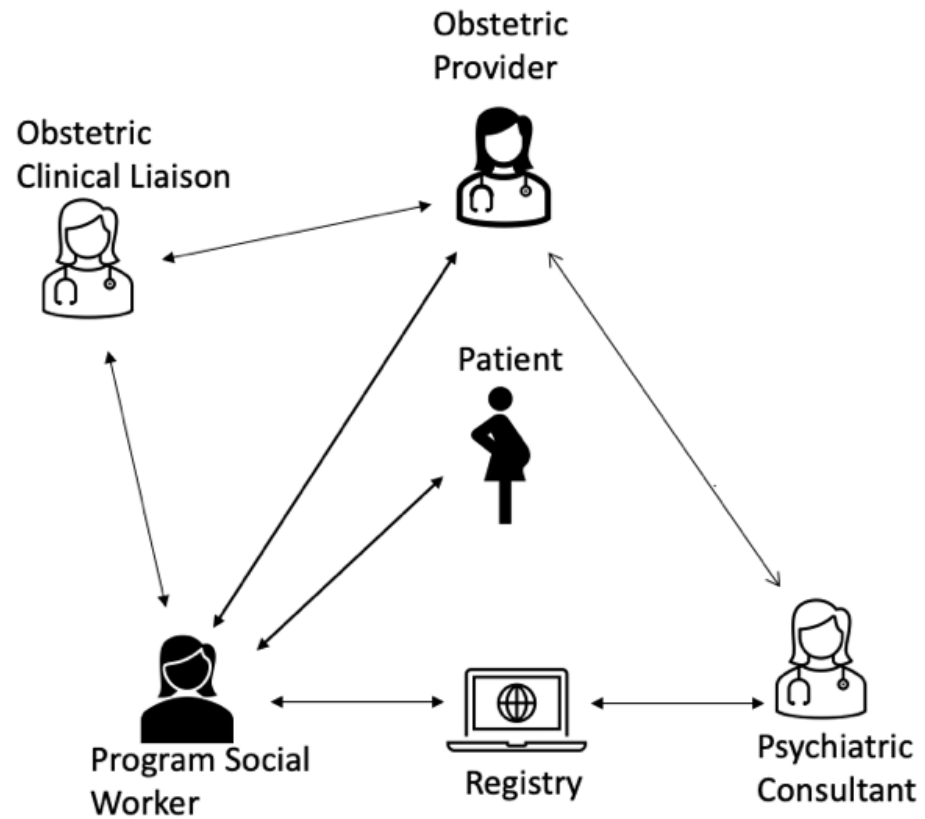
- Significant reductions in no show rate and unplanned healthcare visits
- Reduction in obstetric complications (namely emergency c-sections)
- Improvement in depressive symptoms (based on EPDS)

Future Directions

- Grow the integrated clinic to meet patient needs
- Standardize EPDS screening
- Expand to more Johns Hopkins clinics
- Transition to a full collaborative care model



Expanded Collaborative Care Model



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Question & Answer

