CMS 2024 Quality Conference
Resilient and Ready Together

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

Innovation in Postpartum Care Equity

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

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

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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

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Overview of Postpartum Care and Equity

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

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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

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

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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

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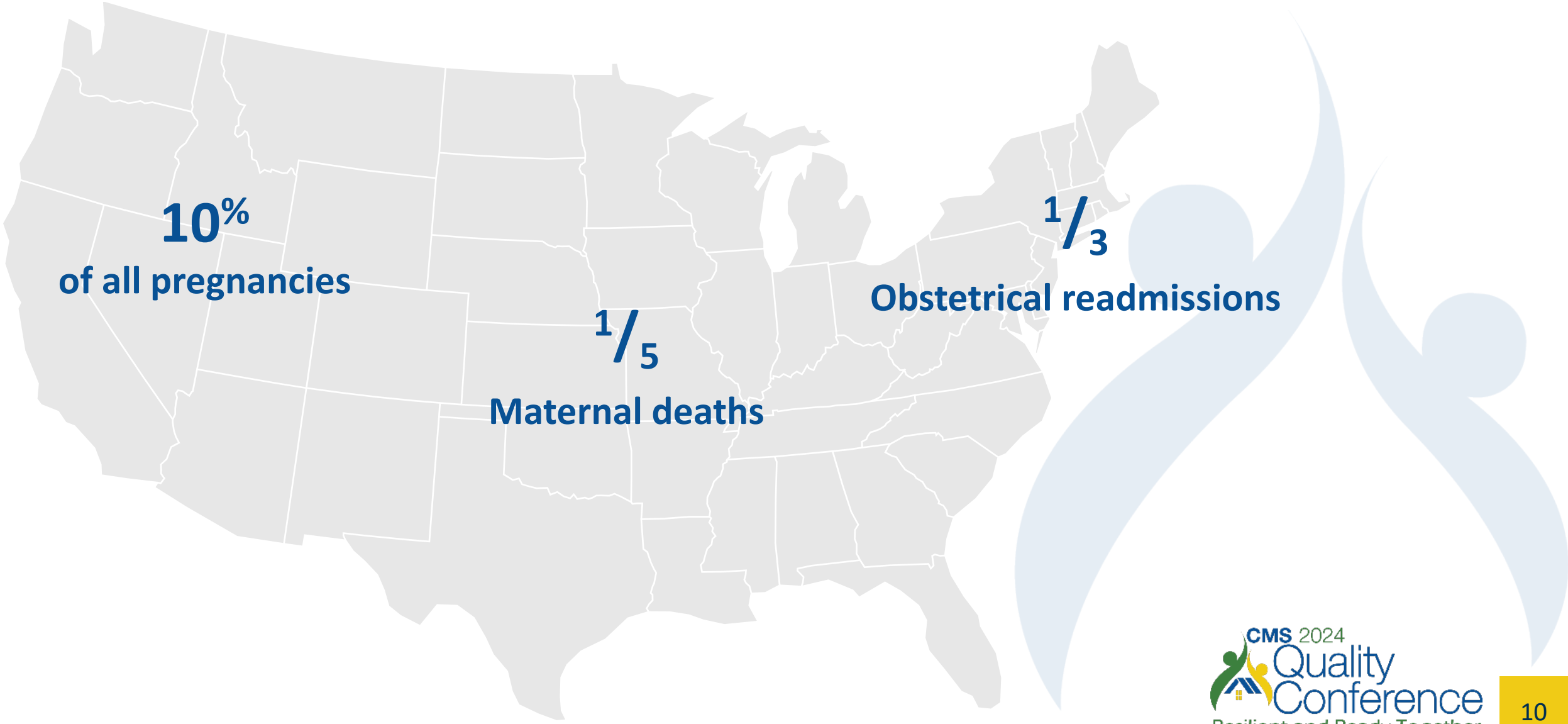
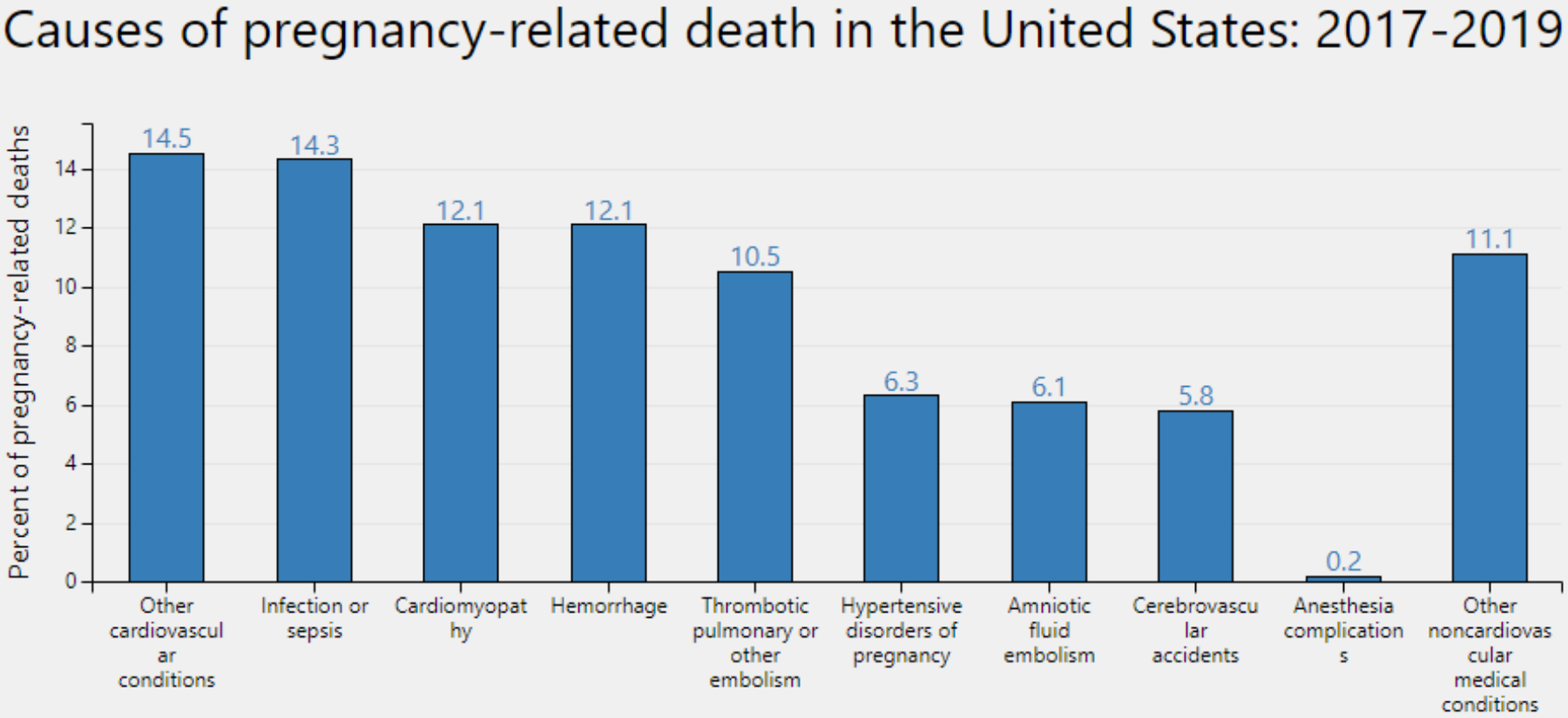
Epidemiology: Hypertension (HTN) of Pregnancy



Epidemiology: Maternal Mortality

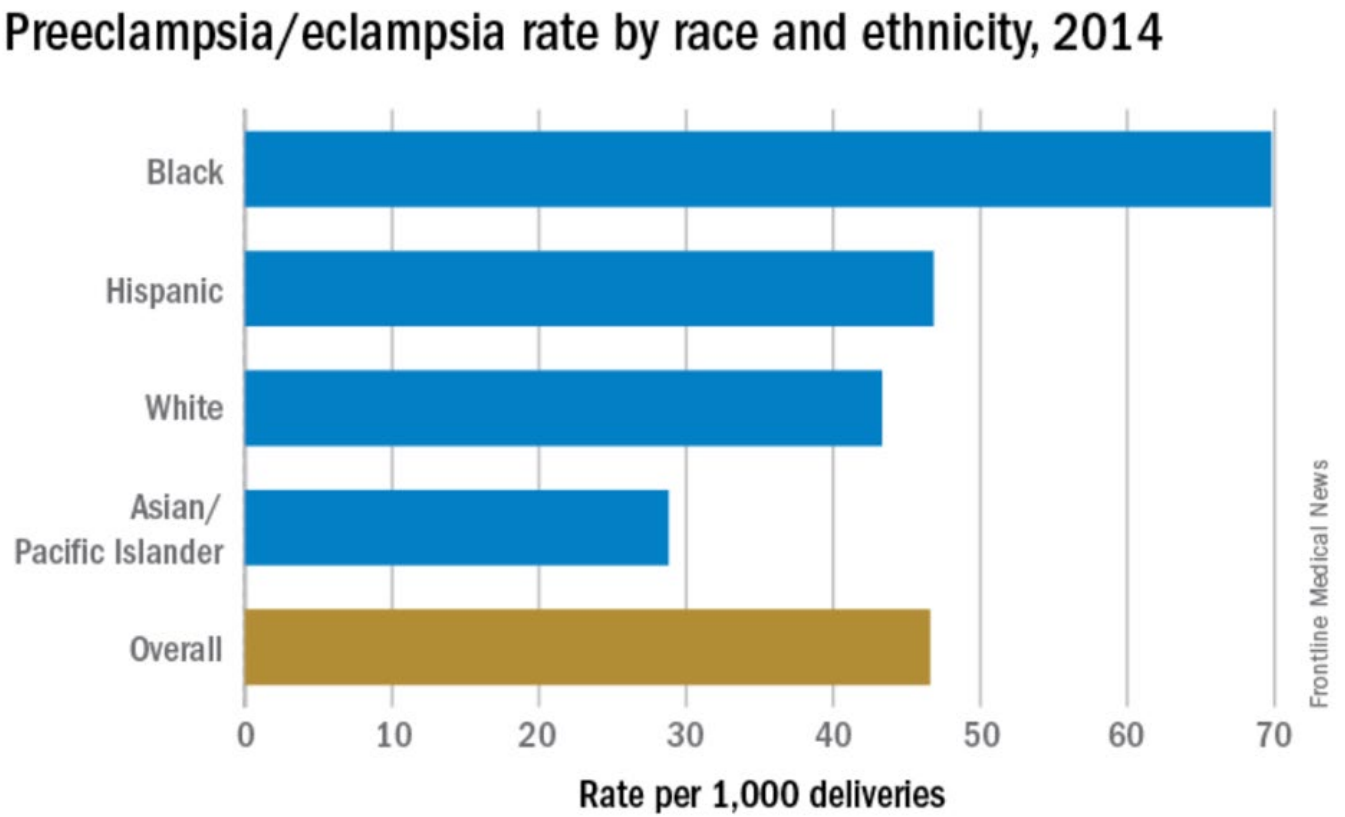


HTN and cardiovascular conditions remain a leading cause of pregnancy related deaths

Disparities in Hypertensive Disorders of Pregnancy

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

Hypertension in Pregnancy: Executive Summary. Obstetrics & Gynecology 122(5):p 1122-1131, November 2013. | DOI: 10.1097/01.AOG.0000437382.03963.88

Optimizing Postpartum Care

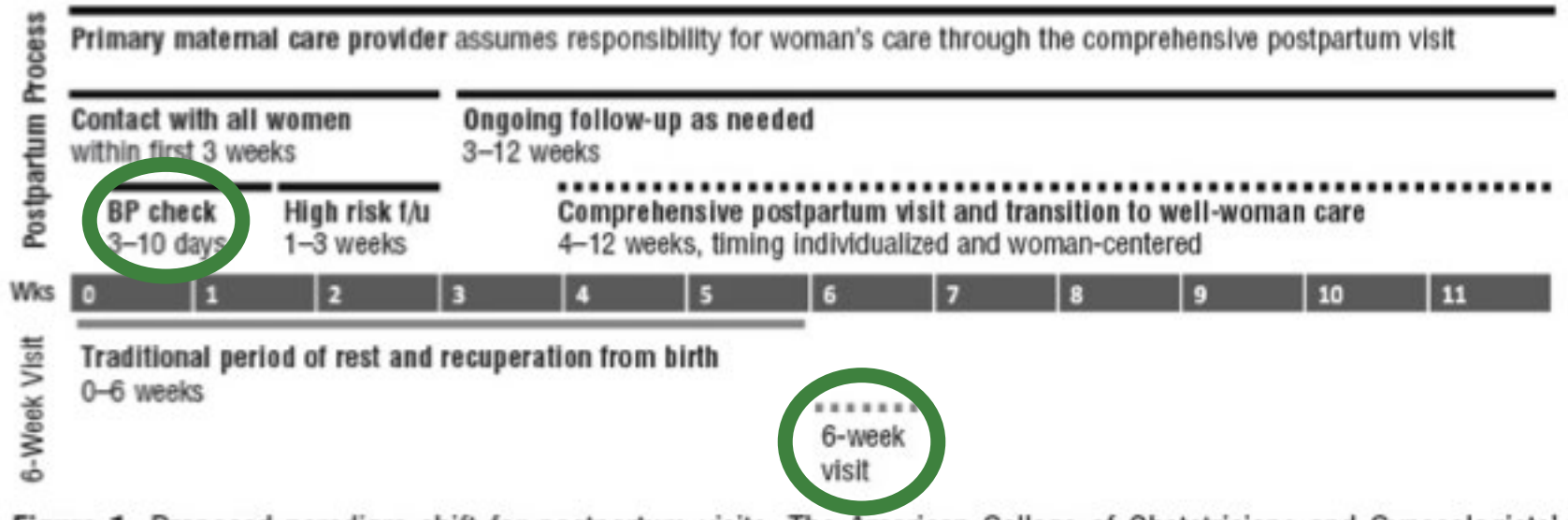


Figure 1. Proposed paradigm shift for postpartum visits. The American College of Obstetricians and Gynecologists' Presidential Task Force on Redefining the Postpartum Visit and the Committee on Obstetric Practice propose shifting the paradigm for postpartum care from a single 6-week visit (bottom) to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

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 G Visit and the Committee on Obstetric Practice in collaboration with task force 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

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

ACOG Committee Opinion No. 736: Optimizing Postpartum Care. Obstet Gynecol. 2018 May;131(5)

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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

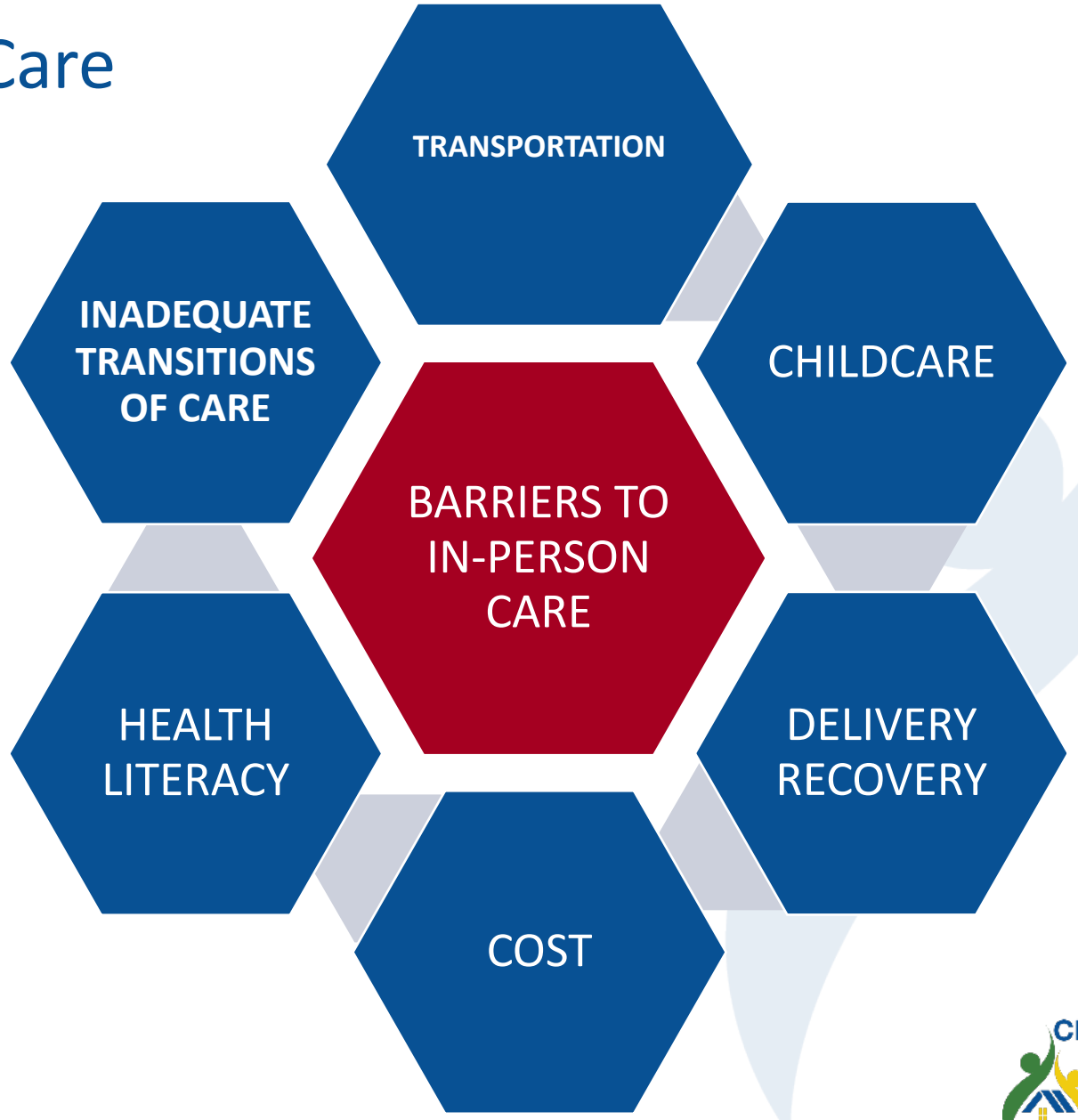
Expanded office hours

Appointments all day of the week

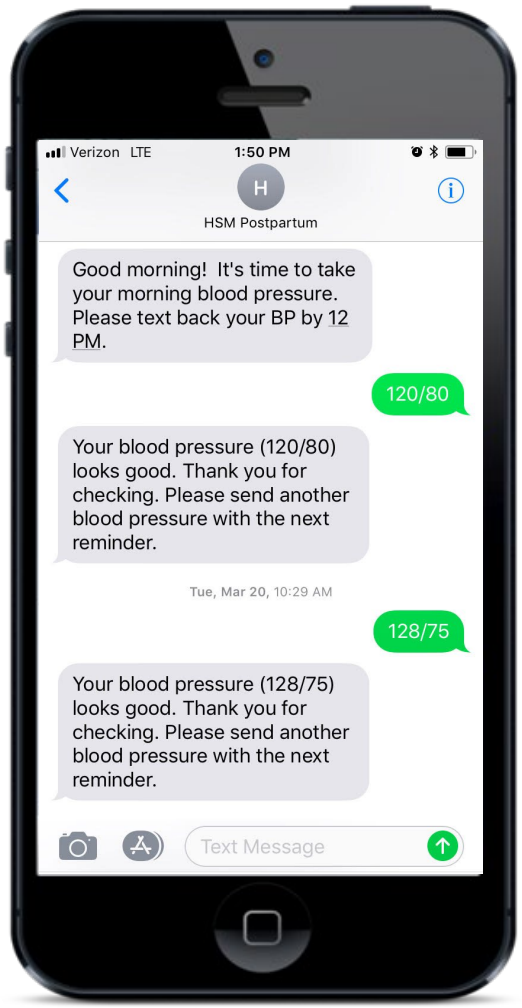
Phone reminders

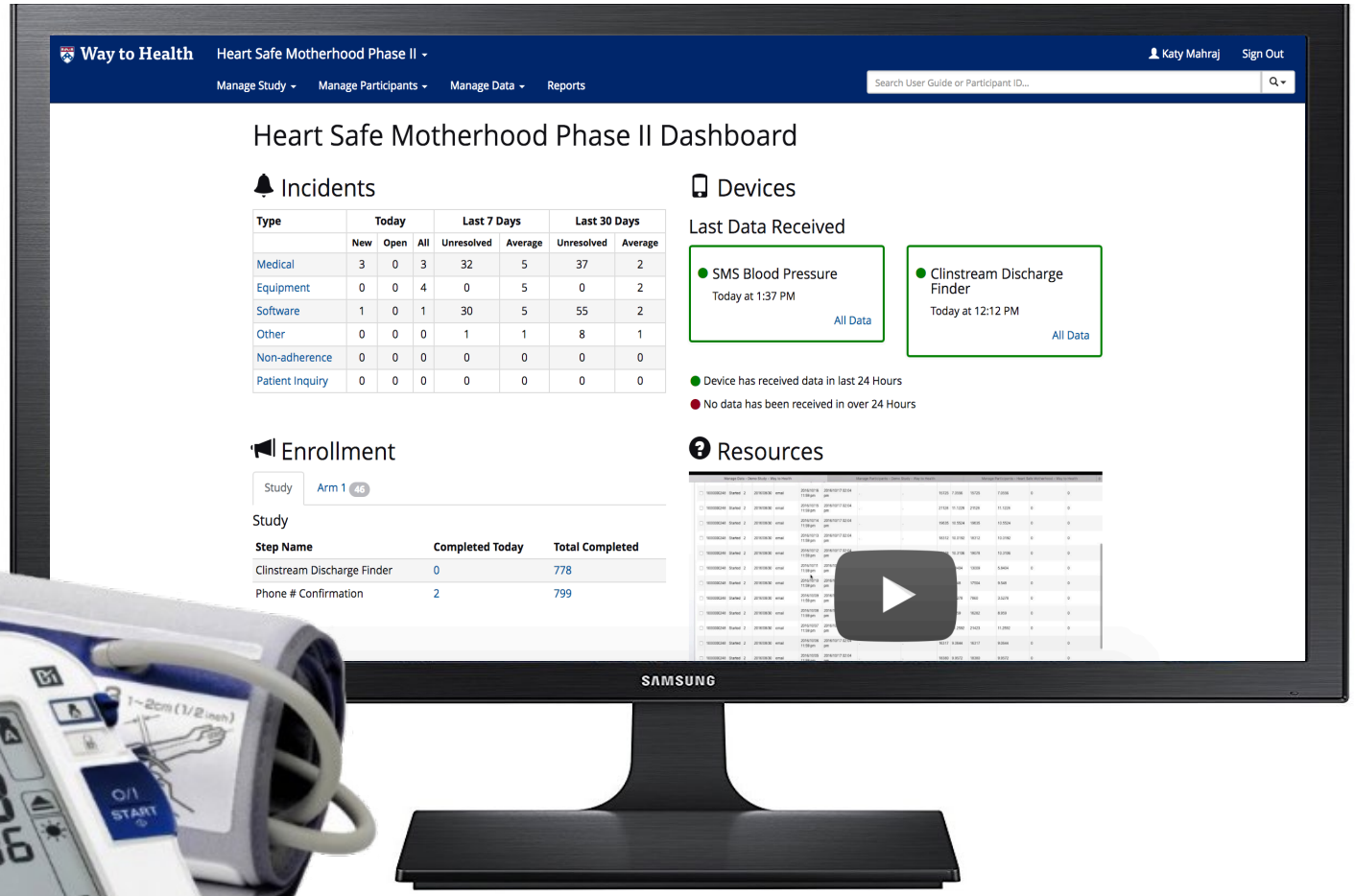
Text reminders

Barriers to In Person Care



Heart Safe Motherhood (1 of 4)





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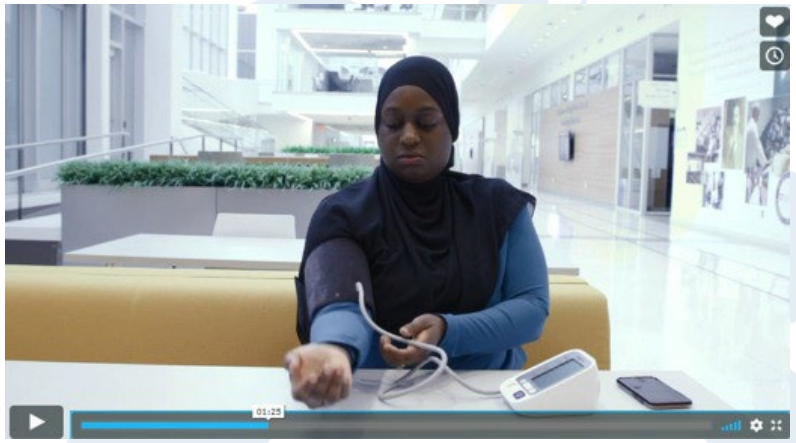
Heart Safe Motherhood (2 of 4)



Heart Safe Motherhood

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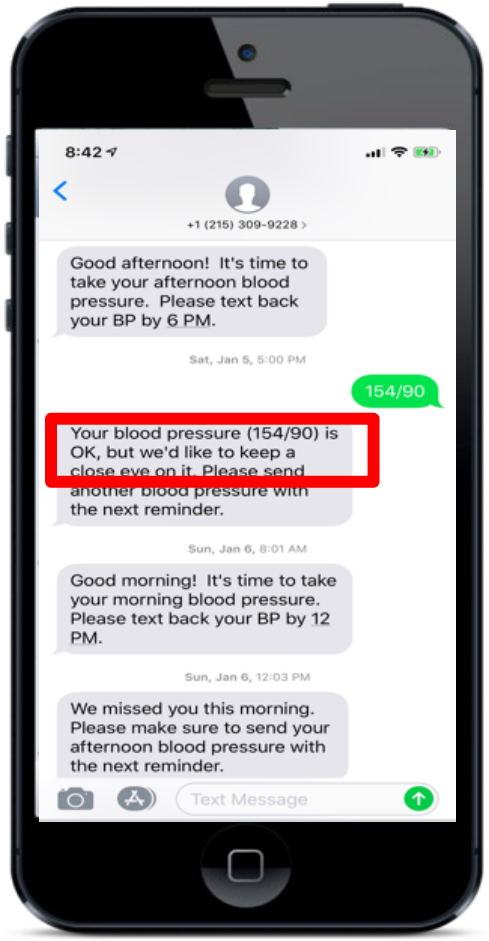
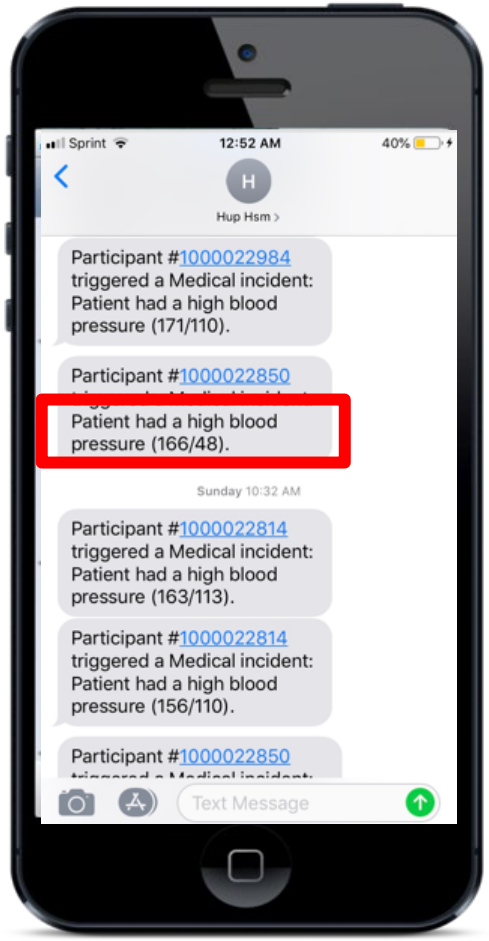
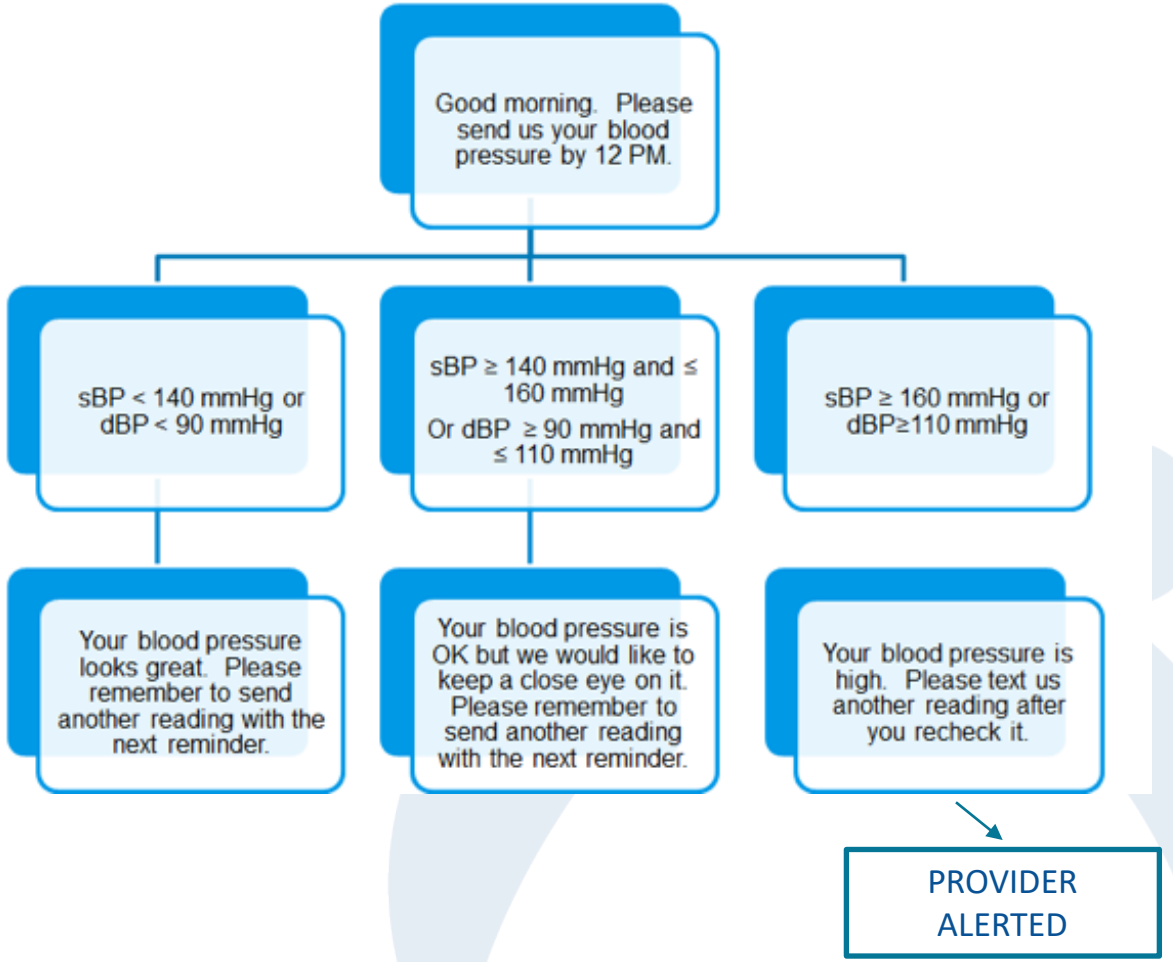
Heart Safe Motherhood (3 of 4)



PATIENT

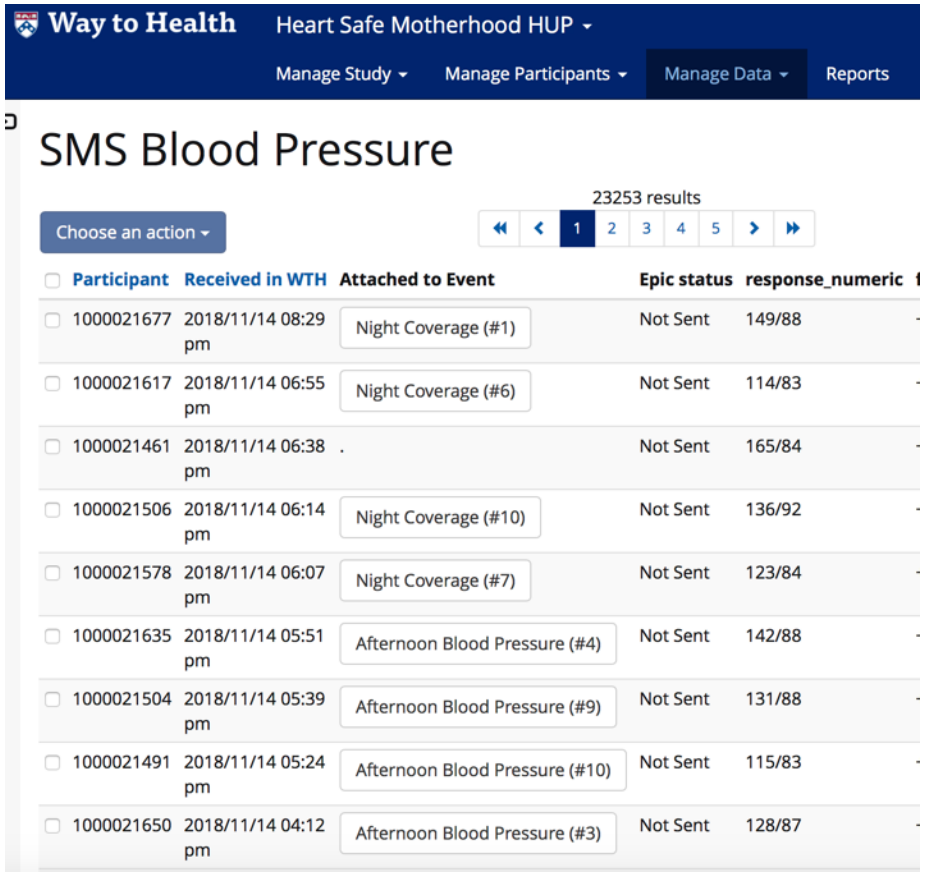


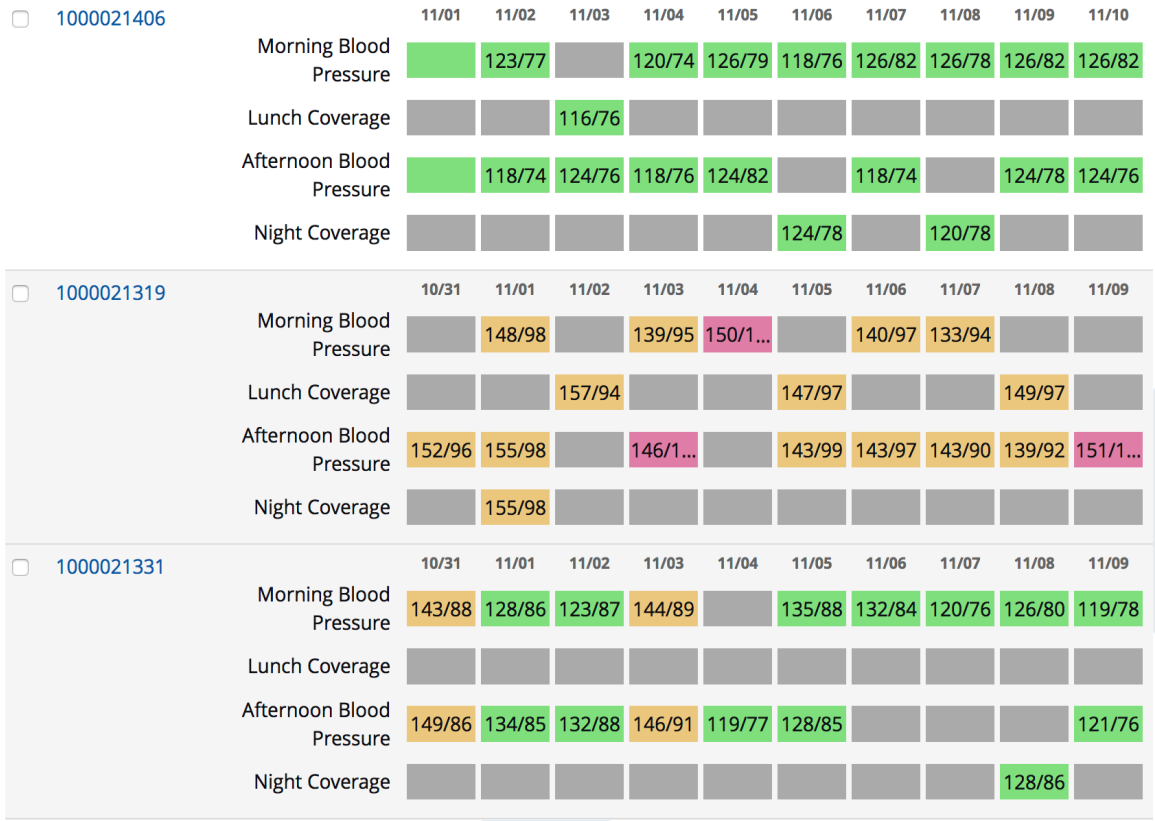
PROVIDER



Heart Safe Motherhood

Heart Safe Motherhood (4 of 4)





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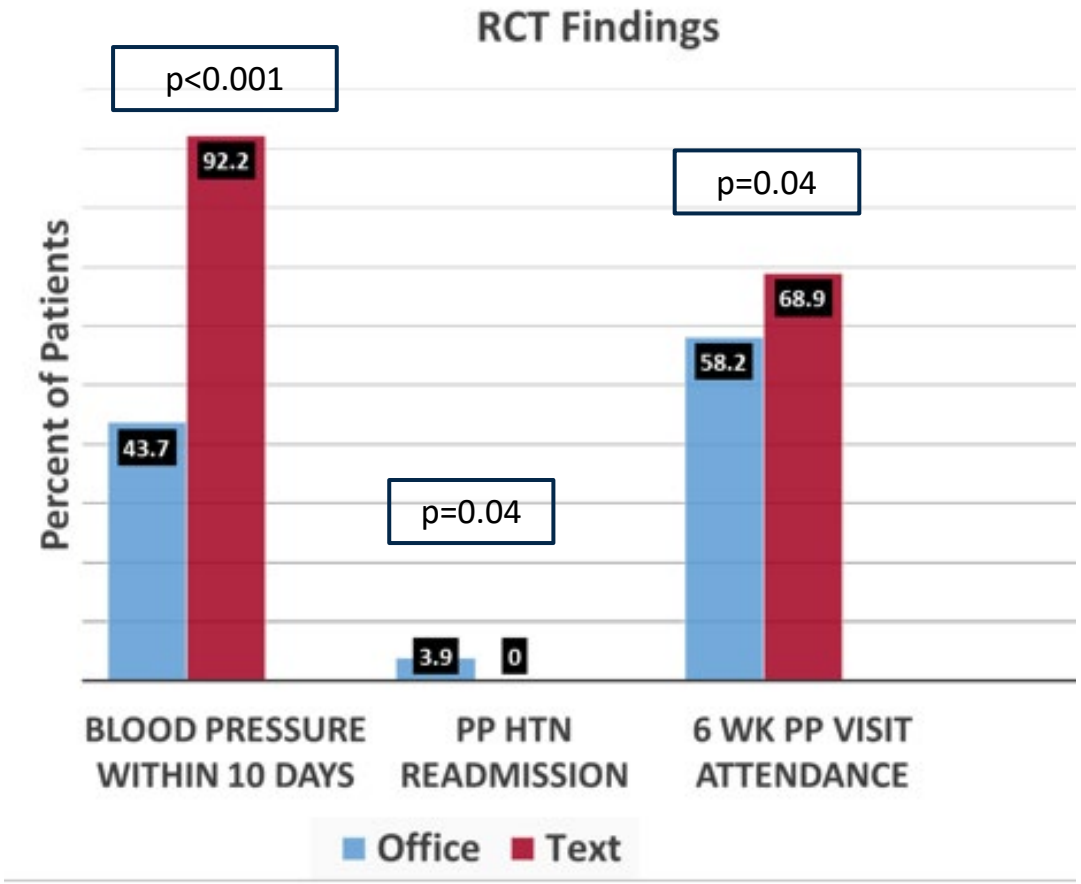
Program Outcomes (1 of 6)



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

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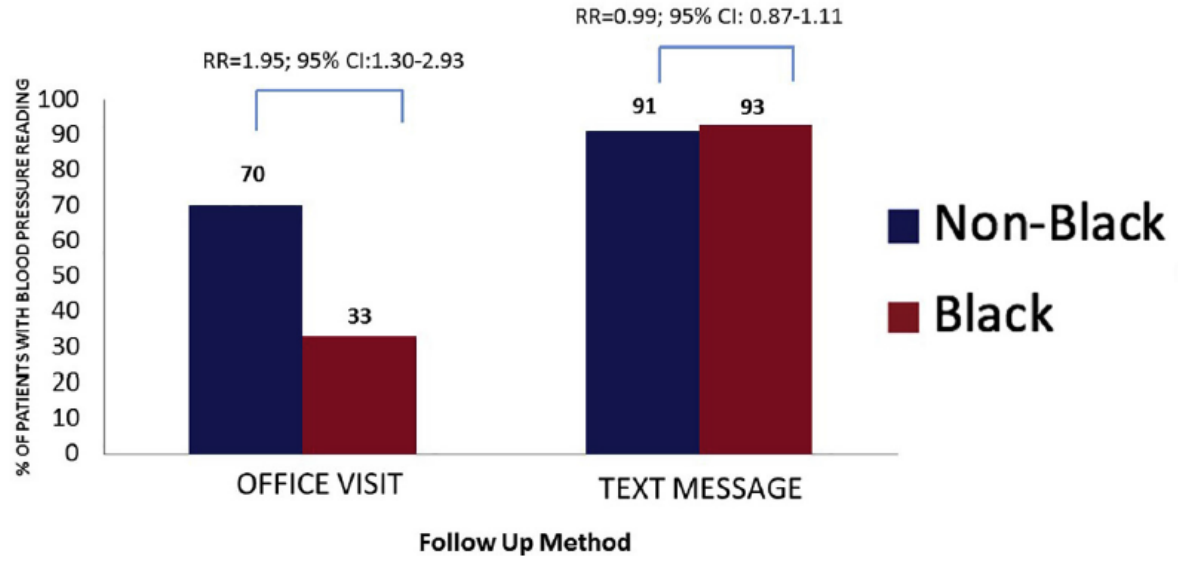
Program Outcomes (2 of 6)

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.

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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, hemoly 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

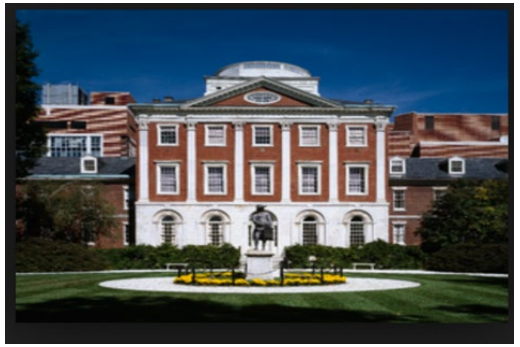
Outcome	Program (n=1,276)	Cohort C (n=1,276)	Difference (% Difference)*	*P*	OR (95% CI)
Cardiologist visits	152 (11.9)	108 (8.4)	44 (41.7)	.004	1.46 (1.13–1.90)
Specialist visits	869 (68.1)	783 (61.4)	86 (10.9)	<.001	1.34 (1.14–1.58)
ED visits	21 (1.6)	36 (2.8)	−15 (−42.9)	.044	0.58 (0.33–0.99)
Inpatient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

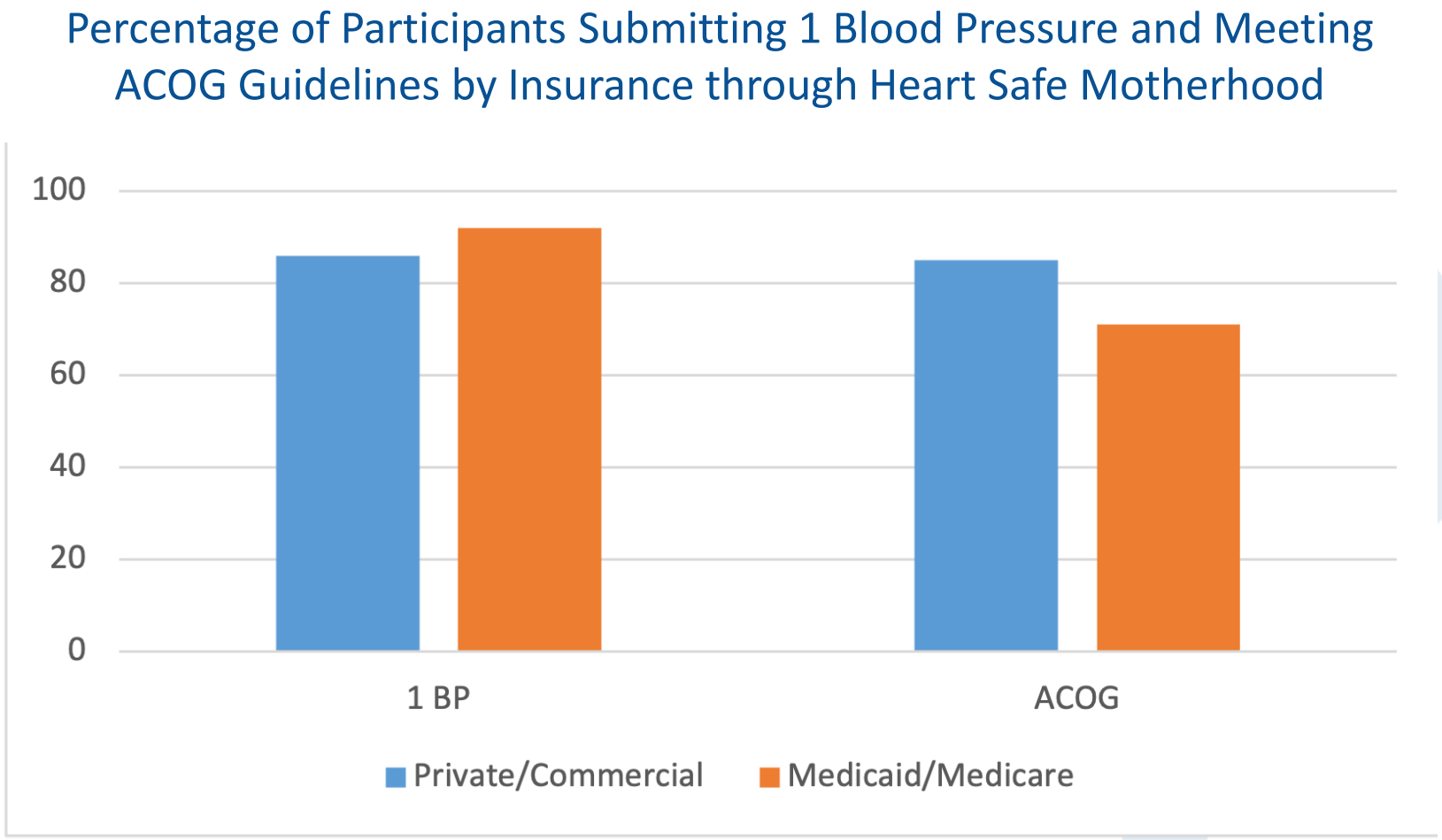
Lancaster General

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%

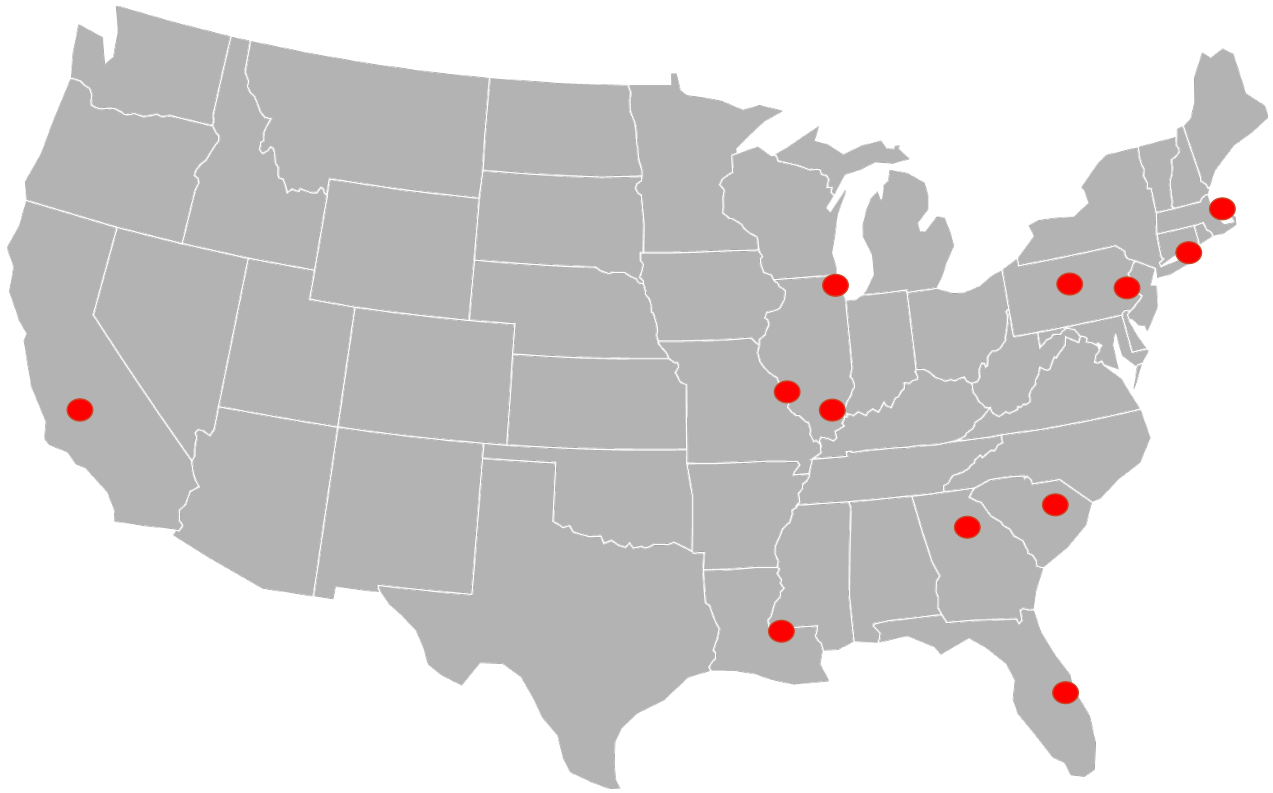
Ongoing data collection



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

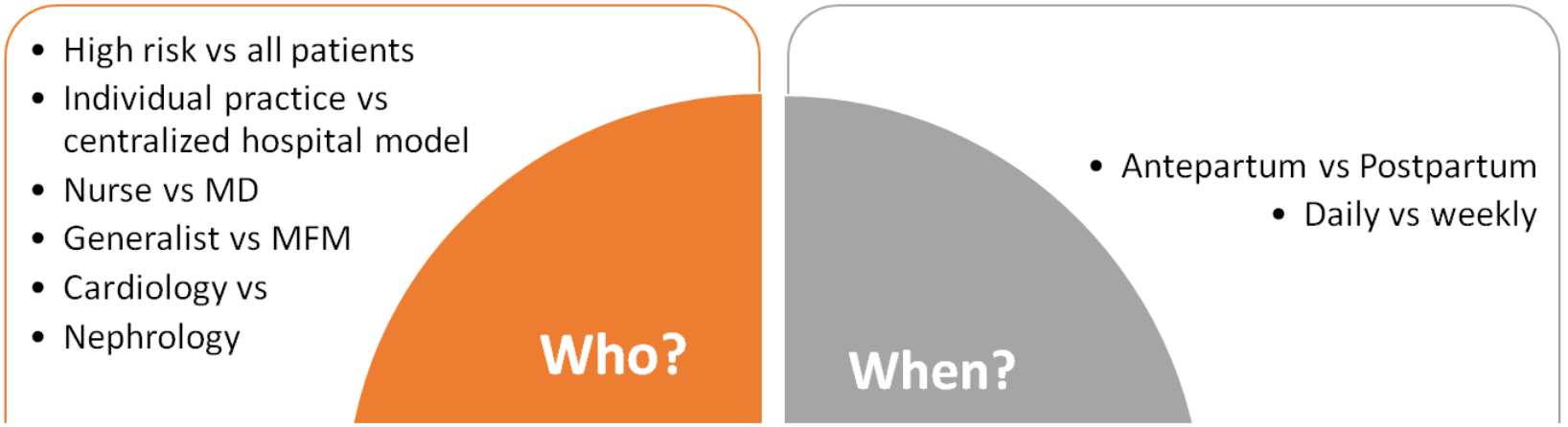


Heart Safe Motherhood

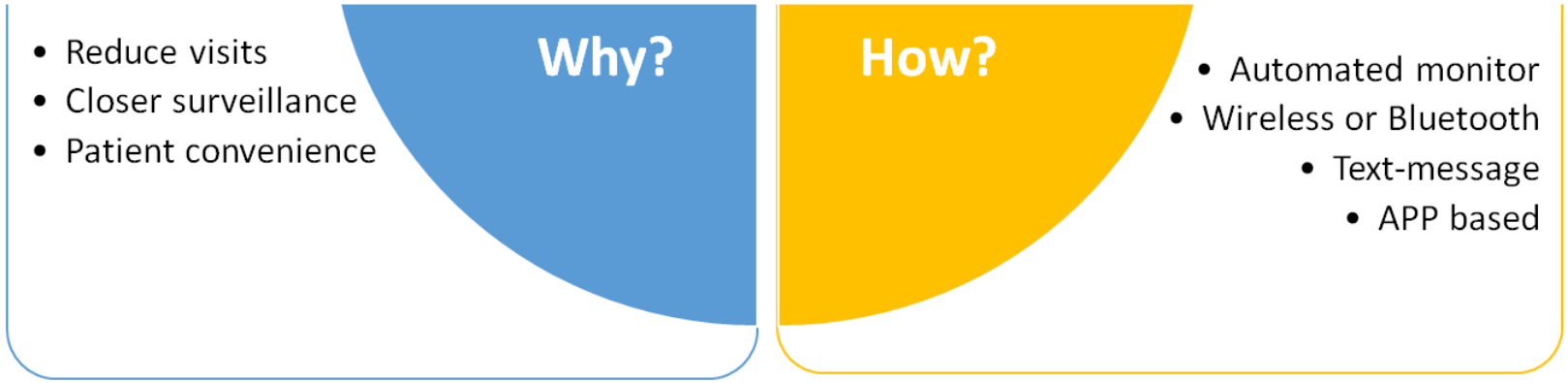
Current and Past Implementations:

- 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



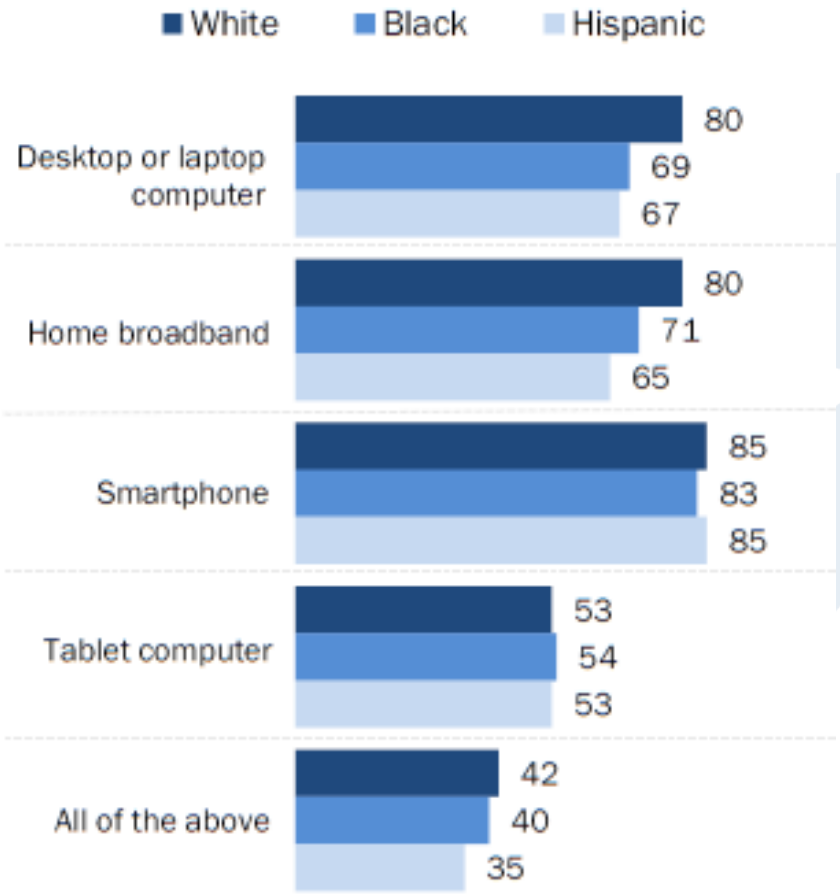
Self-measured blood pressure monitoring



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://pewrsr.ch/3Bdn6tW

Remote Monitoring

Advantages	Limitations
Easy to use, low cost	Validated cuffs in pregnancy, accuracy of readings
Empowers patient	Lack of guidance for optimal frequency and timing
Reduced office visits/remove barriers to in-person visit	Reliance on infrastructure, support on receiving end
Data for BP trends/research	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

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

HHS Postpartum Challenge: Integrated Perinatal Clinic

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

Marissa Beal, DO, Assistant Professor, Department of Psychiatry and Behavioral Health, Penn State Health

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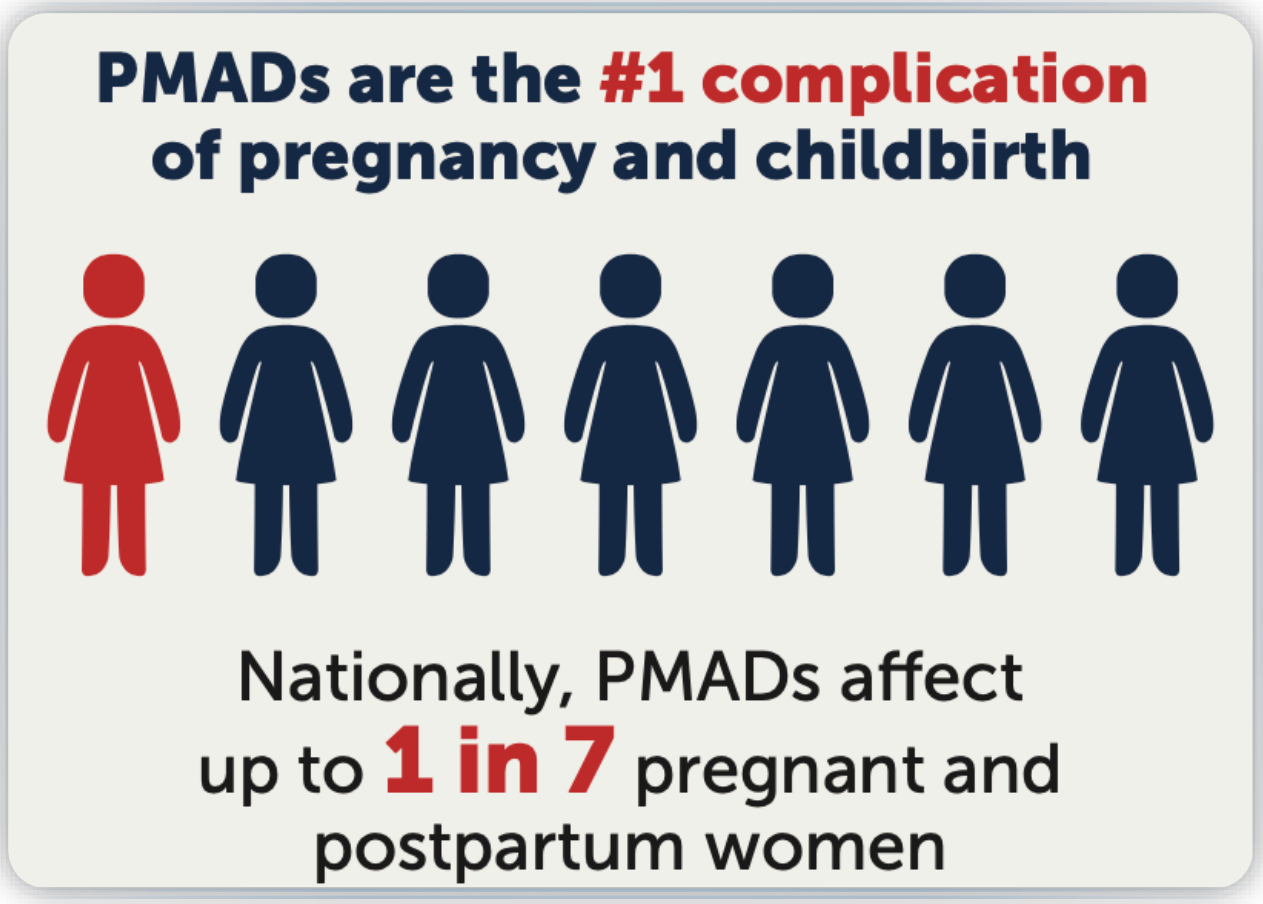
Disclosure

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

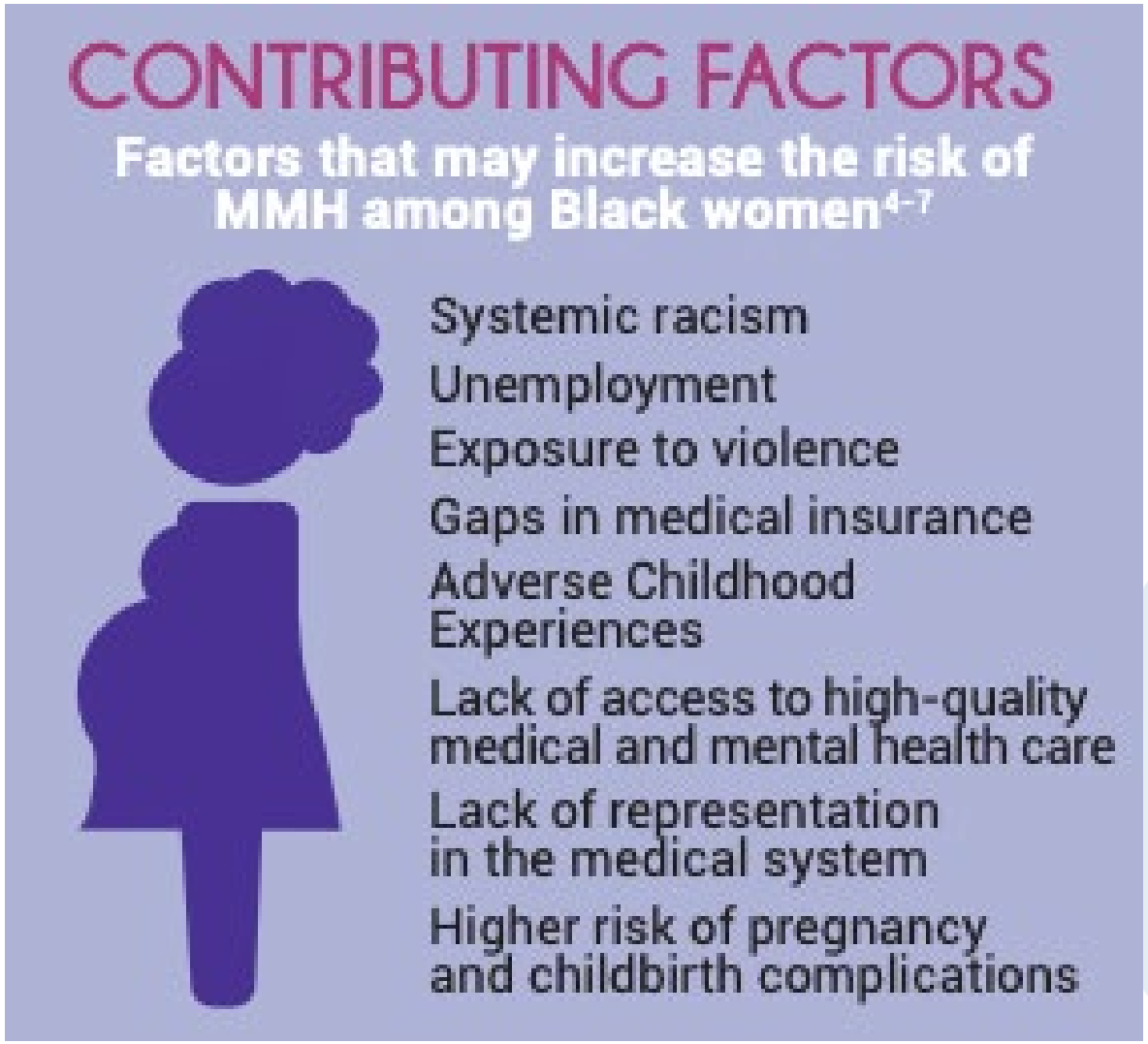
AGENDA (2 of 2)

- 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)

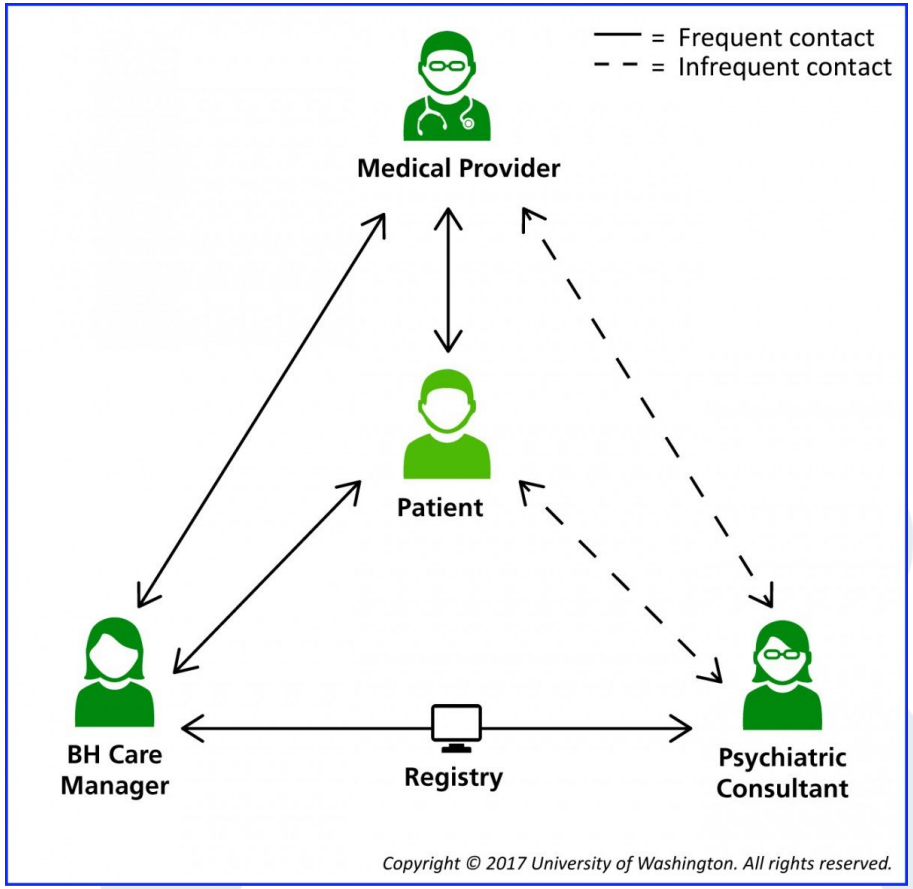


Understanding risk factors of PMAD and Maternal Mental Health (MMH)



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

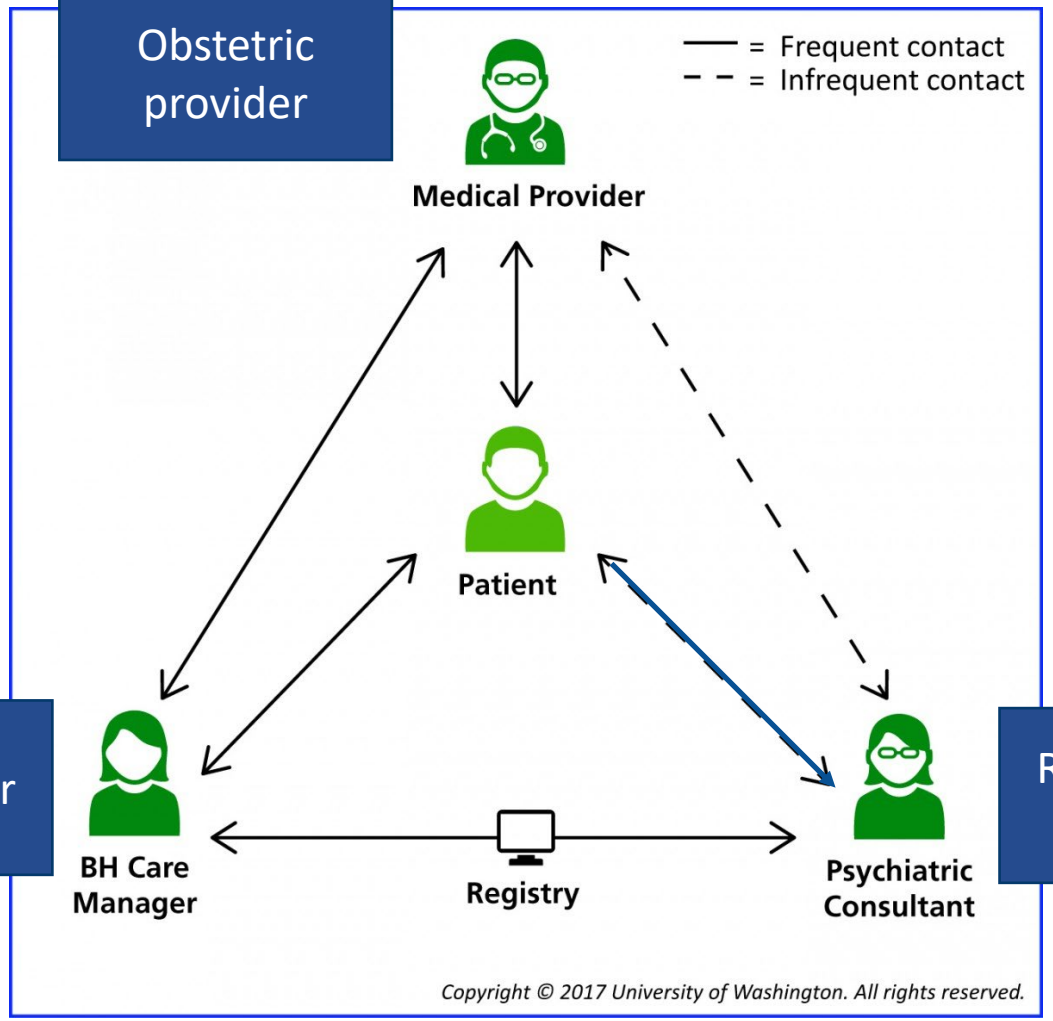


Collaborative Care in Ob-Gyn

- 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.,2022), improve screening, and treatment recommendations (Miller et al., 2021)

Integrated Perinatal Clinic

Obstetric provider

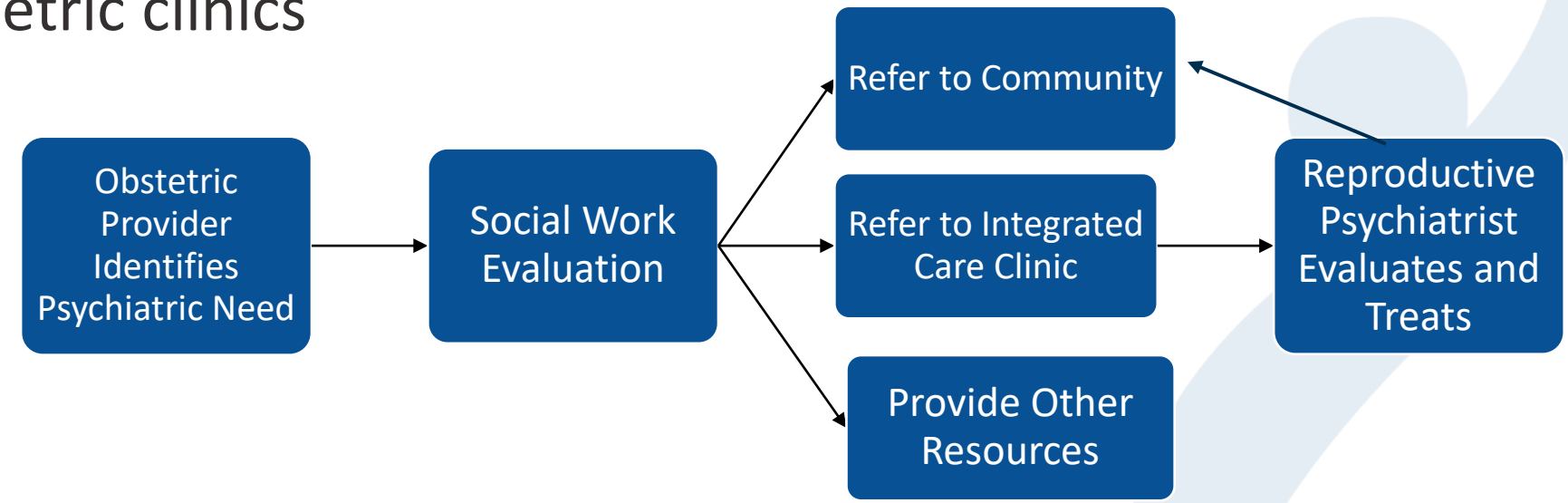


Social worker

Reproductive psychiatrist

Integrated Perinatal Clinic at JHH

- Established in July 2016
- Two obstetric clinics



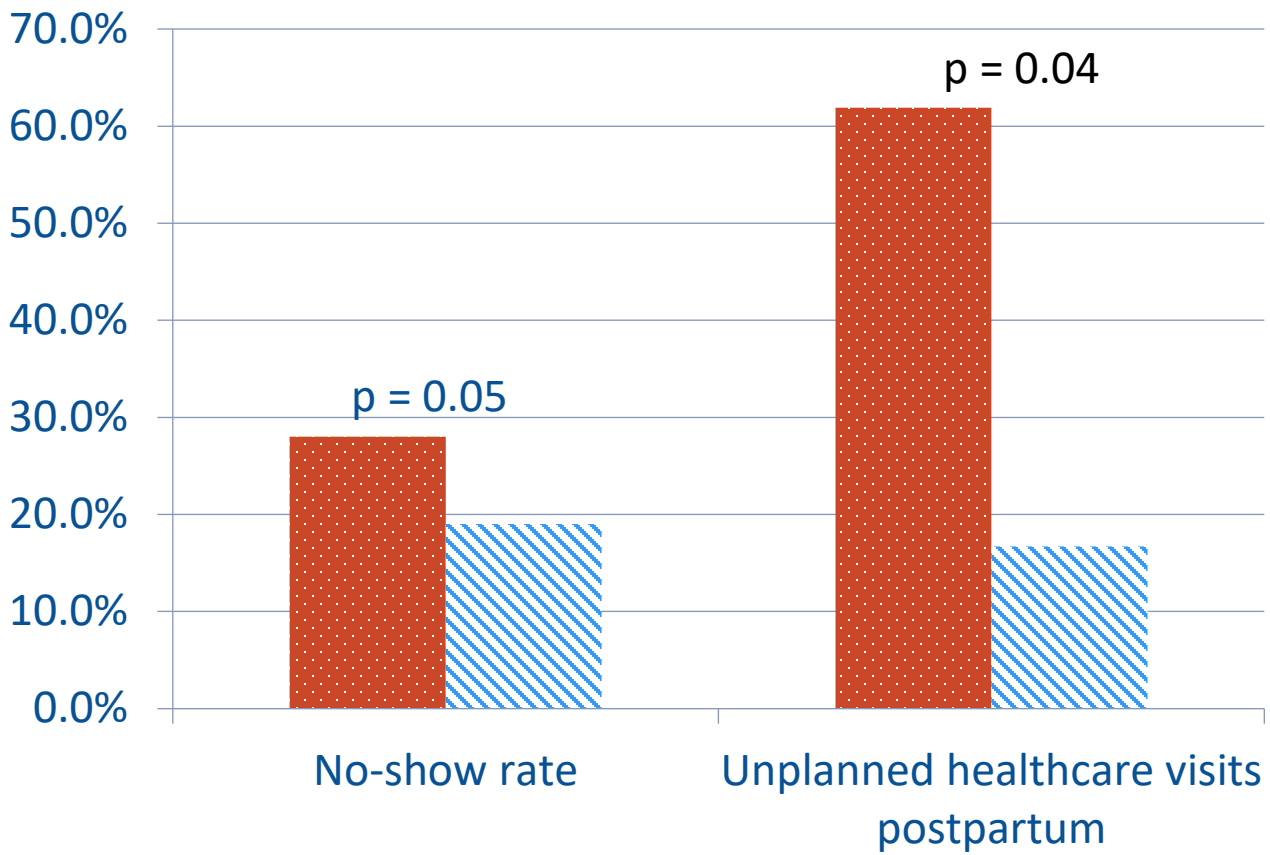
Patient Population (1 of 2)

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

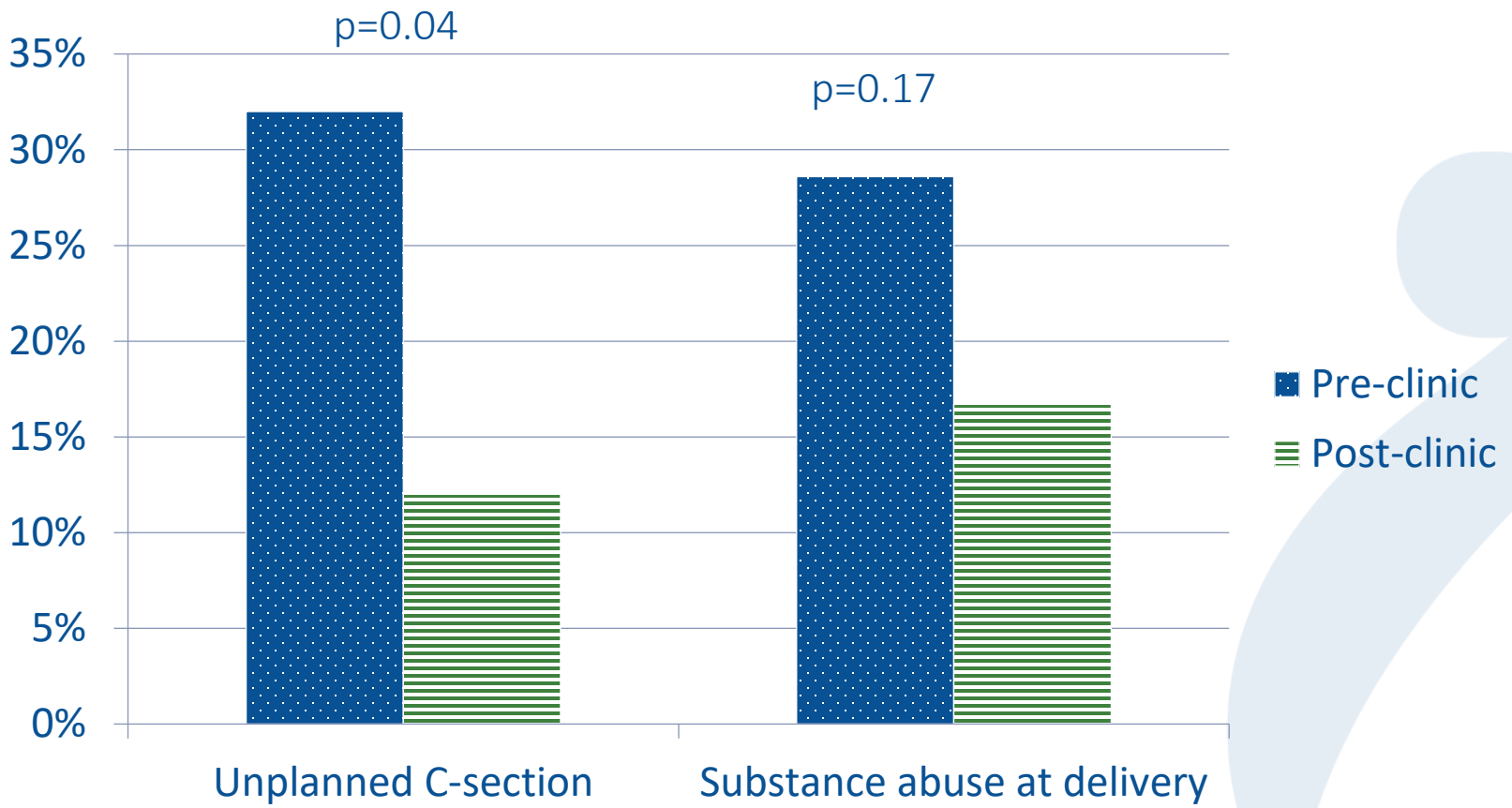
Patient Population (2 of 2)

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

Healthcare Utilization 2016-2018



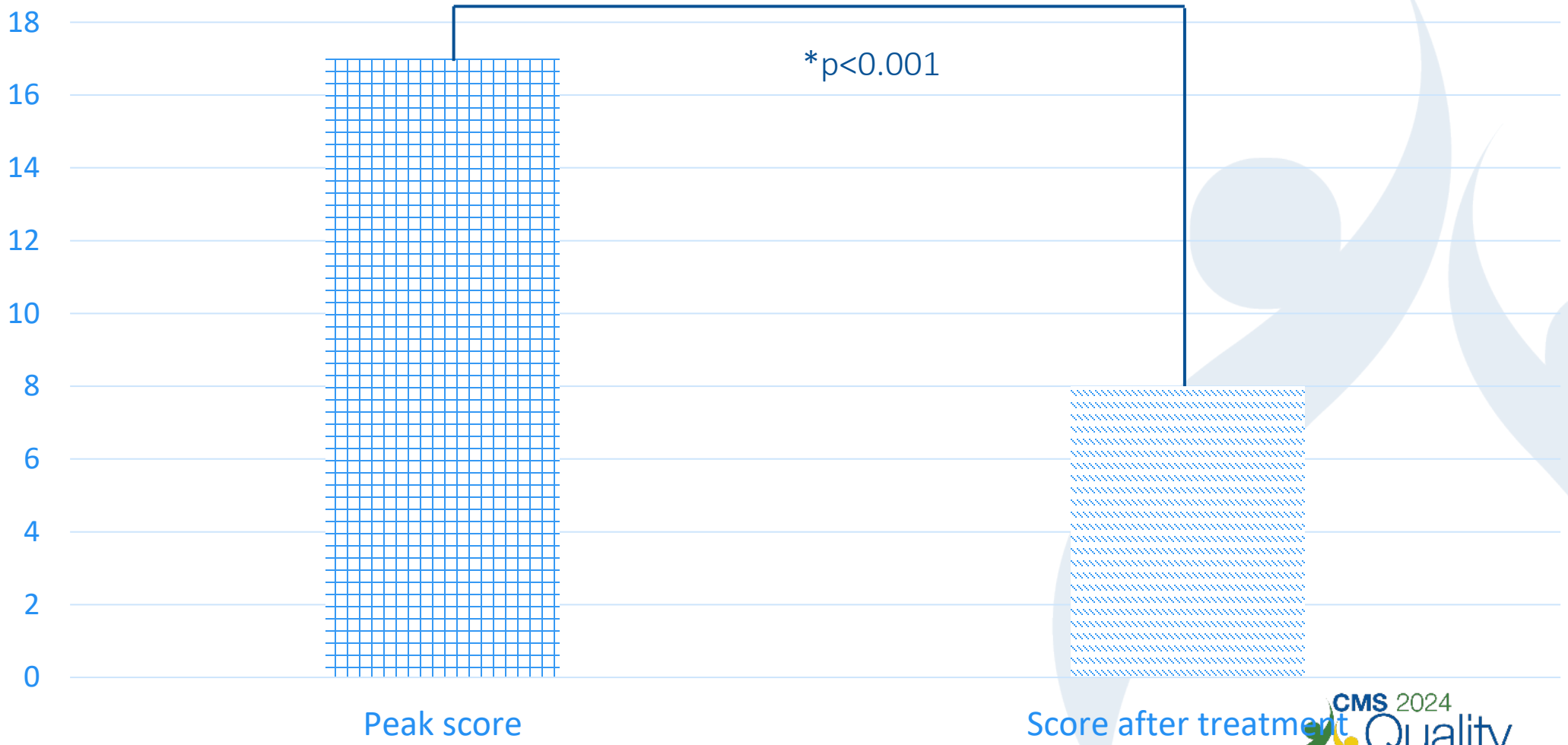
Obstetric Outcomes 2016-2018



Demographics: 2018-2022

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

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



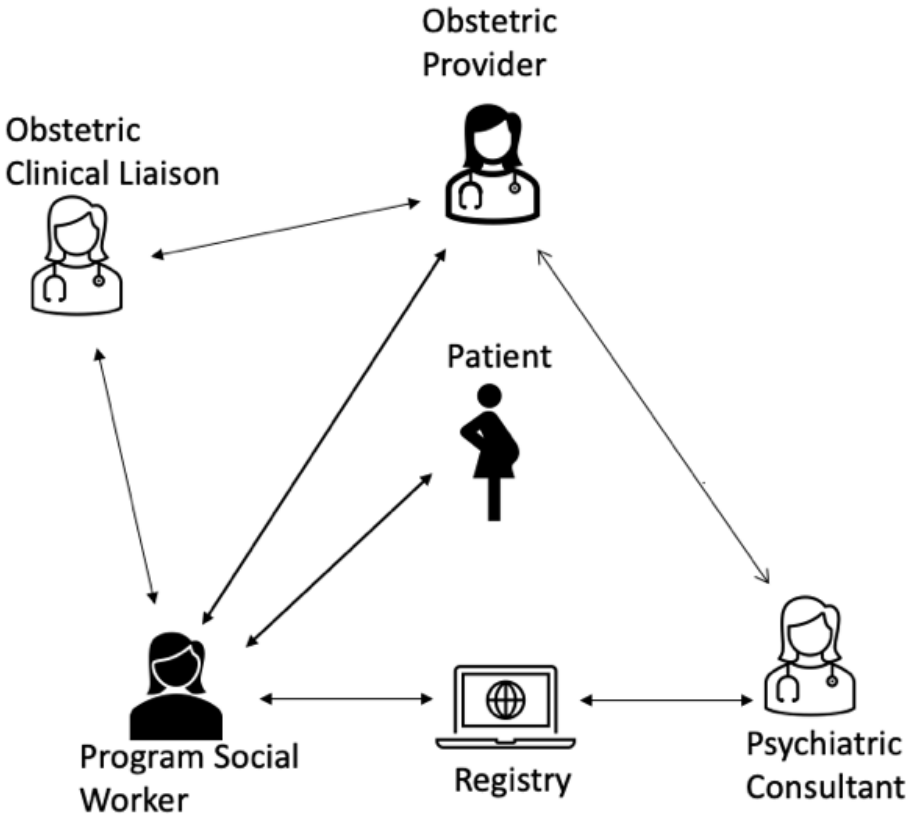
Outcomes

- 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

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