

Improving Health Equity and Reducing Preterm Birth through Group Prenatal Care

June 9, 2017

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Objectives

- Discuss March of Dimes goal of reducing premature birth
- Demonstrate March of Dimes work in health equity promotion
- Discuss evidence behind group prenatal care
- Learn about Supportive Pregnancy Care

March of Dimes mission

to improve the health of babies by preventing premature birth, birth defects, and infant mortality

In particular, March of Dimes has set goals to reduce the preterm birth rate in the U.S. to 8.1% by 2020, and to 5.5% by 2030.

March of Dimes Prematurity Strategic Map for Mobilizing Support: 2016-2020

Achieve Equity and
Demonstrated
Improvements in
Preterm Birth

A

Increase Effective
Use of Evidence-
Informed Clinical
and Public Health
Practice

B

Expand
Discovery and
Accelerate
Translation and
Innovation

C

Align Multi-level
Support to
Improve Health
Equity

D

Develop and
Implement
Messaging,
Policy & Practice
Strategies

E

Secure
the Funding
and Resources
Required for
Success

F

Emphasize the Health of Women and Adolescents

G

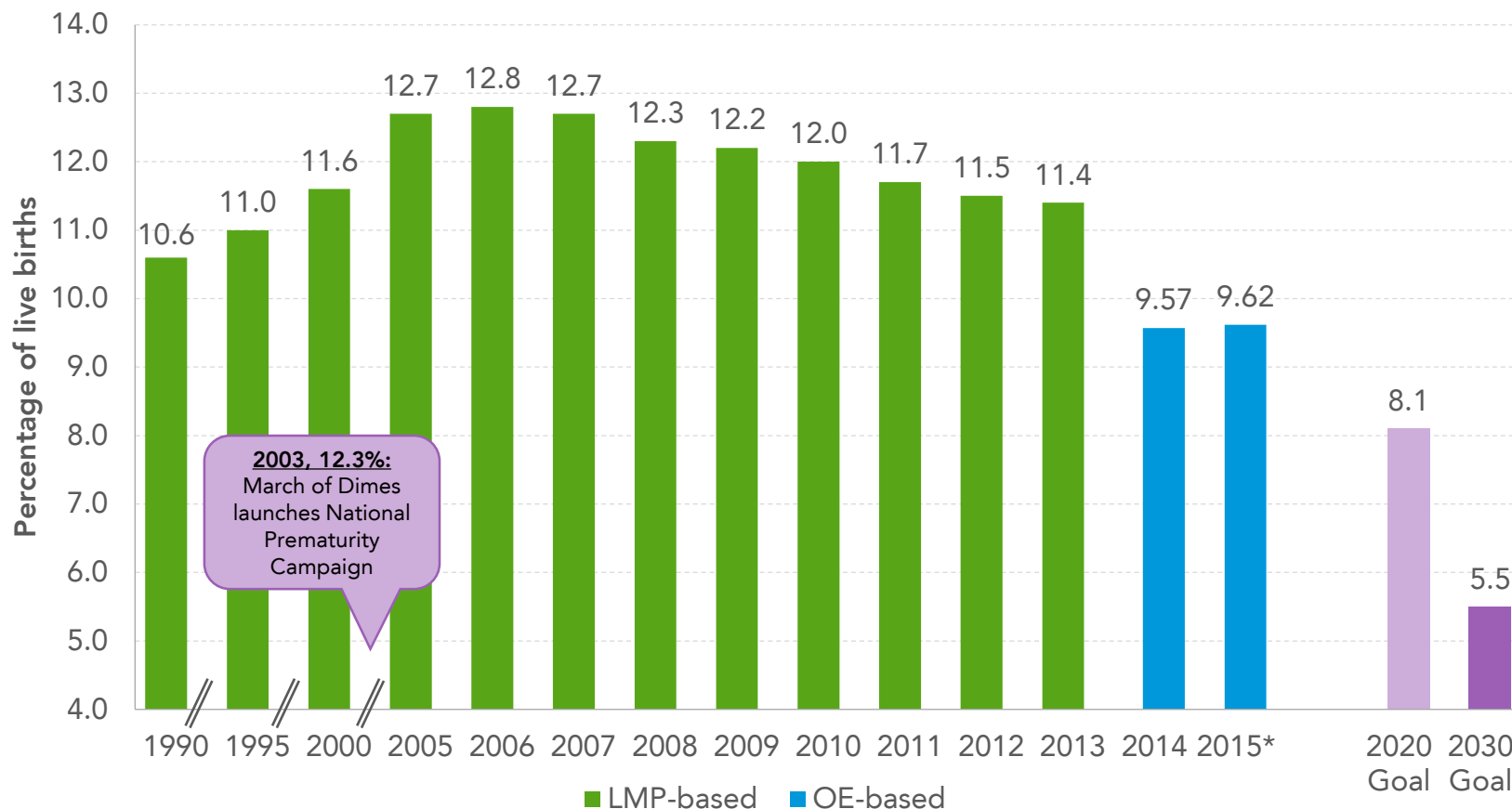
Engage Families, Communities and Other Strategic Partners
Across Sectors Through a Collaborative Infrastructure

H

Optimize the Use of Data and Evaluation
to Drive Learning and Success

Preterm birth rates

United States, 1990, 1995, 2000, 2005-2015*



*2015 data are preliminary.

LMP=gestational age based on date of mother's last menstrual period

OE=gestational age based on obstetric estimate.

2020 and 2030 goals based on OE gestational age.

Preterm is less than 37 weeks gestation.

Source: National Center for Health Statistics, 1990-2014 final and 2015 preliminary natality data.

Prepared by March of Dimes Perinatal Data Center, June 2016.

If the US preterm birth rate had not increased from 2014 to 2015...

- Approximately **2,000 fewer babies** would have been born preterm.
- **More than \$100 million** in medical and societal costs could have been avoided.



*2015 data are preliminary.

Gestational age based on obstetric estimate.

Preterm is less than 37 weeks gestation.

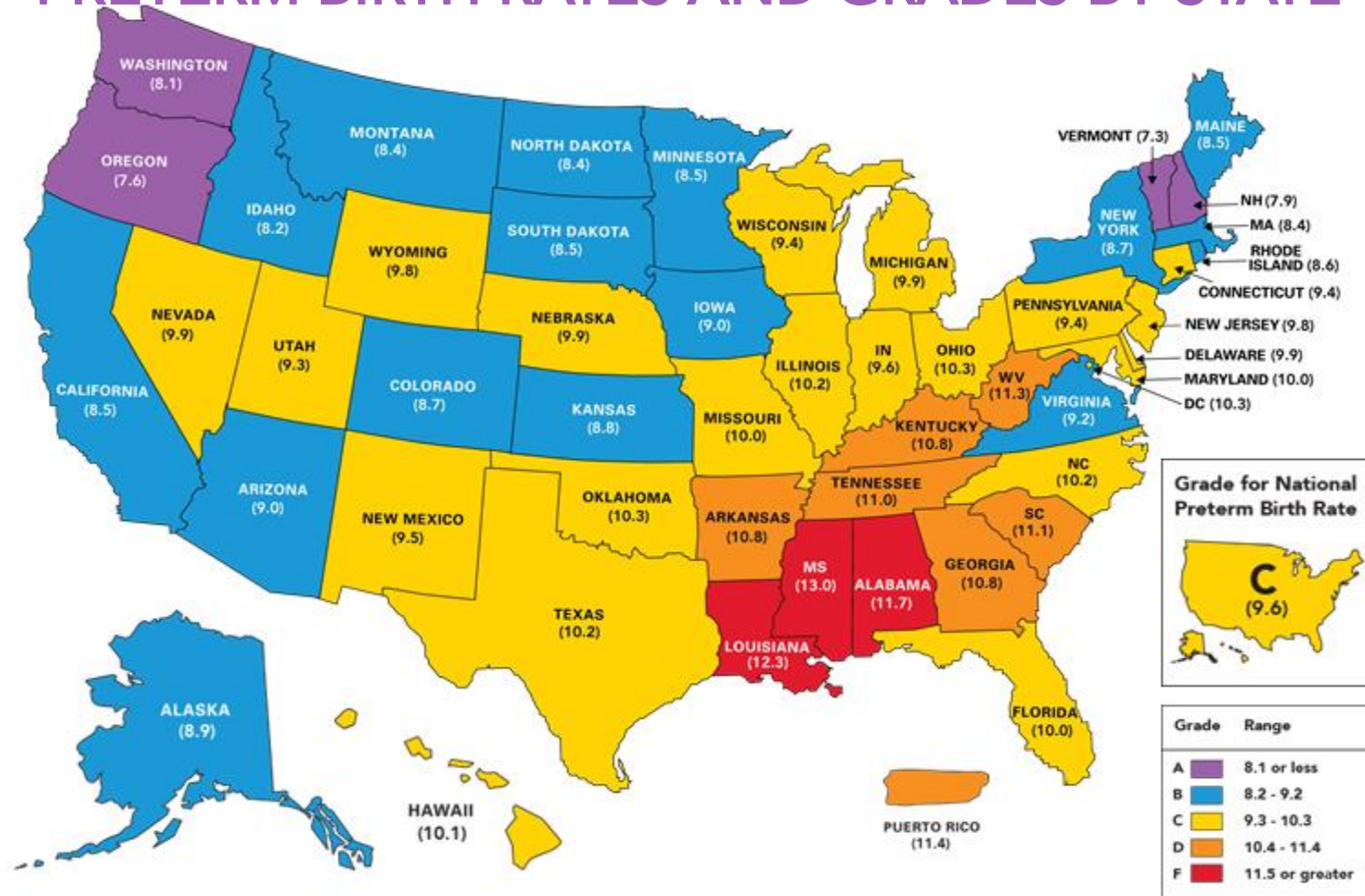
Costs per infant include all employer payments for newborn medical care during the first year of life.

Source: National Center for Health Statistics, 2014 final and 2015 preliminary natality data. Institute of Medicine, CostS of Preterm Birth.

Prepared by March of Dimes Perinatal Data Center, June 2016.

2016 PREMATURE BIRTH REPORT CARD

PRETERM BIRTH RATES AND GRADES BY STATE



Gestational age is based on obstetric estimate.
 Source: National Center for Health Statistics, 2015 natality data..

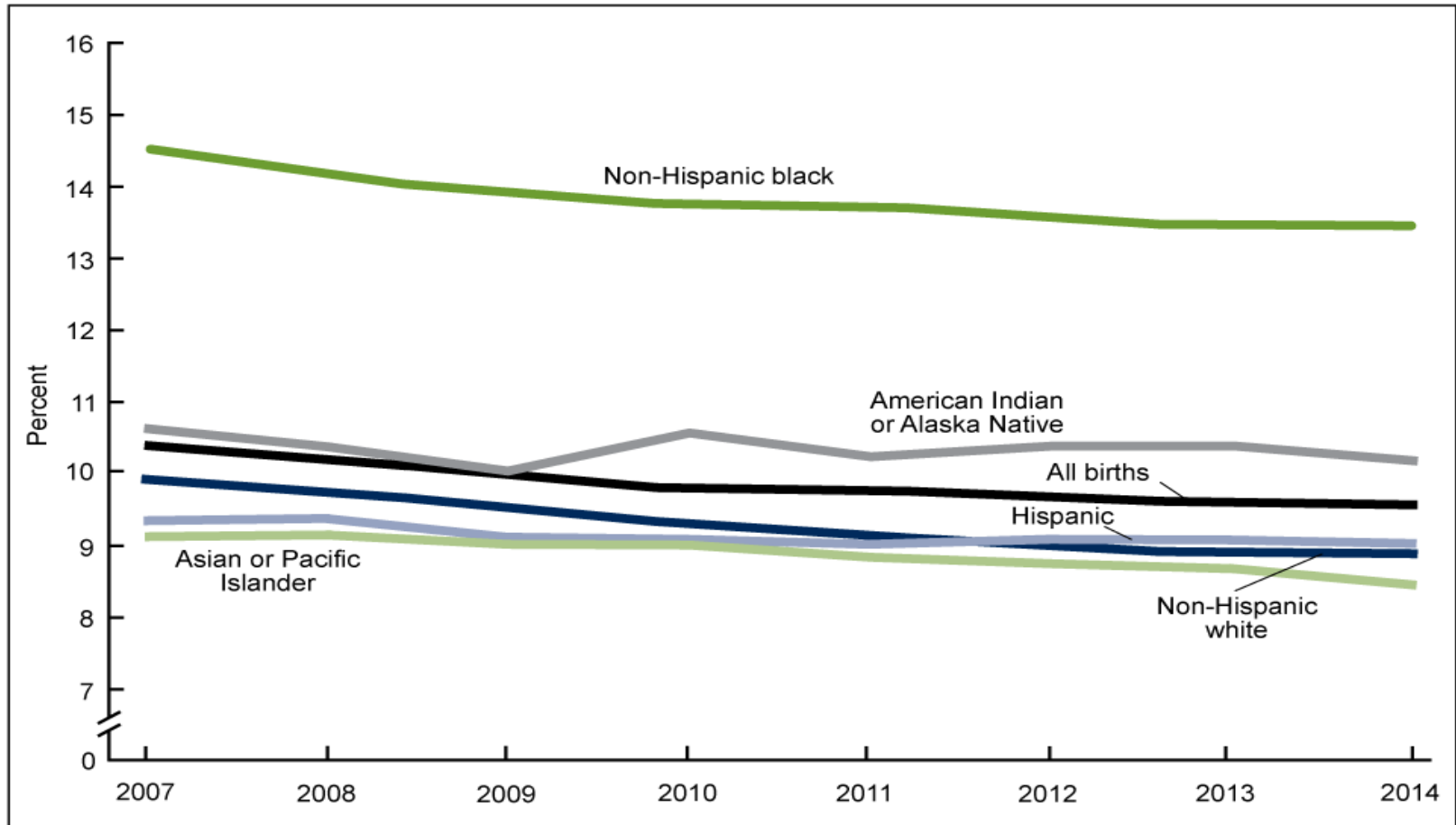
marchofdimes.org/reportcard



A FIGHTING CHANCE FOR EVERY BABY™

Preterm birth rates by race and ethnicity

Figure 4. Preterm birth rates, by race and Hispanic origin of mother: United States, 2007–2014



SOURCE: CDC/NCHS, National Vital Statistics System.

What's working to decrease rates of preterm birth?

Quality improvement efforts aimed at eliminating early elective deliveries

Smoking cessation

Group prenatal care

Progesterone shots to reduce preterm birth recurrence

Low-dose aspirin prophylaxis to reduce pre-eclampsia

Optimizing interpregnancy intervals

Cerclage for short cervix

Reduction in teen pregnancy

Reduction in higher order multiple gestations

What is Group Prenatal Care?

Care is delivered in a group, including all elements of prenatal care and education

Group size varies but optimal size is approximately 8-12 women with a due date in the same month

Initial intake is in an individual visit before entry into a group (~10-12 weeks)

- Nursing and medical history obtained
- Physical assessment and electronic medical record completed
- Lab work drawn

First group usually meets between 12-16 weeks

- Women measure their own weight and blood pressure
- Individual physical assessment done within the group space by the provider

Approach

Ten two-hour sessions cover all elements of prenatal care as outlined by ACOG

Group is run with a facilitated leadership style

Groups are often co-facilitated by:

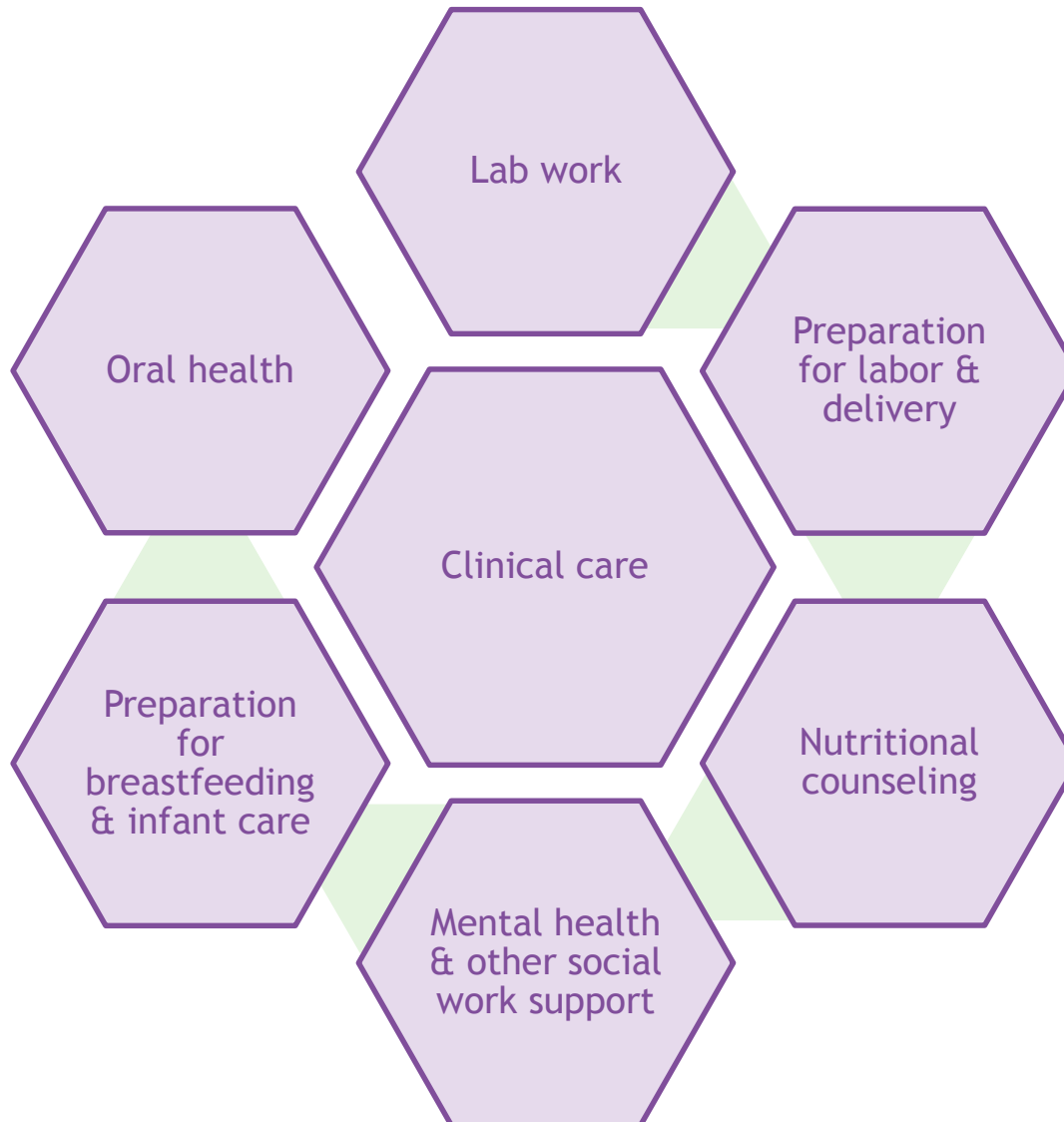
Physician, Certified Nurse Midwife, resident physician

and

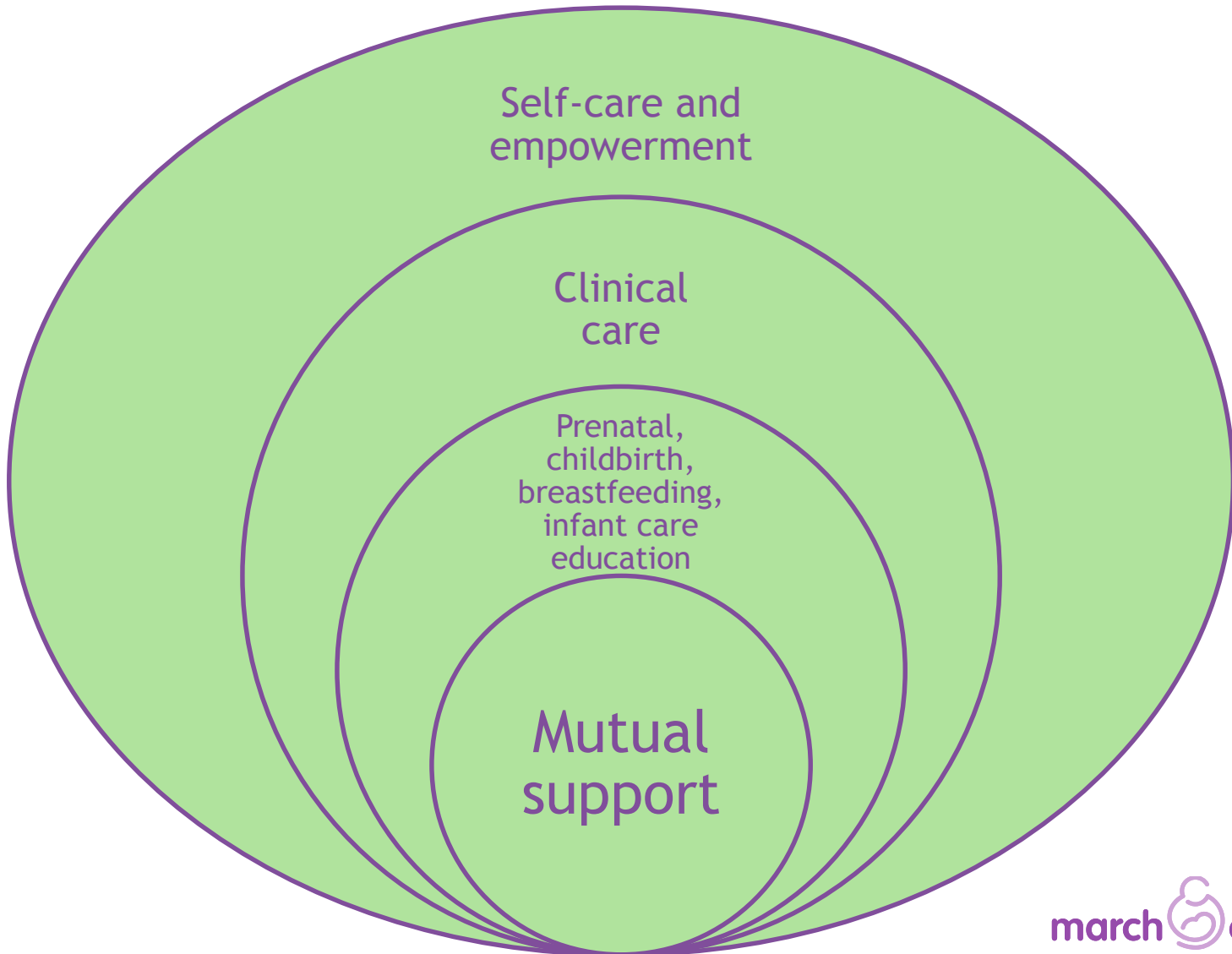
Nurse, health educator, medical assistant, community health worker

Sessions focus on issues of pregnancy, labor and delivery, infant care, and post-partum maternal care

Traditional prenatal care



Group prenatal care



Benefits of Bundling Prenatal Care

CONSUMERS

- More time
- “1-stop shopping”
- Learning/skills
- Community norms
- Support/cohesion
- Better outcomes

PROVIDERS

- Continuity
- Comprehensive
- Improve patient flow, efficiency
- Better outcomes

OVERALL

- Motivation for healthy pregnancy
- Integrate prevention and treatment
- Sustainable
- Financial Benefits

Group Prenatal Care Programs



centeringhealthcare.org

Models developed by
clinics or systems



expect with **me**

moms expecting moms connecting
expectwithme.org

New model:
*March of Dimes
Supportive
Pregnancy Care*

march  of dimes®
A FIGHTING CHANCE FOR EVERY BABY™

We have two goals

Sustainability

Scalability

Evidence behind Group Prenatal Care

Group Prenatal Care and Perinatal Outcomes

A Randomized Controlled Trial

*Jeannette R. Ickovics, PhD, Trace S. Kershaw, PhD, Claire Westdahl, CNM, MPH,
Urania Magriples, MD, Zohar Massey, Heather Reynolds, CNM, MSN,
and Sharon Schindler Rising, CNM, MSN*

(Obstet Gynecol 2007;110:330-9)

Multisite randomized controlled trial

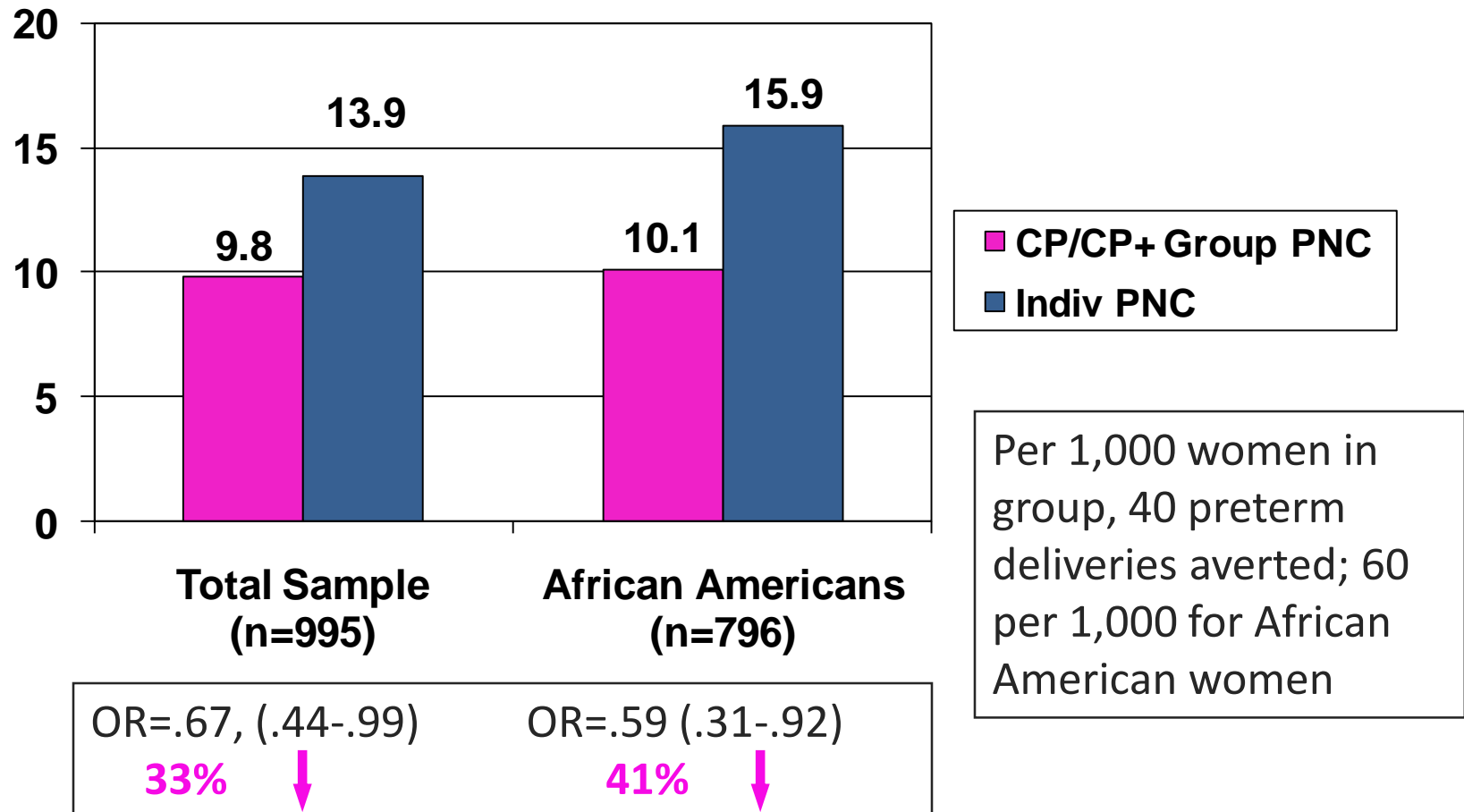
Atlanta, GA (n=546) and New Haven, CT (n= 503)

Young women ages 14-25 years presenting for prenatal care

653 participated in group prenatal care (intervention)

394 participated in individual care (control)

Preterm Delivery



OBSTETRICS

The effect of CenteringPregnancy group prenatal care on preterm birth in a low-income population

Amy H. Picklesimer, MD, MSPH; Deborah Billings, PhD; Nathan Hale, PhD;
Dawn Blackhurst, DrPH; Sarah Covington-Kolb, MSPH, MSW



OBJECTIVE: The purpose of this study was to evaluate the impact of group prenatal care on rates of preterm birth.

STUDY DESIGN: We conducted a retrospective cohort study of 316 women in group prenatal care that was compared with 3767 women in traditional prenatal care. Women self-selected participation in group care.

RESULTS: Risk factors for preterm birth were similar for group prenatal care vs traditional prenatal care: smoking (16.9% vs 20%; $P = .17$), sexually transmitted diseases (15.8% vs 13.7%; $P = .29$), and previous preterm birth (3.2% vs 5.4%; $P = .08$). Preterm delivery (<37 weeks' gestation) was lower in group care than traditional care (7.9% vs

12.7%; $P = .01$), as was delivery at <32 weeks' gestation (1.3% vs 3.1%; $P = .03$). Adjusted odds ratio for preterm birth for participants in group care was 0.53 (95% confidence interval, 0.34–0.81). The racial disparity in preterm birth for black women, relative to white and Hispanic women, was diminished for the women in group care.

CONCLUSION: Among low-risk women, participation in group care improves the rate of preterm birth compared with traditional care, especially among black women. Randomized studies are needed to eliminate selection bias.

Key words: CenteringPregnancy, disparity, prenatal care, preterm birth

Cite this article as: Picklesimer AH, Billings D, Hale N, et al. The effect of CenteringPregnancy group prenatal care on preterm birth in a low-income population. *Am J Obstet Gynecol* 2012;206:415.e1-7.

Table 3. Pregnancy and Psychosocial Outcomes, by Study Condition

	Group Prenatal Care (n=623)	Individual Prenatal Care (n=370)	Statistic	P	OR (95% CI)
Birth outcomes and prenatal care					
Preterm birth	9.8	13.8	$\chi^2=4.01$	.045	0.67 (0.44–0.98)
Gestational age (wk, mean±SD)	39.1±2.8	38.9±2.5	F=0.70	.40	
Low birth weight (less than 2,500 g)	11.3	10.7	$\chi^2=0.03$	.90	0.98 (0.64–1.50)
Birth weight (g, mean±SD)	3,160.6±626.3	3,111.8±636.8	F=1.40	.24	
Small for gestational age	14.3	15.1	$\chi^2=0.67$	.42	0.86 (0.59–1.24)
Fetal demise	1.3	2.2	$\chi^2=1.34$	.25	0.55 (0.20–1.50)
Less than adequate PNC (based on Kotelchuck Index)	26.6	33.0	$\chi^2=6.49$	.01	0.68 (0.50–0.91)
Neonatal outcomes					
Apgar, 5 minutes [mean±SD (median)]	8.8±1.1 (9)	8.8±1.0 (9)	F=0.60	.44	
Admitted to NICU	8.5	7.8	$\chi^2=0.07$	.80	1.06 (0.66–1.72)
Breastfeeding initiation*	66.5	54.6	$\chi^2=12.5$	.001	1.73 (1.28–2.35)
Psychosocial outcomes (mean±SD)					
Prenatal knowledge	41.1±7.3	38.5±6.8	F=27.08	<.001	
Prenatal distress	12.43±7.0	12.93±7.1	F=1.96	.16	
Readiness for labor and delivery	76.2±30.6	68.6±33.2	F=12.77	<.001	
Readiness for infant care	90.0±21.9	86.9±26.0	F=3.68	.056	
Satisfaction with prenatal care	113.3±13.3	108.4±14.4	F=27.16	<.001	

OR, odds ratio; CI, confidence interval; SD, standard deviation; PNC, prenatal care; NICU, neonatal intensive care unit.

Data are expressed as percentages except where otherwise indicated.

All analyses controlled for factors that were different by study condition ($P<.10$) despite randomization (race, age, prenatal distress, history of preterm birth) and clinical risk factors strongly associated with birth outcomes (smoking, prior miscarriage, or stillbirth). Analyses for continuous variables were conducted with analysis of covariance, and analyses for dichotomous variables were conducted with logistic regression with covariates.

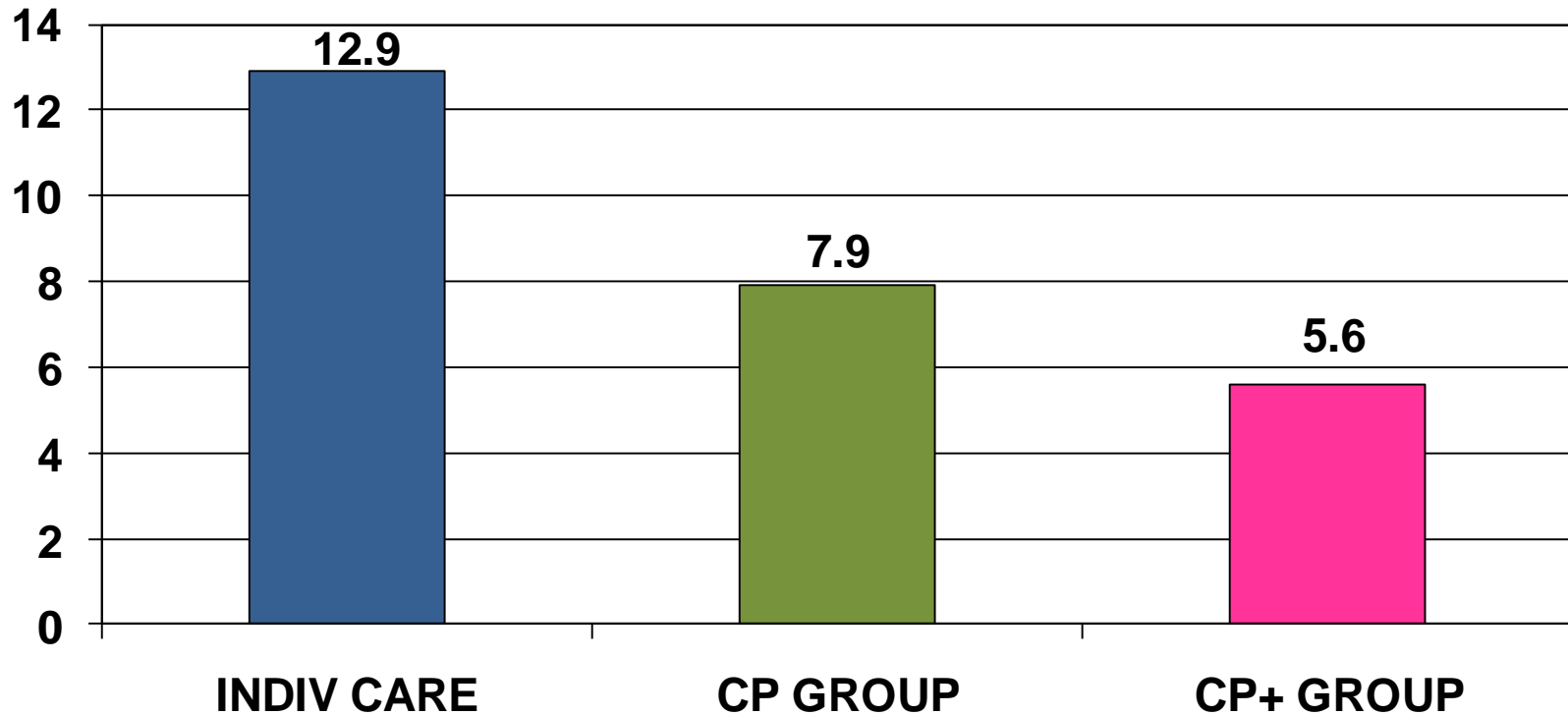
* At 6-month postpartum interview (n=783).

Ickovics et al, *Obs & Gyn* 2007;110:330-339.

Pregnancy as a Window of Opportunity for HIV Prevention: Effects of an HIV Intervention Delivered Within Prenatal Care

| Trace S. Kershaw, PhD, Urania Magriples, MD, Claire Westdahl, CNM, MPH, Sharon Schindler Rising, CNM, MSN, and Jeannette Ickovics, PhD

Rapid Repeat Pregnancy: 6 Months Post Partum



OR = 0.49 (.27-.91), p=.02

OBSTETRICS

The impact of group prenatal care on pregnancy and postpartum weight trajectories

Urania Magriples, MD; Marcella H. Boynton, PhD; Trace S. Kershaw, PhD; Jessica Lewis, LMFT; Sharon Schindler Rising, CNM, MSN; Jonathan N. Tobin, PhD; Elissa Epel, PhD; Jeannette R. Ickovics, PhD

14 Community Health Centers/Hospitals
New York City

Young women ages 14-21 years presenting for prenatal care
495 participated in group prenatal care (intervention)
489 participated in individual care (control)



FIGURE 1

Weight change over time by intervention condition and obese group status

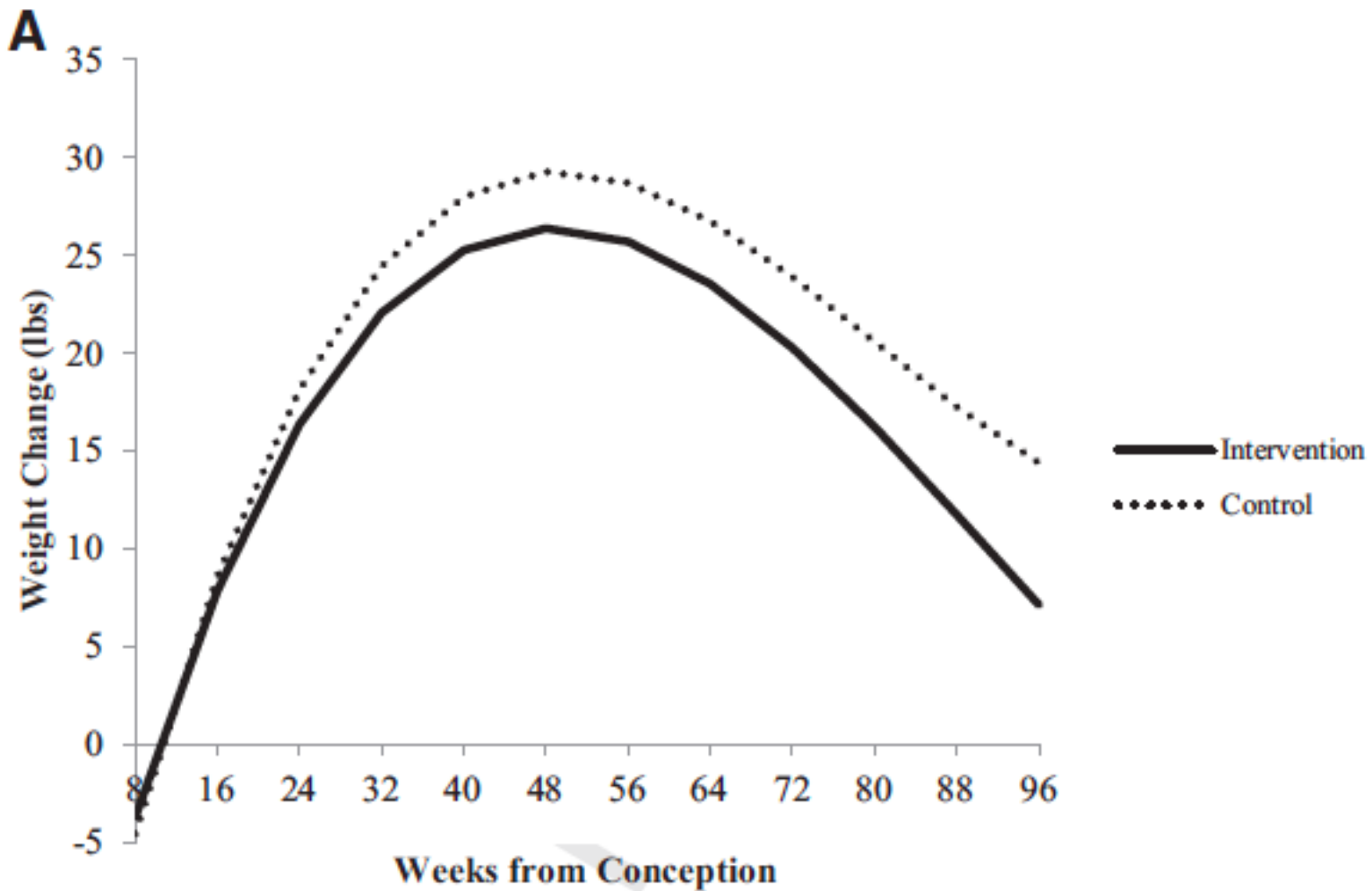
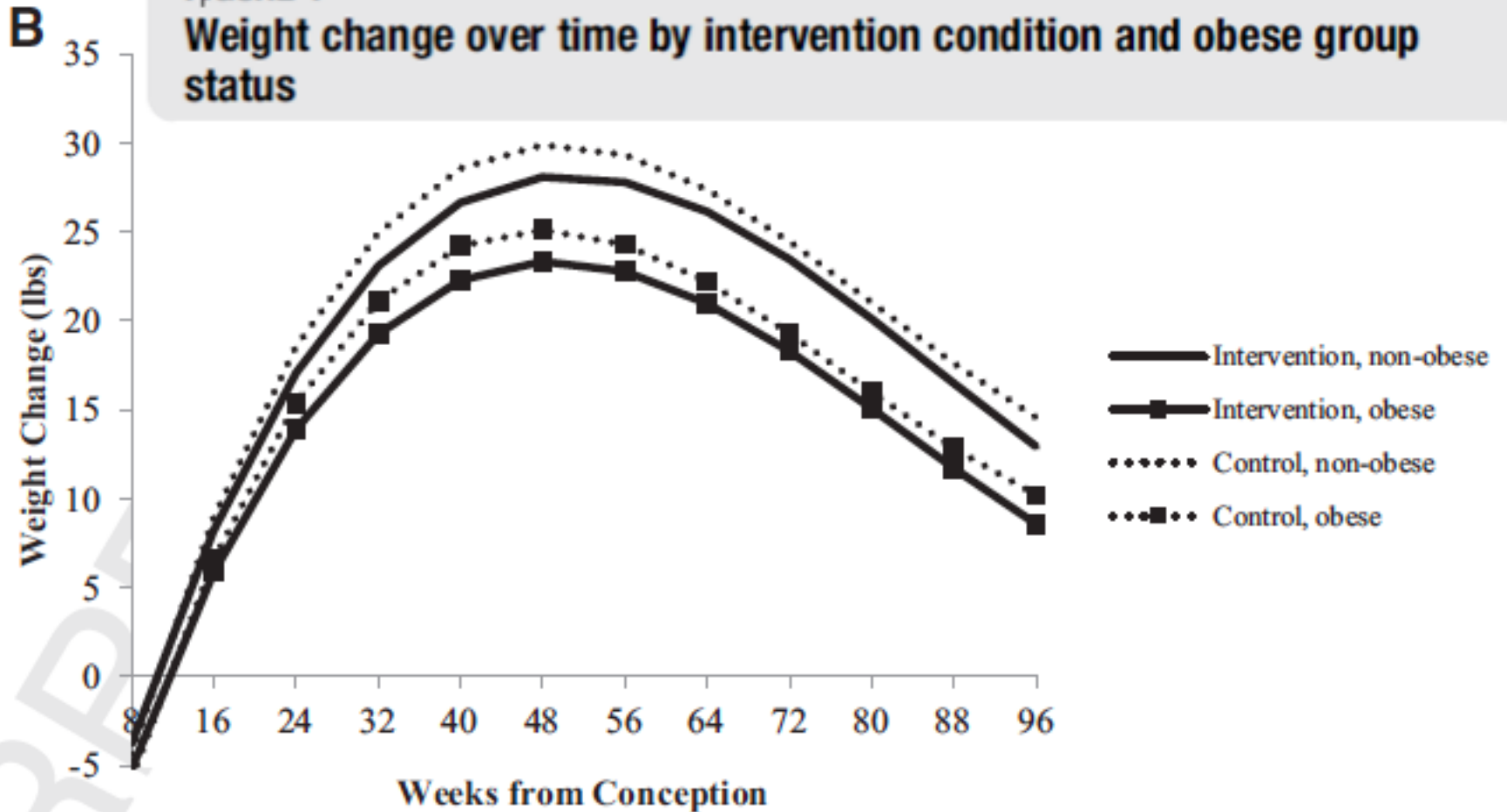


FIGURE 1

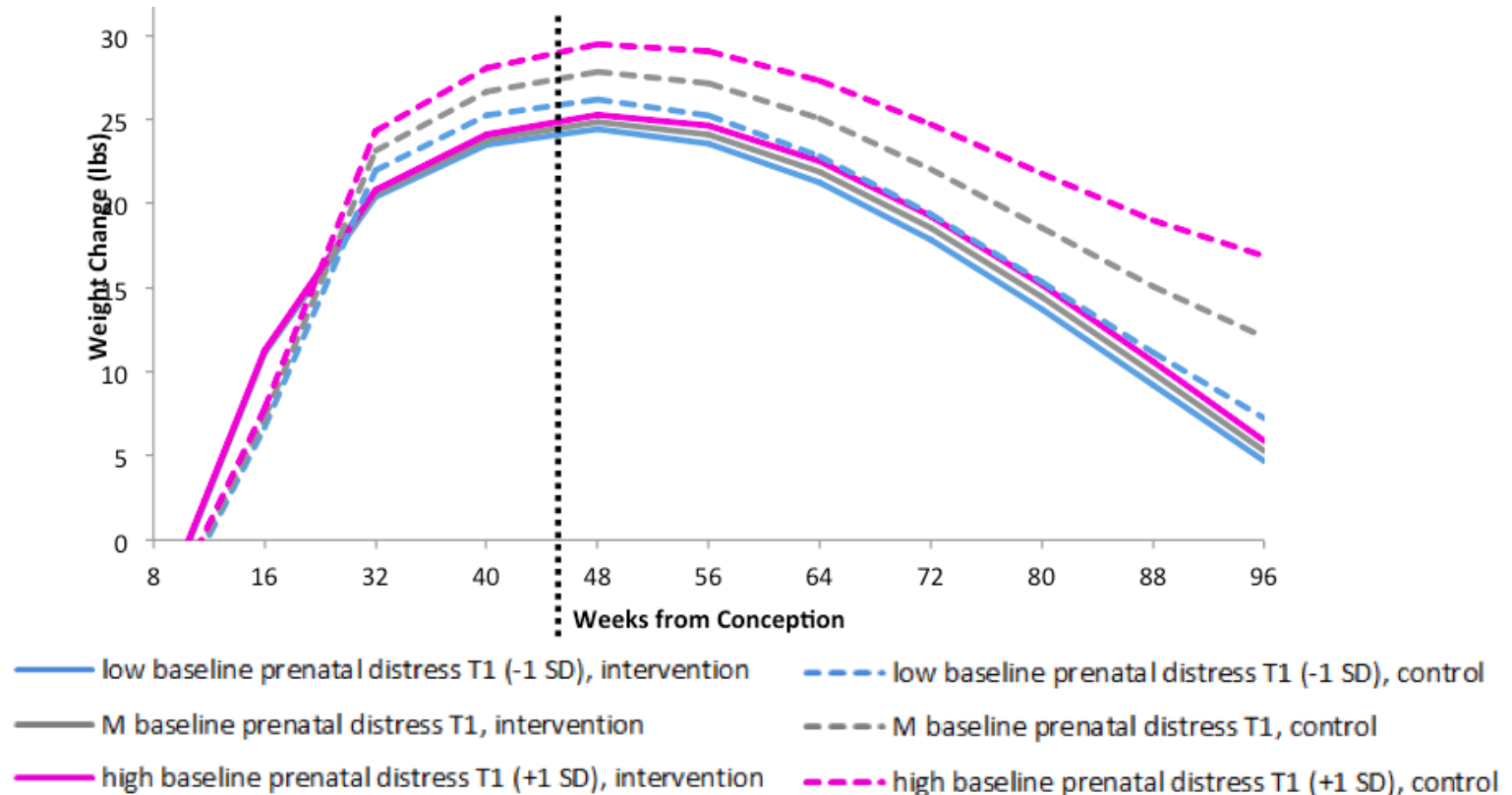
Weight change over time by intervention condition and obese group status



A, Weight change over time as predicted by intervention condition. **B**, Weight change over time as predicted by intervention condition \times obese group status.

Magriples. Weight trajectories in pregnancy and postpartum. *Am J Obstet Gynecol* 2015.

Weight change by intervention group and prenatal distress



** Group prenatal care appears to protect against weight gain and post partum weight retention, especially in women with higher prenatal distress.

Magriples et al. AJOG 2015.

RESEARCH ARTICLE

Open Access

Getting more than they realized they needed: a qualitative study of women's experience of group prenatal care

Deborah A McNeil^{1,2*}, Monica Vekved^{1,3}, Siobhan M Dolan⁴, Jodi Siever¹, Sarah Horn^{1,3} and Suzanne C Tough^{3,5}

Qualitative research - interviews with women and providers

Carried out in Calgary, Alberta, Canada

Group prenatal care was implemented to address high rates of adverse perinatal outcomes in certain regions of the city

Getting more in one place at one time

“Usually at the doctor’s office you have to wait ... like an hour ... so this is only two hours and you’re done ... it’s not so much more time that I’m spending, but I’m gaining more than just a doctor’s visit.”

(31 year old first-time mother)

“If I were to just go to the doctor, I wouldn’t think to ask about something that hasn’t happened.

... you get people who aren’t afraid to ask questions, so it makes you feel more comfortable.”

(27 year old first-time mother)

Not Feeling Alone in the Experience

It helped me to “feel normal like I’m not the only one.

It helped a lot to talk to people and ... oh you have this happen too? Or you feel this way too? So ... to identify with ... the people there. It was very good for me.”

(31 year old first-time mother)

In Summary: Group Prenatal Care...

Evidence-based intervention

Data supports:

- Reduction in preterm birth & rapid repeat pregnancy
- Improved psychosocial outcomes including readiness for labor & delivery
- Greater satisfaction with care
- Appropriate weight gain

May act through enhanced interaction with provider,
increased social support and empowerment



Review

Group Prenatal Care Compared With Traditional Prenatal Care

A Systematic Review and Meta-analysis

Ebony B. Carter, MD, MPH, Lorene A. Temming, MD, Jennifer Akin, BA, Susan Fowler, MLIS, George A. Macones, MD, MSCI, Graham A. Colditz, MD, DrPH, and Methodius G. Tuuli, MD, MPH

OBJECTIVE: To estimate the effect of group prenatal care on perinatal prenatal care.

DATA SOURCES: PubMed, EMBASE, and Allied Health

Systematic Reviews, the Database of Abstracts of Reviews of Effects, the Cochrane Central Register of Controlled Trials, and ClinicalTrials.gov.

METHODS OF STUDY SELECTION: We searched electronic databases for randomized controlled trials and observational studies comparing group care with traditional prenatal care. The primary outcome was preterm birth. Secondary outcomes were low birth weight, neonatal

with 9.3%, pooled RR 0.87, 95% confidence interval [CI]

Improved preterm birth rates in African American women

a decreased : pooled rate ditional care; among ran- % group care

compared with 6.7% traditional care, pooled RR 0.92, 95% CI 0.73–1.16). There were no significant differences in neonatal intensive care unit admission or breastfeeding initiation.

CONCLUSION: Available data suggest that women who participate in group care have similar rates of preterm birth, neonatal intensive care unit admission, and breastfeeding. (*Obstet Gynecol* 2016;128:551–61)

Discussion:

4 Randomized Control Trials and 10 Observational studies included in the meta-analysis:

- Observational studies are at high risk for selection bias & confounding
- Results suggest improved preterm birth rates in African American women participating in group care
- No evidence that group prenatal care causes harm
- Group prenatal care warrants further study

Cost Savings of Group Prenatal Care

Group Prenatal Care – Sample Savings Opportunity

Group prenatal care has the potential to produce significant savings particularly for those groups with significant lifestyle risks. Below are preliminary savings estimates derived from generally available employer and government health care program data¹:

Savings Category	Savings per Birth
Primary: Reduced NICU Days	\$835
Secondary:	
Reduced C-Sections	\$ 45
Avoided 1 st year of life costs	\$ 15
Reduced STI	\$ 5
Reduced repeat pregnancy	\$ 45
Improvements to well baby care	\$ 35
Incremental Physician Visits (cost)	\$(90)
Total Net Savings	\$890

1- Includes preliminary results from Yale study in NY Medicaid market (published in Ickovics et al. Cluster Randomized Controlled Trial of Group Prenatal Care: Perinatal Outcomes Among Adolescents in New York City Health Centers. Am J Public Health. 2016;106: 359–365)



Savings Achieved With Better Outcomes by Medicaid Prenatal Participation in Centering

Sarah Gareau, DrPH
Tammy Cummings, PhD
Elizabeth Crouch, PhD
Amy Picklesimer, MD, MSPH
Ana Lòpez-DeFede, PhD

April 2016



**Medicaid Policy
Research**

University of South Carolina
Institute for Families in Society

Costs of Adverse Birth Outcomes

OUTCOME		Cost Per Infant [†]	
		Three Year Average of Charges	Cost-to-Charge Ratio Applied
Very Low/ Low Birth Weight	Mean	\$118,635	\$35,591
	Median	\$54,297	\$16,289
Prematurity With Major Problems	Mean	\$84,811	\$25,443
	Median	\$54,297	\$16,289
Prematurity Without Major Problems	Mean	\$20,955	\$6287
	Median	\$5274	\$1582
NICU Visit	Mean		\$25,253*

* NICU Cost per Infant was calculated directly from claims data, thus no cost-to-charge ratio need be applied.

† Cost per Infant dollar amounts were rounded to whole numbers.



Results

For every **30 patients** who are treated with Centering, there is **\$69,779** in cost savings due to the prevention of poor birth outcomes:

- one NICU visit (\$25,253)
- one preterm birth (\$8,935)
- one very low to low birth weight baby, (\$35,591)



Cost Analysis

Matern Child Health J (2016) 20:1–10
DOI 10.1007/s10995-015-1802-2



NOTES FROM THE FIELD

Group Prenatal Care: A Financial Perspective

Rebecca A. Rowley¹ · Lindsay E. Phillips² · Lisa O'Dell³ · Racha El Husseini⁵ · Sarah Carpino⁴ · Scott Hartman²

Published online: 31 July 2015
© Springer Science+Business Media New York 2015

Abstract

Introduction Multiple studies have demonstrated improved perinatal outcomes for group prenatal care (GPC) when compared to traditional prenatal care. Benefits of GPC include lower rates of prematurity and low birth weight, fewer cesarean deliveries, improved breastfeeding outcomes and improved maternal satisfaction with care. However, the

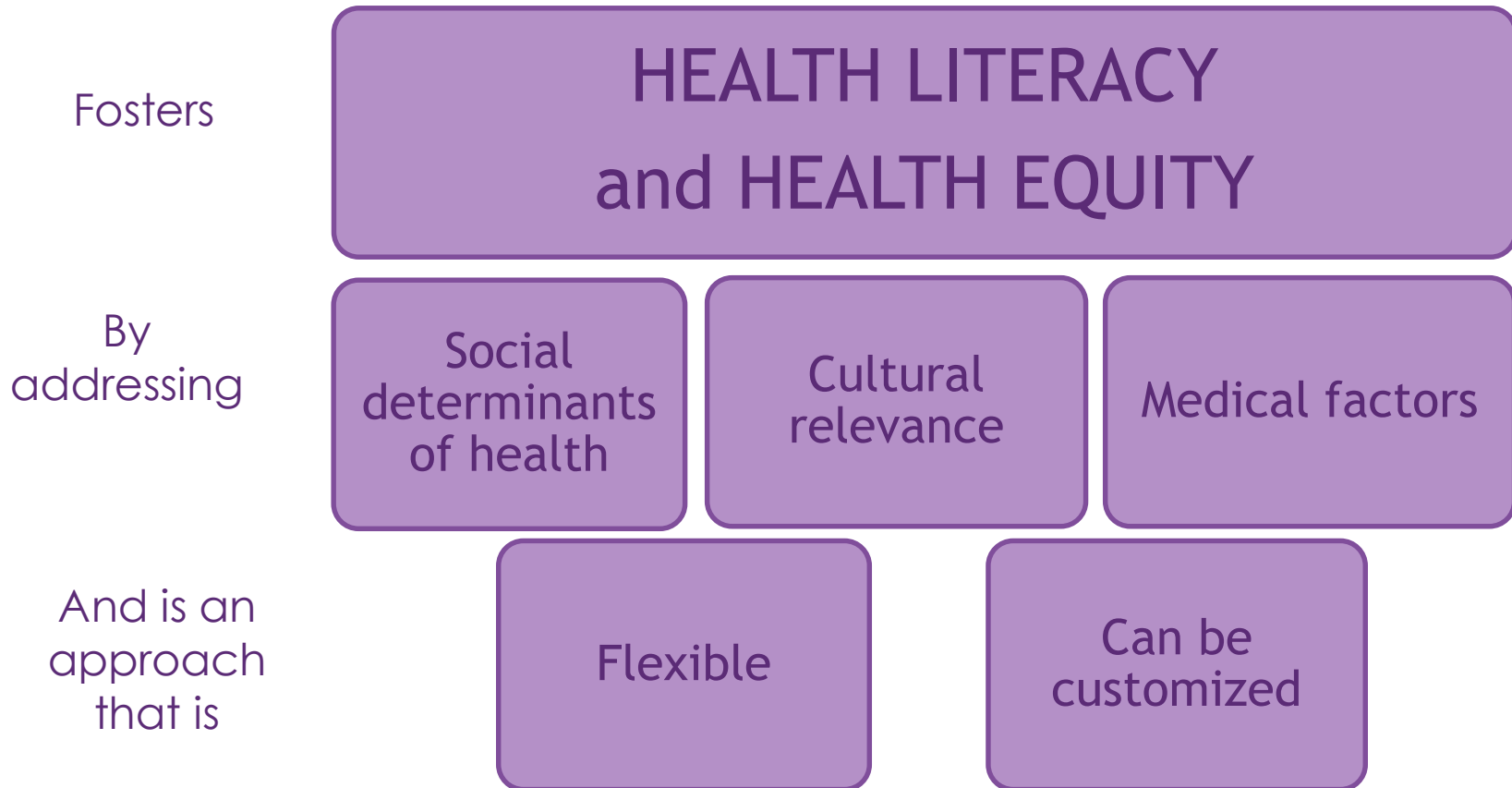
groups with various numbers of participants based on numerous variables, including patient population, payor mix, patient show rates, staffing mix, supply usage and overhead costs. The model was developed for use in an urban underserved practice.

Results Adjusted revenue per pregnancy in this model was found to be \$989.93 for traditional care and \$1080.69

Introducing

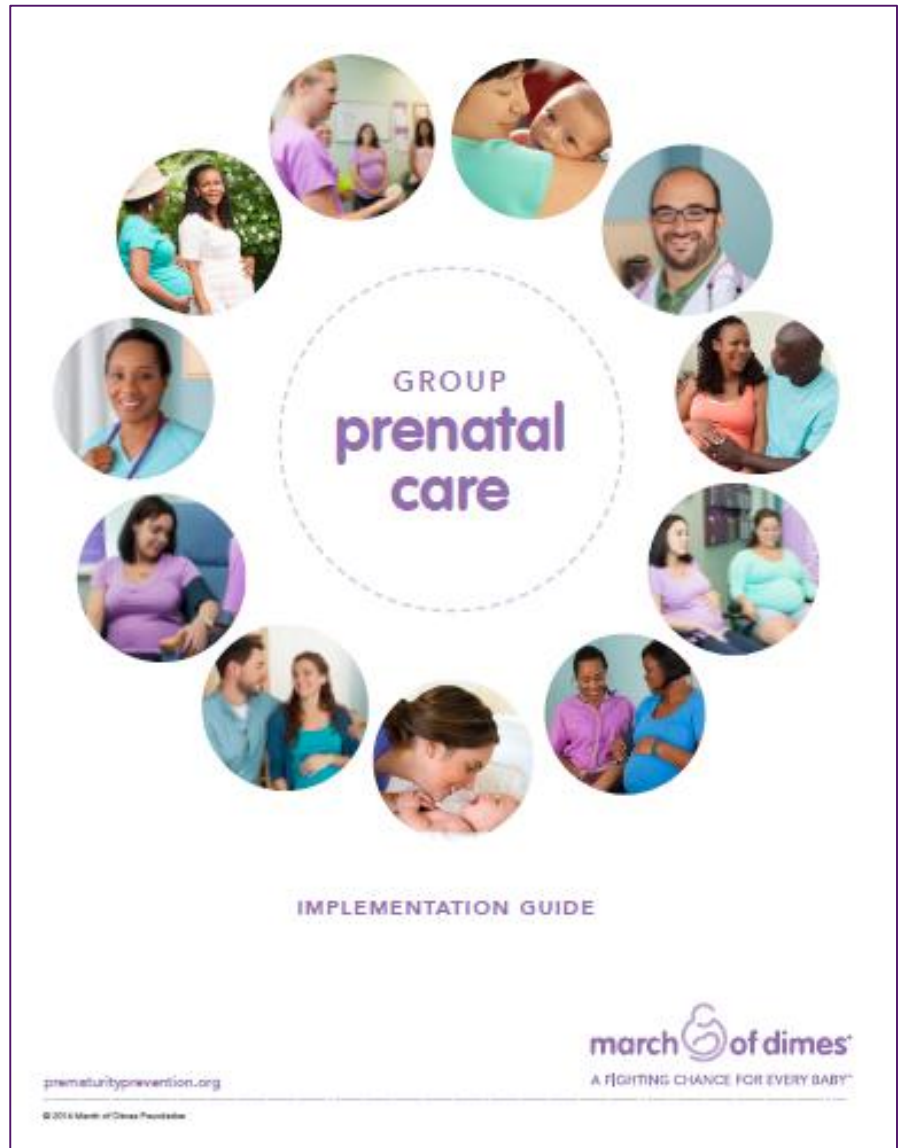
March of Dimes
Supportive
Pregnancy Care

Conceptual framework for model



Program Assets

Implementation Guide



Module Outlines for Sessions



Pilot Study

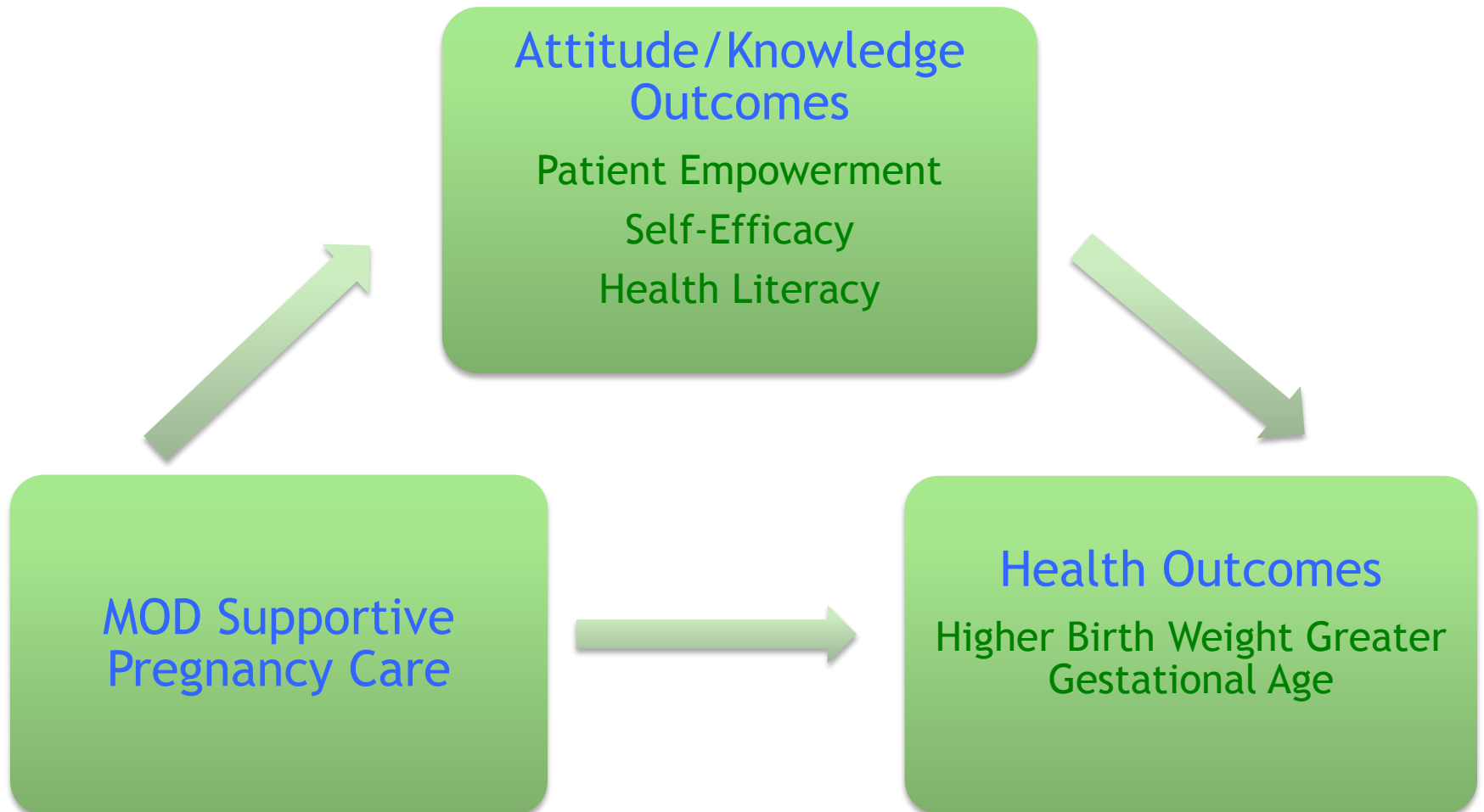
Supportive Pregnancy Care Pilots in Tennessee

- Funded by UnitedHealth Group and State of Tennessee, Department of Health
- Evaluation by Peabody Research Institute at Vanderbilt University
- Pilot runs November 2016 – June 2018
- First groups of women started in February

Partner	Location	Site Setting	Population Served
Cherokee Health Systems	Knoxville	FQHC, urban, medical home with fully integrated behavioral health	31% Caucasian 32% private insurance 48% Medicaid 20% uninsured
Cherokee Health Systems	Talbott	FQHC, rural	95% Hispanic and non-English speaking Predominantly Medicaid
Hollywood Primary Healthcare/Regional One	Memphis	Safety net clinic	78% African-American 10% multiracial 7% Caucasian 95% Medicaid
Meharry Medical College	Nashville	HBCU, urban, safety net hospital	Vast majority of patients is African-American or Hispanic
State of Franklin Healthcare Associates	Johnson City/Tri-Cities	Physician-owned private practice	97% white 55% private insurance 45% Medicaid
UT Knoxville	Knoxville	Teaching hospital, urban	14% private insurance 83% Medicaid
Vanderbilt University Medical Center	Nashville	Teaching Hospital, urban	Majority of patients are privately insured or covered under VU employee insurance 37% Medicaid

Data Analysis Overview

Conduct a mediation analysis testing the hypothesized relationships depicted in the following figure:



Research and Evaluation Overview

From the pilot sites PRI will identify treatment and comparison groups.

Treatment Group

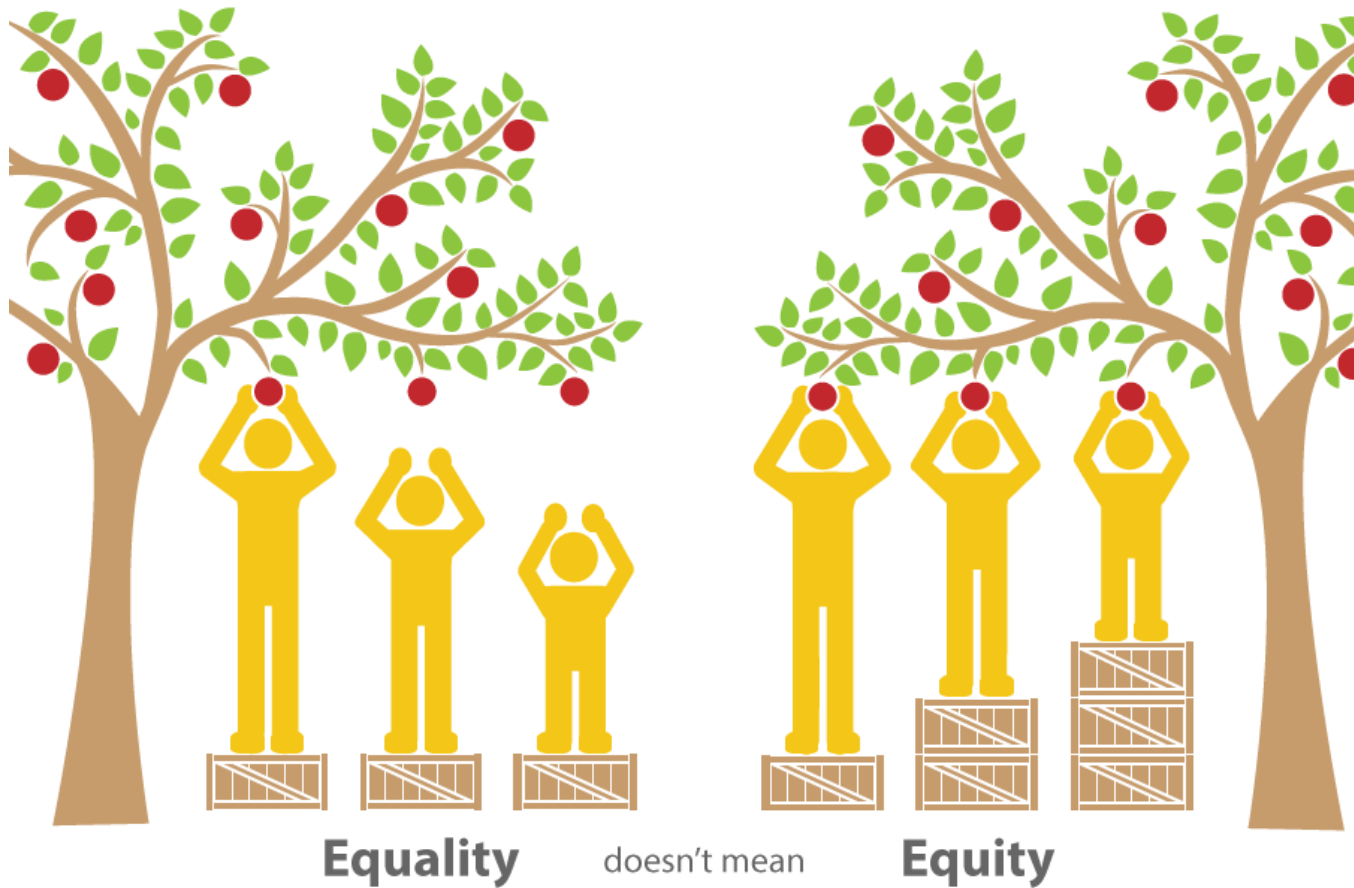
- Women who participate in Supportive Pregnancy Care.
- Women can “self-select” into treatment. Participating health care providers may refer any eligible patient to the treatment group.

Comparison Group

- Women who participate in traditional (i.e., individual) prenatal care at one of the pilot sites.
- PRI will use propensity score matching to identify a sample of women who are “matched” to the women in the treatment group.

PRI will conduct power analysis to determine sample sizes needed for minimal detectable effect sizes for key outcomes of interest.

Conclusion



Group Prenatal Care Short Film