

Group Prenatal Care





Evidence Review Findings: Effective / Roadmap Strategy

Participation in group prenatal care increases the likelihood that mothers receive adequate prenatal care and improves mothers' physical and emotional health. Impacts on healthy and equitable birth outcomes and optimal child health and development are less conclusive. Because group prenatal care has not been rigorously studied as a statewide intervention, the evidence cannot provide clear guidance on the most effective way to implement this model of care at the state level.

Prenatal care generally refers to individual patient care received from one obstetric care provider during an individual's pregnancy. Group prenatal care (GPNC) is an alternative model of care facilitated by a trained health care provider and delivered in a group setting, integrating health assessments, education, skill building, and peer support. GPNC provides pregnant women (typically with low-risk pregnancies not requiring individual monitoring) with approximately 20 hours of prenatal care over the course of their pregnancies, compared to approximately 2 hours in traditional individual care. CenteringPregnancy, created by the Centering Healthcare Institute, is the most prominent and widely studied model of group prenatal care – 435 sites across 44 US states currently offer CenteringPregnancy.¹ However, the group prenatal care model has not been evaluated as a statewide intervention, so it is not clear from the current evidence base the optimal way for states to implement group prenatal care. For example, states can offer enhanced Medicaid reimbursement for group prenatal care or implement Alternative Payment Methods that incentivize enhanced maternal care, which could include group prenatal care.

Decades of research in the field of child development have made clear the conditions necessary for young children and their families to thrive.¹⁸ These conditions are represented by our eight policy goals, shown in Table 1. The goals positively impacted by group prenatal care are indicated below.

Table 1: Impacts of Group Prenatal Care on Policy Goals

Positive Impact	Policy Goal	Overall Findings
	Access to Needed Services	Mostly positive impacts on adequate prenatal care
	Parents' Ability to Work	No strong causal studies identified for this goal
	Sufficient Household Resources	No strong causal studies identified for this goal
	Healthy and Equitable Births	Mixed impacts on preterm birth and birthweight, with limited evidence of reducing racial disparities
	Parental Health and Emotional Wellbeing	Mostly positive impacts on maternal health and emotional wellbeing
	Nurturing and Responsive Child-Parent Relationships	No strong causal studies identified for this goal
	Nurturing and Responsive Child Care in Safe Settings	No strong causal studies identified for this goal
	Optimal Child Health and Development	Mixed impacts on breastfeeding initiation

What Is Group Prenatal Care?

Prenatal care generally refers to individual patient care received from one obstetric care provider during an individual's pregnancy. Visits consist of a physical examination tailored to the stage of pregnancy, discussions about the health of the mother and fetus, and any questions about the pregnancy itself.³ Prenatal care not only helps prevent and address any complications that may arise during pregnancy, but it is also a source of critical information for parents.

Group prenatal care (GPNC) is an alternative model of prenatal care facilitated by a trained health care provider and delivered in a group setting, integrating health assessments, education, skill building, and peer social support.⁴ GPNC provides pregnant women (typically with low-risk pregnancies not requiring individual monitoring) with approximately 20 hours of prenatal care over the course of their pregnancies, compared to approximately 2 hours in traditional individual care.

CenteringPregnancy, created by the Centering Healthcare Institute, is the most prominent and widely studied model of group prenatal care. Most often, alternative models of group prenatal care are adapted from CenteringPregnancy. Each CenteringPregnancy group includes approximately 8 to 10 women at similar gestational ages.⁵ Mothers take responsibility for their own health by recording their weight and blood pressure before their brief turn with a credentialed provider. Afterward, the provider and group facilitators lead a discussion, along with educational activities, to address common health topics and concerns. Group prenatal care is designed to include opportunities for social support and to improve quality of patient education, in addition to the usual physical examinations and risk assessments.

Who Can Participate in Group Prenatal Care?

Group prenatal care is an alternative form of prenatal care that has emerged in response to the increasing costs, limited health care provider availability, and dissatisfaction with wait times associated with individual prenatal care.⁴ Pregnant women can choose to participate in group prenatal care if the model is offered at their chosen obstetric provider. High-risk pregnancies typically require monitoring throughout the prenatal period, so the group prenatal care model is best suited for women with low-risk pregnancies who not require specialist care.⁶ Many obstetric providers limit eligibility for CenteringPregnancy to women with low-risk pregnancies, though evaluations of CenteringPregnancy vary in whether they limit their study samples to women with low-risk pregnancies.^{A,E}

What Are the Funding Options for Group Prenatal Care?

Historically, providers who offer CenteringPregnancy have been paid through submitting traditional reimbursement claims to Medicaid or private health insurance for each patient, as if they were receiving individual prenatal care.⁷ States can offer enhanced Medicaid reimbursement for group prenatal care to incentivize providers to offer this model of care. Ten states have already implemented this change, with reimbursement rates ranging from an additional \$7 to \$30 per patient, per visit, up to a capped amount.² Enhanced reimbursement can occur through grants awarded to health care providers or via billing structures determined by statute or agency rules. States can also incentivize enhanced maternity care, including group prenatal care, through Alternative Payment Methods (APMs). APMs allow provider reimbursement outside of traditional fee-for-service, generally as a value-based payment that financially rewards better outcomes. For more detailed information on state variation in support of group prenatal care, see Table 3 at the end of this review.

Why Should Group Prenatal Care Be Expected to Impact the Prenatal-to-3 Period?

Early and regular prenatal care visits improve the likelihood of a healthy pregnancy and positive perinatal outcomes through education, risk screening, and physical assessment.^{3,4} Group prenatal care augments the individual prenatal care model in key ways that can positively impact pregnant women and their families by integrating family members and peer support into prenatal care and education.⁶ GPNC provides participating women with significantly more prenatal care (20 hours) than individual care (2 hours) over the course of their pregnancies, which in turn should lead to greater quality of care, subsequent improvements in mothers' mental and physical health during the perinatal period, and better birth outcomes. Most of the time spent in GPNC is allocated to pregnant women engaging with each other and their health care provider in "discussion, education, and skills-building to address explicit learning objectives in prenatal care, child birth preparation, and postpartum and parenting roles."^G Group prenatal care leverages social cognitive theory and the

importance of group social processes to support pregnant women's emotional and mental health, in addition to promoting healthy pregnancies and perinatal outcomes.^H

What Impact Does Group Prenatal Care Have, and for Whom?

Group prenatal care, most often the CenteringPregnancy model, has been evaluated in studies using experimental or quasi-experimental designs. The research discussed here meets our standards of evidence for being methodologically strong and allowing for causal inference, unless otherwise noted. Each strong causal study reviewed has been assigned a letter, and a complete list of causal studies can be found at the end of this review, along with more details about our standards of evidence and review method. The findings from each strong causal study reviewed align with one of our eight policy goals from Table 1. The Evidence of Effectiveness table below displays the findings associated with participation in group prenatal care (beneficial, null,ⁱ or detrimental) for each of the strong studies (A through P) in the causal studies reference list, as well as our conclusions about the overall impact on each studied policy goal. The assessment of the overall impact for each studied policy goal weighs the timing of publication and relative strength of each study, as well as the size and direction of all measured indicators.

Table 2: Evidence of Effectiveness for Group Prenatal Care

Policy Goal	Indicator	Beneficial Impacts	Null Impacts	Detrimental Impacts	Overall Impact on Goal
Access to Needed Services	Adequate Prenatal Care	G, J, L			Positive
Healthy and Equitable Births	Preterm Birth	A, B, E, G	F, I, J, L, O		Mixed
	Low Birthweight	A, B, E	D, F, G, I, J, L, O, P		
	NICU Admissions	A, E	G, I, J, L		
Parental Health and Emotional Wellbeing	Gestational Weight Gain	M, P	J		Mostly Positive
	Depressive Symptoms	C, H	J		
	Stress	H	J		
Optimal Child Health and Development	Breastfeeding Initiation	G, N	I, J		Mixed

Access to Needed Services

The findings from three randomized control trials (RCTs) show that participation in GPNC improves the likelihood that pregnant women receive adequate prenatal care.^{G,J,L} Adequacy of prenatal care is often determined using the Kotelchuck Index, which measures adequate prenatal care on two dimensions: month of pregnancy during which care was initiated (earlier is better) and the percentage of recommended visits received (higher is better).¹⁰ Among a sample of more than 1,000 young, mostly Black women ages 14 to 25 with low-risk pregnancies, approximately 10 percent more women in GPNC than in individual care received adequate prenatal care.^G In a smaller (n=322) RCT in two military settings, 63 percent more women in GPNC than in individual care received adequate prenatal care.^J Among a sample of Black women with high-risk pregnancies, those who were randomly assigned to GPNC (13.7; SD=3.8) attended an average of approximately two additional prenatal visits, as compared to women in individual care (11.9; SD=3.8).^L

ⁱ An impact is considered statistically significant if $p < 0.05$.

Healthy and Equitable Births

The impact of participation in GPNC, most often the CenteringPregnancy model specifically, on birth outcomes has been widely studied, but findings are mixed. Several strong causal studies found positive impacts on birth outcomes, whereas others found no impact, with no clear pattern by study design, model of GPNC, or study population to account for the differences. Further, the evidence on whether GPNC reduces racial disparities in birth outcomes is inconclusive.

Preterm Births

Findings from studies of the impacts of group prenatal care on preterm births are mixed. In a two-site RCT of an enhanced model of CenteringPregnancy with a mostly Black sample of more than 1,000 young (ages 14 to 25) women with low-risk pregnancies, 9.8 percent of mothers in group care delivered preterm, compared to 13.8 percent of mothers in individual care (OR=0.67; p=0.045), equal to a beneficial risk reduction of 33 percent.^G In contrast, a 14-site cluster RCT of the same enhanced model of CenteringPregnancy with a sample of more than 1,100 adolescents ages 14 to 21 with low-risk pregnancies, one-third of whom were Black and approximately 60 percent of whom were Latina, found identical rates of preterm birth (10.1) percent among both mothers in GPNC and those in individual care in the intent-to-treat analyses.^I

Two smaller RCTs – one among a military population (n=322)^J and another among a high-risk group of Medicaid-eligible Black women (n=619)^L – similarly found no statistically significant differences in the rate of preterm birth between women participating in GPNC and the control group. The military study evaluated an enhanced model of CenteringPregnancy, whereas the high-risk study evaluated a non-specified model of GPNC. Both studies conducted power analyses that indicated sufficient sample size to detect significant differences between groups; however, the low prevalence of preterm births in both studies, and particularly in the military study (only 10 preterm births in the GPNC group and 7 in the individual care group), suggests that the studies may have been statistically underpowered to detect differences in preterm birth outcomes specifically.

Two retrospective matched studies using propensity scores of women's participation in CenteringPregnancy in South Carolina both found a reduced risk of preterm birth among GPNC participants compared to women receiving individual prenatal care across samples of varying risk. Among a sample of 15,000 women, the majority of whom were enrolled in Medicaid, that included women with high-risk medical conditions, the rate of preterm birth was approximately 30 percent lower among GPNC participants (7.5 percent) than among the comparison group (10.6 percent).^A Among a sample of over 6,000 Medicaid-enrolled women that excluded high-risk mothers, participation in GPNC reduced the risk of having a preterm birth by 36 percent.^E

In contrast to the consistent findings from South Carolina, findings from two retrospective matched studies using propensity scores in Tennessee were mixed. Both studies had large samples of over 6,000 women and included those with high-risk pregnancies. In one study that examined participation in one of two models of GPNC (CenteringPregnancy or Expect with Me), after adjusting for the number of individual care visits,ⁱⁱ the rate of preterm delivery was almost 80 percent lower among GPNC participants (1.8 percent) than among the comparison group (8.6 percent).^B In the other Tennessee study, no significant differences were found between women participating in CenteringPregnancy and the matched comparison group (OR=0.83; CI: 0.61-1.12).^O

Finally, an evaluation of the Strong Start for Mothers and Newborns initiative (Strong Start) for women covered by Medicaid and CHIP during pregnancy found no significant differences between GPNC participants across 11 sites and a matched comparison group on any birth outcomes, including rates of preterm birth.^F Sites offering both traditional and group forms of care with opt-in policies that had low acceptance rates were excluded to reduce selection bias.

Low Birthweight

Findings from studies of GPNC on low birthweight are mixed, but most find null impacts. Both of the retrospective matched studies using propensity scores of women's participation in CenteringPregnancy in South Carolina found a significantly reduced risk of low birthweight among GPNC participants compared to women receiving individual prenatal

ⁱⁱ All group prenatal care participants received at least one individual visit – at intake, when a group visit was missed, or if another visit was deemed medically necessary.

care. In the South Carolina study of 15,000 women, including those with high-risk medical conditions, the rate of low birthweight was 35 percent lower among GPNC participants (7 percent) compared to the comparison group (10.7 percent).^A In the South Carolina study of 6,000 women with low-risk pregnancies, participation in GPNC reduced the risk of having a low birthweight infant by 44 percent.^E Similarly, in the Tennessee retrospective matched study of GPNC with a sample of over 6,000 women that included high-risk pregnancies, the rate of low birthweight was 83 percent lower among participants in either CenteringPregnancy or Expect with Me (1.2 percent) compared to the matched comparison group (7.2 percent).^B

These positive findings must be considered in the context of the other strong causal studies with varying designs and populations that all find no impact of GPNC on low birthweight. RCTs, both large ($n > 1,000$) and small ($n < 300$), both including and excluding high-risk pregnancies, and with samples of varying demographic characteristics, all find no statistically significant impact of GPNC (CenteringPregnancy, enhanced CenteringPregnancy, and unspecified models of GPNC).^{D,G,I,J,L} As with preterm birth, the smaller RCTs^{I,L} may have been statistically underpowered to detect significant differences in rates of low birthweight. For example, a small RCT ($n = 282$) of adolescent women found a rate of low birthweight among GPNC participants that was approximately half the rate among individual care participants, but the difference was not statistically significant – a likely consequence of being statistically underpowered.^D Further, for every retrospective matched study with propensity scores that demonstrated a positive impact on low birthweight, a similarly-designed study finds no impact on low birthweight, including the Strong Start evaluation.^{F,P,O}

NICU Admissions

Studies have also examined the impact of GPNC on the likelihood that newborns are admitted to the Neonatal Intensive Care Unit (NICU). The findings on NICU admissions are mixed, with experimental evidence showing null impacts and quasi-experimental evidence from South Carolina showing beneficial impacts.

The South Carolina studies, which also found significant reductions in the likelihood of preterm and low birthweight births, found significant reductions in the likelihood of a NICU admission or stay. Among the sample that included high-risk pregnancies, the rate of NICU admissions was 39 percent lower for GPNC participants (6.2 percent) than for the matched comparison group (10.1 percent).^A Among the sample with all low-risk pregnancies, participation in GPNC reduced the risk of having a NICU stay by 28 percent.^E

In contrast to the findings from retrospective matched studies with propensity scores, four RCTs found no significant impacts on NICU admissions.^{G,I,J,L} The RCTs ranged in sample sizes from over 1,000^{G,I} to 322.^J Similar to the other birth outcomes, the smaller RCTs^{I,L} may have been statistically underpowered to detect differences, given the low prevalence of NICU admissions.

Parental Health and Emotional Wellbeing

Several studies have examined the impact of GPNC on parental health and emotional wellbeing, and the findings are mostly positive, with the exception of the study in two military settings, which found no significant impacts. Though the military study had a smaller sample size than the other RCTs, power analyses suggested the sample was large enough to provide reliable estimates for parental physical and emotional wellbeing.

Gestational Weight Gain

Mothers' physical health during pregnancy has important implications for pregnancy and perinatal outcomes; both excessive weight gain during pregnancy and obesity are risk factors for pregnancy complications.^M The social and peer support associated with the GPNC model, along with the time spent discussing nutritional choices and exercise and conducting self-assessments of weight and blood pressure, have been theoretically linked to a reduced likelihood of excessive weight gain during pregnancy.^{M,P,J}

Secondary analysis of data from the 14-site RCT of an enhanced model of CenteringPregnancy showed that adolescent women in GPNC gained significantly less weight during pregnancy and retained less weight at 12 months postpartum compared to adolescent women in the control group.^M Similarly, a retrospective matched study using propensity scores with a sample of almost 400 young women found that mothers in CenteringPregnancy were significantly less likely to

have excessive weight gain.^p However, a small RCT conducted across two military settings found no difference in gestational weight gain between GPNC participants and women receiving individual care.^l

Maternal Depressive Symptoms and Stress

Perinatal depression is associated with negative birth, neonatal, and infant outcomes, and although GPNC theoretically may improve mothers' emotional wellbeing, in part through increased social support,^c findings are mixed. Secondary analysis of data from the 14-site RCT of an enhanced model of CenteringPregnancy demonstrated a positive impact on perinatal depressive symptoms – the rate of probable depression decreased by 31 percent between the second trimester and 12 months postpartum among adolescent women in GPNC, compared to a 15 percent reduction among adolescent women in individual care.^c Secondary analysis of data from the two-site RCT of an enhanced model of CenteringPregnancy found no overall significant differences in rates of depression or stress over time between GPNC participants and women receiving individual care. However, high-stress women participating in GPNC reported significantly more decreased stress and lower depression than high-stress women in individual care.^h High-stress women in GPNC decreased an average of 5.1 points on the Perceived Stress Scale (PSS) from study entry to the third trimester, compared to an average decrease of 2.8 points among high-stress women in individual care, though differences were no longer significant one year postpartum. High-stress women in GPNC decreased an average of 6.5 points on the affect-only component of the Center for Epidemiologic Studies Depression Scale (CES-D) from study entry to one year postpartum, compared to an average decrease of 4 points among high-stress women in individual care. In contrast, the two-site military study found no significant differences in either stress (measured by the PSS) or depression (prenatally, measured by CES-D or postpartum, measured by the Postpartum Depression Screening Scale) between women participating in GPNC and those participating in individual care.^l

Optimal Child Health and Development

The impact of GPNC on the likelihood that mothers initiate breastfeeding is mixed. In the two-site RCT of an enhanced model of CenteringPregnancy with a young, largely Black sample, women in GPNC had almost twice the odds of initiating breastfeeding than women who received individual care (OR=1.73; CI: 1.28–2.35).^g A similar difference in breastfeeding initiation emerged in a retrospective matched study using propensity scores with a sample of 800 women across four CenteringPregnancy sites in Tennessee.ⁿ In that study, women who participated in GPNC had more than twice the odds of reporting any breastfeeding at hospital discharge than women who received individual care (OR=2.08; CI: 1.32–3.26). However, no significant differences were found in the odds of exclusively breastfeeding at hospital discharge or the odds of any or exclusive breastfeeding at the six-week postpartum follow-up.

In contrast to the positive findings, two studies found no significant differences in breastfeeding initiation, though rates of initiation were high among all women in both studies.^{lj} In the 14-site RCT of an enhanced model of CenteringPregnancy with a sample of adolescent women, 88.8 percent of women in GPNC reported initiating breastfeeding compared to 87.2 percent of women in individual care.^l In the smaller, two-site military study, 94 percent of women in both groups reported initiating breastfeeding, though rates of breastfeeding across groups had dropped to 56 percent by three months postpartum.^l

Is There Evidence That Group Prenatal Care Reduces Disparities?ⁱⁱⁱ

Poor birth outcomes are not distributed equally across racial and ethnic groups. For example, compared to non-Hispanic White infants, Black infants had a 60 percent higher rate of preterm birth in 2013, and disparities in rates of preterm birth, low birthweight, and infant mortality are increasing.^{13,14} Evidence from several studies shows that GPNC is beneficial for Black mothers, but the evidence that participation in GPNC reduces or eliminates disparities is inconclusive. Impact analyses examining GPNC among women of color do not allow for conclusions about reductions in disparities – only impact analyses comparing women of color to other women would allow for those conclusions.

In the two-site RCT of an enhanced model of CenteringPregnancy with a sample made up of 80 percent Black women, the overall risk of preterm birth was reduced by 33 percent.^g Post hoc analyses examined the impact of GPNC among

ⁱⁱⁱ Disparities are defined here as differential outcomes by race, ethnicity, or socioeconomic status (SES).

only Black women in the sample, and the beneficial effect increased to a risk reduction of 41 percent. In the large South Carolina retrospective matched study with propensity scores, intent-to-treat analyses among Black women showed that the rate of low birthweight among Black women participating in GPNC (9.5 percent) was approximately 30 percent lower than the rate of low birthweight among Black women receiving individual care (13.5 percent).^A Together these studies provide evidence that GPNC is beneficial for Black women, but the results do not allow for conclusions about reductions in disparities.

To further add to the lack of clarity, two RCTs – one with a sample of entirely Black women with high-risk pregnancies^L and another with a sample of adolescents, 94 percent of whom were Black,^P found no significant impacts of GPNC on birth outcomes, suggesting GPNC may not benefit those Black mothers most at risk for adverse birth outcomes.^L

The large South Carolina retrospective matched study^A did examine whether the impact of GPNC on birth outcomes for Black women differed from the impact of GPNC on birth outcomes for other women (White, Hispanic, and other races were combined). This study found that the impacts of GPNC on low birthweight and preterm birth for Black mothers were *not* significantly different from the impacts on non-Black mothers.

Has the Return on Investment for Group Prenatal Care Been Studied?

Implementing group prenatal care in a clinic can be costly due to traditional models of reimbursement, initial provider training, accreditation fees, and ongoing overhead expenses. However, potential cost savings for the individual or the state are possible if birth outcomes are improved by GPNC participation.^E The majority of NICU stays are related to prematurity.⁹ In addition to the developmental and health consequences for children born premature or low birthweight, the hospitalization costs associated with preterm babies far outweigh those of babies born at term. Because Medicaid pays for almost half of all births (43 percent of births in 2018),¹² reducing the need for NICU stays can have significant cost savings for states.^E

Several studies have examined the cost effectiveness of implementing group prenatal care. The two-site RCT of an enhanced CenteringPregnancy model found no significant differences between GPNC and individual care in costs associated with prenatal care or delivery care at one of their two study sites; billing data were not available from the other site.^G

Other studies have found that group prenatal care offered cost savings for individuals and the state. The Strong Start study found that, over the period of the study, prenatal expenditures among group prenatal care enrollees were 15 percent lower, at an average of \$427 less per mother, than among the comparison group.^F Researchers suggested this effect may have been partially the result of a reduction in maternal hospitalizations in the prenatal period. One of the retrospective matched studies in South Carolina conducted a cost-benefit analysis and estimated health savings of \$22,667 for every prevented premature birth, totaling close to a \$2.3 million return on investment when the overall reduction in risk of preterm birth was considered.^E A more comprehensive analysis of the return on investment for group prenatal care is forthcoming.

What Do We Know, and What Do We Not Know?

The findings from rigorously designed studies indicate that participation in group prenatal care during pregnancy improves the likelihood that mothers receive adequate prenatal care and improves mothers' physical and emotional health. Mothers participating in group prenatal care had less excessive gestational weight gain and better psychosocial outcomes than mothers receiving individual care.

The evidence on healthy and equitable birth outcomes and optimal child health and development, however, is less conclusive. Positive impacts on rates of preterm birth and low birthweight emerge were found in both experimental and quasi-experimental studies, but null impacts were also found in similarly designed studies. No consistent pattern in the demographic or risk composition of the study samples accounts for the differences in findings. One exception is the mixed findings for NICU admissions – all of the RCTs (samples ranging from 300 to over 1,000) found null impacts on the likelihood of NICU admissions, whereas the much larger retrospective matched studies both found positive impacts. The

evidence on equitable birth outcomes specifically is especially inconclusive and, further research is needed to understand the extent to which participation in GPNC is beneficial for Black women and Hispanic women (for whom the existing research is even more scant) and whether group prenatal care has the potential to reduce racial disparities.

The evidence on breastfeeding is also mixed across study design and sample size. Additional research is needed to better understand the impact of GPNC participation on breastfeeding initiation and duration.

Theoretically, group prenatal care is more closely connected to the adequacy of prenatal care and maternal health (positive impacts) than birth outcomes and child health (mixed impacts), which may provide some insight into the disparate findings. GPNC emerged as an alternative form of care, in part as a response to challenges with accessing individual prenatal care. Women who choose group prenatal care over individual care may be more likely to attend more of their scheduled visits because GPNC meets their needs in ways that individual care would not. Further, the peer and social component of GPNC models may be a protective factor for women's psychosocial health. Expecting GPNC to promote better birth outcomes than individual care may not be well supported by the model's theory of change. The CenteringPregnancy model typically targets low-risk pregnancies that do not require the individual monitoring necessary for higher-risk pregnancies, so reducing negative birth outcomes among those with high-risk pregnancies may not be an appropriate outcome goal for group prenatal care.

Is Group Prenatal Care an Effective Policy for Improving Prenatal-to-3 Outcomes?

Group prenatal care is an effective strategy for improving the receipt of adequate prenatal care, as well as maternal physical health and emotional wellbeing. Because group prenatal care has not been studied at a statewide level, current evidence does not point to the optimal mechanism through which states can support group prenatal care.

How Does Group Prenatal Care Vary Across the States?

CenteringPregnancy, the predominant model of group prenatal care and the model on which other forms of group care are often based,⁴ is currently being implemented in 435 sites across 44 US states.^{iv,1} Other models include March of Dimes' Supportive Pregnancy Care, Expect With Me, Pregnancy & Parenting Partners, and Honey Child. Ten states currently have enhanced reimbursement models to incentivize group prenatal care.² New York has a two-year pilot project in place that focuses their enhanced reimbursement rate (\$30 per additional patient visit up to \$300) in neighborhoods with the poorest birth outcomes.² Practices already providing CenteringPregnancy in the targeted areas would receive the incentive, and new practices would receive the incentive in addition to staff training and start-up support.² South Carolina, in addition to their enhanced reimbursement rate, has offered a further incentive of \$175 for each patient that has attended at least five visits.¹³

The South Carolina Department of Health and Human Services has also supported a CenteringPregnancy Expansion Project initiative that helps fund start-up costs and training in practices around the state.¹⁶ New Jersey passed legislation in 2019 that allowed Medicaid to cover the CenteringPregnancy model of group prenatal care from accredited providers.¹⁷ States can also support group prenatal care through managed care organization (MCO) contracts and legislation. States that do not support GPNC financially or logistically may still opt to endorse group prenatal care as a promising or best practice through agency resources, such as brochures and taskforce recommendations. See Table 3 below for more details on state variation related to group prenatal care.

^{iv} State counts include the District of Columbia.

Table 3: State Variation in Group Prenatal Care

State	Generosity and Variation		
	Type of State Support for Group Prenatal Care	Number of CenteringPregnancy Program Sites	% of Women <u>NOT</u> Receiving Adequate Prenatal Care
Alabama	Alternative Payment Method	2	19.1%
Alaska	No steps taken to support group prenatal care	4	18.4%
Arizona	No steps taken to support group prenatal care	2	20.1%
Arkansas	Alternative Payment Method	1	20.7%
California	Enhanced fee-for-service reimbursement	45	9.6%
Colorado	Alternative Payment Method; Includes GPNC as a best practice	8	15.5%
Connecticut	No steps taken to support group prenatal care	0	9.6%
Delaware	No steps taken to support group prenatal care	0	18.3%
District of Columbia	Includes GPNC as a best practice	7	20.1%
Florida	No steps taken to support group prenatal care	5	19.1%
Georgia	Enhanced fee-for-service reimbursement via grants; Grant funding	11	18.2%
Hawaii	Includes GPNC as a best practice	3	21.6%
Idaho	Alternative Payment Method	1	11.0%
Illinois	Encourages provision of GPNC	17	15.2%
Indiana	Includes GPNC as a best practice	12	17.0%
Iowa	No steps taken to support group prenatal care	3	11.2%
Kansas	No steps taken to support group prenatal care	2	10.5%
Kentucky	Grant funding	2	14.0%
Louisiana	Enhanced fee-for-service reimbursement (MCO); Alternative Payment Method	2	15.4%
Maine	No steps taken to support group prenatal care	6	10.0%
Maryland	Includes GPNC as a best practice	6	17.9%
Massachusetts	Alternative Payment Method	12	11.1%
Michigan	Enhanced fee-for-service reimbursement (MCO); Alternative Payment Method	12	12.8%
Minnesota	Grant funding; Alternative Payment Method	4	10.6%
Mississippi	Includes GPNC as a best practice	1	13.8%
Missouri	No steps taken to support group prenatal care	12	16.3%
Montana	Enhanced fee-for-service reimbursement; Includes GPNC as a best practice	1	15.8%
Nebraska	Includes GPNC as a best practice	0	14.4%
Nevada	No steps taken to support group prenatal care	3	17.6%
New Hampshire	Includes GPNC as a best practice	2	9.6%
New Jersey	Enhanced fee-for-service reimbursement; Grant funding	14	15.4%
New Mexico	No steps taken to support group prenatal care	2	22.8%
New York	Enhanced fee-for-service reimbursement via grants; Alternative Payment Method	37	12.9%

Table 3: State Variation in Group Prenatal Care (continued)

State	Generosity and Variation		
	Type of State Support for Group Prenatal Care	Number of CenteringPregnancy Program Sites	% of Women NOT Receiving Adequate Prenatal Care
North Carolina	Includes GPNC as a best practice	27	16.7%
North Dakota	No steps taken to support group prenatal care	1	13.5%
Ohio	Grant funding; Alternative Payment Method	41	16.1%
Oklahoma	No steps taken to support group prenatal care	2	16.6%
Oregon	Alternative Payment Method; Encourages provision of GPNC	12	11.5%
Pennsylvania	Grant funding	20	16.3%
Rhode Island	Alternative Payment Method	0	7.4%
South Carolina	Enhanced fee-for-service reimbursement	18	17.4%
South Dakota	No steps taken to support group prenatal care	0	16.4%
Tennessee	Alternative Payment Method	2	15.8%
Texas	Enhanced fee-for-service reimbursement; Encourages provision of GPNC	32	21.0%
Utah	Enhanced fee-for-service reimbursement; Alternative Payment Method	0	10.7%
Vermont	No steps taken to support group prenatal care	1	5.3%
Virginia	No steps taken to support group prenatal care	10	13.3%
Washington	Alternative Payment Method	21	14.8%
West Virginia	Includes GPNC as a best practice	2	15.9%
Wisconsin	Includes GPNC as a best practice	7	11.1%
Wyoming	Includes GPNC as a best practice	0	16.8%
Best State	N/A	45	5.3%
Worst State	N/A	0	22.8%
Median State	N/A	3	15.5%

State support: Data as of June 8, 2020. State health department websites and proposed and passed state legislation.

Number of CenteringPregnancy sites: Data as of May 11, 2020. Centering Healthcare Institute Inc.

Adequate prenatal care: Vital Statistics – Natality Expanded 2018 (from CDC Wonder)

For additional source and calculation information, please refer to the Methods and Sources section of pn3policy.org

How Did We Reach Our Conclusions?

Method of Review

This evidence review began with a broad search of all literature related to the policy and its impacts on child and family wellbeing during the prenatal-to-3 period. First, we identified and collected relevant peer-reviewed academic studies as well as research briefs, government reports, and working papers, using predefined search parameters, keywords, and trusted search engines. From this large body of work, we then singled out for more careful review those studies that endeavored to identify causal links between the policy and our outcomes of interest, taking into consideration characteristics such as the research designs put in place, the analytic methods used, and the relevance of the populations and outcomes studied. We then subjected this literature to an in-depth critique and chose only the most methodologically rigorous research to inform our conclusions about policy effectiveness. All studies considered to date for this review were released on or before March 31, 2020.

Standards of Strong Causal Evidence

When conducting a policy review, we consider only the strongest studies to be part of the evidence base for accurately assessing policy effectiveness. A strong study has a sufficiently large, representative sample, has been subjected to methodologically rigorous analyses, and has a well-executed research design allowing for causal inference – in other words, it demonstrates that changes in the outcome of interest were likely caused by the policy being studied.

The study design considered most reliable for establishing causality is a randomized control trial (RCT), an approach in which an intervention is applied to a randomly assigned subset of people. This approach is rare in policy evaluation because policies typically affect entire populations; application of a policy only to a subset of people is ethically and logistically prohibitive under most circumstances. However, when available, randomized control trials are an integral part of a policy's evidence base and an invaluable resource for understanding policy effectiveness.

The strongest designs typically used for studying policy impacts are quasi-experimental designs (QEDs) and longitudinal studies with adequate controls for internal validity (for example, using statistical methods to ensure that the policy, rather than some other variable, is the most likely cause of any changes in the outcomes of interest). Our conclusions are informed largely by these types of studies, which employ sophisticated techniques to identify causal relationships between policies and outcomes. Rigorous meta-analyses with sufficient numbers of studies, when available, also inform our conclusions.

Studies That Meet Standards of Strong Causal Evidence

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