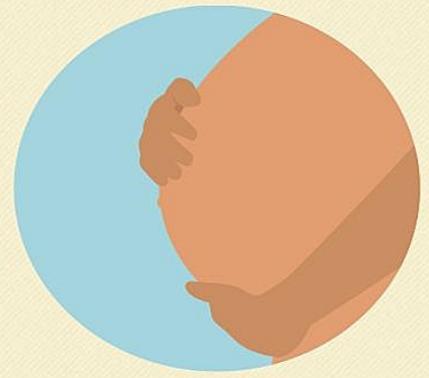


# Doula Care Can Help Improve Adolescent Maternal Mental Health Outcomes



**35%**

Of all mothers feel down, depressed, or hopeless postpartum<sup>1</sup>

**63%**

Of all mothers with indicators of depression do not seek professional help

**18%**

Of all mothers suffer from PTSD symptoms after birth<sup>2</sup>



Teen mothers have a significantly higher rate of both prenatal and postpartum depression than older mothers<sup>3,4</sup>

Adolescent mothers experiencing depression are more likely to develop depression as adults<sup>5</sup>

Severe maternal depression can cause negative affects on mother-infant interactions and the cognitive, emotional, & social development of the infant<sup>6</sup>

## How can doulas help?



Doulas help build adolescent mothers' self-esteem & self-efficacy<sup>7</sup>



Doulas counsel teens in depression risk reduction<sup>7</sup>



Doulas encourage & model self-care<sup>8</sup>



Doulas promote pregnancy as a positive life experience<sup>8</sup>



Doulas can help make mental health referrals<sup>7</sup>

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# Modeling the Cost-Effectiveness of Doula Care Associated with Reductions in Preterm Birth and Cesarean Delivery

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**ABSTRACT: Background:** One in nine US infants is born before 37 weeks' gestation, incurring medical costs 10 times higher than full-term infants. One in three infants is born by cesarean; cesarean births cost twice as much as vaginal births. We compared rates of preterm and cesarean birth among Medicaid recipients with prenatal access to doula care (nonmedical maternal support) with similar women regionally. We used data on this association to mathematically model the potential cost-effectiveness of Medicaid coverage of doula services. **Methods:** Data came from two sources: all Medicaid-funded, singleton births at hospitals in the West North Central and East North Central US ( $n = 65,147$ ) in the 2012 Nationwide Inpatient Sample, and all Medicaid-funded singleton births ( $n = 1,935$ ) supported by a community-based doula organization in the Upper Midwest from 2010 to 2014. We analyzed routinely collected, de-identified administrative data. Multivariable regression analysis was used to estimate associations between doula care and outcomes. A probabilistic decision-analytic model was used for cost-effectiveness estimates. **Results:** Women who received doula support had lower preterm and cesarean birth rates than Medicaid beneficiaries regionally (4.7 vs 6.3%, and 20.4 vs 34.2%). After adjustment for covariates, women with doula care had 22 percent lower odds of preterm birth (AOR 0.77 [95% CI 0.61–0.96]). Cost-effectiveness analyses indicate potential savings associated with doula support reimbursed at an average of \$986 (ranging from \$929 to \$1,047 across states). **Conclusions:** Based on associations between doula care and preterm and cesarean birth, coverage reimbursement for doula services would likely be cost saving or cost-effective for state Medicaid programs. (BIRTH 2016)

**Key words:** cesarean delivery, doula, Medicaid, preterm birth

In 2013, nearly one in nine U.S. newborns were preterm (before 37 weeks' gestation), and one in three were born by way of cesarean delivery (1). Recent pro-

fessional efforts highlight the need to reduce the overall cesarean rates through more appropriate use of the procedure (2). Other professional efforts focus on preterm

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birth; 35 percent of all infant deaths in 2010 were from preterm-related causes, more than any other cause (3). In addition, both preterm birth and cesarean delivery are comparatively costly. Cesarean deliveries cost twice as much as vaginal deliveries, for both Medicaid and private payers (4). Preterm birth costs the U.S. health care system more than \$26 billion annually (5). Infants born preterm incur medical costs 10 times higher than full-term infants during the first year (5,6). This includes high costs of neonatal care and frequent hospitalizations in addition to ongoing medical care. Because nearly one-half of all U.S. births are publicly financed, preterm births are a sizable public cost burden (5). As the largest payer for maternity care, Medicaid programs, both fee-for-service and managed care, have a unique opportunity to address quality and cost of care through policies and incentives to increase consistent use of evidence-based childbirth practices (7).

One intervention being undertaken by a small but growing number of state Medicaid programs and managed care organizations is reimbursement for non-medical assistance from a doula for pregnant beneficiaries (8–10). A doula is a trained professional who provides physical, emotional, and educational support to mothers before, during, and immediately after childbirth. Support from a doula during labor and delivery is associated with lower cesarean rates and fewer obstetric interventions, fewer complications, less pain medication, shorter labor hours, higher infant APGAR scores, and also shows potential for reducing racial-ethnic and socioeconomic disparities in breastfeeding initiation (11–15). In addition to support during labor and delivery, the scope of a doula's work often includes prenatal psychosocial support, education, and health promotion. Typical doula services would include two to four prenatal visits, support during labor and childbirth, and one to two postpartum follow-up visits (16).

While many women may benefit from access to evidence-based, supportive interventions that confer positive health effects during pregnancy and childbirth, only 6 percent of women who gave birth in 2011–2012 reported having support from a doula (15). Women most likely to report that they wanted—but did not have—doula support were black (vs white) women and uninsured (vs privately insured) women (15). These groups of women are also at increased risk of preterm birth (5). Studies have shown a direct relationship between maternal stress and negative birth outcomes, including a correlation between worries and fears about pregnancy and preterm birth (5,12,17). Evidence suggests that communication with and encouragement from a doula throughout the pregnancy may increase a mother's self-efficacy about her own pregnancy (11–13).

Our objectives were to compare rates of preterm and cesarean birth among Medicaid recipients with prenatal access to doula care with preterm and cesarean birth rates for Medicaid beneficiaries regionally, and to use data on this association to mathematically model the potential cost-effectiveness of Medicaid coverage of doula services.

## Methods

This is a retrospective, secondary data analysis using an observational study design to assess statistical associations between key variables and mathematically model cost-effectiveness. Retrospective, multivariable regression analysis was used to estimate associations between doula care and preterm and cesarean births. A probabilistic decision-analytic model was used for cost-effectiveness estimates.

### *Data and Study Population*

The study population comprised two groups: Medicaid-funded singleton births regionally ( $n = 65,147$ ), and Medicaid-funded births with doula care provided by a nonprofit doula organization in a large metropolitan city in the upper Midwest ( $n = 1,935$ ). Women receiving doula services are referred to the organization through one of the state's largest Medicaid-managed care organizations. The managed care organization provides a list of all enrolled pregnant women to the doula organization, and a staff member of the doula organization attempts to contact each eligible woman by way of telephone to notify them of the availability of doula services. These services are covered by the managed care program as one of the options for childbirth education, although the doula services provided encompass more than just prenatal education and include continuous labor support, postpartum visits, and breastfeeding education. During the study period, doulas provided support at the births of approximately 15–20 percent of all eligible Medicaid-managed care enrollees. Reasons for choosing doula care over other childbirth education options most often included convenience, proximity, and the availability of culturally relevant support. Women receiving doula services from this organization typically receive four prenatal visits, support during labor and delivery, and two postpartum visits from doulas who completed DONA training requirements (18).

The study used the 2012 nationwide inpatient sample (NIS), an all-payer inpatient claims database designed to approximate a 20 percent sample of discharges from U.S. hospitals (19). Using the NIS variable that desig-

nates the U.S. Census Division in which each hospital is located, we limited the study sample to births that occurred in hospitals in the East North Central and West North Central regions. These include the states of Minnesota, North Dakota, South Dakota, Iowa, Missouri, Nebraska, and Kansas (West North Central) and Wisconsin, Michigan, Illinois, Indiana, and Ohio (East North Central) (20). We also obtained state data on pre-term birth rates for all Medicaid-funded deliveries from HCUPNet (<http://hcupnet.ahrq.gov/>), which generates estimates using the Statewide Inpatient Databases, a census of inpatient claims for participating states.

Data on the 1,935 doula-supported births are from de-identified client information that is routinely collected by the community-based doula organization. Data were collected for singleton babies born between January 1, 2010, and January 31, 2014, who received at least one prenatal doula visit. All births were financed by Medicaid.

In addition, we had access to detailed records on each prenatal doula visit from mid-2011 through mid-2013 pertaining to 811 births. Among these 811 cases, the mean number of prenatal visits was 3.77 (standard deviation [SD] = 1.62), and ranged from one to eight visits. Of these 811 women, 222 (27.4%) had a visit with a doula early in the pregnancy (before the third trimester), and for those with early doula encounters, the average number of visits before the third trimester was 2.09 (SD = 1.50). There were no significant differences in health or demographics between the 811 women for whom we have detailed data and the full doula sample of 1,935 women.

### Measurement

The primary outcomes of interest were preterm birth and cesarean delivery. Preterm birth was identified in doula program data as deliveries before 37 weeks, and cesarean delivery was coded from the delivery mode listed. Using NIS data, we identified preterm birth using *International Classification of Diseases, 9th revision* diagnosis codes (6442, 64420, 64421). We identified cesarean births using Diagnosis-Related Group codes 765 or 766, as well as *International Classification of Diseases, 9th revision* procedure codes (740, 741, 742, 744, 7491, or 7499). These identification criteria are consistent with prior research using maternal hospital discharge records (21,22).

Measured covariates included maternal age, race-ethnicity, and two major pregnancy-related complications: hypertension and diabetes. Maternal age and race-ethnicity are self-reported in doula program data. The data set distinguishes between African-American women and women of African descent. We present information

for each of these groups and combined results for “black women” for comparability with national estimates. NIS includes race and ethnicity in one data element, but reporting practices for race-ethnicity in the NIS vary across participating states. If the state supplied race and ethnicity in separate data elements, then ethnicity takes precedence over race in the combined variable. Final analytic categories for this study included black, white, Hispanic, Asian, Native American, and others. Hypertension and diabetes measures include both preexisting and gestational conditions and are identified by patient report for doula data and by Clinical Classification System code 183 (for hypertension) and 196 (for diabetes) in NIS data.

### Analysis

We calculated means and 95 percent confidence intervals (CIs) for maternal characteristics and outcomes. Rate differences were evaluated using *t*-tests. We used multivariable logistic regression models to estimate the association between doula support and preterm birth, controlling for maternal age, race-ethnicity, diabetes, and hypertension. All women in this study met the income eligibility thresholds for Medicaid, ensuring some consistency in health care access and socioeconomic status. Doula care has previously been associated with reduced cesarean rates (2,8,11), and we modeled the association between doula support and cesarean delivery separately for full-term and preterm births.

To estimate the cost-effectiveness of doula services, we developed a decision-analytic model of the potential cost impacts of changes in preterm status and in delivery mode (cesarean vs vaginal) that may be associated with doula support for Medicaid beneficiaries, facilitated through reimbursement for doula services. The decision tree we constructed for this analysis compared two different strategies of care for Medicaid beneficiaries: 1) usual care and benefits (i.e., standard of care), and 2) standard of care in addition to access to care from a trained doula by way of health insurance coverage for this service. The endpoints were cesarean and vaginal deliveries in both preterm and full-term births for both strategies. A diagram of the decision tree is shown in Appendix S1. We used cost data from March of Dimes on private insurance payments in the first year of life following full-term or preterm birth (23). We conservatively estimated Medicaid payments for full-term or preterm birth at half those paid by private insurers, based on the March of Dimes data. We used published estimates of Medicaid costs for vaginal and cesarean births (4) and empirically derived preterm and cesarean birth rates (24). To test the sensitivity of the model’s results to specific parameters’ uncertainty, we

conducted a probabilistic sensitivity analysis. This means that we simulated the full range of potential results 10,000 different times by varying all parameters simultaneously. The parameters and probability distributions are shown in Appendix S2. We conducted an incremental cost-effectiveness analysis, looking at the lower rates of preterm deliveries among women with doula support, and one-way sensitivity analysis using linear regression metamodeling (25). We varied potential doula reimbursement values from \$200 to \$1,200.

Statistical analyses were conducted using SAS version 9.3 and decision-analytic models were developed in R program ([www.r-project.org](http://www.r-project.org)). This analysis used only de-identified data and was therefore granted exemption from review by the Institutional Review Board at the University of Minnesota (IRB# 1202E10162).

## Results

The mean maternal age was similar among Medicaid-funded births regionally (age 25.7) and doula-supported births (age 27.1). However, hypertension and diabetes rates were lower in the doula-supported births than the

regional sample. There was a lower proportion (10.3%) of white women among the doula-supported births than among Medicaid-funded births regionally (48.1%). The doula-supported births had lower preterm births rates (4.7%) than Medicaid births regionally (6.3%) in uncontrolled comparisons ( $p < 0.001$ ) (Table 1).

Doula care was associated with 22 percent lower odds of preterm birth (Table 2; adjusted odds ratio (AOR) 0.77 [95% confidence interval (CI) 0.61–0.96]), compared with Medicaid births regionally, after controlling for maternal race-ethnicity, age, hypertension, and diabetes. Consistent with prior studies, black women had higher odds of preterm birth than white women (AOR 1.38 [95% CI 1.29–1.49]). In addition, women with hypertension (AOR 1.83 [95% CI 1.66–2.01]) or diabetes (AOR 1.25 [95% CI 1.12–1.39]) had higher odds of preterm birth.

The adjusted odds of cesarean delivery for preterm and full-term deliveries are presented in Table 3. Among preterm births, doula support was not associated with odds of cesarean delivery (AOR 1.63 [95% CI 0.99–2.64]); however doula support was associated with substantially lower odds of cesarean among full-term births (AOR 0.44 [95% CI 0.39–0.49]), con-

**Table 1. Characteristics of Regional Medicaid-Funded Births (2012), Compared with Medicaid-Funded Births Supported by Doulas (2010–2014)**

	<i>Medicaid-funded deliveries, West North Central and East North Central US (2012)</i> N = 65,147	<i>Medicaid-funded deliveries with doula support (2010–2014)</i> N = 1,935	<i>Difference</i>	<i>p</i>
<b>Maternal characteristics</b>				
Mother's age (mean)	25.7	27.1	1.4	< 0.001
Maternal hypertension rate (%)	7.8	3.2	−4.6	< 0.001
Maternal diabetes rate (%)	7.9	5.4	−2.5	< 0.001
Maternal race-ethnicity (%)				
Asian	2.0	8.8	6.8	< 0.001
Black	22.9	47.2	24.3	< 0.001
African American	NA	10.0		NA
African descent	NA	37.3		NA
Caucasian	48.1	10.3	−37.8	< 0.001
Hispanic	10.7	29.3	18.6	< 0.001
<b>Labor and delivery (%)</b>				
Cesarean rate	34.2	20.4	−13.8	< 0.001
Epidural rate	NA	25.8		NA
Other pain medicine use rate	NA	18.6		NA
<b>Birth outcomes (%)</b>				
Low birthweight rate	NA	7.1		NA
Preterm birth rate	6.3	4.7	−1.6	< 0.001

Source: Authors' own calculations using data from the 2012 Nationwide Inpatient Sample (Regional Medicaid-Funded Deliveries) and 2010–2014 data from a community-based nonprofit doula organization that serves Medicaid beneficiaries. p-values are from rate differences calculated using t-tests.

**Table 2. Adjusted Odds of Preterm Birth for Medicaid-Funded Births**

	<i>Preterm birth AOR (95% CI)</i>
<b>Doula support</b>	0.77 (0.61–0.96)
Race/ethnicity	
Asian	0.72 (0.56–0.94)
Black	1.38 (1.29–1.49)
Hispanic	0.99 (0.89–1.10)
Caucasian	Reference
Age category	
≤20	0.88 (0.80–0.97)
21–25	1.00 (0.93–1.20)
26–30	Reference
31–35	1.08 (0.97–1.20)
36+	0.63 (0.54–0.73)
Clinical characteristics	
Hypertension	1.83 (1.66–2.01)
Diabetes	1.25 (1.12–1.39)

Source: Authors' own calculations using data from the 2012 Nationwide Inpatient Sample (Regional Medicaid-Funded Deliveries) merged with 2010–2014 data from a community-based nonprofit doula organization that serves Medicaid beneficiaries. Cells show adjusted odds ratios (AOR) and 95% confidence intervals (CI) from multivariable logistic regression models to estimate the association between doula support and preterm birth, controlling for maternal age, race-ethnicity, and clinical complications.

sistent with prior research (2,8,11,15). Other covariates were associated with cesarean birth, as expected, for both preterm and full-term births, with higher rates of cesarean delivery among women over age 30 (especially those over age 35), compared with women ages 26–30, and among women with hypertension and diabetes, compared with women who did not have these conditions. Also, among full-term births, black women had higher odds of cesarean (AOR 1.12 [95% CI 1.07–1.16]), compared with white women, whereas Asian and Hispanic women had comparatively lower odds of cesarean (AOR 0.74 [95% CI 0.65–0.83], AOR 0.76 [95% CI 0.72–0.80], respectively).

The incremental cost-effectiveness result is shown in Fig. 1. The quadrants in Fig. 1 plot costs and health outcomes (measured in terms of preterm births, where doula support is associated with a lower odds of preterm birth, as described in Table 2). Each dot represents one simulated scenario and the bigger dot represents the average incremental cost-effectiveness ratio of doula-supported deliveries. The lower right quadrant (quadrant IV) represents estimates that are “cost saving,” that is, such scenarios improve health while saving money. Estimates in the upper right quadrant (quadrant I) are “cost-effective,” that is, such a scenario would improve health at a particular financial cost. We found that, on average, doula-supported deliveries among Medicaid beneficiaries regionally

**Table 3. Odds of Cesarean Delivery for Medicaid-Funded and Doula-Supported Singleton Births, Compared with Medicaid-Funded U.S. Regional Births, Controlling for Demographic and Clinical Factors, Stratified by Preterm or Full-Term Status**

	<i>Odds of cesarean delivery among preterm births AOR (95% CI)</i>	<i>Odds of cesarean delivery among full-term births AOR (95% CI)</i>
<b>Doula support</b>	1.63 (0.99–2.64)	0.44 (0.39–0.49)
Race/ethnicity		
Asian	0.75 (0.42–1.34)	0.74 (0.65–0.83)
Black	0.91 (0.78–1.05)	1.12 (1.07–1.16)
Hispanic	0.96 (0.77–1.21)	0.76 (0.72–0.80)
Caucasian	Reference	Reference
Age category		
≤ 20	0.58 (0.47–0.73)	1.46 (1.38–1.53)
21–25	1.01 (0.86–1.19)	0.90 (0.86–0.94)
26–30	Reference	Reference
31–35	1.35 (1.10–1.65)	1.29 (1.22–1.37)
36+	2.08 (1.53–2.81)	4.67 (4.35–5.01)
Clinical characteristics		
Hypertension	2.63 (2.18–3.18)	1.33 (1.25–1.42)
Diabetes	1.83 (1.48–2.28)	1.76 (1.65–1.88)

Source: Authors' own calculations using data from the 2012 Nationwide Inpatient Sample (Regional Medicaid-Funded Deliveries) merged with 2010–2014 data from a community-based nonprofit doula organization that serves Medicaid beneficiaries. Cells show adjusted odds ratios (AOR) and 95% confidence intervals (CI) from multivariable logistic regression models to estimate the association between doula support and cesarean delivery, stratified by preterm birth status and controlling for maternal age, race-ethnicity, and clinical complications.

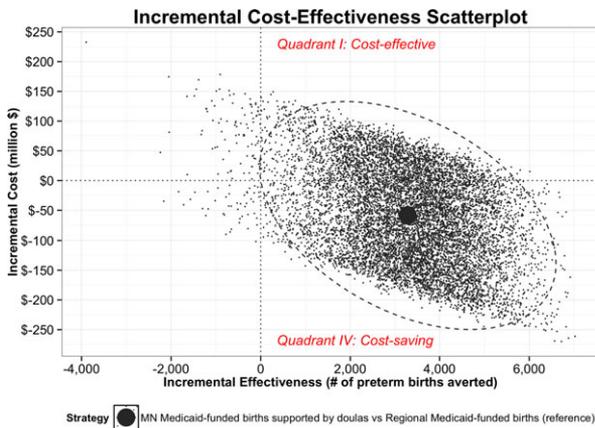


Fig. 1. Incremental cost-effectiveness analysis. Amount in \$ represents break-even amount of reimbursement for doulas at which cost savings is equal to 0.

would save \$58.4 million and avert 3,288 preterm births each year. Of the 10,000 simulated scenarios comparing Medicaid-funded deliveries with doula support to Medicaid-funded deliveries regionally, 73.3 percent resulted in cost savings (i.e., a greater effectiveness at a lower cost) and 25.3 percent were cost-effective (i.e., greater effectiveness at a higher cost).

We also calculated the expected cost savings, using 10,000 simulated scenarios across a range of reimbursement rates. To estimate potential cost savings across these scenarios, we compared potential changes in Medicaid expenditures for childbirth based on the reimbursement rates for doulas and costs related to childbirth care (measured in terms of preterm and cesarean births, where doula support is associated with a lower odds of preterm birth, and lower odds of cesarean delivery among full-term births, per results presented in Tables 2 and 3). Appendix S3 shows cost savings figures for all study states for which data are available, where the *x*-axis represents doula reimbursement rates, and the *y*-axis represents all childbirth-related costs. In each figure, the blue line represents the anticipated cost and health impacts across the rate range, and the place where the blue line intersects with 0 represents the “cost equivalency” point, where the costs of reimbursement for doulas are offset by savings related to lower rates of preterm and cesarean birth. This amount varies across states (which have different baseline preterm and cesarean rates, and different Medicaid reimbursement rates for care), but averages \$986 and ranges from \$929 to \$1,047 across states.

## Discussion

This study presents the first cost-effectiveness data on doula care in a Medicaid context. Prior research suggested potential cost savings associated with

reduced cesarean rates among Medicaid beneficiaries with access to doula care (8), but the current analysis improves on these estimates by 1) employing rigorous decision-analytic modeling, 2) using simulation and empirical assessment of model sensitivity to uncertainty in parameter estimates, and 3) accounting for associations with both preterm birth and cesarean delivery. Results from this analysis indicate that Medicaid coverage of doula services may be cost-effective—or even cost saving—for state programs.

Substantial clinical evidence supports the positive effects of doula care on a range of birth outcomes, with no known risks (11–15). However, prior research has not established whether there is an association between prenatal doula support and preterm birth. After adjusting for age, race, diabetes, and hypertension, we found women with prenatal doula care had 22 percent lower odds of preterm birth, a substantial—but not unprecedented—effect size. Analyses of the Centering Pregnancy group prenatal care model show preterm risk reduction ranging from 33–47 percent among women randomized to group care, compared with those randomized to usual care (26,27). In addition, consistent with prior research (2,8,15), this analysis shows a relationship between doula support and reduced risk of cesarean delivery. Interestingly, the association between doula care and lower odds of cesarean delivery was only detected among women with full-term births, potentially reflecting consistency with a pattern uncovered in prior research, where doula support had a stronger effect on reducing cesarean among women without a medical indication for the procedure (15).

Risk of preterm birth varies by medical factors, socioeconomic conditions, race-ethnicity, substance abuse, and social factors such as high stress levels and lack of social support (5). Doula support during pregnancy may influence this constellation of risks for preterm birth by reducing stress, improving nutrition, improving health literacy, providing referrals and connections to resources, and improving emotional well-being (11–13,16). Prior randomized controlled trials of doula support during labor show stronger effects for women who are low income, socially disadvantaged, or who experience cultural or language barriers to accessing care (11). Extant research from both randomized trials (11) and observational studies (15) also finds that access to doula support, not a desire for doula support, is associated with improved outcomes, reduced rates of procedure use, and higher levels of satisfaction.

All women in this study with access to doula care had at least one prenatal visit with a doula, but without detailed information for the entire cohort on the number and timing of prenatal visits, we were not able to distinguish a dose–response relationship between prenatal doula visits and odds of preterm birth and cesarean

delivery. Future research should examine this question in the context of expanded access to doula services. In addition, future research could also prospectively analyze doula care, possibly through a randomized controlled trial, to assess the causal pathway between prenatal doula support, preterm birth, and cesarean delivery.

Results from cost models can help inform decisions around benefits design, case management, coverage policies, and value (28). There are limited published data (8,15) that have modeled the potential cost savings that could be achieved with doula support for pregnant Medicaid beneficiaries. Furthermore, state Medicaid programs and managed care organizations have more accurate data—there is a need for potential benefit in either internal analyses or research using that data.

### *Strengths and Limitations*

This study is the first rigorous cost-effectiveness analysis of doula care in the context of U.S. state Medicaid programs. It provides timely, policy-relevant information to inform ongoing efforts to expand access to doula services and improve maternity care outcomes. Yet, there are some important limitations on interpretation of these findings. The mathematical cost-effectiveness models presented here are based on associational, not causal, relationships between doula support and preterm and cesarean birth. Also, the doula data used in this study come from one organization in one state; however, relationships are consistent with studies using other data sets (11–13,15). In addition, information on preterm birth and maternal complications are from self-reports in doula data but hospital discharge reports in NIS data. Importantly, we did not have access to consistent information on the number of prenatal doula visits for all women with doula support in the study population, limiting our ability to assess a potential dose–response relationship. Other limitations include lack of information on prior preterm birth, educational attainment, marital status, prenatal care, and other risk markers; differences in racial-ethnic distribution between the study groups; and lack of data on whether Medicaid beneficiaries in NIS data may have received doula care. Cost data are estimated from previously published sources (4,23) because we were unable to identify a source of accurate state-level data for child-birth-related hospitalizations.

In nonrandomized studies, like this one, there is a risk of selection bias and unmeasured confounding. That is, women who receive doula care may differ in important ways from women who do not. Our “comparison group” is a regional sample and not a population of women without access to doula care, but access

to doula care, especially among lower-income women, is minimal based on survey responses from a national sample of childbearing women (29), so we assume that the vast majority of women in the regional comparison group did not have doula support. Future studies should compare women with and without access to doula care (intention to treat analysis) and between women who had doula care and those who may have been eligible but did not use these services (per protocol analysis).

### **Conclusions**

In addition to providing support during labor, the scope of a doula’s work also includes prenatal psychosocial support, education, and health promotion. This type of care may be associated with lower risk of preterm birth, in addition to reductions in the chance of cesarean, and cost-effectiveness results indicate that achieving these health benefits may warrant investment in doula care as a covered benefit for Medicaid plans. Facilitating financial access to prenatal doula support should be given serious consideration by Medicaid programs and managed care organizations concerned with reducing overall rates of preterm birth and cesarean delivery and decreasing associated costs. This cost-effectiveness analysis clearly points to potential value in greater access to doula services among Medicaid beneficiaries.

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## Supporting Information

Additional Supporting Information may be found in the online version of this article:

**Appendix S1.** Diagram of Decision Tree.

**Appendix S2.** Parameter Values and Distributions for Cost Model.

**Appendix S3.** Cost Equivalency Points across Study States, Where the Costs of Reimbursement for Doulas are Offset by Savings Related to Lower Rates of Preterm and Cesarean Birth.

**Evidence for the Effects of Doula Support**  
**Report prepared by Christina Gebel, MPH, May 2014**  
**for Lorenza Holt, BACE-NMC**

**What is a doula?**

A ‘doula’ is a certified professional, who provides non-medical support to women and families throughout a woman’s pregnancy, childbirth, and postpartum experience.<sup>1</sup> Activities of a doula can include: prenatal visits to discuss childbirth education and mother’s intentions for birth; continuous support during labor including relaxation techniques, emotional support, and optimal positioning for labor; and postpartum support including basic breastfeeding skills, developing maternal confidence with infant care, and identifying signs of distress or depression.

**What is the evidence of doula support on labor intervention?**

There is a strong evidence base for the positive effect of doulas on labor and delivery. One review of 15 clinical trials, totaling 12,791 women, showed that having doula support is associated with decreased use of analgesia, decreased incidence of operative birth, increased incidence of vaginal delivery, and increased maternal satisfaction.<sup>2</sup> In a large survey of nationally-representative of 1,573 women in 2005, doula support was the strongest predictor of nonmedical methods of labor induction and labor pain management.<sup>3</sup> The following table lists an overview of evidence for doula support on labor intervention. All studies cited are either randomized-controlled trials or meta-analyses.

**Table 1. Effect of Doula Support on Duration of Labor, Type of Delivery, and Labor Interventions**

Duration of Labor	✓ Shortens duration of labor by 2.8 hours <sup>4</sup>
Spontaneous Vaginal Delivery and Cesarean Delivery	<ul style="list-style-type: none"> <li>✓ Doubles the rate of spontaneous vaginal birth<sup>4</sup></li> <li>✓ 51% lower odds of having a cesarean delivery<sup>5</sup></li> <li>✓ Lower cesarean delivery rate than control group (13.4% vs. 25.0%)<sup>6</sup></li> <li>✓ Lower cesarean delivery rate than control group (8% vs. 18%)<sup>7</sup></li> </ul>
Labor interventions	<p><i>Pitocin</i></p> <ul style="list-style-type: none"> <li>✓ 50% less likely to use oxytocin<sup>4</sup></li> <li>✓ 71% lower odds of using oxytocin<sup>5</sup></li> </ul> <p><i>Analgesia</i></p> <ul style="list-style-type: none"> <li>✓ 46% lower odds of using any analgesia<sup>5</sup></li> <li>✓ Lower use of epidural analgesia than control group (64.7% vs. 76.0%)<sup>6</sup></li> <li>✓ Lower use of epidural analgesia than control group (7.8% vs. 55.3%)<sup>7</sup></li> </ul> <p><i>Forceps Delivery</i></p> <ul style="list-style-type: none"> <li>✓ 57% lower odds of using forceps in delivery<sup>5</sup></li> <li>✓ Lower use of forceps than in control group (8.2% vs. 26.3%)<sup>6</sup></li> <li>✓ 50% less likely to have forceps used<sup>4</sup></li> </ul> <p><i>Labor Induction</i></p> <ul style="list-style-type: none"> <li>✓ Those with induction who had a doula had a lower rate of cesarean delivery than the control group (12.5% vs. 58.8%)<sup>6</sup></li> </ul>

## Effects of Doulas on Rates of Breastfeeding

Healthy People 2020 are national goals for the health of the United States citizens. A subset of these goals has a particular focus on maternal and child health, including increasing rates of breastfeeding. Healthy People MICH-21 sets targets for increasing the proportion of infants who are ever breastfed and breastfed at six months and one year, while increasing the proportion exclusively breastfed at three months and six months.<sup>8</sup>

Doulas provide basic breastfeeding support, and evidence shows that the presence of a doula has a positive effect on rates of breastfeeding:

- ✓ 68% of women receiving doula care were breastfeeding at 6 weeks, compared to 54% of those receiving the standard of care<sup>9</sup>
- ✓ Doula-group mothers attempted breastfeeding at a higher rate than control-group mothers (64% vs. 50%)<sup>10</sup>
- ✓ Doula-group mothers were more likely to breastfeed longer than 6 weeks (29% vs. 17%)<sup>10</sup>
- ✓ Fewer doula-group mothers introduced complementary foods before 6 weeks of age (6% vs. 18%), waiting till at least 4 months (21% vs. 13%)<sup>10</sup>

Evidence also shows that these effects hold true for racially-diverse women, at-risk women, and women in the Medicaid population:

- ✓ Of women with at least one life stressor that could increase stress during childbirth, e.g., substance abuse or depression, mothers with doula support were more than twice as likely to breastfeed at 6 weeks (89% vs. 40% standard of care)<sup>9</sup>
- ✓ Women on Medicaid with a doula-supported birth had near-universal breastfeeding initiation (97.9%) compared with 80.8% of Medicaid population<sup>11</sup>
- ✓ Among African American women on Medicaid, 92.7% of those with doula support initiated breastfeeding compared to 70.3% of the general Medicaid population<sup>11</sup>

## Effects of Doulas on Postpartum Health

Doula support is not only present in labor but also with mothers in the postpartum period. Here, evidence shows that a relationship with a doula shows positive effects on a mother's postpartum health, transition into motherhood, and feelings towards her infant:

- ✓ Increased reports of positive perceptions of infants, support from others, and self-worth<sup>12</sup>
- ✓ Decreased symptoms of depression at six weeks postpartum<sup>13</sup>
- ✓ Improved self-esteem<sup>13</sup>

### Doula Support at BMC

The Birth Sisters program at Boston Medical Center (BMC) show that women with doulas showed:

- ✓ Increased intention to breastfeed (85% vs. 68%)
- ✓ Increased early breastfeeding initiation (46% vs. 23%).
- ✓ Decreased percentages of total cesarean delivery (16% vs. 19%)
- ✓ Decreased use of epidural analgesia (36% vs. 46%)

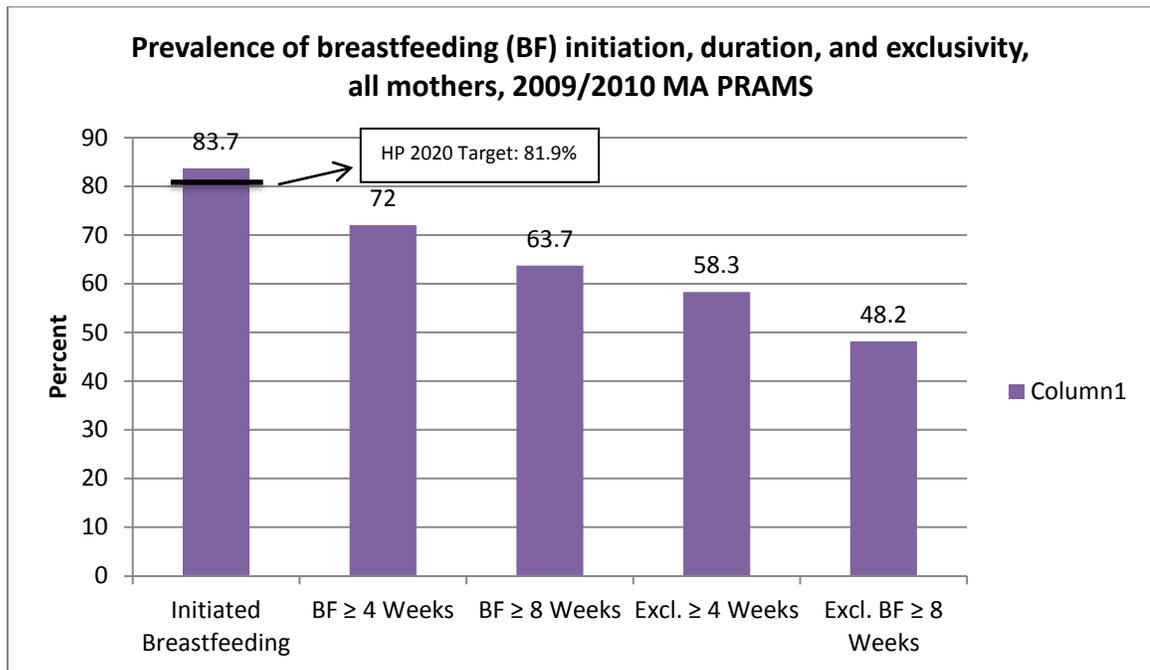
- ✓ Increased sensitivity of the mother to her child's needs<sup>13</sup>

### Racial Disparities in Birth-Related Issues in Massachusetts

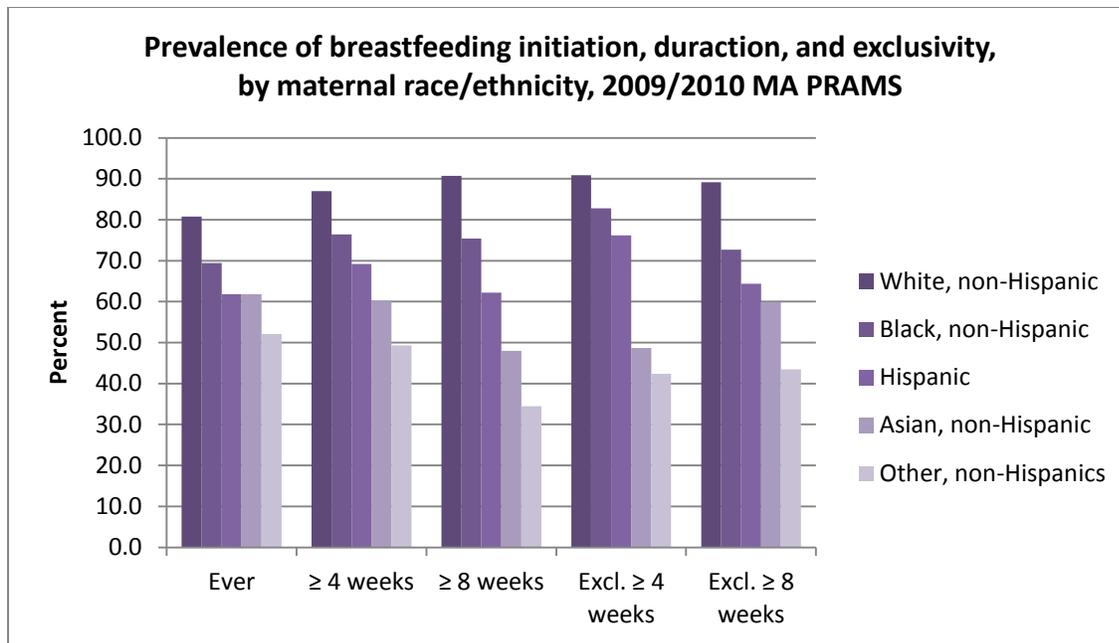
In the United States, racial disparities exist across a number of different health outcomes. The state of Massachusetts had made considerable efforts and progress in decreasing such disparities. However, a number of disparities still persist, and Massachusetts, like other states, is working to reach its Healthy People 2020 goals. The use of doulas is one way to assist Massachusetts in achieving its goals, while reducing disparities. The following tables and figures present a number of different birth-related topics, across race/ethnicity in the state of MA.

#### Breastfeeding

In terms of breastfeeding, the most recent MA PRAMS data show that MA falls just short of reaching its HP 2020 target.



MA PRAMS data also show that all races and ethnicities show a decline in breastfeeding at each time interval as well as difference between races in breastfeeding initiation and duration at four and eight weeks (highest among Asian, non-Hispanic mothers and lowest among White non-Hispanic mothers). The data also show a lower rate of exclusive breastfeeding at four and eight weeks for Hispanic mothers compared to White, non-Hispanic mothers).



### Postpartum Health

MA PRAMS data also show that MA has considerable more work to do in reducing postpartum disparities among mothers of different races. White, non-Hispanic mothers are the least likely to report fair/poor self-rated health, with Hispanic mothers being the most likely.

**Table 2. Prevalence of fair/poor self-rated health, by socio-demographic characteristics, 2009/2010 MA PRAMS**

Characteristic	Weighted (n)	Weighted (%)	95% CL
<b>Maternal race/ethnicity:</b>			
White, non-Hispanic	2446	2.6	1.6-4.1
Black, non-Hispanic	538	4.2	3.0-6.0
Hispanic	2245	10.7	8.7-13.2
Asian, non-Hispanic	348	3.0	1.9-4.9

Data show that the prevalence of mothers with postpartum depression is highest among Black, non-Hispanic mothers (followed closely by Hispanic mothers) and lowest among Asian and White, non-Hispanic mothers.

**Table 3. Prevalence of mothers with postpartum depression (a combined scoring of depressed, hopeless, and slowed down  $\geq 10$ ), by socio-demographic characteristics, 2009/2010 MA PRAMS**

Characteristic	% Post-partum Depression (Combined Measure 10+)		
	Weighted (n)	Weighted (%)	95% CL
<b>Maternal race/ethnicity:</b>			
White, non-Hispanic	8034	8.6	6.8-10.9
Black, non-Hispanic	1499	13.0	10.6-15.9
Hispanic	2146	11.6	9.4-14.4
Asian, non-Hispanic	760	7.3	5.4-9.7

### **Doulas & Disparities**

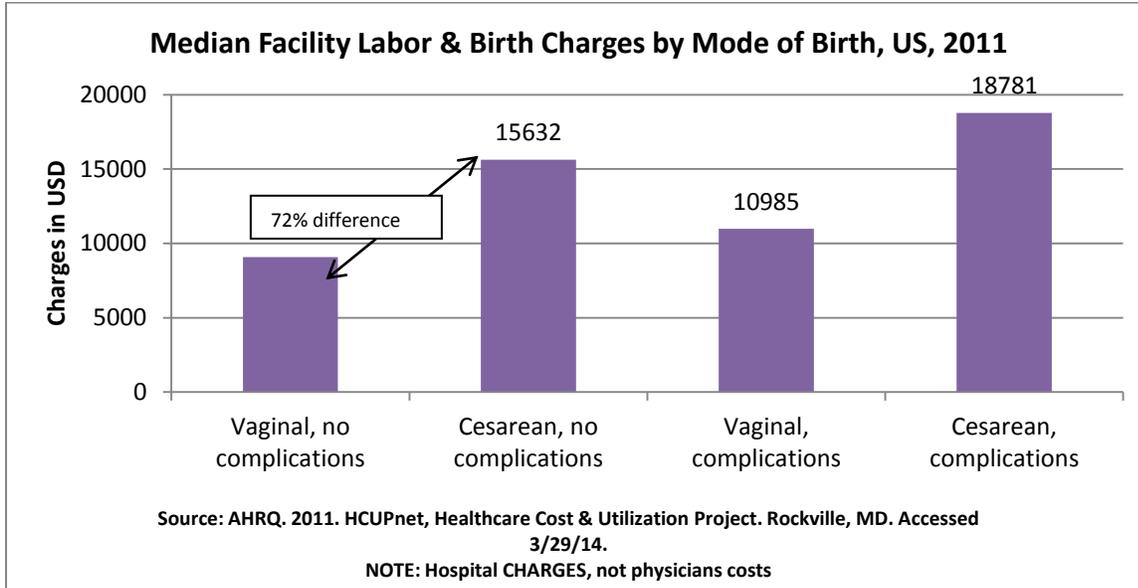
Evidence shows that the presence of doulas in the healthcare system can influence these outcomes. Doulas have been shown to increase rates of breastfeeding, particularly “ever” breastfeeding.<sup>10</sup> Doulas also meet with their clients during the postpartum period and mothers with doula support report decreased symptoms of depression at six weeks as well as increased self-esteem.<sup>13</sup> Thus, doulas can be an effective way to decrease disparities in both breastfeeding and postpartum outcomes.

However, according to *Listening to Mothers III*,<sup>14</sup> a survey of a nationally-representative sample of US women, 39% of Black, non-Hispanic mothers, 30% of Hispanic mothers, and 22% of White, non-Hispanic mothers did not use a doula, but had a clear understanding of doula care and would have liked to have had doula care. This difference across races was significant at  $p < .01$ . Furthermore, when looking at payer source, 36% of mothers on Medicaid or CHIP had never heard of a doula, compared to 19% of mothers on private insurance. This difference, across payer, was also significant at  $p < .01$ . Both of these figures show that there are significant disparities in access to or knowledge of doula by race/ethnicity and also by payer. More non-White women would like doula care, and significant work must be done in the Medicaid/CHIP population to let women know of this option.

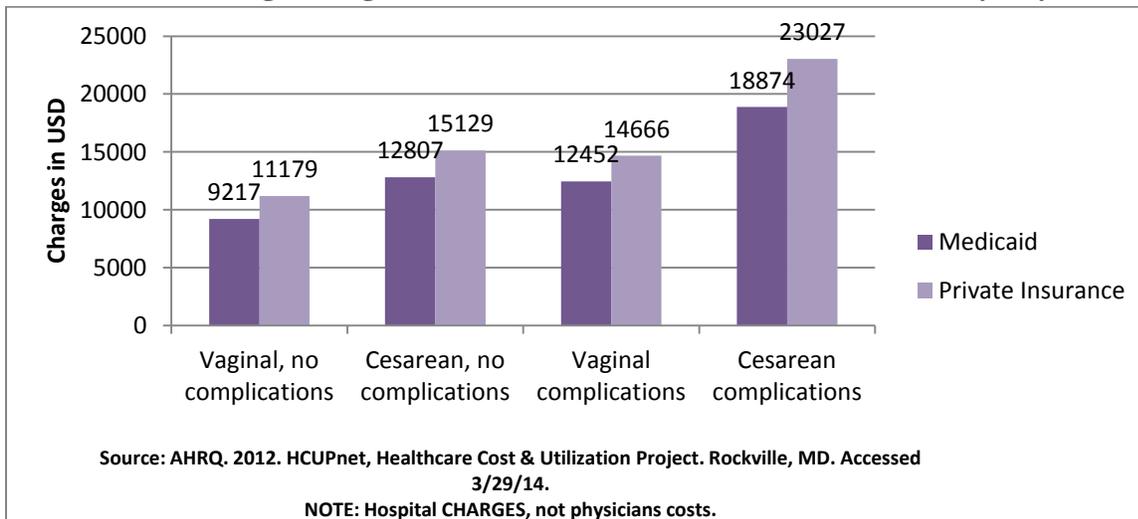
## Cost-Savings Benefits with Use of Doulas in Hospital Systems

Without the use of doulas, the healthcare system is assuming excess costs related to added interventions during labor and delivery. The following tables and charts explore the difference between the costs as well as the projected savings that MA could retain if the use of doulas became the norm in the healthcare system.

### Difference in Charges: Vaginal vs. Cesarean Section Nationwide



### Difference in Charges: Vaginal vs. Cesarean Section in Massachusetts by Payer



According to the Cochrane Review, a systematic look at multiple studies using professional doulas, in 2012 the derived relative risk of cesarean delivery for women with doula support was

0.69, or a 31% reduction in cesarean delivery.<sup>15</sup> The below table only considers cost savings in cesareans without complications

**Table 4. Projected Savings in Cesareans Using a Doula Program**

	Total discharges for cesarean section	Total discharges after 31% reduction	Difference in Number of Discharges	Total charges	Projected Savings
<b>Medicaid</b>	4,317	2,978	1339	\$12,807	\$17,148,573
<b>Private Insurance</b>	9,802	6,763	3039	\$15,129	\$45,977,031
Total Savings					<b>\$63,125,604</b>
Projected costs (see below)					TBD
Total Net Savings					<b>TBD</b>

**Table 5. Projected Compensation for Doulas Per Client**

Service Provided	Estimated Hours	Rate
Two prenatal visits	3 hours	TBD
Labor and delivery	12 hours (average)	TBD
On-call compensation	336 hours (two weeks)	TBD
Postpartum visits	6 hours	TBD
Bonus for completing services to mothers		\$100
Day, night, overtime differentials to pay		\$1.50/hour
Administrative costs		TBD

### Evidence for Cost Savings

States have already begun to estimate their total health care savings, and evidence shows that introducing doulas to the healthcare delivery system, particularly in the Medicaid population will lead to substantial annual savings:

- One study in MN found that a quarter of all US states would save at least \$2.5 million annually at a doula reimbursement of \$200 in the Medicaid population.<sup>16</sup>
- The same study in MN found that doula care lowered the total cesarean rate for mothers in the Medicaid population. Mothers with a community doula had a total cesarean rate of 22.3%, compared to the national rate for the Medicaid population of 31.5% and the total rate for Minnesota during the same time period or 27.4%.<sup>16</sup>
- Another study in WI using the Cochrane Review figure of a 31% reduction in cesarean delivery estimated the total cost savings in WI to be over \$28 million annually.<sup>17</sup>

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**CERTIFICATION UPDATE**

**January 2015**

The Massachusetts Board of Certification of CHWs, created by Chapter 322 (Acts of 2010), continues to meet on the 2<sup>nd</sup> Tuesday of the month (unless otherwise noted) from 9:30 am – 1:00 pm at Division of Health Professions Licensure, 239 Causeway St, Boston (near North Station T stop) in Conference Rooms 417 A&B. **ALL ARE WELCOME. The meeting dates for 2015 are posted on the Board’s website, or as follows:**

January 13, 2015	May 12, 2015	September 8, 2015
February 10, 2015	June 9, 2015	October 13, 2015
March 10, 2015	July 14, 2015	November 10, 2015
April 14, 2015	August 11, 2015	December 8, 2015

The Board Members are as follows:

<b>Board Member</b>	<b>Seat</b>
Jean Zotter, Chair	Director, Office of Integrated Policy, Planning and Management for the Division of Prevention and Wellness, Commissioner’s Office
Joanne Calista, Vice-Chair	Community Health Worker Training Organization Representative
Henrique O. Schmidt, Secretary	Community Health Worker 4
Charles Joffe-Halpern	Community-Based Community Health Worker Employer
Patricia Edraos	Massachusetts League of Community Health Centers Representative
Sheila Och	Community Health Worker 2
Maritza Smidy	Community Health Worker 1
Denise Lau	Public Member
Vacant	Community Health Worker 3
Vacant	Massachusetts Association of Health Plans Representative
Margaret Hogarty	Massachusetts Public Health Association Representative

The Board and its Advisory Workgroup have been working hard for over two years to develop guidelines for certifying individual CHWs and for approving CHW training programs. Regulations have been drafted by the Board, and will be ready for public comment in early 2015. **It is critical that CHWs be informed and prepared to participate in continuing to shape the certification process.**

You may contact Jackie Toledo at MACHW with any questions at [jtoledo@machw.org](mailto:jtoledo@machw.org). You may also visit the Board of Certification’s website at <http://www.mass.gov/eohhs/gov/departments/dph/programs/hcq/dhpl/community-health-workers/> for additional information.

**MACHW will be hosting informational forums across the state to inform CHWs about certification details and to involve CHWs in recommending possible revisions to the draft regulations. STAY TUNED for further announcements from MACHW about how to be involved.** The Board has developed the following DRAFT recommendations for certification:

- 1) A very detailed description of core competencies (what certified CHWs must be able to know and do) to serve as the foundation for competency-based certification:
  - Outreach Methods and Strategies;
  - Individual and Community Assessment;
  - Effective Communication;
  - Cultural Responsiveness and Mediation;
  - Education to Promote Healthy Behavior Change;
  - Care Coordination and System Navigation;
  - Use of Public Health Concepts and Approaches;
  - Advocacy and Community Capacity Building;
  - Documentation; and
  - Professional Skills and Conduct
  
- 2) There will initially be **two** pathways for individual CHWs to become certified:
  - A combination of training and work experience (80 hours of training in a combination of core competencies and special health topics from a state-approved training program plus 2000 hours of relevant work experience over the 10 years prior to application); OR
  - 4000 of relevant work experience over the 10 years prior to application. (This is a “grandfathering” option for experienced CHWs who didn’t graduate from a core competency training program like those offered by OWTI in Worcester or CHEC Boston and CHEC Lowell. This “work only” pathway will be phased out 3 years after the state certification program actually begins.)

CHWs currently enrolled in core competency training programs that are shorter than 80 hours may be eligible to apply for certification, since there will be a provisional state approval process for established CHW training programs. The Board is developing standards for approving core training programs that recognize the unique and valuable nature and skills of the CHW workforce.

Meanwhile, the continuing Board monthly meetings are open to the public. Anyone with an interest in its work is encouraged to attend, particularly those with CHW representation from varying segments and regions that encompass the workforce across the Commonwealth. Do not miss this unique opportunity to be part of shaping the practice and profession of CHWs. Click the link below for more information, upcoming agendas, and previous meeting minutes.●

You may contact Jackie Toledo at MACHW with any questions at [jtoledo@machw.org](mailto:jtoledo@machw.org). You may also visit the Board of Certification’s website at <http://www.mass.gov/eohhs/gov/departments/dph/programs/hcq/dhpl/community-health-workers/> for additional information.

## COMMUNITY HEALTH WORKER FAST FACTS

The CHW Advisory Council was convened under Section 110 of Chapter 58 of the Acts of 2006, the 2006 health care reform law. It conducted a CHW workforce investigation and produced a report to the legislature, “Community Health Workers in Massachusetts: Improving Health Care and Public Health.” (2009)

The Community Health Worker (CHW) Advisory Council found strong published research to show that CHWs are effective in:

- Assisting individuals and families to obtain and maintain health insurance;
- Increasing access to and use of preventive education, screenings, and treatment services;
- Encouraging the use of primary care and medical home models;
- Reducing unnecessary use of urgent care;
- Improving management of chronic diseases such as diabetes and asthma and related health conditions, including high blood pressure; and
- Strengthening patient health literacy and culturally competent provider practices.

DPH defines CHWs as public health workers who apply their unique understanding of the experience, language, and/or culture of the populations they serve in order to carry out one or more of the following roles:

- Providing culturally appropriate health education, information, and outreach in community-based settings, such as homes, schools, clinics, shelters, local businesses, and community centers;
- Bridging/culturally mediating between individuals, communities, and health and human services, including actively building individual and community capacity;
- Assuring that people access the services they need;
- Providing direct services, such as informal counseling, social support, care coordination, and health screenings; and
- Advocating for individual and community needs.

CHWs are distinguished from other health professionals because they:

- Are hired primarily for their understanding of the populations and communities they serve;
- Conduct outreach a significant portion of the time in one or more of the categories above;
- Have experience providing services in community settings.

According to the 2008 workforce survey conducted as part of the legislative report:

- There are nearly 3,000 CHWs employed in Massachusetts.
- 34% of CHWs in Massachusetts make less than \$15 per hour, which is below \$30,000 a year for a full-time position. *In other words, over a third of Massachusetts CHWs are working at wages that put them below 150% of the federal poverty level (FPL) for a family of four.*
- 41% of CHWs work in Boston; 21.6% are employed in the Metro region; 14.4% in Central Massachusetts; and less than 10% in each of the other regions of the state.
- 30% of CHWs are employed by agencies that serve rural clients.
- CHWs work with a wide variety of at-risk populations, including, but not limited to, people with substance abuse disorders, homeless persons, immigrants and refugees, persons at risk for or living with HIV/AIDS, and adolescents, among others.
- Most clients served by CHWs receive or are eligible for publicly funded health insurance.

According to 2005 DPH data cited in the CHW Advisory Council report;

- 76% of CHWs are women, with a median age range of 36-40 years old.
- 60% have a degree beyond high school.
- Over half of the CHW workforce is people of color, including 23.7% African-American, 20.6% Hispanic, and 4.9% Asian or Pacific Islander.
- Over half (58.6%) of CHWs in Massachusetts are bi- or multi-lingual, speaking the preferred language of their clients.

The 2009 legislative report made 34 recommendations for a sustainable CHW program in Massachusetts, including Recommendation #2.6 to establish a CHW board of certification. This ultimately led to the passage of Chapter 322, Acts of 2010, “An Act Establishing a Board of Certification of Community Health Workers.”

# OVERDUE

## MEDICAID & PRIVATE INSURANCE COVERAGE OF DOULA CARE



*If a doula were a drug, it would be unethical not to offer it.* Adapted from John Kennell, MD<sup>1</sup>

### HEALTH BENEFITS<sup>2,3</sup>

**9%** drop in use of pain medication

**31%** less use of Pitocin

**34%** fewer negative birth experiences

**40** minutes shorter labor



**28%** fewer cesareans



**12%** more spontaneous vaginal births



**Higher** Apgar scores



**Increased** breastfeeding with prenatal and postpartum doula care

*Continuous labor support by a doula is "one of the most effective tools to improve labor and delivery outcomes."*

American College of Obstetricians and Gynecologists and Society for Maternal-Fetal Medicine<sup>4</sup>

### WHAT DOULAS DO

Doulas provide emotional, informational & physical support before, during & after birth for childbearing women and their partners

**Doulas and family members work together as a support team.**

Family members have long-term, close relationships with the mother-to-be.

Doulas are trained and experienced at providing labor and birth support.

#### INFORMATION



Prenatal & postpartum resources & referrals

Answering questions about labor and birth

#### EMOTIONAL SUPPORT

Relaxation techniques

Encouragement

Calm environment



#### COMMUNICATION

Foster positive communication with doctors, midwives & nurses



Support informed decision making

Help women advocate for themselves

#### HANDS ON SUPPORT

Walking & position changes

Massage

Hydrotherapy

Breastfeeding support



### UNMET NEED<sup>5</sup>

Just **6%** of women had labor support from a doula in 2011-12

Of those who did not use a doula, more vulnerable women were more likely to have wanted doula support



**Medicaid 35%**

**Private Insurance 21%**

Percent of women who wanted - but did not have - doula support



**Black 39%**

**Latina 30%**

**White 22%**

# SPENDING



# COST SAVINGS

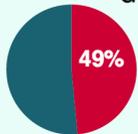
In 2013, hospitals billed **\$126 billion**<sup>6</sup> for maternal & newborn care



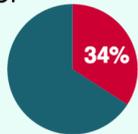
**MORE** is spent on childbirth care than any other type of hospital care<sup>7</sup>

Reducing spending on childbirth care by even a small percentage would have a big effect!

Maternal & newborn stays account for<sup>8</sup>



of Medicaid hospitalizations



of privately insured hospitalizations

**1 in 3 births** is by cesarean<sup>9</sup>



56% more than in 1996 but this hasn't made moms or babies healthier!<sup>4</sup>

Cesarean births cost **50% more**<sup>10</sup> than vaginal births<sup>10</sup>

**\$9,537** more for private insurance  **\$4,459** more for Medicaid (includes maternal and newborn care costs)

**Doulas lower spending by**



**Decreasing** cesareans (an average of 28%) repeat cesareans epidurals complications chronic conditions

**Increasing** breastfeeding

**Decreasing cesareans**

**28%** would save



for private insurance



for Medicaid

each year

## STRATEGIES TO EXPAND COVERAGE



Federal or State legislation mandating coverage



Centers for Medicare and Medicaid Services guidance and technical assistance to states



Review by U.S. Preventive Services Task Force for inclusion as a recommended service



State Medicaid coverage via "non-licensed" service practitioner rule, DSRIP or 1115 waiver



Agreements between insurers or managed care organizations with doula agencies or groups



Including doula coverage within innovative payment and delivery systems

**2 States** Oregon + Minnesota



have passed legislation leading to Medicaid coverage of doula support

**LEARN MORE IN THE 2016 ISSUE BRIEF ON INSURANCE COVERAGE OF DOULA CARE at**

**Choices in Childbirth**

[www.choicesinchildbirth.org/our-work/advocacy-policy/doulacoverage/](http://www.choicesinchildbirth.org/our-work/advocacy-policy/doulacoverage/)

**Childbirth Connection**

<http://transform.childbirthconnection.org/reports/doula/>

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# Overdue: Medicaid and Private Insurance Coverage of Doula Care to Strengthen Maternal and Infant Health

JANUARY 2016

## Executive Summary

Doula care, which includes non-clinical emotional, physical and informational support before, during and after birth, is a proven key strategy to improve maternal and infant health. Medicaid and private insurance reimbursement for doula care would increase the availability and accessibility of this type of support and would advance the “Triple Aim” framework of the National Quality Strategy by:

- ▶ Improving the quality of care, including by making it more accessible, safe and woman- and family-centered (e.g., by enhancing women’s experience of care and engagement in their care);
- ▶ Improving health outcomes for mothers and babies; and
- ▶ Reducing spending on non-beneficial medical procedures, avoidable complications and preventable chronic conditions.

Rigorous studies show that doula care reduces the likelihood of such consequential and costly interventions as cesarean birth and epidural pain relief while increasing the likelihood of a shorter labor, a spontaneous vaginal birth, higher Apgar scores for babies and a positive childbirth experience. Other smaller studies suggest that doula support is associated with increased breastfeeding and decreased postpartum depression. This body of research has not identified any harms of continuous labor support.

Studies in three states (Minnesota, Oregon and Wisconsin) have concluded that Medicaid reimbursement of doula care holds the potential to achieve cost savings even when considering just a portion of the costs expected to be averted. Cesareans currently account for one of every three births, despite widespread recognition that this rate is too high. Cesareans also cost approximately 50 percent more than vaginal births – adding \$4,459 (Medicaid payments) or \$9,537 (commercial payments) to the total cost per birth in the United States in 2010.



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Because doula support increases the likelihood of vaginal birth, it lowers the cost of maternity care while improving women's and infants' health. Other factors that would contribute to cost savings include reduced use of epidural pain relief and instrument assisted births, increased breastfeeding and a reduction in repeat cesarean births, associated complications and chronic conditions.

Because the benefits are particularly significant for those most at risk of poor outcomes, doula support has the potential to reduce health disparities and improve health equity. Doula programs in underserved communities have had positive outcomes and are expanding, but the persistent problem of unstable funding limits their reach and impact.

In August 2013, the Centers for Medicare and Medicaid Services (CMS) Expert Panel on Improving Maternal and Infant Health Outcomes in Medicaid/CHIP included providing coverage for continuous doula support during labor among its recommendations.

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**"One of the most effective tools to improve labor and delivery outcomes is the continuous presence of support personnel, such as a doula."**

— "Safe Prevention of the Primary Cesarean Delivery," Consensus Statement, American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine, March 2014.

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Currently, only two states – Minnesota and Oregon – have passed targeted legislation to obtain Medicaid reimbursement for doula support, including continuous support during labor and birth, as well as several prenatal and postpartum home visits. Implementation has been challenging, and bureaucratic hurdles make obtaining reimbursement difficult. At this time, few doulas, if any, have actually received Medicaid reimbursement in either state. Across the country, a relatively small number of doula agencies have contracted with individual Medicaid managed care organizations and other health plans to cover doula services. The extent of these untracked local arrangements is unknown.

The recently revised CMS Preventive Services Rule (42 CFR §440.130(c)) opens the door for additional state Medicaid programs to cover doula services under a new regulation allowing reimbursement of preventive services provided by non-licensed service providers. However, the absence of clear implementation policies or national coordination would require each state to spend considerable resources devising new processes and procedures to achieve Medicaid reimbursement for doula support.

### **Key Recommendations for Increasing Public and Private Coverage of Birth Doula Services**

- ▶ Congress should designate birth doula services as a mandated Medicaid benefit for pregnant women based on evidence that doula support is a cost-effective strategy to improve birth outcomes of women and babies and reduce health disparities with no known harms.
- ▶ Until this broad, optimal solution is attained, CMS should develop a clear, standardized pathway for establishing reimbursement for doula services, including prenatal and postpartum visits and continuous labor support, in all state Medicaid agencies and Medicaid managed care plans. CMS should provide guidance and technical assistance to states to facilitate this coverage.
- ▶ State Medicaid agencies should take advantage of the recent revision of the Preventive Services Rule, 42 CFR §440.130(c), to amend their state plans to cover doula support. States should also include access to doula support in new and existing Delivery System Reform Incentive Payment (DSRIP) waiver programs.

- ▶ The U.S. Preventive Services Task Force (USPSTF) should determine whether continuous labor support by a trained doula falls within the scope of its work and, if so, should determine whether labor support by a trained doula meets its criteria for recommended preventive services.
- ▶ Managed care organizations and other private insurance plans as well as relevant innovative payment and delivery systems with options for enhanced benefits should include support by a trained doula as a covered service.
- ▶ State legislatures should pass legislation mandating private insurance coverage of doula services.

## What is Doula Care?

Doulas are trained to provide non-clinical emotional, physical and informational support for women before, during and after labor and birth. Birth doulas provide hands-on comfort measures, share resources and information about labor and birth and facilitate positive communication between women and their maternity care providers by helping women articulate their questions, preferences and values.

In addition to providing continuous support during labor, birth doulas typically meet with clients one or more times at the end of pregnancy, as well as early in the postpartum period, although some hospital-based doula programs provide care only during labor and birth. In the postpartum period, doulas may offer help with newborn feeding and other care, emotional and physical recovery from birth, coping skills and appropriate referrals as necessary.

Community-based doula programs offer culturally appropriate, broad support to women in at-risk and underserved communities. Such programs offer services tailored to the specific needs of the community they serve at no or very low cost to women. In addition to birthing support, community-based doulas often make prenatal and postpartum home visits with clients to provide childbirth and breastfeeding education, offer referrals for needed health or social services, inform the client about birth options and assist with creating birth plans, and support attachment and responsive parenting.<sup>1</sup> Some programs provide only a few home visits or birth-only support.

Community-based doulas are specially trained community health workers (CHWs), women who are usually trusted members of the community they serve. CHWs may be particularly well-suited to address issues related to discrimination and disparities by bridging language and cultural gaps and serving as a health navigator or liaison between the client and service providers.<sup>2</sup>

Payment for doula services is largely out of pocket, with the exception of community-based doula programs and some health plans. Lack of reliable reimbursement is a barrier to access to doula care, especially for women with limited means.

## Why Do Women Need Doula Care?

The current system of maternity care in the United States is failing to meet the needs of our women and families. Available data suggest that the United States spends more on childbirth-related care than any other nation,<sup>3</sup> yet our performance and international ranking on numerous key maternal and infant health indicators lag behind those of many other countries. World Health Organization data published in 2014 identify 36 nations with a lower infant mortality rate, 62 with a lower maternal mortality ratio, and 97 with a higher rate of exclusive breastfeeding to six or more months

than the United States.<sup>4</sup> “Severe maternal events” – complications of pregnancy or birth that are severe enough to be or become life threatening – have been rapidly rising in the United States, reaching a total of 60,000 women a year.<sup>5</sup> Relative to Asian and Pacific Islander and white women, black, American Indian and Alaska Native and Hispanic women experience disparities for many maternal and infant health measures.<sup>6</sup>

Medicaid and private insurance reimbursement for doula care would significantly increase access to this beneficial service and would improve the quality and value of publicly and privately funded maternity care, consistent with the “Triple Aim” of the Department of Health and Human Service’s National Quality Strategy:<sup>7</sup>

- ▶ Improving the quality of care, including by making it more accessible, safe and woman- and family-centered (e.g., by enhancing women’s experience of care and engagement in their care);
- ▶ Improving health outcomes for mothers and babies; and
- ▶ Reducing spending on non-beneficial medical procedures, avoidable complications and preventable chronic conditions.

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**Authors [of the 2013 Cochrane systematic review] concluded that benefits are so substantial that “all women should have continuous support during labour.”**

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High-quality scientific research strongly and consistently supports the benefits of doula care. The 2013 Cochrane systematic review of effects of continuous labor support analyzed data from 22 individual studies involving more than 15,000 women. Authors concluded that the benefits are so substantial that “all women should have continuous support during labour.” The review found no known harms of such care and determined that caregivers such as doulas who are present solely to provide continuous labor support offer a broader range of benefits with greater impact than either nurses or other hospital staff or a woman’s friend or family member.<sup>8</sup> A review of 41 birth practices in the *American Journal of Obstetrics and Gynecology* in 2008 using the methodology of the USPSTF concluded that doula support was among the most effective of all those reviewed – one of only three to receive an “A” grade.<sup>9</sup>

Despite the strength of the evidence supporting doula care, the American College of Obstetricians and Gynecologists (ACOG) and the Society for Maternal-Fetal Medicine (SMFM) reported that continuous labor support is likely underutilized,<sup>10</sup> suggesting the need for policy changes that will increase access to doula care, particularly for those at greatest risk of poor outcomes.

### **Improving the Health of Women and Babies**

Doula support increases the likelihood of safer, healthier and more satisfying births<sup>11</sup> and reduces health disparities.<sup>12,13</sup> By providing continuous emotional and hands-on, physical support throughout labor and delivery, doulas help women experience healthy birth practices with less use of interventions. By avoiding consequential unwarranted and unwanted procedures and medications,<sup>14</sup> doula care reduces the likelihood of complications and improves the long-term health of women and infants.<sup>15,16,17</sup>

Most women giving birth in the United States are in good health with low-risk pregnancies. Research shows that supporting normal, healthy physiologic processes around the time of birth is the optimal model of care for the majority of women and babies<sup>22</sup> – an approach that is “low-tech”

and “high-touch.” Doula care helps mitigate the highly medicalized approach to maternity care that has become the norm, resulting in an overuse of some medical procedures, even in circumstances where there is no evidence to demonstrate their benefits.<sup>23</sup>

The documented impact of doula support on the cesarean rate alone is of major significance. One in three births is now by cesarean (32.2 percent in 2014), a 56 percent increase from 1996.<sup>24</sup> The cesarean rate has increased for all groups of women, including those at very low risk for this procedure.<sup>25,26</sup> Rising rates of cesarean birth in the United States have not led to better maternal or infant health.<sup>27</sup>

Cesareans have been associated with an increased risk of serious short- and long-term complications.<sup>28,29</sup> Between 1998 and 2011, life-threatening, severe maternal complications of birth more than doubled.<sup>30</sup> The increase in many of these complications has been associated with rising cesarean rates.<sup>31</sup> The risk of severe maternal complications is three times greater following a cesarean and may include maternal death, cardiac arrest, hysterectomy, blood clots and major infections, as well as result in longer hospital stays and a greater chance of hospital readmission.<sup>32</sup> Risks are magnified in subsequent pregnancies, with the risk of several serious types of placental complication rising exponentially with each repeat cesarean.<sup>33,34,35</sup> Systematic reviews have found that babies born via cesarean face an increased risk of breathing problems<sup>36</sup> and such chronic diseases as asthma,<sup>37</sup> Crohn’s disease,<sup>38</sup> Type 1 diabetes,<sup>39</sup> allergies,<sup>40</sup> autism spectrum disorder<sup>41</sup> and obesity.<sup>42</sup>

Doula support also helps reduce the use of several other medical interventions, and the type of labor support provider makes a big difference. Compared with women without labor support, labor support provided by doulas has consistently been found to be more beneficial than labor support provided by nurses and other members of the hospital staff (associated with fewer, less effective benefits) and by a member of the woman’s social network (associated solely with greater satisfaction). Compared with no labor support, doula-provided labor support has been shown on average to involve a:

- ▶ 28 percent reduction in cesarean births;
- ▶ 9 percent reduction in use of any pain medications;
- ▶ 31 percent reduction in use of synthetic oxytocin to speed up labor;
- ▶ 34 percent reduction in reporting a negative birth experience; and
- ▶ 12 percent greater likelihood of having a spontaneous vaginal birth.<sup>43</sup>

### The Benefits of Doula Care

The Cochrane review of effects of continuous labor support offers what is widely understood to be the most trustworthy type of evidence: systematic review of randomized controlled trials. It concludes that continuous support during labor lowers the likelihood of having a:

- ▶ Cesarean birth
- ▶ Labor with epidural or other pain medications
- ▶ Birth with forceps or vacuum assistance
- ▶ Negative childbirth experience
- ▶ Baby with a low five-minute Apgar score

It increases the likelihood of having a:

- ▶ Shorter labor
- ▶ Spontaneous vaginal birth<sup>18</sup>

Some studies of doula support have found that such care is associated with:

- ▶ Increased breastfeeding<sup>19</sup>
- ▶ Decreased likelihood of developing postpartum depression<sup>20,21</sup>

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**Compared with no labor support, doula-provided labor support has been shown, on average, to involve a 28 percent reduction in cesarean births.**

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Care provided by trained, experienced doulas also appears to increase the establishment and duration of breastfeeding<sup>44,45,46</sup> and may help identify and reduce postpartum depression and improve parent-infant interaction.<sup>47,48</sup> Increasing breastfeeding has been a top public health priority, because it is linked to reduction in the risk of asthma, obesity, diabetes and ear infections in babies, and the risk of heart disease, obesity, diabetes and breast and ovarian cancers in women.<sup>49,50</sup> A recent study supported by the Centers for Disease Control and Prevention (CDC) and the Health Resources and Services Administration (HRSA) assessed the outcomes in multiple HealthConnect One community-based doula program sites and found a dramatic increase in breastfeeding duration and exclusivity in women from populations that traditionally experience some of the lowest breastfeeding rates.<sup>51</sup> The CDC has recommended doula care as a strategy to increase breastfeeding.<sup>52</sup>

Doula care is also an important component of maternity care from the perspective of our growing understanding of innate hormonally-driven childbearing processes. A recent, comprehensive synthesis of the literature finds that physiologic processes foster safe and effective labor, birth, maternal behaviors, maternal-newborn attachment, and breastfeeding, whereas common medical procedures during childbirth, such as epidural pain relief and cesarean birth, interfere with these processes and diminish their benefits. Consistent with these findings, labor support by doulas appears to enhance the functioning of major hormone systems and limit stress responses that can interfere with labor progress. This in turn reduces the need to use interventions with established side effects and helps keep women and babies healthy.<sup>53</sup>

## Eliminating Disparities

Providing access to doula services to women of color and low-income women – populations facing the worst maternal and infant outcomes – can reduce disparities by improving the care and health of those with the greatest need. Community-based doula programs offer culturally appropriate doula support to women in underserved communities, generally at no charge to the client.

Some community-based doula programs engage and educate trusted members of the community they serve to become birth doulas and home visitors who can provide childbirth education, breastfeeding support and help navigating the health care system, as well as continuous support during labor and birth. The CDC and HRSA support community-based doula programs as a promising approach to meeting the needs of vulnerable and high-risk mothers and families.<sup>54</sup>

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**Childbirth Connection’s national *Listening to Mothers III* survey found that just 6 percent of women who gave birth in hospitals experienced labor support from a doula.**

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Community-based programs have achieved positive results, such as reducing cesareans and increasing breastfeeding, in communities across the United States, improving outcomes and care practices, elevating the voices of women in disenfranchised communities and taking a comprehensive approach to maternal health by linking women with a variety of support services.<sup>55,56</sup>

Childbirth Connection’s national *Listening to Mothers III* survey found that just six percent of women who gave birth in hospitals from 2011 to 2012 experienced labor support from a doula. Medicaid beneficiaries were half as likely as privately insured women to know about doula care (19 percent versus 36 percent).<sup>57</sup> However, underserved women were disproportionately interested in using doula care. Among women who did not experience but knew about this type of care, Medicaid beneficiaries

were far more likely to have wanted doula care than women with private insurance (35 percent versus 21 percent), as were black non-Hispanic and Hispanic women compared with white non-Hispanic women (39 percent versus 30 percent versus 22 percent).<sup>58</sup> Moreover, research suggests that maternal health benefits derived from doula support are greatest among women from low-income and socially disadvantaged communities and those facing language or cultural barriers.<sup>59</sup>

## Enhancing Women's Experience of Care

Doulas improve women's satisfaction and experience of care by strengthening their engagement in care decisions.<sup>60,61,62</sup> By offering resources to help women educate themselves in advance and by assisting women in establishing and maintaining positive communications with their maternity care providers, doulas strengthen women's capacity to make informed decisions about their own health care. Having a sense of control and involvement in maternity care decision-making are key factors in women's satisfaction with the childbirth experience.<sup>63,64</sup>

Research shows that many women do not have enough information about the maternity care choices they face or the risks and benefits of various options.<sup>65</sup> Women have reported feeling that they do not have the capacity to be actively engaged in their maternity care decisions because their input or concerns are dismissed, ignored or not heard.<sup>66,67</sup>

The Affordable Care Act prioritizes the experience of care as an essential quality component and has created financial incentives to improve it. In 2012, CMS instituted a new system for hospital reimbursement, with experience of care survey scores impacting the level of incentive payments to hospitals; increasingly, private insurers are following suit.<sup>68</sup> Doulas can help facilities benefit from these incentives by emphasizing a woman-centered, individualized approach to care and by encouraging women to become more informed about and actively involved in care decisions.

## Reducing the Cost of Care

Childbirth-related hospital charges exceed charges for any other type of hospitalization.<sup>69,70</sup> In 2013, hospitals billed \$126 billion for combined maternal and newborn care.<sup>71</sup> Obstetric care has become procedure intensive, even for low-risk women and newborns, contributing to the soaring maternity care costs. Studies conducted in Oregon, Minnesota and Wisconsin have found that Medicaid reimbursement of doula support has the potential to reduce Medicaid expenditures by reducing the number of unnecessary cesareans, instrument assisted births and admissions to neonatal intensive care units based on Apgar scores.<sup>72,73,74</sup> While more difficult to quantify, Oregon's analysis recognized, but did not calculate, the long- and short-term benefits of increased breastfeeding and reduced repeat cesareans with their attendant risk of morbidity and mortality.<sup>75</sup>

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**Eliminating spending on non-beneficial procedures, avoidable complications, and preventable chronic conditions would each contribute to significant savings that would cover the cost of doula care.**

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Eliminating spending on non-beneficial procedures, avoidable complications and preventable chronic conditions would each contribute to significant savings that would cover the cost of doula care. Existing analyses of potential cost savings are based primarily on calculations of the reduction in spending on cesarean sections at the time of a single pregnancy and birth. While that is the easiest to estimate and possibly the largest source of savings, the economic benefits of doula support in the present pregnancy extend beyond avoided cesareans in that pregnancy and continue well into the future.

Doula care has the potential to generate cost savings by:

- ▶ **Lowering cesarean rates:** Cesarean births cost about 50 percent more than vaginal births, whether paid for by Medicaid or by commercial insurance, adding \$4,459 and \$9,537, respectively, to the total payments per birth in the United States in 2010.<sup>76</sup> Because medical costs have risen steadily in the intervening period, these figures are conservative, and current numbers are substantially higher. If cesareans were decreased by 28 percent, the average achieved in the Cochrane review’s meta-analysis of doula studies,<sup>77</sup> Medicaid and private insurance could potentially reduce spending on cesareans in the present pregnancy alone by \$646 million and \$1.73 billion, respectively, per year (see Table 1).
- ▶ **Reducing repeat cesareans:** About 90 percent of births following a cesarean are repeat cesareans, but few women with an initial vaginal birth have cesareans in subsequent births.<sup>78</sup> This means that avoiding the first cesarean reduces costs in future pregnancies.
- ▶ **Reducing the use of epidural analgesia:** The cost of epidural analgesia includes fees for the medication and anesthesia services, and the increased likelihood of additional interventions, including the use of medication to speed labor, bladder catheters, cesarean section for concern about the welfare of the baby, and evaluation and treatment of subsequent fevers, often an iatrogenic consequence of epidurals.<sup>79</sup>
- ▶ **Increasing rates of breastfeeding:** Breastfeeding improves the health of women and babies, and research suggests that \$31 billion could be saved nationwide (\$13 billion in pediatric and \$18 billion in maternal costs) if breastfeeding targets were reached.<sup>80,81</sup>
- ▶ **Reducing preventable complications and chronic conditions:** Cesareans, epidurals, vaginal birth assisted with vacuum or forceps and not breastfeeding increase the risk of complications and chronic conditions. By reducing use of these interventions and increasing breastfeeding, doulas can reduce spending on these long-term adverse effects (as described above).

Table 1. Estimated Potential Reduction in Spending Limited to Cesareans in the Present Pregnancy

United States, 2013	Medicaid	Private Insurance
Number of births <sup>82</sup>	1,579,099	1,845,499
Number of cesareans <sup>83</sup>	517,630	642,435
Cesarean rate <sup>84</sup>	32.8%	34.8%
Estimated cesareans preventable with doula support (28%) <sup>85</sup>	144,936	179,882
Average additional costs per cesarean <sup>86</sup>	\$4,459	\$9,627
<b>Estimated savings per year</b>	<b>\$646,271,408</b>	<b>\$1,731,722,089</b>
<b>Estimated savings per birth</b>	<b>\$409.27</b>	<b>\$938.35</b>

## Paths Forward

To deliver the proven benefits of doula care to women and their babies, doula services must be widely available and accessible, which in turn requires the establishment of clear, system-wide pathways to reimbursement. Several approaches at the federal level hold the potential to achieve widespread, national access to doula services. While achieving these more far-reaching solutions is optimal, several interim more incremental strategies that are currently in place on a small scale should be expanded, clarified, and simplified to meaningfully increase access to doulas.

### The Role of Medicaid

Each year almost 4 million women give birth in the United States.<sup>87</sup> Medicaid covers nearly half of these births<sup>88</sup> and disproportionately serves vulnerable and disadvantaged families. As the nation's largest payor for childbirth care, Medicaid influences maternity care and reimbursement practices system-wide through its policies and standards.

In June 2012, CMS convened the Expert Panel on Improving Maternal and Infant Health Outcomes in Medicaid/CHIP to identify opportunities to enhance care, improve outcomes and reduce costs for mothers and babies enrolled in Medicaid and the Children's Health Insurance Program (CHIP). The Expert Panel presented its findings in August 2013 and included Medicaid coverage for continuous doula support during labor among the strategies recommended to enhance maternal care.<sup>89,90</sup>

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**The most effective and far-reaching step to increase utilization of doula support among women in underserved communities would be for Congress to mandate coverage of this high-value service for pregnant Medicaid beneficiaries.**

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The most effective and far-reaching step to increase utilization of doula support among women in underserved communities would be for Congress to mandate coverage of this high-value service for pregnant Medicaid beneficiaries. Prior to federal legislative action, states have several possible pathways to expand Medicaid coverage of doula support. While these pathways are described below in more detail, CMS could amplify the impact of state action by providing states with the support, guidance and technical clarifications needed to facilitate the adoption of innovative practices. By providing technical expertise and sharing successful state strategies, CMS could reduce the duplication of efforts from state to state and allow more efficient and timely uptake of successful strategies.

### Non-Licensed Health Professional Rule

On July 15, 2013, CMS published its final rule (CMS-2334-F) expanding the definition of who can provide preventive services covered by Medicaid. To ensure “robust provision of services designed to assist beneficiaries in maintaining a healthy lifestyle and avoiding unnecessary health care costs,” CMS revised “42 CFR 440.130(c) to accurately reflect the statutory language that physicians or other licensed practitioners recommend these services but that preventive services may be provided, at state option, by practitioners other than physicians or other licensed practitioners.”<sup>91</sup> Previously, Medicaid required that services be “provided by a physician or other licensed practitioner...,” but the newest rule now grants individual states the option to reimburse for preventive services that have been recommended by a physician or other licensed medical provider (such as a midwife), but provided by a non-licensed practitioner.<sup>92</sup>

In order to be approved to cover non-licensed preventive service providers, states must submit an amendment to their state Medicaid plan that includes the scope of services to be covered and who may provide them. The amendment must define practitioner qualifications, education, credentialing and any registration that the state will require.<sup>93</sup>

While no state has yet submitted a state plan amendment reflecting this revision, the rule change has opened a new pathway for state Medicaid agencies to reimburse community-based preventive services that could include doula support before, during and following labor and birth. Community-based doulas often provide preventive services such as home visiting, care coordination, educational counseling and breastfeeding support, as well as continuous labor support, making this new rule a promising tool for authorizing funding for doula services.<sup>94</sup>

Several resources have been developed to help states and organizations develop a state plan amendment. CDC has created a technical assistance guide to support states seeking to utilize community health workers to provide preventive services<sup>95</sup> and two non-profit organizations, the Trust for America's Health and Nemours Health and Prevention Services, have developed a questionnaire to guide states or organizations through the process of working with state Medicaid offices to develop state plan amendments to include community health workers.<sup>96</sup>

### **Delivery System Reform Incentive Payment (DSRIP) Waivers**

Delivery System Reform Incentive Payment – DSRIP initiatives – are a category of Section 1115 waiver programs, which states can use to test innovative practices through a demonstration or pilot project. DSRIP programs aim to transform the Medicaid payment and delivery systems by linking funding with improvements meeting specific metrics. Programs may focus on developing infrastructure, system redesign and improvement in outcomes.<sup>97</sup> Because doula support has been demonstrated to improve outcomes in maternity care and studies suggest that it has the potential to reduce unnecessary spending, doula programs would be excellent candidates for inclusion in DSRIP initiatives. States should pursue the inclusion of projects to expand access to doulas under existing and new DSRIP programs as a strategy to improve maternal and infant outcomes while reducing costs.

### **Existing State and Local Programs**

States exercise a broad range of approaches to determining which services are eligible for Medicaid coverage.<sup>98</sup> Some states and individual organizations have taken the lead in creating innovative ways for Medicaid to reimburse for doula services. Two states, Oregon in 2011 and Minnesota in 2013, passed legislation leading to authorization of Medicaid coverage of doula services in those states, through the process of applying for and obtaining a waiver from CMS.<sup>99</sup> Both states have been taking steps to identify or create certifying bodies, registration procedures, core competencies, scope of services, supervision arrangements and reimbursement procedures. Because of the extensive work involved in developing the needed infrastructure, it has taken significant time for these states to begin reimbursement.

At this time, few doulas, if any, have actually received reimbursement in either Oregon or Minnesota. Challenges have included identifying the mechanism for a non-licensed service provider to receive payment and locating and making arrangements with licensed providers who are required to serve as

a conduit for reimbursement. For example, in Oregon doulas must register with the state to be eligible for reimbursement, but must also work with a health care provider (physician or certified nurse-midwife) who submits a request for their reimbursement. The physician or midwife receives the reimbursement and must then pay the doula. This requires close collaboration between the doula and the health care provider, which may not always be possible and may limit available services. Usually, a doula works independently or for an agency and provides services to women, who have many different maternity care providers, making this model of reimbursement potentially burdensome for maternity care providers, doulas and women.

In Minnesota, in the year after doula coverage went into effect, evaluation researchers have documented a number of challenges to implementation, including a number of difficulties with becoming an enrolled provider. Most community-based doulas work for agencies rather than as individuals, but as of the writing of this brief, there was no provision to allow agencies to contract with Medicaid, only individual providers. Doulas and agencies were unclear as to the documentation required for payment of claims for doula services, which differed from one Medicaid managed care organization to another. Minnesota doulas noted the need for a formal coordination structure to allow various parties to work together to resolve issues related to the registry/credentialing (Minnesota Department of Health) and payment, including for sustainable levels of reimbursement (Minnesota Department of Health Services).<sup>100</sup>

In several parts of the country, doula programs run by independent agencies or non-profit organizations have developed innovative strategies to secure funding and serve women by contracting directly with Medicaid managed care organizations in their area. Because this information is not tracked, the extent of these local arrangements is unknown. Uzazi Village's Sister Doula program in Kansas City, Missouri, is an example of such a model (see box).

## Innovative Programs

Small-scale programs have been successfully providing doula services to some low-income women, but limited funding constrains their impact and sustainability. New reimbursement policies would provide much-needed financial stability and would greatly increase the number of women who could be served. Below are a few examples of programs currently providing services.

**HealthConnect One** developed and implemented a program in about 50 sites across the country. In this model, trusted community members complete a 20-session doula training course supplemented with additional information and skills such as breastfeeding counseling and childbirth education. Doulas begin meeting with clients as early in pregnancy as possible, provide home visits and attend health care visits with clients during the prenatal period. Doulas assist clients during labor and birth, and then continue with intensive home visits in the weeks and months following birth for up to two years.<sup>101</sup> These programs have been supported by grants from HRSA and private foundations.

**Uzazi Village** was established in Kansas City, Missouri, to increase perinatal health equity in the urban core and eliminate disparities in urban at-risk populations. Uzazi Village's Sister Doula program pairs pregnant women enrolled in Medicaid with community members who have been specially trained in an eight-week course as perinatal doulas. The training includes breastfeeding peer counseling, birth and postpartum doula care, childbirth education and contraception counseling. In addition

to providing culturally appropriate care to their clients, Uzazi Village seeks to develop the next generation of birth workers of color, ensuring that the workforce better reflects both the values of the community

and the population being served.<sup>102</sup> Uzazi Village contracted directly with a local Medicaid managed care organization serving Kansas City to obtain reimbursement for Sister Doula services. Twenty-three women are currently participating in the Sister Doula program. A study of the program's impact is underway. Full-scale implementation of Medicaid reimbursement would allow this and similar programs to increase their impact by reaching a significantly greater number of women.<sup>103</sup>

**Everyday Miracles** is a community-based program in Minneapolis, Minnesota, that provides doula support and other pregnancy-related services including childbirth education classes in three languages, mother support groups, prenatal yoga and access to car seats and breast pumps. Since its founding in 2003, Everyday Miracles has served over 3,000 clients. The women participating in their program have a cesarean rate of 17 percent, significantly lower than the national average (32.2 percent in 2014). Ninety-eight percent of their clients initiate breastfeeding and 72 percent continue past six months, compared with national averages of 75 percent and 43 percent, respectively. The first-year evaluation of the Doula Access Project is now available and details the challenges, opportunities and impact of Minnesota's new Medicaid coverage option.<sup>104</sup>

## The Role of Private Insurance

Private insurance plans should include services of a trained doula as a covered service, and state legislatures should pass legislation mandating private insurance coverage of doula services, as they have done for a broad range of services.<sup>105</sup> Anecdotal reports from advocates and doulas across the country indicate that no state legally mandates coverage of doula services at this time.

## Options Impacting Both Medicaid and Private Insurance

Private insurance plans can generally determine the scope of the coverage they provide, but under the Affordable Care Act, new private insurance plans are required to cover recommended preventive services without any cost-sharing by the consumer. Preventive services are identified by four agencies, including the USPSTF, and insurers must cover evidence-based services that receive an "A" or "B" rating, which indicates that the services have substantial or moderate benefits that outweigh any harms. The USPSTF assesses clinical preventive services, such as counseling, screening tests and preventive medication.

The USPSTF should determine whether continuous labor support by a trained doula falls within the scope of their work, and if it does, they should carry out a review to determine whether continuous labor support by a trained doula meets their criteria for recommended, evidence-based, preventive services.

Designation by the USPSTF as a recommended preventive service would greatly expand inclusion of doula support under new private insurance plans and would make coverage of doula services optional for maternity coverage through traditional Medicaid programs and required for coverage under Medicaid expansion.

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Finally, innovative payment and delivery systems, such as those sponsored by the CMS Center for Medicare and Medicaid Innovation,<sup>106</sup> are another possible pathway to expanding access to doula services. The recent announcement of major public and private sector initiatives for reaching value-based payment targets that accelerate movement to value-based care,<sup>107,108</sup> and establishment of the Health Care Payment Learning & Action Network,<sup>109</sup> will further accelerate this innovation. To facilitate better performance, some innovative payment and delivery systems offer enhanced benefits for high-value services that are not otherwise covered. As relevant and possible, high-value doula services are an excellent candidate for inclusion as an enhanced benefit. Table 2 compares these options.

Table 2. Comparing Strategies to Expand Coverage of Doula Services

<b>Strategy</b>	<b>Coverage Type</b>	<b>Positives</b>	<b>Negatives</b>
Federal Legislation	Medicaid	<ul style="list-style-type: none"> <li>- Would efficiently settle issue for all 50 states</li> <li>- Would lead to greatest access</li> </ul>	<ul style="list-style-type: none"> <li>- Could take a long time</li> <li>- Requires concerted lobbying effort</li> <li>- Politically challenging to achieve</li> </ul>
Federal Guidance	Medicaid	<ul style="list-style-type: none"> <li>- Would efficiently settle issue for all 50 states</li> </ul>	<ul style="list-style-type: none"> <li>- Not binding</li> <li>- No leverage</li> </ul>
USPSTF	Medicaid and Private	<ul style="list-style-type: none"> <li>- National reach</li> <li>- Would result in private insurance and Medicaid expansion reimbursement</li> <li>- Would expand and affirm evidence-based benefits of doula services</li> </ul>	<ul style="list-style-type: none"> <li>- Traditional state Medicaid plans have option of covering USPSTF recommended services without cost-sharing and not all do so for all services</li> <li>- Doula services may not fit into categories covered by the USPSTF</li> </ul>
Preventive Services Rule	Medicaid	<ul style="list-style-type: none"> <li>- Federal regulations already in place</li> <li>- No legislation required</li> <li>- Potential collaboration with other types of preventive service providers would strengthen advocacy and implementation efforts</li> <li>- Intended to address non-licensed, community-based services</li> </ul>	<ul style="list-style-type: none"> <li>- Requires state plan amendment, which may be time consuming to develop, submit, and obtain approval</li> <li>- Each state has to develop guidelines independently</li> <li>- Not clarified as applicable</li> </ul>
State DSRIP Programs	Medicaid	<ul style="list-style-type: none"> <li>- May move faster than federal legislation or other national solutions</li> <li>- Able to address specifics of each state's health care context</li> </ul>	<ul style="list-style-type: none"> <li>- Requires significant duplication of effort across states</li> <li>- Beneficiaries in states without DSRIP programs lack access</li> <li>- May not fit parameters of some state DSRIP plans</li> </ul>
State Legislation	Medicaid and Private	<ul style="list-style-type: none"> <li>- May move faster than federal legislation or other national solutions</li> <li>- Able to address specifics of each state's regulatory, legislative, political and health care context</li> </ul>	<ul style="list-style-type: none"> <li>- Requires significant duplication of effort across states</li> <li>- Beneficiaries in states without legislation lack access</li> <li>- Requires political as opposed to regulatory action</li> </ul>
Payment and Delivery Innovation	Medicaid and Private	<ul style="list-style-type: none"> <li>- Flexibly enables enhanced benefits for high-value services not otherwise covered</li> <li>- CMS is authorized to scale up successful innovation</li> </ul>	<ul style="list-style-type: none"> <li>- To date, relevant programs that might offer doula services as enhanced benefit are limited (e.g., much innovation has been in Medicare)</li> </ul>

## Next Steps

### Federal Level Recommendations

1. CMS should make continuous labor support by a trained doula a reimbursable service in all states, including by:

- ▶ Clarifying the appropriate current procedural terminology (CPT) code for obtaining reimbursement for doula services;
- ▶ Identifying doula support as a reimbursable preventive service delivered by non-licensed service providers who could be reimbursed through agencies or community health centers under 42 CFR §440.130(c);
- ▶ Exploring and advancing strategies to integrate doulas into innovative payment and delivery systems; and
- ▶ Advancing reimbursement for continuous labor support by a trained doula within its ongoing Maternal and Infant Health Initiative.

2. The USPSTF should determine whether continuous labor support by a trained doula falls under the scope of its work and, if so, should undertake a scientific evidence review to determine if such care meets its criteria for recommended preventive services.

3. HRSA and CMS should explore and define clear pathways for community-based doulas to be reimbursed for home visits that provide preventive services including, but not limited to, health education, nutrition counseling and breastfeeding counseling.

4. The Agency for Healthcare Research and Quality should collaborate with stakeholders to develop, implement and seek National Quality Forum endorsement of an adaptation of the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey suitable for measuring the experience of facility care of birthing women and newborns, including the dimension of access to supportive care during labor.

5. Given the complex and uneven approach across states to determine covered Medicaid services, Congress should include high-value birth doula services, inclusive of prenatal and postpartum home visits, among services mandated for Medicaid coverage.

### State Level Recommendations

6. States should seek CMS approval of state plan amendments to cover continuous labor support and home visits as reimbursable preventive services provided by non-licensed service providers under 42 CFR §440.130(c).

7. States should seek to include coverage of doula support under new and existing DSRIP programs

8. Medicaid managed care organizations and other health plans should offer doula services as a covered benefit, and states should enact legislation requiring plans to do so.

9. States should require health plans to include doula services within their covered benefits.

## Community Level Recommendation

**10.** Local governments, public and other safety net hospital systems, Medicaid managed care organizations, community health centers and other agencies and organizations should establish interdisciplinary teams to continue to explore and develop innovative approaches to making doula support available to women enrolled in Medicaid.

## Conclusion

Doula support is a proven strategy to improve health outcomes for mothers and babies, reduce disparities, engage and increase the satisfaction of those receiving care and improve the value of care. Recognizing the well-established benefits and the absence of identified harms of doula services, leading professional societies (e.g., ACOG, SMFM), agencies (e.g., CDC, HRSA and the CMS Expert Panel) and authors of the rigorous Cochrane review identify the value of increased access to this form of care. Multiple existing analyses anticipate a favorable return on investment for payors, considering just a subset of reduced costs. And many women desire but do not receive such care, pointing to unmet need for doula services.

Improving outcomes of mothers and babies and the experience of maternity care system-wide is imperative. Achieving measureable success will require better use of existing evidence-based practices. With the proliferation of pathways to increase access to doula support, this is a critical time to bring well-established benefits of this form of care to many more women and babies. Because all childbearing women and babies can benefit from this cost-effective service, private and government insurers throughout the United States should make doula services widely available. The greatest priority, however, is to initiate policy changes to ensure access to doula support for vulnerable women who have the greatest need for support and the fewest options available to them.

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**Private and government insurers throughout the United States should make doula services widely available. The greatest priority, however, is to initiate policy changes to ensure access to doula support for vulnerable women.**

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### About Choices in Childbirth

*Choices in Childbirth is a non-profit organization that works to ensure access to maternity care that is safe, healthy, equitable, and empowering. Our mission is to promote evidence-based, mother-friendly childbirth options through public education, advocacy, and innovative policy reform. Learn more at [www.ChoicesinChildbirth.org](http://www.ChoicesinChildbirth.org).*

### About the National Partnership for Women & Families

*The National Partnership for Women & Families is a nonprofit, nonpartisan advocacy group dedicated to promoting fairness in the workplace, access to quality health care and policies that help women and men meet the dual demands of work and family. Founded in 1918, Childbirth Connection became a core program of the National Partnership in 2014. Childbirth Connection programs serve as a voice for the needs and interests of childbearing women and families, and work to improve the quality and value of maternity care through consumer engagement and health system transformation. Learn more at <http://Transform.ChildbirthConnection.org> or [www.NationalPartnership.org](http://www.NationalPartnership.org).*

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- <sup>86</sup> See note 76.
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## **Community Health Workers Help MassHealth Improve People's Health & the State Budget!**

MassHealth's goal is to deliver better quality health care at lower cost through **A**ccountable **C**are **O**rganizations. **C**ommunity **H**ealth **W**orkers are key to successful MassHealth service delivery & payment system redesign.

### **Build CHWs into MassHealth ACOs and Their Practices!**

- Multiple states, including New York and Oregon, allow Medicaid coverage of CHWs as part of Health Homes or Patient Centered Medical Homes.
- Michigan Medicaid Managed Care contracts require inclusion of CHWs or peer support specialists.
- New Mexico Medicaid Managed Care contracts must describe CHW roles in patient education, and are encouraged to include CHWs as part of care coordination.
- Oregon CCO (ACO) contracts require inclusion of traditional health worker services, including CHWs.

#### **RECOMMENDATIONS FOR BUILDING CHWs INTO ACO MODELS**

##### **MassHealth shall:**

- 1) Require** – as a condition of contract – **that ACO systems demonstrate how they will integrate CHWs into multi-disciplinary teams for high-risk/high need patients**, including, but not limited to, **Health Homes**;
- 2) List CHWs as members of Interdisciplinary Care Teams in the upcoming Medicaid waiver request for ACOs, their practices and partners. CHWs shall be authorized to provide** the following services: care coordination, system navigation and support for access to community resources; assisting people to manage chronic diseases through reinforcement of clinical messages, motivational health education and other support; and to act as advocates for reducing unnecessary high cost interventions & procedures;<sup>1</sup>
- 3) Provide technical assistance** to ACOs, MCOs, and Community Partners to promote best practices for **hiring, training, supervising and integrating CHWs into teams and programs**, including provision of livable wage;
- 4) Direct upfront Delivery System Reform Incentive Payment (DSRIP) funding** to help both clinical practices and collaborating community partners **integrate CHWs into teams and help pay initial CHW contractor rates/salaries.**

<sup>1</sup> See MassHealth services to be delivered by CHWs as stipulated in One Care contracts.

**CHWs are effective when** integrated into health care provider systems, as:

- Members of primary care teams;
- Connectors between health care, social and community services;
- Liaisons across organizations as part of care coordination for patients; &
- As staff based in clinical settings and as staff at community-based settings that contract with clinical settings.

### **WHY INCLUDE CHWs IN ACO, MCO PRACTICES, COMMUNITY PARTNERS & HEALTH HOMES?**

- CHWs are hired primarily for their shared background with targeted populations and their personal qualities that help them build culturally competent rapport and trust with people they serve.
- CHWs are trained to help people deal with social, linguistic, economic, and other barriers to accessing and benefiting from health services.
- As a result of these qualities and skills, CHWs play a key role in reducing inequities in health care and outcomes.
- **Research has shown:**
  - ✓ Placing CHWs as part of health care teams contains costs by reducing high risk patients' use of urgent and emergency room care and preventing unnecessary hospitalizations.
  - ✓ CHWs improve quality of care and health outcomes by improving use of preventive services, chronic disease self-management support, maternal-child home visiting and perinatal support.

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**Model 3: Community Health Worker Intervention**

**Maternal and Child Health**

**Intervention Focus:**

This model is focused on improving the use of maternity and early pediatric care resources and other social services that have impact on outcomes in the perinatal and infancy period, with the end goal of improved health outcomes at decreased costs. The protocols used by CHWs in educating and supporting women follow state (Massachusetts Perinatal Care Guidelines, 2016) and national (AAP/ACOG Perinatal Care Guidelines, 7<sup>th</sup> edition) guidelines for best practice perinatal care.

**Goals for Intervention**

1. Increase utilization of prenatal, postpartum and preventive pediatric care
2. Increase utilization of social services that address social determinants of health as identified in individual needs assessment
3. Decrease costly, preventable labor interventions, including unnecessary cesarean births
4. Decrease low birth weight in babies
5. Increase breastfeeding initiation, exclusivity and duration (for patients of doula and breastfeeding support CHWs)
6. Decrease postpartum depression

**Population for Intervention**

1. Low-income Medicaid patients from diverse ethnic/racial/linguistic backgrounds
2. Pregnant and postpartum women and infants up to 1 year of age
3. Social and medical risk factors for poor perinatal, infant or childhood outcomes and/or high cost of care
  - a. Over- or under-utilization of health care services in pregnancy, the postpartum period, infancy or early childhood, and/or
  - b. Medical and/or behavioral comorbidities or complex care needs, and/or
  - c. Social determinants of poor perinatal, infant and child health, including housing instability, food insecurity, unmet basic material need, domestic

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violence, parental drug or alcohol addiction, prior or actual preterm birth/low birth weight, poor social support and/or other factors

### **Location of CHW**

1. **Option 1:** CHWs located in clinical setting (community health centers or hospitals) and supervised on site; CHWs can see patients in clinical or community settings, such as home visits or at social service organizations.
2. **Option 2:** CHWs on staff and supervised at community-based organizations but stationed at hospital or community health center; CHWs can see patients in clinical or community settings, as in Option 1 above.
3. **Option 3:** CHWs on staff and supervised at community-based organization (for example, multiservice agencies or doula or breastfeeding support organizations) and linked with ACO, with clear communication and coordination systems with clinical teams; CHW's can see patients in clinical or community settings as in Option 1 above.
4. **Option 4:** CHWs on staff at health plan, MCO, centrally supervised and coordinated with clinical team; CHWs can see patients in clinical or community settings, as in Option 1 above.

### **Supervision, Training Caseload, and Staffing Ratio**

*Literature on implementation structure varies by program. Recommendations below reflect a reasonable average over range of programs (see references below).*

1. **Manager-Staff Ratio:** 1.0 FTE program manager/supervisor per eight full-time CHWs
2. **Supervisor:** Supervisor should have content expertise. Clinical training as RN or Social Worker preferred. Senior CHW with significant relevant experience considered. Master's level education recommended.
3. **Caseload:** 15-40 clients at a time per 1.0 CHW FTE depending on scope of tasks in job description and location of client visits. Tasks limited to the clinical setting, such as phone navigation and clinic/hospital-based education can accommodate a caseload of 40-50 clients. Longer term home-visiting CHW's, including breastfeeding peers, can accommodate 30 clients per CHW. The

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caseload for a full-time doula is 4 clients in each pregnancy due date month, for a caseload of approximately 15-25 clients per full time doula depending on the home visiting and other navigation tasks required.

4. **Training:**
  - a. **CHW:** CHW training depends on the scope of the job description. Typical programs include initial trainings, covering some core competencies and some specialized health topics, ranging from several days to a week. Topics covered may include healthy pregnancy behaviors, information about childbirth, breastfeeding benefits, substance use in pregnancy, domestic violence and family planning information. Job-specific topics may include labor support techniques for doulas, strategies for home visiting, and breastfeeding support techniques. All MCH CHWs are encouraged to complete the entire CHW core competency training. Ongoing and continuing education training should be included in regular staff meetings.
  - b. **Supervisor:** All CHW supervisors should attend the CHW Supervisor Training at one of the CHW Core Competency training Centers in Massachusetts
  
5. **Team Integration Activities:** Strong communication between CHWs and practice clinical teams via regular team meetings, entry of CHW activities into electronic medical record, and telephone or texting.

### **CHW Activities**

*CHW meets woman in early prenatal period and follows her through pregnancy and the first 6-8 weeks postpartum using a structured assessment and intervention pathway (see below). Dose of the intervention is determined by client need. Doula CHWs also follow the client during labor and birth. Breastfeeding support and doula CHWs provide breastfeeding education and support prenatally, in the hospital and at home.*

1. **Assessment:** Standardized tools assess for social and medical needs at regular intervals (often in each trimester and the postpartum period). The CHW promotes the activation and engagement of the client through a woman- and family-centered action plan to accomplish patient-identified priorities and goals.

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2. Navigation: phone calls or in-person assessments in coordination with clinical team; assess barriers to care, provide health systems education, accompany client to appointments when needed to connect patient to:
  - a. Health Services:
    - Prenatal care, pediatric care and possible specialty care needed during the perinatal period, including behavioral health and dental cleaning
    - Improve two-way communication between clinical providers and patients/clients by serving as bridge (cultural, linguistic, health literacy)
  - b. Social Services Addressing Social Determinants of Health:
    - Health insurance, WIC, food resources, DTA, utilities assistance, SNAP, housing, immigration, employment, education, transportation, domestic violence resources, tobacco cessation, addiction services and other material resources such as diapers, crib, and baby clothes.
3. Social Support: Includes support during delivery, which involves physical and emotional comfort measures throughout labor and birth, serving as a cultural bridge between the laboring woman and health care team, promotion of breastfeeding and maternal-infant bonding in the immediate postpartum period.
4. Client Education: Topics include healthy pregnancy behaviors, benefits of smoking cessation, stress reduction techniques, childbirth and breastfeeding information, baby care and SIDS prevention, the importance of immunizations and other public health topics.

### **Quality and Health Outcomes Supported By Evidence**

1. Reduction In Low Birth Weight (for highly structured interventions)
  - a. Redding, S., Conrey, E., Porter, K., Paulson, J., Hughes, K., & Redding, M. (2015). Pathways Community Care Coordination in Low Birth Weight Prevention. *Maternal and child health journal*, 19(3), 643-650.
  - b. Lee, E., Mitchell-Herzfeld, S. D., Lowenfels, A. A., Greene, R., Dorabawila, V., & DuMont, K. A. (2009). Reducing low birth weight through home visitation: a

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randomized controlled trial. American journal of preventive medicine, 36(2), 154-160.

2. **Improved Breastfeeding Outcomes:** Increased initiation, duration and exclusivity of breastfeeding (For infants, breastfeeding reduces risks of infant hospitalization, childhood asthma, diabetes and obesity; For women, breastfeeding reduces risk of diabetes and breast cancer)
  - a. Chapman, D. J., Damio, G., Young, S., & Pérez-Escamilla, R. (2004). Effectiveness of breastfeeding peer counseling in a low-income, predominantly Latina population: a randomized controlled trial. Archives of pediatrics & adolescent medicine, 158(9), 897-902.
  - b. Chung, Mei, et al. "Interventions in primary care to promote breastfeeding: an evidence review for the US Preventive Services Task Force." Annals of Internal Medicine 149.8 (2008): 565-582
  - c. Chapman, D. J., Morel, K., Anderson, A. K., Damio, G., & Pérez-Escamilla, R. (2010). Review: breastfeeding peer counseling: from efficacy through scale-up. Journal of Human Lactation, 26(3), 314-326.
  - d. Newton, K. N., Chaudhuri, J., Grossman, X., & Merewood, A. (2009). Factors associated with exclusive breastfeeding among Latina women giving birth at an inner-city baby-friendly hospital. Journal of Human Lactation, 25(1), 28-33.)
  
3. **Improved Labor Outcomes, Including Reduction In Unnecessary Cesarean Birth:** Includes reduction operative vaginal delivery, more positive patient experience of childbirth
  - a. Hodnett, E. D., Gates, S., Hofmeyr, G. J., Sakala, C., & Weston, J. (2013). Continuous support for women during childbirth. Cochrane Database Syst Rev, 7(7).
  - b. Mottl-Santiago, J., Walker, C., Ewan, J., Vragovic, O., Winder, S., & Stubblefield, P. (2008). A hospital-based doula program and childbirth outcomes in an urban, multicultural setting. Maternal and child health journal, 12(3), 372-377.
  
4. **Improved Infant Parenting Skills And Maternal-Infant Bonding:** More positive engagement with their infants, more likely to respond to infant distress, more child-centered parenting values

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- a. Hans, S. L., Thullen, M., Henson, L. G., Lee, H., Edwards, R. C. and Bernstein, V. J. (2013). Promoting Positive Mother–Infant Relationships: A Randomized Trial of Community Doula Support For Young Mothers. *Infant Mental Health Journal*, 34: 446–457.
5. Prevention Of Postpartum Depression
  - a. Dennis, C. L., Hodnett, E., Kenton, L., Weston, J., Zupancic, J., Stewart, D. E., & Kiss, A. (2009). Effect of peer support on prevention of postnatal depression among high risk women: multisite randomised controlled trial. *Bmj*, 338, a3064.
  - b. Gjerdingen, D. K., McGovern, P., Pratt, R., Johnson, L., & Crow, S. (2013). Postpartum Doula and Peer Telephone Support for Postpartum Depression A Pilot Randomized Controlled Trial. *Journal of primary care & community health*, 4(1), 36-43.
6. Reduced Cost Of Care
  - a. Kozhimannil, K. B., Hardeman, R. R., Attanasio, L. B., Blauer-Peterson, C., & O'Brien, M. (2013). Doula care, birth outcomes, and costs among Medicaid beneficiaries. *American journal of public health*, 103(4), e113-e121.
7. Increased Preventive Care, Including Prenatal Care And Infant Immunization
  - a. Barnes-Boyd C, Norr KF, Nacion KW. Promoting infant health through home visiting by a nurse-managed community worker team. *Publ Health Nursing*. 2001, 71c 07;18(4):225-35
  - b. Tessaro I, Campbell M, O'Meara C, et al. State health department and university evaluation of North Carolina's Maternal Outreach Worker Program. *Am J Prev Med*. 1997 Nov-Dec;13(6 Suppl):38-44. 87.
  - c. Viswanathan M, Kraschnewski J, Nishikawa B, Morgan LC, Thieda P, Honeycutt A, Lohr KN, Jonas D. Outcomes of Community Health Worker Interventions. Evidence Report/Technology Assessment No. 181 (Prepared by the RTI International–University of North Carolina Evidence-based Practice Center under Contract No. 290 2007 10056 I.) AHRQ Publication No. 09-E014. Rockville, MD: Agency for Healthcare Research and Quality. June 2009.



## Section IV

### Massachusetts Maternal, Infant, and Early Childhood Home Visiting Capacity

Home visiting programs have grown consistently over the past decade and Massachusetts has kept pace with this national trend. Home visiting programs are adaptable, allowing for multiple types of interventions and variation with respect to their focus, target participants, service area, program activities and service provider<sup>1</sup>. Although variation in program design and delivery is crucial, home visiting programs share some common components.

#### **Definition of Home Visiting Program: Massachusetts**

Massachusetts home visiting programs offer voluntary services to individuals predominately in a home setting, although many offer group services as well. Services are delivered from trained home visiting professionals or paraprofessionals with the goal of addressing specific issues based upon the individual's eligibility for the program<sup>2</sup>. Home visits are structured to ensure consistency that allows for evaluations to link program components with intended outcomes. For the purposes of this needs assessment, the following overview of Massachusetts home visiting programs includes those programs with the characteristics described above, as well as those delivering services as part of federal IDEA Part C requirements. Programs are excluded if they provide one-time home visits, do not provide routine and sustained home visits or those who are bound to Child Protective Services or court-mandated referrals, as family participation in those services are not voluntary<sup>3</sup>.

The discussion below summarizes the home visiting programs in Massachusetts using the data compiled from the Home Visiting Program Survey. Each home visiting program is described in detail. To the extent possible, program descriptions include the home visiting model or approach, the program service components, program goals, number and type of individuals and families served, demographic characteristics (when available), geographical area served, and the individual programs' gaps, concerns, and ability to meet the needs of their eligible populations. This discussion also includes a capacity map that highlights the number of home visiting programs within the top 18 high-risk communities in Massachusetts.

#### **Overview and Capacity Map of Massachusetts Home Visiting Programs**

This section provides an assessment of the home visiting programs' ability to meet the needs of at-risk maternal, infant, and early childhood populations and examines the statewide gaps in maternal and early childhood home visiting programs. Massachusetts' currently has a wide variety of community-based and statewide initiatives and programs:

- 14 home visiting programs
- 5 national home visiting models
- 5 national evidence-based home visiting programs
- 3 program that provides services to one specific community (2 in Boston & 1 Springfield)
- 3 programs that provide services statewide (on an as needed basis)

Annually these programs:

- Serve approximately 47,592 families, with the median number of 669 families per program (min = 20 ; max = 33,346)
- Median cost of \$2,750 per family (min = \$781 ; max = \$10,000)

**Figure IV.1**

<b>Program Name</b>	<b>Number of Families Served</b>	<b>Programmatic Cost per Family</b>
Boston Healthy Start Initiative	1,792	\$781
Boston Home Visiting Collaborative	38	Unknown
Early Connections	83	\$1,300
Early Head Start	358	\$10,000
Early Intervention	33,346	\$3,000
Early Intervention Partnership Program	669	\$1,397
F.O.R.Families	3,196	Unknown
Good Start	338	\$1,700
Healthy Baby Healthy Child	1,414	\$2,829
Healthy Families Massachusetts	3,131	\$3,300
Parent Child Home Program	1,500	\$2,750
Parenting Works	20	Unknown
Parents as Teachers	279	Unknown
Visiting Moms	190	Unknown
Young Parents Support Program	1,122	Unknown
<b>TOTAL/ AVERAGE COST</b>	<b>Total Families: 47, 592</b>	<b>Average Cost: \$3,006</b>
<b>MEDIAN</b>	<b>Median: 669</b>	<b>Median: \$2,750</b>

*Boston Healthy Start Initiative*

The Boston Healthy Start Initiative (BHSI), based on the national evidence-based Healthy Start Initiative model, is a comprehensive home visiting program that aims to decrease the racial and ethnic disparities in perinatal health outcomes, such as infant mortality, and to promote healthy supportive parent-child relationships. BHSI is a federally funded voluntary program that provides community-based home visiting and support group services to Black pregnant women and their children up to the child’s second year of birth who reside in Boston. BHSI core case management and home visiting services focus on health education, including prenatal care, nutrition, and inter-conceptional care. BHSI services also address housing, mental health, substance abuse, financial literacy, and domestic violence issues. Service delivery consists of routine health assessments, on-going family health education, socio-emotional assessments, support groups, and referrals as needed.

As of May 2009, BSHI delivered services to 1,792 Black pregnant/postpartum women at a cost of \$781 per family. There is no waitlist for BSHI, yet some clients are lost after delivery and program administrators also note difficulty in providing adequate mental health services and referrals to specific populations, particularly Latinos, Somalians, and Haitians. This difficulty is attributed to the lack of mental health professionals that are culturally diverse and who speak the language of these populations.

**Figure IV.2**

<b>Boston Health Start Initiative Program Characteristics</b>	
National Evidence-Based Model	Yes
National Model	Yes
Communities Served (bold denotes communities that are among the top 18 most at risk)	<b>Boston</b> (including the neighborhoods of: Roxbury, Dorchester, Mattapan, Hyde Park, South End, and Jamaica Plain)
<b>Client Demographics</b>	
Race	100% self-identified Black
Educational attainment	86% identify highest attainment as 'high school'
Federal or other assistance	90% on public assistance

*Boston Home Visiting Collaborative*

The Boston Home Visiting Collaborative (BHVC), based at the Visiting Nurses Association of Greater Boston, serves mothers with children through age 5 years who are at-risk or experiencing maternal depression in the Allston/Brighton neighborhoods of Boston. The Early Childhood System of Care home visitor, a Masters-level clinician, partners with local community-based home visiting programs to provide at-home therapy for participating mothers who are at-risk or experiencing maternal depression. Using the In-Home Cognitive Behavioral Therapy (CBT) model, the BHVC program aligns its services with the curriculum of the concurrent home visiting program to provide 15 therapeutic visits. The program also provides additional services, such as mental health trainings, to home visiting programs to help enhance the capacity of the existing community organizations to provide services and improve the overall care for families in need of social-emotional support.

Since March 2010, the program has served 38 mothers, with 100% of its funding coming from the United Way. While the program itself does not have a waitlist, as a pilot program, it is limited to the Allston and Brighton neighborhoods. To address this issue of limited capacity, the program plans to expand into different neighborhoods of Boston in the fall of 2010.

**Figure IV.3**

<b>Boston Home Visiting Collaborative Characteristics</b>	
National Evidence-Based Model	No
National Model	No
Communities Served (bold denotes communities that are among the top 35 most at risk)	<b>Allston and Brighton</b> (neighborhoods of <b>Boston</b> )
<b>Client Demographics</b>	
Data is unavailable	

*Early Connections*

The Early Connections program, run by the Jewish Family and Children’s Service (JFCS), is a home visiting program for mothers who live within the service delivery area (see table below) and who are facing issues related to postpartum emotional health and/or their relationship with their baby. Through the use of masters and doctoral-level clinicians who have special training in infant/parent mental health, the Early Connections program address developmental outcomes for infants and children by improving maternal mental health and enhancing the mother’s capacity for emotional availability and empathetic care. Early Connections service model is based upon the Parent-Child Psychotherapy (CPP), a National Child Traumatic Stress Network (NCTSN)-approved evidence-based practice. Service components of the CPP include family assessments, maternal depression screens, parent-child psychotherapy, dyadic attachment assessments, support group services, and additional information and referrals as needed.

In FY09, the program served 83 mothers at a cost of approximately \$1,300 per family. There is a \$100 fee per visit, but reduced and free care is available if families are not able to afford the fee. While the Early Connections program does not have a waitlist, the capacity of the program to meet the perceived needs of the surrounding communities is limited. Administrators note two major issues. The first is workforce capacity, as there are not enough clinicians with specialized training to expand services. The program is limited to only those communities where clinical home visitors reside or are able to visit easily. The second issue reflects the financial limitations of a clinical home-visiting model, as clinical home visiting is expensive and is not reimbursable by most insurance companies.

**Figure IV.4**

<b>Early Connections Collaborative Characteristics</b>		
National Evidence-Based Model	No	
National Model	No	
Communities Served (bold denotes communities that are among the top 18 most at risk)	Metro Boston (26 communities), concentrated in <b>Boston, Cambridge, Somerville, &amp; Waltham</b>	
<b>Client Demographics</b>		
<b>Race</b>		
38.2% Caucasian	35.3% Latina	8.8% African American
8.8% Asian	8.8% Arab/North African	
<b>Income Level</b>		
50% less than 25K	20.6% 50-75K	11.8% 75-100K
11.8% 100K+	5.9% 25-50K	
<b>Education Level</b>		
61.8% College or Post College	17.6% Some College	11.8% Less than High School
8.8% High School		
<b>Age</b>		
32.4% age over 35	32.4% age 30-35	14.7% age 20-25
11.8% age 25-30	8.8% under 20	

*Early Head Start*

Early Head Start (EHS) is a national evidence-based multi-service early childhood program which provides home visiting to income eligible families, many of whom have multiple risk factors and live in identified at-risk communities. The eligible populations for Early Head Start are children ages birth to three and pregnant women of any age. EHS is run by the Office of Head Start (OHS), Administration for Children and Families (ACF) within the U.S. Department of Health and Human Services (DHHS). The goal of EHS' home visiting component is to promote school readiness and enhance children's physical, dental, nutritional, social/emotional, and cognitive development. Early Head Start also promotes healthy family functioning, including healthy outcomes for pregnant women and economic self sufficiency. Primarily through the use of paraprofessional home visitors, EHS' home visiting component provides a number of comprehensive services, such as developmental screening, hearing and vision screening, linkages with medical and dental homes, on-going assessments, family support services, and referrals as needed.

In FY09, the 10 Early Head Start home visiting program sites served 242 children and 116 pregnant women statewide. The estimated cost of the Early Head Start home visiting program is approximately \$10,000 - \$11,000 per child (this estimate includes both the home visiting and the center-based components). Limitations of the Early Head Start program, administrators note, include the lack of resources to meet the needs of eligible families. While the waitlist for the EHS home visiting component is unknown, the cumulative waitlist for both the Early Head Start and Head Start programs in the spring of 2010 was an estimated 4,000 families statewide. Finally, administrators also feel that demand exceeds enrollment capacity for Early Head Start and similar programs, and that more resources need to be dedicated to programs serving at-risk populations.

**Figure IV.5**

<b>Early Head Start Characteristics</b>	
National Evidence-Based Model	Yes
National Model	Yes
Communities Served (bold denotes communities that are among the top 18 most at risk)	Amherst, Arlington, Attleboro, Belchertown, Berkley, Billerica, <b>Boston</b> , Braintree, Brookline, Carlisle, Chelmsford, Chicopee, Cummington, Dighton, Dracut, Dunstable, Dudley, Easthampton, Enfield, <b>Fall River</b> , Freetown, Goshen, Granby, Greenwich, Greenfield, Hadley, Hatfield, Haverhill, Holbrook, <b>Holyoke</b> , Hull, Huntington, Lakeville, <b>Lowell</b> , <b>Lynn</b> , Lynnfield, Marblehead, Middleboro, Middlefield, Millbury, Milton, Nahant, Newton, Norton, Orange, Oxford, Pelham, Plainfield, Prescott, Quincy, Randolph, Raynham, Rehoboth, Saugus, Seekonk, Somerset, Somerville, South Hadley, Southampton, <b>Southbridge</b> , Spencer, <b>Springfield</b> , Swampscott, Taunton, Tewksbury, Tyngsborough, Waltham, Ware, Watertown, Webster, Westford, Weymouth, Williamsburg, Wilmington and Worthington
<b>Client Demographics</b>	
<b>Race</b>	

44.5% Hispanic / Latino	27.5% White	25.3% Black/African American
16.6% Unknown	12% Multi-racial	8.7% Other
5% American-Indian/ Alaskan	4.9% Asian	.07% Native Hawaiian or Pac. Islander
<b>Marriage Type</b>		
30.8% Two parent families	69.3% Single parent families	
<b>Language</b>		
50% Families spoke a language other than English as their primary language		
<b>Federal or Other Assistance</b>		
38.6% Families receiving TANF	13.7% Families receiving SSI	
<b>Children with Health Insurance</b>		
99.60% Children with Health Insurance (at End of Enrollment Year)		
95.1% Public	4.9% Private	0.40 % None
<b>Top 5 Family Services</b>		
67.2% Parenting Education	60.7% Health Education	42% Emergency/Crisis Intervention
29.5% Housing Assistance	16.2% Mental Health Services	

### *Early Intervention (EI)*

The Massachusetts Early Intervention program (EI) is a family-centered early childhood home visiting program run by the Massachusetts Department of Public Health (MDPH). Funded through a combination of state, federal, and third party reimbursement funds, EI serves children up to age 3 who either have 1) a diagnosed medical or disabling condition, 2) a 30% delay in specific development areas, or 3) who are at-risk for delay and their families. EI assesses and assists children and families through an array of services to facilitate the development process as well as to help children acquire the skills they need to succeed. EI service components include on-going developmental screens, routine family socio-emotional assessments, child-centered development activities, group-based services, child group services, and referrals as needed.

EI provides services through multi-disciplinary teams. The team, depending upon the needs of the child, may include a developmental specialist, physical therapist, speech-language pathologist, psychologist, occupational therapist, social worker, nurse, and/or other specialty service providers. In FY09, EI served 33,346 children and their families statewide, and the cost of service was approximately \$3,000 per family. Because EI is a statewide program, it does not have a waitlist. However, fiscal and workforce capacity issues have presented a challenge in meeting the needs of eligible families. Additionally, EI has had to restrict eligibility requirements in recent years due to fiscal limitations and cutbacks. Finally, EI administrators have noted difficulties in hiring appropriate therapists and specialty service providers due to a lack of qualified applicants.

**Figure IV.6**

<b>Early Intervention Characteristics</b>		
National Evidence-Based Model	No	
National Model	No	
Communities Served (bold denotes communities that are among the top 18 most at risk)	<b>Statewide as needed</b>	
Communities Served (bold denotes communities that are among the top 18 most at risk)	<b>Statewide as needed</b>	
<b>Client Demographics</b>		
<b>Race</b>		
63% White	17.9% Hispanic / Latino	8.8% Black
3.8% Other/Unknown/Missing	0.2% American-Indian	
<b>Income Level</b>		
25% less than 200% FPL	11% 200-300% FPL	10% 401-550% FPL
9% 301-300% FPL	7% greater than 551-775% FPL	
<b>Children with Health Insurance</b>		
52% Third Party Insurance	45% Public (Medicaid)	1% None

*Early Intervention Partnership Program (EIPP)*

The Early Intervention Partnership Program (EIPP) is a perinatal home visiting program run by MDPH and funded through a combination of third party coverage and the federal Maternal and Child Health (MCH) block grant. EIPP reaches out to high-risk pregnant and postpartum women and their infants up until the age of one and seeks to reduce infant and maternal mortality and morbidity, build healthy dyadic relationships, and promote overall optimal health and wellness for women and their infants along the life course. Eligibility for EIPP includes a number of risk factors, such as young maternal age with two or more children, previous high risk birth, inadequate prenatal care, homelessness, domestic violence, substance abuse, and others. The program provides home visiting and group-based services to pregnant and post partum women, including maternal and newborn screenings, assessments and services, and referrals to address the physical, emotional, and environmental health needs of women and their infants.

In FY09, EIPP served 669 women and their infants through the use of an MCH home visiting team. The MCH team is comprised of nurses, social workers, and community health workers. It costs approximately \$1,397 per family. EIPP does not have a waitlist but program administrators expressed concerns over the program’s limited geographic reach. Due to fiscal constraints, EIPP is only able to operate in 8 communities statewide and is unable to meet the perinatal needs of other high-risk communities.

**Figure IV.7**

<b>Early Intervention Parenting Program Characteristics</b>	
National Evidence-Based Model	No

National Model	No	
Communities Served (bold denotes communities that are among the top 18 most at risk)	Cambridge/Somerville, <b>Fall River</b> , Leominster/ <b>Fitchburg</b> , <b>Lowell</b> , <b>Lynn</b> , <b>New Bedford</b> , <b>Southbridge</b> , and <b>Springfield</b>	
<b>Client Demographics</b>		
<b>Race</b>		
45.1% White	41% Hispanic	26% Other
12.5% Black	7.7% Asian	3.2% Missing
2.9% Unknown	2% Multi-racial	0.5% American Indian/Native Alaskan
0.2% Native Hawaiian/ Pacific Islander		
<b>Marriage Type</b>		
68.2% Single	25.6% Married	2.5% Separated
2.2% Missing	1.4% Divorced	0.2% Widowed
<b>Health Insurance</b>		
64.7% MassHealth	20.8% Healthy Start/MassHealth Limited	13.1% Other
9.3% Private	3.4% Missing	1.1% None
0.9% Health Safety Net Fund (free care)		

*F.O.R. Families*

The F.O.R. (Follow-up, Outreach, and Referral) Families program, administered by MDPH, is a home visiting program for homeless families receiving Emergency Assistance shelter benefits from the Department of Housing and Community Development (DHCD). F.O.R. Families receives full funding and referrals from DHCD. The program assists families with the transition from homelessness (families residing in hotels) to permanent stable housing, through case management and routine family assessments, on-going family support and education, and referral services. F.O.R. Families home visitors are nurses, social workers, or community service workers.

In FY09, F.O.R. Families served 3,196 families statewide. While the program does not have a waitlist, program staff note several program limitations. The first is that the program is only able to serve families who are eligible for Emergency Assistance, thus limiting the program's scope of service. Home visitors are only able to work with families while they are residing in hotels, and services end once a family is placed into permanent housing. Continuity of care, in particular, suffers as families struggle to find support systems during this vulnerable transition period.

**Figure IV.8**

<b>F.O.R. Families Characteristics</b>	
National Evidence-Based Model	No
National Model	No
Communities Served (bold denotes communities that	<b>Statewide</b> in communities housing homeless

are among the top 18 most at risk)		families in hotels
<b>Client Demographics</b>		
<b>Race</b>		
37% Hispanic / Latino	28.1% Black/Non-Hispanic	27% White
6.53% Other/ Non-Hispanic	0.9% Asian/Pacific Islander	0.5% Native American
<b>Age</b>		
28.05% under age 24	24.4% age 24-28	17.7% age 39+
16.15% age 29-33	13.7% age 34-38	
<b>Head of household</b>		
92% female head of household	8% male head of household	
<b>Number of Children</b>		
49.28% had 1 child	27.3% had 2 children	19.43% had 3+ children
4% were pregnant		

*Good Start/Connecting Families Social Services*

The Good Start/Connecting Families Social Services program is a home visiting program focused on parent support. The program is run by the Massachusetts Society for the Prevention of Cruelty to Children (MSPCC) and is funded through various private and public sources. Good Start serves pregnant women or parenting families with children up to the age of 16 who face challenges that could potentially put the child and/or family at risk. The focus of the program is on quality parent child interaction, child development, age appropriate activities, nurturing, and effective discipline. Through a validated curriculum, the program provides home-based and group-based parenting education services to help build relationships that reinforce positive parenting skills and beliefs. Good Start also provides linkages to community connections and programs as needed.

Staffed by Bachelors-level trained home visitors, the Good Start program served 338 families across its multiple sites in FY10. The program costs approximately \$1,700 per family and has a waitlist of 71 families. Good Start program administrators point to an overwhelming need for more funding to 1) decrease waitlists, 2) increase capacity to reach vulnerable families, particularly undocumented families who are difficult to link to other resources because of their immigration status, and 3) enhance program capacity to provide transportation and supplies for group services.

**Figure IV.9**

<b>Good Start Program Characteristics</b>	
National Evidence-Based Model	No
National Model	No
Communities Served (bold denotes communities that are among the top 18 most at risk)	Cape Cod & Islands, <b>Greater Boston, Greater Holyoke, Greater Lawrence, Greater Springfield, and Greater Worcester</b>
<b>Client Demographics</b>	
Data is unavailable	

*Healthy Baby Healthy Child (HBHC)*

The Healthy Baby Healthy Child (HBHC) program is a perinatal home visiting program administered by the Boston Public Health Commission (BPHC). HBHC is funded primarily by municipal grants and receives a small amount of federal funding from HRSA. HBHC serves pregnant and postpartum women of any age and parenting families with children through the age of 5 years who reside in Boston. The program is designed to promote infant survival, positive birth outcomes and child development, and family unity by connecting parents and infants (from pregnancy through 5 years) to services to prevent or reduce poor health and/or developmental outcomes. Service components include on-going health and emotional family assessments, maternal depression screens, child health assessment, oral screenings, connections to additional community resources, and referrals as needed.

In FY 09, HBHC’s home visitors – who are comprised of public health nurses, social workers, public health advocates, and early childhood educators – served 1,414 families at a cost of approximately \$2,829 per family. The program does not have a waitlist.

**Figure IV.10**

<b>Healthy Baby Healthy Child Program Characteristics</b>		
National Evidence-Based Model		No
National Model		No
Communities Served (bold denotes communities that are among the top 18 most at risk)		<b>Boston</b>
<b>Client Demographics</b>		
<b>Race</b>		
70.2% Black/African American	23.4% Hispanic/Latino	4% White
1.6% Asian	0.48% Native American	.32% Native Hawaiian/Islander
<b>Age</b>		
27.2% age 31-40	19.8% age 22-25	17.1% age 26-30
12% age 20-21	12.02% > 40	6.6% age 19
4.5% age 17-18	.78 % 15-16	
<b>Educational Attainment</b>		
32.25 grade 9-11	26.25% High School Graduate	23.50% Tech, Voc or Associate Degree
7.5% Grade 1-8	5.25% 4 yr college	2.75% GED
1.5% no formal school	1% Graduate school	
<b>Health Insurance</b>		
92% of clients have health insurance		

*Healthy Families Massachusetts (HFM)*

Healthy Families Massachusetts (HFM), based on Healthy Families America, is a comprehensive home visiting program that provides a broad range of services. Paraprofessionals provide voluntary program services to first time teen parents, less than age 20 years. Families are

eligible to enroll in services during the prenatal period and up to the child’s first birthday, and they may receive home visiting until the child’s third birthday. Program sites are located in 25 community-based agencies throughout Massachusetts and programs services include family centered assessments, child development screenings, groups, goal setting activities, and referrals to other community services. The goals of HFM are to prevent child abuse and neglect by supporting positive, effective parenting skills; achieve optimal health, growth, and development in infancy and early childhood; promote increased educational attainment, job, and life skills; reduce repeat teen pregnancies; and promote optimal parental health and wellness. HFM currently receives 100% direct funding from state funds through the Massachusetts Children’s Trust Fund (CTF).

For FY11, HFM programs will receive a total of \$8.9M, with a maximum of \$3,300 to be allocated per family. During FY10, HFM served approximately 3,131 teen mothers and fathers and 2,317 children. Currently, HFM programs are not permitted to carry waitlists for services; the program maintains capacity limits to ensure that caseloads do not exceed 20 families per home visitor. Whenever possible, families who are eligible, but not enrolled in HFM due to capacity limits, are referred to other services to meet their needs. Current funding only allows program services to reach approximately one-third of the target population each year.

**Figure IV.11**

<b>Healthy Family Massachusetts Program Characteristics</b>		
National Evidence-Based Model		Yes
National Model		Yes
Communities Served (bold denotes communities that are among the top 18 most at risk)		<b>Statewide as needed</b>
<b>Client Demographics</b>		
<b>Race</b>		
32% Hispanic/Latino	30% White	11% Black
11% Blank	5% Multi-racial	3% Asian/ Pacific Islander
3% Unknown	2% Other	.2% Native American
<b>Age</b>		
21% age 19	20% age 18	19% age 17
13% age 20	13% age 16	8% age 15
3% age 1	1% age 13	2% age 21 & up
<b>Sex</b>		
96% Female (mothers)	4% Male (fathers)	
<b>Health Insurance</b>		
MassHealth (Medicaid) -61%	Unknown 27%	Private/Commercial 7%
Other, specify 2%	Healthy Start 1%	None =1%
CMSP 0.03%		

*Parent-Child Home Program (PCHP)*

The Parent-Child Home Program (PCHP) is an evidence-based national home visiting model that provides home-based literacy and parenting services through the PCHP curriculum. Paraprofessionals offer home visiting services to at-risk parents and children that are between the

ages of 18 months and 4 years. PCHP primarily serves low-income families and families that are at-risk due to limited parental education, homelessness, limited English and limited literacy, isolation, or those who are recent immigrants. The goal of the program is to prepare young children for school readiness and success by increasing language and literacy skills, enhancing social-emotional development, and strengthening the parent-child relationship. PCHP utilizes a non-didactic approach that promotes and models behaviors for parents that enhance children’s literacy and development. Program services also assist socio-emotional development and make appropriate referrals as needed.

In FY09, 1,500 families were provided services throughout Massachusetts. PCHP receives 95% of its funding from the state Department of Early Education and Care (EEC) and the additional 5% from federal funds and other financial resources. It costs approximately \$2,750 per family per program year. As of FY09, the statewide waiting list for PCHP consisted of approximately 400 families (with 18 of 30 sites reporting). According to program administrators, this number greatly underestimates the number of families that are eligible and who would like to be enrolled in PCHP. Due to fiscal constraints, most site coordinators do not continue to build waitlists or conduct active outreach once their annual caseload is filled.

Administrators also note that although the program seeks to enhance family social-emotional development, PCHP is not designed to serve children with serious developmental delays or parents who have serious mental health issues. Additionally, PCHP does not have the capacity to provide therapeutic intervention services. As a result, PCHP provides referrals to EI or other therapeutic services.

**Figure IV.12**

<b>Parent-Child Home Program Characteristics</b>		
National Evidence-Based Model	Yes	
National Model	Yes	
Communities Served (bold denotes communities that are among the top 18 most at risk)	Acushnet, Adams, Amesbury, Andover, Athol, Barre, Belchertown, Berkeley, Bolton, <b>Boston</b> , Bradford, Brookline, Cambridge, Cheshire, Clarksburg, Clinton, Dartmouth, Dighton, Fairhaven, Fitchburg, Florida, Framingham, Groveland, Hardwick, Haverhill, Hubbardston, Lakeville, Lancaster, Lanesboro, <b>Lawrence</b> , Leominster, <b>Lowell</b> , <b>Lynn</b> , Marlborough, Medford, Methuen, Monson, Needham, <b>New Bedford</b> , New Braintree, Newton, <b>North Adams</b> , Northampton, North Andover, Oakham, Orange, Palmer, Petersham, <b>Pittsfield</b> , Plymouth, Quincy, Rawley, Rehoboth, Royalston, Salem, Seekonk, Shirley, Somerville, South Hadley, <b>Springfield</b> , Sterling, Stow, Swansea, Taunton, Thorndike, Three Rivers, Turner’s Falls, Waltham, Ward Hill, Ware, Wareham, Warren, Watertown, Wellesley, West Brookfield, Williamstown, and <b>Worcester</b>	
<b>Client Demographics</b>		
<b>Race</b>		
37% Hispanic/Latino	31% White	13% Other
10% Black	9% Asian	
<b>Educational Attainment</b>		<b>Marriage Type</b>
35% Non-High School Graduates		41% Single Parents

<b>Federal or Other Assistance</b>		
58% Receiving Medicaid	49% Receiving Food Stamps	48% Receiving Government Aid

### *Parenting Works*

The Parenting Works program run by Square One, a community-based agency in Springfield, is a home visiting program that provides services to at-risk pregnant and postpartum women or men of any age and their children from birth through the age of 5 years. Eligibility for the program includes such indicators as lack of sustainable employment, domestic violence, homelessness, and substance abuse. The Parenting Works program receives 100% of their funding from private foundations. Program participants receive home visits from MSW interns or MA art therapy interns. Program services focus on providing parent education and support across the following areas: family income and employment parent skills, substance dependency, mental health issues, child program referrals, and a family support network. Service components include family and child assessments, emotional/mental health assessments, family service plans, and referrals as needed.

In FY09, Parenting Works served 15-20 at-risk families through home visiting and approximately 200 families in group-based sessions. Program administrators state that because the program is staffed by students, they face service delivery constraints during the summer months, even though they occasionally have summer interns.

**Figure IV.13**

<b>Parenting Works Program Characteristics</b>	
National Evidence-Based Model	No
National Model	No
Communities Served (bold denotes communities that are among the top 18 most at risk)	Chicopee, <b>Holyoke, Springfield</b> , West Springfield, and surrounding communities
<b>Client Demographics</b>	
<b>Race</b>	
72% families minority: primarily Hispanic & African American	
<b>Marriage Type</b>	
83% families single head of household	
<b>Age</b>	<b>Health Insurance Type</b>
Majority of families are in their 20's	Majority of families on MassHealth (Medicaid)

### *Parents as Teachers (PAT)*

Parents as Teachers (PAT), a national evidence-based home visiting model, provides family-centered services that help to increase parent knowledge, promote optimal child development, and increase school readiness. PAT provides services to parents (75% of PAT programs have

universal access) along the continuum of pregnancy to kindergarten. Grounded in research, PAT developed the *Born to Learn* evidence-curriculum that supports and encourages school readiness and the improvement of child health. The *Born to Learn* curriculum includes a health assessment, annual developmental screen, and referrals to support parents in their role as teachers. The curriculum can also help to improve parenting practices, provide early detection of developmental delays and health issues including nutrition and wellness, prevent child abuse and neglect, and ensure children are ready to learn.

In FY09, PAT certified parent educators, across the four Massachusetts sites, provided services to 279 families and 328 children. Funding sources vary across the four program sites. In Attleboro, for example, the Massachusetts the Attleboro PAT/Family Center receives 80% of its funding from EEC and 20% from non-profit sources. Two of the four programs report waitlists, with 17 families currently waiting for services. Although the Attleboro PAT program noted that they do not currently have a waiting list, at times they have had up to 15 families waiting for services. One significant limitation of the PAT program, noted by the Attleboro PAT, is the lack of PAT parent educators (home visitors) who speak a second language.

**Figure IV.14**

<b>Parents as Teachers Program Characteristics</b>		
National Evidence-Based Model	Yes	
National Model	Yes	
Communities Served (bold denotes communities that are among the top 18 most at risk)	Attleboro, Milford, <b>New Bedford</b> , and <b>Pittsfield</b>	
<b>Client Demographics</b>		
<b>Child Race</b>		
59.7% (European-American)	12.9% Hispanic / Latino	10.1% Unknown
6.0% Asian	5.5% African American	3.0% White (Non-European origin)
2.2% Multi-Racial	0.5% Other	0.0% American-Indian
0.0% Native Hawaiian or Pac. Islander		
<b>Language/Foreign Born</b>		
11% of PAT families spoke Spanish as their primary language		
18.3% of all families had at least one parent who was foreign born		
<b>Top 5 Family Characteristics</b>		
22% Low Income	20% Limited English Proficiency	16% Low Educational Attainment
13% Single Parent Household	11% Child with Disabilities	
<b>Military Families</b>		
0% of families are active duty military		

*Visiting Moms*

Visiting Moms is a home visiting program that serves pregnant and postpartum women of any age. Operated by the community-based JFCS organization, the program provides support and nurturance to pregnant and parenting mothers during their baby's first year. Home visitors – who

are volunteers from the community – provide on-going assessment of psychological, economic, housing, health, and infant development with the support of clinical supervisors. In addition, group services, support groups, and referrals to additional services are also provided on an as-needed basis. While there is no formal educational requirement for home visitors, the majority of home visitors have a Bachelor’s degree, some with advanced degrees.

In FY09, services were provided to 190 mothers residing in the service catchment area. Visiting Moms received 80% of its funding from private philanthropic organizations, and the additional 20% from JFCS support. Although the program is adequately meeting the needs of English-speaking families, there are currently gaps in capacity for Spanish-speaking families. In addition, although Visiting Moms operates throughout the year, there are geographical limitations based upon the location of home visitors.

**Figure IV.15**

<b>Visiting Moms Characteristics</b>		
National Evidence-Based Model	No	
National Model	No	
Communities Served (bold denotes communities that are among the top 18 most at risk)	<b>Boston, Cambridge, Malden, Somerville, Waltham, and the surrounding 40 communities</b>	
<b>Client Demographics</b>		
<b>Race</b>		
70% White	11% Hispanic / Latino	7% African American
6% Asian	6% Multi-racial or Other	

*Young Parents Support Program (YPSP)*

The Massachusetts Department of Children and Families (DCF) administers the Young Parents Support Program (YPSP) across 27 statewide program sites. The YPSP is a home visiting program serving young parents up to the age of 23 with the goal of improving outcomes and mitigating the adverse consequences of early childbearing. The target population includes hard to reach, isolated young parents with mental health, trauma, and homelessness issues who are not involved and/or not eligible for other types of young parents services. Typically, services for individuals and families include home visiting, outreach, case management, mentoring, and parenting groups. Services focus on parenting skills education, household management, budget training, education and job planning, advocacy referral for medical care, housing, child care, and adoption counseling. The program encourages the use of the Power Source Parenting Curriculum developed by the Lionheart Foundation.

Each program site determines the necessary qualifications for their home visitors. One example is seen at the YPSP program run by Massachusetts Catholic Charities North, where YPSP home visitors constitute a multi-disciplinary team consisting of social workers (MSW, BSW), MSW interns, and bi-lingual paraprofessionals.

The YPSP received 100% state funding in FY10 and with it was able to serve 1,122 young parents. Although waitlists vary depending on the program site, in FY10, there were a total of 213 families on the waitlist. Overall program administrators note that capacity is the biggest

program concern, as the annual maximum program obligation for each site limits the ability of the program to meet the demand of qualified families who are eligible and waiting for services.

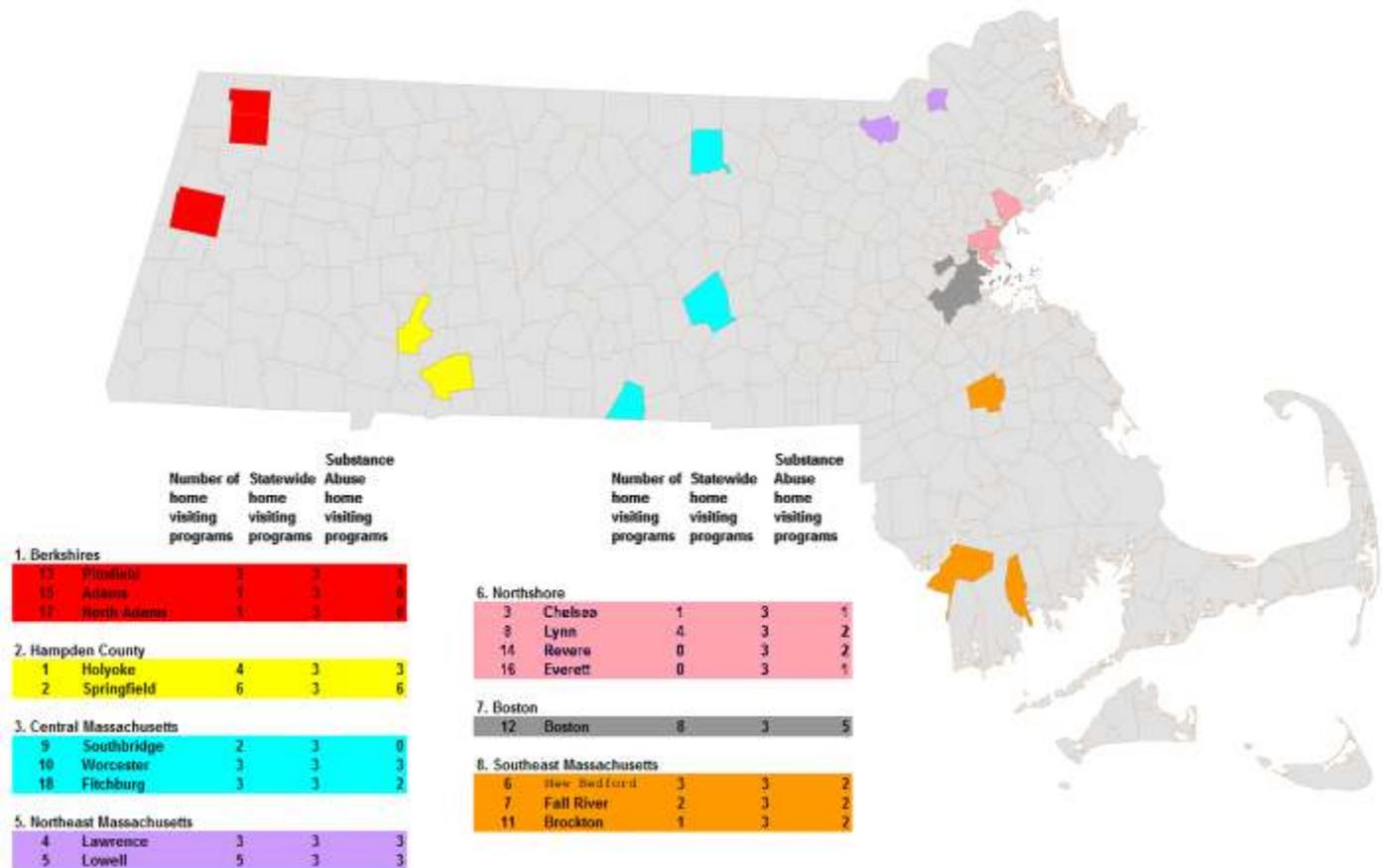
**Figure IV.16**

<b>Young Parents Support Program Characteristics</b>		
National Evidence-Based Model	No	
National Model	No	
Communities Served (bold denotes communities that are among the top 18 most at risk)	Beverly, <b>Boston (Jamaica Plain), Brockton</b> , Cambridge, <b>Chelsea</b> , Danvers, Falmouth, <b>Fitchburg</b> , Gloucester, <b>Greater Lynn, Holyoke</b> , Ipswich, Lynnfield, Manchester by the Sea, <b>Lawrence, Lowell</b> , Marblehead, <b>New Bedford</b> , Rockport, Oxford, <b>Pittsfield</b> , Saugus, Salem, <b>Springfield</b> , Taunton, West Newton, and <b>Worcester</b>	
<b>Client Demographics</b>		
<b>Race/ Ethnicity</b>		
44.1% Hispanic/Other Hispanic/Puerto Rican	27.7% Caucasian/European	12.7% Black/ African American/ Haitian Creole
8.3% Multi-Racial/ Cape Verdean	3.5% Asian/Islands/Pacific	3.2% Other
0.3% Portuguese	0.2% Native American	
<b>Age</b>		
62% age 19-23	35.4% age 16-18	2.1% age 13-15
0.3% age 12		
<b>Sex</b>		
87.4% Female	12.6% Male	
<b>Top 5 Services Received</b>		
25.9% Life Skills Education	15.2% Job/Vocational Training	14.9% Attended GED Program
12.8% Job Search/Referral	9.3% Attended High School	

### Capacity Map

The map below charts the service locations of the aforementioned home visiting programs by the top 18 at-risk communities in Massachusetts. Notably, many of the communities identified as most at-risk in the state have limited access to maternal, infant, and early childhood home visiting programs. The communities of the North Shore, directly north of Boston, and many of the western rural communities, in particular, significantly lack home visiting services. These communities are of considerable concern, as they experience high levels of poverty and increasing rates of immigrants, two indicators of adverse health outcomes that require additional supports and services.

**Figure IV.17 Home Visiting Capacity Map**



## **Individual Program Capacity and Statewide Gaps**

Massachusetts has a solid foundation of home visiting programs and home-based assets. The home visiting programs in the state are tailored to address high risk populations, such as homeless families, families experiencing domestic violence and substance abuse, and parenting teens. The state's home visiting programs also address high risk issues, such as children with special health care needs, family literacy, school readiness, economic self sufficiency, maternal depression, and child development. However, despite this foundation, Massachusetts home visiting programs are not meeting the needs of all eligible families, as there are significant gaps in maternal, infant, and early childhood home visiting in Massachusetts.

The following sections address capacity issues. The first section focuses on the capacity of individual home visiting programs to meet the needs of eligible families. The proceeding section highlights maternal, infant, and early childhood home visiting service gaps as identified by Home Visiting Program Survey respondents. Both sections also use available data from the following partner agencies and offices to provide a comprehensive overview of programmatic limitations and statewide gaps: 1) Title II CAPTA inventory and current community-based and prevention-focused programs, 2) Head Start/ Early Head Start community-wide strategic plan/needs assessment, and 3) Massachusetts Domestic Violence Coalition needs assessment and STOP Violence Against Women statewide plan. Collectively, this information is used to inform the statewide understanding of home visiting capacity and known gaps in Massachusetts' highest risk communities.

### *Individual Program Capacity*

As outlined in the home visiting program profiles, current Massachusetts programs are reaching very high risk families and populations through intensive outreach and home-based (as well as group-based) case management services. Despite these efforts, Massachusetts home visiting programs are not able to enroll all eligible families and are not operating in all high risk communities. In addition, due to fiscal constraints, many other programs have had to tighten eligibility requirements, which ultimately excludes otherwise eligible families and in turn creates significant service gaps. Many families who qualify for services are either waitlisted, do not have a program operating in their area that meets their needs, or are left out due to restrictive eligibility requirements. The following table outlines, for each home visiting program: 1) the current waitlist for eligible families, and 2) programmatic delivery of socio-economic, developmental, and health-related services.

**Figure IV.18 Home Visiting Service Components and Capacity**

<b>Program Name</b>	<b>Waitlist</b>	<b>Premature Birth</b>	<b>LBW Infants</b>	<b>Infant Mortality</b>	<b>Poverty</b>	<b>Crime</b>	<b>Domestic Violence</b>	<b>School Drop Out</b>	<b>Substance Abuse</b>	<b>Unemployment</b>	<b>Child Maltreatment</b>	<b>Maternal Depression</b>	<b>Child Development</b>	<b>School Readiness</b>
<b>Boston Healthy Start Initiative</b>	None	✓	✓	✓	✓	✓	✓	No	✓	✓	✓	✓	✓	No
<b>Boston Home Visiting Collaborative</b>	None	No	No	No	No	No	No	No	No	No	No	✓	No	No
<b>Early Connections</b>	None	No	No	No	No	No	No	No	No	No	No	✓	✓	No
<b>Early Head Start</b>	4,000*	✓	✓	✓	✓	No	✓	✓	✓	No	✓	✓	✓	✓
<b>Early Intervention</b>	None	✓	✓	No	No	No	No	No	No	No	No	No	✓	✓
<b>Early Intervention Partnership Program</b>	None	✓	✓	✓	✓	No	✓	No	✓	✓	✓	✓	✓	No
<b>F.O.R Families</b>	None	No	No	No	✓	No	✓	No	✓	✓	✓	✓	✓	No
<b>Good Start</b>	71	✓	✓	✓	No	No	No	No	No	No	✓	No	✓	No
<b>Healthy Baby Healthy Child</b>	None	✓	✓	✓	✓	No	✓	No	✓	✓	✓	✓	✓	No
<b>Healthy Families Massachusetts</b>	2,098 families eligible for HFM but were not able to be served due to capacity limits	✓	✓	✓	✓	No	✓	✓	✓	✓	✓	✓	✓	✓
<b>Parent Child Home Program</b>	400	No	No	No	No	No	No	No	No	No	No	✓	✓	✓
<b>Parenting Works</b>	None	No	No	No	✓	No	✓	No	✓	No	No	✓	✓	No
<b>Parents as Teachers</b>	17	✓	✓	✓	No	No	No	No	No	No	✓	No	✓	✓

Program Name	Waitlist	Premature Birth	LBW Infants	Infant Mortality	Poverty	Crime	Domestic Violence	School Drop Out	Substance Abuse	Unemployment	Child Maltreatment	Maternal Depression	Child Development	School Readiness
Visiting Moms	None	✓	✓	✓	✓	No	✓	No	✓	✓	No	✓	✓	No
Young Parents Support Program (YPSP)	213	No	No	No	✓	✓	✓	✓	✓	✓	✓	No	✓	No

\* includes HS/EHS waitlist numbers

### Statewide Gaps

Data derived from survey respondents, state agency needs assessments, and partner agencies' statewide plans highlights significant programmatic gaps in maternal, infant, and early childhood home visiting across the state. The following information, outlined thematically, highlights Massachusetts' gaps.

### Themes

- **Maternal Mental Health:** Massachusetts home visiting programs consistently noted the need to increase services for women in the postpartum period. Programs specifically noted the following areas of concern:
  - Postpartum/Maternal depression
  - Lack of mental health clinicians/Long waiting lists
- **Immigrants:** Massachusetts home visiting programs consistently noted the need to increase services for immigrants, particularly:
  - New immigrants, because they are not eligible for entitlements until after 5 years of residence in the US. Immigrant families can, however, access EHS immediately, as social security numbers are not required for enrollment.
  - Immigrant populations typically lack services and resources in their native languages
  - Immigrant populations are also less likely to report domestic or sexual violence
  - Particularly at risk immigrant populations include Somalians, Cape Verdeans and Haitians
- **Family Economic Self-Sufficiency:** Massachusetts home visiting programs consistently noted the need to bolster economic self sufficiency programming and homeless services:
  - Target families in shelters and motels
  - Housing resources to include financial assistance with deposits and arrearages (e.g. increasing rent and foreclosure rates have impacted target populations that consistently relocate)
  - Financial literacy
  - Workforce development, including career services
  - Food security

- Transportation
- Child Health and Development: Massachusetts home visiting programs consistently noted the need to increase services for healthy infant growth and child development. Specific areas of concern included:
  - Closing the achievement gap
  - Healthy development of premature infants
  - Infant and early childhood mental health
  - Enhanced screening and treatment for children with special health care needs, including speech/language, OT/PT, sensory and learning disabilities, and autism
  - Family nutrition literacy
  - Family literacy and parent education
- Family Violence/Trauma: Massachusetts home visiting programs consistently noted the need to increase services for families experiencing trauma and/or family violence, particularly:
  - Domestic violence, including intimate partner violence (IPV)
  - Child risk prevention, including child maltreatment (CM)
  - Shortage of shelters to meet needs of families experiencing DV/IPV
  - Trauma experienced by families, especially refugees or US military families
- Comprehensive System of Care: Massachusetts home visiting programs expressed concern about the need to increase collaborations within family support programs to connect home visiting programs, center-based programs, and other family support programs into a seamless structure of family services. Programs also noted the increased need for:
  - A comprehensive approach to data collection and data sharing in order to avoid duplication of services, and to provide clear and consistent information
  - Allied health professionals (e.g. physical therapists, speech therapists, and occupational therapists)
  - Primary care, dental care and the medical home model
  - Clinicians of color and/or multi-lingual, multi-cultural workforce who are highly trained and have the competencies to provide home visiting services in at-risk communities
  - Fiscal resources to provide on-going trainings for home visitors
  - Continuity of care for transition populations, such as teens and adolescents or families with complex needs
  - Fiscal resources to address client retention
  - Program evaluation
- Non-Traditional Populations: Massachusetts home visiting programs consistently noted the need to increase services to non-traditional populations who typically are not targeted for services in the parent, infant, and early childhood spectrum. Other caregivers for young children have increased and need home visiting support:
  - Fathers
  - Grandparents who are parenting
  - Individuals with non-felony Criminal Offender Record Information (CORIs)

- **Top 18 At-Risk Communities:** Among Massachusetts' top 18 at-risk communities, the following communities lack important maternal, infant, and early childhood home visiting services:

**Figure IV.19**

<b>Early Head Start</b>				
<b>Unmet Needs by City/Town</b> (identified at-risk city/towns without an EHS home visiting program):				
Adams	Brockton	Chelsea	Everett	Fitchburg
Lawrence	New Bedford	North Adams	Pittsfield	Revere
Worcester				

**Figure IV.20**

<b>Healthy Families Massachusetts (HFM)</b>			
<b>% of target population (first time parents under age 21) <u>*NOT</u> receiving services in top 18 at risk city/towns:</b>			
Adams: 69 %	Boston: 81%	Brockton: 57%	Chelsea: 77%
Everett: 82%	Fall River: 82%	Fitchburg: 66%	Holyoke: 87%
Lawrence: 67%	Lowell: 74%	Lynn: 83%	New Bedford: 71%
North Adams: 41%	Pittsfield: 75%	Revere: 75%	Southbridge: 83%
Springfield: 66%	Worcester: 81%		

\* The HFM program model assumes a 90% acceptance rate for the target population, i.e. that only 90% of families eligible for and offered HFM will accept services.

**Figure IV.21**

<b>Sexual Assault and Domestic Violence Shelters/Programs</b>				
<b>Unmet Needs by City/Town</b> (top 18 at risk city/towns without a DV program):				
Adams	Chelsea	Everett	North Adams	Revere
Southbridge				

**Figure IV.22**

<b>Substance Abuse</b>		
<b>Unmet Needs by City/Town</b> (top 18 at risk city/towns without a substance abuse home visiting program):		
Adams	North Adams	Southbridge

<sup>1</sup> Olds, D.L., Henderson, C.R., Chamberlain, R., and Tatelbaum, R. (1986). Preventing child abuse and neglect: A randomized trials of nurse home visitation. *Pediatrics*; 78; pp 65-78.

<sup>2</sup> Ibid.

<sup>3</sup> Pew Center for the States. <http://www.pewcenteronthestates.org/>. Accessed: August 6, 2010.