



Strong Start for Mothers and Newborns Evaluation:

YEAR 2 ANNUAL REPORT

Volume 2 – Awardee Specific Reports

Prepared for:

Caitlin Cross-Barnet and William Clark
Center for Medicare and Medicaid Innovation, DHHS
Contract No.: HHSM-500-T0004
Deliverable No.: 4.1

Prepared by:

Ian Hill (Project Director), Sarah Benatar, Brigitte Courtot, Lisa Dubay, Fred Blavin, Bowen Garrett, Embry Howell, Margaret Wilkinson, Morgan Cheeks, Sarah Gadsden, Nikhil Holla and Mayookha Mitra-Majumdar—*Urban Institute*
Jennifer Edwards, Sharon Silow-Carroll, and Diana Rodin—*Health Management Associates*
Lee Thompson, Brandy Farrar and Kathryn Paez—*American Institutes for Research*
Mark Rouse, Benita Sinnarajah, and Lynn Paquin—*Briljent*

March 2016



Contents

Introduction	1
Access Community Health Network	2
Albert Einstein Healthcare Network	9
American Association of Birth Centers	15
Amerigroup Corporation.....	22
Central Jersey Family Health Consortium	29
Florida Association of Healthy Start Coalitions.....	36
Grady Memorial Hospital Corporation	43
Harris County Hospital District.....	50
HealthInsight of Nevada	56
Johns Hopkins University	62
Los Angeles County Department of Health Services	68
Maricopa Integrated Health System.....	75
Medical University of South Carolina	82
Meridian Health Plan	88
Mississippi Primary Health Care Association	94
Oklahoma Health Care Authority.....	100
Providence Health Foundation of Providence Hospital.....	106
Signature Medical Group	113
St. John Providence Health System.....	120
Texas Tech University Health Sciences Center	127
United Neighborhood Health Services	134
University of Alabama at Birmingham	141
University of Kentucky Research Foundation	147
University of Puerto Rico	154
University of South Alabama	161
University of Tennessee Health Sciences Center.....	168
Virginia Commonwealth University	175

Introduction

The Strong Start for Mothers and Newborns Evaluation Annual Report Volume 2 presents awardee-specific findings for each of the 27 Strong Start awards. Findings presented are based on case studies, participant-level process evaluation forms (Intake Form, Third Trimester Survey, and Exit Form), and State Data Linkage Technical Assistance (TA) information.

The case study analysis summarizes findings from telephone interviews conducted by the evaluation team between March and July 2015 (with a site visit to University of Puerto Rico, which was not visited in-person during evaluation Year 1) as well as information obtained from other background documents.

Participant-level process evaluation data being collected for each woman enrolled in Strong Start inform an analysis of the sociodemographic characteristics of participants, and provide an additional layer of information regarding participant risk profiles, early outcomes, and satisfaction with the care they have received. Available data from program inception through Quarter 1 2015¹ are presented for each awardee and by enhanced prenatal care approach. We have not reported on data in cases where an awardee has submitted fewer than 25 forms.

The State Data Linkage Technical Assistance (TA) task of Strong Start is working to obtain birth certificate, Medicaid eligibility, and Medicaid claims/encounter data from selected states with Strong Start awardees to assess Strong Start's impact on birth outcomes and Medicaid costs. Data on a limited set of outcomes are also extracted from quarterly monitoring reports collected for Quarter 2 2014 through Quarter 1 2015, which present an overview of each awardee's progress in implementing Strong Start during this second evaluation year, as well as a summary of the characteristics of women enrolling in Strong Start.

¹ Strong Start program quarters follow the traditional calendar year. That is, Q1 2015 is the period from January 1, 2015 through March 31, 2015.

Access Community Health Network

CASE STUDY

ACCESS Community Health Network (ACCESS) is a large, multi-site Federally Qualified Health Center (FQHC) in Chicago, Illinois. At the time of evaluation Y2 data collection, ACCESS was implementing the maternity care home approach at 31 sites, and had enrolled 1,076 women in Strong Start. Informants report that Strong Start implementation continues to go well, with progress in a number of program areas.

Highlights from the second round of case study data collection include:

- The number of Strong Start sites has grown over the last year; Strong Start is now being offered at all 31 sites offering prenatal care within the ACCESS system, up from 23 sites in 2014.
- ACCESS has slightly modified its staffing structure to include seven care coordinators, including five full-time social workers and two RNs, as well as a care coordinator manager, a part-time outreach worker, and a data entry clerk. Previously, program staff included six care coordinators (three RNs and two social workers), a program manager, and an internal evaluation specialist.
- ACCESS adopted modified program eligibility criteria, which has led to a slight increase in enrollment. To ensure that the limited number of care coordinators are providing support to patients with the greatest risk, women must still have a second risk factor for preterm birth (in addition to Medicaid enrollment) to qualify for Strong Start. ACCESS has been enrolling a small proportion of women in their third trimester—generally these are patients who had been receiving prenatal care at ACCESS but only developed a medical risk factor for preterm birth in their third trimester.
- Though enrollment continues to be lower than anticipated, it has increased considerably from 325 during the first round of case studies to 1076 participants when Y2 data was collected. New enrollment methods, including an electronic referral process that facilitates provider referrals, have contributed to this trend. However, the fact that care coordinators are responsible for multiple sites and are not always able to be physically present when potential enrollees present for appointments has continued to pose enrollment challenges.
- Care coordination services have remained largely unchanged, and care coordinators work with each participant to develop a “care plan” and provide support (typically between three and eight encounters) during pregnancy. However, reflecting Illinois Medicaid’s increasing reliance on managed care organizations, care coordinators report spending a growing share of their time negotiating with health plans to ensure patients gain approval for services they need. This, in turn, has impeded their ability to provide other kinds of support to patients.
- Key informants are universally pleased with program outcomes so far, which include lower than average (for the ACCESS network) rates of preterm birth and low birth weight, which stand at

seven to eight percent and nine percent, respectively. In addition, Strong Start participants have reportedly been very responsive to the care coordinators and are appreciative of the additional support. The care coordinators have also been working more closely with providers to develop patient-friendly materials on targeted issues, such as 17 alpha hydroxyprogesterone caproate (17P) treatments to prevent preterm birth.

- ACCESS has placed additional emphasis on improving enrollment, and care coordinators are expected to enroll and maintain a caseload of 120 women (up from 70-90). Many are concerned that this will impact the care coordinators' abilities to provide responsive and high quality support to Strong Start enrollees.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, ACCESS Community Health Network had Intake Forms for 92 percent of participants enrolled through Quarter 1 2015 (1,260 Intake Forms for 1,375 participants). In addition, ACCESS submitted 686 Third Trimester Surveys, 532 Postpartum Surveys, and 12 Exit Forms. The tables below present data collected on ACCESS' participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	ACCESS (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	270	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	1375	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	609	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	1260	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	91.6	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	686	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	112.6	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	532	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	87.4	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	+	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	+	93.8	52.0	50.1	59.4

Notes: Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	ACCESS (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	1260	2993	4401	11761	19155
Less than 18 years of age	%	6.7	3.4	6.7	5.8	5.6
18 through 34 years of age	%	71.6	86.1	75.0	81.4	80.7
35 years and older	%	8.4	6.2	4.9	6.0	5.8
Missing	%	13.3	4.3	13.4	6.8	7.9
Race and Ethnicity	N	1260	2993	4401	11761	19155
Hispanic	%	47.9	25.7	39.2	22.9	27.1
Non-Hispanic white	%	4.4	53.3	13.7	26.2	27.6
Non-Hispanic black	%	44.1	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0.8	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0.6	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	0.4	3.6	2.3	1.2	1.8
Missing	%	1.8	0.9	2.8	1.5	1.7
Employed at Intake	N	1260	2993	4401	11761	19155
Yes	%	37.1	39.7	34.6	38.8	38
No	%	61.7	59.1	60.9	60.0	60.0
Missing	%	1.1	1.2	4.5	1.2	2.0
Education Level at Intake	N	1260	2993	4401	11761	19155
Less than high school	%	27.0	14.3	23.7	24.5	22.7
High school graduate or GED	%	43.1	52.3	46.2	52.0	50.7
Bachelor's degree	%	1.9	10.1	3.1	2.5	3.9
Other college degree(s)	%	6.1	12.7	7.2	6.0	7.3
Missing	%	21.9	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	1260	2993	4401	11761	19155
Married, living with spouse	%	19.2	40.7	18.6	17.2	21.2
Married, not living with spouse	%	1.8	1.7	2.1	1.9	1.9
Living with a partner	%	31.1	32.2	31.3	30.6	31.0
In a relationship but not living together	%	30.0	12.9	24.6	30.5	26.4
Not in a relationship right now	%	16.1	11.1	17.0	17.8	16.6
Missing	%	1.7	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	1260	2993	4401	11761	19155
Yes	%	9.0	10.1	7.8	14.1	12
No	%	83.4	77.1	71.7	77.8	76.3
Missing	%	7.5	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	1260	2993	4401	11761	19155
Yes	%	28.0	18.1	18.5	16.1	16.9
No	%	63.9	76.9	61.4	76.2	72.9
Missing*	%	8.0	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	1260	2993	4401	11761	19155
Yes	%	21.4	21.8	25.2	23.4	23.5
No	%	69.7	69.3	57.0	69.3	66.4
Missing*	%	8.9	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	1260	2993	4401	11761	19155

Data Element	N or %	ACCESS (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Yes	%	19.7	20.6	17.1	19.0	18.8
No	%	78.3	77.2	68.4	78.5	76.0
Missing*	%	2.0	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	ACCESS (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	+	1127	700	1914	3741
<18 months	%	+	24.3	18.0	19.5	20.7
≥18 months	%	+	39.8	48.3	51.9	47.6
Missing	%	+	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	+	1127	700	1914	3741
Yes	%	+	10.7	11.4	18.9	15.0
No	%	+	89.3	63.9	63.2	71.2
Not Known	%	+	0	18.6	14.9	11.1
Missing	%	+	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	+	1127	700	1914	3741
Yes	%	+	1.9	8.6	14.8	9.7
No	%	+	95.8	60.4	61.7	71.7
Not Known	%	+	0	24.7	19.2	14.5
Missing	%	+	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	0.5	1.3	1.5	1.1
No	%	+	99.5	74.2	84.4	87
Not Known	%	+	0	7.7	11.1	6.8
Missing	%	+	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	0	2.6	1.9	1.5
No	%	+	5	72.9	83.3	56.1
Not Known	%	+	0	7.7	11.1	6.8
Missing	%	+	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	+	2133	1433	3103	6669
Yes	%	+	0.5	6	9.5	5.9
No	%	+	99.5	66.7	77.4	82.2
Not Known	%	+	0	7.6	10.2	6.4
Missing	%	+	0	19.7	2.9	5.6

Notes: Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	ACCESS (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	2.7	4.2	5.3	4.2
No	%	+	97.3	65.4	76	80.6
Not Known	%	+	0	10.3	15.9	9.6
Missing	%	+	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	+	2133	1433	3103	6669
Yes	%	+	1.3	7.8	7.7	5.7
No	%	+	98.7	62.6	74.8	79.8
Not Known	%	+	0	9.4	14.6	8.8
Missing	%	+	0	20.2	2.9	5.7

Notes: Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	ACCESS (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	+	2125	1103	2740	5968
Number of Babies Born	N	+	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	+	2133	1297	2826	6256
Yes	%	+	14.4	23.8	17.2	17.6
No	%	+	85.3	42.8	35.5	54
Not known	%	+	0	10.6	37.8	19.3
Missing	%	+	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	+	2133	1433	3103	6669
Vaginal delivery	%	+	87.3	49.1	52.0	62.7
C-Section	%	+	12.4	24.3	29.6	23
Vaginal and C-Section	%	+	0	0	0	0
Missing	%	+	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	+	90.9	80.2	81.6	85.4
VBAC²	N	+	90	161	418	669
Yes	%	+	30.0	19.9	13.9	17.5
Repeat C-Section	N	+	90	161	418	669
Yes	%	+	70.0	80.1	86.1	82.5
Scheduled C-Section	N	+	265	348	920	1533
Yes	%	+	0	39.1	29.2	26.4

Notes: Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Rows labeled with an “N” indicate the number of observations from which percentages have been calculated

² The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	ACCESS (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Age (EGA)	N	+	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	+	112	131	461	704
	%	+	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	+	1994	823	1945	4762
	%	+	94.3	72.2	74.3	81.1
Missing	N	+	–	186	211	406
	%	+	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	+	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	+	75	147	412	634
	%	+	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	+	1810	993	2019	4822
	%	+	85.6	87.1	77.2	82.1
Missing	N	+	240	13	197	450
	%	+	11.3	1.1	7.5	7.7

Notes: Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	ACCESS (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Survey Data	N	532	1533	1416	4000	6949
Yes	%	67.5	86.4	64.7	61.5	67.7
No	%	26.3	7.4	9.5	25.6	18.3
Prefer not to answer	%	1.5	0.7	1.8	0.5	0.8
Missing	%	4.7	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	101.7	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	532	1533	1416	4000	6949
Yes	%	60.9	71.6	60.8	69.7	68.3
No	%	27.4	19.4	12.3	15.2	15.5
Unsure	%	4.7	2.8	2.4	1.8	2.1
Missing	%	7.0	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In January 2015, the evaluation team spoke with officials from the Illinois Department of Healthcare and Family Services (HFS) and the Illinois Department of Public Health (IDPH) to learn about the state’s willingness to and process for releasing state Medicaid and birth certificate data (respectively) to the

Urban Institute in support of the impact analysis of the Strong Start evaluation. State officials were receptive to supporting the evaluation, and HFS staff plan to link the Medicaid and birth certificate data. Applications requesting Medicaid and birth certificate data were submitted to HFS and IDPH in February and March 2015, respectively. In April, the evaluation team received provisional approval from HFS, but is currently awaiting approval from IDPH. The team hopes to begin receiving data in late 2015.

Albert Einstein Healthcare Network

CASE STUDY

Albert Einstein Healthcare Network (Einstein) is a private, nonprofit health system with three acute-care hospitals and many outpatient centers throughout the greater Philadelphia region. Einstein has implemented the group prenatal care approach at two Strong Start sites: the Paley Clinic in the Einstein Medical Center, Philadelphia (a large teaching hospital with a Level One Trauma center) and the Genuardi clinic in suburban Montgomery County where another Einstein hospital (newly built in 2012) is located. Both sites are high-volume maternity care practices, with approximately 3,000 births annually at Einstein Medical Center Philadelphia and 1,600 at Einstein Medical Center Montgomery. Both serve a large proportion of Medicaid beneficiaries; 70 percent of the Einstein Healthcare Network's births across facilities are Medicaid-funded. Both of Einstein's Strong Start sites are following CHI's CenteringPregnancy approach.

Highlights from the second round of case study data collection include:

- A new intake process was initiated in response to lower-than-expected enrollment. Initial prenatal care visits are now scheduled simultaneously so that patients can be introduced to the approach as a group (in the group prenatal care meeting space) rather than during individual appointments.
- Einstein providers were trained by the March of Dimes about the benefits of group prenatal care for birth outcomes and encouraged to refer their patients to the Strong Start program. Ongoing "in-reach" to providers continues, including at faculty meetings.
- Though the awardee discontinued external marketing for its group prenatal care program (including billboards and bus ads) in 2014 and shifted its focus to internal campaigns, it plans to resume external marketing in 2015 after observing a 30 percent drop in enrollment (from 109 enrollees in the last quarter of 2014 to 69 newly enrolled participants in the first quarter of 2015) that was attributed to the marketing change.
- Einstein has been awarded a HRSA Healthy Start grant. Key informants described several ways in which the Healthy Start project complements Strong Start services. For example, the awardee will use Healthy Start funding to add social worker support at outpatient clinics. Previously, social workers were only available to pregnant women during inpatient stays. In addition, a patient navigator funded by Healthy Start has been in place since March of 2015. She conducts outreach to Strong Start enrollees to improve appointment attendance. The new intervention may create some complexity for the evaluation in teasing out the effects of Strong Start on birth outcomes.
- In response to ongoing enrollment challenges, there is a plan for a new Strong Start Centering site called Rising Sun. Providers at the site are currently being trained in the approach.

- Though the program is not currently enrolling new participants in their third trimester, there has been consideration of a “late to care” group (for those who enter care in the third trimester) that would condense the material covered earlier in the program.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, Albert Einstein Healthcare Network had Intake Forms for 62 percent of participants enrolled through Quarter 1 2015 (354 Intake Forms for 572 participants). In addition, Albert Einstein Healthcare Network submitted 202 Third Trimester Surveys, 127 Postpartum Surveys, and 267 Exit Forms. The tables below present data collected on Albert Einstein Healthcare Network’s participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	EINSTEIN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	69	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	572	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	399	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	354	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	61.9	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	202	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	50.6	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	127	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	31.8	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	267	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	66.9	93.8	52.0	50.1	59.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	EINSTEIN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother’s Age at Intake	N	354	2993	4401	11761	19155
Less than 18 years of age	%	8.2	3.4	6.7	5.8	5.6
18 through 34 years of age	%	86.2	86.1	75	81.4	80.7
35 years and older	%	2.0	6.2	4.9	6.0	5.8
Missing	%	3.7	4.3	13.4	6.8	7.9
Race and Ethnicity	N	354	2993	4401	11761	19155
Hispanic	%	15.5	25.7	39.2	22.9	27.1
Non-Hispanic white	%	12.1	53.3	13.7	26.2	27.6
Non-Hispanic black	%	65.5	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	1.1	1.1	1.2	1.2	1.2

Data Element	N or %	EINSTEIN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Non-Hispanic other	%	0.3	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	4.8	3.6	2.3	1.2	1.8
Missing	%	0.6	0.9	2.8	1.5	1.7
Employed at Intake	N	354	2993	4401	11761	19155
Yes	%	37.3	39.7	34.6	38.8	38
No	%	61.3	59.1	60.9	60.0	60.0
Missing	%	1.4	1.2	4.5	1.2	2.0
Education Level at Intake	N	354	2993	4401	11761	19155
Less than high school	%	22.0	14.3	23.7	24.5	22.7
High school graduate or GED	%	59.6	52.3	46.2	52.0	50.7
Bachelor's degree	%	2.5	10.1	3.1	2.5	3.9
Other college degree(s)	%	5.7	12.7	7.2	6.0	7.3
Missing	%	10.2	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	354	2993	4401	11761	19155
Married, living with spouse	%	10.7	40.7	18.6	17.2	21.2
Married, not living with spouse	%	1.7	1.7	2.1	1.9	1.9
Living with a partner	%	31.6	32.2	31.3	30.6	31.0
In a relationship but not living together	%	35.0	12.9	24.6	30.5	26.4
Not in a relationship right now	%	16.7	11.1	17.0	17.8	16.6
Missing	%	4.2	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	354	2993	4401	11761	19155
Yes	%	11.0	10.1	7.8	14.1	12.0
No	%	72.3	77.1	71.7	77.8	76.3
Missing	%	16.7	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	354	2993	4401	11761	19155
Yes	%	20.3	18.1	18.5	16.1	16.9
No	%	69.8	76.9	61.4	76.2	72.9
Missing*	%	9.9	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	354	2993	4401	11761	19155
Yes	%	34.7	21.8	25.2	23.4	23.5
No	%	47.2	69.3	57.0	69.3	66.4
Missing*	%	18.0	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	354	2993	4401	11761	19155
Yes	%	19.2	20.6	17.1	19.0	18.8
No	%	78.8	77.2	68.4	78.5	76.0
Missing*	%	2.0	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	EINSTEIN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	152	1127	700	1914	3741

Data Element	N or %	EINSTEIN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
<18 months	%	12.4	24.3	18.0	19.5	20.7
≥18 months	%	38.2	39.8	48.3	51.9	47.6
Missing	%	49.3	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	152	1127	700	1914	3741
Yes	%	22.4	10.7	11.4	18.9	15.0
No	%	69.7	89.3	63.9	63.2	71.2
Not Known	%	5.3	0	18.6	14.9	11.1
Missing	%	2.6	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	152	1127	700	1914	3741
Yes	%	19.7	1.9	8.6	14.8	9.7
No	%	70.4	95.8	60.4	61.7	71.7
Not Known	%	8.6	0	24.7	19.2	14.5
Missing	%	1.3	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	267	2133	1433	3103	6669
Yes	%	1.1	0.5	1.3	1.5	1.1
No	%	96.6	99.5	74.2	84.4	87.0
Not Known	%	0.7	0	7.7	11.1	6.8
Missing	%	1.5	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	267	2133	1433	3103	6669
Yes	%	1.5	0	2.6	1.9	1.5
No	%	96.3	5.0	72.9	83.3	56.1
Not Known	%	0.7	0	7.7	11.1	6.8
Missing	%	1.5	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	267	2133	1433	3103	6669
Yes	%	7.5	0.5	6.0	9.5	5.9
No	%	89.9	99.5	66.7	77.4	82.2
Not Known	%	1.1	0	7.6	10.2	6.4
Missing	%	1.5	0	19.7	2.9	5.6

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	EINSTEIN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	267	2133	1433	3103	6669
Yes	%	2.6	2.7	4.2	5.3	4.2
No	%	88.8	97.3	65.4	76.0	80.6
Not Known	%	4.9	0	10.3	15.9	9.6
Missing	%	3.7	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	267	2133	1433	3103	6669
Yes	%	12.0	1.3	7.8	7.7	5.7
No	%	77.2	98.7	62.6	74.8	79.8
Not Known	%	6.4	0	9.4	14.6	8.8
Missing	%	4.5	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	EINSTEIN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	264	2125	1103	2740	5968
Number of Babies Born	N	266	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	241	2133	1297	2826	6256
Yes	%	29.9	14.4	23.8	17.2	17.6
No	%	54.8	85.3	42.8	35.5	54.0
Not known	%	12.0	0	10.6	37.8	19.3
Missing	%	3.3	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	267	2133	1433	3103	6669
Vaginal delivery	%	67.0	87.3	49.1	52.0	62.7
C-Section	%	24.7	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	8.2	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	84.4	90.9	80.2	81.6	85.4
VBAC ³	N	37	90	161	418	669
Yes	%	32.4	30.0	19.9	13.9	17.5
Repeat C-Section	N	37	90	161	418	669
Yes	%	67.6	70.0	80.1	86.1	82.5
Scheduled C-Section	N	66	265	348	920	1533
Yes	%	39.4	0	39.1	29.2	26.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	EINSTEIN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Age (EGA)	N	243	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	25	112	131	461	704
	%	10.3	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	204	1994	823	1945	4762
	%	84.0	94.3	72.2	74.3	81.1
Missing	N	14	—	186	211	406
	%	5.8	—	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	243	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	25	75	147	412	634
	%	10.3	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	221	1810	993	2019	4822
	%	90.9	85.6	87.1	77.2	82.1
Missing	N	—	240	13	197	450
	%	—	11.3	1.1	7.5	7.7

³ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Note: Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period. Statistics were only calculated for items with at least 11 responses. Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	EINSTEIN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Survey Data	N	127	1533	1416	4000	6949
Yes	%	38.6	86.4	64.7	61.5	67.7
No	%	4.7	7.4	9.5	25.6	18.3
Prefer not to answer	%	1.6	0.7	1.8	0.5	0.8
Missing	%	55.1	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	106.1	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	127	1533	1416	4000	6949
Yes	%	35.4	71.6	60.8	69.7	68.3
No	%	7.9	19.4	12.3	15.2	15.5
Unsure	%	0.8	2.8	2.4	1.8	2.1
Missing	%	55.9	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In March 2015, the evaluation team spoke with officials from the Pennsylvania Department of Human Services (DHS) and the Pennsylvania Department of Health (DOH) to learn about the state’s willingness to and process for releasing state Medicaid and birth certificate data to the Urban Institute for the impact analysis of the Strong Start evaluation. State officials were receptive to supporting the evaluation, and DHS staff plan to link the Medicaid and birth certificate data for the impact analysis. Applications requesting Medicaid and birth certificate data were submitted to DHS and DOH in March and April 2015, respectively. In April 2015, the evaluation team received approval from DOH but is currently awaiting approval from DHS following our submission of responses to questions from its legal department. The team hopes to begin receiving data in late 2015.

American Association of Birth Centers

CASE STUDY

American Association of Birth Centers (AABC) is the national trade association for birth centers in the United States, with a mission to support and promote birth centers as a model of maternity care. AABC operates the largest number of Strong Start sites; at the time of Y2 data collection, AABC was operating 41 sites in 18 states across the country. AABC operates all but one of the Strong Start initiative's birth center approach sites. Overall, awardee and site-level staff involved in AABC's Strong Start program indicate that implementation has been going well, with progress on many fronts.

Highlights from the second round of case study data collection include:

- Though enrollment continues to lag at some sites, overall it increased considerably in the second program year. Enrollment was around 1200 participants (ever enrolled) at the start of the Y1 case studies, compared to nearly 4,000 participants enrolled at the start of Y2 case study data collection.
- Changes to the Strong Start eligibility criteria (in June 2014) contributed to the enrollment increase by both expanding the pool of eligible patients and simplifying enrollment for sites. More specifically, all pregnant women who are enrolled or eligible for Medicaid or CHIP can enroll in Strong Start at AABC sites with no additional preterm risk factor. For a period of about one year (June 2014-June 2015), AABC allowed sites to enroll patients at any gestational age. Even during this time, however, some sites chose not to enroll women past 36 weeks gestation because it would be difficult to complete the three peer counselor visits that are required during the prenatal period. [In the months since Y2 case study data collection, AABC has reinstated a gestational age cutoff of 28 weeks in general, with enrollment of women up to 32 weeks gestation in special circumstances.]
- No longer requiring a second risk factor has boosted enrollment particularly at birth centers with low-risk patient populations. The sites still complete the AABC-developed risk assessment form when patients are enrolled in the program. This information is needed for Strong Start program monitoring reports, and is also generally used by peer counselors to identify patient needs and prioritize education and supportive services.
- Data collection has improved over the past year. In addition to providing individualized technical assistance to sites on data collection and use of AABC's Perinatal Data Registry, the awardee recently implemented a policy of withholding Strong Start payments until sites are current with data collection.
- The overall number of AABC sites has been stable. A few are expected to leave the program this year, but several others will begin Strong Start operations in the coming months.

- AABC’s peer counseling services have remained unchanged (four encounters per pregnancy—three prenatal encounters, and one postpartum encounter), though program staff are now tracking service delivery mode and type of counselor (nurse or non-nurse) and plan to use this information when analyzing program outcomes.
- Most peer counselor encounters currently occur in person at the birth center. This represents a shift for some birth centers that began their programs by conducting visits by phone, in the participants’ home, or in local restaurants and coffee shops. Some sites made this shift because peer counselors became more available and others wished to make it more convenient for participants to schedule and attend the visits.
- In between formal encounters, peer counselors are typically available to participants via phone and email. Some peer counselors also communicate with participants via text messages and have found this to be an effective way to maintain contact.
- Birth centers and Strong Start participants have access to some new resources, including a website, a blog, and two web-based tools called Maternity Neighborhood Care Guides and the AABC Maternity Surveys. AABC has also worked to increase its social media presence for Strong Start.
- Program staff are pleased with program outcomes so far, such as low rates of preterm birth and Cesarean section, and report that Strong Start participants are satisfied with their care, which is verified by the evaluation’s Participant-Level Process Evaluation data. Strong Start has also improved birth centers’ capacity to support patients and has increased knowledge about the birth center approach more generally.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, American Association of Birth Centers (AABC) had Intake Forms for 62 percent of participants enrolled through Quarter 1 2015 (2842 Intake Forms for 4557 participants). In addition, American Association of Birth Centers submitted 1772 Third Trimester Surveys, 1441 Postpartum Surveys, and 2133 Exit Forms. The tables below present data collected on American Association of Birth Centers’ participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	AABC (Birth Center)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	694	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	4557	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	2174	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	2842	2993	4401	11761	19155

Data Element	N or %	AABC (Birth Center)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	62.4	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	1772	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	81.5	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	1441	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	66.3	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	2133	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	98.1	93.8	52.0	50.1	59.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	AABC (Birth Center)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother’s Age at Intake	N	2842	2993	4401	11761	19155
Less than 18 years of age	%	3.3	3.4	6.7	5.8	5.6
18 through 34 years of age	%	86.2	86.1	75.0	81.4	80.7
35 years and older	%	6.2	6.2	4.9	6.0	5.8
Missing	%	4.3	4.3	13.4	6.8	7.9
Race and Ethnicity	N	2842	2993	4401	11761	19155
Hispanic	%	26.7	25.7	39.2	22.9	27.1
Non-Hispanic white	%	56.0	53.3	13.7	26.2	27.6
Non-Hispanic black	%	11.1	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	1.1	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0.6	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	3.5	3.6	2.3	1.2	1.8
Missing	%	0.9	0.9	2.8	1.5	1.7
Employed at Intake	N	2842	2993	4401	11761	19155
Yes	%	39.9	39.7	34.6	38.8	38
No	%	58.9	59.1	60.9	60.0	60.0
Missing	%	1.2	1.2	4.5	1.2	2
Education Level at Intake	N	2842	2993	4401	11761	19155
Less than high school	%	13.8	14.3	23.7	24.5	22.7
High school graduate or GED	%	52.1	52.3	46.2	52.0	50.7
Bachelor’s degree	%	10.4	10.1	3.1	2.5	3.9
Other college degree(s)	%	13.0	12.7	7.2	6.0	7.3
Missing	%	10.7	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	2842	2993	4401	11761	19155
Married, living with spouse	%	42.4	40.7	18.6	17.2	21.2
Married, not living with spouse	%	1.8	1.7	2.1	1.9	1.9
Living with a partner	%	32.4	32.2	31.3	30.6	31.0
In a relationship but not living together	%	11.9	12.9	24.6	30.5	26.4
Not in a relationship right now	%	10.3	11.1	17.0	17.8	16.6

Data Element	N or %	AABC (Birth Center)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Missing	%	1.1	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	2842	2993	4401	11761	19155
Yes	%	9.9	10.1	7.8	14.1	12.0
No	%	77.3	77.1	71.7	77.8	76.3
Missing	%	12.8	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	2842	2993	4401	11761	19155
Yes	%	17.2	18.1	18.5	16.1	16.9
No	%	77.8	76.9	61.4	76.2	72.9
Missing*	%	5.0	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	2842	2993	4401	11761	19155
Yes	%	21.0	21.8	25.2	23.4	23.5
No	%	70.1	69.3	57.0	69.3	66.4
Missing*	%	8.9	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	2842	2993	4401	11761	19155
Yes	%	20.3	20.6	17.1	19.0	18.8
No	%	77.6	77.2	68.4	78.5	76.0
Missing*	%	2.2	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	AABC (Birth Center)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	1127	1127	700	1914	3741
<18 months	%	24.3	24.3	18.0	19.5	20.7
≥18 months	%	39.8	39.8	48.3	51.9	47.6
Missing	%	35.9	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	1127	1127	700	1914	3741
Yes	%	10.7	10.7	11.4	18.9	15.0
No	%	89.3	89.3	63.9	63.2	71.2
Not Known	%	0	0	18.6	14.9	11.1
Missing	%	0	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	1127	1127	700	1914	3741
Yes	%	1.9	1.9	8.6	14.8	9.7
No	%	95.8	95.8	60.4	61.7	71.7
Not Known	%	0	0	24.7	19.2	14.5
Missing	%	2.3	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	2133	2133	1433	3103	6669
Yes	%	0.5	0.5	1.3	1.5	1.1
No	%	99.5	99.5	74.2	84.4	87
Not Known	%	0	0	7.7	11.1	6.8
Missing	%	0	0	16.7	3.1	5.0

Data Element	N or %	AABC (Birth Center)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Pre-Pregnancy Diagnosis of Type II Diabetes	N	2133	2133	1433	3103	6669
Yes	%	0	0	2.6	1.9	1.5
No	%	5.0	5.0	72.9	83.3	56.1
Not Known	%	0	0	7.7	11.1	6.8
Missing	%	94.9	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	2133	2133	1433	3103	6669
Yes	%	0.5	0.5	6.0	9.5	5.9
No	%	99.5	99.5	66.7	77.4	82.2
Not Known	%	0	0	7.6	10.2	6.4
Missing	%	0	0	19.7	2.9	5.6

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	AABC (Birth Center)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	2133	2133	1433	3103	6669
Yes	%	2.7	2.7	4.2	5.3	4.2
No	%	97.3	97.3	65.4	76.0	80.6
Not Known	%	0	0	10.3	15.9	9.6
Missing	%	0	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	2133	2133	1433	3103	6669
Yes	%	1.3	1.3	7.8	7.7	5.7
No	%	98.7	98.7	62.6	74.8	79.8
Not Known	%	0	0	9.4	14.6	8.8
Missing	%	0	0	20.2	2.9	5.7

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	AABC (Birth Center)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	2125	2125	1103	2740	5968
Number of Babies Born	N	2128	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	2133	2133	1297	2826	6256
Yes	%	14.4	14.4	23.8	17.2	17.6
No	%	85.3	85.3	42.8	35.5	54.0
Not known	%	0	0	10.6	37.8	19.3
Missing	%	0.3	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	2133	2133	1433	3103	6669
Vaginal delivery	%	87.3	87.3	49.1	52.0	62.7
C-Section	%	12.4	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	0.2	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	90.9	90.9	80.2	81.6	85.4

Data Element	N or %	AABC (Birth Center)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
VBAC⁴	N	90	90	161	418	669
Yes	%	30.0	30.0	19.9	13.9	17.5
Repeat C-Section	N	90	90	161	418	669
Yes	%	70.0	70.0	80.1	86.1	82.5
Scheduled C-Section	N	265	265	348	920	1533
Yes	%	0	0	39.1	29.2	26.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	AABC (Birth Center)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Age (EGA)	N	2115	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	112	112	131	461	704
	%	5.3	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	1994	1994	823	1945	4762
	%	94.3	94.3	72.2	74.3	81.1
Missing	N	–	–	186	211	406
	%	–	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	2115	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	75	75	147	412	634
	%	3.5	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	1810	1810	993	2019	4822
	%	85.6	85.6	87.1	77.2	82.1
Missing	N	240	240	13	197	450
	%	11.3	11.3	1.1	7.5	7.7

Notes: Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	AABC (Birth Center)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	1441	1533	1416	4000	6949
Yes	%	86.5	86.4	64.7	61.5	67.7
No	%	7.2	7.4	9.5	25.6	18.3
Prefer not to answer	%	0.7	0.7	1.8	0.5	0.8
Missing	%	5.6	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	100.1	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	1441	1533	1416	4000	6949
Yes	%	70.3	71.6	60.8	69.7	68.3
No	%	20.4	19.4	12.3	15.2	15.5
Unsure	%	3.0	2.8	2.4	1.8	2.1

⁴ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Data Element	N or %	AABC (Birth Center)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Missing	%	6.3	6.2	24.5	13.3	14

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

Of the 20 states in which we are seeking data, AABC has sites in the following states: Arizona, California, Florida, Illinois, Maryland, Pennsylvania, South Carolina, Tennessee and Texas. Please see the following awardee sections for more information regarding our efforts in these states: Maricopa Integrated Health System (AZ), Los Angeles County Department of Healthcare Services (CA), Florida Association of Healthy Start Coalitions (FL), ACCESS Community Health Network (IL), Johns Hopkins University (MD), Albert Einstein Healthcare Network (PA), Medical University of South Carolina (SC), University of Tennessee Health Science Center (TN) and Harris Health System (TX).

Amerigroup Corporation

CASE STUDY

Amerigroup Corporation (Amerigroup), a wholly-owned subsidiary of Anthem, Inc., is a national managed care organization that works extensively with state-sponsored health programs (like Medicaid) across the U.S. Amerigroup and Anthem's other affiliate health plans serve more than 5.6 million people in state-sponsored health plans across 19 states, including seniors, individuals with disabilities, and low-income families. Though Amerigroup led the development of the Strong Start proposal in Louisiana, the Southeast Louisiana Area Health Education Center (SELAHEC) manages the day-to-day operations of the award. Amerigroup assists with many of Strong Start's administrative aspects, including the budget, while SELAHEC is responsible for "on the ground" implementation and management which includes working directly with the providers and sites involved in Strong Start, collecting and reporting evaluation data, and managing the grant funds. Key informants noted progress in a number of areas since the Y1 site visit:

- At the time of this writing, the awardee was managing seven Strong Start sites in Louisiana.⁵ In addition to the five sites reported in Year 1, the awardee has added a new site in Gentilly affiliated with Daughters of Charity, as well as an OB/GYN clinic at Woman's Hospital in Baton Rouge, affiliated with the Louisiana State University Health System. All sites provide group prenatal care using the CenteringPregnancy model, and are working with the Centering Healthcare Institute (CHI) to obtain CenteringPregnancy site certification. Data specialists have been hired for most of the Strong Start sites to reduce the data collection burden on employees working with group prenatal care.
- The awardee has increased its efforts to facilitate cross-site collaboration by, for example, initiating a standard bimonthly call with all provider sites encouraged to participate. SELAHEC also planned and convened a Learning Collaborative, held in Baton Rouge in February 2015, which brought together Strong Start providers and partners to brainstorm on issues surrounding enrollment, recruitment, and retention.
- Because of CMMI's change in program eligibility criteria in June 2014, sites no longer require a preterm birth risk factor (in addition to Medicaid eligibility) as a prerequisite for enrollment into Strong Start. Sites generally enroll Medicaid women up to 28 weeks gestation, but some have been enrolled by the sites past that benchmark to boost patient volume. In these cases, one of the facilitators will provide late-enrollees with additional information needed one-on-one at the beginning of their first session.
- The Centering Pregnancy curriculum has been fairly consistently followed by provider sites over the last year, with 10 two-hour sessions over the course of seven months, as well as a

⁵ The seven sites were: LSU New Orleans—Carrollton Clinic, LSU Shreveport Clinic, LSU New Orleans—Perdido Clinic, Ochsner Women's Services, Ochsner—St. Charles Clinic, Woman's Health Center for OB/GYN at Woman's Hospital and Woman's Hospital at Gonzales.

postpartum session. All sites emphasize breastfeeding education and family planning support, with community partners such as Healthy Start, the Women, Infants, and Children (WIC) program, the Greater New Orleans Breastfeeding Awareness Coalition (GNOBAC), and the Nurse-Family Partnership providing additional support as needed.

- LSU-affiliated sites are soliciting help from LSU’s marketing department for Strong Start outreach. Strong Start funding has also provided for AHEC to hire a research assistant to support sites with recruitment and outreach efforts which include assisting with community events, developing a Facebook page, and showcasing sites’ progress and activities on the Centering Louisiana website.
- All sites are using modified forms of opt-in enrollment—essentially giving pregnant women the option of participating in group prenatal care—with different procedures for recruitment and enrollment.
- Low enrollment numbers have prompted some sites to combine Centering groups of women of different gestational ages, which informants have stated is not ideal for the educational goals of Centering Pregnancy.
- Sites continue to experience problems with provider buy-in, citing the extra time it takes to explain Centering to patients, a reluctance to lose patients, and concerns about whether reimbursement rates will sufficiently compensate for the time spent conducting group prenatal care. Amerigroup Louisiana health plan included enhanced reimbursement for group prenatal care as part of its re-bid to continue participation in Bayou Health (Louisiana’s Medicaid managed care initiative), which was awarded by the state Medicaid agency. AHEC has provided information to Strong Start sites on how to engage the Amerigroup Louisiana health plan to learn more about this opportunity. Another Bayou Health plan is also developing a pilot program for enhanced reimbursement for CenteringPregnancy providers. The availability of these incentives may be helpful to sites as they work on sustainability efforts in the coming months.
- Sites are continuing to try to integrate medical residents into Strong Start enrollment and Centering groups, but these efforts have been complicated by residents’ relatively short obstetrical rotations and CHI’s recommendation against introducing new providers into existing Centering groups.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, Amerigroup Corporation had Intake Forms for 89 percent of participants enrolled through Quarter 1 2015 (283 Intake Forms for 317 participants). In addition, Amerigroup Corporation submitted 170 Third Trimester Surveys, 44 Postpartum Surveys, and 60 Exit Forms. The tables below present data collected on Amerigroup Corporation’s participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	AMERIGROUP (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	78	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	317	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	102	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	283	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	89.3	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	170	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	166.7	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	44	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	43.1	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	60	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	58.8	93.8	52.0	50.1	59.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	AMERIGROUP (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother’s Age at Intake	N	283	2993	4401	11761	19155
Less than 18 years of age	%	1.4	3.4	6.7	5.8	5.6
18 through 34 years of age	%	39.6	86.1	75.0	81.4	80.7
35 years and older	%	2.1	6.2	4.9	6.0	5.8
Missing	%	56.9	4.3	13.4	6.8	7.9
Race and Ethnicity	N	283	2993	4401	11761	19155
Hispanic	%	6.0	25.7	39.2	22.9	27.1
Non-Hispanic white	%	19.8	53.3	13.7	26.2	27.6
Non-Hispanic black	%	71.0	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	1.1	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	2.1	3.6	2.3	1.2	1.8
Missing	%	0	0.9	2.8	1.5	1.7
Employed at Intake	N	283	2993	4401	11761	19155
Yes	%	44.5	39.7	34.6	38.8	38.0
No	%	54.8	59.1	60.9	60.0	60.0
Missing	%	0.7	1.2	4.5	1.2	2.0
Education Level at Intake	N	283	2993	4401	11761	19155
Less than high school	%	21.2	14.3	23.7	24.5	22.7
High school graduate or GED	%	60.8	52.3	46.2	52.0	50.7
Bachelor’s degree	%	3.2	10.1	3.1	2.5	3.9

Data Element	N or %	AMERIGROUP (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Other college degree(s)	%	8.2	12.7	7.2	6.0	7.3
Missing	%	6.7	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	283	2993	4401	11761	19155
Married, living with spouse	%	11.7	40.7	18.6	17.2	21.2
Married, not living with spouse	%	2.1	1.7	2.1	1.9	1.9
Living with a partner	%	32.9	32.2	31.3	30.6	31.0
In a relationship but not living together	%	32.9	12.9	24.6	30.5	26.4
Not in a relationship right now	%	17.7	11.1	17.0	17.8	16.6
Missing	%	2.8	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	283	2993	4401	11761	19155
Yes	%	9.5	10.1	7.8	14.1	12.0
No	%	74.9	77.1	71.7	77.8	76.3
Missing	%	15.5	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	283	2993	4401	11761	19155
Yes	%	24.0	18.1	18.5	16.1	16.9
No	%	69.3	76.9	61.4	76.2	72.9
Missing*	%	6.7	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	283	2993	4401	11761	19155
Yes	%	32.5	21.8	25.2	23.4	23.5
No	%	54.1	69.3	57.0	69.3	66.4
Missing*	%	13.4	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	283	2993	4401	11761	19155
Yes	%	20.8	20.6	17.1	19.0	18.8
No	%	77.0	77.2	68.4	78.5	76.0
Missing*	%	2.2	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	AMERIGROUP (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	28	1127	700	1914	3741
<18 months	%	7.1	24.3	18.0	19.5	20.7
≥18 months	%	67.9	39.8	48.3	51.9	47.6
Missing	%	25.0	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	28	1127	700	1914	3741
Yes	%	7.1	10.7	11.4	18.9	15.0
No	%	28.6	89.3	63.9	63.2	71.2
Not Known	%	0	0	18.6	14.9	11.1
Missing	%	64.3	0	6.1	3.0	2.7

Data Element	N or %	AMERIGROUP (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Previous Birth(s) Less than 2,500 grams	N	28	1127	700	1914	3741
Yes	%	10.7	1.9	8.6	14.8	9.7
No	%	28.6	95.8	60.4	61.7	71.7
Not Known	%	0	0	24.7	19.2	14.5
Missing	%	60.7	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	60	2133	1433	3103	6669
Yes	%	0	0.5	1.3	1.5	1.1
No	%	31.7	99.5	74.2	84.4	87.0
Not Known	%	0	0	7.7	11.1	6.8
Missing	%	68.3	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	60	2133	1433	3103	6669
Yes	%	0	0	2.6	1.9	1.5
No	%	31.7	5.0	72.9	83.3	56.1
Not Known	%	0	0	7.7	11.1	6.8
Missing	%	68.3	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	60	2133	1433	3103	6669
Yes	%	0	0.5	6.0	9.5	5.9
No	%	31.7	99.5	66.7	77.4	82.2
Not Known	%	0	0	7.6	10.2	6.4
Missing	%	68.3	0	19.7	2.9	5.6

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	AMERIGROUP (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	60	2133	1433	3103	6669
Yes	%	3.3	2.7	4.2	5.3	4.2
No	%	28.3	97.3	65.4	76.0	80.6
Not Known	%	0	0	10.3	15.9	9.6
Missing	%	68.3	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	60	2133	1433	3103	6669
Yes	%	3.3	1.3	7.8	7.7	5.7
No	%	25.0	98.7	62.6	74.8	79.8
Not Known	%	0	0	9.4	14.6	8.8
Missing	%	71.7	0	20.2	2.9	5.7

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	AMERIGROUP (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	30	2125	1103	2740	5968
Number of Babies Born	N	31	2128	1125	2801	6054

Data Element	N or %	AMERIGROUP (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Induction of Labor Excluding Planned C-Sections	N	57	2133	1297	2826	6256
Yes	%	8.8	14.4	23.8	17.2	17.6
No	%	31.6	85.3	42.8	35.5	54.0
Not known	%	0	0	10.6	37.8	19.3
Missing	%	59.6	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	60	2133	1433	3103	6669
Vaginal delivery	%	41.7	87.3	49.1	52.0	62.7
C-Section	%	8.3	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	50.0	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	95.5	90.9	80.2	81.6	85.4
VBAC⁶	N	–	90	161	418	669
Yes	%	–	30.0	19.9	13.9	17.5
Repeat C-Section	N	–	90	161	418	669
Yes	%	–	70.0	80.1	86.1	82.5
Scheduled C-Section	N	–	265	348	920	1533
Yes	%	–	0	39.1	29.2	26.4

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	AMERIGROUP (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births for Estimated Gestational Birth (EGA)	N	30	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	0	112	131	461	704
	%	0	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	0	1994	823	1945	4762
	%	0	94.3	72.2	74.3	81.1
Missing	N	30	–	186	211	406
	%	100.0	–	16.3	8.1	6.9
Number of Live Births for Birth Weight	N	30	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	–	75	147	412	634
	%	–	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	22	1810	993	2019	4822
	%	73.3	85.6	87.1	77.2	82.1
Missing	N	–	240	13	197	450
	%	–	11.3	1.1	7.5	7.7

⁶ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.
Yellow cells labelled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.
Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	AMERIGROUP (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	44	1533	1416	4000	6949
Yes	%	59.1	86.4	64.7	61.5	67.7
No	%	22.7	7.4	9.5	25.6	18.3
Prefer not to answer	%	0	0.7	1.8	0.5	0.8
Missing	%	18.2	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	99.9	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	44	1533	1416	4000	6949
Yes	%	81.8	71.6	60.8	69.7	68.3
No	%	0	19.4	12.3	15.2	15.5
Unsure	%	0	2.8	2.4	1.8	2.1
Missing	%	18.2	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

Louisiana’s Department of Health and Hospitals, which houses the State Registrar and Vital Records, discussed the process for vital records data requests with the evaluation team in late March of 2015. We submitted to the department information about the evaluation protocol, our data confidentiality protocols, and the variables we are requesting. An application for birth certificate data was submitted in July; the request is currently under review and, pending approval, will allow the evaluation team access to the birth certificate data needed to merge participant data with Medicaid eligibility and claims data. The Department of Health and Hospitals also oversees the state’s Medicaid program and we are working closely with the department’s Medicaid administrators to develop an Institutional Review Board application to be submitted to their academic partner who coordinates Medicaid data requests. As of July of 2015, we have received an IRB application from the Department of Health and Hospitals’ Medicaid administrators and are in the process of completing it for submission.

Central Jersey Family Health Consortium

CASE STUDY

Central Jersey Family Health Consortium (Central Jersey) is a nonprofit organization that supports a regional network of maternal and child health services, with emphasis on prevention and community-based activities. The Consortium's mission is to disseminate public health initiatives with a maternal child focus across central New Jersey. With a staff of nearly 100, Central Jersey's efforts reach an estimated 30,000 mother-infant pairs in its six-county service area. Central Jersey serves in a convener role for its Strong Start project. It has recruited seven sites, including hospital-based clinics and federally qualified health centers (FQHCs), to implement group prenatal care under Strong Start. These sites have enrolled 602 participants as of Quarter 1 2015.

Highlights from the second round of case study data collection include:

- One site coordinator has been added to the team. This person works part-time (.5 FTE) and supports the Newark site in developing and maintaining enrollment, retention, and scheduling practices that will allow the site to succeed at Strong Start and to facilitate the transition to group prenatal care as the health center's "standard care." Central Jersey also added a medical chart reviewer who works approximately 15 hours per week to help with chart audits for the evaluation's Exit forms.
- While the number of total sites currently participating in Central Jersey's Strong Start program is still seven, the number of sites participating in the program has fluctuated over the past year. Several sites halted participation temporarily, and one discontinued participation. One new site will begin participating in Central Jersey's Strong Start program by summer 2015.
- Sites have not changed their general approach to Strong Start enrollment; two sites continue to use an opt-out approach while the remainder uses an opt-in approach.
- Central Jersey's strong pre-existing partnerships with WIC, Medicaid offices, Central Intake, and other programs that focus on maternal and child health are a source of referrals for Strong Start-eligible women. However, recruitment within participating Strong Start sites remains the primary outreach strategy.
- Most sites have eliminated the gestational age cutoff for their Strong Start program; however, one site continues to impose a limit of 18 weeks gestational age for women without previous prenatal care and 20 weeks gestational age for women with previous prenatal care. All sites continue to require a second preterm risk factor in addition to Medicaid eligibility or enrollment.⁷

⁷ Since Year 2 case study data collection, the program team has re-instituted the less than 29 weeks gestational age criteria for enrollment in Strong Start. Even when the program operated without any gestational age cutoff, key informants noted that the vast majority of participants enrolled between 13-19 weeks and no participants enrolled past 29 weeks gestation.

- All sites continue to use CHI's CenteringPregnancy model for their group prenatal care.
- Meeting enrollment goals continues to be challenging for Central Jersey. At the time of data collection, the awardee was working on strategies to increase enrollment and intended to reduce its enrollment target to a more attainable goal.
- The awardee has observed many positive outcomes associated with Strong Start, including lower rates of preterm birth and low birth weight and higher rates of breastfeeding compared to Medicaid beneficiaries across the state. In addition, they have observed that compared to patients who do not participate in the program, group prenatal care participants are more likely to attend prenatal care visits regularly, return for their postpartum visit, and seek follow up care for their newborns.
- Central Jersey has had several conversations with stakeholders in the state about providing financial support for group prenatal care once grant funding ends and hopes to use program evaluation data to help "make the business case" for continuing the approach.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By February 2015, Central Jersey Family Health Consortium had Intake Forms for 98 percent of participants enrolled through Quarter 1 2015 (588 Intake Forms for 602 participants). In addition, Central Jersey Family Health Consortium submitted 243 Third Trimester Surveys, 171 Postpartum Surveys, and 231 Exit Forms. The tables below present data collected on Central Jersey Family Health Consortium's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	CJFHC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1, 2015	N	76	739	948	2638	4325
Total Ever Enrolled through Q1, 2015	N	602	4739	5576	13232	23547
Number of Women Delivered through Q1, 2015	N	284	2275	2755	6189	11219
Intake Forms Received through Q1, 2015	N	588	2993	4401	11761	19155
Received through Q1, 2015 as a percentage of the number of women ever enrolled	%	97.7	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1, 2015	N	243	1876	2145	4683	8704
Received through Q1, 2015 as a percentage of the number of women delivered	%	85.6	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1, 2015	N	171	1533	1416	4000	6949
Received through Q1, 2015 as a percentage of the number of women delivered	%	60.2	67.4	51.4	64.6	61.9
Exit Forms Received through Q1, 2015	N	231	2133	1433	3103	6669

Data Element	N or %	CJFHC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Received through Q1, 2015 as a percentage of the number of women delivered	%	81.3	93.8	52.0	50.1	59.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	CJFHC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother’s Age at Intake	N	588	2993	4401	11761	19155
Less than 18 years of age	%	6.3	3.4	6.7	5.8	5.6
18 through 34 years of age	%	83.8	86.1	75.0	81.4	80.7
35 years and older	%	4.9	6.2	4.9	6.0	5.8
Missing	%	4.9	4.3	13.4	6.8	7.9
Race and Ethnicity	N	588	2993	4401	11761	19155
Hispanic	%	43.5	25.7	39.2	22.9	27.1
Non-Hispanic white	%	10.9	53.3	13.7	26.2	27.6
Non-Hispanic black	%	37.8	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	1.7	1.1	1.2	1.2	1.2
Non-Hispanic other	%	1.9	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	1.5	3.6	2.3	1.2	1.8
Missing	%	2.7	0.9	2.8	1.5	1.7
Employed at Intake	N	588	2993	4401	11761	19155
Yes	%	40.5	39.7	34.6	38.8	38.0
No	%	58.0	59.1	60.9	60.0	60.0
Missing	%	1.5	1.2	4.5	1.2	2.0
Education Level at Intake	N	588	2993	4401	11761	19155
Less than high school	%	14.5	14.3	23.7	24.5	22.7
High school graduate or GED	%	52.7	52.3	46.2	52.0	50.7
Bachelor’s degree	%	4.1	10.1	3.1	2.5	3.9
Other college degree(s)	%	7.5	12.7	7.2	6.0	7.3
Missing	%	21.3	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	588	2993	4401	11761	19155
Married, living with spouse	%	16.2	40.7	18.6	17.2	21.2
Married, not living with spouse	%	3.4	1.7	2.1	1.9	1.9
Living with a partner	%	28.4	32.2	31.3	30.6	31.0
In a relationship but not living together	%	28.9	12.9	24.6	30.5	26.4
Not in a relationship right now	%	18.2	11.1	17.0	17.8	16.6
Missing	%	4.9	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	588	2993	4401	11761	19155
Yes	%	4.6	10.1	7.8	14.1	12.0
No	%	75.0	77.1	71.7	77.8	76.3
Missing	%	20.4	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	588	2993	4401	11761	19155
Yes	%	22.6	18.1	18.5	16.1	16.9
No	%	65.1	76.9	61.4	76.2	72.9
Missing*	%	12.3	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	588	2993	4401	11761	19155

Data Element	N or %	CJFHC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Yes	%	22.4	21.8	25.2	23.4	23.5
No	%	54.8	69.3	57.0	69.3	66.4
Missing*	%	22.8	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	588	2993	4401	11761	19155
Yes	%	17.7	20.6	17.1	19.0	18.8
No	%	78.2	77.2	68.4	78.5	76.0
Missing*	%	4.1	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	CJFHC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	78	1127	700	1914	3741
<18 months	%	15.3	24.3	18.0	19.5	20.7
≥18 months	%	61.5	39.8	48.3	51.9	47.6
Missing	%	23.1	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	78	1127	700	1914	3741
Yes	%	12.8	10.7	11.4	18.9	15.0
No	%	84.6	89.3	63.9	63.2	71.2
Not Known	%	1.3	0	18.6	14.9	11.1
Missing	%	1.3	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	78	1127	700	1914	3741
Yes	%	6.4	1.9	8.6	14.8	9.7
No	%	89.7	95.8	60.4	61.7	71.7
Not Known	%	1.3	0	24.7	19.2	14.5
Missing	%	2.6	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	231	2133	1433	3103	6669
Yes	%	0	0.5	1.3	1.5	1.1
No	%	97.8	99.5	74.2	84.4	87.0
Not Known	%	1.7	0	7.7	11.1	6.8
Missing	%	0.4	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	231	2133	1433	3103	6669
Yes	%	0	0	2.6	1.9	1.5
No	%	97.8	5.0	72.9	83.3	56.1
Not Known	%	1.7	0	7.7	11.1	6.8
Missing	%	0.4	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	231	2133	1433	3103	6669
Yes	%	2.2	0.5	6.0	9.5	5.9
No	%	95.7	99.5	66.7	77.4	82.2
Not Known	%	1.7	0	7.6	10.2	6.4
Missing	%	0.4	0	19.7	2.9	5.6

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	CJFHC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	231	2133	1433	3103	6669
Yes	%	7.8	2.7	4.2	5.3	4.2
No	%	86.1	97.3	65.4	76.0	80.6
Not Known	%	6.1	0	10.3	15.9	9.6
Missing	%	0	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	231	2133	1433	3103	6669
Yes	%	12.6	1.3	7.8	7.7	5.7
No	%	80.5	98.7	62.6	74.8	79.8
Not Known	%	6.9	0	9.4	14.6	8.8
Missing	%	0	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	CJFHC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	230	2125	1103	2740	5968
Number of Babies Born	N	232	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	216	2133	1297	2826	6256
Yes	%	36.1	14.4	23.8	17.2	17.6
No	%	39.8	85.3	42.8	35.5	54.0
Not known	%	24.1	0	10.6	37.8	19.3
Missing	%	0	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	231	2133	1433	3103	6669
Vaginal delivery	%	58.9	87.3	49.1	52.0	62.7
C-Section	%	32.0	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	9.1	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	69.2	90.9	80.2	81.6	85.4
VBAC⁸	N	18	90	161	418	669
Yes	%	11.1	30.0	19.9	13.9	17.5
Repeat C-Section	N	18	90	161	418	669
Yes	%	88.9	70.0	80.1	86.1	82.5
Scheduled C-Section	N	74	265	348	920	1533
Yes	%	20.3	0	39.1	29.2	26.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

⁸ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	CJFHC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births for Estimated Gestational Birth (EGA)	N	210	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	15	112	131	461	704
	%	7.1	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	175	1994	823	1945	4762
	%	83.3	94.3	72.2	74.3	81.1
Missing	N	20	–	186	211	406
	%	9.5	–	16.3	8.1	6.9
Number of Live Births for Birth Weight	N	210	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	17	75	147	412	634
	%	8.1	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	190	1810	993	2019	4822
	%	90.5	85.6	87.1	77.2	82.1
Missing	N	–	240	13	197	450
	%	–	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.
Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.
Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	CJFHC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	171	1533	1416	4000	6949
Yes	%	70.2	86.4	64.7	61.5	67.7
No	%	9.4	7.4	9.5	25.6	18.3
Prefer not to answer	%	1.2	0.7	1.8	0.5	0.8
Missing	%	19.3	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	94.6	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	171	1533	1416	4000	6949
Yes	%	66.7	71.6	60.8	69.7	68.3
No	%	9.4	19.4	12.3	15.2	15.5
Unsure	%	3.5	2.8	2.4	1.8	2.1
Missing	%	20.5	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

The New Jersey Division of Medical Assistance and Health Services was enthusiastic about inclusion in the Strong Start for Mothers and Newborns Evaluation when we first communicated with the agency in March of 2015. At the time, the NJ Medicaid agency indicated that access to merged birth certificate and Medicaid eligibility/claims data would be facilitated by addition of an amendment to a Data Use Agreement in development between the New Jersey Division of Medical Assistance and Health Services and the New Jersey Department of Health. As of June of 2015, the submission and review of the Data

Use Agreement is ongoing and currently under review by the New Jersey Department of Health. We anticipate receiving a linked data file for analysis in late 2015.

Florida Association of Healthy Start Coalitions

CASE STUDY

The Florida Association of Healthy Start Coalitions (FAHSC) directs the state's Healthy Start home visiting program as well as the Strong Start Maternity Care Home initiative in the Tampa Bay area. FAHSC initiated maternity care homes at seven dissimilar sites to test the fit of the approach in different health care settings. There are four locations that are part of a Medicaid-only obstetrics group practice (one of which is new since last year), one FQHC, one hospital-affiliated high-risk obstetrical clinic, and one public health department. Another small FQHC site closed in the second year of the program because of low Medicaid enrollment. Maternal Health Specialists (MHS's) provide care management, conduct patient education, assist with doctor-patient communication, and provide referrals and follow-up. In the first quarter of 2015, the awardee had enrolled a total of 716 participants in Strong Start.

Highlights from the second round of case study data collection include:

- MHS integration in the workflow at each site has continued to evolve and improve. Staff and clinicians have a greater understanding of how the MHS's can support maternity care for their patients.
- MHS's are receiving additional training and materials to help them provide more comprehensive support related to breastfeeding, family planning, and diabetes.
- With supplemental Strong Start funding, FAHSC hired a data specialist who collects and reports program and evaluation data for all the sites.
- FAHSC has experienced some staff turnover among the MHS's, which key informants ascribed to the nature of a grant-funded, temporary position and to moves out of the area.
- FAHSC's eligibility criteria require that women be Medicaid eligible and present with at least one additional preterm risk factor. MHS's are enrolling women with some risk factors that were excluded during evaluation Y1, such as women with a short inter-pregnancy period, BMI over 30, multiple gestations, unintended pregnancy, and primiparous women.
- Further, women up to 28 weeks gestation may now be enrolled in the program, though about 80 percent enroll before 20 weeks. As a policy, FAHSC program sites try to limit enrollment to women below 24 weeks but will enroll women up to 28 weeks if they are considered medically needy.
- Key informants believe women are benefitting from the additional continuity that MHS's provide, increased health education, and the referrals to community services. Retention through

the postpartum visit is high and as a result, Strong Start participants are receiving education about access to contraception and ongoing women's health services.

- FAHSC believes there is support among sites for continuing the MHS role after the Strong Start grant ends. Staff are exploring ways they could integrate Strong Start and Healthy Start to provide the range of services women need during pregnancy and postpartum.
- FAHSC engaged in a "re-planning" phase that focused on increasing program enrollment. Key informants noted that this process was informative and beneficial, but also increased the complexity of contract renegotiations with their community partners.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, Florida Association of Healthy Start Coalitions had Intake Forms for 98 percent of participants enrolled through Quarter 1 2015 (699 Intake Forms for 716 participants). In addition, Florida Association of Health Start Coalitions submitted 335 Third Trimester Surveys, 328 Postpartum Surveys, and 275 Exit Forms. The tables below present data collected on Florida Association of Healthy Start Coalitions' participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	FLORIDA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	161	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	716	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	344	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	699	2993	4401	11761	19155
Received through Q1, 2015 as a percentage of the number of women ever enrolled	%	97.6	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	335	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	97.4	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	328	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	95.3	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	275	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	79.9	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	FLORIDA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	699	2993	4401	11761	19155

Data Element	N or %	FLORIDA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Less than 18 years of age	%	6.6	3.4	6.7	5.8	5.6
18 through 34 years of age	%	90.1	86.1	75	81.4	80.7
35 years and older	%	3.1	6.2	4.9	6.0	5.8
Missing	%	0.1	4.3	13.4	6.8	7.9
Race and Ethnicity	N	699	2993	4401	11761	19155
Hispanic	%	21.2	25.7	39.2	22.9	27.1
Non-Hispanic white	%	29.8	53.3	13.7	26.2	27.6
Non-Hispanic black	%	44.5	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0.4	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0.6	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	3.4	3.6	2.3	1.2	1.8
Missing	%	0.1	0.9	2.8	1.5	1.7
Employed at Intake	N	699	2993	4401	11761	19155
Yes	%	38.9	39.7	34.6	38.8	38.0
No	%	60.7	59.1	60.9	60.0	60.0
Missing	%	0.4	1.2	4.5	1.2	2.0
Education Level at Intake	N	699	2993	4401	11761	19155
Less than high school	%	31.8	14.3	23.7	24.5	22.7
High school graduate or GED	%	46.2	52.3	46.2	52	50.7
Bachelor's degree	%	1.0	10.1	3.1	2.5	3.9
Other college degree(s)	%	8.4	12.7	7.2	6.0	7.3
Missing	%	12.6	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	699	2993	4401	11761	19155
Married, living with spouse	%	14.3	40.7	18.6	17.2	21.2
Married, not living with spouse	%	1.4	1.7	2.1	1.9	1.9
Living with a partner	%	34.6	32.2	31.3	30.6	31.0
In a relationship but not living together	%	30.3	12.9	24.6	30.5	26.4
Not in a relationship right now	%	19.2	11.1	17.0	17.8	16.6
Missing	%	0.1	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	699	2993	4401	11761	19155
Yes	%	19.2	10.1	7.8	14.1	12.0
No	%	79.4	77.1	71.7	77.8	76.3
Missing	%	1.4	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	699	2993	4401	11761	19155
Yes	%	22.6	18.1	18.5	16.1	16.9
No	%	74.7	76.9	61.4	76.2	72.9
Missing*	%	2.7	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	699	2993	4401	11761	19155
Yes	%	32.6	21.8	25.2	23.4	23.5
No	%	63.9	69.3	57.0	69.3	66.4
Missing*	%	3.4	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	699	2993	4401	11761	19155
Yes	%	36.5	20.6	17.1	19.0	18.8
No	%	59.7	77.2	68.4	78.5	76.0

Data Element	N or %	FLORIDA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Missing*	%	3.8	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	FLORIDA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	170	1127	700	1914	3741
<18 months	%	31.1	24.3	18.0	19.5	20.7
≥18 months	%	62.4	39.8	48.3	51.9	47.6
Missing	%	6.5	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	170	1127	700	1914	3741
Yes	%	23.5	10.7	11.4	18.9	15.0
No	%	72.4	89.3	63.9	63.2	71.2
Not Known	%	3.5	0	18.6	14.9	11.1
Missing	%	0.6	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	170	1127	700	1914	3741
Yes	%	14.7	1.9	8.6	14.8	9.7
No	%	72.9	95.8	60.4	61.7	71.7
Not Known	%	10.6	0	24.7	19.2	14.5
Missing	%	1.8	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	275	2133	1433	3103	6669
Yes	%	2.2	0.5	1.3	1.5	1.1
No	%	96.4	99.5	74.2	84.4	87
Not Known	%	0.4	0	7.7	11.1	6.8
Missing	%	1.1	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	275	2133	1433	3103	6669
Yes	%	1.5	0	2.6	1.9	1.5
No	%	97.5	5.0	72.9	83.3	56.1
Not Known	%	0.4	0	7.7	11.1	6.8
Missing	%	0.7	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	275	2133	1433	3103	6669
Yes	%	9.1	0.5	6.0	9.5	5.9
No	%	89.5	99.5	66.7	77.4	82.2
Not Known	%	0.7	0	7.6	10.2	6.4
Missing	%	0.7	0	19.7	2.9	5.6

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	FLORIDA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	275	2133	1433	3103	6669
Yes	%	13.1	2.7	4.2	5.3	4.2
No	%	69.5	97.3	65.4	76.0	80.6
Not Known	%	16.7	0	10.3	15.9	9.6
Missing	%	0.7	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	275	2133	1433	3103	6669
Yes	%	6.9	1.3	7.8	7.7	5.7
No	%	74.5	98.7	62.6	74.8	79.8
Not Known	%	17.8	0	9.4	14.6	8.8
Missing	%	0.7	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	FLORIDA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	219	2125	1103	2740	5968
Number of Babies Born	N	227	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	258	2133	1297	2826	6256
Yes	%	9.3	14.4	23.8	17.2	17.6
No	%	7.0	85.3	42.8	35.5	54
Not known	%	65.1	0	10.6	37.8	19.3
Missing	%	18.6	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	275	2133	1433	3103	6669
Vaginal delivery	%	40.7	87.3	49.1	52.0	62.7
C-Section	%	24.4	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	34.9	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	79.9	90.9	80.2	81.6	85.4
VBAC⁹	N	36	90	161	418	669
Yes	%	19.4	30.0	19.9	13.9	17.5
Repeat C-Section	N	36	90	161	418	669
Yes	%	80.6	70.0	80.1	86.1	82.5
Scheduled C-Section	N	67	265	348	920	1533
Yes	%	25.4	0	39.1	29.2	26.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

⁹ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	FLORIDA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	197	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	47	112	131	461	704
	%	23.9	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	150	1994	823	1945	4762
	%	76.1	94.3	72.2	74.3	81.1
Missing	N	0	–	186	211	406
	%	0	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	197	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	42	75	147	412	634
	%	21.3	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	149	1810	993	2019	4822
	%	75.6	85.6	87.1	77.2	82.1
Missing	N	–	240	13	197	450
	%	–	11.3	1.1	7.5	7.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.
Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.
Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	FLORIDA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Survey Data	N	328	1533	1416	4000	6949
Yes	%	48.5	86.4	64.7	61.5	67.7
No	%	22.3	7.4	9.5	25.6	18.3
Prefer not to answer	%	0.6	0.7	1.8	0.5	0.8
Missing	%	28.7	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	98.6	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	328	1533	1416	4000	6949
Yes	%	50.6	71.6	60.8	69.7	68.3
No	%	15.2	19.4	12.3	15.2	15.5
Unsure	%	2.7	2.8	2.4	1.8	2.1
Missing	%	31.4	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In March of 2015, we contacted the Bureau of Vital Statistics in the Florida Department of Health and the Florida Agency for Health Care Administration (AHCA). Both were receptive to providing data for the Strong Start Evaluation pending submission of formal applications for data requests. In May of 2015, we submitted our completed applications to both Florida AHCA and Florida DOH. We received initial feedback on our applications from both agencies and requests for supplementary documentation. We

are currently completing the required supplements to our applications which largely focus on providing greater specificity in the variables requested, the research protocol, and the expertise of the evaluation team. While the application process requires two to three months to review, we are optimistic our applications are consistent with the state's goals for sharing by supporting Medicaid policy development. We hope to access the requested data in late 2015.

Grady Memorial Hospital Corporation

CASE STUDY

Grady Health System (Grady) has convened maternity care providers who were already offering group prenatal care to participate in the Strong Start program. All sites had implemented the CenteringPregnancy model prior to receiving the Strong Start award and have used funding to expand and enhance their existing programs. Group care is offered through four providers. Grady Hospital's Nurse Midwifery Service, a joint program of Emory University and Morehouse College, has offered group prenatal care for over a decade and is now the service's sole approach of prenatal care. The Dougherty County Health Department (DCHD) site in Albany serves a very low-income rural region approximately 200 miles south of Atlanta. Group prenatal care is the sole approach of care at the clinic, and there are few alternatives serving Medicaid women in the area. The Southside Medical Center is located in a suburb on Atlanta's south side, primarily serves Medicaid-insured women, and is part of a large health system. Finally, the Providence Women's Health Care site has three locations north of Atlanta and has a mix of publically and privately insured women. Grady sites enrolled a total of 540 participants in 2014, and an additional 87 women were enrolled in the first quarter of 2015.

Highlights from the second round of case study data collection include:

- Since evaluation Y1, the awardee has made a few changes related to recruitment, as well as some minor changes to the content and scope of the group prenatal care sessions. However, the sites and staff have remained stable. Each site has augmented its efforts toward Strong Start enrollment, including use of site-specific brochures that describe Strong Start. Sites also use connections with community partners and local health departments to recruit potential Strong Start participants.
- To improve attendance and retention, Southside now conducts phone follow-up to increase attendance at the first session, Providence has adjusted meeting times to meet the needs of working women, and DCHD focuses on educating other staff within the health department about the program to better take advantage of internal referrals.
- DCHD key informants felt very optimistic about the postpartum session that was added shortly after the evaluation's Y1 site visit, stating it has provided a "great opportunity" not only for women to receive needed postpartum services, but also to reconnect with members of their group cohort.
- The awardee's group prenatal care coordinator is assuming a bigger role in making sure the Strong Start evaluation forms get completed by participants, thereby improving data collection. The awardee also added a receptionist to the program team, who has been credited with improving follow up with patients who miss sessions.

- Awardee staff are pleased with program outcomes so far (e.g., low rates of preterm birth and high rates of breastfeeding) and report that Strong Start participants are satisfied with their care. Strong Start has also improved the awardee's capacity to support patients and has increased knowledge, both within the organization and amongst patients, about group prenatal care, specifically the CenteringPregnancy model.
- At the time of evaluation Y2 interviews, awardee staff felt confident their enrollment goals could be met, through additional outreach opportunities with community partners, and by setting monthly enrollment targets.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, Grady Memorial Hospital Corporation (Grady) had Intake Forms for 46 percent of participants enrolled through Quarter 1 2015 (285 Intake Forms for 627 participants). In addition, Grady Memorial Hospital Corporation submitted 179 Third Trimester Surveys, 29 Postpartum Surveys, but no Exit Forms. The tables below present data collected on Grady's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	GRADY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	87	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	627	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	292	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	285	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	45.5	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	179	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	61.3	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	29	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	9.9	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	+	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	+	93.8	52.0	50.1	59.4

Notes: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	GRADY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	285	2993	4401	11761	19155

Data Element	N or %	GRADY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Less than 18 years of age	%	9.8	3.4	6.7	5.8	5.6
18 through 34 years of age	%	84.2	86.1	75.0	81.4	80.7
35 years and older	%	2.1	6.2	4.9	6.0	5.8
Missing	%	3.9	4.3	13.4	6.8	7.9
Race and Ethnicity	N	285	2993	4401	11761	19155
Hispanic	%	4.6	25.7	39.2	22.9	27.1
Non-Hispanic white	%	4.2	53.3	13.7	26.2	27.6
Non-Hispanic black	%	89.5	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0.7	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	1.1	3.6	2.3	1.2	1.8
Missing	%	0	0.9	2.8	1.5	1.7
Employed at Intake	N	285	2993	4401	11761	19155
Yes	%	41.1	39.7	34.6	38.8	38
No	%	57.2	59.1	60.9	60.0	60.0
Missing	%	1.8	1.2	4.5	1.2	2.0
Education Level at Intake	N	285	2993	4401	11761	19155
Less than high school	%	24.2	14.3	23.7	24.5	22.7
High school graduate or GED	%	55.8	52.3	46.2	52	50.7
Bachelor's degree	%	2.8	10.1	3.1	2.5	3.9
Other college degree(s)	%	7.8	12.7	7.2	6.0	7.3
Missing	%	9.5	10.7	19.8	15	15.4
Relationship Status at Intake	N	285	2993	4401	11761	19155
Married, living with spouse	%	9.5	40.7	18.6	17.2	21.2
Married, not living with spouse	%	1.4	1.7	2.1	1.9	1.9
Living with a partner	%	30.9	32.2	31.3	30.6	31.0
In a relationship but not living together	%	29.8	12.9	24.6	30.5	26.4
Not in a relationship right now	%	26.0	11.1	17.0	17.8	16.6
Missing	%	2.5	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	285	2993	4401	11761	19155
Yes	%	4.2	10.1	7.8	14.1	12.0
No	%	84.9	77.1	71.7	77.8	76.3
Missing	%	10.9	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	285	2993	4401	11761	19155
Yes	%	17.2	18.1	18.5	16.1	16.9
No	%	73.7	76.9	61.4	76.2	72.9
Missing*	%	9.2	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	285	2993	4401	11761	19155
Yes	%	30.2	21.8	25.2	23.4	23.5
No	%	59.3	69.3	57.0	69.3	66.4
Missing*	%	10.5	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	285	2993	4401	11761	19155
Yes	%	13.7	20.6	17.1	19.0	18.8
No	%	84.2	77.2	68.4	78.5	76.0
Missing*	%	2.2	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.
Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.
Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.
Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	GRADY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	+	1127	700	1914	3741
<18 months	%	+	24.3	18.0	19.5	20.7
≥18 months	%	+	39.8	48.3	51.9	47.6
Missing	%	+	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	+	1127	700	1914	3741
Yes	%	+	10.7	11.4	18.9	15.0
No	%	+	89.3	63.9	63.2	71.2
Not Known	%	+	0	18.6	14.9	11.1
Missing	%	+	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	+	1127	700	1914	3741
Yes	%	+	1.9	8.6	14.8	9.7
No	%	+	95.8	60.4	61.7	71.7
Not Known	%	+	0	24.7	19.2	14.5
Missing	%	+	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	0.5	1.3	1.5	1.1
No	%	+	99.5	74.2	84.4	87.0
Not Known	%	+	0	7.7	11.1	6.8
Missing	%	+	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	0	2.6	1.9	1.5
No	%	+	5.0	72.9	83.3	56.1
Not Known	%	+	0	7.7	11.1	6.8
Missing	%	+	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	+	2133	1433	3103	6669
Yes	%	+	0.5	6.0	9.5	5.9
No	%	+	99.5	66.7	77.4	82.2
Not Known	%	+	0	7.6	10.2	6.4
Missing	%	+	0	19.7	2.9	5.6

Notes: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.
Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	GRADY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	2.7	4.2	5.3	4.2
No	%	+	97.3	65.4	76.0	80.6
Not Known	%	+	0	10.3	15.9	9.6

Data Element	N or %	GRADY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Missing	%	+	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	+	2133	1433	3103	6669
Yes	%	+	1.3	7.8	7.7	5.7
No	%	+	98.7	62.6	74.8	79.8
Not Known	%	+	0	9.4	14.6	8.8
Missing	%	+	0	20.2	2.9	5.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	GRADY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	+	2125	1103	2740	5968
Number of Babies Born	N	+	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	+	2133	1297	2826	6256
Yes	%	+	14.4	23.8	17.2	17.6
No	%	+	85.3	42.8	35.5	54.0
Not known	%	+	0	10.6	37.8	19.3
Missing	%	+	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	+	2133	1433	3103	6669
Vaginal delivery	%	+	87.3	49.1	52.0	62.7
C-Section	%	+	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	+	0	0	0	0
Missing	%	+	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	+	90.9	80.2	81.6	85.4
VBAC¹⁰	N	+	90	161	418	669
Yes	%	+	30.0	19.9	13.9	17.5
Repeat C-Section	N	+	90	161	418	669
Yes	%	+	70.0	80.1	86.1	82.5
Scheduled C-Section	N	+	265	348	920	1533
Yes	%	+	0	39.1	29.2	26.4

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	GRADY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	+	2115	1140	2617	5872

¹⁰ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Data Element	N or %	GRADY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Preterm Births, <37 weeks EGA	N	+	112	131	461	704
	%	+	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	+	1994	823	1945	4762
	%	+	94.3	72.2	74.3	81.1
Missing	N	+	–	186	211	406
	%	+	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	+	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	+	75	147	412	634
	%	+	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	+	1810	993	2019	4822
	%	+	85.6	87.1	77.2	82.1
Missing	N	+	240	13	197	450
	%	+	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period. Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	GRADY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Survey Data	N	29	1533	1416	4000	6949
Yes	%	93.1	86.4	64.7	61.5	67.7
No	%	3.4	7.4	9.5	25.6	18.3
Prefer not to answer	%	3.4	0.7	1.8	0.5	0.8
Missing	%	0	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	100.0	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	29	1533	1416	4000	6949
Yes	%	79.3	71.6	60.8	69.7	68.3
No	%	13.8	19.4	12.3	15.2	15.5
Unsure	%	3.4	2.8	2.4	1.8	2.1
Missing	%	3.4	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In January 2015, the evaluation team contacted the Georgia Department of Public Health (DPH) and was directed to contact the state’s Medicaid agency, the Department of Community Health (DCH), to obtain Medicaid data first before placing a request for birth certificate data. Because of significant turnover at DCH, it took several months to initiate contact with the right person. In May of 2015 we introduced state officials at DCH to the Strong Start for Mothers and Newborns Evaluation. State officials were receptive to supporting the evaluation and requested further detail regarding the method for identifying which Medicaid enrolled women would be sampled from their files. We were directed back to DPH as a first step to identify women based on the birth certificate data pull. DPH has directed us to submit our

application to them, and we will discuss next steps after they review. We hope to determine how best to meet both agencies' concerns regarding privacy provisions and responsibility for data matching before proceeding with a data request from DCH.

Harris County Hospital District

CASE STUDY

Harris Health System, the county public health system in Houston, Texas, has had a group prenatal care program that implements CHI's CenteringPregnancy since 2005. The awardee has used Strong Start funds to enhance its group prenatal care program by hiring Community Health Workers (CHWs) and social workers who recruit Medicaid and CHIP-eligible patients for group care enrollment at multiple sites and also provide prenatal and postpartum counseling, education, and referrals. A total of 774 women had ever been enrolled in Harris Health System's Strong Start program as of March 2015.

Highlights from the second round of case study data collection include:

- Harris Health has hired an additional (third) social worker to ease caseloads and allow for longer encounters with participants. Another social worker was replaced, and one of the three Strong Start CHWs left the program.
- With the loss of one CHW who previously focused on outreach, the remaining CHWs have become more involved with community outreach but still focus mainly on "in-reach" to women who come to the Harris Health clinics for pregnancy tests or prenatal care.
- The sites continue to provide CHW and social worker visits to supplement group prenatal care, either before or after sessions, or during a separate appointment as needed. CHW and social worker strategies vary slightly by site, but workers often attend the first group session to ensure that women know they are available throughout the prenatal and postpartum period. In addition to providing emotional support and practical advice, CHWs make reminder calls about group sessions, which is especially valuable at the beginning of each session cycle.
- Harris Health's Strong Start eligibility requirements have changed so that Medicaid or CHIP eligibility alone is sufficient to qualify a pregnant patient for the program; an additional preterm risk factor is no longer required. Key informants reported that the gestational age cutoff for Strong Start is 20 or 24 weeks (responses varied).
- Using Strong Start funding, the awardee hired a data specialist to complete the evaluation Exit forms and provide other support for Strong Start administration.
- Turnover among group facilitators has had a negative effect on attendance and retention. At the time of the Y2 case study, one site had temporarily halted new group enrollment for three months until a new facilitator can be hired.
- Despite these challenges, program enrollment has grown; group size increased and some sites have had to employ waiting lists for group prenatal care.
- Key informants believe Strong Start is extending the benefits of group prenatal care to more patients, which include meeting medical, contraception, and psychosocial needs; reducing

preterm deliveries and NICU stays; increasing breastfeeding rates; and improving continuity of care.

- Harris Health reduced its total enrollment target from 3,000 to about 1,600 enrollees (a “more realistic” target according to key informants) in evaluation Y1; this continues to be the goal in Y2.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, Harris County Hospital District (Harris) had Intake Forms for 92 percent of participants enrolled through Quarter 1 2015 (715 Intake Forms for 774 participants). In addition, Harris County Hospital District submitted 415 Third Trimester Surveys, 408 Postpartum Surveys, and 139 Exit Forms. The tables below present data collected on Harris County Hospital District’s participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	HARRIS (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	158	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	774	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	472	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	715	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	92.4	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	415	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	87.9	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	408	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	86.4	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	139	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	29.4	93.8	52.0	50.1	59.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	HARRIS (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother’s Age at Intake	N	715	2993	4401	11761	19155
Less than 18 years of age	%	10.1	3.4	6.7	5.8	5.6
18 through 34 years of age	%	79.9	86.1	75.0	81.4	80.7
35 years and older	%	9.9	6.2	4.9	6.0	5.8
Missing	%	0.1	4.3	13.4	6.8	7.9
Race and Ethnicity	N	715	2993	4401	11761	19155

Data Element	N or %	HARRIS (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Hispanic	%	83.4	25.7	39.2	22.9	27.1
Non-Hispanic white	%	2.0	53.3	13.7	26.2	27.6
Non-Hispanic black	%	13.6	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0.4	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0.3	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	0.0	3.6	2.3	1.2	1.8
Missing	%	0.4	0.9	2.8	1.5	1.7
Employed at Intake	N	715	2993	4401	11761	19155
Yes	%	24.1	39.7	34.6	38.8	38.0
No	%	75.4	59.1	60.9	60.0	60.0
Missing	%	0.6	1.2	4.5	1.2	2.0
Education Level at Intake	N	715	2993	4401	11761	19155
Less than high school	%	59.6	14.3	23.7	24.5	22.7
High school graduate or GED	%	27.4	52.3	46.2	52.0	50.7
Bachelor's degree	%	0.3	10.1	3.1	2.5	3.9
Other college degree(s)	%	0.2	12.7	7.2	6.0	7.3
Missing	%	12.4	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	715	2993	4401	11761	19155
Married, living with spouse	%	28.8	40.7	18.6	17.2	21.2
Married, not living with spouse	%	2.1	1.7	2.1	1.9	1.9
Living with a partner	%	31.3	32.2	31.3	30.6	31.0
In a relationship but not living together	%	19.4	12.9	24.6	30.5	26.4
Not in a relationship right now	%	17.6	11.1	17.0	17.8	16.6
Missing	%	0.7	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	715	2993	4401	11761	19155
Yes	%	0.6	10.1	7.8	14.1	12.0
No	%	89.9	77.1	71.7	77.8	76.3
Missing	%	9.5	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	715	2993	4401	11761	19155
Yes	%	11.5	18.1	18.5	16.1	16.9
No	%	87.6	76.9	61.4	76.2	72.9
Missing*	%	1.0	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	715	2993	4401	11761	19155
Yes	%	13.6	21.8	25.2	23.4	23.5
No	%	83.6	69.3	57.0	69.3	66.4
Missing*	%	2.8	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	715	2993	4401	11761	19155
Yes	%	18.3	20.6	17.1	19.0	18.8
No	%	81.3	77.2	68.4	78.5	76.0
Missing*	%	0.4	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	HARRIS (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	62	1127	700	1914	3741
<18 months	%	32.3	24.3	18.0	19.5	20.7
≥18 months	%	46.8	39.8	48.3	51.9	47.6
Missing	%	21.0	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	62	1127	700	1914	3741
Yes	%	8.1	10.7	11.4	18.9	15.0
No	%	75.8	89.3	63.9	63.2	71.2
Not Known	%	12.9	0	18.6	14.9	11.1
Missing	%	3.2	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	62	1127	700	1914	3741
Yes	%	14.5	1.9	8.6	14.8	9.7
No	%	69.4	95.8	60.4	61.7	71.7
Not Known	%	12.9	0	24.7	19.2	14.5
Missing	%	3.2	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	139	2133	1433	3103	6669
Yes	%	0	0.5	1.3	1.5	1.1
No	%	46.8	99.5	74.2	84.4	87.0
Not Known	%	50.4	0	7.7	11.1	6.8
Missing	%	2.9	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	139	2133	1433	3103	6669
Yes	%	2.2	0	2.6	1.9	1.5
No	%	44.6	5.0	72.9	83.3	56.1
Not Known	%	50.4	0	7.7	11.1	6.8
Missing	%	2.9	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	139	2133	1433	3103	6669
Yes	%	0.7	0.5	6.0	9.5	5.9
No	%	46.0	99.5	66.7	77.4	82.2
Not Known	%	50.4	0	7.6	10.2	6.4
Missing	%	2.9	0	19.7	2.9	5.6

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	HARRIS (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	139	2133	1433	3103	6669
Yes	%	5.8	2.7	4.2	5.3	4.2
No	%	41.0	97.3	65.4	76.0	80.6
Not Known	%	51.8	0	10.3	15.9	9.6
Missing	%	1.4	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	139	2133	1433	3103	6669
Yes	%	1.4	1.3	7.8	7.7	5.7
No	%	46.0	98.7	62.6	74.8	79.8
Not Known	%	51.8	0	9.4	14.6	8.8

Data Element	N or %	HARRIS (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Missing	%	0.7	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	HARRIS (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	102	2125	1103	2740	5968
Number of Babies Born	N	105	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	135	2133	1297	2826	6256
Yes	%	35.6	14.4	23.8	17.2	17.6
No	%	20.0	85.3	42.8	35.5	54.0
Not known	%	15.6	0	10.6	37.8	19.3
Missing	%	28.9	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	139	2133	1433	3103	6669
Vaginal delivery	%	58.3	87.3	49.1	52.0	62.7
C-Section	%	14.4	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	27.3	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	93.7	90.9	80.2	81.6	85.4
VBAC¹¹	N	–	90	161	418	669
Yes	%	–	30.0	19.9	13.9	17.5
Repeat C-Section	N	–	90	161	418	669
Yes	%	–	70.0	80.1	86.1	82.5
Scheduled C-Section	N	20	265	348	920	1533
Yes	%	20.0	0	39.1	29.2	26.4

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	HARRIS (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	105	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	20	112	131	461	704
	%	19.0	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	84	1994	823	1945	4762
	%	80.0	94.3	72.2	74.3	81.1
Missing	N	–	–	186	211	406
	%	–	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	105	2115	1140	2617	5872

¹¹ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Data Element	N or %	HARRIS (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Low Birth Weight, <2500 grams	N	–	75	147	412	634
	%	–	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	94	1810	993	2019	4822
	%	89.6	85.6	87.1	77.2	82.1
Missing	N	–	240	13	197	450
	%	–	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.
Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.
Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	HARRIS (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Survey Data	N	408	1533	1416	4000	6949
Yes	%	57.8	86.4	64.7	61.5	67.7
No	%	4.7	7.4	9.5	25.6	18.3
Prefer not to answer	%	0.2	0.7	1.8	0.5	0.8
Missing	%	37.3	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	98.3	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	408	1533	1416	4000	6949
Yes	%	57.4	71.6	60.8	69.7	68.3
No	%	4.2	19.4	12.3	15.2	15.5
Unsure	%	1.0	2.8	2.4	1.8	2.1
Missing	%	37.5	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

The Texas Health and Human Services Commission (HHSC) was receptive to supporting the Strong Start Evaluation when introduced to the project in March of 2015. HHSC has had previous experience in creating linked data files that employ birth certificate and Medicaid data but identified the linking of birth certificate data for infants with their respective mothers as a challenge. In April of 2015, administrators at HHSC introduced the Strong Start Evaluation to the Texas Department of State Health Services (DSHS) who agreed to assist with the linking of Strong Start participant and comparison group demographic information with infant birth certificate data and then merging these data with Medicaid eligibility and claims data to be furnished by HHSC. After some deliberation between HHSC and DSHS we received notice that we would need to submit applications to the Department of State Health Services’ Institutional Review Board and Committee on Requests for Personal Data. The submitted applications must also be approved by HHSC. The evaluation team has decided to seek comparable data from the Texas Children’s Health Insurance Program and is pursuing the request for this additional data.

HealthInsight of Nevada

CASE STUDY

HealthInsight of Nevada (HealthInsight) is a private, non-profit Quality Improvement Organization (QIO) working on numerous state, federal, and foundation-funded activities in Utah, Nevada, and New Mexico. HealthInsight of Nevada, the Strong Start grantee, is headquartered in Las Vegas and has recruited a number of providers in the Las Vegas and Reno areas to implement the Strong Start group prenatal care approach. The sites involved have changed over the course of the award period, and at the time of evaluation Y2 data collection, HealthInsight was operating five sites. These included Renown Pregnancy Center, St. Mary's Regional Medical Center (St. Mary's), the University of Nevada School of Medicine (UNSOM), Women's Health Associates of Southern Nevada (WHASN), and Nevada Health Centers. St Mary's and Nevada Health Centers are newer sites that have joined the Strong Start program in the past year. As of March 2015, a total of 401 Strong Start participants had ever enrolled in HealthInsight's program.

Highlights from the second round of case study data collection include:

- Key informants report that implementation has been a “slow go,” with turnover among program staff, both at the site and awardee level. The Strong Start project coordinator and data analyst left in late 2014. Program staff felt the transition to a new project coordinator in December went smoothly.
- Despite the support of some physician champions, all sites have experienced physician resistance to the approach, which continues to be a significant barrier to referrals and enrollment. Physicians are reportedly concerned that group care sessions are less profitable than individual appointments (particularly if group cohorts are small), and that Strong Start participants will leave their practices before delivery.
- HealthInsight also continues to experience enrollment-related challenges including a substantial proportion of low-income patients who are late to or receive no prenatal care (hence shrinking the pool of eligible patients), and a 60 to 90-day processing time for Medicaid applications.
- The sites continue to implement varying approaches of group care. Renown and St. Mary's use the CenteringPregnancy program and are CHI-certified and the other three sites use different approaches of group care that deviate from the CHI approach, including group prenatal care programs that involve fewer sessions that are shorter in length.
- Strong Start eligibility criteria have not changed since evaluation Y1, though they vary between sites. The gestational age cutoff was shifted from 20 weeks to 24 weeks in the program's first year and has not changed since. The awardee decided to begin enrolling patients under age 18 to increase enrollment and meet the needs of the large number of pregnant teens.

- After incentives for referrals failed to boost enrollment, the awardee and sites are exploring more effective outreach strategies and plan to launch a Strong Start marketing campaign that involves ads on bus shelters and elsewhere in the community.
- Key informants believe that Strong Start is improving the psychosocial health of enrollees by providing valuable peer support, which has made participants better prepared for birth and has led to higher rates of breastfeeding.
- HealthInsight reduced its enrollment target from 3,600 to 1,500, though the revised enrollment target is still seen as very ambitious.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, HealthInsight of Nevada had Intake Forms for 65 percent of participants enrolled through Quarter 1 2015 (261 Intake Forms for 401 participants). In addition, HealthInsight of Nevada submitted 192 Third Trimester Surveys, 128 Postpartum Surveys, and 129 Exit Forms. The tables below present data collected on HealthInsight of Nevada's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	NEVADA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	65	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	401	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	156	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	261	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	65.1	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	192	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	123.1	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	128	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	82.1	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	129	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	82.7	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	NEVADA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	261	2993	4401	11761	19155
Less than 18 years of age	%	1.9	3.4	6.7	5.8	5.6
18 through 34 years of age	%	87.7	86.1	75.0	81.4	80.7

Data Element	N or %	NEVADA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
35 years and older	%	3.8	6.2	4.9	6.0	5.8
Missing	%	6.5	4.3	13.4	6.8	7.9
Race and Ethnicity	N	261	2993	4401	11761	19155
Hispanic	%	44.8	25.7	39.2	22.9	27.1
Non-Hispanic white	%	30.7	53.3	13.7	26.2	27.6
Non-Hispanic black	%	13.4	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	2.7	1.1	1.2	1.2	1.2
Non-Hispanic other	%	3.4	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	3.4	3.6	2.3	1.2	1.8
Missing	%	1.5	0.9	2.8	1.5	1.7
Employed at Intake	N	261	2993	4401	11761	19155
Yes	%	34.5	39.7	34.6	38.8	38.0
No	%	64.4	59.1	60.9	60.0	60.0
Missing	%	1.1	1.2	4.5	1.2	2.0
Education Level at Intake	N	261	2993	4401	11761	19155
Less than high school	%	24.1	14.3	23.7	24.5	22.7
High school graduate or GED	%	55.6	52.3	46.2	52.0	50.7
Bachelor's degree	%	2.3	10.1	3.1	2.5	3.9
Other college degree(s)	%	7.7	12.7	7.2	6.0	7.3
Missing	%	10.3	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	261	2993	4401	11761	19155
Married, living with spouse	%	21.8	40.7	18.6	17.2	21.2
Married, not living with spouse	%	2.3	1.7	2.1	1.9	1.9
Living with a partner	%	44.1	32.2	31.3	30.6	31.0
In a relationship but not living together	%	18.4	12.9	24.6	30.5	26.4
Not in a relationship right now	%	12.3	11.1	17.0	17.8	16.6
Missing	%	1.1	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	261	2993	4401	11761	19155
Yes	%	9.6	10.1	7.8	14.1	12.0
No	%	79.3	77.1	71.7	77.8	76.3
Missing	%	11.1	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	261	2993	4401	11761	19155
Yes	%	26.8	18.1	18.5	16.1	16.9
No	%	65.1	76.9	61.4	76.2	72.9
Missing*	%	8.1	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	261	2993	4401	11761	19155
Yes	%	24.5	21.8	25.2	23.4	23.5
No	%	59.4	69.3	57.0	69.3	66.4
Missing*	%	16.1	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	261	2993	4401	11761	19155
Yes	%	23.0	20.6	17.1	19.0	18.8
No	%	74.7	77.2	68.4	78.5	76.0
Missing*	%	2.3	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.
Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.
Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.
Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	NEVADA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	63	1127	700	1914	3741
<18 months	%	25.3	24.3	18.0	19.5	20.7
≥18 months	%	46.0	39.8	48.3	51.9	47.6
Missing	%	28.6	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	63	1127	700	1914	3741
Yes	%	0	10.7	11.4	18.9	15.0
No	%	93.7	89.3	63.9	63.2	71.2
Not Known	%	0	0	18.6	14.9	11.1
Missing	%	6.3	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	63	1127	700	1914	3741
Yes	%	1.6	1.9	8.6	14.8	9.7
No	%	85.7	95.8	60.4	61.7	71.7
Not Known	%	0	0	24.7	19.2	14.5
Missing	%	12.7	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	129	2133	1433	3103	6669
Yes	%	0	0.5	1.3	1.5	1.1
No	%	96.9	99.5	74.2	84.4	87.0
Not Known	%	0	0	7.7	11.1	6.8
Missing	%	3.1	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	129	2133	1433	3103	6669
Yes	%	0	0	2.6	1.9	1.5
No	%	96.9	5.0	72.9	83.3	56.1
Not Known	%	0	0	7.7	11.1	6.8
Missing	%	3.1	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	129	2133	1433	3103	6669
Yes	%	3.9	0.5	6.0	9.5	5.9
No	%	93.8	99.5	66.7	77.4	82.2
Not Known	%	0	0	7.6	10.2	6.4
Missing	%	2.3	0	19.7	2.9	5.6

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	NEVADA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	129	2133	1433	3103	6669
Yes	%	1.6	2.7	4.2	5.3	4.2
No	%	89.1	97.3	65.4	76.0	80.6
Not Known	%	0	0	10.3	15.9	9.6
Missing	%	9.3	0	20.1	2.8	5.6

Data Element	N or %	NEVADA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Pregnancy-Related Hypertension	N	129	2133	1433	3103	6669
Yes	%	3.1	1.3	7.8	7.7	5.7
No	%	88.4	98.7	62.6	74.8	79.8
Not Known	%	0	0	9.4	14.6	8.8
Missing	%	8.5	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	NEVADA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	120	2125	1103	2740	5968
Number of Babies Born	N	121	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	116	2133	1297	2826	6256
Yes	%	24.1	14.4	23.8	17.2	17.6
No	%	67.2	85.3	42.8	35.5	54.0
Not known	%	0.9	0	10.6	37.8	19.3
Missing	%	7.8	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	129	2133	1433	3103	6669
Vaginal delivery	%	66.7	87.3	49.1	52.0	62.7
C-Section	%	25.6	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	7.8	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	85.8	90.9	80.2	81.6	85.4
VBAC¹²	N	12	90	161	418	669
Yes	%	25.0	30.0	19.9	13.9	17.5
Repeat C-Section	N	12	90	161	418	669
Yes	%	75.0	70.0	80.1	86.1	82.5
Scheduled C-Section	N	33	265	348	920	1533
Yes	%	39.4	0	39.1	29.2	26.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	NEVADA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	119	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	—	112	131	461	704
	%	—	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	105	1994	823	1945	4762
	%	88.2	94.3	72.2	74.3	81.1

¹² The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Data Element	N or %	NEVADA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Missing	N	—	—	186	211	406
	%	—	—	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	119	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	12	75	147	412	634
	%	10.1	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	107	1810	993	2019	4822
	%	89.9	85.6	87.1	77.2	82.1
Missing	N	0	240	13	197	450
	%	0	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	NEVADA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	128	1533	1416	4000	6949
Yes	%	90.6	86.4	64.7	61.5	67.7
No	%	5.5	7.4	9.5	25.6	18.3
Prefer not to answer	%	0.8	0.7	1.8	0.5	0.8
Missing	%	3.1	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	103.9	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	128	1533	1416	4000	6949
Yes	%	59.4	71.6	60.8	69.7	68.3
No	%	30.5	19.4	12.3	15.2	15.5
Unsure	%	7.0	2.8	2.4	1.8	2.1
Missing	%	3.1	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In February 2015, the evaluation team spoke with officials from the Nevada Division of Welfare and Supportive Services (DWSS) and the Nevada Division of Public and Behavioral Health (DPBH) to discuss the state’s willingness to and process for releasing state Medicaid and birth certificate data (respectively) to the Urban Institute for the impact analysis of the Strong Start evaluation. State officials were receptive to supporting the evaluation, and although they originally preferred that the Urban Institute link the data, DWSS staff recently indicated that they will link the Medicaid and birth certificate data on our behalf. A fully executed data use agreement (DUA) was sent to the Urban Institute from DWSS in July 2015. The evaluation team is currently awaiting approval from DPBH, and hopes to begin receiving data in late 2015.

Johns Hopkins University

CASE STUDY

Johns Hopkins University School of Medicine in Baltimore, Maryland has implemented the maternity care home approach of Strong Start in partnership with Priority Partners, the Hopkins-affiliated Medicaid managed care organization (MCO). At the time of evaluation Y2 data collection, there were an estimated 400 women participating in the program across five sites in Baltimore. Awardee and site staff report that Strong Start implementation has been going well with progress on many fronts, including expansion of the approach and improved participant outcomes.

Highlights from the second round of case study data collection include:

- Though enrollment continues to fall short of the awardee's target, Hopkins has made a number of changes to the program in an effort to increase enrollment. Two new sites were added in early 2015 (Wyman Park and the Center for Addiction and Pregnancy), and all five sites enroll patients with gestational age up to 30 weeks, a change from their gestational age cut-off at 28 weeks in evaluation Y1.
- Strong Start staff are confident that they are reaching all of the eligible women at each site. Key informants felt that recent implementation of Strong Start at two new sites was smoother than earlier launches as a result of that prior experience and the identification of best practices to develop a more formalized workflow.
- The awardee now provides more support to site staff for data collection, including through regular meetings and increased communication about the data collection process and by establishing a standardized approach to report submission.
- Hopkins uses a detailed protocol for service delivery to ensure that enhanced services are provided consistently across all sites. The standardized protocol helps to clarify Strong Start staff roles and responsibilities and better integrate the program into the clinic flow. Three nurse case managers and community health worker (CHW) teams are embedded at each site to provide care coordination and resource referrals for Strong Start enrollees.
- Based on Hopkins' own tracking of outcomes for Strong Start participants, key informants note significant improvements in preterm birth rates, NICU admissions, birth weight, and gestational age at birth.
- Priority Partners has seen the cost savings associated with Strong Start and has expressed plans to continue the program. Ongoing support for the program is part of current budget discussions.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, Johns Hopkins University (Hopkins) had Intake Forms for 94 percent of participants enrolled through Quarter 1 2015 (908 Intake Forms for 965 participants). In addition, Hopkins submitted 373 Third Trimester Surveys, 420 Postpartum Surveys, and 205 Exit Forms. The tables below present data collected on Johns Hopkins University's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	JHU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	140	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	965	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	555	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	908	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	94.1	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	373	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	67.2	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	420	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	75.7	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	205	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	36.9	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	JHU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	908	2993	4401	11761	19155
Less than 18 years of age	%	7.7	3.4	6.7	5.8	5.6
18 through 34 years of age	%	68.9	86.1	75.0	81.4	80.7
35 years and older	%	4.1	6.2	4.9	6.0	5.8
Missing	%	19.3	4.3	13.4	6.8	7.9
Race and Ethnicity	N	908	2993	4401	11761	19155
Hispanic	%	7.7	25.7	39.2	22.9	27.1
Non-Hispanic white	%	13.5	53.3	13.7	26.2	27.6
Non-Hispanic black	%	71.8	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	1.9	1.1	1.2	1.2	1.2
Non-Hispanic other	%	1.3	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	3.4	3.6	2.3	1.2	1.8
Missing	%	0.3	0.9	2.8	1.5	1.7

Data Element	N or %	JHU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Employed at Intake	N	908	2993	4401	11761	19155
Yes	%	37.9	39.7	34.6	38.8	38.0
No	%	61.9	59.1	60.9	60.0	60.0
Missing	%	0.2	1.2	4.5	1.2	2.0
Education Level at Intake	N	908	2993	4401	11761	19155
Less than high school	%	29.4	14.3	23.7	24.5	22.7
High school graduate or GED	%	59.0	52.3	46.2	52.0	50.7
Bachelor's degree	%	2.3	10.1	3.1	2.5	3.9
Other college degree(s)	%	3.8	12.7	7.2	6.0	7.3
Missing	%	5.5	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	908	2993	4401	11761	19155
Married, living with spouse	%	10.8	40.7	18.6	17.2	21.2
Married, not living with spouse	%	2.1	1.7	2.1	1.9	1.9
Living with a partner	%	34.5	32.2	31.3	30.6	31.0
In a relationship but not living together	%	29.7	12.9	24.6	30.5	26.4
Not in a relationship right now	%	21.4	11.1	17.0	17.8	16.6
Missing	%	1.5	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	908	2993	4401	11761	19155
Yes	%	15.1	10.1	7.8	14.1	12.0
No	%	71.4	77.1	71.7	77.8	76.3
Missing	%	13.5	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	908	2993	4401	11761	19155
Yes	%	15.2	18.1	18.5	16.1	16.9
No	%	82.7	76.9	61.4	76.2	72.9
Missing*	%	2.1	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	908	2993	4401	11761	19155
Yes	%	33.0	21.8	25.2	23.4	23.5
No	%	63.8	69.3	57.0	69.3	66.4
Missing*	%	3.2	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	%	908	2993	4401	11761	19155
Yes	%	14.0	20.6	17.1	19.0	18.8
No	%	85.7	77.2	68.4	78.5	76.0
Missing*	%	0.3	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	JHU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	135	1127	700	1914	3741
<18 months	%	20.7	24.3	18.0	19.5	20.7
≥18 months	%	59.3	39.8	48.3	51.9	47.6
Missing	%	20.0	35.9	33.7	28.6	31.8

Data Element	N or %	JHU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	135	1127	700	1914	3741
Yes	%	20.7	10.7	11.4	18.9	15.0
No	%	74.1	89.3	63.9	63.2	71.2
Not Known	%	4.4	0	18.6	14.9	11.1
Missing	%	0.7	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	135	1127	700	1914	3741
Yes	%	12.6	1.9	8.6	14.8	9.7
No	%	64.4	95.8	60.4	61.7	71.7
Not Known	%	14.8	0	24.7	19.2	14.5
Missing	%	8.1	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	205	2133	1433	3103	6669
Yes	%	0.5	0.5	1.3	1.5	1.1
No	%	89.8	99.5	74.2	84.4	87.0
Not Known	%	2.9	0	7.7	11.1	6.8
Missing	%	6.8	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	205	2133	1433	3103	6669
Yes	%	2.0	0	2.6	1.9	1.5
No	%	88.8	5.0	72.9	83.3	56.1
Not Known	%	2.9	0	7.7	11.1	6.8
Missing	%	6.3	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	205	2133	1433	3103	6669
Yes	%	8.8	0.5	6.0	9.5	5.9
No	%	82.4	99.5	66.7	77.4	82.2
Not Known	%	2.9	0	7.6	10.2	6.4
Missing	%	5.9	0	19.7	2.9	5.6

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	JHU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	205	2133	1433	3103	6669
Yes	%	6.8	2.7	4.2	5.3	4.2
No	%	83.9	97.3	65.4	76.0	80.6
Not Known	%	1.5	0	10.3	15.9	9.6
Missing	%	7.8	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	205	2133	1433	3103	6669
Yes	%	12.7	1.3	7.8	7.7	5.7
No	%	78.0	98.7	62.6	74.8	79.8
Not Known	%	1.5	0	9.4	14.6	8.8
Missing	%	7.8	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	JHU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	194	2125	1103	2740	5968
Number of Babies Born	N	196	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	187	2133	1297	2826	6256
Yes	%	28.9	14.4	23.8	17.2	17.6
No	%	62.0	85.3	42.8	35.5	54.0
Not known	%	5.3	0	10.6	37.8	19.3
Missing	%	3.7	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	205	2133	1433	3103	6669
Vaginal delivery	%	65.4	87.3	49.1	52.0	62.7
C-Section	%	27.8	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	6.8	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	83.7	90.9	80.2	81.6	85.4
VBAC ¹³	N	33	90	161	418	669
Yes	%	21.2	30.0	19.9	13.9	17.5
Repeat C-Section	N	33	90	161	418	669
Yes	%	78.8	70.0	80.1	86.1	82.5
Scheduled C-Section	N	57	265	348	920	1533
Yes	%	31.6	0	39.1	29.2	26.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	JHU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	193	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	41	112	131	461	704
	%	21.2	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	146	1994	823	1945	4762
	%	75.6	94.3	72.2	74.3	81.1
Missing	N	–	–	186	211	406
	%	–	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	193	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	38	75	147	412	634
	%	19.7	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	154	1810	993	2019	4822
	%	79.7	85.6	87.1	77.2	82.1
Missing	N	–	240	13	197	450
	%	–	11.3	1.1	7.5	7.7

¹³ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.
 Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.
 Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	JHU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Survey Data	N	420	1533	1416	4000	6949
Yes	%	43.3	86.4	64.7	61.5	67.7
No	%	28.3	7.4	9.5	25.6	18.3
Prefer not to answer	%	0.2	0.7	1.8	0.5	0.8
Missing	%	28.1	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	103.6	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	420	1533	1416	4000	6949
Yes	%	67.6	71.6	60.8	69.7	68.3
No	%	3.6	19.4	12.3	15.2	15.5
Unsure	%	0.7	2.8	2.4	1.8	2.1
Missing	%	28.1	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In March and April 2015, the evaluation team spoke with officials from the Maryland Department of Health and Mental Hygiene, which houses the Maryland Medicaid Assistance Programs and the Vital Statistics Administration, to learn about the state’s willingness to and process for releasing state Medicaid and birth certificate data (respectively) to the Urban Institute for the impact analysis of the Strong Start evaluation. State officials were initially receptive to supporting the evaluation; however, the Maryland Vital Statistics Administration later indicated that they do not have the capacity to share or link data at this time. The evaluation team followed up with agency officials to clarify the option that the state could simply share birth certificate data, rather than take on the more labor-intensive linking role, but we received no response. Therefore, we plan to follow-up with the Vital Statistics Administration in late 2015 to determine whether or not we can obtain data at a later point.

Los Angeles County Department of Health Services

CASE STUDY

Los Angeles Department of Health Services (LADHS) is a large public health care system that treats over 800,000 patients each year at 19 community-based clinics and four hospitals located throughout Los Angeles County. LADHS hospitals and clinics are the primary safety net provider in the county, with an annual budget of approximately \$4 billion. The majority of LADHS patients are enrolled in Medi-Cal (the state's Medicaid program), Healthy Families (the state's CHIP program), or are uninsured. Several of the county facilities offer opportunities for training physicians, including two of the county's Strong Start sites: Harbor-UCLA Medical Center and LAC+USC Medical Center. LADHS is implementing the maternity care home approach at six sites, including the two mentioned above as well as: Martin Luther King Jr. Ambulatory Care Center (MLK), Hubert Humphrey Comprehensive Health Center, Wilmington Medical Center and Olive View-UCLA Medical Center. LADHS calls its Strong Start Program MAMA's (Maternity Assessment, Management, Access and Service) Neighborhood. Overall, the awardee is pleased with its progress in implementing Strong Start, which includes expansions in the number of staff, sites and services offered.

Highlights from the second round of case study data collection include:

- In the past year, LADHS has hired three new staff members (an additional social worker and health educator, as well as a nurse manager) and begun offering Strong Start services at LAC+USC Medical Center. The awardee plans to expand to Olive View Hospital in June 2015.
- Although care coordination services continue to focus on identifying participants' areas of need and providing them with linked referrals to both in-house and community resources, care coordinators now use the automated risk scoring system developed by the awardee to determine the intervention intensity each participant receives.
- The awardee has integrated a health education curriculum into the resiliency classes LADHS (in partnership with Healthy African American Families) developed for Strong Start during the first year of implementation. These newly combined classes have been launched at Harbor and MLK with plans to expand to remaining sites in the coming year.
- The awardee has enrolled approximately 1,200 women to date and has discharged between 400 and 500 participants. At the time of the Year 2 interviews, there were approximately 700 women currently enrolled in the program.
- While no changes have been made to the awardee's enrollment strategies yet, LADHS plans to move toward an opt-out enrollment approach. Key informants feel this would better suit its program since so few women decline to participate and given the awardee's plan for the Strong

Start enhanced services to become the standard of care offered to all pregnant patients in the county health system.

- The county is implementing a new electronic medical record system that will eventually allow physicians at all LADHS facilities access to any LADHS patient's records. The "Online Real-Time Centralized Health Information Database" (ORCHID) was launched in March 2013 and implementation is expected to be complete in March 2016.
- Based on anecdotal observation, the awardee is confident that together, the components of its Strong Start program are improving the psychosocial health of participants which should, in turn, positively affect their physical health. Importantly, the awardee feels the program is improving provider awareness of the need for behavioral health integration.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. Through March 2015, Los Angeles County Department of Health Services had Intake Forms for 101 percent of participants enrolled through Quarter 1 2015 (1177 Intake Forms for 1166 participants). In addition, Los Angeles County Department of Health Services submitted 42 Third Trimester Surveys, 84 Postpartum Surveys, and 64 Exit Forms. The tables below present data collected on Los Angeles County Department of Health Services' participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	LA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	267	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	1166	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	272	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	1177	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	100.9	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	42	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	15.4	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	84	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	30.9	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	64	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	23.5	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	LA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	1177	2993	4401	11761	19155
Less than 18 years of age	%	3.1	3.4	6.7	5.8	5.6
18 through 34 years of age	%	82.9	86.1	75.0	81.4	80.7
35 years and older	%	13.1	6.2	4.9	6.0	5.8
Missing	%	0.9	4.3	13.4	6.8	7.9
Race and Ethnicity	N	1177	2993	4401	11761	19155
Hispanic	%	60.2	25.7	39.2	22.9	27.1
Non-Hispanic white	%	5.4	53.3	13.7	26.2	27.6
Non-Hispanic black	%	23.2	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	5.6	1.1	1.2	1.2	1.2
Non-Hispanic other	%	1.4	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	1.3	3.6	2.3	1.2	1.8
Missing	%	3.1	0.9	2.8	1.5	1.7
Employed at Intake	N	1177	2993	4401	11761	19155
Yes	%	43.8	39.7	34.6	38.8	38.0
No	%	54.4	59.1	60.9	60.0	60.0
Missing	%	1.9	1.2	4.5	1.2	2.0
Education Level at Intake	N	1177	2993	4401	11761	19155
Less than high school	%	24.2	14.3	23.7	24.5	22.7
High school graduate or GED	%	45.5	52.3	46.2	52.0	50.7
Bachelor's degree	%	4.8	10.1	3.1	2.5	3.9
Other college degree(s)	%	4.5	12.7	7.2	6.0	7.3
Missing	%	21.1	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	1177	2993	4401	11761	19155
Married, living with spouse	%	21.3	40.7	18.6	17.2	21.2
Married, not living with spouse	%	2.5	1.7	2.1	1.9	1.9
Living with a partner	%	34.2	32.2	31.3	30.6	31.0
In a relationship but not living together	%	30.6	12.9	24.6	30.5	26.4
Not in a relationship right now	%	10.5	11.1	17.0	17.8	16.6
Missing	%	0.8	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	1177	2993	4401	11761	19155
Yes	%	5.1	10.1	7.8	14.1	12.0
No	%	89.6	77.1	71.7	77.8	76.3
Missing	%	5.3	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	1177	2993	4401	11761	19155
Yes	%	16.3	18.1	18.5	16.1	16.9
No	%	63.8	76.9	61.4	76.2	72.9
Missing*	%	19.9	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	1177	2993	4401	11761	19155
Yes	%	23.7	21.8	25.2	23.4	23.5
No	%	74.2	69.3	57.0	69.3	66.4
Missing*	%	2.2	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	1177	2993	4401	11761	19155
Yes	%	27.0	20.6	17.1	19.0	18.8

Data Element	N or %	LA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
No	%	70.2	77.2	68.4	78.5	76.0
Missing*	%	2.8	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	LA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	32	1127	700	1914	3741
<18 months	%	15.6	24.3	18.0	19.5	20.7
≥18 months	%	43.8	39.8	48.3	51.9	47.6
Missing	%	40.6	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	32	1127	700	1914	3741
Yes	%	3.1	10.7	11.4	18.9	15.0
No	%	90.6	89.3	63.9	63.2	71.2
Not Known	%	6.2	0	18.6	14.9	11.1
Missing	%	0	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	32	1127	700	1914	3741
Yes	%	6.2	1.9	8.6	14.8	9.7
No	%	78.1	95.8	60.4	61.7	71.7
Not Known	%	15.6	0	24.7	19.2	14.5
Missing	%	0	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	64	2133	1433	3103	6669
Yes	%	0	0.5	1.3	1.5	1.1
No	%	90.6	99.5	74.2	84.4	87.0
Not Known	%	9.4	0	7.7	11.1	6.8
Missing	%	0	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	64	2133	1433	3103	6669
Yes	%	1.6	0	2.6	1.9	1.5
No	%	89.1	5.0	72.9	83.3	56.1
Not Known	%	9.4	0	7.7	11.1	6.8
Missing	%	0	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	64	2133	1433	3103	6669
Yes	%	3.1	0.5	6.0	9.5	5.9
No	%	85.9	99.5	66.7	77.4	82.2
Not Known	%	10.9	0	7.6	10.2	6.4
Missing	%	0	0	19.7	2.9	5.6

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	LA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	64	2133	1433	3103	6669

Data Element	N or %	LA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Yes	%	6.2	2.7	4.2	5.3	4.2
No	%	64.1	97.3	65.4	76.0	80.6
Not Known	%	26.6	0	10.3	15.9	9.6
Missing	%	3.1	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	64	2133	1433	3103	6669
Yes	%	10.9	1.3	7.8	7.7	5.7
No	%	56.2	98.7	62.6	74.8	79.8
Not Known	%	29.7	0	9.4	14.6	8.8
Missing	%	3.1	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	LA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	42	2125	1103	2740	5968
Number of Babies Born	N	43	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	64	2133	1297	2826	6256
Yes	%	15.9	14.4	23.8	17.2	17.6
No	%	47.6	85.3	42.8	35.5	54.0
Not known	%	30.2	0	10.6	37.8	19.3
Missing	%	6.3	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	64	2133	1433	3103	6669
Vaginal delivery	%	45.3	87.3	49.1	52.0	62.7
C-Section	%	18.8	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	35.9	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	–	90.9	80.2	81.6	85.4
VBAC¹⁴	N	–	90	161	418	669
Yes	%	–	30.0	19.9	13.9	17.5
Repeat C-Section	N	–	90	161	418	669
Yes	%	–	70.0	80.1	86.1	82.5
Scheduled C-Section	N	12	265	348	920	1533
Yes	%	8.3	0	39.1	29.2	26.4

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

¹⁴ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	LA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Age (EGA)	N	41	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	0	112	131	461	704
	%	0	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	0	1994	823	1945	4762
	%	0	94.3	72.2	74.3	81.1
Missing	N	41	–	186	211	406
	%	100.0	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	41	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	–	75	147	412	634
	%	–	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	36	1810	993	2019	4822
	%	87.8	85.6	87.1	77.2	82.1
Missing	N	0	240	13	197	450
	%	0	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.
Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.
Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	LA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Survey	N	84	1533	1416	4000	6949
Yes	%	78.6	86.4	64.7	61.5	67.7
No	%	13.1	7.4	9.5	25.6	18.3
Prefer not to answer	%	0	0.7	1.8	0.5	0.8
Missing	%	8.3	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	100.0	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	84	1533	1416	4000	6949
Yes	%	66.7	71.6	60.8	69.7	68.3
No	%	17.9	19.4	12.3	15.2	15.5
Unsure	%	2.4	2.8	2.4	1.8	2.1
Missing	%	13.1	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In December 2014, the evaluation team spoke with officials from the California Committee for the Protection of Human Subjects (CPHS), which acts as the state’s Institutional Review Board, and the Department of Health Care Services (DHCS), which administers California’s Medicaid program, to learn about the state’s process for reviewing and approving requests to utilize Medicaid and birth certificate data for research purposes and to explore their willingness to support the Strong Start evaluation. The evaluation team decided to proceed with an the application to the Department of Public Health (DPH),

the vital records agency in California, without an initial phone call because of our previous experience working with this agency. In general, state officials were receptive to supporting the Strong Start evaluation, and staff from DHCS told us that they will be responsible for linking the Medicaid and birth certificate data. Applications requesting Medicaid and birth certificate data were submitted to CPHS, DHCS and DPH, in March 2015. In April, the evaluation team received approval from CPHS, but at the time of this writing was still awaiting official approval from DHCS and DPH. We hope to receive 2014 birth data in late 2015.

Maricopa Integrated Health System

CASE STUDY

Maricopa Integrated Health System (MIHS) is the largest public safety net health system in Arizona and operates a Medicaid managed care plan. MIHS serves predominantly low-income, minority residents in Maricopa County, which contains the city of Phoenix. The health system is piloting Strong Start's maternity care home approach in 5 of its 11 family health clinics. As of Quarter 1 2015, MIHS had enrolled 575 women into its Strong Start program.

Highlights from the second round of case study data collection include:

- Supplemental Strong Start funding has allowed MIHS to increase staff resources. Specifically, the Registered Nurse Care Coordinator (RNCC), community health worker (CHW), and the Vice President of Grants and Research are able to devote more time to the project, and the awardee also added a second full-time RNCC position. As a result, MIHS resumed Strong Start operations at two sites that were previously discontinued because of staffing concerns.
- The enhanced services offered to Strong Start participants at MIHS remain the same. RNCCs and CHWs provide care coordination, health education and social support, and referrals to supplementary services and resources such as substance abuse treatment, mental health care, pregnancy/birth/breastfeeding education, and social services.
- Strong Start outreach continues to occur both internally (through flagging eligible women in the system's electronic medical record) and externally (through partnering with community organizations to refer eligible women to MIHS).
- MIHS has made two changes to its Strong Start program eligibility criteria. First, the awardee no longer requires a second preterm risk factor beyond Medicaid enrollment. Second, MIHS is now offering Strong Start to Maricopa Health Plan patients receiving care at the Comprehensive Health Center (a preexisting site) who were previously excluded because they already had access to a RNCC through the health plan.
- From implementation of the program to the time of the case study, MIHS has been enrolling Medicaid-eligible women with gestational ages up to 33 weeks and 6 days, using an opt-in enrollment approach.
- Since receiving supplemental funding that allowed them to expand their staff capacity, Strong Start enrollment has increased steadily at MIHS sites.
- Key informants have begun to observe positive physical and psychosocial outcomes for Strong Start participants, such as high rates of vaginal deliveries, healthy birth weights and receipt of mental health and substance abuse treatment (though no comparison points were provided).

- MIHS has already initiated conversations with health plans about providing financial support to sustain Strong Start. One approach that has been discussed is a pay-for-performance program. For example, a plan could create financial incentives for meeting thresholds for postpartum visit attendance rates.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. Through March 2015, Maricopa Special Health Care District had Intake Forms for 66 percent of participants enrolled through Quarter 1 2015 (381 Intake Forms for 575 participants).¹⁵ In addition, Maricopa Special Health Care District submitted 177 Third Trimester Surveys, 114 Postpartum Surveys, but no Exit Forms. The tables below present data collected on Maricopa Special Health Care District's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	MARICOPA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	102	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	575	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	297	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	381	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	66.3	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	177	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	59.6	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	114	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	38.4	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	+	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	+	93.8	52.0	50.1	59.4

Notes: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	MARICOPA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	381	2993	4401	11761	19155
Less than 18 years of age	%	13.1	3.4	6.7	5.8	5.6
18 through 34 years of age	%	80.8	86.1	75.0	81.4	80.7
35 years and older	%	5.0	6.2	4.9	6.0	5.8

¹⁵ Some enrollees will not have Intake Forms because they were enrolled prior to the awardee receiving IRB approval to administer the form.

Data Element	N or %	MARICOPA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Missing	%	1.0	4.3	13.4	6.8	7.9
Race and Ethnicity	N	381	2993	4401	11761	19155
Hispanic	%	63.3	25.7	39.2	22.9	27.1
Non-Hispanic white	%	13.4	53.3	13.7	26.2	27.6
Non-Hispanic black	%	20.5	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0.5	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0.8	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	1.0	3.6	2.3	1.2	1.8
Missing	%	0.5	0.9	2.8	1.5	1.7
Employed at Intake	N	381	2993	4401	11761	19155
Yes	%	32.8	39.7	34.6	38.8	38.0
No	%	66.7	59.1	60.9	60	60.0
Missing	%	0.5	1.2	4.5	1.2	2.0
Education Level at Intake	N	381	2993	4401	11761	19155
Less than high school	%	38.1	14.3	23.7	24.5	22.7
High school graduate or GED	%	44.6	52.3	46.2	52	50.7
Bachelor's degree	%	0.8	10.1	3.1	2.5	3.9
Other college degree(s)	%	3.1	12.7	7.2	6.0	7.3
Missing	%	13.4	10.7	19.8	15	15.4
Relationship Status at Intake	N	381	2993	4401	11761	19155
Married, living with spouse	%	13.6	40.7	18.6	17.2	21.2
Married, not living with spouse	%	1.3	1.7	2.1	1.9	1.9
Living with a partner	%	36.5	32.2	31.3	30.6	31.0
In a relationship but not living together	%	30.4	12.9	24.6	30.5	26.4
Not in a relationship right now	%	17.3	11.1	17.0	17.8	16.6
Missing	%	0.8	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	381	2993	4401	11761	19155
Yes	%	13.1	10.1	7.8	14.1	12.0
No	%	85.3	77.1	71.7	77.8	76.3
Missing	%	1.6	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	381	2993	4401	11761	19155
Yes	%	2.1	18.1	18.5	16.1	16.9
No	%	89.2	76.9	61.4	76.2	72.9
Missing*	%	8.6	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	381	2993	4401	11761	19155
Yes	%	9.2	21.8	25.2	23.4	23.5
No	%	86.6	69.3	57.0	69.3	66.4
Missing*	%	4.2	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	381	2993	4401	11761	19155
Yes	%	21.8	20.6	17.1	19	18.8
No	%	76.6	77.2	68.4	78.5	76.0
Missing*	%	1.6	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.
Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.
Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.
Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	MARICOPA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	+	1127	700	1914	3741
<18 months	%	+	24.3	18.0	19.5	20.7
≥18 months	%	+	39.8	48.3	51.9	47.6
Missing	%	+	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	+	1127	700	1914	3741
Yes	%	+	10.7	11.4	18.9	15.0
No	%	+	89.3	63.9	63.2	71.2
Not Known	%	+	0	18.6	14.9	11.1
Missing	%	+	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	+	1127	700	1914	3741
Yes	%	+	1.9	8.6	14.8	9.7
No	%	+	95.8	60.4	61.7	71.7
Not Known	%	+	0	24.7	19.2	14.5
Missing	%	+	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	0.5	1.3	1.5	1.1
No	%	+	99.5	74.2	84.4	87.0
Not Known	%	+	0	7.7	11.1	6.8
Missing	%	+	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	0	2.6	1.9	1.5
No	%	+	5.0	72.9	83.3	56.1
Not Known	%	+	0	7.7	11.1	6.8
Missing	%	+	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	+	2133	1433	3103	6669
Yes	%	+	0.5	6.0	9.5	5.9
No	%	+	99.5	66.7	77.4	82.2
Not Known	%	+	0	7.6	10.2	6.4
Missing	%	+	0	19.7	2.9	5.6

Notes: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.
Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	MARICOPA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	2.7	4.2	5.3	4.2

Data Element	N or %	MARICOPA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
No	%	+	97.3	65.4	76.0	80.6
Not Known	%	+	0	10.3	15.9	9.6
Missing	%	+	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	+	2133	1433	3103	6669
Yes	%	+	1.3	7.8	7.7	5.7
No	%	+	98.7	62.6	74.8	79.8
Not Known	%	+	0	9.4	14.6	8.8
Missing	%	+	0	20.2	2.9	5.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	MARICOPA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	+	2125	1103	2740	5968
Number of Babies Born	N	+	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	+	2133	1297	2826	6256
Yes	%	+	14.4	23.8	17.2	17.6
No	%	+	85.3	42.8	35.5	54.0
Not known	%	+	0	10.6	37.8	19.3
Missing	%	+	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	+	2133	1433	3103	6669
Vaginal delivery	%	+	87.3	49.1	52.0	62.7
C-Section	%	+	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	+	0	0	0	0
Missing	%	+	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	+	90.9	80.2	81.6	85.4
VBAC¹⁶	N	+	90	161	418	669
Yes	%	+	30.0	19.9	13.9	17.5
Repeat C-Section	N	+	90	161	418	669
Yes	%	+	70.0	80.1	86.1	82.5
Scheduled C-Section	N	+	265	348	920	1533
Yes	%	+	0	39.1	29.2	26.4

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

¹⁶ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	MARICOPA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	+	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	+	112	131	461	704
	%	+	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	+	1994	823	1945	4762
	%	+	94.3	72.2	74.3	81.1
Missing	N	+	–	186	211	406
	%	+	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	+	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	+	75	147	412	634
	%	+	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	+	1810	993	2019	4822
	%	+	85.6	87.1	77.2	82.1
Missing	N	+	240	13	197	450
	%	+	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	MARICOPA (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	114	1533	1416	4000	6949
Yes	%	77.2	86.4	64.7	61.5	67.7
No	%	21.1	7.4	9.5	25.6	18.3
Prefer not to answer	%	0	0.7	1.8	0.5	0.8
Missing	%	1.8	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	92.3	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	114	1533	1416	4000	6949
Yes	%	82.5	71.6	60.8	69.7	68.3
No	%	13.2	19.4	12.3	15.2	15.5
Unsure	%	0.9	2.8	2.4	1.8	2.1
Missing	%	3.5	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In late March of 2015, the evaluation team contacted the Arizona Department of Health Services and was directed to contact the state’s Medicaid agency, the Arizona Health Care Cost Containment System (AHCCCS) before placing a request for birth certificate data. In April of 2015 we introduced states

officials at Arizona AHCCCS to the Strong Start for Mothers and Newborns Evaluation. State officials were receptive to supporting the evaluation and requested further detail regarding the privacy protections utilized by the evaluation. We were directed to the agency's legal counsel with whom we have recently reestablished communication. We hope to determine how best to meet the privacy provisions required in the Medicaid eligibility and claims data request for the state before proceeding with a data request to the Department of Health Services.

Medical University of South Carolina

CASE STUDY

The Medical University of South Carolina (MUSC) is a state university with a large academic medical center and a statewide network of more than 750 primary and specialty care providers. MUSC is implementing the Strong Start maternity care home approach at seven sites across the state, with a particular focus in the Charleston area, and as of March 2015 had enrolled 735 women in the program. Enhanced services include care coordination and social support, which are administered telephonically by care navigators. A secondary component of MUSC's Strong Start program aims to promote evidence-based prenatal care at OB practice sites throughout the state.

Highlights from the second round of case study data collection include:

- Implementation continues to be smooth, and the awardee is particularly pleased with the addition of a social worker to the Strong Start team. The social worker addresses the psychosocial needs of enrollees, which has allowed the care navigators, who are registered nurses, to focus on participants' medical needs.
- MUSC modified Strong Start eligibility criteria in mid-2014 and at the time of Y2 data collection enrolled any obstetrical patient with Medicaid coverage whose pregnancy is less than 32 weeks gestation (i.e., no additional preterm risk factor is required). Key informants estimate that enrollment has increased by 10 to 12 percent as a result of the criteria changes.
- MUSC has maintained the five Strong Start sites reported during evaluation Y1. The majority of Strong Start participants are from the three sites in the Charleston area (with few enrollees coming from sites in the Columbia and Florence areas).
- Key informants believe that Strong Start has contributed to reductions in the preterm birth rate, emergency room admissions, early inductions, loss to follow-up, and NICU admissions. They also report a positive impact on the psychosocial health of participants.
- Despite reports of the program's positive effects and unanimous interest in sustaining Strong Start, key informants were not confident that MUSC would be able to continue providing maternity care home services once the award period ends. The awardee was not able to sustain a similar March of Dimes pilot program that was implemented in 2006, and key informants were dubious that South Carolina's Medicaid program would expand prenatal care benefits to incorporate services like care coordination.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, Medical University of South Carolina (MUSC) had Intake Forms for 78

percent of participants enrolled through Quarter 1 2015 (576 Intake Forms for 735 participants). In addition, Medical University of South Carolina submitted 312 Third Trimester Surveys, 403 Postpartum Surveys, and 331 Exit Forms. The tables below present data collected on Medical University of South Carolina's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	MUSC (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	123	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	735	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	532	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	576	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	78.4	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	312	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	58.6	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	403	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	75.8	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	331	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	62.2	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	MUSC (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	576	2993	4401	11761	19155
Less than 18 years of age	%	2.1	3.4	6.7	5.8	5.6
18 through 34 years of age	%	90.6	86.1	75.0	81.4	80.7
35 years and older	%	6.4	6.2	4.9	6.0	5.8
Missing	%	0.9	4.3	13.4	6.8	7.9
Race and Ethnicity	N	576	2993	4401	11761	19155
Hispanic	%	3.8	25.7	39.2	22.9	27.1
Non-Hispanic white	%	24.8	53.3	13.7	26.2	27.6
Non-Hispanic black	%	69.3	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0.2	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	1.2	3.6	2.3	1.2	1.8
Missing	%	0.7	0.9	2.8	1.5	1.7
Employed at Intake	N	576	2993	4401	11761	19155
Yes	%	40.5	39.7	34.6	38.8	38
No	%	59.5	59.1	60.9	60	60
Missing	%	0	1.2	4.5	1.2	2
Education Level at Intake	N	576	2993	4401	11761	19155

Data Element	N or %	MUSC (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Less than high school	%	22.2	14.3	23.7	24.5	22.7
High school graduate or GED	%	62.0	52.3	46.2	52.0	50.7
Bachelor's degree	%	3.3	10.1	3.1	2.5	3.9
Other college degree(s)	%	7.8	12.7	7.2	6.0	7.3
Missing	%	4.7	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	576	2993	4401	11761	19155
Married, living with spouse	%	14.8	40.7	18.6	17.2	21.2
Married, not living with spouse	%	2.4	1.7	2.1	1.9	1.9
Living with a partner	%	26.6	32.2	31.3	30.6	31.0
In a relationship but not living together	%	40.8	12.9	24.6	30.5	26.4
Not in a relationship right now	%	15.5	11.1	17.0	17.8	16.6
Missing	%	0	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	576	2993	4401	11761	19155
Yes	%	11.6	10.1	7.8	14.1	12.0
No	%	88.2	77.1	71.7	77.8	76.3
Missing	%	0.2	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	576	2993	4401	11761	19155
Yes	%	16.8	18.1	18.5	16.1	16.9
No	%	82.1	76.9	61.4	76.2	72.9
Missing*	%	1.0	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	576	2993	4401	11761	19155
Yes	%	13.7	21.8	25.2	23.4	23.5
No	%	85.2	69.3	57.0	69.3	66.4
Missing*	%	1.1	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	576	2993	4401	11761	19155
Yes	%	11.8	20.6	17.1	19.0	18.8
No	%	88.2	77.2	68.4	78.5	76.0
Missing*	%	0	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	MUSC (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	217	1127	700	1914	3741
<18 months	%	17.6	24.3	18.0	19.5	20.7
≥18 months	%	70.0	39.8	48.3	51.9	47.6
Missing	%	12.4	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	217	1127	700	1914	3741
Yes	%	34.1	10.7	11.4	18.9	15.0
No	%	65.4	89.3	63.9	63.2	71.2
Not Known	%	0.5	0	18.6	14.9	11.1

Data Element	N or %	MUSC (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Missing	%	0	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	217	1127	700	1914	3741
Yes	%	27.2	1.9	8.6	14.8	9.7
No	%	55.8	95.8	60.4	61.7	71.7
Not Known	%	16.1	0	24.7	19.2	14.5
Missing	%	0.9	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	331	2133	1433	3103	6669
Yes	%	1.5	0.5	1.3	1.5	1.1
No	%	93.7	99.5	74.2	84.4	87.0
Not Known	%	4.2	0	7.7	11.1	6.8
Missing	%	0.6	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	331	2133	1433	3103	6669
Yes	%	5.1	0	2.6	1.9	1.5
No	%	90.0	5	72.9	83.3	56.1
Not Known	%	4.2	0	7.7	11.1	6.8
Missing	%	0.6	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	331	2133	1433	3103	6669
Yes	%	18.1	0.5	6.0	9.5	5.9
No	%	76.1	99.5	66.7	77.4	82.2
Not Known	%	5.1	0	7.6	10.2	6.4
Missing	%	0.6	0	19.7	2.9	5.6

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	MUSC (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	331	2133	1433	3103	6669
Yes	%	8.5	2.7	4.2	5.3	4.2
No	%	81.0	97.3	65.4	76.0	80.6
Not Known	%	10.6	0	10.3	15.9	9.6
Missing	%	0	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	331	2133	1433	3103	6669
Yes	%	8.8	1.3	7.8	7.7	5.7
No	%	80.1	98.7	62.6	74.8	79.8
Not Known	%	11.2	0	9.4	14.6	8.8
Missing	%	0	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	MUSC (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	323	2125	1103	2740	5968
Number of Babies Born	N	334	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	279	2133	1297	2826	6256
Yes	%	34.8	14.4	23.8	17.2	17.6

Data Element	N or %	MUSC (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
No	%	57.7	85.3	42.8	35.5	54.0
Not known	%	7.2	0	10.6	37.8	19.3
Missing	%	0.4	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	331	2133	1433	3103	6669
Vaginal delivery	%	60.1	87.3	49.1	52.0	62.7
C-Section	%	36.3	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	3.6	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	83.2	90.9	80.2	81.6	85.4
VBAC¹⁷	N	76	90	161	418	669
Yes	%	17.1	30.0	19.9	13.9	17.5
Repeat C-Section	N	76	90	161	418	669
Yes	%	82.9	70.0	80.1	86.1	82.5
Scheduled C-Section	N	120	265	348	920	1533
Yes	%	43.3	0	39.1	29.2	26.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	MUSC (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	323	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	81	112	131	461	704
	%	25.1	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	238	1994	823	1945	4762
	%	73.7	94.3	72.2	74.3	81.1
Missing	N	–	–	186	211	406
	%	–	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	323	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	74	75	147	412	634
	%	22.9	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	246	1810	993	2019	4822
	%	76.2	85.6	87.1	77.2	82.1
Missing	N	–	240	13	197	450
	%	–	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

¹⁷ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	MUSC (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	403	1533	1416	4000	6949
Yes	%	56.8	86.4	64.7	61.5	67.7
No	%	18.9	7.4	9.5	25.6	18.3
Prefer not to answer	%	0	0.7	1.8	0.5	0.8
Missing	%	24.3	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	100.0	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	403	1533	1416	4000	6949
Yes	%	76.2	71.6	60.8	69.7	68.3
No	%	0.5	19.4	12.3	15.2	15.5
Unsure	%	0.2	2.8	2.4	1.8	2.1
Missing	%	23.1	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

The South Carolina Division of Biostatistics, a part of the South Carolina Department of Health and Environmental Control (DHEC), discussed the process of obtaining vital statistics data with our evaluation team in the January of 2015. Following a productive conversation, we were forwarded a vital statistics data request application and list of birth certificate variables and were told to reach out to the South Carolina Revenue and Fiscal Affairs Office (RFA) to obtain information on the application process for Medicaid data. The RFA official we spoke to was receptive to our request and was confident in South Carolina’s ability to link Medicaid and vital statistics data. Furthermore, this official would function as our liaison to the Medicaid Review Committee that would review our Medicaid data request. The official forwarded us the application for use of Medicaid data and list of available Medicaid variables. We submitted both the vital statistics and Medicaid data request applications to DHEC and RFA respectively in the March of 2015. As of July 2015, we have obtained approval from the Medicaid review committee and currently await approval from DHEC before proceeding. We hope to receive a linked file in the coming months once DHEC approval has been granted.

Meridian Health Plan

CASE STUDY

Meridian Health Plan (Meridian) operates the Strong Start maternity care home approach in five counties including Jackson County (west of Detroit), the site visited in evaluation Y1. Participation in Strong Start is initiated when a pregnant Medicaid beneficiary enrolled in Meridian Health Plan is identified through claims or a provider referral. Participants are screened for risk of having a poor birth outcome, and the Strong Start intervention is tailored based on risk level. Low-risk participants receive periodic telephonic care coordination. A care plan is developed for higher-risk participants, and there is more clinical involvement in the telephonic care coordination these participants receive. Patients must opt out of Strong Start if they wish to stop receiving telephonic support. High-risk participants who cannot be reached by phone or who are not receiving prenatal care (as measured by claims data) are visited by a Community Health Outreach Worker (CHOW), who assists them in getting needed medical and social services.

Highlights from the second round of case study data collection include:

- Meridian Strong Start staff includes two telephone care coordinators and the CHOW. Telephone care coordinators communicate with obstetric practices to hand off information from the risk assessment, an interaction that occurs more frequently than in evaluation Y1. The CHOW, however, continues to have very little contact with prenatal care provider offices.
- Allegiance Health, the largest health system in Jackson, plans to co-fund (with the awardee) a nurse educator to work directly with patients, including pregnant women visiting the emergency department. Beginning this summer (2015) the nurse educator will provide education and referral to a prenatal care provider if the patient has not already selected one. Patients may also be referred to the nurse educator by an obstetrician. The awardee has replaced its initially-implemented group health education approach, which reached very few women, with one-on-one education.
- Meridian is working to increase access to behavioral health services for Strong Start enrollees in the Jackson County area. The CHOW now receives referrals from the Meridian phone coordinators so that she can assist in meeting patients' behavioral health care needs..
- Meridian's Strong Start enrollment dipped in the fall of 2014 because of staff turnover. Following recent hiring and training, enrollment is higher in April 2015 than it was in recent months. Overall, Meridian Health Plan has been reaching enrollment targets.
- A Meridian Health Plan-organized focus group (not part of the Strong Start evaluation) revealed that plan enrollees are uncertain about their contraceptive choices. Meridian has eliminated pre-authorization for long-acting reversible contraceptives in order to address one of the barriers that may be influencing provider decisions about prescribing these forms of

contraception. Similarly, the awardee no longer requires prior authorization for the prescription of breast pumps to pregnant Medicaid beneficiaries.

- Because of the perceived successes of Strong Start to date, informants report that Meridian Health Plan is exploring how Strong Start-like services can be offered in other regions of Michigan and in other states where the health plan operates.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. Through March 2015, Meridian Health Plan had Intake Forms for 100.2 percent of participants enrolled through Quarter 1 2015 (1540 Intake Forms for 1537 participants). In addition, Meridian Health Plan submitted 817 Third Trimester Surveys, 714 Postpartum Surveys, and 331 Exit Forms. The tables below present data collected on Meridian Health Plan's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	MERIDIAN (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	322	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	1537	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	995	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	1540	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	100.2	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	817	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	82.1	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	714	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	71.8	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	331	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	33.3	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	MERIDIAN (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	1540	2993	4401	11761	19155
Less than 18 years of age	%	2.7	3.4	6.7	5.8	5.6
18 through 34 years of age	%	92.8	86.1	75	81.4	80.7
35 years and older	%	3.2	6.2	4.9	6.0	5.8
Missing	%	1.2	4.3	13.4	6.8	7.9
Race and Ethnicity	N	1540	2993	4401	11761	19155

Data Element	N or %	MERIDIAN (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Hispanic	%	3.6	25.7	39.2	22.9	27.1
Non-Hispanic white	%	83.4	53.3	13.7	26.2	27.6
Non-Hispanic black	%	11.2	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0.5	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0.2	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	0.6	3.6	2.3	1.2	1.8
Missing	%	0.5	0.9	2.8	1.5	1.7
Employed at Intake	N	1540	2993	4401	11761	19155
Yes	%	38.2	39.7	34.6	38.8	38.0
No	%	61.6	59.1	60.9	60.0	60.0
Missing	%	0.1	1.2	4.5	1.2	2.0
Education Level at Intake	N	1540	2993	4401	11761	19155
Less than high school	%	22.3	14.3	23.7	24.5	22.7
High school graduate or GED	%	61.9	52.3	46.2	52.0	50.7
Bachelor's degree	%	3.4	10.1	3.1	2.5	3.9
Other college degree(s)	%	7.2	12.7	7.2	6.0	7.3
Missing	%	5.1	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	1540	2993	4401	11761	19155
Married, living with spouse	%	25.6	40.7	18.6	17.2	21.2
Married, not living with spouse	%	1.2	1.7	2.1	1.9	1.9
Living with a partner	%	32.0	32.2	31.3	30.6	31.0
In a relationship but not living together	%	24.8	12.9	24.6	30.5	26.4
Not in a relationship right now	%	15.8	11.1	17.0	17.8	16.6
Missing	%	0.5	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	1540	2993	4401	11761	19155
Yes	%	23.9	10.1	7.8	14.1	12.0
No	%	74.9	77.1	71.7	77.8	76.3
Missing	%	1.2	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	1540	2993	4401	11761	19155
Yes	%	3.1	18.1	18.5	16.1	16.9
No	%	93.8	76.9	61.4	76.2	72.9
Missing*	%	3.2	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	1540	2993	4401	11761	19155
Yes	%	7.9	21.8	25.2	23.4	23.5
No	%	86.8	69.3	57.0	69.3	66.4
Missing*	%	5.3	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	1540	2993	4401	11761	19155
Yes	%	14.6	20.6	17.1	19.0	18.8
No	%	84.3	77.2	68.4	78.5	76.0
Missing*	%	1.1	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	MERIDIAN (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	194	1127	700	1914	3741
<18 months	%	25.3	24.3	18.0	19.5	20.7
≥18 months	%	59.8	39.8	48.3	51.9	47.6
Missing	%	14.9	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	194	1127	700	1914	3741
Yes	%	9.8	10.7	11.4	18.9	15.0
No	%	82.0	89.3	63.9	63.2	71.2
Not Known	%	5.7	0	18.6	14.9	11.1
Missing	%	2.6	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	194	1127	700	1914	3741
Yes	%	8.2	1.9	8.6	14.8	9.7
No	%	86.1	95.8	60.4	61.7	71.7
Not Known	%	0	0	24.7	19.2	14.5
Missing	%	5.7	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	331	2133	1433	3103	6669
Yes	%	0.9	0.5	1.3	1.5	1.1
No	%	94.6	99.5	74.2	84.4	87.0
Not Known	%	3.3	0	7.7	11.1	6.8
Missing	%	1.2	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	331	2133	1433	3103	6669
Yes	%	1.8	0	2.6	1.9	1.5
No	%	94.0	5.0	72.9	83.3	56.1
Not Known	%	3.0	0	7.7	11.1	6.8
Missing	%	1.2	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	331	2133	1433	3103	6669
Yes	%	5.7	0.5	6.0	9.5	5.9
No	%	90.6	99.5	66.7	77.4	82.2
Not Known	%	2.4	0	7.6	10.2	6.4
Missing	%	1.2	0	19.7	2.9	5.6

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	MERIDIAN (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	331	2133	1433	3103	6669
Yes	%	4.8	2.7	4.2	5.3	4.2
No	%	85.8	97.3	65.4	76.0	80.6
Not Known	%	8.2	0	10.3	15.9	9.6
Missing	%	1.2	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	331	2133	1433	3103	6669
Yes	%	2.4	1.3	7.8	7.7	5.7

Data Element	N or %	MERIDIAN (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
No	%	87.0	98.7	62.6	74.8	79.8
Not Known	%	9.1	0	9.4	14.6	8.8
Missing	%	1.5	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	MERIDIAN (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	275	2125	1103	2740	5968
Number of Babies Born	N	277	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	309	2133	1297	2826	6256
Yes	%	16.8	14.4	23.8	17.2	17.6
No	%	36.2	85.3	42.8	35.5	54.0
Not known	%	42.4	0	10.6	37.8	19.3
Missing	%	4.5	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	331	2133	1433	3103	6669
Vaginal delivery	%	50.5	87.3	49.1	52.0	62.7
C-Section	%	36.3	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	13.3	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	79.1	90.9	80.2	81.6	85.4
VBAC ¹⁸	N	21	90	161	418	669
Yes	%	14.3	30.0	19.9	13.9	17.5
Repeat C-Section	N	21	90	161	418	669
Yes	%	85.7	70.0	80.1	86.1	82.5
Scheduled C-Section	N	120	265	348	920	1533
Yes	%	12.5	0	39.1	29.2	26.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	MERIDIAN (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Age (EGA)	N	273	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	29	112	131	461	704
	%	10.6	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	231	1994	823	1945	4762
	%	84.6	94.3	72.2	74.3	81.1

¹⁸ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Data Element	N or %	MERIDIAN (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Missing	N	13	—	186	211	406
	%	4.8	—	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	273	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	19	75	147	412	634
	%	7.0	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	193	1810	993	2019	4822
	%	70.7	85.6	87.1	77.2	82.1
Missing	N	61	240	13	197	450
	%	22.3	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	MERIDIAN (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Survey	N	714	1533	1416	4000	6949
Yes	%	72.3	86.4	64.7	61.5	67.7
No	%	27.2	7.4	9.5	25.6	18.3
Prefer not to answer	%	0	0.7	1.8	0.5	0.8
Missing	%	0.6	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	100.8	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	714	1533	1416	4000	6949
Yes	%	68.8	71.6	60.8	69.7	68.3
No	%	28.6	19.4	12.3	15.2	15.5
Unsure	%	1.5	2.8	2.4	1.8	2.1
Missing	%	1.1	6.2	24.5	13.3	14

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In January 2015, the evaluation team spoke with officials from the Michigan Department of Health and Human Services (MDHHS) to learn about the state’s willingness to and process for releasing state Medicaid and birth certificate data to the Urban Institute for the impact analysis of the Strong Start evaluation. In Michigan, both Medicaid and birth certificate data are housed under MDHHS, and thus we are working with one person within the agency who is coordinating our data request. Michigan is receptive to supporting the evaluation, and MDHHS staff plan to link the Medicaid and birth certificate data. An application requesting Medicaid and birth certificate data was submitted to MDHHS in June 2015. The evaluation team is currently awaiting approval from MDHHS but hopes to begin receiving data in late 2015.

Mississippi Primary Health Care Association

CASE STUDY

The Mississippi Primary Health Care Association (MPHCA) administers the Strong Start award across eight community health centers (CHCs) in Mississippi. Sites are a mix of urban, suburban and rural health centers. Total enrollment through the end of 2014 was 1,819. Very few changes in program content or administration were reported at the time of Y2 data collection. Significant updates are highlighted below.

Highlights from the second round of case study data collection include:

- Key informants generally felt that Strong Start implementation was going well, although one site (Pearl) plans to end its participation in October 2015 because of the administrative burden. The evaluation team has subsequently been informed that all remaining sites will stop enrolling new patients on September 30, 2015 in preparation for the end of their award period in early 2016.
- Both sites studied appear to be more proactive and energetic with more defined processes in their care coordination, social service referrals, and tracking of patients than on our site visit in 2014.
- CHCs have improved relationships with delivering hospitals and private obstetricians compared to 2014 when they were not able to track referrals or birth outcomes. Improved provider relationships have facilitated CHC access to birth outcomes data, which subsequently improves continuity of care for their patients.
- Eligibility criteria appear to vary among the sites. For example, the Pearl site, which had already stopped enrolling new patients at the time of the Y2 data collection, attempted to enroll all Medicaid-eligible pregnant women in Strong Start regardless of gestational age, while the Laurel site requires an additional preterm risk factor and imposes a 20-week gestational age limit. The awardee noted that preterm risk factors are identified in 99 percent of Medicaid patients and that the challenge lies in recruiting and enrolling patients prior to 20-24 weeks gestation.
- Key informants from both sites studied in evaluation Y2 believe Strong Start services positively affect outcomes. For instance, the Laurel site reported an estimated 5 to 7 percent reduction in preterm births (compared to pre-Strong Start rates), out-performing the MPHCA target of a 3 percent reduction.
- Total enrollment projections have been revised downward from 4,000 enrollees (during evaluation Y1) to 2,640 for the duration of the program, which informants view as more realistic given the available funding.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, Mississippi Primary Health Care Association had Intake Forms for 79 percent of participants enrolled through Quarter 1 2015 (1666 Intake Forms for 2098 participants). In addition, Mississippi Primary Health Care Association submitted 694 Third Trimester Surveys, 572 Postpartum Surveys, and 1066 Exit Forms. The tables below present data collected on Mississippi Primary Health Care Association's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	MISSISSIPPI (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	280	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	2098	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	957	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	1666	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	79.4	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	694	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	72.5	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	572	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	59.8	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	1066	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	111.4	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	MISSISSIPPI (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	1666	2993	4401	11761	19155
Less than 18 years of age	%	9.1	3.4	6.7	5.8	5.6
18 through 34 years of age	%	78.5	86.1	75.0	81.4	80.7
35 years and older	%	3.8	6.2	4.9	6.0	5.8
Missing	%	8.6	4.3	13.4	6.8	7.9
Race and Ethnicity	N	1666	2993	4401	11761	19155
Hispanic	%	1.0	25.7	39.2	22.9	27.1
Non-Hispanic white	%	8.3	53.3	13.7	26.2	27.6
Non-Hispanic black	%	87.9	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0.2	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0.2	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	0.4	3.6	2.3	1.2	1.8

Data Element	N or %	MISSISSIPPI (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Missing	%	2.0	0.9	2.8	1.5	1.7
Employed at Intake	N	1666	2993	4401	11761	19155
Yes	%	35.7	39.7	34.6	38.8	38.0
No	%	62.4	59.1	60.9	60.0	60.0
Missing	%	1.9	1.2	4.5	1.2	2.0
Education Level at Intake	N	1666	2993	4401	11761	19155
Less than high school	%	16.8	14.3	23.7	24.5	22.7
High school graduate or GED	%	51.1	52.3	46.2	52.0	50.7
Bachelor's degree	%	1.3	10.1	3.1	2.5	3.9
Other college degree(s)	%	7.1	12.7	7.2	6.0	7.3
Missing	%	23.6	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	1666	2993	4401	11761	19155
Married, living with spouse	%	7.6	40.7	18.6	17.2	21.2
Married, not living with spouse	%	2.4	1.7	2.1	1.9	1.9
Living with a partner	%	19.7	32.2	31.3	30.6	31.0
In a relationship but not living together	%	40.5	12.9	24.6	30.5	26.4
Not in a relationship right now	%	23.8	11.1	17.0	17.8	16.6
Missing	%	6.0	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	1666	2993	4401	11761	19155
Yes	%	14.0	10.1	7.8	14.1	12.0
No	%	61.9	77.1	71.7	77.8	76.3
Missing	%	24.0	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	1666	2993	4401	11761	19155
Yes	%	14.1	18.1	18.5	16.1	16.9
No	%	79.1	76.9	61.4	76.2	72.9
Missing*	%	6.8	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	1666	2993	4401	11761	19155
Yes	%	29.7	21.8	25.2	23.4	23.5
No	%	58.6	69.3	57.0	69.3	66.4
Missing*	%	11.7	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	1666	2993	4401	11761	19155
Yes	%	14.5	20.6	17.1	19.0	18.8
No	%	83.9	77.2	68.4	78.5	76.0
Missing*	%	1.6	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	MISSISSIPPI (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	639	1127	700	1914	3741

Data Element	N or %	MISSISSIPPI (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
<18 months	%	17.2	24.3	18.0	19.5	20.7
≥18 months	%	37.9	39.8	48.3	51.9	47.6
Missing	%	44.9	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	639	1127	700	1914	3741
Yes	%	15.2	10.7	11.4	18.9	15.0
No	%	42.6	89.3	63.9	63.2	71.2
Not Known	%	35.8	0	18.6	14.9	11.1
Missing	%	6.4	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	639	1127	700	1914	3741
Yes	%	13.3	1.9	8.6	14.8	9.7
No	%	43.3	95.8	60.4	61.7	71.7
Not Known	%	36.3	0	24.7	19.2	14.5
Missing	%	7.0	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	1066	2133	1433	3103	6669
Yes	%	2.0	0.5	1.3	1.5	1.1
No	%	66.0	99.5	74.2	84.4	87.0
Not Known	%	26.5	0	7.7	11.1	6.8
Missing	%	5.5	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	1066	2133	1433	3103	6669
Yes	%	0.8	0	2.6	1.9	1.5
No	%	66.9	5.0	72.9	83.3	56.1
Not Known	%	26.5	0	7.7	11.1	6.8
Missing	%	5.9	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	1066	2133	1433	3103	6669
Yes	%	10.3	0.5	6.0	9.5	5.9
No	%	60.5	99.5	66.7	77.4	82.2
Not Known	%	24.1	0	7.6	10.2	6.4
Missing	%	5.1	0	19.7	2.9	5.6

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	MISSISSIPPI (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	1066	2133	1433	3103	6669
Yes	%	3.5	2.7	4.2	5.3	4.2
No	%	65.3	97.3	65.4	76	80.6
Not Known	%	27.2	0	10.3	15.9	9.6
Missing	%	4.0	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	1066	2133	1433	3103	6669
Yes	%	11.2	1.3	7.8	7.7	5.7
No	%	62.5	98.7	62.6	74.8	79.8
Not Known	%	22.3	0	9.4	14.6	8.8
Missing	%	4.0	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	MISSISSIPPI (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	928	2125	1103	2740	5968
Number of Babies Born	N	953	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	989	2133	1297	2826	6256
Yes	%	6.6	14.4	23.8	17.2	17.6
No	%	24.7	85.3	42.8	35.5	54.0
Not known	%	57.9	0	10.6	37.8	19.3
Missing	%	10.8	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	1066	2133	1433	3103	6669
Vaginal delivery	%	49.0	87.3	49.1	52.0	62.7
C-Section	%	28.9	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0.0	0	0	0	0
Missing	%	22.1	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	85.0	90.9	80.2	81.6	85.4
VBAC ¹⁹	N	117	90	161	418	669
Yes	%	8.5	30.0	19.9	13.9	17.5
Repeat C-Section	N	117	90	161	418	669
Yes	%	91.5	70.0	80.1	86.1	82.5
Scheduled C-Section	N	308	265	348	920	1533
Yes	%	25.0	0	39.1	29.2	26.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	MISSISSIPPI (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	898	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	158	112	131	461	704
	%	17.6	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	612	1994	823	1945	4762
	%	68.2	94.3	72.2	74.3	81.1
Missing	N	128	–	186	211	406
	%	14.3	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	898	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	132	75	147	412	634
	%	14.7	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	663	1810	993	2019	4822
	%	73.9	85.6	87.1	77.2	82.1

¹⁹ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Data Element	N or %	MISSISSIPPI (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Missing	N	105	240	13	197	450
	%	11.7	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	MISSISSIPPI (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	572	1533	1416	4000	6949
Yes	%	51.2	86.4	64.7	61.5	67.7
No	%	37.8	7.4	9.5	25.6	18.3
Prefer not to answer	%	1.7	0.7	1.8	0.5	0.8
Missing	%	9.3	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	101.8	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	572	1533	1416	4000	6949
Yes	%	76.0	71.6	60.8	69.7	68.3
No	%	12.8	19.4	12.3	15.2	15.5
Unsure	%	1.6	2.8	2.4	1.8	2.1
Missing	%	9.6	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In March and April 2015, the evaluation team spoke with officials from the Mississippi Division of Medicaid (DOM) and the Mississippi Department of Health (MSDH) to learn about the state’s willingness to and process for releasing state Medicaid and birth certificate data (respectively) to the Urban Institute for the impact analysis of the Strong Start evaluation. State officials were receptive to supporting the evaluation, and staff from MSDH plan to link the Medicaid and birth certificate data for the impact analysis. MSDH has sent the Urban Institute a Business Associate Agreement (BAA) to review and sign. DOM is in the process of drafting a BAA for the Urban Institute to sign. The evaluation team hopes to begin receiving data in early 2016.

Oklahoma Health Care Authority

CASE STUDY

Oklahoma Health Care Authority (OKHCA) is Oklahoma's State Medicaid Agency located in Oklahoma City. Initially OKHCA operated three Strong Start sites that each adopted the group prenatal care approach, using a modified version of CHI's CenteringPregnancy approach. At the time of evaluation Y2 data collection, however, OKHCA had two active sites with plans to begin Strong Start operations at two new sites (for a total of four) in July 2015. Of the four sites now included in OKHCA's program, two are implementing the maternity care home approach and two are implementing group prenatal care.

Highlights from the second round of case study data collection include:

- One site, the Oklahoma State University-Tulsa, exited the program after struggling to establish an effective enrollment process and experiencing considerable difficulty engaging and building support among providers.
- Two federally qualified health centers (FQHCs) in Oklahoma City were preparing to begin operations as new Strong Start sites. The Mary Mahoney Memorial Medical Center (which serves a largely African-American population) will implement the maternity care home approach featuring enhanced education services delivered by on-site providers (e.g. dentists, pediatricians, behavioral health specialists). The Variety Care Center (which serves a largely Hispanic population) will implement the group prenatal care approach and offer after-hours sessions to facilitate participation by pregnant teens.
- Choctaw Nation Medical Center (a site that existed in evaluation Y1) continues to face enrollment-related challenges including limited interest in the program among eligible patients. Still, key informants have observed that retention and visit attendance are high among patients who do opt-in to group care, and that the approach has contributed to increased knowledge about pregnancy and childbirth as well as improved receptivity to breastfeeding.
- Another original site—the Oklahoma City Indian Clinic—transitioned from group prenatal care to a maternity care home approach in the second program year. This transition was in process at the time of Y2 data collection. The site plans to use the educational components of their group care approach (which built off the Centering curriculum) to structure the content of the three prenatal and one postpartum encounters that are planned for maternity care home enrollees. To help boost program enrollment, the site adopted an opt-out enrollment approach and has also placed the enrollment coordinator within the prenatal care clinic so that she can interact more directly with participants.
- Lagging Strong Start enrollment has been a major challenge for the awardee (with roughly 150 participants ever enrolled at the time of Y2 data collection) but OKHCA is hopeful that adding the maternity care home approach to its program will improve enrollment and provide a

foundation for a sustainable intervention. Despite enrollment-related problems, feedback from Strong Start participants has been positive and satisfaction with the enhanced services is high.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, Oklahoma Health Care Authority had Intake Forms for 80 percent of participants enrolled through Quarter 1 2015 (111 Intake Forms for 138 participants). In addition, Oklahoma Health Care Authority submitted 42 Third Trimester Surveys, 34 Postpartum Surveys, and 72 Exit Forms. The tables below present data collected on Oklahoma Health Care Authority's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	OKLAHOMA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	17	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	138	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	93	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	111	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	80.4	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	42	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	45.2	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	34	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	36.6	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	72	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	77.4	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	OKLAHOMA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	111	2993	4401	11761	19155
Less than 18 years of age	%	9.9	3.4	6.7	5.8	5.6
18 through 34 years of age	%	64.9	86.1	75.0	81.4	80.7
35 years and older	%	0.9	6.2	4.9	6.0	5.8
Missing	%	24.3	4.3	13.4	6.8	7.9
Race and Ethnicity	N	111	2993	4401	11761	19155
Hispanic	%	10.8	25.7	39.2	22.9	27.1
Non-Hispanic white	%	24.3	53.3	13.7	26.2	27.6
Non-Hispanic black	%	7.2	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0	1.1	1.2	1.2	1.2

Data Element	N or %	OKLAHOMA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Non-Hispanic other	%	37.8	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	19.8	3.6	2.3	1.2	1.8
Missing	%	0.0	0.9	2.8	1.5	1.7
Employed at Intake	N	111	2993	4401	11761	19155
Yes	%	45.9	39.7	34.6	38.8	38.0
No	%	54.1	59.1	60.9	60.0	60.0
Missing	%	0	1.2	4.5	1.2	2.0
Education Level at Intake	N	111	2993	4401	11761	19155
Less than high school	%	13.5	14.3	23.7	24.5	22.7
High school graduate or GED	%	50.5	52.3	46.2	52.0	50.7
Bachelor's degree	%	2.7	10.1	3.1	2.5	3.9
Other college degree(s)	%	16.2	12.7	7.2	6.0	7.3
Missing	%	17.1	10.7	19.8	15	15.4
Relationship Status at Intake	N	111	2993	4401	11761	19155
Married, living with spouse	%	29.7	40.7	18.6	17.2	21.2
Married, not living with spouse	%	0	1.7	2.1	1.9	1.9
Living with a partner	%	36.9	32.2	31.3	30.6	31.0
In a relationship but not living together	%	18.0	12.9	24.6	30.5	26.4
Not in a relationship right now	%	12.6	11.1	17.0	17.8	16.6
Missing	%	2.7	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	111	2993	4401	11761	19155
Yes	%	11.7	10.1	7.8	14.1	12.0
No	%	65.8	77.1	71.7	77.8	76.3
Missing	%	22.5	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	111	2993	4401	11761	19155
Yes	%	22.5	18.1	18.5	16.1	16.9
No	%	73.0	76.9	61.4	76.2	72.9
Missing*	%	4.5	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	111	2993	4401	11761	19155
Yes	%	27.0	21.8	25.2	23.4	23.5
No	%	66.7	69.3	57.0	69.3	66.4
Missing*	%	6.3	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	111	2993	4401	11761	19155
Yes	%	27.0	20.6	17.1	19.0	18.8
No	%	73.0	77.2	68.4	78.5	76.0
Missing*	%	0	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	OKLAHOMA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	37	1127	700	1914	3741
<18 months	%	43.2	24.3	18.0	19.5	20.7
≥18 months	%	24.3	39.8	48.3	51.9	47.6
Missing	%	32.4	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	37	1127	700	1914	3741
Yes	%	8.1	10.7	11.4	18.9	15.0
No	%	64.9	89.3	63.9	63.2	71.2
Not Known	%	18.9	0	18.6	14.9	11.1
Missing	%	8.1	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	37	1127	700	1914	3741
Yes	%	0	1.9	8.6	14.8	9.7
No	%	45.9	95.8	60.4	61.7	71.7
Not Known	%	51.4	0	24.7	19.2	14.5
Missing	%	2.7	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	72	2133	1433	3103	6669
Yes	%	1.4	0.5	1.3	1.5	1.1
No	%	73.6	99.5	74.2	84.4	87
Not Known	%	13.9	0	7.7	11.1	6.8
Missing	%	11.1	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	72	2133	1433	3103	6669
Yes	%	1.4	0	2.6	1.9	1.5
No	%	72.2	5	72.9	83.3	56.1
Not Known	%	15.3	0	7.7	11.1	6.8
Missing	%	11.1	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	72	2133	1433	3103	6669
Yes	%	1.4	0.5	6.0	9.5	5.9
No	%	72.2	99.5	66.7	77.4	82.2
Not Known	%	15.3	0	7.6	10.2	6.4
Missing	%	11.1	0	19.7	2.9	5.6

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	OKLAHOMA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	72	2133	1433	3103	6669
Yes	%	5.6	2.7	4.2	5.3	4.2
No	%	69.4	97.3	65.4	76.0	80.6
Not Known	%	15.3	0	10.3	15.9	9.6
Missing	%	9.7	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	72	2133	1433	3103	6669
Yes	%	2.8	1.3	7.8	7.7	5.7

Data Element	N or %	OKLAHOMA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
No	%	72.2	98.7	62.6	74.8	79.8
Not Known	%	15.3	0	9.4	14.6	8.8
Missing	%	9.7	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	OKLAHOMA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	60	2125	1103	2740	5968
Number of Babies Born	N	60	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	67	2133	1297	2826	6256
Yes	%	22.4	14.4	23.8	17.2	17.6
No	%	56.7	85.3	42.8	35.5	54.0
Not known	%	9.0	0	10.6	37.8	19.3
Missing	%	11.9	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	72	2133	1433	3103	6669
Vaginal delivery	%	56.9	87.3	49.1	52.0	62.7
C-Section	%	25.0	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	18.1	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	70.5	90.9	80.2	81.6	85.4
VBAC ²⁰	N	–	90	161	418	669
Yes	%	–	30.0	19.9	13.9	17.5
Repeat C-Section	N	–	90	161	418	669
Yes	%	–	70.0	80.1	86.1	82.5
Scheduled C-Section	N	18	265	348	920	1533
Yes	%	27.8	0	39.1	29.2	26.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	OKLAHOMA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	59	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	–	112	131	461	704
	%	–	5.3	11.5	17.6	12.0

²⁰ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Data Element	N or %	OKLAHOMA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Non-Preterm Births, ≥37 weeks EGA	N	52	1994	823	1945	4762
	%	88.1	94.3	72.2	74.3	81.1
Missing	N	–	–	186	211	406
	%	–	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	59	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	–	75	147	412	634
	%	–	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	56	1810	993	2019	4822
	%	94.9	85.6	87.1	77.2	82.1
Missing	N	0	240	13	197	450
	%	0	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	OKLAHOMA (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	34	1533	1416	4000	6949
Yes	%	82.4	86.4	64.7	61.5	67.7
No	%	17.6	7.4	9.5	25.6	18.3
Prefer not to answer	%	0	0.7	1.8	0.5	0.8
Missing	%	0	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	96.2	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	34	1533	1416	4000	6949
Yes	%	73.5	71.6	60.8	69.7	68.3
No	%	26.5	19.4	12.3	15.2	15.5
Unsure	%	0	2.8	2.4	1.8	2.1
Missing	%	0	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

The evaluation team is not seeking data in Oklahoma because total Strong Start enrollment in the state is too low to warrant the large investment of time and resources required to obtain data.

Providence Health Foundation of Providence Hospital

CASE STUDY

The National Capital Strong Start award, convened by the Center for Perinatal Advocacy of the Providence Health Foundation at Providence Hospital (Providence), is operating five Strong Start sites in Washington, D.C. The participating sites include three maternity care homes, a birth center and a group prenatal care site. At the time of Y2 case study data collection, the awardee was on target to reach its Y2 enrollment goal of 1,380 women. Y2 case study interviews focused on two maternity care home sites not studied during evaluation Y1: Unity Healthcare and Mary's Center.

Highlights from the second round of data collection include:

- Unity Healthcare is a federally qualified health center (FQHC) and level-three Patient-Centered Medical Home (PCMH) that has implemented Strong Start at seven of its 29 clinic locations. Unity recently began offering prenatal care classes and has hired four prenatal care associates who provide patient education and case management services. The program initially focused on enrolling all existing patients, which included a number of women between 35 and 38 weeks gestation; however, once existing patients were enrolled, it shifted to focus on enrolling new prenatal care patients who are generally earlier in their pregnancies.
- Mary's Center is also an FQCH and certified PCMH. Mary's Center's maternity care home enhanced services are delivered by family support workers with college degrees, who provide education and referrals to resources. Key informants noted that implementation has gone smoothly because Mary's Center offered these services prior to the award, and the only significant change under Strong Start is the data collection component. Mary's Center also offers group prenatal care that is not funded by the Strong Start award.
- A site that had implemented group prenatal care via Strong Start, Washington Hospital Center, left the program this past year because of enrollment challenges. A recent change in managed care contracting has significantly reduced their Medicaid patient population. All other sites have remained in the program, which include Unity, Mary's Center, and the three sites visited in Y1: Community of Hope Family Health and Birth Center (which implemented the birth center approach), Howard University (maternity care home approach), and Providence Hospital (group prenatal care approach).
- Overall, Providence is pleased with enrollment, the bulk of which is from the maternity care home sites.
- A District-wide initiative to support hospitals seeking Baby Friendly certification is underway at most hospitals serving Medicaid beneficiaries. According to key informants, FQHCs and WIC

have both reported that more Medicaid enrollees across the city are now receiving breastfeeding support.

- Key informants reported a number of positive outcomes associated with their Strong Start program, including high satisfaction with care and feeling more supported. They feel that their process of identifying and addressing patient needs has potential to improve both physical and psychosocial health among Strong Start participants.
- The birth center and group prenatal care sites are expected to sustain their enhanced prenatal care approaches after the award funding expires. However, the outlook for maternity care home sites was mixed: while Mary's Center will continue offering the family support worker services (which they already offered before Strong Start) sustainable funding for Unity and Howard University is uncertain.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, Providence Health Foundation had Intake Forms for 90 percent of participants enrolled through Quarter 1 2015 (1193 Intake Forms for 1328 participants). In addition, Providence Health Foundation submitted 462 Third Trimester Surveys, 247 Postpartum Surveys, and 46 Exit Forms. The tables below present data collected on Providence Health Foundation's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	PROVIDENCE (All Approaches)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	387	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	1328	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	389	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	1193	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	89.8	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	462	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	118.8	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	247	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	63.5	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	46	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	11.8	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	PROVIDENCE (All Approaches)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	1193	2993	4401	11761	19155
Less than 18 years of age	%	6.4	3.4	6.7	5.8	5.6
18 through 34 years of age	%	82.1	86.1	75.0	81.4	80.7
35 years and older	%	8.0	6.2	4.9	6.0	5.8
Missing	%	3.4	4.3	13.4	6.8	7.9
Race and Ethnicity	N	1193	2993	4401	11761	19155
Hispanic	%	32.4	25.7	39.2	22.9	27.1
Non-Hispanic white	%	1.1	53.3	13.7	26.2	27.6
Non-Hispanic black	%	61.4	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0.8	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0.6	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	1.8	3.6	2.3	1.2	1.8
Missing	%	1.8	0.9	2.8	1.5	1.7
Employed at Intake	N	1193	2993	4401	11761	19155
Yes	%	39.7	39.7	34.6	38.8	38.0
No	%	59.3	59.1	60.9	60.0	60.0
Missing	%	0.9	1.2	4.5	1.2	2.0
Education Level at Intake	N	1193	2993	4401	11761	19155
Less than high school	%	29.0	14.3	23.7	24.5	22.7
High school graduate or GED	%	48.1	52.3	46.2	52.0	50.7
Bachelor's degree	%	3.0	10.1	3.1	2.5	3.9
Other college degree(s)	%	4.1	12.7	7.2	6.0	7.3
Missing	%	15.8	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	1193	2993	4401	11761	19155
Married, living with spouse	%	14.6	40.7	18.6	17.2	21.2
Married, not living with spouse	%	1.9	1.7	2.1	1.9	1.9
Living with a partner	%	30.4	32.2	31.3	30.6	31.0
In a relationship but not living together	%	30.7	12.9	24.6	30.5	26.4
Not in a relationship right now	%	19.8	11.1	17	17.8	16.6
Missing	%	2.6	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	1193	2993	4401	11761	19155
Yes	%	6.4	10.1	7.8	14.1	12.0
No	%	84.9	77.1	71.7	77.8	76.3
Missing	%	8.7	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	1193	2993	4401	11761	19155
Yes	%	24.8	18.1	18.5	16.1	16.9
No	%	69.4	76.9	61.4	76.2	72.9
Missing*	%	5.8	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	1193	2993	4401	11761	19155
Yes	%	27.0	21.8	25.2	23.4	23.5
No	%	60.8	69.3	57.0	69.3	66.4
Missing*	%	12.2	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	1193	2993	4401	11761	19155
Yes	%	17.4	20.6	17.1	19.0	18.8

Data Element	N or %	PROVIDENCE (All Approaches)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
No	%	80.6	77.2	68.4	78.5	76.0
Missing*	%	2.1	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	PROVIDENCE (All Approaches)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	24	1127	700	1914	3741
<18 months	%	16.7	24.3	18.0	19.5	20.7
≥18 months	%	62.5	39.8	48.3	51.9	47.6
Missing	%	20.8	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	24	1127	700	1914	3741
Yes	%	16.7	10.7	11.4	18.9	15.0
No	%	62.5	89.3	63.9	63.2	71.2
Not Known	%	8.3	0	18.6	14.9	11.1
Missing	%	12.5	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	24	1127	700	1914	3741
Yes	%	4.2	1.9	8.6	14.8	9.7
No	%	66.7	95.8	60.4	61.7	71.7
Not Known	%	16.7	0	24.7	19.2	14.5
Missing	%	12.5	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	46	2133	1433	3103	6669
Yes	%	0	0.5	1.3	1.5	1.1
No	%	76.1	99.5	74.2	84.4	87.0
Not Known	%	2.2	0	7.7	11.1	6.8
Missing	%	21.7	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	46	2133	1433	3103	6669
Yes	%	0	0	2.6	1.9	1.5
No	%	76.1	5.0	72.9	83.3	56.1
Not Known	%	2.2	0	7.7	11.1	6.8
Missing	%	21.7	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	46	2133	1433	3103	6669
Yes	%	0	0.5	6.0	9.5	5.9
No	%	80.4	99.5	66.7	77.4	82.2
Not Known	%	0	0	7.6	10.2	6.4
Missing	%	19.6	0	19.7	2.9	5.6

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	PROVIDENCE (All Approaches)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	46	2133	1433	3103	6669

Data Element	N or %	PROVIDENCE (All Approaches)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Yes	%	2.2	2.7	4.2	5.3	4.2
No	%	78.3	97.3	65.4	76.0	80.6
Not Known	%	0	0	10.3	15.9	9.6
Missing	%	19.6	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	46	2133	1433	3103	6669
Yes	%	4.3	1.3	7.8	7.7	5.7
No	%	73.9	98.7	62.6	74.8	79.8
Not Known	%	0	0	9.4	14.6	8.8
Missing	%	21.7	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	PROVIDENCE (All Approaches)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	37	2125	1103	2740	5968
Number of Babies Born	N	37	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	45	2133	1297	2826	6256
Yes	%	13.3	14.4	23.8	17.2	17.6
No	%	57.8	85.3	42.8	35.5	54.0
Not known	%	6.7	0	10.6	37.8	19.3
Missing	%	22.2	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	46	2133	1433	3103	6669
Vaginal delivery	%	54.3	87.3	49.1	52.0	62.7
C-Section	%	26.1	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	19.6	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	73.3	90.9	80.2	81.6	85.4
VBAC²¹	N	–	90	161	418	669
Yes	%	–	30.0	19.9	13.9	17.5
Repeat C-Section	N	–	90	161	418	669
Yes	%	–	70.0	80.1	86.1	82.5
Scheduled C-Section	N	12	265	348	920	1533
Yes	%	8.3	0	39.1	29.2	26.4

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

²¹ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	PROVIDENCE (All Approaches)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	37	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	–	112	131	461	704
	%	–	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	31	1994	823	1945	4762
	%	83.8	94.3	72.2	74.3	81.1
Missing	N	–	–	186	211	406
	%	–	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	37	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	–	75	147	412	634
	%	–	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	30	1810	993	2019	4822
	%	81.1	85.6	87.1	77.2	82.1
Missing	N	0	240	13	197	450
	%	0	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	PROVIDENCE (All Approaches)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	247	1533	1416	4000	6949
Yes	%	85	86.4	64.7	61.5	67.7
No	%	11.3	7.4	9.5	25.6	18.3
Prefer not to answer	%	0	0.7	1.8	0.5	0.8
Missing	%	3.6	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	101.1	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	247	1533	1416	4000	6949
Yes	%	81.4	71.6	60.8	69.7	68.3
No	%	13.8	19.4	12.3	15.2	15.5
Unsure	%	0.4	2.8	2.4	1.8	2.1
Missing	%	4.5	6.2	24.5	13.3	14

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In April 2015, the evaluation team spoke with the Department of Health Care Finance to discuss their willingness to and process for releasing Medicaid data to the Urban Institute for the impact analysis of the Strong Start evaluation. State officials were receptive to the project and are developing a Memorandum of Understanding (MOU) between the Urban Institute and the Department of Health Care Finance. We also spoke with the Department of Health regarding the possibility of accessing birth certificate data, and submitted a data request application in July 2015. The state plans to link Medicaid

and birth certificate data in support of the Strong Start evaluation. We hope to begin receiving data in early 2016, as developing and approving the MOU reportedly can take up to six months.

Signature Medical Group

CASE STUDY

Signature Medical Group (Signature) is a large, physician-owned multi-specialty group that serves the St. Louis and Kansas City areas as well as parts of southwestern Missouri. Much of Signature's patient population is urban and suburban; however, there are practices in rural parts of the region. Signature is implementing the Strong Start maternity care home approach at nine OB/GYN practices. As of Quarter 1 of 2015, 843 patients had been enrolled in Signature's Strong Start program. Overall, key informants reported that Strong Start implementation has been going well so far, and they have been able to overcome some of the challenges they faced during the first program year.

Highlights from the second round of case study data collection include:

- The original Strong Start program coordinator is no longer with the program; a prenatal care coordinator is assuming her role.
- Signature has added one site, for a total of nine sites.
- Prenatal care coordinators are now well-integrated within participating OB/GYN offices, which has resulted in increased communication amongst the prenatal care team.
- Signature's enhanced services have not changed. Services include home visits, patient education, medical advice in between prenatal visits, brief interpersonal therapy and counseling, care coordination, and case management services.
- The awardee has increased outreach and partnership with community groups to help identify potential participants and to build a "brand" for the program.
- There have been no changes to program eligibility criteria or enrollment methods; Signature sites continue to use an opt-out enrollment approach.
- One of the biggest changes since the program's first year is quicker enrollment in Medicaid. The state's processing time for Medicaid applications is now 30 days at most, compared to up to seven months (reported during the first evaluation site visit). In addition to improvements in the state's processing time, the number of Signature care coordinators who enroll patients in Medicaid has increased from one to four. Quicker Medicaid enrollment has improved Signature's Strong Start enrollment because many participating providers would not care for patients whose Medicaid was pending.
- Through enhanced communication strategies, Strong Start staff are able to retain most patients in the program. The most common reasons patients leave the program are because they have moved or because of pregnancy loss.

- Some implementation challenges remain. These include coordinating program and evaluation data collection and documentation across sites' different electronic medical record systems and trying to retrieve data from hospitals (e.g. length of NICU stay).
- Key informants attributed improved patient outcomes over the past year, especially reduced preterm births and improved mental health and education, to participation in Strong Start.
- Key informants agreed that they would like to sustain Strong Start services after the funding period ends, based on the success they have had with the program thus far.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, Signature Medical Group had Intake Forms for 86 percent of participants enrolled through Quarter 1 2015 (722 Intake Forms for 843 participants). In addition, Signature Medical Group submitted 217 Third Trimester Surveys, 183 Postpartum Surveys, and 249 Exit Forms. The tables below present data collected on Signature Medical Group's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	SIGNATURE (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	191	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	843	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	382	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	722	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	85.6	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	217	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	56.8	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	183	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	47.9	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	249	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	65.2	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	SIGNATURE (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	722	2993	4401	11761	19155
Less than 18 years of age	%	4.6	3.4	6.7	5.8	5.6
18 through 34 years of age	%	89.1	86.1	75	81.4	80.7

Data Element	N or %	SIGNATURE (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
35 years and older	%	5.7	6.2	4.9	6.0	5.8
Missing	%	0.7	4.3	13.4	6.8	7.9
Race and Ethnicity	N	722	2993	4401	11761	19155
Hispanic	%	3.2	25.7	39.2	22.9	27.1
Non-Hispanic white	%	75.2	53.3	13.7	26.2	27.6
Non-Hispanic black	%	15.8	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	1.2	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0.7	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	2.2	3.6	2.3	1.2	1.8
Missing	%	1.7	0.9	2.8	1.5	1.7
Employed at Intake	N	722	2993	4401	11761	19155
Yes	%	45.2	39.7	34.6	38.8	38.0
No	%	53.6	59.1	60.9	60.0	60.0
Missing	%	1.2	1.2	4.5	1.2	2.0
Education Level at Intake	N	722	2993	4401	11761	19155
Less than high school	%	13.0	14.3	23.7	24.5	22.7
High school graduate or GED	%	65.9	52.3	46.2	52.0	50.7
Bachelor's degree	%	5.5	10.1	3.1	2.5	3.9
Other college degree(s)	%	8.6	12.7	7.2	6.0	7.3
Missing	%	6.9	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	722	2993	4401	11761	19155
Married, living with spouse	%	27.3	40.7	18.6	17.2	21.2
Married, not living with spouse	%	0.8	1.7	2.1	1.9	1.9
Living with a partner	%	35.6	32.2	31.3	30.6	31.0
In a relationship but not living together	%	20.8	12.9	24.6	30.5	26.4
Not in a relationship right now	%	14.8	11.1	17.0	17.8	16.6
Missing	%	0.7	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	722	2993	4401	11761	19155
Yes	%	15.7	10.1	7.8	14.1	12.0
No	%	80.2	77.1	71.7	77.8	76.3
Missing	%	4.2	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	722	2993	4401	11761	19155
Yes	%	9.1	18.1	18.5	16.1	16.9
No	%	84.1	76.9	61.4	76.2	72.9
Missing*	%	6.8	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	722	2993	4401	11761	19155
Yes	%	20.9	21.8	25.2	23.4	23.5
No	%	74.5	69.3	57.0	69.3	66.4
Missing*	%	4.6	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	722	2993	4401	11761	19155
Yes	%	24.2	20.6	17.1	19.0	18.8
No	%	71.1	77.2	68.4	78.5	76.0
Missing*	%	4.7	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.
Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.
Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.
Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	SIGNATURE (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	150	1127	700	1914	3741
<18 months	%	15.4	24.3	18.0	19.5	20.7
≥18 months	%	26.7	39.8	48.3	51.9	47.6
Missing	%	58.0	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	150	1127	700	1914	3741
Yes	%	14.0	10.7	11.4	18.9	15.0
No	%	84.0	89.3	63.9	63.2	71.2
Not Known	%	0.7	0	18.6	14.9	11.1
Missing	%	1.3	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	150	1127	700	1914	3741
Yes	%	10.7	1.9	8.6	14.8	9.7
No	%	83.3	95.8	60.4	61.7	71.7
Not Known	%	4.0	0	24.7	19.2	14.5
Missing	%	2.0	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	249	2133	1433	3103	6669
Yes	%	0	0.5	1.3	1.5	1.1
No	%	98.4	99.5	74.2	84.4	87.0
Not Known	%	0.8	0	7.7	11.1	6.8
Missing	%	0.8	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	249	2133	1433	3103	6669
Yes	%	0.4	0	2.6	1.9	1.5
No	%	91.6	5.0	72.9	83.3	56.1
Not Known	%	0.8	0	7.7	11.1	6.8
Missing	%	7.2	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	249	2133	1433	3103	6669
Yes	%	0.4	0.5	6.0	9.5	5.9
No	%	97.6	99.5	66.7	77.4	82.2
Not Known	%	0.8	0	7.6	10.2	6.4
Missing	%	1.2	0	19.7	2.9	5.6

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	SIGNATURE (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	249	2133	1433	3103	6669
Yes	%	1.2	2.7	4.2	5.3	4.2
No	%	90.4	97.3	65.4	76.0	80.6

Data Element	N or %	SIGNATURE (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Not Known	%	4.0	0	10.3	15.9	9.6
Missing	%	4.4	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	249	2133	1433	3103	6669
Yes	%	2.8	1.3	7.8	7.7	5.7
No	%	88.8	98.7	62.6	74.8	79.8
Not Known	%	4.0	0	9.4	14.6	8.8
Missing	%	4.4	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	SIGNATURE (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	218	2125	1103	2740	5968
Number of Babies Born	N	220	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	210	2133	1297	2826	6256
Yes	%	29.5	14.4	23.8	17.2	17.6
No	%	51.0	85.3	42.8	35.5	54.0
Not known	%	3.8	0	10.6	37.8	19.3
Missing	%	15.7	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	249	2133	1433	3103	6669
Vaginal delivery	%	57.0	87.3	49.1	52.0	62.7
C-Section	%	29.3	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0.4	0	0	0	0
Missing	%	13.3	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	80.6	90.9	80.2	81.6	85.4
VBAC²²	N	42	90	161	418	669
Yes	%	7.1	30.0	19.9	13.9	17.5
Repeat C-Section	N	42	90	161	418	669
Yes	%	92.9	70.0	80.1	86.1	82.5
Scheduled C-Section	N	74	265	348	920	1533
Yes	%	51.4	0	39.1	29.2	26.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	SIGNATURE (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	219	2115	1140	2617	5872

²² The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Data Element	N or %	SIGNATURE (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Preterm Births, <37 weeks EGA	N	18	112	131	461	704
	%	8.2	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	190	1994	823	1945	4762
	%	86.8	94.3	72.2	74.3	81.1
Missing	N	11	–	186	211	406
	%	5.0	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	219	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	16	75	147	412	634
	%	7.3	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	198	1810	993	2019	4822
	%	90.4	85.6	87.1	77.2	82.1
Missing	N	–	240	13	197	450
	%	–	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.
Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.
Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	SIGNATURE (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	183	1533	1416	4000	6949
Yes	%	76.5	86.4	64.7	61.5	67.7
No	%	16.4	7.4	9.5	25.6	18.3
Prefer not to answer	%	0	0.7	1.8	0.5	0.8
Missing	%	7.1	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	98.6	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	183	1533	1416	4000	6949
Yes	%	75.4	71.6	60.8	69.7	68.3
No	%	15.8	19.4	12.3	15.2	15.5
Unsure	%	1.1	2.8	2.4	1.8	2.1
Missing	%	7.7	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In May 2015, the evaluation team spoke with officials at the Section of Epidemiology for Public Health Practices, Missouri Department of Health and Senior Services (which houses Vital Records), about their willingness to and process for releasing birth certificate data to the Urban Institute for the impact analysis of the Strong Start evaluation. State officials were receptive to supporting the evaluation, and will likely link Medicaid and birth certificate data, possibly with some technical assistance from the Urban Institute. We plan to follow-up with the state officials in the near future to discuss next steps,

including submitting materials to the state's Institutional Review Board (IRB) and contacting Medicaid officials.

St. John Providence Health System

CASE STUDY

St. John Providence Health System (St. John) is one of the largest health systems in the Detroit Metropolitan area and includes five hospitals and 125 medical facilities. St. John uses Strong Start funding to offer group prenatal support sessions at two sites in the Detroit Metropolitan area.²³ The “West Side” location is a primary care and obstetric clinic in Southfield, west of Detroit. The “East Side” location is the 772-bed St. John Providence Hospital and Medical Center on the east edge of Detroit. In addition, St. John began group prenatal care following the CenteringPregnancy model at one new Strong Start site—Hurley Medical Center in Flint, MI. The awardee continues to struggle with numerous administrative challenges in evaluation Y2, contributing to low enrollment and retention. However, program staff remain committed to group prenatal care and continue to feel positive about potential program outcomes.

Highlights from the second round of case study data collection include:

- With just 19 women participating in Strong Start at the time of data collection (and 69 women ever enrolled), St. John has not been able to meet its enrollment goals. Constraints on outreach methods put in place by the awardee’s internal Institutional Review Board continue to interfere with the awardee’s plan to conduct recruitment during home visits. In Y1, the awardee elected to begin outreach during home visits, instead of outreach via a letter, which had a low yield.
- The awardee made changes to the Strong Start eligibility criteria by eliminating the requirement for a second preterm risk factor (effectively expanding eligibility). The current eligibility criteria include Medicaid eligibility and being up to 28 weeks gestation.
- Retention barriers include transportation, life events that supersede group attendance, and the duration of two separate prenatal appointments (i.e. since group prenatal support sessions are a supplement rather than an alternative to individual prenatal visits, participants continue to receive both types of services).
- A change in leadership at the West Side site led prenatal care group operations to cease temporarily, but recruitment efforts for a new group have now resumed. The East Side site continues to operate group prenatal support sessions using an internally developed approach focused on support and education, coordinating outreach efforts and sharing space with the breastfeeding support group. Hospital leadership has not provided any additional support for the program (e.g., dedicated space) since evaluation Y1.

²³ At St. John’s, Strong Start participants enroll in group prenatal support sessions, which are a supplement rather than an alternative to individual prenatal visits. Since participants continue to receive traditional prenatal care visits and the group sessions are supportive and not the primary means for providing prenatal care to Strong Start enrollees, this report refers to St. John’s approach as “group prenatal support sessions” rather than group prenatal care.

- The awardee recently launched a new site within Hurley Medical Center which follows the CenteringPregnancy approach closely. Participants in Centering and in all other St. John prenatal care groups are scheduled for a total of ten group prenatal sessions.
- The program coordinator (also a social worker and prenatal care group facilitator) is leaving her position in June. The awardee will likely refill this position with one of the other social workers on staff at St. John.
- Even with limited enrollment numbers, key informants emphasized that both approaches, group prenatal care and group support sessions, have had positive effects. Specifically, they report that the approaches have increased patient knowledge about health and nutrition and that Strong Start participants benefit greatly from the peer support and bonding associated with group prenatal care and support sessions.
- St. John continues to focus on improving enrollment and strengthening the Strong Start program's relationship with the health system.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, St. John Community Health Investment Corporation had Intake Forms for 73 percent of participants enrolled through Quarter 1 2015 (50 Intake Forms for 69 participants). In addition, St. John Community Health Investment Corp. submitted 24 Third Trimester Surveys, 54 Postpartum Surveys, and 39 Exit Forms. The tables below present data collected on St. John Community Health Investment Corporation participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	ST. JOHN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	12	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	69	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	31	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	50	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	72.5	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	24	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	77.4	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	54	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	174.2	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	39	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	125.8	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	ST. JOHN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	50	2993	4401	11761	19155
Less than 18 years of age	%	2.0	3.4	6.7	5.8	5.6
18 through 34 years of age	%	90.0	86.1	75.0	81.4	80.7
35 years and older	%	8.0	6.2	4.9	6.0	5.8
Missing	%	0	4.3	13.4	6.8	7.9
Race and Ethnicity	N	50	2993	4401	11761	19155
Hispanic	%	2.0	25.7	39.2	22.9	27.1
Non-Hispanic white	%	8.0	53.3	13.7	26.2	27.6
Non-Hispanic black	%	88.0	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	2.0	3.6	2.3	1.2	1.8
Missing	%	0	0.9	2.8	1.5	1.7
Employed at Intake	N	50	2993	4401	11761	19155
Yes	%	32.0	39.7	34.6	38.8	38.0
No	%	68.0	59.1	60.9	60.0	60.0
Missing	%	0	1.2	4.5	1.2	2.0
Education Level at Intake	N	50	2993	4401	11761	19155
Less than high school	%	24.0	14.3	23.7	24.5	22.7
High school graduate or GED	%	62.0	52.3	46.2	52	50.7
Bachelor's degree	%	2.0	10.1	3.1	2.5	3.9
Other college degree(s)	%	4.0	12.7	7.2	6.0	7.3
Missing	%	8.0	10.7	19.8	15	15.4
Relationship Status at Intake	N	50	2993	4401	11761	19155
Married, living with spouse	%	2.0	40.7	18.6	17.2	21.2
Married, not living with spouse	%	6.0	1.7	2.1	1.9	1.9
Living with a partner	%	30.0	32.2	31.3	30.6	31.0
In a relationship but not living together	%	26.0	12.9	24.6	30.5	26.4
Not in a relationship right now	%	36.0	11.1	17.0	17.8	16.6
Missing	%	0	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	50	2993	4401	11761	19155
Yes	%	10.0	10.1	7.8	14.1	12.0
No	%	90.0	77.1	71.7	77.8	76.3
Missing	%	0	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	50	2993	4401	11761	19155
Yes	%	34.0	18.1	18.5	16.1	16.9
No	%	64.0	76.9	61.4	76.2	72.9
Missing*	%	2.0	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	50	2993	4401	11761	19155
Yes	%	50.0	21.8	25.2	23.4	23.5
No	%	50.0	69.3	57.0	69.3	66.4
Missing*	%	0	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	50	2993	4401	11761	19155
Yes	%	40.0	20.6	17.1	19.0	18.8

Data Element	N or %	ST. JOHN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
No	%	60.0	77.2	68.4	78.5	76.0
Missing*	%	0	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	ST. JOHN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	33	1127	700	1914	3741
<18 months	%	15.2	24.3	18.0	19.5	20.7
≥18 months	%	48.5	39.8	48.3	51.9	47.6
Missing	%	36.4	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	33	1127	700	1914	3741
Yes	%	3.0	10.7	11.4	18.9	15.0
No	%	60.6	89.3	63.9	63.2	71.2
Not Known	%	36.4	0	18.6	14.9	11.1
Missing	%	0	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	33	1127	700	1914	3741
Yes	%	3.0	1.9	8.6	14.8	9.7
No	%	3.0	95.8	60.4	61.7	71.7
Not Known	%	93.9	0	24.7	19.2	14.5
Missing	%	0	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	39	2133	1433	3103	6669
Yes	%	5.1	0.5	1.3	1.5	1.1
No	%	51.3	99.5	74.2	84.4	87.0
Not Known	%	43.6	0	7.7	11.1	6.8
Missing	%	0	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	39	2133	1433	3103	6669
Yes	%	0	0	2.6	1.9	1.5
No	%	56.4	5.0	72.9	83.3	56.1
Not Known	%	43.6	0	7.7	11.1	6.8
Missing	%	0	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	39	2133	1433	3103	6669
Yes	%	12.8	0.5	6.0	9.5	5.9
No	%	46.2	99.5	66.7	77.4	82.2
Not Known	%	41	0	7.6	10.2	6.4
Missing	%	0	0	19.7	2.9	5.6

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	ST. JOHN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	39	2133	1433	3103	6669

Data Element	N or %	ST. JOHN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Yes	%	2.6	2.7	4.2	5.3	4.2
No	%	10.3	97.3	65.4	76.0	80.6
Not Known	%	87.2	0	10.3	15.9	9.6
Missing	%	0	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	39	2133	1433	3103	6669
Yes	%	17.9	1.3	7.8	7.7	5.7
No	%	41.0	98.7	62.6	74.8	79.8
Not Known	%	41.0	0	9.4	14.6	8.8
Missing	%	0	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	ST. JOHN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	0	2125	1103	2740	5968
Number of Babies Born	N	0	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	35	2133	1297	2826	6256
Yes	%	25.7	14.4	23.8	17.2	17.6
No	%	25.7	85.3	42.8	35.5	54.0
Not known	%	48.6	0	10.6	37.8	19.3
Missing	%	0	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	39	2133	1433	3103	6669
Vaginal delivery	%	38.5	87.3	49.1	52.0	62.7
C-Section	%	20.5	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	41.0	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	57.1	90.9	80.2	81.6	85.4
VBAC²⁴	N	–	90	161	418	669
Yes	%	–	30.0	19.9	13.9	17.5
Repeat C-Section	N	–	90	161	418	669
Yes	%	–	70.0	80.1	86.1	82.5
Scheduled C-Section	N	–	265	348	920	1533
Yes	%	–	0	39.1	29.2	26.4

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

²⁴ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	ST. JOHN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	27	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	–	112	131	461	704
	%	–	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	23	1994	823	1945	4762
	%	85.2	94.3	72.2	74.3	81.1
Missing	N	0	–	186	211	406
	%	0	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	27	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	–	75	147	412	634
	%	–	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	19	1810	993	2019	4822
	%	70.4	85.6	87.1	77.2	82.1
Missing	N	–	240	13	197	450
	%	–	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	ST. JOHN (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	54	1533	1416	4000	6949
Yes	%	9.3	86.4	64.7	61.5	67.7
No	%	5.6	7.4	9.5	25.6	18.3
Prefer not to answer	%	0	0.7	1.8	0.5	0.8
Missing	%	85.2	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	83.3	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	54	1533	1416	4000	6949
Yes	%	11.1	71.6	60.8	69.7	68.3
No	%	3.7	19.4	12.3	15.2	15.5
Unsure	%	0	2.8	2.4	1.8	2.1
Missing	%	85.2	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In January 2015, the evaluation team spoke with officials from the Michigan Department of Health and Human Services (MDHHS) to learn about the state’s willingness to and process for releasing state Medicaid and birth certificate data to the Urban Institute for the impact analysis of the Strong Start evaluation. In Michigan, both Medicaid and birth certificate data are housed under MDHHS, and thus we are working with one person within the agency who is coordinating our data request. Michigan is receptive to supporting the evaluation, and MDHHS staff plan to link the Medicaid and birth certificate

data. An application requesting Medicaid and birth certificate data was submitted to MDHHS in June 2015. The evaluation team is currently awaiting approval from MDHHS but hopes to begin receiving data in late 2015.

Texas Tech University Health Sciences Center

CASE STUDY

Texas Tech University Health Sciences Center (Texas Tech) is composed of health professions graduate schools and health care facilities affiliated with Texas Tech University in Lubbock, Texas. Initially, Texas Tech implemented the Maternity Care Home (MCH) approach using two community health workers (CHWs) in its large Pavilion OB clinic and a smaller neighborhood clinic, Grand Expectations. During the past year the awardee also implemented group prenatal care at its Larry Combest Community Health & Wellness Center (Combest Center), which just began offering prenatal services. At the time of evaluation Y2 data collection, there were about 145 active Strong Start participants, the vast majority in the MCH approach. Since implementation, there have been 362 total participants.

Highlights from the second round of case study data collection include:

- One of the program's two CHWs left and was later replaced; enrollment slowed during the transition.
- To help relieve significant administrative burdens on the CHWs (which had infringed on their time spent with participants), a new data collector was recently hired to complete and enter Strong Start evaluation Exit forms.
- The awardee has employed multiple strategies to address low enrollment. Both CHWs now attend the OB clinic every Friday (which is devoted to new OB visits), and they screen every new patient for Strong Start eligibility.
- Referrals from clinic nurses have grown as relationships between Strong Start staff and clinic staff improved through frequent interaction, deliberate re-engagement with the Grand Expectations nurse practitioner, and gift cards for clinic nurses who refer the most women to Strong Start.
- Texas Tech modified its Strong Start eligibility criteria, including by eliminating the requirement for an additional preterm risk factor (Medicaid/CHIP eligibility alone is sufficient) and shifting the gestational age cutoff from 20 weeks to 28 weeks. In rare cases, the maternity care home sites may enroll a patient with gestational age up to 36 weeks; such patients receive very frequent visits for the remainder of their pregnancy (once or twice weekly).
- The awardee is reaching out to other providers in Lubbock to increase referral sources, but is finding that having different electronic medical record systems is a barrier to referrals.
- The CHWs continue to provide health education and social service referrals. They have increased phone contact and texting with participants to improve retention, resulting in an

increase in total encounters (clinic visits, phone, home visits), from three to between six and ten on average.

- Texas Tech has expanded use of the Strong Start database developed specifically for the program; staff now use the database to track and review enrollment and service delivery progress on a weekly basis, promoting accountability.
- Group prenatal care enrollment has been slow and groups are small in size; the first group cohort included eight women, the second group involved seven, and a group being formed at the time of data collection had just three participants (with more expected).
- The awardee is working to increase enrollment (through the above strategies), and reduced the initial enrollment target, described now as “unrealistic.”
- Key informants perceive that Strong Start enhanced services have helped Texas Tech patients—particularly those who are young or who have many risk factors—meet critical needs (e.g., food, housing, jobs) and learn how to better manage their lives.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, Texas Tech University Health Sciences had Intake Forms for 80 percent of participants enrolled through Quarter 1 2015 (302 Intake Forms for 380 participants). In addition, Texas Tech University Health Sciences submitted 116 Third Trimester Surveys, 73 Postpartum Surveys, but no Exit Forms. The tables below present data collected on Texas Tech University Health Sciences’ participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	TTU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	90	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	380	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	164	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	302	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	79.5	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	116	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	70.7	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	73	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	44.5	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	+	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	+	93.8	52.0	50.1	59.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.
Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	TTU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother’s Age at Intake	N	302	2993	4401	11761	19155
Less than 18 years of age	%	1.3	3.4	6.7	5.8	5.6
18 through 34 years of age	%	40.1	86.1	75.0	81.4	80.7
35 years and older	%	2.6	6.2	4.9	6.0	5.8
Missing	%	56.0	4.3	13.4	6.8	7.9
Race and Ethnicity	N	302	2993	4401	11761	19155
Hispanic	%	54.6	25.7	39.2	22.9	27.1
Non-Hispanic white	%	24.5	53.3	13.7	26.2	27.6
Non-Hispanic black	%	13.2	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0.3	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	0.7	3.6	2.3	1.2	1.8
Missing	%	6.6	0.9	2.8	1.5	1.7
Employed at Intake	N	302	2993	4401	11761	19155
Yes	%	38.1	39.7	34.6	38.8	38.0
No	%	54.6	59.1	60.9	60.0	60.0
Missing	%	7.3	1.2	4.5	1.2	2.0
Education Level at Intake	N	302	2993	4401	11761	19155
Less than high school	%	22.5	14.3	23.7	24.5	22.7
High school graduate or GED	%	41.4	52.3	46.2	52.0	50.7
Bachelor’s degree	%	1.0	10.1	3.1	2.5	3.9
Other college degree(s)	%	6.6	12.7	7.2	6.0	7.3
Missing	%	28.5	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	302	2993	4401	11761	19155
Married, living with spouse	%	14.6	40.7	18.6	17.2	21.2
Married, not living with spouse	%	1.3	1.7	2.1	1.9	1.9
Living with a partner	%	37.7	32.2	31.3	30.6	31.0
In a relationship but not living together	%	20.5	12.9	24.6	30.5	26.4
Not in a relationship right now	%	21.5	11.1	17.0	17.8	16.6
Missing	%	4.3	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	302	2993	4401	11761	19155
Yes	%	13.2	10.1	7.8	14.1	12.0
No	%	70.9	77.1	71.7	77.8	76.3
Missing	%	15.9	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	302	2993	4401	11761	19155
Yes	%	17.9	18.1	18.5	16.1	16.9
No	%	56.6	76.9	61.4	76.2	72.9
Missing*	%	25.5	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	302	2993	4401	11761	19155
Yes	%	23.2	21.8	25.2	23.4	23.5
No	%	50.3	69.3	57.0	69.3	66.4
Missing*	%	26.5	9.0	17.9	7.3	10.0

Data Element	N or %	TTU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Have Experienced Intimate Partner Violence in a Relationship***	N	302	2993	4401	11761	19155
Yes	%	19.2	20.6	17.1	19.0	18.8
No	%	64.9	77.2	68.4	78.5	76.0
Missing*	%	15.9	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	TTU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	+	1127	700	1914	3741
<18 months	%	+	24.3	18.0	19.5	20.7
≥18 months	%	+	39.8	48.3	51.9	47.6
Missing	%	+	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	+	1127	700	1914	3741
Yes	%	+	10.7	11.4	18.9	15.0
No	%	+	89.3	63.9	63.2	71.2
Not Known	%	+	0	18.6	14.9	11.1
Missing	%	+	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	+	1127	700	1914	3741
Yes	%	+	1.9	8.6	14.8	9.7
No	%	+	95.8	60.4	61.7	71.7
Not Known	%	+	0	24.7	19.2	14.5
Missing	%	+	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	0.5	1.3	1.5	1.1
No	%	+	99.5	74.2	84.4	87.0
Not Known	%	+	0	7.7	11.1	6.8
Missing	%	+	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	0	2.6	1.9	1.5
No	%	+	5.0	72.9	83.3	56.1
Not Known	%	+	0	7.7	11.1	6.8
Missing	%	+	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	+	2133	1433	3103	6669
Yes	%	+	0.5	6.0	9.5	5.9
No	%	+	99.5	66.7	77.4	82.2
Not Known	%	+	0	7.6	10.2	6.4
Missing	%	+	0	19.7	2.9	5.6

Notes: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	TTU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	2.7	4.2	5.3	4.2
No	%	+	97.3	65.4	76.0	80.6
Not Known	%	+	0	10.3	15.9	9.6
Missing	%	+	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	+	2133	1433	3103	6669
Yes	%	+	1.3	7.8	7.7	5.7
No	%	+	98.7	62.6	74.8	79.8
Not Known	%	+	0	9.4	14.6	8.8
Missing	%	+	0	20.2	2.9	5.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	TTU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	+	2125	1103	2740	5968
Number of Babies Born	N	+	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	+	2133	1297	2826	6256
Yes	%	+	14.4	23.8	17.2	17.6
No	%	+	85.3	42.8	35.5	54.0
Not known	%	+	0	10.6	37.8	19.3
Missing	%	+	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	+	2133	1433	3103	6669
Vaginal delivery	%	+	87.3	49.1	52.0	62.7
C-Section	%	+	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	+	0	0	0	0
Missing	%	+	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	+	90.9	80.2	81.6	85.4
VBAC²⁵	N	+	90	161	418	669
Yes	%	+	30.0	19.9	13.9	17.5
Repeat C-Section	N	+	90	161	418	669
Yes	%	+	70.0	80.1	86.1	82.5
Scheduled C-Section	N	+	265	348	920	1533
Yes	%	+	0	39.1	29.2	26.4

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

²⁵ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	TTU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	+	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	+	112	131	461	704
	%	+	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	+	1994	823	1945	4762
	%	+	94.3	72.2	74.3	81.1
Missing	N	+	–	186	211	406
	%	+	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	+	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	+	75	147	412	634
	%	+	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	+	1810	993	2019	4822
	%	+	85.6	87.1	77.2	82.1
Missing	N	+	240	13	197	450
	%	+	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period. Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	TTU (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	73	1533	1416	4000	6949
Yes	%	58.9	86.4	64.7	61.5	67.7
No	%	38.4	7.4	9.5	25.6	18.3
Prefer not to answer	%	1.4	0.7	1.8	0.5	0.8
Missing	%	1.4	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	90.8	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	73	1533	1416	4000	6949
Yes	%	78.1	71.6	60.8	69.7	68.3
No	%	19.2	19.4	12.3	15.2	15.5
Unsure	%	0	2.8	2.4	1.8	2.1
Missing	%	2.7	6.2	24.5	13.3	14

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

The Texas Health and Human Services Commission (HHSC) was receptive to supporting the Strong Start Evaluation when introduced to the project in March of 2015. HHSC has had previous experience in creating linked data files that employ birth certificate and Medicaid data but identified the linking of birth certificate data for infants with their respective mothers as a challenge. In April of 2015, administrators at HHSC introduced the Strong Start Evaluation to the Texas Department of State Health

Services (DSHS), who agreed to assist with the linking of Strong Start participant and comparison group demographic information with infant birth certificate data and then merge these data with Medicaid eligibility and claims data to be furnished by HHSC. After some deliberation between HHSC and DSHS we received notice that we would need to submit applications to the Department of State Health Services' Institutional Review Board and Committee on Requests for Personal Data. The submitted applications must also be approved by HHSC. The evaluation team has decided to seek comparable data from the Texas Children's Health Insurance Program and is pursuing the request for this additional data

United Neighborhood Health Services

CASE STUDY

United Neighborhood Health Services (United) is a Federally Qualified Health Center (FQHC) operating 11 clinics in Davidson County, Tennessee and the surrounding area. Eight of the United clinics provide prenatal care. At the time of evaluation Y2 data collection, United was implementing the Strong Start maternity care home approach at seven of its clinics in Davidson County, primarily in Nashville. A total of 588 women were ever enrolled in Strong Start at United as of March 2015.

Highlights from the second round of case study data collection include:

- Key informants consider their Strong Start program a success, citing growing enrollment; improvements in implementation; positive changes in birth outcomes; and satisfaction among enrollees, staff and providers.
- Strong Start enrollees continue to receive a minimum of three prenatal encounters with a health coach (coordinated with patients' prenatal care visits) and a postpartum encounter conducted either in the clinic or at the patient's home.
- United made changes to its Strong Start leadership team in late 2014, transitioning the role of project director to two staff members who divide responsibilities for clinical and administrative coordination.
- One site left Strong Start in Y2 because of low enrollment, reducing the number of sites to seven.
- United used Strong Start supplemental funding to add several staff to the program team, including a third health coach who is bilingual, two data specialists, and an interpreter who works with the health coaches.
- United also changed its approach of care in January 2015 so that prenatal patients receive continuous prenatal care in the clinic up until delivery (instead of being transferred at 28 to 32 weeks) and give birth attended by hospitalist residents at a single partner hospital. Key informants reported that the change has enabled longer-lasting relationships with the health coaches and has led to a nearly 25 percent increase in rates of postpartum visit attendance and newborns receiving postpartum care. A shared electronic health record (EHR) implemented in January 2015 facilitates smooth patient transfers between United and the delivering hospital.
- The awardee continues to focus on maintaining robust enrollment. United currently enrolls approximately 58 women per month, double the average monthly enrollment at the time of the Y1 evaluation site visit in August 2014.

- Health coaches have become more engaged in outreach and enrollment, and now enroll patients into Strong Start when they first visit the clinic for a pregnancy test as opposed to waiting for physician referrals or conducting enrollment at the first OB visit.
- United made some modifications to Strong Start eligibility criteria. Pregnant women who are eligible for Medicaid or CHIP can now enroll in Strong Start, and no additional preterm risk factor is required. In addition, the program's gestational age cutoff was raised to 28 weeks in evaluation Y1, but was reportedly reduced to 24 weeks again in Y2.
- Key informants credit Strong Start with improvements in a number of maternal and infant health outcomes including reductions in the rate of miscarriages, preterm births, and low birth weight. They also noted improvements in psychosocial health as a result of the extra support Strong Start participants receive from health coaches.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, United Neighborhood Health Services had Intake Forms for 92 percent of participants enrolled through Quarter 1 2015 (541 Intake Forms for 588 participants). In addition, United Neighborhood Health Services submitted 223 Third Trimester Surveys, 157 Postpartum Surveys, and 288 Exit Forms. The tables below present data collected on United Neighborhood Health Services' participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	UNITED (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	127	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	588	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	229	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	541	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	92.0	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	223	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	97.4	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	157	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	68.6	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	288	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	125.8	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	UNITED (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	541	2993	4401	11761	19155
Less than 18 years of age	%	5.0	3.4	6.7	5.8	5.6
18 through 34 years of age	%	86.3	86.1	75	81.4	80.7
35 years and older	%	8.3	6.2	4.9	6.0	5.8
Missing	%	0.4	4.3	13.4	6.8	7.9
Race and Ethnicity	N	541	2993	4401	11761	19155
Hispanic	%	49.9	25.7	39.2	22.9	27.1
Non-Hispanic white	%	11.8	53.3	13.7	26.2	27.6
Non-Hispanic black	%	33.6	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0.9	1.1	1.2	1.2	1.2
Non-Hispanic other	%	1.1	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	0	3.6	2.3	1.2	1.8
Missing	%	2.6	0.9	2.8	1.5	1.7
Employed at Intake	N	541	2993	4401	11761	19155
Yes	%	36.0	39.7	34.6	38.8	38.0
No	%	63.2	59.1	60.9	60.0	60.0
Missing	%	0.7	1.2	4.5	1.2	2.0
Education Level at Intake	N	541	2993	4401	11761	19155
Less than high school	%	28.8	14.3	23.7	24.5	22.7
High school graduate or GED	%	39.6	52.3	46.2	52	50.7
Bachelor's degree	%	1.8	10.1	3.1	2.5	3.9
Other college degree(s)	%	2.5	12.7	7.2	6.0	7.3
Missing	%	27.2	10.7	19.8	15	15.4
Relationship Status at Intake	N	541	2993	4401	11761	19155
Married, living with spouse	%	28.7	40.7	18.6	17.2	21.2
Married, not living with spouse	%	0.7	1.7	2.1	1.9	1.9
Living with a partner	%	33.5	32.2	31.3	30.6	31.0
In a relationship but not living together	%	22.6	12.9	24.6	30.5	26.4
Not in a relationship right now	%	12.9	11.1	17.0	17.8	16.6
Missing	%	1.7	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	541	2993	4401	11761	19155
Yes	%	11.6	10.1	7.8	14.1	12.0
No	%	84.1	77.1	71.7	77.8	76.3
Missing	%	4.3	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	541	2993	4401	11761	19155
Yes	%	14.0	18.1	18.5	16.1	16.9
No	%	76.3	76.9	61.4	76.2	72.9
Missing*	%	9.6	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	541	2993	4401	11761	19155
Yes	%	17.2	21.8	25.2	23.4	23.5
No	%	74.3	69.3	57.0	69.3	66.4
Missing*	%	8.5	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	541	2993	4401	11761	19155

Data Element	N or %	UNITED (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Yes	%	16.3	20.6	17.1	19.0	18.8
No	%	78.0	77.2	68.4	78.5	76.0
Missing*	%	5.7	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	UNITED (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	208	1127	700	1914	3741
<18 months	%	15.4	24.3	18.0	19.5	20.7
≥18 months	%	68.3	39.8	48.3	51.9	47.6
Missing	%	16.3	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	208	1127	700	1914	3741
Yes	%	12.0	10.7	11.4	18.9	15.0
No	%	74.5	89.3	63.9	63.2	71.2
Not Known	%	12.0	0	18.6	14.9	11.1
Missing	%	1.4	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	208	1127	700	1914	3741
Yes	%	12.0	1.9	8.6	14.8	9.7
No	%	71.6	95.8	60.4	61.7	71.7
Not Known	%	15.4	0	24.7	19.2	14.5
Missing	%	1.0	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	288	2133	1433	3103	6669
Yes	%	0.3	0.5	1.3	1.5	1.1
No	%	93.4	99.5	74.2	84.4	87.0
Not Known	%	5.9	0	7.7	11.1	6.8
Missing	%	0.3	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	288	2133	1433	3103	6669
Yes	%	2.4	0	2.6	1.9	1.5
No	%	91.3	5	72.9	83.3	56.1
Not Known	%	5.9	0	7.7	11.1	6.8
Missing	%	0.3	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	288	2133	1433	3103	6669
Yes	%	6.9	0.5	6.0	9.5	5.9
No	%	87.8	99.5	66.7	77.4	82.2
Not Known	%	4.9	0	7.6	10.2	6.4
Missing	%	0.3	0	19.7	2.9	5.6

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	UNITED (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	288	2133	1433	3103	6669
Yes	%	5.6	2.7	4.2	5.3	4.2
No	%	77.1	97.3	65.4	76.0	80.6
Not Known	%	17.4	0	10.3	15.9	9.6
Missing	%	0	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	288	2133	1433	3103	6669
Yes	%	3.1	1.3	7.8	7.7	5.7
No	%	79.2	98.7	62.6	74.8	79.8
Not Known	%	17.7	0	9.4	14.6	8.8
Missing	%	0	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	UNITED (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	280	2125	1103	2740	5968
Number of Babies Born	N	284	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	262	2133	1297	2826	6256
Yes	%	13.7	14.4	23.8	17.2	17.6
No	%	29.0	85.3	42.8	35.5	54.0
Not known	%	48.9	0	10.6	37.8	19.3
Missing	%	8.4	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	288	2133	1433	3103	6669
Vaginal delivery	%	50.0	87.3	49.1	52.0	62.7
C-Section	%	25.0	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	25.0	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	79.9	90.9	80.2	81.6	85.4
VBAC²⁶	N	46	90	161	418	669
Yes	%	13.0	30.0	19.9	13.9	17.5
Repeat C-Section	N	46	90	161	418	669
Yes	%	87.0	70.0	80.1	86.1	82.5
Scheduled C-Section	N	72	265	348	920	1533
Yes	%	36.1	0	39.1	29.2	26.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

²⁶ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	UNITED (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	218	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	31	112	131	461	704
	%	14.2	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	184	1994	823	1945	4762
	%	84.4	94.3	72.2	74.3	81.1
Missing	N	–	–	186	211	406
	%	–	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	218	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	26	75	147	412	634
	%	11.9	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	185	1810	993	2019	4822
	%	84.9	85.6	87.1	77.2	82.1
Missing	N	–	240	13	197	450
	%	–	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	UNITED (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	157	1533	1416	4000	6949
Yes	%	70.7	86.4	64.7	61.5	67.7
No	%	15.3	7.4	9.5	25.6	18.3
Prefer not to answer	%	0.6	0.7	1.8	0.5	0.8
Missing	%	13.4	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	102.5	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	157	1533	1416	4000	6949
Yes	%	70.7	71.6	60.8	69.7	68.3
No	%	8.3	19.4	12.3	15.2	15.5
Unsure	%	3.2	2.8	2.4	1.8	2.1
Missing	%	17.8	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In April 2015, the evaluation team spoke with the Division of Policy, Planning, and Assessment within the Tennessee Department of Health to learn about the state’s willingness to and process for releasing state Medicaid and birth certificate data to the Urban Institute for the impact analysis of the Strong Start evaluation. State officials were very receptive to supporting the evaluation, and the Office of Vital Records said that it would be able to link Medicaid and birth certificate data on our behalf. The

evaluation team submitted a data request form to the Office of Vital Records in June 2015, and is in the process of submitting materials to the state's Institutional Review Board (IRB). Additionally, the evaluation team is in the process of completing the application for Medicaid and CHIP data, which are overseen by TennCare.

University of Alabama at Birmingham

CASE STUDY

The University of Alabama at Birmingham (UAB) Department of Maternal and Fetal Medicine has implemented a maternity care home approach under Strong Start, with a focus on identifying depression, making referrals, offering education, and providing enhanced nutritional support. In the second year of the program, two UAB sites merged and relocated to a newly-constructed clinic, reducing the number of Strong Start sites from four to three. Currently, two sites are housed within county health department space (with Strong Start staffing by UAB employees) and the third, the Obstetrics Complications Clinic, is part of the UAB campus and serves as the primary site of referrals for high risk pregnancies in Alabama. UAB has enrolled 675 Strong Start participants since implementation.

Highlights from the second round of case study data collection include:

- UAB hired a second nurse practitioner in April 2015. She works at the Obstetrics Complications Clinic and shares responsibilities for recruitment and enrollment with the program's other Clinical Research Nurse, who splits her time between clinics.
- UAB continues to use the same eligibility criteria as in Y1 (up to 26 weeks gestation, eligible for Medicaid, and possessing at least one additional preterm risk factor), but is now recruiting women with pending Medicaid applications rather than waiting until the Medicaid applications are approved.
- The awardee continues to use an opt-in enrollment approach to meet the University Institutional Review Board's requirements for informed consent. Key informants reported that around 73 percent of eligible patients choose to participate in the program.
- Rather than using a full depression screening instrument at intake, the Strong Start nurses now prescreen women using the depression-related questions on the Strong Start intake form, and if indicated, refer women to a social worker for a full depression screening.
- As a result of low participation in group educational sessions during the program's first year, Strong Start staff created a series of educational videos that patients can access from home or on a smartphone using an individual log-in ID. The videos address nutrition, contraception, early child care, and other topics. Staff are disappointed, however, that very few women have accessed the videos to date. On a few occasions, program staff have played the videos during Strong Start encounters but remarked that there is often not enough time for this, particularly given the lengthy intake process.
- The nurses and project director have taken on more responsibility for Strong Start data collection because other UAB staff did not complete the forms consistently. Key informants reported that the paperwork continues to be time-consuming, which prevents the awardee from enrolling as many women as are eligible.

- Key informants felt that higher-need participants could benefit from more follow up than they are able to provide with program resources but have otherwise received positive feedback about the program from participants.
- Program strengths include identifying and referring women to mental health services and providing preventive, pre-diabetic dietitian services.
- In the month after the second nurse was hired, enrollment at the three UAB sites increased from an average of 27 women per month to 50 women per month. Key informants expect to reach their goal of 55-60 per month because of the additional nurse.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, University of Alabama at Birmingham had Intake Forms for 81 percent of participants enrolled through Quarter 1 2015 (456 Intake Forms for 563 participants). In addition, University of Alabama at Birmingham submitted 210 Third Trimester Surveys, 213 Postpartum Surveys, and 146 Exit Forms. The tables below present data collected on University of Alabama at Birmingham's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	UAB (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	78	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	563	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	394	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	456	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	81.0	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	210	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	53.3	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	213	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	54.1	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	146	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	37.1	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	UAB (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	456	2993	4401	11761	19155
Less than 18 years of age	%	5.9	3.4	6.7	5.8	5.6

Data Element	N or %	UAB (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
18 through 34 years of age	%	88.4	86.1	75	81.4	80.7
35 years and older	%	4.4	6.2	4.9	6.0	5.8
Missing	%	1.3	4.3	13.4	6.8	7.9
Race and Ethnicity	N	456	2993	4401	11761	19155
Hispanic	%	2.6	25.7	39.2	22.9	27.1
Non-Hispanic white	%	16.2	53.3	13.7	26.2	27.6
Non-Hispanic black	%	80.5	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0.2	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	0.4	3.6	2.3	1.2	1.8
Missing	%	0	0.9	2.8	1.5	1.7
Employed at Intake	N	456	2993	4401	11761	19155
Yes	%	37.9	39.7	34.6	38.8	38
No	%	61.8	59.1	60.9	60.0	60.0
Missing	%	0.2	1.2	4.5	1.2	2.0
Education Level at Intake	N	456	2993	4401	11761	19155
Less than high school	%	26.5	14.3	23.7	24.5	22.7
High school graduate or GED	%	56.4	52.3	46.2	52.0	50.7
Bachelor's degree	%	2.4	10.1	3.1	2.5	3.9
Other college degree(s)	%	5.7	12.7	7.2	6.0	7.3
Missing	%	9.0	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	456	2993	4401	11761	19155
Married, living with spouse	%	10.5	40.7	18.6	17.2	21.2
Married, not living with spouse	%	1.5	1.7	2.1	1.9	1.9
Living with a partner	%	23.9	32.2	31.3	30.6	31.0
In a relationship but not living together	%	41.4	12.9	24.6	30.5	26.4
Not in a relationship right now	%	21.5	11.1	17	17.8	16.6
Missing	%	1.1	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	456	2993	4401	11761	19155
Yes	%	18.2	10.1	7.8	14.1	12.0
No	%	80.7	77.1	71.7	77.8	76.3
Missing	%	1.1	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	456	2993	4401	11761	19155
Yes	%	30.7	18.1	18.5	16.1	16.9
No	%	65.4	76.9	61.4	76.2	72.9
Missing*	%	3.9	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	456	2993	4401	11761	19155
Yes	%	45.8	21.8	25.2	23.4	23.5
No	%	43.2	69.3	57.0	69.3	66.4
Missing*	%	11	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	456	2993	4401	11761	19155
Yes	%	24.1	20.6	17.1	19	18.8
No	%	75.4	77.2	68.4	78.5	76.0
Missing*	%	0.4	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.
Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.
Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.
Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	UAB (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	78	1127	700	1914	3741
<18 months	%	17.9	24.3	18.0	19.5	20.7
≥18 months	%	62.8	39.8	48.3	51.9	47.6
Missing	%	19.2	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	78	1127	700	1914	3741
Yes	%	34.6	10.7	11.4	18.9	15.0
No	%	62.8	89.3	63.9	63.2	71.2
Not Known	%	0	0	18.6	14.9	11.1
Missing	%	2.6	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	78	1127	700	1914	3741
Yes	%	28.2	1.9	8.6	14.8	9.7
No	%	67.9	95.8	60.4	61.7	71.7
Not Known	%	1.3	0	24.7	19.2	14.5
Missing	%	2.6	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	146	2133	1433	3103	6669
Yes	%	4.1	0.5	1.3	1.5	1.1
No	%	94.5	99.5	74.2	84.4	87
Not Known	%	0	0	7.7	11.1	6.8
Missing	%	1.4	0	16.7	3.1	5
Pre-Pregnancy Diagnosis of Type II Diabetes	N	146	2133	1433	3103	6669
Yes	%	7.5	0	2.6	1.9	1.5
No	%	91.1	5	72.9	83.3	56.1
Not Known	%	0	0	7.7	11.1	6.8
Missing	%	1.4	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	146	2133	1433	3103	6669
Yes	%	16.4	0.5	6	9.5	5.9
No	%	81.5	99.5	66.7	77.4	82.2
Not Known	%	0	0	7.6	10.2	6.4
Missing	%	2.1	0	19.7	2.9	5.6

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	UAB (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	146	2133	1433	3103	6669
Yes	%	3.4	2.7	4.2	5.3	4.2
No	%	92.5	97.3	65.4	76	80.6
Not Known	%	3.4	0	10.3	15.9	9.6
Missing	%	0.7	0	20.1	2.8	5.6

Data Element	N or %	UAB (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Pregnancy-Related Hypertension	N	146	2133	1433	3103	6669
Yes	%	5.5	1.3	7.8	7.7	5.7
No	%	89	98.7	62.6	74.8	79.8
Not Known	%	4.8	0	9.4	14.6	8.8
Missing	%	0.7	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	UAB (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	132	2125	1103	2740	5968
Number of Babies Born	N	138	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	132	2133	1297	2826	6256
Yes	%	39.4	14.4	23.8	17.2	17.6
No	%	51.5	85.3	42.8	35.5	54
Not known	%	1.5	0	10.6	37.8	19.3
Missing	%	7.6	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	146	2133	1433	3103	6669
Vaginal delivery	%	63.7	87.3	49.1	52.0	62.7
C-Section	%	25.0	12.4	24.3	29.6	23
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	6.8	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	80.0	90.9	80.2	81.6	85.4
VBAC²⁷	N	23	90	161	418	669
Yes	%	26.1	30.0	19.9	13.9	17.5
Repeat C-Section	N	23	90	161	418	669
Yes	%	73.9	70.0	80.1	86.1	82.5
Scheduled C-Section	N	43	265	348	920	1533
Yes	%	32.6	0	39.1	29.2	26.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	UAB (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live by Estimated Gestational Birth (EGA)	N	133	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	27	112	131	461	704
	%	20.3	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	105	1994	823	1945	4762
	%	78.9	94.3	72.2	74.3	81.1

²⁷ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Data Element	N or %	UAB (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Missing	N	–	–	186	211	406
	%	–	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	133	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	32	75	147	412	634
	%	24.1	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	101	1810	993	2019	4822
	%	75.9	85.6	87.1	77.2	82.1
Missing	N	–	240	13	197	450
	%	–	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.
Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.
Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	UAB (Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	213	1533	1416	4000	6949
Yes	%	70.0	86.4	64.7	61.5	67.7
No	%	23.9	7.4	9.5	25.6	18.3
Prefer not to answer	%	0	0.7	1.8	0.5	0.8
Missing	%	6.1	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	102.5	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	213	1533	1416	4000	6949
Yes	%	91.1	71.6	60.8	69.7	68.3
No	%	1.9	19.4	12.3	15.2	15.5
Unsure	%	0.9	2.8	2.4	1.8	2.1
Missing	%	6.1	6.2	24.5	13.3	14

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In March 2015, the evaluation team spoke with officials from the Alabama Medicaid Agency and the Alabama Department of Public Health (ADPH) to learn about the state’s willingness to and process for releasing state Medicaid and birth certificate data (respectively) to the Urban Institute for the impact analysis of the Strong Start evaluation. State officials were receptive to supporting the evaluation, but said that they would prefer having the Urban Institute link the Medicaid and birth certificate data. In June 2015, the evaluation team received approval from the Alabama Medicaid Agency. A data request application was submitted to ADPH in April 2015, and we are currently awaiting approval from ADPH. The team hopes to begin receiving data in late 2015.

University of Kentucky Research Foundation

CASE STUDY

The University of Kentucky Research Foundation (UKRF) is affiliated with the academic medical center at the University of Kentucky (UK) and is responsible for managing all external grants and contracts at the university. UKRF is implementing group prenatal care with the CenteringPregnancy model at five sites across the state, and at the time of Y2 data collection had enrolled 551 women in Strong Start. Overall, informants were pleased with Strong Start implementation over the last year.

Highlights from the second round of case study data collection include:

- The number of Strong Start sites has grown from four sites in evaluation Y1 to five in Y2. One site withdrew from Strong Start because of increased enrollment expectations and staff turnover, but two new sites affiliated with a local health department located south of Lexington are now part of the program. The site that withdrew continues to offer group prenatal care.
- The Polk Dalton site implemented a new EMPOWR (Efforts to Maximize Perinatal Outcomes in Women at Risk) group targeting pregnant women with substance abuse issues, using a group care approach that differs significantly from the Centering curriculum. Women meet every two weeks for group prenatal care, at which time they also receive prescription treatment for opioid addiction. Thus far, both providers and patients have been very responsive to and engaged in the group.
- Though enrollment continues to be a challenge, it has increased considerably from 121 participants at the end of the first program year to 380 participants a year later. The expansion of gestational age criteria in June 2014 (with a new cutoff of 30 weeks gestation) has led to a slight increase in enrollment, however only a small proportion of patients are enrolled in their third trimester. A significant proportion of women continue to decline participation in Strong Start at several sites, most often because of child care issues.
- UKRF is placing additional emphasis on increasing enrollment. The awardee has developed new site-specific enrollment targets based on the percentage of Medicaid participants receiving care before 26 weeks at each site. Key informants feel these are “more realistic” than the initial targets. In addition, UKRF has increased its outreach efforts to bring more attention to the group prenatal care approach and increase referrals to participating sites.
- UKRF has adopted several strategies to improve retention, particularly between the screening and enrollment process and the first group session, which can be weeks or even months apart. The awardee is beginning a pre-group meeting at the local health department to re-familiarize

participants with the program before it begins, and site-level staff continue to rely heavily on text messaging as a way to improve group attendance and retention.

- Key informants are pleased with program outcomes thus far, which include rates of preterm birth that are lower than state and national averages and improvements in breastfeeding rates, glucose control, and smoking cessation. Strong Start participants reportedly enjoy the group sessions and benefit from the additional support of their peers and the facilitators.
- Awardee staff has begun to discuss sustainability of the Strong Start approach with participating sites, which have expressed interest in continuing the group prenatal care approach.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, University of Kentucky Research Foundation had Intake Forms for 100.8 percent of participants enrolled through Quarter 1 2015 (391 Intake Forms for 388 participants). In addition, University of Kentucky Research Foundation submitted 170 Third Trimester Surveys, 95 Postpartum Surveys, but no Exit Forms. The tables below present data collected on University of Kentucky Research Foundation's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	UKY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	85	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	388	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	211	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	391	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	100.8	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	170	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	80.6	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	95	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	45.0	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	+	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	+	93.8	52.0	50.1	59.4

Notes: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	UKY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	391	2993	4401	11761	19155
Less than 18 years of age	%	5.1	3.4	6.7	5.8	5.6
18 through 34 years of age	%	85.2	86.1	75	81.4	80.7
35 years and older	%	4.9	6.2	4.9	6.0	5.8
Missing	%	4.9	4.3	13.4	6.8	7.9
Race and Ethnicity	N	391	2993	4401	11761	19155
Hispanic	%	32.2	25.7	39.2	22.9	27.1
Non-Hispanic white	%	43.2	53.3	13.7	26.2	27.6
Non-Hispanic black	%	14.3	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	1.0	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	3.6	3.6	2.3	1.2	1.8
Missing	%	5.6	0.9	2.8	1.5	1.7
Employed at Intake	N	391	2993	4401	11761	19155
Yes	%	34.8	39.7	34.6	38.8	38.0
No	%	59.8	59.1	60.9	60.0	60.0
Missing	%	5.4	1.2	4.5	1.2	2.0
Education Level at Intake	N	391	2993	4401	11761	19155
Less than high school	%	0	14.3	23.7	24.5	22.7
High school graduate or GED	%	47.3	52.3	46.2	52.0	50.7
Bachelor's degree	%	3.6	10.1	3.1	2.5	3.9
Other college degree(s)	%	6.9	12.7	7.2	6.0	7.3
Missing	%	42.2	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	391	2993	4401	11761	19155
Married, living with spouse	%	31.2	40.7	18.6	17.2	21.2
Married, not living with spouse	%	0.8	1.7	2.1	1.9	1.9
Living with a partner	%	36.1	32.2	31.3	30.6	31.0
In a relationship but not living together	%	15.1	12.9	24.6	30.5	26.4
Not in a relationship right now	%	11.3	11.1	17.0	17.8	16.6
Missing	%	5.6	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	391	2993	4401	11761	19155
Yes	%	25.3	10.1	7.8	14.1	12.0
No	%	74.7	77.1	71.7	77.8	76.3
Missing	%	0	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	391	2993	4401	11761	19155
Yes	%	9.5	18.1	18.5	16.1	16.9
No	%	0	76.9	61.4	76.2	72.9
Missing*	%	90.5	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	391	2993	4401	11761	19155
Yes	%	28.6	21.8	25.2	23.4	23.5
No	%	53.2	69.3	57.0	69.3	66.4
Missing*	%	18.2	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	391	2993	4401	11761	19155
Yes	%	12.8	20.6	17.1	19	18.8

Data Element	N or %	UKY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
No	%	0	77.2	68.4	78.5	76
Missing*	%	87.2	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	UKY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	+	1127	700	1914	3741
<18 months	%	+	24.3	18	19.5	20.7
≥18 months	%	+	39.8	48.3	51.9	47.6
Missing	%	+	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	+	1127	700	1914	3741
Yes	%	+	10.7	11.4	18.9	15
No	%	+	89.3	63.9	63.2	71.2
Not Known	%	+	0	18.6	14.9	11.1
Missing	%	+	0	6.1	3	2.7
Previous Birth(s) Less than 2,500 grams	N	+	1127	700	1914	3741
Yes	%	+	1.9	8.6	14.8	9.7
No	%	+	95.8	60.4	61.7	71.7
Not Known	%	+	0	24.7	19.2	14.5
Missing	%	+	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	0.5	1.3	1.5	1.1
No	%	+	99.5	74.2	84.4	87
Not Known	%	+	0	7.7	11.1	6.8
Missing	%	+	0	16.7	3.1	5
Pre-Pregnancy Diagnosis of Type II Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	0	2.6	1.9	1.5
No	%	+	5	72.9	83.3	56.1
Not Known	%	+	0	7.7	11.1	6.8
Missing	%	+	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	+	2133	1433	3103	6669
Yes	%	+	0.5	6	9.5	5.9
No	%	+	99.5	66.7	77.4	82.2
Not Known	%	+	0	7.6	10.2	6.4
Missing	%	+	0	19.7	2.9	5.6

Notes: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	UKY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	2.7	4.2	5.3	4.2
No	%	+	97.3	65.4	76.0	80.6
Not Known	%	+	0	10.3	15.9	9.6
Missing	%	+	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	+	2133	1433	3103	6669
Yes	%	+	1.3	7.8	7.7	5.7
No	%	+	98.7	62.6	74.8	79.8
Not Known	%	+	0	9.4	14.6	8.8
Missing	%	+	0	20.2	2.9	5.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	UKY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	+	2125	1103	2740	5968
Number of Babies Born	N	+	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	+	2133	1297	2826	6256
Yes	%	+	14.4	23.8	17.2	17.6
No	%	+	85.3	42.8	35.5	54.0
Not known	%	+	0	10.6	37.8	19.3
Missing	%	+	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	+	2133	1433	3103	6669
Vaginal delivery	%	+	87.3	49.1	52.0	62.7
C-Section	%	+	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	+	0	0	0	0
Missing	%	+	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	+	90.9	80.2	81.6	85.4
VBAC²⁸	N	+	90	161	418	669
Yes	%	+	30.0	19.9	13.9	17.5
Repeat C-Section	N	+	90	161	418	669
Yes	%	+	70.0	80.1	86.1	82.5
Scheduled C-Section	N	+	265	348	920	1533
Yes	%	+	0	39.1	29.2	26.4

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

²⁸ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	UKY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	+	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	+	112	131	461	704
	%	+	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	+	1994	823	1945	4762
	%	+	94.3	72.2	74.3	81.1
Missing	N	+	–	186	211	406
	%	+	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	+	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	+	75	147	412	634
	%	+	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	+	1810	993	2019	4822
	%	+	85.6	87.1	77.2	82.1
Missing	N	+	240	13	197	450
	%	+	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period. Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	UKY (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	95	1533	1416	4000	6949
Yes	%	81.1	86.4	64.7	61.5	67.7
No	%	0	7.4	9.5	25.6	18.3
Prefer not to answer	%	18.9	0.7	1.8	0.5	0.8
Missing	%	0	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	98.3	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	95	1533	1416	4000	6949
Yes	%	90.5	71.6	60.8	69.7	68.3
No	%	0	19.4	12.3	15.2	15.5
Unsure	%	9.5	2.8	2.4	1.8	2.1
Missing	%	0	6.2	24.5	13.3	14

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In May 2015, the evaluation team spoke with officials from the Division of Epidemiology and Health Planning, which houses the Vital Statistics Branch, about the state’s willingness to and process for releasing state birth certificate data to the Urban Institute for the impact analysis of the Strong Start evaluation. State officials were receptive to supporting the evaluation, and they have access to and experience with linking birth certificates with Medicaid data. Therefore, the state will likely link the

Medicaid and birth certificate data for the Strong Start evaluation. In the meantime the evaluation team has reached out to Kentucky Medicaid to assess their willingness to share Medicaid data, but has not established a primary contact as of yet. We plan to follow-up with Vital Statistics in the near future to discuss next steps, including submitting materials to the state's Institutional Review Board (IRB).

University of Puerto Rico

CASE STUDY

The University of Puerto Rico (UPR) Medical Sciences Campus in San Juan is one of eleven UPR campuses and includes the Schools of Medicine, Pharmacy, Dentistry, Nursing, Public Health, and Health-Related Professions. UPR is a publicly-operated health system that has implemented the Strong Start group prenatal care approach at one of its two prenatal care sites, the University Hospital prenatal care clinic, which is on the campus grounds in San Juan. The University Hospital site is the sole public clinic in Puerto Rico caring for patients with high-risk pregnancies, and prenatal patients are referred there from all parts of the island. The awardee would eventually like to extend group prenatal care to its second prenatal clinic, which is in a community hospital about 30 minutes away from campus (still within the San Juan metropolitan area).

Because it did not receive an in-person site visit in year one, unlike the other awardees included in this volume UPR received an in-person visit in year two. The visit involved in-person interviews, focus groups, and structured observations of group prenatal care sessions. Highlights from this round of data collection include:

- In early summer 2015, group prenatal care became the standard approach of prenatal care at University Hospital. The awardee shifted from an opt-in to an opt-out enrollment approach as part of this transition, so that all patients (those who are and are not Strong Start eligible) are now enrolled in group care by default.
- The awardee follows CHI's CenteringPregnancy approach with some notable distinctions, such as the addition of two sessions to the curriculum (i.e., for a total of 12 rather than 10 sessions); inclusion of patients who begin care with the clinic after 20 weeks gestation; allowing patients who miss their group session to attend another group's session on a "drop-in" basis; and involvement of three facilitators and often other hospital staff members or visitors in the sessions. The latter two features contribute to a more fluid group composition than is recommended by CHI, though focus group participants suggested they were comfortable with this fluidity.
- UPR operates a specialized prenatal care group for women living with HIV. This group follows the same 12-session cycle and curriculum as other group cohorts, but gestational age is more varied among group participants and sessions incorporate some additional topics that are relevant to HIV-positive women (e.g., administration of prophylactic antiretroviral drug therapy for infants).
- Strong support from University leadership has facilitated Strong Start implementation and the transition to group prenatal care as the clinic's standard approach of care. At the same time, the awardee has experienced some challenges, including lack of support from prenatal clinic nurses,

space constraints and scheduling (particularly related to a wide range of gestational ages at entry into University Hospital prenatal care), and Medicaid enrollment delays.

- Key informants and focus group participants alike report that group prenatal care has helped patients build stronger relationships with their peers and providers. The opportunity to include partners in group sessions (a contrast from UPR's traditional care approach) is a significant benefit and widely appreciated by group participants.
- Focus group participants expressed great satisfaction with the group care approach. They especially appreciate the fact that sessions start at a designated time without no long waits in the clinic waiting room (as was typical under UPR's traditional prenatal care approach) as well as the opportunity to receive more education and participate in discussions about topics such as family planning, C-section deliveries, and breastfeeding.
- Awardee program staff described plans to sustain group prenatal care at the University Hospital site once the award period has ended, with the expectation that it will continue as the standard approach of care for the clinic.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, University of Puerto Rico Medical Sciences Campus had Intake Forms for 100.3 percent of participants enrolled through Quarter 1 2015 (379 Intake Forms for 378 participants). In addition, University of Puerto Rico Medical Sciences Campus submitted 228 Third Trimester Surveys, 159 Postpartum Surveys, and 230 Exit Forms. The tables below present data collected on University of Puerto Rico Medical Sciences Campus' participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	PUERTO RICO (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	124	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	378	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	255	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	379	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	100.3	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	228	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	89.4	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	159	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	62.4	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	230	2133	1433	3103	6669

Data Element	N or %	PUERTO RICO (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Received through Q1 2015 as a percentage of the number of women delivered	%	90.2	93.8	52.0	50.1	59.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	PUERTO RICO (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother’s Age at Intake	N	379	2993	4401	11761	19155
Less than 18 years of age	%	7.4	3.4	6.7	5.8	5.6
18 through 34 years of age	%	62.3	86.1	75.0	81.4	80.7
35 years and older	%	8.7	6.2	4.9	6.0	5.8
Missing	%	21.6	4.3	13.4	6.8	7.9
Race and Ethnicity	N	379	2993	4401	11761	19155
Hispanic	%	96	25.7	39.2	22.9	27.1
Non-Hispanic white	%	1.1	53.3	13.7	26.2	27.6
Non-Hispanic black	%	0.3	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	0	3.6	2.3	1.2	1.8
Missing	%	2.6	0.9	2.8	1.5	1.7
Employed at Intake	N	379	2993	4401	11761	19155
Yes	%	29.8	39.7	34.6	38.8	38.0
No	%	68.3	59.1	60.9	60.0	60.0
Missing	%	1.8	1.2	4.5	1.2	2.0
Education Level at Intake	N	379	2993	4401	11761	19155
Less than high school	%	8.7	14.3	23.7	24.5	22.7
High school graduate or GED	%	34.3	52.3	46.2	52	50.7
Bachelor’s degree	%	6.3	10.1	3.1	2.5	3.9
Other college degree(s)	%	24.3	12.7	7.2	6.0	7.3
Missing	%	26.4	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	379	2993	4401	11761	19155
Married, living with spouse	%	19.0	40.7	18.6	17.2	21.2
Married, not living with spouse	%	1.8	1.7	2.1	1.9	1.9
Living with a partner	%	45.9	32.2	31.3	30.6	31.0
In a relationship but not living together	%	17.9	12.9	24.6	30.5	26.4
Not in a relationship right now	%	12.9	11.1	17.0	17.8	16.6
Missing	%	2.4	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	379	2993	4401	11761	19155
Yes	%	2.4	10.1	7.8	14.1	12.0
No	%	79.2	77.1	71.7	77.8	76.3
Missing	%	18.5	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	379	2993	4401	11761	19155
Yes	%	24	18.1	18.5	16.1	16.9
No	%	67.3	76.9	61.4	76.2	72.9
Missing*	%	8.7	5.0	20.0	7.7	10.1

Data Element	N or %	PUERTO RICO (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Exhibiting Depressive Symptoms at Intake**	N	379	2993	4401	11761	19155
Yes	%	28.5	21.8	25.2	23.4	23.5
No	%	48.5	69.3	57.0	69.3	66.4
Missing*	%	23.0	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	379	2993	4401	11761	19155
Yes	%	15.0	20.6	17.1	19.0	18.8
No	%	82.1	77.2	68.4	78.5	76.0
Missing*	%	2.9	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	PUERTO RICO (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	147	1127	700	1914	3741
<18 months	%	14.9	24.3	18.0	19.5	20.7
≥18 months	%	53.1	39.8	48.3	51.9	47.6
Missing	%	32.0	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	147	1127	700	1914	3741
Yes	%	5.4	10.7	11.4	18.9	15
No	%	30.6	89.3	63.9	63.2	71.2
Not Known	%	63.9	0	18.6	14.9	11.1
Missing	%	0	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	147	1127	700	1914	3741
Yes	%	4.1	1.9	8.6	14.8	9.7
No	%	31.3	95.8	60.4	61.7	71.7
Not Known	%	64.6	0	24.7	19.2	14.5
Missing	%	0	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	230	2133	1433	3103	6669
Yes	%	5.7	0.5	1.3	1.5	1.1
No	%	91.3	99.5	74.2	84.4	87
Not Known	%	2.6	0	7.7	11.1	6.8
Missing	%	0.4	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	230	2133	1433	3103	6669
Yes	%	12.6	0	2.6	1.9	1.5
No	%	84.3	5	72.9	83.3	56.1
Not Known	%	2.6	0	7.7	11.1	6.8
Missing	%	0.4	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	230	2133	1433	3103	6669
Yes	%	20.4	0.5	6.0	9.5	5.9

Data Element	N or %	PUERTO RICO (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
No	%	77.4	99.5	66.7	77.4	82.2
Not Known	%	1.7	0	7.6	10.2	6.4
Missing	%	0.4	0	19.7	2.9	5.6

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	PUERTO RICO (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	230	2133	1433	3103	6669
Yes	%	7.0	2.7	4.2	5.3	4.2
No	%	91.3	97.3	65.4	76.0	80.6
Not Known	%	0.4	0	10.3	15.9	9.6
Missing	%	1.3	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	230	2133	1433	3103	6669
Yes	%	13	1.3	7.8	7.7	5.7
No	%	85.2	98.7	62.6	74.8	79.8
Not Known	%	0.4	0	9.4	14.6	8.8
Missing	%	1.3	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	PUERTO RICO (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	214	2125	1103	2740	5968
Number of Babies Born	N	226	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	168	2133	1297	2826	6256
Yes	%	19.6	14.4	23.8	17.2	17.6
No	%	66.1	85.3	42.8	35.5	54.0
Not known	%	4.8	0	10.6	37.8	19.3
Missing	%	9.5	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	230	2133	1433	3103	6669
Vaginal delivery	%	45.7	87.3	49.1	52.0	62.7
C-Section	%	47.0	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	7.4	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	73.2	90.9	80.2	81.6	85.4
VBAC²⁹	N	61	90	161	418	669
Yes	%	11.5	30.0	19.9	13.9	17.5

²⁹ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Data Element	N or %	PUERTO RICO (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Repeat C-Section	N	61	90	161	418	669
Yes	%	88.5	70.0	80.1	86.1	82.5
Scheduled C-Section	N	108	265	348	920	1533
Yes	%	57.4	0	39.1	29.2	26.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	PUERTO RICO (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	213	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	37	112	131	461	704
	%	17.4	5.3	11.5	17.6	12
Non-Preterm Births, ≥37 weeks EGA	N	113	1994	823	1945	4762
	%	53.1	94.3	72.2	74.3	81.1
Missing	N	63	–	186	211	406
	%	29.6	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	213	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	48	75	147	412	634
	%	22.5	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	171	1810	993	2019	4822
	%	80.3	85.6	87.1	77.2	82.1
Missing	N	–	240	13	197	450
	%	–	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	PUERTO RICO (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	159	1533	1416	4000	6949
Yes	%	73.0	86.4	64.7	61.5	67.7
No	%	25.2	7.4	9.5	25.6	18.3
Prefer not to answer	%	0	0.7	1.8	0.5	0.8
Missing	%	1.9	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	87.8	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	159	1533	1416	4000	6949
Yes	%	58.5	71.6	60.8	69.7	68.3
No	%	37.7	19.4	12.3	15.2	15.5
Unsure	%	1.3	2.8	2.4	1.8	2.1
Missing	%	2.5	6.2	24.5	13.3	14

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

The evaluation team is exploring the possibility of obtaining birth certificate data from Puerto Rico, but no direct conversations between Urban and territory officials has yet taken place.

University of South Alabama

CASE STUDY

The Department of Obstetrics and Gynecology at the University of South Alabama (USA) administers a Strong Start award in the Mobile, Alabama region, with four Maternity Care Home (MCH) sites, one of which also offers group prenatal care through the Strong Start program. Strong Start complements an existing Alabama Medicaid perinatal program called MomCare which provides social services to pregnant Medicaid enrollees. The MCH provides each participant with a risk assessment, nutritional counseling, and support from either a social worker or a nurse. USA's group prenatal care approach follows CHI's CenteringPregnancy approach.

Highlights from the second round of case study data collection include:

- Enhanced services through USA's Maternity Care Home approach focus on enhanced psychosocial screening and enhanced nutritional support by a registered dietitian. Strong Start screening and patient health and pregnancy counseling have been integrated into the first prenatal care visit and are now offered in face-to-face patient encounters (initially, the awardee provided these later in pregnancy by phone). Key informants believe this change has led to important improvements across many program aspects—outreach, enrollment, and service utilization.
- Participants who are teens or first-time mothers are automatically referred to the dietitian while other women in the program only receive nutritional counseling if they present with or develop a BMI of over 30 or under 19.
- Women enrolled in Strong Start group prenatal care at The Women's Center participate in ten sessions, using the CenteringPregnancy standards and curriculum.
- In March 2015, a fourth MCH Strong Start site was added—the USA Family Medicine outpatient clinic.
- Eligibility requirements have changed to allow any pregnant patient who is eligible for Medicaid to enroll in Strong Start, without an additional preterm risk factor and up until the 28th week of pregnancy. During the first program year, participants were required to possess an additional risk factor (beyond Medicaid eligibility) for inclusion in the program.
- Some Strong Start participants have been concerned about questions on the evaluation's intake form related to housing, which they believe could impact receipt of other (non-Medicaid) public benefits. USA allows women to skip questions of significant concern to them, such as who lives in the household, if they do not feel comfortable providing this information.
- Key informants believe the rate of preterm birth among Strong Start enrollees may be improving, though low enrollment makes it difficult to draw conclusions. (USA enrolled a total of

503 participants in their first year of program operation.) USA has developed a plan to increase enrollment in Strong Start through Y3 of the program.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, University of South Alabama had Intake Forms for 95 percent of participants enrolled through Quarter 1 2015 (828 Intake Forms for 875 participants). In addition, University of South Alabama submitted 236 Third Trimester Surveys, 123 Postpartum Surveys, and 139 Exit Forms. The tables below present data collected on University of South Alabama's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	USA (Group Prenatal Care and Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	207	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	875	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	316	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	828	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	94.6	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	236	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	74.7	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	123	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	38.9	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	139	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	44.0	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	USA (Group Prenatal Care and Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	828	2993	4401	11761	19155
Less than 18 years of age	%	7.9	3.4	6.7	5.8	5.6
18 through 34 years of age	%	75	86.1	75	81.4	80.7
35 years and older	%	2.7	6.2	4.9	6.0	5.8
Missing	%	14.5	4.3	13.4	6.8	7.9
Race and Ethnicity	N	828	2993	4401	11761	19155
Hispanic	%	1.6	25.7	39.2	22.9	27.1
Non-Hispanic white	%	34.4	53.3	13.7	26.2	27.6

Data Element	N or %	USA (Group Prenatal Care and Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Non-Hispanic black	%	60.1	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	1.2	1.1	1.2	1.2	1.2
Non-Hispanic other	%	1.0	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	1.3	3.6	2.3	1.2	1.8
Missing	%	0.4	0.9	2.8	1.5	1.7
Employed at Intake	N	828	2993	4401	11761	19155
Yes	%	38.4	39.7	34.6	38.8	38.0
No	%	58.6	59.1	60.9	60.0	60.0
Missing	%	3.0	1.2	4.5	1.2	2.0
Education Level at Intake	N	828	2993	4401	11761	19155
Less than high school	%	26	14.3	23.7	24.5	22.7
High school graduate or GED	%	55.6	52.3	46.2	52.0	50.7
Bachelor's degree	%	1.1	10.1	3.1	2.5	3.9
Other college degree(s)	%	5.9	12.7	7.2	6.0	7.3
Missing	%	11.5	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	828	2993	4401	11761	19155
Married, living with spouse	%	12.3	40.7	18.6	17.2	21.2
Married, not living with spouse	%	3.5	1.7	2.1	1.9	1.9
Living with a partner	%	25.6	32.2	31.3	30.6	31.0
In a relationship but not living together	%	30.3	12.9	24.6	30.5	26.4
Not in a relationship right now	%	23.3	11.1	17.0	17.8	16.6
Missing	%	5.0	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	828	2993	4401	11761	19155
Yes	%	21.4	10.1	7.8	14.1	12.0
No	%	68.4	77.1	71.7	77.8	76.3
Missing	%	10.3	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	828	2993	4401	11761	19155
Yes	%	17.0	18.1	18.5	16.1	16.9
No	%	68.0	76.9	61.4	76.2	72.9
Missing*	%	14.9	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	828	2993	4401	11761	19155
Yes	%	30.7	21.8	25.2	23.4	23.5
No	%	56.5	69.3	57.0	69.3	66.4
Missing*	%	12.8	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	828	2993	4401	11761	19155
Yes	%	15.3	20.6	17.1	19.0	18.8
No	%	81.6	77.2	68.4	78.5	76.0
Missing*	%	3.0	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	USA (Group Prenatal Care and Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	79	1127	700	1914	3741
<18 months	%	25.3	24.3	18.0	19.5	20.7
≥18 months	%	55.7	39.8	48.3	51.9	47.6
Missing	%	19.0	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	79	1127	700	1914	3741
Yes	%	32.9	10.7	11.4	18.9	15.0
No	%	64.6	89.3	63.9	63.2	71.2
Not Known	%	2.5	0	18.6	14.9	11.1
Missing	%	0	0	6.1	3	2.7
Previous Birth(s) Less than 2,500 grams	N	79	1127	700	1914	3741
Yes	%	15.2	1.9	8.6	14.8	9.7
No	%	58.2	95.8	60.4	61.7	71.7
Not Known	%	25.3	0	24.7	19.2	14.5
Missing	%	1.3	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	139	2133	1433	3103	6669
Yes	%	0	0.5	1.3	1.5	1.1
No	%	94.2	99.5	74.2	84.4	87
Not Known	%	3.6	0	7.7	11.1	6.8
Missing	%	2.2	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	139	2133	1433	3103	6669
Yes	%	0	0	2.6	1.9	1.5
No	%	94.2	5	72.9	83.3	56.1
Not Known	%	3.6	0	7.7	11.1	6.8
Missing	%	2.2	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	139	2133	1433	3103	6669
Yes	%	10.8	0.5	6.0	9.5	5.9
No	%	83.5	99.5	66.7	77.4	82.2
Not Known	%	3.6	0	7.6	10.2	6.4
Missing	%	2.2	0	19.7	2.9	5.6

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	USA (Group Prenatal Care and Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	139	2133	1433	3103	6669
Yes	%	2.9	2.7	4.2	5.3	4.2
No	%	87.8	97.3	65.4	76.0	80.6
Not Known	%	9.4	0	10.3	15.9	9.6
Missing	%	0	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	139	2133	1433	3103	6669

Data Element	N or %	USA (Group Prenatal Care and Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Yes	%	5.0	1.3	7.8	7.7	5.7
No	%	87.1	98.7	62.6	74.8	79.8
Not Known	%	7.9	0	9.4	14.6	8.8
Missing	%	0	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	USA (Group Prenatal Care and Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	122	2125	1103	2740	5968
Number of Babies Born	N	127	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	126	2133	1297	2826	6256
Yes	%	30.2	14.4	23.8	17.2	17.6
No	%	54.8	85.3	42.8	35.5	54.0
Not known	%	4.0	0	10.6	37.8	19.3
Missing	%	11.1	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	139	2133	1433	3103	6669
Vaginal delivery	%	53.2	87.3	49.1	52.0	62.7
C-Section	%	34.5	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	12.2	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	77.1	90.9	80.2	81.6	85.4
VBAC ³⁰	N	22	90	161	418	669
Yes	%	9.1	30.0	19.9	13.9	17.5
Repeat C-Section	N	22	90	161	418	669
Yes	%	90.9	70.0	80.1	86.1	82.5
Scheduled C-Section	N	48	265	348	920	1533
Yes	%	27.1	0	39.1	29.2	26.4

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	USA (Group Prenatal Care and Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	125	2115	1140	2617	5872

³⁰ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Data Element	N or %	USA (Group Prenatal Care and Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Preterm Births, <37 weeks EGA	N	35	112	131	461	704
	%	28	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	88	1994	823	1945	4762
	%	70.4	94.3	72.2	74.3	81.1
Missing	N	–	–	186	211	406
	%	–	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	125	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	28	75	147	412	634
	%	22.4	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	99	1810	993	2019	4822
	%	79.2	85.6	87.1	77.2	82.1
Missing	N	0	240	13	197	450
	%	0	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells label with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	USA (Group Prenatal Care and Maternity Care Home)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	123	1533	1416	4000	6949
Yes	%	39.8	86.4	64.7	61.5	67.7
No	%	27.6	7.4	9.5	25.6	18.3
Prefer not to answer	%	0	0.7	1.8	0.5	0.8
Missing	%	32.5	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	97.5	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	123	1533	1416	4000	6949
Yes	%	61.8	71.6	60.8	69.7	68.3
No	%	4.1	19.4	12.3	15.2	15.5
Unsure	%	0.8	2.8	2.4	1.8	2.1
Missing	%	33.3	6.2	24.5	13.3	14.0

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In March 2015, the evaluation team spoke with officials from the Alabama Medicaid Agency and the Alabama Department of Public Health (ADPH) to learn about the state’s willingness to and process for releasing state Medicaid and birth certificate data (respectively) to the Urban Institute for the impact analysis of the Strong Start evaluation. State officials were receptive to supporting the evaluation, but said that they would prefer having the Urban Institute will link the Medicaid and birth certificate data. In June 2015, the evaluation team received approval from the Alabama Medicaid Agency. A data request

application was submitted to ADPH in April 2015, and we are currently awaiting approval from ADPH. The team hopes to begin receiving data in late 2015.

University of Tennessee Health Sciences Center

CASE STUDY

The University of Tennessee Health Science Center (UTHSC) operates two Strong Start group prenatal care sites in Memphis, Tennessee. Hollywood Prenatal Care (formerly Hollywood Health Loop) is an outpatient center in North Memphis. The Regional One Health Outpatient Center (formerly called Med Outpatient) is co-located with the Regional One Medical Center and serves as the high-risk referral clinic for pregnant women in the area. Strong Start enables the continuation and expansion of group prenatal care at both sites, which have operated groups following CHI's CenteringPregnancy model since 2005.

Highlights from the second round of case study data collection include:

- In October of 2014, the UTHSC merged with the Regional One Medical Center and the University of Tennessee Medical Group (the original Strong Start awardee) became defunct. Key informants noted that there was a slight decrease in enrollment in the month following the change in UTHSC's hospital affiliation but enrollment has since picked up. Program staff and providers remain the same as in evaluation Y1, though group care facilitators who co-lead sessions with a midwife are now called "administrative coordinators."
- Along with a midwife, administrative coordinators co-lead an eight-session, group prenatal care program that uses a modified version of the Centering curriculum. UTHSC operates six prenatal care groups (which translates to three sessions per week). Each group has an average of 8-10 patients.
- Participants must be Medicaid eligible and up to 25 weeks gestational age. No additional preterm risk factors are required for Strong Start eligibility.
- Each site employs a different enrollment approach. Hollywood Prenatal Care, where patients tend to be of average risk, uses an opt-out approach whereby all patients are enrolled in group care by default with the option of switching to traditional OB care if they are not satisfied with the group setting. Regional One Health employs an opt-in approach, reportedly because of a high proportion of high-risk patients who must attend specialist as well as prenatal care visits. Patients with gestational diabetes, sickle cell anemia, and preeclampsia are not eligible for Strong Start.
- The Project Manager is charged with program coordination and program data entry following a transition in program roles.

- Two midwives were receiving facilitator training from CHI at the time of Y2 data collection; the addition of these midwives to the Strong Start program staff will allow UTHSC increase the number of groups in operation at the sites.
- Key informants are pleased with Strong Start program outcomes and report increased retention and a decrease in infant mortality in Shelby County, where UTHSC resides.
- Efforts to increase enrollment (which was 413 ever enrolled in December 2014) are ongoing and administrative coordinators currently engage in community outreach at health fairs in the Memphis area.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By March 2015, University Tennessee Health Science Center had Intake Forms for 34 percent of participants enrolled through Quarter 1 2015 (140 Intake Forms for 413 participants). In addition, University Tennessee Health Science Center submitted 66 Third Trimester Surveys, 19 Postpartum Surveys, but no Exit Forms. The tables below present data collected on University Tennessee Health Science participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	UTHSC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	44	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	413	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	56	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	140	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	33.9	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	66	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	117.9	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	+	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	+	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	+	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	+	93.8	52.0	50.1	59.4

Notes: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	UTHSC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	140	2993	4401	11761	19155
Less than 18 years of age	%	0	3.4	6.7	5.8	5.6
18 through 34 years of age	%	0	86.1	75.0	81.4	80.7
35 years and older	%	0	6.2	4.9	6.0	5.8
Missing	%	100	4.3	13.4	6.8	7.9
Race and Ethnicity	N	140	2993	4401	11761	19155
Hispanic	%	1.4	25.7	39.2	22.9	27.1
Non-Hispanic white	%	2.1	53.3	13.7	26.2	27.6
Non-Hispanic black	%	78.6	14.8	39.2	46.3	39.8
Non-Hispanic Asian	%	0	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	0	3.6	2.3	1.2	1.8
Missing	%	17.9	0.9	2.8	1.5	1.7
Employed at Intake	N	140	2993	4401	11761	19155
Yes	%	21.4	39.7	34.6	38.8	38.0
No	%	57.1	59.1	60.9	60.0	60.0
Missing	%	21.4	1.2	4.5	1.2	2.0
Education Level at Intake	N	140	2993	4401	11761	19155
Less than high school	%	16.4	14.3	23.7	24.5	22.7
High school graduate or GED	%	46.4	52.3	46.2	52.0	50.7
Bachelor's degree	%	0	10.1	3.1	2.5	3.9
Other college degree(s)	%	2.1	12.7	7.2	6.0	7.3
Missing	%	35.0	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	140	2993	4401	11761	19155
Married, living with spouse	%	5	40.7	18.6	17.2	21.2
Married, not living with spouse	%	0.7	1.7	2.1	1.9	1.9
Living with a partner	%	10	32.2	31.3	30.6	31.0
In a relationship but not living together	%	23.6	12.9	24.6	30.5	26.4
Not in a relationship right now	%	10.7	11.1	17.0	17.8	16.6
Missing	%	50.0	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	140	2993	4401	11761	19155
Yes	%	2.9	10.1	7.8	14.1	12
No	%	53.6	77.1	71.7	77.8	76.3
Missing	%	43.6	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	140	2993	4401	11761	19155
Yes	%	6.4	18.1	18.5	16.1	16.9
No	%	39.3	76.9	61.4	76.2	72.9
Missing*	%	54.3	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	140	2993	4401	11761	19155
Yes	%	12.1	21.8	25.2	23.4	23.5
No	%	31.4	69.3	57.0	69.3	66.4
Missing*	%	56.4	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	140	2993	4401	11761	19155
Yes	%	8.6	20.6	17.1	19.0	18.8

Data Element	N or %	UTHSC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
No	%	44.3	77.2	68.4	78.5	76.0
Missing*	%	47.1	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	UTHSC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	+	1127	700	1914	3741
<18 months	%	+	24.3	18.0	19.5	20.7
≥18 months	%	+	39.8	48.3	51.9	47.6
Missing	%	+	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	+	1127	700	1914	3741
Yes	%	+	10.7	11.4	18.9	15.0
No	%	+	89.3	63.9	63.2	71.2
Not Known	%	+	0	18.6	14.9	11.1
Missing	%	+	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	+	1127	700	1914	3741
Yes	%	+	1.9	8.6	14.8	9.7
No	%	+	95.8	60.4	61.7	71.7
Not Known	%	+	0	24.7	19.2	14.5
Missing	%	+	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	0.5	1.3	1.5	1.1
No	%	+	99.5	74.2	84.4	87
Not Known	%	+	0	7.7	11.1	6.8
Missing	%	+	0	16.7	3.1	5.0
Pre-Pregnancy Diagnosis of Type II Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	0	2.6	1.9	1.5
No	%	+	5.0	72.9	83.3	56.1
Not Known	%	+	0	7.7	11.1	6.8
Missing	%	+	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	+	2133	1433	3103	6669
Yes	%	+	0.5	6.0	9.5	5.9
No	%	+	99.5	66.7	77.4	82.2
Not Known	%	+	0	7.6	10.2	6.4
Missing	%	+	0	19.7	2.9	5.6

Notes: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 1 2015

Data Element	N or %	UTHSC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	+	2133	1433	3103	6669
Yes	%	+	2.7	4.2	5.3	4.2
No	%	+	97.3	65.4	76	80.6
Not Known	%	+	0	10.3	15.9	9.6
Missing	%	+	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	+	2133	1433	3103	6669
Yes	%	+	1.3	7.8	7.7	5.7
No	%	+	98.7	62.6	74.8	79.8
Not Known	%	+	0	9.4	14.6	8.8
Missing	%	+	0	20.2	2.9	5.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	UTHSC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	+	2125	1103	2740	5968
Number of Babies Born	N	+	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	+	2133	1297	2826	6256
Yes	%	+	14.4	23.8	17.2	17.6
No	%	+	85.3	42.8	35.5	54.0
Not known	%	+	0	10.6	37.8	19.3
Missing	%	+	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	+	2133	1433	3103	6669
Vaginal delivery	%	+	87.3	49.1	52.0	62.7
C-Section	%	+	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	+	0	0	0	0
Missing	%	+	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	+	90.9	80.2	81.6	85.4
VBAC³¹	N	+	90	161	418	669
Yes	%	+	30.0	19.9	13.9	17.5
Repeat C-Section	N	+	90	161	418	669
Yes	%	+	70.0	80.1	86.1	82.5
Scheduled C-Section	N	+	265	348	920	1533
Yes	%	+	0	39.1	29.2	26.4

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

³¹ The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	UTHSC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	+	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	+	112	131	461	704
	%	+	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	+	1994	823	1945	4762
	%	+	94.3	72.2	74.3	81.1
Missing	N	+	–	186	211	406
	%	+	–	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	+	2115	1140	2617	5872
Low Birth Weight, <2500 grams	N	+	75	147	412	634
	%	+	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	+	1810	993	2019	4822
	%	+	85.6	87.1	77.2	82.1
Missing	N	+	240	13	197	450
	%	+	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period. Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	UTHSC (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	+	1533	1416	4000	6949
Yes	%	+	86.4	64.7	61.5	67.7
No	%	+	7.4	9.5	25.6	18.3
Prefer not to answer	%	+	0.7	1.8	0.5	0.8
Missing	%	+	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	+	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	+	1533	1416	4000	6949
Yes	%	+	71.6	60.8	69.7	68.3
No	%	+	19.4	12.3	15.2	15.5
Unsure	%	+	2.8	2.4	1.8	2.1
Missing	%	+	6.2	24.5	13.3	14.0

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Gray cells labeled with a plus symbol indicate that fewer than 25 forms had been received during the reporting period. Statistics were calculated only if there were at least 25 forms received.

TECHNICAL ASSISTANCE

In April 2015, the evaluation team spoke with the Division of Policy, Planning, and Assessment within the Tennessee Department of Health to learn about the state’s willingness to and process for releasing state Medicaid and birth certificate data to the Urban Institute for the impact analysis of the Strong Start

evaluation. State officials were very receptive to supporting the evaluation, and the Office of Vital Records said that it would be able to link Medicaid and birth certificate data on our behalf. The evaluation team submitted a data request form to the Office of Vital Records in June 2015, and is in the process of submitting materials to the state's Institutional Review Board (IRB). Additionally, the evaluation team is in the process of completing the application for Medicaid and CHIP data, which are overseen by TennCare.

Virginia Commonwealth University

CASE STUDY

Virginia Commonwealth University (VCU) is a university health system that has implemented group prenatal care using the CenteringPregnancy model under Strong Start. At the time of evaluation Y2 data collection, VCU was operating four of its original five Strong Start sites in central and northern Virginia and had enrolled 546 women in Strong Start. VCU reports that since evaluation Y1 data collection, the program has progressed and been strengthened by changes in both outreach and services offered.

Highlights from the second round of case study data collection include:

- Because of challenges associated with recruitment and data collection, the Shenandoah site withdrew from Strong Start. At the time of the Y2 data collection, the Manassas site had substantially reduced staffing and the size of its group prenatal care program because of reimbursement and network inclusion issues with the Medicaid managed care organizations (MCOs) in which their patients were enrolled. The awardee reported on June 16 (subsequent to Y2 data collection) that the Manassas site had ceased all operations as a result of these issues with the MCOs.
- VCU has increased staffing and services to provide more care coordination, referrals to and coordination with social services, and patient tracking.
- Enrollment continues to be a challenge, though it has increased considerably as noted above. To increase enrollment, VCU partners with the state Medicaid agency, the Department of Medical Assistance Services (DMAS), to send information to Medicaid-enrolled pregnant women, encouraging them to participate in Strong Start. Additionally, VCU works with other programs and departments such as Baby Basics, the MCV trauma department's "Project Empower" initiative (which focuses on addressing the needs of women who have experienced intimate partner violence), and migrant care centers to direct patients to group prenatal care sites.
- VCU's Strong Start sites now enroll all eligible pregnant Medicaid patients in Strong Start (i.e., no additional preterm risk factor is required). Enhanced services available to all Strong Start women, including some who present for care too late to be included in a group cohort, but are enrolled in Strong Start nonetheless, include dental services, care and social service coordination, and referrals to Healthy Families (a home visiting organization).
- Implementation challenges include retention (although retention appears to have improved compared to Y1), facilitator "burn-out," maintenance of smooth clinic workflow with the group prenatal care schedule, and workflow issues in patient charting.
- Early data indicate that the incidence of preterm birth now ranges from 6 to 9 percent in the VCU Strong Start sites, compared to a statewide average of 11 percent, which key informants

attributed to the implementation of Strong Start. Manassas (a midwifery practice) reported a preterm delivery rate of 4.4 percent among Strong Start participants.

- Key informants report that patient response to Centering in Strong Start at VCU is overwhelmingly favorable and enthusiastic.

PARTICIPANT-LEVEL PROCESS EVALUATION

The information presented below is based on data submitted from the four evaluation forms through Quarter 1 2015. By February 2015, Virginia Commonwealth University had Intake Forms for 89 percent of participants enrolled through Quarter 1 2015 (507 Intake Forms for 567 participants). In addition, Virginia Commonwealth University submitted 101 Third Trimester Surveys, 77 Postpartum Surveys, and 217 Exit Forms. The tables below present data collected on Virginia Commonwealth University's participants with aggregated rates by approach for the purpose of comparison.

Table 1. Enrollment and Forms Submitted, through Quarter 1 2015

Data Element	N or %	VCU (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Newly Enrolled in Q1 2015	N	71	739	948	2638	4325
Total Ever Enrolled through Q1 2015	N	567	4739	5576	13232	23547
Number of Women Delivered through Q1 2015	N	259	2275	2755	6189	11219
Intake Forms Received through Q1 2015	N	507	2993	4401	11761	19155
Received through Q1 2015 as a percentage of the number of women ever enrolled	%	89.4	63.2	78.9	88.9	81.3
Third Trimester Surveys Received through Q1 2015	N	101	1876	2145	4683	8704
Received through Q1 2015 as a percentage of the number of women delivered	%	39.0	82.5	77.9	75.7	77.6
Postpartum Surveys Received through Q1 2015	N	77	1533	1416	4000	6949
Received through Q1 2015 as a percentage of the number of women delivered	%	29.7	67.4	51.4	64.6	61.9
Exit Forms Received through Q1 2015	N	217	2133	1433	3103	6669
Received through Q1 2015 as a percentage of the number of women delivered	%	83.8	93.8	52.0	50.1	59.4

Note: Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 2. Sociodemographic Risk Factors, through Quarter 1 2015

Data Element	N or %	VCU (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Mother's Age at Intake	N	507	2993	4401	11761	19155
Less than 18 years of age	%	5.5	3.4	6.7	5.8	5.6
18 through 34 years of age	%	84.8	86.1	75.0	81.4	80.7
35 years and older	%	4.9	6.2	4.9	6.0	5.8
Missing	%	4.7	4.3	13.4	6.8	7.9
Race and Ethnicity	N	507	2993	4401	11761	19155
Hispanic	%	27.2	25.7	39.2	22.9	27.1
Non-Hispanic white	%	18.5	53.3	13.7	26.2	27.6
Non-Hispanic black	%	39.4	14.8	39.2	46.3	39.8

Data Element	N or %	VCU (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Non-Hispanic Asian	%	3.7	1.1	1.2	1.2	1.2
Non-Hispanic other	%	0.6	0.6	1.6	0.7	0.9
Non-Hispanic multiple race	%	3	3.6	2.3	1.2	1.8
Missing	%	7.5	0.9	2.8	1.5	1.7
Employed at Intake	N	507	2993	4401	11761	19155
Yes	%	35.5	39.7	34.6	38.8	38.0
No	%	43.2	59.1	60.9	60.0	60.0
Missing	%	21.3	1.2	4.5	1.2	2.0
Education Level at Intake	N	507	2993	4401	11761	19155
Less than high school	%	16.8	14.3	23.7	24.5	22.7
High school graduate or GED	%	37.5	52.3	46.2	52.0	50.7
Bachelor's degree	%	5.9	10.1	3.1	2.5	3.9
Other college degree(s)	%	6.7	12.7	7.2	6.0	7.3
Missing	%	33.1	10.7	19.8	15.0	15.4
Relationship Status at Intake	N	507	2993	4401	11761	19155
Married, living with spouse	%	18.9	40.7	18.6	17.2	21.2
Married, not living with spouse	%	3.0	1.7	2.1	1.9	1.9
Living with a partner	%	26.4	32.2	31.3	30.6	31.0
In a relationship but not living together	%	19.7	12.9	24.6	30.5	26.4
Not in a relationship right now	%	14.8	11.1	17	17.8	16.6
Missing	%	17.2	1.3	6.4	2.0	2.9
Smokes Cigarettes at Intake	N	507	2993	4401	11761	19155
Yes	%	7.7	10.1	7.8	14.1	12
No	%	22.1	77.1	71.7	77.8	76.3
Missing	%	70.2	12.9	20.4	8.1	11.7
Food Insecure at Intake	N	507	2993	4401	11761	19155
Yes	%	20.3	18.1	18.5	16.1	16.9
No	%	43.4	76.9	61.4	76.2	72.9
Missing*	%	36.3	5.0	20.0	7.7	10.1
Exhibiting Depressive Symptoms at Intake**	N	507	2993	4401	11761	19155
Yes	%	23.5	21.8	25.2	23.4	23.5
No	%	47.9	69.3	57.0	69.3	66.4
Missing*	%	28.6	9.0	17.9	7.3	10.0
Have Experienced Intimate Partner Violence in a Relationship***	N	507	2993	4401	11761	19155
Yes	%	13.8	20.6	17.1	19.0	18.8
No	%	55.8	77.2	68.4	78.5	76.0
Missing*	%	30.4	2.1	14.5	2.4	5.1

Notes: Cells that contain one asterisk indicate that the 'Missing' category includes respondents who did not answer all of the items required to calculate this measure.

Cells that contain two asterisks indicate that this is as measured by a shortened version of the CES-D.

Cells that contain three asterisks indicate that this is as measured by the Slapped, Threatened, and Throw (STaT) screener.

Rows labeled with an "N" indicate the number of observations from which percentages have been calculated.

Table 3. Medical Risk Factors Prior to Current Pregnancy, through Quarter 1 2015

Data Element	N or %	VCU (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Inter-Pregnancy Interval with Current Pregnancy Since Last Birth	N	80	1127	700	1914	3741
<18 months	%	13.7	24.3	18.0	19.5	20.7
≥18 months	%	48.8	39.8	48.3	51.9	47.6
Missing	%	37.5	35.9	33.7	28.6	31.8
Previous Preterm Birth(s) Between 20 and 36 weeks, 6 days EGA	N	80	1127	700	1914	3741
Yes	%	15.0	10.7	11.4	18.9	15.0
No	%	71.2	89.3	63.9	63.2	71.2
Not Known	%	0	0	18.6	14.9	11.1
Missing	%	13.8	0	6.1	3.0	2.7
Previous Birth(s) Less than 2,500 grams	N	80	1127	700	1914	3741
Yes	%	6.2	1.9	8.6	14.8	9.7
No	%	78.8	95.8	60.4	61.7	71.7
Not Known	%	0	0	24.7	19.2	14.5
Missing	%	15.0	2.3	6.3	4.3	4.1
Pre-Pregnancy Diagnosis of Type I Diabetes	N	217	2133	1433	3103	6669
Yes	%	0	0.5	1.3	1.5	1.1
No	%	20.3	99.5	74.2	84.4	87
Not Known	%	0	0	7.7	11.1	6.8
Missing	%	79.7	0	16.7	3.1	5
Pre-Pregnancy Diagnosis of Type II Diabetes	N	217	2133	1433	3103	6669
Yes	%	0	0	2.6	1.9	1.5
No	%	20.3	5.0	72.9	83.3	56.1
Not Known	%	0	0	7.7	11.1	6.8
Missing	%	79.7	94.9	16.7	3.7	35.7
Pre-Pregnancy Diagnosis of Hypertension	N	217	2133	1433	3103	6669
Yes	%	0.5	0.5	6.0	9.5	5.9
No	%	0	99.5	66.7	77.4	82.2
Not Known	%	0	0	7.6	10.2	6.4
Missing	%	99.5	0	19.7	2.9	5.6

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 4. Medical Risk Factors during the Current Pregnancy, through Quarter 2015

Data Element	N or %	VCU (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Gestational Diabetes	N	217	2133	1433	3103	6669
Yes	%	0.5	2.7	4.2	5.3	4.2
No	%	1.8	97.3	65.4	76.0	80.6
Not Known	%	0	0	10.3	15.9	9.6
Missing	%	97.7	0	20.1	2.8	5.6
Pregnancy-Related Hypertension	N	217	2133	1433	3103	6669
Yes	%	0	1.3	7.8	7.7	5.7
No	%	2.3	98.7	62.6	74.8	79.8
Not Known	%	0	0	9.4	14.6	8.8

Data Element	N or %	VCU (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Missing	%	97.7	0	20.2	2.9	5.7

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Table 5. Birth and Delivery Methods, through Quarter 1 2015

Data Element	N or %	VCU (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Total Number of Exit Forms with Valid Birth Information	N	37	2125	1103	2740	5968
Number of Babies Born	N	37	2128	1125	2801	6054
Induction of Labor Excluding Planned C-Sections	N	217	2133	1297	2826	6256
Yes	%	1.8	14.4	23.8	17.2	17.6
No	%	0.5	85.3	42.8	35.5	54.0
Not known	%	0	0	10.6	37.8	19.3
Missing	%	97.7	0.3	22.7	9.6	9.1
Delivery Method from Exit Data	N	217	2133	1433	3103	6669
Vaginal delivery	%	1.8	87.3	49.1	52.0	62.7
C-Section	%	0.5	12.4	24.3	29.6	23.0
Vaginal and C-Section	%	0	0	0	0	0
Missing	%	97.7	0.2	26.7	18.3	14.3
Women Who Had a Vaginal Birth as a Percentage of Women Who Planned to Deliver Vaginally	%	66.7	90.9	80.2	81.6	85.4
VBAC³²	N	—	90	161	418	669
Yes	%	—	30.0	19.9	13.9	17.5
Repeat C-Section	N	—	90	161	418	669
Yes	%	—	70.0	80.1	86.1	82.5
Scheduled C-Section	N	—	265	348	920	1533
Yes	%	—	0	39.1	29.2	26.4

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 6. Infant Outcomes, through Quarter 1 2015

Data Element	N or %	VCU (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Number of Live Births by Estimated Gestational Birth (EGA)	N	88	2115	1140	2617	5872
Preterm Births, <37 weeks EGA	N	—	112	131	461	704
	%	—	5.3	11.5	17.6	12.0
Non-Preterm Births, ≥37 weeks EGA	N	33	1994	823	1945	4762
	%	37.5	94.3	72.2	74.3	81.1
Missing	N	49	—	186	211	406
	%	55.7	—	16.3	8.1	6.9
Number of Live Births by Birth Weight	N	88	2115	1140	2617	5872

³² The denominator for VBAC and repeat C-section are calculated by adding the total respondents in both categories since we cannot confidently know who else had a previous C-section.

Data Element	N or %	VCU (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Low Birth Weight, <2500 grams	N	11	75	147	412	634
	%	12.5	3.5	12.9	15.7	10.8
Not Low Birth Weight, ≥ 2500 grams	N	74	1810	993	2019	4822
	%	84.1	85.6	87.1	77.2	82.1
Missing	N	–	240	13	197	450
	%	–	11.3	1.1	7.5	7.7

Notes: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

Yellow cells labeled with a dash symbol indicate that between 0 and 11 responses had been received during the reporting period.

Statistics were only calculated for items with at least 11 responses.

Table 7. Breastfeeding and Family Planning, through Quarter 1 2015

Data Element	N or %	VCU (Group Prenatal Care)	Birth Center	Group Prenatal Care	Maternity Care Home	Total
Breastfeeding After Delivery from Postpartum Data	N	77	1533	1416	4000	6949
Yes	%	66.2	86.4	64.7	61.5	67.7
No	%	3.9	7.4	9.5	25.6	18.3
Prefer not to answer	%	0	0.7	1.8	0.5	0.8
Missing	%	29.9	5.6	24.0	12.3	13.2
Women Who Breastfed As a Percentage of Women Who Planned to Breastfeed	%	103.2	100.2	97.4	100.7	99.9
Had Birth Control Counseling After Delivery	N	77	1533	1416	4000	6949
Yes	%	59.7	71.6	60.8	69.7	68.3
No	%	10.4	19.4	12.3	15.2	15.5
Unsure	%	2.6	2.8	2.4	1.8	2.1
Missing	%	27.3	6.2	24.5	13.3	14

Note: Rows labeled with an “N” indicate the number of observations from which percentages have been calculated.

TECHNICAL ASSISTANCE

In May 2015, the evaluation team spoke with the Strong Start awardee in Virginia, Virginia Commonwealth University (VCU). VCU was asked by the Virginia Department of Medical Assistance Services (DMAS) and the Virginia Office of Vital Records to coordinate our data request for the state’s release of Medicaid and birth certificate data to the Urban Institute. The state, with assistance from VCU, is receptive to supporting the evaluation, and DMAS staff plan to link the Medicaid and birth certificate data for our impact analysis. VCU has also requested Medicaid and birth certificate data from the state to conduct its own evaluations of its Strong Start program and is exploring whether our data request can fall under its current agreement with the state or if a separate data sharing agreement is required. The evaluation team hopes to begin receiving data in early 2016, as final birth certificate data for 2014 births will not be available until that time.