The work undertaken and included in this report was supported by a grant from the South Carolina Department of Health and Human Services (SCDHHS). Additional funding was provided to Ms. Marsh through the USC Honors College Exploration Grant Program and the USC Magellan Scholars Program.

Thanks to staff at all CenteringPregnancy sites, Dr. Amy Picklesimer and Sarah Covington-Kolb for their leadership and vision, March of Dimes for its commitment to supporting CenteringPregnancy expansion and SCDHHS for its vision and support of CenteringPregnancy throughout South Carolina, the process evaluation and its overall commitment to improving birth outcomes throughout South Carolina.

Thanks to the Dordt College graphic design students and faculty for their layout design.

Centering Pregnancy (CP) is an evidence-based model of group prenatal care (GPNC) that has been associated with improved maternal and child health outcomes and potentially reducing maternal and child health disparities (Grady & Bloom, 2004; Heberlein et al., 2015; Ickovics et al., 2003, 2007; Picklesimer et al., 2012; Tanner-Smith et al., 2014).

Per the recommendation of the South Carolina Birth Outcomes Initiative (BOI), in January 2013, the South Carolina Department of Health and Human Services (SC DHHS) invested in the expansion of CP to sites throughout the state as a necessary strategy for improving birth outcomes and reducing racial disparities in birth outcomes. Seven new sites began to offer GPNC as an option to women seeking prenatal care between 2013 and 2014. Established sites in Easley and Greenville continued to offer CP in addition to traditional one-on-one prenatal care.

The summary findings in this report are from the process evaluation of CP expansion in South Carolina, conducted from January 2013 – December 2014. Process evaluation involves examining the strengths and limitations of interventions, documenting implementation, and studying factors and contexts that could influence implementation (Durlak & DuPre, 2008; Saunders et al., 2005; Scheier, 2000). Sources of data included individual and group interviews, observations of CP groups, document review, surveys, and media analysis.
Major lessons learned

The success of CP implementation and expansion in South Carolina will be enhanced by investing additional time and resources into existing sites, including strengthening facilitation training, mentorship, and ongoing Level 1 training opportunities, especially for sites with expanding CP services or staff turnover. Observations and feedback should be offered to sites by experts in South Carolina, which will complement trainings provided by CHI.

Elements for start-up success

- Broad-based support from both state agencies and the Centering Healthcare Institute (CHI), exemplifying strong political will for CP start-up and expansion throughout South Carolina;
- Strategic use of “windows of opportunity”;
- Enthusiasm generated for CP among a range of staff at each site;
- Simultaneous training for multiple sites (rather than training at individual sites) helpful for networking and information-sharing established early in the process of implementation;
- Start-up funds to cover the costs of implementation (e.g. notebooks for women) as well as site certification from CHI.

Elements for implementation success

- Changing the way prenatal care is provided to women can be challenging at first for practices and individual providers. Mechanisms for communication, support and active problem-solving are important;
  - Regularly-held steering committee meetings at each site that allow important decision-makers to ask questions, voice concerns, share ideas, problem-solve and foster staff and administrator buy-in;
  - The CP Consortium, managed by one coordinator (Sarah Covington-Kolb), served as a strategic hub for communication in which providers across sites could share ideas and solutions to challenges;
- As compared to traditional prenatal care, additional logistical, time and financial demands exist for sites;
- A CP Site Coordinator at each site who can coordinate logistical and administrative demands of CP implementation;
- Support from key stakeholders at site and state levels;
- Medical resident involvement in CP groups as an important strategy for sustainability and expansion of services;
- CP should be included in SC residency programs;
- Enhanced and creative marketing of CP and recruitment of women to CP groups;
- Effective dissemination and use of site data for process improvement;
- Enhanced per patient Medicaid reimbursement necessary for CP sustainability at sites;
- Planning for sustainability from the beginning of CP implementation, including logistics, time, finances, marketing and patient recruitment.

Elements for expansion success

- Support from key stakeholders at site and state levels, including SC DHHS and Board of Investment;
- Medical resident involvement in CP groups as an important strategy for sustainability and expansion of services;
- CP should be included in SC residency programs;
- Effective dissemination and use of site data for process improvement;
- The CP Consortium as a hub for communication, problem-solving and celebration of successes;
- Additional funding from a range of entities including March of Dimes and insurance providers to cover start-up and site certification costs;
- Enhanced reimbursement strategies implemented by private insurers.
Centering Pregnancy group prenatal care

Centering Pregnancy (CP) is an evidence-based model of GPNC that has been associated with improved maternal and child health outcomes and reduced maternal and child health disparities (Grady & Bloom, 2004; Heberlein et al., 2015; Ickovics et al., 2003, 2007; Picklesimer, Billings, Hale, Blackhurst, & Covington-Kolb, 2012; Tanner-Smith et al., 2014). The model is supported by the Centering Healthcare Institute (CHI), a nonprofit organization that provides the expertise, training and tools necessary to start and sustain Centering group care practice. The CP model of care is comprised of three key components (Rising et al., 2004):

1) *Healthcare check-ups* by a licensed clinical care provider during group time in a private corner in the same group space, as well as patient self-care activities to assess their own blood pressure, weight, and body mass index

2) *Educational content* provided through group facilitation by trained facilitators

3) Women provided *support* through relationships among group members and interactions with facilitators.
Expansion in South Carolina

Centering Pregnancy was initiated in South Carolina in 2008 at Greenville Health System (GHS) in Greenville, SC, through support from the March of Dimes, and independently at Mountainview Ob-Gyn in Easley, SC the same year. In a retrospective cohort study by Picklesimer and colleagues (2012), GHS reported a 47% reduction in the odds of preterm birth for women in CP verses women in traditional prenatal care. Given the impact of CP on birth outcomes specific to South Carolina (Picklesimer et al., 2012), in 2012 the South Carolina Birth Outcomes Initiative (SC BOI) proposed women’s expanding access to CP as a core strategy to improve birth outcomes in SC. In January 2013, the South Carolina Department of Health and Human Services (SC DHHS) began to invest in its expansion to sites throughout the state.

Dr. Amy Picklesimer, a Maternal-Fetal Medicine specialist, and Ms. Sarah Covington-Kolb, Centering Pregnancy Coordinator, both with GHS have led the SC DHHS CP expansion process. GHS runs one of the largest and most successful CP practices in the United States.

A call for proposals was issued by SC DHHS to sites to apply to be included in the CP expansion. Before applying, practices were required to attend a CHI Model Implementation Seminar. Stakeholders from multiple obstetrical practices with expressed interest in starting up CP attended the seminars, which were facilitated by an experienced CHI faculty member and by the SC State CP coordination team. During the daylong session, participants had the opportunity to learn more about CP, meet faculty from CHI, hear from providers from sites in South Carolina that have successfully implemented CP, and ask questions.

Expansion sites were selected through a competitive application process. After the Model Implementation Seminar, sites submitted applications, which were reviewed by a committee, comprised of representatives from SC DHHS, South Carolina March of Dimes, CHI, GHS, and the process evaluation team. Practices were selected based on scores generated from the CHI “site readiness tool” (http://www.centeringhealthcare.org/pages/centering-model/site-readiness.php), and percent of patients served by Medicaid.

Since 2012, three Model Implementation Seminars have been held in SC (November 2012, 2013, 2014), followed by open periods for practices to apply for start-up funds. Fifteen practices attended the 2012 and 2013 Model Implementation Seminars. From the applicant pool, seven clinical sites were selected by the SC committee.
A “start-up package” was created for each new practice, which included:

1) training for providers and staff in the CP model, led by CHI;

2) a small budget to cover basic necessities for running groups and outfitting the group space, including patient notebooks for the first few groups, blood pressure cuffs, a massage table used for women’s check-in time at the beginning of each group, chairs and educational materials, such as posters for the group space and

3) a contract with CHI for support to move toward site certification.

Concurrently, SC DHHS created a per-patient “enhanced reimbursement” made available to sites according to the number of women served through CP prenatal care.

Between 2013 and 2014, all seven sites began to offer GPNC, following the CP model, as an option to women seeking prenatal care. Each site has trained CP group facilitators, including a licensed care provider (physician, nurse practitioner or nurse midwife) and a co-facilitator, often a nurse or support staff member. Steering committees were convened at each of the CP sites and include positions such as: group facilitators, other healthcare practitioners, center director, clinic coordinator, other clinic administration, marketing leader, internal process evaluation and benchmarking leader, support staff, and patients.

At the same time, Statewide CP Coordinator, Sarah Covington-Kolb, MWS, MPH, created a SC Centering Consortium to facilitate communication among sites and provide a space for ongoing creative problem-solving as well as celebrating successes (https://centeringpregnancy.ghs.org/). All of the sites communicate through Consortium meetings, which are held in person and by phone every three to four months.
Why conduct a process evaluation?

SC DHHS is investing in CP as one of several strategies for improving birth outcomes throughout the state. This investment includes resources for clinical sites to initiate and implement CP in their practice, a rigorous outcomes evaluation, and to document implementation and expansion processes (process evaluation). Since 2012, a team of external evaluators has documented how sites are working to incorporate CP into their everyday practice of offering prenatal care and includes documentation of challenges faced, ways in which practices are meeting those challenges, and key successes.

The main objectives of the process evaluation are to:

1) Document and inform implementation processes at each site;
2) Support the CP Consortium to share lessons learned across sites;
3) Inform SC DHHS and other agencies about the process of statewide expansion in order to define ways to best continue the process;
4) Better understand and explain CP outcomes;
5) Serve as a model for other states or agencies seeking to expand an evidence-based healthcare model within an existing healthcare framework.

Process evaluation is important given that “implementation affects the outcomes obtained in promotion and prevention programs” (Durlak & DuPre, 2008, p. 327). Effective implementation can lead to higher rates of success and stronger positive outcomes. Process evaluation involves examining the strengths and limitations of interventions, watching how implementation happens in “real-time,” and studying factors, including context, that could influence intervention implementation (Durlak & DuPre, 2008; Saunders et al., 2005; Scheirer, 2000). Process evaluation provides a means through which implementers can learn from the successes of other sites, and importantly, how they were able to overcome barriers (Durlak & DuPre, 2008; King, Morris, & Fitz-Gibbon, 1987; Patton, 2008; Saunders et al., 2005; Scheirer, 2000). The findings of a solid process evaluation can be used both to modify the intervention so it is implemented as planned, as well as to describe what happened throughout the intervention, who was reached, and how the outcomes are related to these findings (Durlak & DuPre, 2008; Saunders et al., 2005; Scheirer, 2000).
SCDHHS supported a three-year process evaluation, carried out by a team from the University of South Carolina, Arnold School of Public Health. Note that only five sites from the first round of CP expansion (in 2013) are included in this summary report.

Process evaluation team

• Deborah Billings, PhD
• Kristin Van De Griend, MPH, PhD, MPH
• Noël Marsh, BA
• Sarah Kelley, LMSW, MPH

Name and location of CP sites

The five CenteringPregnancy expansion sites included in this evaluation are: AnMed Health Family Medicine, Tuomey Healthcare System OB-Gyn, University of South Carolina School of Medicine Department of Obstetrics and Gynecology, Carolina OB-Gyn at Georgetown Hospital System, and Medical University of South Carolina (Table 4.1). These are shown on the map below and are marked in red. The remaining sites that are marked in blue are not included in this report (Figure 4.1).

Evaluation methods

Data collection methods used by the process evaluation team are summarized in Table 4.2. Data were collected from January 2013 – December 2014. These data were used to describe and understand the processes, challenges and successes of the first phase of start-up and implementation at each site, as well as to document general trends experienced statewide.
<table>
<thead>
<tr>
<th>Site Name</th>
<th>Location</th>
<th>Year initiated CP</th>
<th>Included in summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenville Health System</td>
<td>Greenville</td>
<td>2008</td>
<td>No</td>
</tr>
<tr>
<td>Mountainview OB-Gyn</td>
<td>Easley</td>
<td>2008</td>
<td>No</td>
</tr>
<tr>
<td>AnMed Health Family Medicine</td>
<td>Anderson</td>
<td>2013</td>
<td>Yes</td>
</tr>
<tr>
<td>Tuomey Healthcare System OB-Gyn</td>
<td>Sumter</td>
<td>2013</td>
<td>Yes</td>
</tr>
<tr>
<td>University of South Carolina School of Medicine Department of Obstetrics and Gynecology</td>
<td>Columbia</td>
<td>2013</td>
<td>Yes</td>
</tr>
<tr>
<td>Carolina OB-Gyn, Georgetown Hospital System</td>
<td>Murrells Inlet</td>
<td>2013</td>
<td>Yes</td>
</tr>
<tr>
<td>Medical University of South Carolina</td>
<td>Charleston</td>
<td>2013</td>
<td>Yes</td>
</tr>
<tr>
<td>Montgomery Center for Family Medicine</td>
<td>Greenwood</td>
<td>2014</td>
<td>No</td>
</tr>
<tr>
<td>Carolina Women's Center</td>
<td>Clinton</td>
<td>2014</td>
<td>No</td>
</tr>
<tr>
<td>Palmetto Women's Healthcare</td>
<td>Manning</td>
<td>2015</td>
<td>No</td>
</tr>
<tr>
<td>Lexington Women's Care</td>
<td>Lexington</td>
<td>2015</td>
<td>No</td>
</tr>
<tr>
<td>Coastal Carolina OB-Gyn</td>
<td>Conway</td>
<td>2015</td>
<td>No</td>
</tr>
</tbody>
</table>

Table 4.1 – CP sites in South Carolina, 2008-2014
Figure 4.1 – Map of South Carolina CP sites
### Table 4.2 – Methods used in South Carolina CP process evaluation by clinical site

<table>
<thead>
<tr>
<th>Site name</th>
<th>Location</th>
<th>Baseline steering committee interview</th>
<th>1st followup steering committee interview</th>
<th>2nd followup steering committee interview</th>
<th>Individual facilitator interviews</th>
<th>Site observations</th>
<th>Facilitator essential elements</th>
<th>Content surveys</th>
<th>Additional info</th>
</tr>
</thead>
</table>

Statewide Coordinator (Greenville): individual interviews with two coordinators in Oct. 2014

CHI Basic and Advanced Facilitation Trainings (Charleston, Greenville, & Columbia): trainings for expansion sites were conducted and observed in May and June 2013 and April and May 2014


Birth Outcomes Initiative (Columbia): monthly meeting attended 2013-2014

*Table 4.2 – Methods used in South Carolina CP process evaluation by clinical site*
Implementation was monitored for fidelity, dose, and reach (Table 5.1). Each of these terms and how the results were obtained are discussed in detail below.

**Fidelity to the CP model**

Fidelity, or the extent to which CP was implemented consistently with the theories and philosophies used to create it as outlined in the 13 Essential Elements (below) was measured through a survey to all facilitators and through group observations at three sites (Durlak & DuPre, 2008). All sites had a high level of fidelity to the model (Table 5.1).

13 Essential Elements:
- Health assessment occurs within the group space.
- Participants are involved in self-care activities.
- A facilitative leadership style is used.
- The group is conducted in a circle.
- Each session has an overall plan.
- Attention is given to the core content, although emphasis may vary.
- There is stability of group leadership.
- Group conduct honors the contribution of each member.
- The composition of the group is stable, not rigid.
- Group size is optimal to promote the process.
- Involvement of support people is optional.
- Opportunity for socializing with the group is provided.
- There is ongoing evaluation of outcomes.

**Dose**

Dose delivered, or the extent to which all sessions and modules (Table 5.2) within the Facilitator’s Guide were implemented, was measured by a survey to all facilitators (Durlak & DuPre, 2008). All sites had a high rate of delivering recommended content to participants (Table 5.1).

The indicators for dose of the intervention received by women were whether or not participants gave CP an overall high rating and how facilitators felt about the quality of the care they provided during groups (Durlak & DuPre, 2008). The process evaluation team attempted to collect the actual percentage of woman who rated their experience with CP highly, however, sites did not make this information available to the team. All five sites were certified by CHI to continue providing CP, thus all five sites had an acceptable dose of delivery (i.e., percentage of women who rated their CP experiences highly).
Reach

Reach, or the number of women served by CP, was obtained through practice-reported data to the statewide coordinator (Durlak & DuPre, 2008). The number of women who received CP prenatal care can be compared to the number of women who had traditional individual prenatal care at each site (Table 5.1).

Recruitment

See “Logistics” below for a discussion on recruitment and marketing.

Context

There are system-level (internal) and external elements that influenced the level of CP implementation and expansion (Chen, 2005). Examples of system-level contextual elements influencing CP implementation were practice type (i.e., independent or hospital-based clinic and family practice or obstetrics), facilitator credentials (i.e., physician, nurse practitioner, nurse-midwife), involvement of medical residents, organizational collaboration from departments within the system, such as hospital marketing, support from leadership, geographic location, and finances from the start-up grant and enhanced reimbursement.

The process evaluation also revealed external contexts that impacted CP implementation (Chen, 2005), such as level of political and community support regarding prenatal care and maternal and child health, and conditions of the local economy can impact CP implementation.
### Implementation monitoring results, cont.

<table>
<thead>
<tr>
<th>Randomized site number</th>
<th>Self-reported fidelity score</th>
<th>Observed fidelity score</th>
<th>Self-reported content score</th>
<th>Number of CP patients Jan. 2014 through April 2015</th>
<th>Practice type, location, and enrollment model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>85.7%</td>
<td>95.8%</td>
<td>92.2%</td>
<td>67</td>
<td>Hospital-based family practice residency clinic; 27,000 city population; opt-in enrollment model</td>
</tr>
<tr>
<td>2</td>
<td>86.9%</td>
<td>Not observed</td>
<td>100.0%</td>
<td>119</td>
<td>Hospital-based OB/GYN residency clinic; 128,000 city population; opt-out enrollment model</td>
</tr>
<tr>
<td>3</td>
<td>82.9%</td>
<td>Not observed</td>
<td>90.6%</td>
<td>181</td>
<td>Independent OB/GYN clinic with CP at two locations; 16,500+ population for both towns; opt-out model</td>
</tr>
<tr>
<td>4</td>
<td>83.8%</td>
<td>87.5%</td>
<td>95.0%</td>
<td>92</td>
<td>Hospital-based OB/GYN clinic in two locations with CP offered at one; 133,000 city population; opt-out at one location and opt-in at the other</td>
</tr>
<tr>
<td>5</td>
<td>84.6%</td>
<td>95.8%</td>
<td>92.4%</td>
<td>113</td>
<td>Hospital-based OB/GYN clinic; 41,000 city population; opt-in enrollment</td>
</tr>
</tbody>
</table>

*Table 5.1 – Implementation Monitoring of CenteringPregnancy, by Randomized Site Number*
### Table 5.2 – Centering Pregnancy Educational Content

<table>
<thead>
<tr>
<th>Session Number</th>
<th>Weeks Gestation</th>
<th>Educational Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12-16</td>
<td>My pregnancy, what's most important? Personal goals, group guidelines, confidentiality agreements and photo release, prenatal testing, nutrition, and healthy lifestyle choices</td>
</tr>
<tr>
<td>2</td>
<td>16-20</td>
<td>Common discomforts, body changes during pregnancy, back pain, and oral health</td>
</tr>
<tr>
<td>3</td>
<td>20-24</td>
<td>Relaxation, breastfeeding, family dynamics</td>
</tr>
<tr>
<td>4</td>
<td>24-28</td>
<td>Family planning and safe sex, safety, family dynamics, sexuality, domestic violence/abuse, fetal brain development, and preterm labor</td>
</tr>
<tr>
<td>5</td>
<td>26-30</td>
<td>How am I doing? Comfort during labor, labor and breathing, birth facilities, medications, early labor</td>
</tr>
<tr>
<td>6</td>
<td>28-32</td>
<td>Labor decisions, birthing experience</td>
</tr>
<tr>
<td>7</td>
<td>30-34</td>
<td>Decisions after the baby is born, newborns, pediatric care, caring for your baby, circumcision, brothers and sisters</td>
</tr>
<tr>
<td>8</td>
<td>32-36</td>
<td>Feelings, parenting, kick counts, emotions, baby blues, postpartum depression</td>
</tr>
<tr>
<td>9</td>
<td>34-38</td>
<td>Thinking ahead, putting it together, newborn safety, infant massage</td>
</tr>
<tr>
<td>10</td>
<td>36-40</td>
<td>Newborn care, growth and development, home and family changes, mom and newborn postpartum – when to call the clinic</td>
</tr>
</tbody>
</table>

*Table 5.2 – Centering Pregnancy Educational Content*
The following sections summarize the major findings in relation to CP start-up, implementation, and institutionalization in the sample of CP expansion sites for this process evaluation. Included at the end of each section are recommendations aimed at informing start-up processes at additional sites and improving implementation in existing sites such that expansion of CP can continue in South Carolina.
Key findings: CP start-up

Explicit political will, stakeholder involvement, and effective use of windows of opportunity were critical to the inception of GPNC scale-up in SC. Stakeholders’ values were reflected in decisions they made throughout the process.

Explicit political will

Key policy and donor agencies, SC DHHS, Birth Outcomes Initiative, South Carolina March of Dimes, and CHI, helped support the new practices during the start-up phase. Support was provided in the form of funding, training, sharing experiences, mentorship and enthusiasm for and high-level attention to CP implementation. The broad-based support from both state and national-level agencies exemplified the strong political will that existed to make CP expansion a reality in SC. This resulted in enthusiasm for CP and a desire on the part of practices to participate in a groundbreaking GPNC expansion project.

Decision making approaches

Changing the way care is provided within existing healthcare systems can be difficult to achieve. Some sites in this process established a top-down decision-making approach that enabled administrators to use their authority to bring CP to the practice. Physicians who supported bringing CP to their practice also used their status to persuade skeptical administrators and staff to support it.

Stakeholder values

The values of important stakeholders were expressed through their decisions and actions throughout implementation and expansion of CP. Leaders at sites stated the model would allow women a greater level of rapport, or relationships: “to form bonds and connect with other people in the community so that if they didn’t have those support systems before, those can be in place” (steering committee member). Healthcare providers continue to promote the model of care in their practices, “as a facilitator, I really get to know the women a lot better in the group than I did one on one, but it is more emotionally intense” (group facilitator). Clinic staff often described the value of affection when deciding to implement CP because they believed the model would offer a better type of healthcare to promote patient well-being: “So a different approach which would have better outcomes and much better compliance” (steering committee member). They also expressed value for the knowledge, or educational aspect of CP for patients: “I feel it is very important that pregnant women get comprehensive care in a manner that they can understand and
Key findings: CP start-up, cont.

relate to, that is going to help them understand the whole process that they’re going through” (nurse midwife group facilitator). Administrators believe that the residency education programs benefit from the model: “From a residency educator perspective, this is to me, a really exciting opportunity to shake the educational boat just a little bit” (residency program steering committee member).

Whether CP would generate income was noted by several leaders, “There is one provider who is just not sure whether or not it will make money for the practice. The provider isn’t against it, but is not completely sold, until the person sees that there is money coming in” (steering committee member). Valuing conformity was revealed through the expectation that there would be better compliance by patients, “if they really are committed to being a part of the group, then that’s part of that commitment too, showing up and then participating when they’re here” (steering committee member), as well as the intention to participate as a clinic in forming a new norm of care, “I think health care is moving toward a group care model and I wanted us to be in the forefront of that” (clinic administrator). Providers also expressed a deeper level of respect for patients because of the model, “I have a lot of respect for [patients] and what they’re going through. It’s a very positive experience. It’s enjoyable” (group facilitator).

Windows of opportunity

Windows of opportunity opened throughout the process of expanding CP at both the state and site levels. At the state level, these windows involved the identification of poor birth outcomes as a problem, presenting evidence of the benefits of GPNC to state and health insurance leaders, and public and political commitment to establishing GPNC as a standard of care throughout the state to address the issue (Kingdon, 1995). Key stakeholders took advantage of these windows to secure funding to implement and oversee the new model of healthcare at multiple sites throughout the state, “He [DHHS Director] said he would be interested in funding that as a way to try to move the needle on NICU stays and perinatal outcomes, so that’s where we came up with the idea for the expansion…We thought we could do it … At that the same time, I told him, sustainability was really important and we would have to have some incentive payments. So that first year, he [wrote] incentive payments into the contracts with the managed care organizations” (Statewide Expansion Coordinator).

At the individual site level, clinic decision-makers capitalized on policy windows by arranging meetings, attending grant application forums, applying for funding and support to implement the new model of care, and building
staff commitment at their own sites, “Because I was able to meet with her [expansion coordinator] through the [South Carolina Perinatal Association] meetings, she knew that I was interested. I had seen her at Birth Outcomes Initiative and the Vision Team, and then we had dinner together and talked about it…I feel like we’ve got a team that we can be successful with. So that’s the main interest for us” (clinic administrator).

**Stakeholder support**

Support from key stakeholders within the individual practice sites, such as administrators, clinic staff, and direct health care providers, was necessary for successful implementation of CP. At least one administrator at each site who could oversee the process was essential. Physicians were considered key stakeholders at each practice because of their abilities to influence the system, regardless of their involvement in CP.

While many stakeholders initially supported CP, effort was necessary to build support among hesitant or uncertain people within each practice both prior to implementation and as practices began to implement CP. Throughout implementation, stakeholders at each of the practices have been actively engaging and reaching out to providers, staff and administrators to build support for CP, though some providers remain ambivalent, “Usually the people not supportive of Centering are the people who are not involved. They don’t like the idea, don’t understand the idea, or aren’t able to be involved and are disgruntled” (Facilitator, hospital-based CP practice).

**Team effort**

Practices with a cooperative staff described how teamwork made challenging tasks more manageable. A large number of varying roles were necessary to make CP work, from healthcare providers to administrators and ancillary staff. Teamwork helped with scheduling, patient flow, recruitment and marketing, and group facilitation, “They think that they are all working together and making it work” (clinic administrator). Another leader described how staff made CP work, “They constantly exchange ideas during clinic. It’s been a good team effort…they are wonderful. They want it to work and want it to be successful” (steering committee member).
Steering committees

Steering committees strategically brought together politically influential people from both within their clinic and externally associated with it to address challenges and concerns, brainstorm solutions, share ideas, and make plans for the future of CP at their sites. These meetings also created a space where critical buy-in happened. Practices found it helpful to involve people from various disciplines with multiple perspectives and areas of expertise because CP affects multiple areas of the clinic. Steering committees met regularly, typically monthly, during the start-up phase and began to meet informally or once every few months after their first few CP groups were underway. As sites approached their dates for site certification through CHI, steering committees began to meet more regularly. One implementation challenge that most sites faced was scheduling these meetings because, “They are so busy running a practice and caring for patients” (clinic manager).

Communication across sites

Communication between and across CP practices facilitated discussion about best practices and ways to resolve challenges. Information, such as marketing, healthcare check-up procedures, and billing codes, was shared between sites at regular CP consortium meetings (via phone and in-person). One of the most important challenges of maintaining active involvement in the Consortium was staff turnover and changing contact information.
Centering Pregnancy implementers at the expansion sites consistently expressed that the CP model of care differs significantly from the traditional one-on-one model of prenatal care. Clinic providers and staff saw this change as both challenging and rewarding.

Facilitative dynamics

Facilitators must be willing to adapt to a facilitative style of providing care, which is a much different way of communicating with patients. Several CP group facilitators initially feared that the hardest part of facilitating groups would be to sit back and listen, letting group participants take the lead. This was especially true for providers who were accustomed to more didactic ways of teaching patients about what they should be doing during pregnancy. While learning to facilitate groups was challenging at first for some providers, the overall sentiment for most by the end of the process evaluation was, “Most of the facilitators and co-facilitators really enjoy spending the time with the patients and feel like they get to know the patients better...in Centering than they would in more traditional care” (clinic director). Additionally, facilitative leadership allows patients to exchange their own stories and learn from and support each other.
Implementing CP requires multiple logistical changes to the way obstetrical practices are run. Considerations must be made for the amount of time it takes to coordinate group care, space for groups to meet, group care templates for electronic medical record systems, refreshments, educational materials, marketing, scheduling, and finances. Due to additional logistical and administrative demands of CP, assigning one or more people the role of CP Site Coordinator is necessary for each practice.

**Time**

Centering Pregnancy is a more time-consuming model of care and results in less productivity than individual care because providers see six to twelve women (optimal group size is 8-12) during the same amount of time they could see up to 16 women. This can be costly, depending on sites’ financial and practice structure. Group facilitators and coordinators often took time before and after clinic and during lunch hours to prepare for group care, to set up the room, organize snacks and guest speakers, fill out Centering Counts evaluation forms, and record medical information in electronic charts (which otherwise happens in the room with patients during individual care), “It took more prep time than what we were prepared for” (CP facilitator).

**Space**

Providing care for a group of women and each support person requires a room with enough space to comfortably maneuver and complete all of the CP educational and health-assessment activities. Some practices renovated a permanent CP space, while others use existing meeting or waiting rooms. Practices that set up and broke down equipment in temporary spaces for each session found this to be time-consuming, stressful, and exhausting, “It’s very complicated, it takes a lot from everyone involved to get the schedule blocked off to make sure no one’s walking through the front door” (CP facilitator). Another facilitator said, “One of our biggest obstacles is that we don’t have a dedicated space. If we had a space we could just leave alone that would be huge…everyday we’re bringing everything out, setting it up, taking it down, then putting it back up” (CP facilitator). A lack of designated space also limited some sites’ abilities to expand to concurrent groups.
Key findings: logistics, cont.

Electronic medical records

Keeping electronic medical records for CP groups has worked well for some practices and has been very challenging for other practices. Initially, templates had to be created in order to streamline documentation for group care. Some facilitators had to work outside of business hours to keep patient records current and to feel confident that they reviewed upcoming patient histories, “If you have go to a patient’s EMR, …and look through things, it is not a quick process. So, the prep time for [a facilitator] to get ready for a CP group, when she has a whole group of them, with only 3 minutes assessment time, you can’t quickly prepare yourself for that group. Except for ahead of time with prep time” (clinic administrator).

Marketing and recruitment

Some practices were using an “opt-out” approach to recruitment, whereby any low-risk pregnant woman is scheduled into CP unless the woman said she wanted individual prenatal care. Practices used a variety of advertising strategies: staff t-shirts, pamphlets, posters, articles in magazine and newspapers, webpages, Facebook groups, videos, billboards, and radio advertisements. Other CP sites were not able to successfully market outside of their own clinic due to contextual dynamics beyond their control. It was common for some healthcare providers to be more committed to speaking with their patients about CP than were other providers, “I think they don’t think about it. I think it’s just been done the traditional way for so long that they don’t think to offer it” (CP facilitator).

Scheduling

Scheduling group prenatal care was challenging, especially since this was a new model of care being added to existing obstetrical practices. Provider schedules constantly had to be restructured in order to create space to conduct two hours of CP, plus preparation before and time to process after groups. Groups were assigned to facilitators, and multiple patients were assigned to a group and were scheduled out for the duration of their prenatal care. Two practices had the added responsibility of scheduling medical residents to each group in addition to their current medical education structure. Good communication and collaboration were essential to efficient scheduling.
Key findings: logistics, cont.

Data collection and management

Centering Counts is a database provided by CHI and submitting Centering Counts forms with site data is required at the time the site applies for certification. This database includes information regarding each woman in CP and each group: attendance, clinic goals for CP, cost impact, essential elements evaluations, group numbers, provider data, staff and administration surveys, steering committee evaluations, health outcomes, and patient evaluations. The Statewide Expansion Coordinator facilitated the process of getting sites trained in Centering Counts and sites found the assistance to be very helpful. The predominant responses to Centering Counts, however, were that instructions in the files were unclear, CHI-led training would be beneficial for CP coordinators, and that the process of implementing Centering Counts was confusing, unclear, very time consuming, stressful, and frustrating.

Eligibility criteria and enrollment

Each practice established site-specific eligibility criteria for CP. Most sites enrolled low-risk patients, however, there was no consensus among sites on this term. All practices enrolled women regardless of their type of insurance (i.e., Medicaid or private insurance). All practices enrolled English-speaking women, as the cost for translation services was a barrier. Only women with singleton births were enrolled. By the end of data collection, practices were not enrolling women with diagnosed diabetes prior to pregnancy, but they allowed women to stay in groups if they developed diabetes during pregnancy.

Materials and supplies

There were additional materials and supplies necessary to run group prenatal care, relative to traditional individual prenatal care. The cost of CHI-sponsored materials, such as educational videos and posters, was a barrier for most practices, so most practices created their own or purchased them from other vendors. Overall, practices found the CHI facilitator's kits with guides and activities, as well as the mom's notebooks to be very beneficial.
Key findings: logistics, cont.

Personnel

Most practices found that running CP cost effectively required having nurse practitioners or nurse-midwives facilitate groups and nurses or medical assistants co-facilitate groups, though some practices did utilize physicians as group facilitators. Financial limitations prevented practices from hiring a full-time coordinator for CP at first; rather, responsibilities were redistributed across multiple people within the clinic. “I think there should be one set administrative person who is in charge...What we have we’ve put together piecemeal...But it’s never been really clear about what that [coordinator] is supposed to be doing” (CP facilitator). By the second year of implementation, most sites created a CP Site Coordinator position, though people in that role were expected to manage many other clinic duties in addition to coordinating CP. Staff turnover was a significant challenge for many sites over the last two years, “The problem is, with the front office, we have so much turnover that we have to continually train the individuals who come in how to do that and I feel like the whole front office in general is a constant training ground” (steering committee member).

Training and technical assistance

Most CP providers found the CHI basic and advanced facilitation training workshops to be useful. Some people suggested that the basic facilitation workshop be condensed into one day; while other people said it should be split between facilitation training and administrative trainings (i.e., how to coordinate CP within a practice and how to manage Centering Counts). Most sites agreed that ongoing training should be made available at no or low-cost if possible due to staff turnover.

Educational

All residents noted a distinctive difference between CP and traditional prenatal care with the added benefit of educational components for CP patients. Residents indicated that the educational piece was important because it allowed for patients to be more informed consumers and permitted patients to address topics they might not otherwise explore if in a traditional setting. One participant noted the difference their involvement in CP has made in their delivery of traditional prenatal care, “Because there’s so much more education in [CP]...even if I’m seeing somebody in the regular clinic, I think about things I need to touch on...it’s definitely made me educate people better and get their input more.”
Organizational

The organizational structure of CP at this site appeared to have a large impact on the positive experiences residents expressed. All residents indicated that the site prioritized CP in their schedules and that the scheduling was conducive to their family medicine training needs. They expressed a feeling of support for their desire to attend CHI trainings; however, most indicated a need for a more formal introduction to CP in their orientation. Residents also identified that marketing in the community to encourage more women to attend CP groups is important.

Relationships

Residents expressed positive aspects associated with the group setting, both to them and their patients. Residents indicated that CP allows for more relationship building between the doctor and their patient and provides an additional support structure for patients who might not have a support system in place. An added bonus identified by residents came in the form of learning from their patients and using a facilitative approach. For example, “You don’t always know the answer. I kind of like that I don’t always know the answer… it gives us a chance to learn, so we learn as a group. I love the group dynamic.”
Key findings: institutionalization

Institutionalization is a necessary component of implementation, through which an intervention becomes part of the normal way of providing services (Billings et al., 2015). Factors affecting it need to be considered and addressed before and during active implementation. One important mark of the institutionalization of CP is site certification, a rigorous process through which individual sites become officially approved by CHI to conduct CP groups. All five of the sites were certified through CHI by the end of the second year of implementation.

Financial perspectives

There are significant financial costs to implementing CP, including CHI membership, trainings, consultations, and system redesign, as well as travel to trainings and meetings, educational materials, snacks, and personnel. The start-up grant to each practice made this expansion possible, “We couldn’t have done it without the start-up grant. We wouldn’t have had enough money to train people. They’ve been nice to train a nurse and a nurse practitioner” (clinic administrator).

Current reimbursement from third-party payers, such as Medicaid and private insurance, cover most costs associated with traditional prenatal care, but are not enough to cover CP. Practices counted on enhanced reimbursement from Medicaid to immediately offset the extra costs of provider time, mom’s notebooks, and snacks, however, transition to enhanced reimbursement was not as smooth as stakeholders hoped. Practices are looking forward to the recent (July 2014) policy change that allows enhanced reimbursement from Blue Cross/Blue Shield as well.
Impact of marketing and recruitment

Recruitment into CP impacts the number of women receiving care through CP, which is also a mark of institutionalization. Several practices rely on “word of mouth” for recruitment. Practices should continue to focus on marketing and recruitment in order to sustain CP within their practices.

Adaptation

As CP is implemented into existing healthcare systems, there are internal system-level contexts and external influences on implementation, “We have to make it work within the context of the resources we have” (steering committee member). For example, some practices implement 9 of the 10 sessions, some sites moved to 6-week due date groupings instead of 4-week groupings, and some sites allow later entry into CP (24 weeks) than the usual 16 weeks. Some sites do not cover all of the recommended material, such as prenatal and infant massage, because the topics are not as relevant to their patients or are not brought up spontaneously by the group for discussion. If there are future changes in the enhanced reimbursement model, some practices indicated that maintaining their site certification through CHI to provide CP for their patients would be too cost prohibitive for them to maintain.
Conclusions

South Carolina is unique because of its commitment to expanding CP as one of its key strategies to improving birth outcomes among all women in the state. All five of the sites monitored in this process evaluation have worked very hard and formed important collaborations in order to make CP successful in their practices. Steering committees were able to come up with creative solution for challenges they faced during the process in order to situate CP within the context of their work. Results from the process evaluation showed that practices implemented CP with a high level of fidelity to the model and they delivered a high level of dose (content) to patients. Site approval was granted through CHI at all five sites, which demonstrated sufficient reach, fidelity to the model, internal administrative and staff support, and high ratings of CP by women.

Ways in which the work can be sustained over time need to continue to be explored and incorporated into expansion plans. This includes involving a range of insurers and additional donors to participate and contribute to the financial sustainability of CP in South Carolina. This important investment is expected to result in significant improvements in maternal and child health over time.


