WellBabies: Mothers’ Perspectives on an Innovative Model of Group Well-child Care

Cristen Page, MD, MPH; Alfred Reid, MA; Erin Hoagland; Sarah Brier Leonard, MD, MPH

Background and Objectives: Typical well-child visits are often unsatisfactory both to providers and patients. Group visits have been shown effective in some settings but have not been recently assessed for well-child care. Here we describe a model for infant well-child visits, WellBabies, along with participating mothers’ perspectives and comparisons of quality outcomes. Methods: We invited mothers receiving prenatal care in our practice to participate in WellBabies after delivery. Thirteen women participated, and 11 were available for individual interviews. We identified and summarized common themes in interview transcripts and compared quality outcomes with babies who had standard individual well-child visits. Results: Participants expressed largely positive reactions to WellBabies, identifying mutual support, information sharing, parental involvement in care, and time spent in the visit as particularly valuable. One participant expressed concern about lack of individual time with a provider. Quality outcomes were similar to those in the comparison group. Conclusions: Group well-child visits can effectively address important issues in children’s health care and are well-received by participants.

Well-child visits to family physicians have been declining nationally, and family physicians are challenged to create medical homes that are attractive to parents with children needing basic health care. Well-child care visits are designed to enhance the delivery of preventive services to children and are routinely conducted during individual appointments spanning 20–40 minutes. During this time, clinicians must provide appropriate screening, physical examinations, parental education issues, and immunizations.

Physicians report that this model typically provides insufficient time for even the most important preventive services, and evidence suggests that preventive service performance is low. In addition, studies investigating parents’ expectations reveal that 94% of parents report one or more unmet needs for parenting guidance, education, and screening.

The Future of Family Medicine Project encourages family physicians to develop innovative models of care to better meet patients’ health care needs. Application of Wagner’s Chronic Care Model has led to consideration of group visits as a way to improve both the process and outcomes of care for children. First studied in the early 1980s, group visits for well-child care were designed to allow delivery of preventive health care to a group of similarly aged children over a longer office visit. The longer office visit also would allow more time to answer parents’ questions and provide anticipatory guidance.

These early studies showed that group visits were an efficient and effective way of delivering well-child care. Compared to parents and infants who received care during individual well-child visits, participants of group well-child visits had similar outcomes of time per infant, similar use of health services, and similar patient satisfaction. Further, group visits have been found to enhance delivery of health information for parents on topics such as safety, nutrition, and infant behavior.

With the exception of high-risk populations, however, group well-child visits have received little attention in the last 2 decades, and their feasibility for providers and attractiveness for parents in the current health care climate are unclear. The purposes of
this paper are to (1) describe a new program of group well-child care implemented in addition to individual well-child visits, (2) relate mothers’ perspectives on their participation in the program, (3) describe quality outcomes, and (4) share lessons learned in implementing the program.

Methods

Program Description and Setting
The University of North Carolina’s academic Family Medicine Center (FMC) has been conducting formal group visits for diabetes and prenatal care since 2001 and 2002, respectively. Prenatal groups, initially designed from the Centering Pregnancy® model,12 have been well received. About half of our approximately 170 prenatal patients per year choose group care instead of individual care, and we conduct an average of 250 group visits per year.

Encouraged by successful experiences with group visits and parents’ desire to continue meeting with their prenatal group after delivery, we created group well-child visits in 2006. We called the program WellBabies and designed it to respond to physicians’ and patients’ need for more time and to facilitate parental education.

Organization
WellBabies group visits, lasting 90–120 minutes each, followed the routine preventive schedule developed by the American Academy of Pediatrics.13 The groups started with infants at approximately 1 month of age and ended at the 1-year birthday celebration, with six total visits per group. Groups consisted of four to eight infants and their mothers; fathers were invited and occasionally participated. Visits were conducted during usual clinic hours in a large room not ordinarily used in patient care. Visits were scheduled by a group assistant who, after finding the most suitable time for participants and facilitators, worked with front desk staff to schedule multiple infants with the same provider at the same time and to reserve the group space.

A physician facilitated each group. A nurse midwife/lactation consultant assisted with the group’s first visit and thereafter as appropriate. When scheduling permitted, a resident physician also helped facilitate. Equipment included a portable infant scale, a measuring tape, and colorful foam mats for infants’ “tummy time.” A complete outline of the WellBabies visit is shown in Table 1.

Participants and Recruitment
Beginning in April 2006, all prenatal patients in their third trimester at our FMC and at an affiliated freestanding birth center were given a written description of our pediatric services and invited to participate in the WellBabies group. Patients expressing interest received a follow-up phone call after delivery and were offered a choice of individual care or group care. Invitations were targeted to patients who would deliver during

| Table 1 |
| Overall Flow, Time Allotted, Planned Content, and Billing of WellBabies Group Visits |

| Check-in | • Parent(s) and babies arrive in advance of the scheduled appointment time, participate in the usual patient check-in process, and are then escorted to the group visit room. |
| Introduction (25–30 minutes) | • Parents (with facilitator and/or nurse assistance) document child’s length, weight, head circumference; complete the well-child form; and write concerns on the board. • Facilitator checks in with parents individually and does physical exams (in parent’s lap). • Facilitator documents measurements in electronic chart and prints growth charts for review. |
| Group bonding (5 minutes) | • Facilitator leads introduction into group discussion. • Parents share something new about their child. |
| Review growth charts (5 minutes) | • Facilitator explains growth charts while parents review their child’s chart. |
| “Tummy Time” (10 minutes) | • Parents place their child on colorful mats in the center of the group and review their children’s developmental milestones together. • Facilitator leads discussion, compliments each child individually, and explains the range of normal development. • Parent(s) complete the Parents’ Evaluation of Developmental Status© (PEDS)14 Questionnaire and/or the Ages and Stages Questionnaires© (ASQ)15 for babies over 6 months old with Medicaid or those identified with developmental concerns. |
| Anticipatory guidance/parental concerns (30–40 minutes) | • Facilitator invites discussion of parents’ concerns and questions and encourages information sharing and mutual problem solving. • Facilitator guides discussion to include age-appropriate anticipatory guidance on sleep, nutrition, injury prevention, and violence prevention based on American Academy of Pediatrics (AAP) guidelines.20 |
| Wrap-up/immunizations (10–20 minutes) | • Nurse gives immunizations as needed. • Facilitator follows up on outstanding issues discovered in visit and finishes documentation. |
the startup period of our first group in June 2006 and those who would deliver during the targeted month of the next two groups.

Evaluation
Evaluation included qualitative interviews with participating mothers, as well as comparisons of vaccination rates, health care services utilization, and satisfaction ratings of participants and non-participants. Our methods were approved by the University of North Carolina Biomedical Institutional Review Board.

Interviews and Satisfaction. In interviews, we sought to explore the experiences and perceptions of mothers who participated in the WellBabies program to (1) discover mothers’ opinions regarding favorable and unfavorable aspects of WellBabies, (2) understand mothers’ needs and preferences regarding the preventive well-child visits, and (3) elicit feedback to improve the WellBabies program.

All mothers who participated in the first three WellBabies groups during the period from June 2006 to August 2007 were invited to participate in a study to evaluate the program. Semi-structured, individual in-person interviews (Table 2) were conducted by one of the investigators who was not involved in the group care. Each interview was audiorecorded and transcribed verbatim. Two independent reviewers coded the transcribed data to identify emerging themes, using the editing analytic style. A third reviewer helped resolve disagreements in coding or interpretation.

Health Services Utilization. WellBabies participants’ medical records were reviewed for vaccination adherence, acute ambulatory visits, emergency department visits, hospitalizations, and retention in the practice at 1 year as a proxy for overall satisfaction. For comparison, we reviewed records of randomly selected babies who were delivered in our practice contemporaneously with study participants. Forty-two of these records were reviewed for retention in the practice; a subsample of 25 of these records was reviewed for health services utilization. Vaccination rates were compared to the overall practice rate for infants.

Results
Participant Characteristics
Of 33 prenatal patients who were invited to participate in the group care, 13 chose to join: six in the first group, four in the second group, and three in the third group. Two mothers could not be contacted; 11 participated in the study.

Participating women’s ages ranged from 19–39 years, six were Caucasian, five had private insurance, and six were married. Educational background varied. Three had graduate degrees, three had college degrees, three completed some college, and two completed some high school. Eight of the 11 were first-time mothers. Nine received prenatal care at our FMC, and eight of those already had experience with group care through their participation in the prenatal group.

Interview Themes on Experience With WellBabies Groups
Five distinct themes emerging from the interviews and are shown in Table 3. All reflected participants’ enthusiasm for the WellBabies program. One participant raised a concern about lack of individual clinician attention.

Value of Support. The most frequently expressed positive theme was the value of support from other women. As one woman stated, “It’s nice. Just to know that you’re not out there coping with the stuff all by yourself…” First-time mothers focused on their need for education and support related to being a new mother. “Because I was new, I didn’t know anything. I wanted to hear other moms and what they are going through to see if I’m going through similar things. I needed that bond with other mothers.”

Developmental Comparisons. Eight mothers expressed appreciation for the structured developmental comparisons. One woman voiced this by saying, “[I like]
seeing [my baby’s] progress compared to other babies his age and kind of seeing [that] he’s pretty normal as far as I can tell.”

**Learning From Others.** The value of learning from the other women in the group was expressed by seven participants. “It was good [hearing] from so many people. You can get some experience from [other] people who will share it, especially with a first baby, a first daughter.” The more experienced mothers focused on their desire to pass on their knowledge to others. “Being that I wasn’t a first-time mom, I really felt like I benefited the other moms in there, by having the experience. And then, there were some things they would say that I wasn’t aware of, too…I think it helped both ways.” One new mother captured this sentiment when we asked her if she would participate in group well-child care again. “[I would participate again] because I think that my experiences—my first time experiences—would help somebody else.”

**More Parental Involvement.** The enjoyment of having a more active role in the visit expressed by seven mothers was captured by one who said, “I also liked the fact that there was more involvement. When you get a traditional doctor’s visit, they take all the vital signs and stuff, and so getting to put him on the scale and weigh him myself and measure him … I really enjoyed that aspect of it, too.”

**More Time.** Time with the provider was another key element for six participants. “I think the difference is you feel like you have to come in with a list of questions when you sit down with the doctor in a standard office visit. Here you get the opportunity to do brainstorming a little bit. You’re not forced to come in with a list of questions, and you don’t feel quite as much pressure that you’re taking up the precious doctor’s time answering all your silly questions. It’s more relaxed, and it seems more personal. It doesn’t feel like she’s just a slot in the daytime appointment book.”

**Lack of Private Time a Minor Concern.** One potentially unfavorable aspect of the group care involved lack of individual, private time for each baby. One mother left the group, in part, because of her desire for more individual attention. “I needed that one-on-one attention...Even though we did take the babies to the side, it was really chaotic sometimes…it’s just I’m scared some things will get missed.” The 10 mothers who remained with their groups all stated that they felt they received the individual attention they needed.

**Satisfaction, Vaccination Adherence and Services Utilization**

Among the first 21 WellBabies participants, 17 (81%) remained in our practice beyond 1 year, compared with only 26 (62%) of a randomly chosen comparison group. Moreover, the four WellBabies participants who left the practice also did so because the family relocated.

When asked if they would choose group visits for a future child, all 11 mothers responded affirmatively. All 11 study participants were up to date on recommended immunizations at 1 year, compared to the practice’s infant immunization rate of 95%. Table 4 summarizes acute ambulatory visits, emergency department visits, and hospitalizations for WellBabies participants and the comparison group.

**Feedback for Improvement**

Suggestions for improvement came primarily from the visits themselves rather than our interview data. At the start of the program, WellBabies visits were scheduled (and occasionally rescheduled) to accommodate the facilitating physician’s availability. Participants ex-

---

**Table 3**

Predominant Themes and Frequencies Emerging From Interviews

| Theme (no. of Respondents) | No.
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Support From Other Women</td>
<td>9</td>
</tr>
<tr>
<td>Developmental Comparisons</td>
<td>8</td>
</tr>
<tr>
<td>Learning From Others’ Experiences</td>
<td>7</td>
</tr>
<tr>
<td>More Parental Involvement</td>
<td>7</td>
</tr>
<tr>
<td>More Time</td>
<td>6</td>
</tr>
</tbody>
</table>

---

**Table 4**

Comparison of Health Services Utilization

<table>
<thead>
<tr>
<th></th>
<th>WellBabies n=11</th>
<th>Comparison Group n=25</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Range</td>
<td>Average</td>
</tr>
<tr>
<td>Acute ambulatory visits</td>
<td>0–11</td>
<td>43/11=3.9</td>
</tr>
<tr>
<td>Emergency Department visits*</td>
<td>0–3</td>
<td>7/11=0.64</td>
</tr>
<tr>
<td>Hospitalizations*</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

* Emergency Department visits and hospitalizations at UNC only (documented in EHR)
pressed a strong desire for a regular schedule, planned in advance. Some participants did not understand that the WellBabies visits occurred instead of individual well-child checks and suggested clarification of this point to avoid unneeded visits. Facilitators noticed substantial discomfort among parents when they gave immunizations in the presence of the group, and participants strongly suggested that immunizations be given individually in a separate space.

Groups occasionally started late due to backlog at check in, and our front desk staff devised a system to circumvent the need for immediate check in. We found that a nurse was needed only at the beginning and end of group visits and could be freed up for other clinic duties in the interim.

Another potential cause for concern notable for its absence in the interviews involves the handling of serious health or developmental problems that come to light during a group visit. This situation did arise during the study period, and facilitators scheduled individual visits to address those specific issues in a more private setting. The parent whose child needed additional visits to address a delay in growth and development did not mention this during the interview.

Discussion

We found that WellBabies participants show service utilization patterns and vaccination rates similar to those of babies receiving individual care. Retention in the practice beyond the WellBabies program reflects, we believe, high satisfaction. Qualitative findings point to mutual support, shared learning, parental involvement, and more time with providers as key outcomes for parents.

Our findings suggest that group well-child care addresses important issues in child care. By providing ample time for preventive services and involving parents where appropriate, WellBabies group visits increase the likelihood that prevention is adequately addressed. Additionally, positive patient response to group well-child visits may aid in recruitment and retention of pediatric patients in the practice. Only four of the 21 WellBabies participants in the first year of the program left the practice, and they did so because their families relocated.

Perhaps our most important finding concerns the degree of social support our participants described. In expressing the value they place not only on the support they receive, but also on the opportunity to provide it, our participants touch on a key factor in postpartum mental health. By providing social support at a time when it has been shown to diminish, group well-child visits can enhance quality of care.

Based on the feedback we received from our initial evaluation, we have already improved WellBabies by implementing new patient education notebooks that outline the process of group visits and provide age-appropriate patient education materials, organized by visit. We increased administrative support to provide advanced scheduling and to explore a system for patients to check in ahead of the visit to prevent backlog at the front desk. We changed our immunization process to administer in a separate room from the group and worked with our nursing staff to have shots ready 20 minutes before group ended to facilitate smooth administration. We also standardized our developmental screening to the American Academy of Pediatrics’ Ages and Stages Questionnaire (ASQ) and implemented Reach Out and Read, both administered at the 6-, 9-, and 12-month group visits. Since the study period, 12 additional WellBabies groups have been conducted. Interest in the program is growing, and it is beginning to attract new patients who did not receive prenatal care at our FMC. We have also developed a residency curriculum using WellBabies group visits as a vehicle for teaching and modeling parent counseling and preventive care.

Limitations

In discussing the implications of our findings, several considerations should be taken into account. First, the WellBabies program is still relatively new. As the program continues, perspectives of additional participants may reflect different experiences. Second, our practice already had successful experience with group visits, and WellBabies was a direct extension of existing group prenatal care. Practices implementing group well-child care alone may experience different participant reactions.

A third limitation is that we did not assess satisfaction directly but, rather, drew conclusions about satisfaction based on a high percentage of parents continuing to attend group visits and on their comments. Those comments clearly reflect a high degree of satisfaction, and this is consistent with findings of other studies of group visits across patient and disease populations. Finally, most participants in our study had already experienced group visits for prenatal care, and all were self-selected to receive group care; thus they may have been more likely to report a positive experience than patients with no group-visit experience.

Conclusions

Our findings indicate a role for group well-child visits in addressing important issues in pediatric primary care. Implicit, but no less clear, is a continued role for individual well-child visits as well as exploration of other approaches. Longer-term evaluation should include cost-effectiveness analyses; more extensive comparisons of participant satisfaction, health outcomes, and quality indicators (including health services delivery); as well as further analysis of recruitment and
retention. Studies carried out in other settings will help identify practice environments that may benefit from incorporating group well-child visits.

Acknowledgments: This study was undertaken as part of the first author’s faculty development fellowship at the University of North Carolina Department of Family Medicine, partially funded by the Bureau of Health Professions, HRSA (#5-D55-HP00019-06).

The authors gratefully acknowledge Anthony Viera, MD, MPH, for his thoughtful reviews of earlier versions of this paper, and Yee Lam, PhD, for data review and editorial assistance.

This study was presented at the 2008 Society of Teachers of Family Medicine Annual Spring Conference in Baltimore.

Corresponding Author: Address correspondence to Mr Reid, University of North Carolina, Department of Family Medicine, Campus Box #7595, Chapel Hill, NC 27599-7595. 919-966-4152 (voice and fax). areid@med.unc.edu.

References