

BREAK THIS PRACTICE HABIT

Feasibility—and safety—of reducing the traditional 14 prenatal visits to 8 or 10

The time has come to reconsider the number of in-office prenatal care visits needed for the woman at low risk. Technology-based communication and remote monitoring offer advantages for the patient and clinician.

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CASE Low-risk maternity patient wants fewer prenatal visits

A recently pregnant patient asks her obstetrician if she can schedule fewer prenatal visits given that she is at low risk, wants to minimize missing work, and lives an hour away from the clinic office. Her physician tells her that she needs the standard 13 to 15 visits to have a healthy pregnancy.



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Obstetric care in the United States largely remains a “one-size fits all” approach despite compelling data that fewer visits for low-risk women are medically acceptable and may be more cost-effective.

Prenatal care: One size does not fit all

With nearly 4 million births annually in the United States, prenatal care is one of the most widely used preventive health care strategies.^{1,2} The ideal method for providing prenatal care, however, remains controversial. At the inception of early 20th century prenatal care in the United States, preventive strategies focused in part on eclampsia-related maternal morbidity and mortality, which in turn informed the content and frequency of prenatal visits.² Despite the dramatic changes in medical practice over the last 100 years, the basic timing and quantity of prenatal care has not changed substantively.

The lack of change is not because we have not explored other models of prenatal care and sought to introduce evidence-based change. Several studies have assessed the impact of reduced prenatal care visits for low-risk women.³⁻⁷ Systematic reviews

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evaluated 7 randomized trials, with more than 60,000 women enrolled, of prenatal care models with a reduced number of planned antenatal visits (4 to 9 visits vs the traditional 13 to 15 visits).^{3,8} There were no demonstrable differences in maternal or perinatal morbidity or mortality, particularly in higher resource settings.

Despite strong safety data and the potential cost-effectiveness of a reduced schedule of prenatal visits, US prenatal care practices generally continue to have a one-size-fits-all approach. Several organizations, however, have called for a change in practice.

Endorsing a reduced number of prenatal visits for low-risk women, the US Department of Health and Human Services Expert Panel on Prenatal Care issued a report in 1989 that stated “the specific content and timing of prenatal visits, contacts, and education should vary depending on the risk status of the pregnant woman and her fetus.”⁹ Consistent with that recommendation, the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists (ACOG) jointly published guidelines that recommend a system of goal-oriented antenatal visits at specific gestational ages and that support a reduced schedule of prenatal visits, compared with traditional models, for low-risk, parous women.¹⁰ The World Health Organization also published recommendations for an 8 “contact” prenatal care system to reduce perinatal mortality and improve women’s prenatal experience.¹¹

Is obstetric dogma the reason for lack of change?

Concerns about patient satisfaction may play a role in limiting the use of a reduced prenatal care visit model. In trials that evaluated a model of reduced prenatal care visits, women were less satisfied with a reduced visit schedule and the gap between provider contacts.^{3,8} Anecdotally, providers have expressed concerns about perceived liability. Most compelling, perhaps, is the idea that the traditional prenatal schedule has become obstetric dogma.

Consciously or unconsciously, clinicians may feel uncomfortable diverging from a schedule of visits that is firmly entrenched in obstetric practice. Continuing the status quo is easier than restructuring prenatal care practice. Ultimately, a paradigm shift may be required to broadly adopt a model of fewer prenatal visits for low-risk pregnancies.¹² With these issues propelling the historic patterns of prenatal care, it is easy to see why we have not yet changed despite convincing reasons to do so.

In this article, we detail the reduced-visit prenatal care models developed at 3 institutions and how they incorporate use of today’s technology.

Approach #1: University of Utah Virtual Prenatal Care Program

The University of Utah Virtual Prenatal Care Program was conceived as a “baby step” toward developing a model of fewer total prenatal visits. Virtual visits were intended to reduce the number of prenatal face-to-face visits while maintaining the same total number of visits. Since large clinical trials had established the safety of reduced visits, the primary objectives were to retain patient satisfaction and to facilitate provider adoption.

Would women be satisfied with remote prenatal care? A prospective randomized controlled trial was designed in which 200 women were assigned to receive either a combination of telemedicine and 5 scheduled in-clinic prenatal visits (remote care group) or traditional in-clinic prenatal care (usual care group). Low-risk multigravida pregnant

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The Virtual Prenatal Care Program included virtual prenatal visits intended to reduce the number of face-to-face visits while maintaining the same total number of visits

Instant Poll

Do you agree that the number of prenatal care visits for low-risk women should be reduced?

- Yes
- No

Tell us at rbarbieri@mdedge.com
Please include your name and city and state.

women who were between 6 0/7 and 16 0/7 weeks' gestation were enrolled. The primary outcome was patient satisfaction.

The face-to-face visits were goal oriented, with scheduled physical examination, laboratory tests, or ultrasonography, and were conducted by the patient's established obstetric provider (physician or nurse midwife) to maintain continuity of care. The remote care group self-collected measurements for weight, blood pressure, and fetal heart rate by handheld Doppler device prior to each telemedicine visit and entered the information into the electronic medical record. The purpose of the self-collected data was patient engagement and satisfaction, as well as increased provider comfort with the change in prenatal care schedule, rather than medical necessity.

The primary outcome of overall patient satisfaction with prenatal care was ascertained by questionnaire after delivery. The sample size calculation of 200 patients was based on noninferiority testing, and analysis was by intent-to-treat. The details of the trial are pending publication.

As expected, the remote care group had significantly fewer in-clinic prenatal care visits compared with the usual care group (7.2 vs 11.3 visits); the total number of prenatal visits was not different between groups. Overall satisfaction with prenatal care was very high in both the remote care and the usual care group (100% vs 97%).

The virtual prenatal care model for low-risk pregnancies, consisting of a novel remote monitoring strategy and a reduced number of in-clinic visits, was not associated with lower patient satisfaction compared with traditional care.

New care strategy gives patients a choice. The success of this clinical trial has led to its programmatic adoption at the University of Utah, and low-risk women currently are offered a choice between participating in the Virtual Prenatal Care Program or receiving traditional prenatal care. The University of Utah is moving on from the one-size-fits-all approach to adopt new strategies that provide personalized evidence-based prenatal

care at the lowest cost, while retaining high patient satisfaction. Formal cost-effectiveness analyses are underway.

Approach #2: Mayo Clinic OB Nest

In 2011, the Mayo Clinic Obstetric Division partnered with 2 other Mayo Clinic divisions, the Center for Innovation and the Center for the Science of Health Care Delivery, to redesign prenatal care for low-risk expectant mothers. Pregnant women and their obstetric health care teams (including obstetricians, certified nurse midwives, registered nurses, and clinical support staff) were convened to develop a novel model of prenatal care.⁴ The goal of this collaboration centered on:

- creating an evidence-driven prenatal care model for low-risk expectant women designed by relevant stakeholders
- focusing on meeting the on-demand needs of expectant mothers
- integrating innovative 21st century technology, and
- reducing the burden of prescheduled, low-value office visits.

Exploratory efforts to develop a novel care program. Based on feedback from the collaboration and guided by these goals, 141 expectant mothers participated in 19 different experiments, enabling the health care team to understand the impact of changing various components of prenatal care.

The experiments included integration of home monitoring (home fetal Doppler devices, drop-in fetal Doppler stations, home blood pressure monitoring devices), technology-enhanced communication with obstetric team members (video chats, tummy photos, virtual prenatal clinic appointments, proactive calls), and social media engagement (secure online prenatal care community).

Recommendations for the final components of OB Nest were based on feasibility and the potential impact on care. The recommendations included decreasing scheduled clinic appointments from 14 to 8, providing home monitoring devices to measure maternal blood pressure and fetal heart rate, establishing OB Nest virtual connected care visits

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OB Nest's program includes 8 clinic appointments, 6 virtual visits with a nurse, home monitoring of blood pressure and fetal heart rate, and access to a designated online prenatal care community

with a registered nurse, and offering a secure online community of expectant mothers.

Trial assessed program’s efficacy, safety, satisfaction. A mixed-methods randomized controlled trial subsequently was conducted to evaluate the components of OB Nest.⁶ The trial included 300 pregnant women who were randomly assigned to standard prenatal care as recommended by ACOG or to OB Nest care.

OB Nest care consisted of 8 scheduled clinic appointments, 6 planned virtual (phone or online) connected care visits with a registered nurse dedicated to OB Nest, home monitoring of blood pressure (with a home digital sphygmomanometer) and fetal heart rate, and access to an online prenatal care community designated for OB Nest participants.

While publication of the trial results currently is pending, the OB Nest program appears to safely and effectively decrease the number of scheduled prenatal care visits for low-risk expectant mothers while improving the overall patient experience. OB Nest care now is offered as one of several options for low-risk expectant mothers at Mayo Clinic.

Additional avenues of study. Studies evaluating the impact of OB Nest in various non-academic settings are now underway. Also under review is the potential cost savings of OB Nest as related to the productive lives of expectant mothers, while prenatal care safety is maintained.

The focus shift from a sick to a wellness perspective, stakeholder inclusion in the program design, and the integration of home monitoring tools are all major contributing factors to the success of OB Nest.

Approach #3: Prisma Health utilizes mobile app technology

A third approach to reducing unnecessary visits for routine maternity care is to employ mobile app technology. Technology companies have developed app platforms for providers to use to educate and connect with patients; such apps reduce the number of routine obstetric office visits while maintaining patient satisfaction.

One group’s app experience. In a pilot

study at a Prisma Health practice (South Carolina), 100 patients were placed on a reduced appointment schedule of 9 prenatal visits; the women self-monitored their weight gain and blood pressure using a remote monitoring system via an app called Babyscripts.⁷ Patient feedback was collected, with 45 of 100 patients responding.

Ninety-five percent of patients were satisfied with the mobile app, 94% reported positivity around pregnancy readiness, 90% were satisfied with their health care team, and 89% were happy with remote monitoring. Patients visited the app 3 times per week on average, and the top categories of interest were travel, exercise, genetics, and eating right.

One patient using the Babyscripts mobile health app and schedule optimization platform commented, “I am on my second pregnancy and wish this had been available for the first! The app is easy to use and I love seeing my weight on a graph. And I very much like the quality of the cuff” (personal data generated from Babyscripts).

In with the new

As clinicians strive to provide more patient-centered care, offering expectant families more than one way to receive their prenatal care is appropriate. Beyond the traditional 14-visit care model, we should offer use of novel options like mobile health apps, which improve the patient experience while decreasing the cost of care by reducing unnecessary visits.¹² Note also that reducing visits for low-risk mothers opens space in the provider schedule for patients who need services more quickly.

Benefits for postpartum care. Traditionally, clinicians see the low-risk patient for a single follow-up appointment at 6 weeks postpartum. However, the World Health Organization recommends evaluating women at 3 days, 1 to 2 weeks, and 6 weeks postpartum.¹³ Further, the National Institute for Health and Care Excellence guidance recommends screening all women for resolution of postpartum blues at 10 to 14 days.¹⁴

ACOG also has made recommendations

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on optimizing postpartum care. In a committee opinion, ACOG recommends that all women have contact with their provider within the first 3 weeks postpartum.¹⁵ Recognizing that such an in-person visit may be difficult, ACOG has endorsed communication via text messaging, app-based support, and remote monitoring.¹⁵ An app

such as Babyscripts would fill this need conveniently for both patient and provider.

In 2019, patients want choice. As maternity care providers, we should be open to considering novel, evidence-based options that may provide more cost-effective obstetric care. ●

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