



Remote and in-home prenatal care: Safe, inclusive, and here to stay

A look at how the COVID-19 pandemic has reshaped the prenatal treatment model for the benefit of patients and clinicians

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For much of the general public, in-home care from a physician is akin to the rotary telephone: a feature of a bygone age, long since replaced by vastly different systems. While approximately 40% of physician-patient interactions in 1930 were house calls, by the early 1980s this had dwindled to less than 1%,¹ with almost all physician-patient encounters taking place in a clinical setting, whether in a hospital or in a free-standing clinic. In the last 2 decades, a smattering of primary care and medical subspecialty clinicians started to incorporate some in-home care into their practices in the form of telemedicine, using video and telephone technology to facilitate care outside of the clinical setting, and by 2016, approximately 15% of physicians reported using some form of telemedicine in their interactions with patients.²

Despite these advances, prior to the COVID-19 pandemic, obstetricians lagged significantly behind in their use of at-home or remote care. Although there were some efforts to promote a hybrid care model that incorporated prenatal telemedicine,³ pre-pandemic ObGyn was one of the least likely fields to offer telemedicine to their patients, with only 9% of practices offering such services.² In this article, we discuss how the COVID-19 pandemic resulted in a shift from traditional, in-person care to a hybrid remote model and how this may benefit obstetrics patients as well as clinicians.

Pre-pandemic patient management

The traditional model of prenatal care presents a particularly intense time period for patients in terms of its demands. Women who are pregnant and start care in their first trimester typically have 12 to 14 visits during the subsequent 6 to 7 months, with additional visits for those with high-risk pregnancies. Although some of these visits coincide with the need for in-person laboratory work or imaging, many are chiefly oriented around assessment of vital signs or counseling. These frequent prenatal visits represent a significant commitment from patients in terms of transportation, time off work, and childcare resources—all of which may be exacerbated for patients who need to receive their care from overbooked, high-risk specialists.



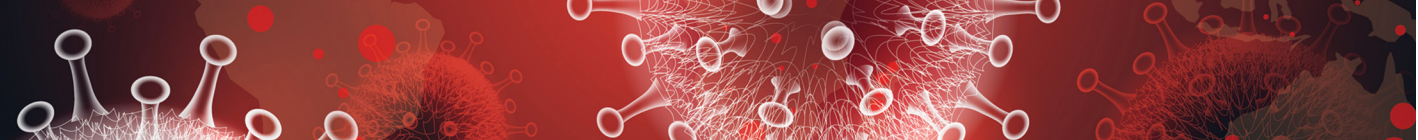
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After delivery, attending an in-person postpartum visit with a newborn can be even more daunting. Despite the increased recognition from professional groups of the importance of postpartum care to support breastfeeding, physical recovery, and mental health, as many as 40% of recently delivered patients do not attend their scheduled postpartum visit(s).⁴ Still, before 2020, few obstetricians had revised their workflows to “meet patients where they are,” with many continuing to only offer in-person care and assessments.

COVID-19: An impetus for change

As with so many things, the COVID-19 pandemic has challenged our ideas of what is normal. In a sense, the pandemic has catalyzed a revolution in the prenatal care model. The very real risks of exposure and contagion during the pandemic—for clinicians and patients alike—has forced ObGyns to reexamine the actual risks and benefits of in-person and in-clinic prenatal care. As a result, many ObGyns have rapidly adopted telemedicine into practices that were strictly in-person. For example, a national survey of 172 clinicians who offered contraception counseling during the pandemic found that 91% of them were now offering telemedicine services, with 78% of those clinicians new to telemedicine.⁵ Similarly, although a minority of surveyed obstetricians in New York City reported using telemedicine pre-pandemic, 89% planned to continue using such technology in the future.⁶

Incorporating mobile technology

Obstetricians, forced to consolidate and maximize their in-person care to protect their patients’ safety, have started to realize that many of the conversations and counseling offered to patients can be managed equally effectively with telemedicine. Furthermore, basic home monitoring devices, such as blood pressure machines, can be safely and accurately used by patients without requiring them to come to the office.



More recent research into mobile medical devices suggests that patients can safely and appropriately manage more complex tools. One such example is a mobile, self-operated, ultrasound transducer that is controlled through a smartphone (Instinct, Pulsion Ltd). This device was evaluated in an observational, noninterventional trial of 100 women carrying a singleton fetus at 14/0 weeks’ to 39/6 weeks’ gestation. Patients performed 1,360 self-scans, which were reviewed by a clinician in real time online or subsequently off-line. Results showed successful detection rates of 95.3% for fetal heart activity, 88.3% for body movements, 69.4% for tone, 23.8% for breathing movements, and 92.2% for normal amniotic fluid volume.⁷ The authors concluded that this represents a feasible solution for remote sonographic fetal assessment.

Coordinating care with health care extenders

Remote monitoring options allow patients to be safely monitored during their pregnancies while remaining at home more often, especially when used in conjunction with trained health care extenders such as registered nurses, primary care associates, or “maternity

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navigators” who can facilitate off-site care. In fact, many aspects of prenatal care are particularly amenable to remote medicine or non-physician-based home care. Different variations of this model of “hybrid” prenatal care may be appropriate depending upon the needs of the patient population served by a given obstetrics practice. Ideally, a prenatal care model personalizes care based on the known risk factors that are identified at the beginning of prenatal care, the anticipated barriers to care, and the patient’s own preferences. As a result, alternatives to the traditional model may be to alternate in-person and telemedicine visits,^{3,8} to incorporate in-person or remote group prenatal visits,^{9,10} or to incorporate staff with basic health care skills to serve as health care extenders in the community and provide home visits for basic monitoring, laboratory work, and patient education.¹¹

Benefits of hybrid prenatal models

As we look ahead to the end of the pandemic, how should obstetricians view these hybrid prenatal care models? Are these models safe for patients? Were they only worthwhile to minimize infection risk, or do they have potential benefits for patients going forward?

In fact, data on the use of telemedicine in prenatal care indicate that these models may be equally as safe as the traditional model in terms of clinical outcomes and may have important additional benefits with regard to patient convenience and access to and satisfaction with care. Even audio-only prenatal televisits have been found to be equivalent to in-person visits in terms of serious perinatal outcomes.¹² Common pregnancy diagnoses are also well-served by telemedicine. For example, several recent investigations of patients with gestational diabetes have found that telemedicine was as effective as standard care for glucose control.^{13,14} Management of hypertension during pregnancy, another antenatal condition that is commonly managed with frequent in-person check-ups, also was found to be adequately feasible

with telemedicine using home monitors and symptom checklists, with high rates of patient satisfaction.¹⁵

With good evidence for safety, the added potential for patients to benefit in such hybrid models is multifactorial. For one, despite our collective hopes, the COVID-19 pandemic may have a long tail. Vaccine hesitancy and COVID-19 variants may mean that clinicians will have to consider the real threat of infection risk in the clinic setting for years to come. In-home prenatal care also provides a wide variety of social, economic, and psychological benefits for pregnant women across various patient populations. The pandemic has introduced many patients to the full potential of working and meeting remotely; pregnant patients are becoming more familiar with these technology platforms and appreciate its incorporation into their busy lives.⁵ Furthermore, hybrid models actually can provide otherwise “nonadherent” patients with better access to care. From the patient perspective, an in-person 15-minute health care provider visit actually represents a significant commitment of time and resources (ie, hours spent on public transportation, lost wages for those with inflexible work schedules, and childcare costs for patients discouraged from bringing their children to prenatal visits). Especially for patients with fewer socioeconomic resources, these barriers to in-person clinic visits may be daunting, if not insurmountable; the option of remote visits or house calls reduces these barriers and facilitates care.¹⁶

Such hybrid models benefit prenatal clinicians as well. In addition to a decreased risk of infection, clinicians may be able to attract a wider potential prenatal patient population with telemedicine by appealing to younger and potentially more technology-savvy patients.¹⁷ Importantly, telemedicine is increasingly recognized as on par with in-person visits in many billing algorithms. Changes during the pandemic led Medicare to cover telemedicine visits as well as in-person visits^{18,19}; among other groundbreaking changes, new patients can have an initial billable visit via telemedicine. Although the billing landscape will likely continue to

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Alternatives to traditional in-person visits may be to incorporate telemedicine, remote group prenatal visits, or “health care extenders” within the community

evolve, such changes allow clinicians to focus on patient safety and convenience without financial risk to their practices.

The future of prenatal appointment scheduling

The future of prenatal care certainly doesn't look like a dozen 15-minute visits in a private physician's office. While these emerging hybrid models of prenatal care certainly can benefit patients with low-risk uncomplicated pregnancies, they are already being adopted

by clinicians who care for patients with antenatal complications that require specialist consultation; for those with conditions that require frequent, low-complexity check-ins (gestational diabetes, chronic hypertension, history of pre-term birth, etc.); and for patients who struggle with financial or logistical barriers to in-person care. Although obstetrics may have lagged behind other subspecialties in revising its traditional health care models, the pandemic has opened up a new world of possibilities of remote and in-home care for this field. ●

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