

Patient Perspectives on Audio-Only Virtual Prenatal Visits Amidst the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Pandemic

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OBJECTIVE: To evaluate patient satisfaction after integration of audio-only virtual visits into a pre-existing prenatal care schedule within a large, county-based system during the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic.

METHODS: We implemented audio-only prenatal virtual visits in response to the SARS-CoV-2 pandemic within a large, county-based prenatal care system serving predominantly women with low socioeconomic status and limited resources. Using a four-question telephone survey, we surveyed a cross-section of patients who had opted to participate in virtual visits to assess their level of satisfaction surrounding audio-only visits. In addition, average clinic wait times and attendance rates by visit type were examined.

RESULTS: From March 17 to May 31, 2020, more than 4,000 audio-only virtual prenatal visits were completed in our system. After implementation, the percentage of visits conducted through the virtual platform gradually rose, with nearly 25% of weekly prenatal visits being performed through the virtual platform by the month of May. Clinic wait times trended downward after implementation of virtual visits ($P < .001$). On average, 88% of virtual prenatal visits were completed as scheduled,

whereas only 82% of in-person visits were attended ($P < .001$). Hospital administration attempted to contact 431 patients who had participated in at least one virtual visit to assess patient satisfaction; 283 patients were reached and agreed to participate (65%). Ninety-nine percent of respondents reported that their needs were met during their audio-only virtual visits. The majority of patients preferred a combination of in-person and virtual visits for prenatal care, and patients reported many benefits with virtual visits.

CONCLUSION: Audio-only virtual prenatal visits—as a complement to in-person prenatal visits—have specific and distinct advantages compared with video-enabled telehealth in a vulnerable population of women and offer a viable option to increase access to care.

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As the United States continues to be affected by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic, health care systems have rapidly adapted to maintain access to care while providing recommended social distancing. In the world of obstetrics, telehealth quickly gained popularity, because postponing ambulatory visits is not a viable option. Telehealth encompasses different modalities, including synchronous video visits, synchronous audio-only visits, asynchronous communication, and remote patient monitoring.¹ Before the SARS-CoV-2 pandemic, telemedicine had increasingly been used as a tool to deliver limited facets of prenatal care, including genetic and nutrition counseling, as well as mental health and lactation services.^{1–5} Telehealth has also been used for postpartum blood pressure monitoring in patients with hypertensive disorders.^{6,7} Despite promising evidence, policy guiding telehealth for

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prenatal care is still evolving. A 2014 systematic review described only three states having regulatory guidance for telehealth for maternal or neonatal care.⁸

Within our hospital system, relaxation of state and federal regulatory requirements were critical in the adoption of audio-only virtual visits after the start of the SARS-CoV-2 pandemic; before this time, billing for audio-only visits was not possible.⁹ In response to the SARS-CoV-2 crisis, the Centers for Medicare & Medicaid Services expanded the use of telehealth and removed a visual requirement for these visits.¹⁰ Previous requirements for an established patient–physician relationship were also paused, based on good-faith intentions in serving patients during this crisis.¹¹

Emergency measures in this pandemic also applied to the Texas Department of Insurance Emergency Rule that required payment for services delivered on any visit platform to be covered at the same reimbursement rate as an in-person visit.¹² Current Procedural Terminology codes for telephone-only evaluation and management were created based on length of service. New codes were used for SARS-CoV-2 testing, and previously existing Current Procedural Terminology codes for new or established patient visits were identified as acceptable for billing with audio-only virtual visits.

Within Parkland Health and Hospital System, telemedicine had not been used for prenatal care by the obstetrics service before the start of the SARS-CoV-2 pandemic. Our hospital provides prenatal and delivery services to a medically indigent population who have coverage predominantly through Medicaid (32%) or the Children’s Health Insurance Program (CHIP) Perinatal (58%) for those women who do not qualify for Medicaid as a result of legal status, with only 6.5% having commercial insurance. Of women who deliver at Parkland Hospital, 97% establish care within the prenatal system before delivery, which was accomplished by strategically locating 10 women’s health centers throughout the more than 900 square miles of Dallas County.¹³ These clinics completed nearly 80,000 prenatal visits in the previous fiscal year. Women with medical or obstetric complications are referred to a central maternal fetal medicine clinic, where an additional 42,000 visits are provided annually. We employ approximately 100 advanced practice nurses, 72 resident physicians, and more than 30 obstetricians to make this care possible. Therefore, any proposed changes to practice policies are scrutinized to ensure the quality of care is not negatively affected. The purpose of this article is to report on the implementation of audio-only virtual prenatal visits

and to present the feedback we received from patients regarding their experience.

METHODS

A cross-sectional survey of pregnant women was performed to evaluate patients’ satisfaction after implementation of audio-only virtual prenatal visits. This quality-assurance initiative was undertaken by department and hospital leadership in response to the rapid implementation of virtual prenatal visits during the SARS-CoV-2 pandemic. This quality-assurance initiative was reviewed by the University of Texas Southwestern Institutional Review Board and deemed nonregulated research and, thus, exempted from approval.

After the first confirmed case of SARS-CoV-2 infection in Dallas County on March 10, 2020, Dallas County public schools were closed indefinitely beginning on March 16, followed by a shelter-in-place order effected on March 23.^{14,15} In response, medical and nursing leadership worked together to redesign prenatal services. We were faced with a time-sensitive challenge to implement virtual prenatal visits and promote social distancing based on readily available resources. Because of the population we serve, we anticipated that the majority of our patients would not have access to high-speed internet in their homes and would prefer an audio-only visit option. We also lacked hardware infrastructure for videoconferencing within the clinics. Therefore, synchronous audio-only virtual visits were the most readily available option for rapid implementation. We were reassured that the limited available data have not demonstrated a significant difference in patient satisfaction with the addition of video in obstetric telehealth.¹⁶

In coordination with information technology analysts, a prenatal virtual visit platform was created within the electronic medical record. Education was developed and dispersed through the use of online video conferencing sessions, which included guidelines for documentation, consent, billing, coding, and mandatory use of translation services for non-English-speaking patients (Table 1). For those patients who accepted participation in virtual visits, a visit date and time was provided and a valid telephone number was confirmed.

The prenatal schedule created is consistent with previously established guidelines from the World Health Organization, the American College of Obstetricians and Gynecologists, and other organizations, including up to four interspersed synchronous audio-only virtual visits (Table 2).^{17–23} A similar schedule was used in the maternal–fetal medicine



Table 1. Documentation Components of an Audio-Only Virtual Visit

Component	Details
Stopwatch	Visit time begins when the patient is reached and ends when the phone call is complete.
Patient identification confirmed	Patient's identity is confirmed with 2 patient identifiers (name, date of birth).
Consent	"In light of the COVID-19 pandemic and related regulation, waivers, and guidance from regulatory bodies, the applicable consent discussion has taken place with the patient virtually and the patient has provided verbal consent."
Discussion	Physician or advanced practice nurse documents a summary of the discussion with the patient, including discussion of any obstetric or COVID-19 symptoms, as well as any counseling performed.
Charges for audio-only visit	Virtual check-in: G0212: for brief, technology-based service Length of service billing: 99441-99443 Evaluation and management codes: CPT: 98966-68; ICD-10-CM codes for COVID-19: U07.1, Z03.818, Z0.828, Z.1159

COVID-19, coronavirus disease 2019; CPT, Current Procedural Terminology; ICD-10 CM, International Classification of Diseases, Tenth Revision, Clinical Modification.

clinic, with the timing of virtual visits reviewed and approved by faculty physicians on an individual basis. Subspecialty services that are normally co-located within the maternal–fetal medicine clinic, such as psychiatry and addiction medicine, were included in the virtual visit platform. Patients scheduled for in-person visits were contacted 24–48 hours before their appointment and screened for coronavirus disease 2019 (COVID-19) symptoms and SARS-CoV-2 exposure. Women who screened positive were assessed by an advanced practice nurse in a same-day virtual visit using standardized algorithms to guide management and outpatient testing.

Data on scheduled and completed virtual and in-person visits, as well as in-person clinic wait times, were derived from the electronic medical record through the existing operational reports. For the survey, patients were identified from the electronic medical record if they had participated in at least one prenatal virtual visit. One attempt was made to contact each patient on the day after their appointment, and, if reached, they were asked to participate in a patient satisfaction survey. In addition to four questions regarding their virtual visit, patients were given the opportunity to share additional comments (Table 3). Student's *t* test and analysis of variance were performed for continuous variables, with $P < .05$ being significant. Statistical analyses were performed using statistical software R 3.6.3.

RESULTS

From March 17 to May 31, 2020, more than 4,000 virtual audio-only prenatal visits were completed. After implementation, the percentage of visits conducted through the virtual platform gradually rose, with nearly

25% of weekly prenatal visits performed virtually by the month of May (Appendix 1, available online at <http://links.lww.com/AOG/B959>). This coordinated temporally with the surge in SARS-CoV-2 activity within our community, where there had been a total of 7,904 confirmed cases and 191 deaths as of May 19.²⁴ The combination of virtual visits and strict visitor policies allowed for adequate social distancing in clinic waiting rooms. The average time spent conducting a virtual prenatal visit was 21 minutes, with almost all visits performed by advanced practice nurses. Average prenatal visit wait times, a measure of how long a woman spends in the clinic, trended downward for those women requiring an in-person visit (Appendix 2, available online at <http://links.lww.com/AOG/B959>, $P < .001$). A greater number of virtual prenatal visits were completed as scheduled compared with in-person visits (88% vs 82%, $P < .001$).

Of 431 patients asked to participate in the satisfaction survey, 283 (65%) were reached and agreed to participate (Table 3). The overwhelming majority of patients described their experience as “good” or “very good,” and only two patients, less than 1%, reported technical issues or difficulty with the visit (Appendix 3, available online at <http://links.lww.com/AOG/B959>). The majority of patients felt that a mix of both in-person and virtual visits was preferred, though 27% of women followed in the maternal–fetal medicine clinic preferred virtual visits. This was attributed to the central location of the clinic within the county, with hurdles including transportation, parking costs, and more time spent away from responsibilities such as childcare or employment. Virtual visits were limited by the unavailability of physical examinations, with 3 of 283 patients, or 1%, feeling their needs were not met.



Table 2. Prenatal Visit Schedule Incorporating Virtual Visits

Approximate Gestational Age (wk)	Type of Visit	Comments
10	In-person	Initial prenatal visit, to include initial obstetric laboratory tests
14	Virtual	
18–20	In-person	Ultrasound scan and maternal serum screening performed
24	In-person	
28	In-person or virtual	If Rho(D) immune globulin administration required, visit performed as in-person
32	In-person	
34	Virtual	3 rd -trimester laboratory studies performed
36	In-person	
37	Virtual	Gonorrhea and chlamydia testing performed
38	In-person	
39	In-person	
40	In-person	
41	In-person	

Put another way, 99% of women surveyed felt their needs were met by the virtual visit.

Barriers to both virtual and in-person visits were identified in a population with limited resources (Appendix 4, available online at <http://links.lww.com/AOG/B959>). Patients were enthusiastic about decreased needs for transportation with virtual visits, because many currently avoid public transportation in the setting of the pandemic and obtaining access to an automobile or purchasing gas is difficult. Additionally, women reported needing less time away from jobs as essential workers, which translated to less lost wages. Finally, in the setting of a restricted visitor policy in clinics, women reported less need for childcare assistance and, therefore, a greater ability to attend appointments.

DISCUSSION

Though audio-only virtual visits were implemented within our prenatal system in response to the SARS-CoV-2 pandemic, we have discovered a silver lining within this public health emergency. Audio-only virtual visits were a quick and safe solution, maintaining quality of care with low user burden. Virtual prenatal care increases access to care for women with limited resources and does not require high-tech solutions such as live video streaming to provide satisfactory care. Moreover, if given the choice, our patients would prefer to continue a combination of in-person and virtual visits. This is consistent with the results of a recent survey of postpartum women by Peahl et al.³

Table 3. Telephone Questionnaire Administered by a Separate Caller After Virtual Prenatal Visits

Question	Answer Options
1. How was your virtual visit?	Very good Good OK Bad Really bad
2. Were there any complications with technology (ie, telephone or language line services)?	Yes No
3. Do you prefer an in-person visit or a virtual visit?	In-person Virtual Need both
4. Were all of your needs met?	Yes No Partially



This implementation was made possible only by changes to regulations surrounding telemedicine in the setting of this pandemic. We would like to use virtual visit technology moving forward and will consider including video technology for those patients who have the necessary resources. However, this will be possible only if permanent changes are made to state regulations in support of audio-only telemedicine services. Important policy changes surrounding coding and reimbursement equitable to the time spent by the physician or advanced practice nurse in-person are necessary for long-term implementation. Importantly, we closely track our obstetric outcomes and thus far have not identified deterioration of access to care associated with the implementation of virtual visits. As described in a recent commentary by Onwuzurike et al, it is the most vulnerable groups within our society who will continue to suffer most from this pandemic as their ability to obtain necessary health care services continues to be affected.²⁵ With this in mind, we argue that improved coverage for audio-only telehealth visits is crucial. Requiring a video component for approved telehealth visits offers minimal incremental benefit compared with audio-only visits, with significantly more cost and patient burden. Our preliminary evaluation supports the Triple Aim Initiative of the Institute of Medicine (now known as the National Academy of Medicine), and we have demonstrated an enhancement to the patient experience and improved access to care, both benchmarks for improving population health.²⁵ In conclusion, we advocate for the continued support of audio-only prenatal virtual visits in an effort to expand access to care for all.

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