

Project Title: Evaluating a New Prenatal Care Model During the COVID-19 Pandemic

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Summary (~250-500 words):

The Obstetrics and Gynecology Department at the University of Michigan implemented a 4-1-4 strategy for prenatal visits due to the COVID-19 pandemic. Four visits will be in-person with their provider, four visits will be completed with video or phone calls, and one fetal anatomy scan. This was done in a time-sensitive manner in March of 2020. Prenatal care models with decreased the frequency of visits and increased virtual visits have previously been studied in randomized controlled trials, but lack real-world data.

Our objective was to study the perspectives of patients to understand the effect of the new model on patients and make immediate improvements to address concerns. We created a survey adapted from validated instruments to collect feedback on telemedicine and the new prenatal care model with both quantitative and qualitative questioning. Free responses were collected and themes were determined and categorized.

Of 1690 eligible patients, 253 (15.0%) responded to the survey. Patient demographics showed a mean age of 31.2 years (SD 6.7), predominantly white (180/253, 71.1%), privately insured (199/253, 78.7%), and multiparous (133/253, 52.6%). Factors associated with a positive experience included ease, convenience, and improved access to care. Factors associated with a negative experience included access inequities, virtual visit quality, and safety without home devices. This study suggests that the 4-1-4 prenatal care model with reduced frequency of visits and telemedicine visits were associated with positive care experience for many, but not all, patients.

Methodology:

We conducted a retrospective evaluation of institution-level adoption of a COVID-19 prenatal care model using a survey of patient care experience. The University of Michigan Institutional Review Board deemed this study exempt (HUM00181021) on April 29, 2020. All patients more than 20 weeks' gestation who were receiving prenatal care at our institution and registered for the EHR portal during the survey fielding window received a 1-time message through the EHR to participate.

We used Qualtrics software (Provo, UT) to develop a new survey instrument for patients based on validated measures available. Survey analyses were performed with Qualtrics software. Free-text responses were qualitatively coded using 3 experience domains. Subthemes within each domain were reviewed, and discrepancies were discussed until consensus was reached.

Results:

Of 1690 eligible patients, 253 (15.0%) responded to the survey. Patient demographics showed a mean age of 31.2 years (SD 6.7), predominantly white (180/253, 71.1%), privately insured (199/253, 78.7%), and multiparous (133/253, 52.6%). Written feedback themes are summarized in Table 1.

Table 1: Patient Perspectives on New Prenatal Care Model

Category	Positive Themes	Negative Themes
<p>Access to Care</p>	<p>New models decrease barriers to care like employment <i>"I have a busy work schedule and childcare, so the flexibility is actually really nice for me."</i></p> <p>New models reduce travel time and inefficiencies <i>"If you have a pregnancy with no issue the model offers care but less time with travel and waiting in the office."</i></p>	<p>Barriers may disproportionately affect vulnerable patients <i>"Many people may not be able to afford monitoring devices to have at home"</i></p> <p><i>"I have access to home measurement devices but what about patients that don't? And how reliable are home devices?"</i></p>
<p>Quality and Safety</p>	<p>New schedules match care to patient's needs <i>"Cuts down on transportation time and time off work; I am able to get all my questions answered by the doctor like I would in person"</i></p> <p>New models allowed for safety during the pandemic <i>"I like not having to go to the office during COVID-19 and maintaining safety measures in my own home"</i></p>	<p>Routine measurements are crucial for perceived safety <i>"It's my first pregnancy and I would feel more reassured if I was able to go to the office for appointments, get my BP and weight measured, make sure they can still hear a fetal heartbeat, etc"</i></p> <p>Concern for missing something <i>"Things are going to get missed. It's hard to talk to the doctor on the phone, because they don't let you talk"</i></p>
<p>Patient Satisfaction</p>	<p>Virtual visits make space for counseling and communication <i>"Virtual appointments are still nice check-ups with doctors and give you an opportunity to express any concerns."</i></p> <p>Virtual care is empowering for patients <i>"I do find it empowering to seek out the information being sent to me via MyChart... I can consume information in regards to my pregnancy, labor and delivery at my own pace and also can refer back to it, versus relying solely on the the in-person visits."</i></p>	<p>Defining expectations is crucial <i>"Having a plan prior to the appointment of things to think about and possible questions to ask"</i></p> <p>Relationships are key for virtual visits <i>"From my last virtual visit I don't feel like I got asked questions or had the doctors full attention."</i></p> <p>Lack of connection can be a driver of lower satisfaction <i>"Less personal, quicker, seems more like a quick check in and not easy to learn what to do, what to expect etc."</i></p> <p>First-time moms are less comfortable with new models <i>"For a first time mom, being pregnant and giving birth is anxiety inducing, add a pandemic and cut in in-person prenatal appts and it is overwhelming"</i></p>

As seen in table 2, the majority of patient respondents reported that virtual visits were associated with high satisfaction, ease of use, safe, improvement in access, and a positive change for patients. A minority thought that virtual visits were the same as in person visits. Additionally, a minority would want to continue virtual visits after the COVID-19 pandemic.

Table 2: Patient Survey Responses on Care Experience		
Theme	Question	Patients (n=253)
Access	Virtual Visits improve access to health services.	174 (68.8%)
	It is easy to do virtual visits.	235 (92.9%)
Quality and Safety	I was able to express myself effectively during virtual visits.	213 (84.2%)
	The quality of virtual visits is the same as in-person care.	94 (37.1%)
	I think virtual visits are as safe as in person visits.	164 (64.8%)
Patient Satisfaction	I felt well-prepared to do virtual visits.	231 (91.3%)
	I think virtual visits are a positive change for patients.	154 (60.9%)
	I am satisfied with doing virtual visits.	196 (77.5%)
	After COVID-19, I would like to continue virtual visits.	102 (40.3%)

Conclusion (~250-500 words):

This study suggests that the 4-1-4 prenatal care model with reduced frequency of visits and telemedicine visits was associated with positive care experiences for many, but not all, patients. This model was rapidly adopted at a single institution of largely white, privately insured, highly educated population of pregnant patients. Ensuring continuity with providers, availability of home monitoring devices, and setting expectations for each visit are important considerations for further improvement.

Changes have been made to improve these themes from this initial feedback. First, we designed patient-facing materials for the first prenatal appointment to help patients understand the new model, including visit schedule, structure of virtual visits, and available resources. We will also secure home devices for patients selecting virtual care for them from their first prenatal appointment through insurance coverage, health savings accounts, individual purchase, or donation. We will validate devices in the clinic and provide education on proper use in person before patients use them at home. Finally, our institution has returned to usual outpatient provider staffing in comparison to when this study was implemented, therefore facilitating improved patient-provider continuity.

Limitations included that this was a single institution with a predominantly white and privately insured population and while this matches previous demographics at this institution, should be further evaluated in other populations to obtain a more representative perspective of different populations. Additionally, this was implemented rapidly in March of 2020 when much about COVID-19 was unknown. The immediate feedback from patients has already led to changes in the model since extensive planning could not be put into place before implementing the model. Further

study is required to understand the long term outcomes and perspectives after months of model implementation.

Reflection/Impact Statement:

You may use the following questions to guide your reflection:

1. How did the process of conducting this research confront any limitations of your prior thinking?
2. Who could potentially benefit from this CFI project over different timescales and how?
3. What actions will you take afterwards to continue the momentum of this project, and maximise the likelihood of the identified benefits being achieved?
4. What advice would you give to another student completing their CFI?

Continuing to explore research, especially when there is time to do so, I think is important for my career and for all of us going into medicine. This research was quite different than what I had done before and I think this is a good opportunity to try something new. This led to a lot of other research with Dr. Peahl, including a systematic review and helping with a national prenatal care guidelines panel. Neither of these have I ever been a part of before. While this poster/final presentation makes it seem like I only did one project, this really was multiple projects that came out of this work. In a certain sense, I am already moving on with the momentum with Dr. Peahl forward. I maximized this by continuing to communicate with Dr. Peahl and collaborate on a lot of time-sensitive work with her.

Advice for students completing their CFI: It is normal to take something you are already doing and make that your CFI. A lot of times, we just don't have the time to juggle everything. But looking back, I am glad I chose something that was a newer project for me instead of one that was nearly done. I also think it is helpful to choose a project that you know you can complete in the time we have. Even if the project turns into multiple projects like mine did, it was fulfilling to get a single project to completion for this. I also am really glad I chose a project that was building new skills for me.