Brief Communication

DIGITAL HEALTH

DIGITAL HEALTH
Volume 10: 1–8

DOI: 10.1177/20552076241277037
journals.sagepub.com/home/dhj

Sage

Digital health utilization during pregnancy and the likelihood of preterm birth

Alison K Brinson[1,2,3], Hannah R Jahnke[3], Natalie Henrich[3], Smriti Karwa[3], Christa Moss[3] and Neel Shah[3,4]

Abstract

Objective: Given the complex nature of preterm birth, interventions to reduce rates of preterm birth should be multifaceted. This analysis aimed to explore the association between the duration of using Maven, a digital health platform for women's and family health, and the odds of preterm birth.

Methods: Data came from 3326 pregnant, nulliparous Maven users who enrolled in Maven during their pregnancy between January 2020 and September 2022. Chi-square and Fisher's exact tests compared characteristics between users who developed gestational conditions and users who did not. This retrospective cohort study used logistic regression models to estimate the association between the duration of Maven use and odds of preterm birth, stratified by the presence of gestational conditions.

Results: Compared to those without gestational conditions, individuals who developed gestational conditions were more likely to have a preterm birth (8.7% vs. 3.4%; $p < 0.001$). For every 1 h of Maven use, users experienced a 2% reduction in their odds of experiencing a preterm birth [adjusted odds ratio (AOR) (95% confidence interval (CI)) = 0.98 (0.95, 0.998), $p = 0.04$]. Among individuals who developed gestational conditions, every 1 h increase in Maven use was associated with a 5% reduction in the odds of experiencing a preterm birth [AOR (95% CI) = 0.95 (0.91, 0.99), $p = 0.037$]. There was no statistically significant association between Maven use and preterm birth in individuals without gestational conditions.

Conclusion: Among those who developed gestational conditions, use of a digital health platform was associated with a decreased likelihood of preterm birth.

Keywords

Digital health, pregnancy, preterm birth, reproductive health, women's health

Submission date: 7 May 2024; Acceptance date: 5 August 2024

Introduction

Preterm birth occurs when an infant is born before 37 weeks gestational age. In 2022, 10.4% of all births in the United States were considered preterm.[1] Preterm birth is associated with long-term health issues and high emotional and financial costs to families.[2] There are several maternal risk factors that increase one's risk of preterm birth, including older age, gestational conditions (e.g. preeclampsia or gestational diabetes), alcohol or drug use during pregnancy, and maternal stress or depression. At the societal level, low socioeconomic status and lack of appropriate prenatal care can also increase risk.[3,4]

Given the complex nature of preterm birth, research suggests that interventions to reduce rates of preterm birth should be multifaceted.[5,6] For individuals with uncomplicated pregnancies, beneficial interventions may include educational tools to prevent disease. In contrast, for those

[1]Department of Anthropology, University of North Carolina at Chapel Hill, NC, USA
[2]Carolina Population Center, Chapel Hill, NC, USA
[3]Maven Clinic, New York, NY, USA
[4]Department of Obstetrics, Gynecology and Reproductive Biology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, USA

Corresponding author:
Natalie Henrich, Maven Clinic, 160 Varick Street, New York, NY, USA.
Email: natalie.henrich@mavenclinic.com

who develop gestational conditions or complications that increase their risk of preterm birth, interventions may need to include education alongside access to healthcare providers to promote disease management.[7] Digital health platforms can aid in both disease prevention and management by offering care coordination and expanding access to healthcare and educational resources throughout pregnancy.[8] Use of digital health has been associated with positive pregnancy and birth outcomes including mental health management during pregnancy,[9,10] and a decreased likelihood of cesarean birth.[11,12] Further, integration of telehealth visits into routine antenatal care has been associated with a decreased likelihood of preterm birth.[13]

As the use of digital health care during pregnancy increases, it is important to explore how it can be leveraged to help complement in-person care and reduce preterm birth rates. Maven, a comprehensive digital platform for women's and family health, offers continuous access to virtual healthcare providers, allied health professionals, and care coordinators via messaging and telehealth appointments, as well as educational materials (e.g. articles and virtual classes).[14] This analysis explored the association between the duration of digital health care use through Maven and the odds of preterm birth among a sample of nulliparous individuals. Given the clinical associations between gestational conditions during pregnancy and the likelihood of preterm birth, our results were stratified by the presence/absence of gestational conditions.

Methods

Study setting and design

This retrospective cohort study examined the associations between digital health use and preterm birth among individuals enrolled in Maven. Maven offers a comprehensive digital platform designed to support women's and family health and complements routine prenatal care. Users receive free and unlimited access to Maven as an employer or health plan-sponsored benefit through their own or their partner's employer. Within the digital platform, Maven offers a variety of digital education and support services, including access to a care advocate who serves as users' primary point of contact within the virtual platform, supports the coordination of digital prenatal services, and directs users to providers and services; access to articles, videos, and live classes; and access to virtual appointments with providers across a variety of specialties including obstetrics, mental health, nutrition, physical therapy, and others. Users are able to enroll in Maven at any point during their pregnancy. Data for this analysis included platform use data as well as user-reported data from the enrollment questionnaire (completed during pregnancy immediately upon enrollment in Maven) and the post-birth questionnaire (Supplemental Table 1). The post-birth questionnaire was administered in the platform after the user-reported due date (85% of users completed this questionnaire within their first month postpartum).

Data were extracted from employer or health plan-sponsored Maven users residing in the US who enrolled in the pregnancy program and provided complete data for all health assessments between January 2020 and September 2022. We excluded users who: had previously given birth ($n = 1549$), had a multiple pregnancy ($n = 689$), conceived with fertility treatment ($n = 0$), and reported any cigarette, drug, or alcohol use during pregnancy ($n = 29$; Supplemental Figure 1). These exclusion decisions were made due to the strong associations between experiences in a previous pregnancy/birth,[15] multiple gestation,[16] and drug/alcohol use with preterm birth,[17] independent of other factors. A final analytic sample of 3326 participants was included in this analysis. All users consented to the use of their de-identified data for scientific research upon creating a Maven account. This study used de-identified data only, and the protocol was designated as exempt by the WCG Institutional Review Board ((45 CFR §46.104(d)(4)), an independent ethical review board. An abstract of this manuscript is available at https://www.ajog.org/article/S0002-9378(23)01025-6/fulltext.

Outcome: Preterm birth

Preterm birth was determined if users gave birth before 37 weeks, 0 days gestation. Gestational age at birth was calculated from the estimated due date (reported by users in the enrollment questionnaire) and infant date of birth (reported by users in the post-birth questionnaire).

Exposure: Digital health use

The primary exposure in this analysis was the duration of use of Maven services. To calculate the total number of active hours a person spent on Maven, we used member use data (automatically tracked within the platform) to sum the time spent with a care advocate, with a provider, messaging a provider, reading articles, attending virtual classes, or watching class recordings.

Gestational conditions

Given the strong associations between gestational conditions and subsequent infant health outcomes,[18] all analyses were stratified by the presence of gestational conditions. The following conditions were assessed on both the enrollment questionnaire and the post-birth questionnaire: cholestasis, gestational diabetes, intrauterine growth restriction, hypertension, preeclampsia, eclampsia, vaginal blood loss (non-labor related), problems with the placenta, issues with the cervix, excess or diminished amniotic fluid, infant large for gestational age, perinatal mood disorder, and

hemolysis, elevated liver enzymes, low platelet count (HELLP) syndrome. Users were stratified by having at least one gestational condition versus having no gestational conditions.

Covariates

Directed acyclic graphs were used to identify confounders and determine the relevant covariates to include in each model.[19] The enrollment questionnaire collected data on user-reported demographics (e.g. self-reported age, race, and ethnicity), pre-pregnancy body mass index (BMI; calculated as weight in kilograms divided by height in meters squared), and medical history (e.g. history of chronic and mental health conditions, gestational conditions in most recent pregnancy, and mode of delivery in most recent pregnancy). Ethnicity and race were categorized into "Hispanic/Latinx'' and non-Hispanic/Latinx: "White," "Asian or Pacific Islander," "Black," and "Multiracial or American Indian." The latter category was created due to a small sample size of users who identified as multiracial or American Indian. History of chronic conditions was included in the models by summing the total number of medical conditions reported by each user and categorizing them into 3 groups: "0 conditions," "1–2 conditions," and "3 or more conditions."[20] Trimester of enrollment into the digital health platform, as well as the total number of days on the platform prior to birth, was automatically tracked within the platform based on the user's self-reported due date.

Statistical analysis

Chi-square and Fisher's exact tests were used to compare characteristics between users who developed gestational conditions during pregnancy and users who did not. Adjusted multivariable logistic regression models estimated the association between the number of hours of digital health use and the odds of preterm birth, stratified by the presence of gestational conditions. All models estimated the odds ratio (OR) with 95% confidence intervals (CIs), and significance was determined when $p < 0.05$. All statistical analyses were performed in RStudio version 4.2.0.

Results

Sample characteristics

Our analytic sample consisted of 3326 pregnant individuals enrolled in Maven. The mean age of our sample was 32.3 years (SD = 4.0). Forty-seven percent of users identified as non-Hispanic White, 23% as non-Hispanic Asian or Pacific Islander, and 14% preferred not to disclose their race and ethnicity (Table 1). Few users reported the presence of any chronic medical conditions, with thyroid disease being the most prevalent (8%). During pregnancy, hypertension (15%) and gestational diabetes (11%) were the most commonly reported gestational conditions. Six percent of users reported their infant was born preterm (<37 weeks gestation).

Compared to those without gestational conditions, individuals who developed gestational conditions during pregnancy were more likely to have a preterm birth (8.7% vs. 3.4%; $p < 0.001$; Table 1). The presence of gestational conditions varied significantly by race and ethnicity, as well as pre-pregnancy BMI. Further, users who developed gestational conditions were more likely to be older (32.8 years vs. 32.0 years), with a history of type 1 or type 2 diabetes (2.2% vs. 0.2%), hypertension (5.5% vs. 0.2%), thyroid disease (8.9% vs. 6.4%), anxiety (27.3% vs. 18.5%), and depression (15.5% vs. 9.1%).

The majority of members enrolled in the digital health platform during the second (50.4%) or third trimester (34.2%) of their pregnancy. The mean number of days on the digital health platform prior to birth was 125 days (SD = 69.6). The average amount of digital health use during pregnancy was 8.1 h (SD = 7.9). Trimester of digital health enrollment, number of days enrolled during pregnancy, and duration of digital health use did not vary by the presence of gestational conditions.

Associations between digital health use and the likelihood of preterm birth

Overall, for every hour increase in Maven use, users experienced a 2% reduction in their odds of experiencing a preterm birth [adjusted odds ratio (AOR) (95% CI) = 0.98 (0.95, 0.998), $p = 0.04$] (Table 2). When stratified by the presence of gestational conditions, adjusted models revealed that among individuals who developed gestational conditions during pregnancy, every hour increase in Maven use was associated with a 5% reduction in the odds of experiencing a preterm birth [AOR (95% CI) = 0.95 (0.91, 0.99), $p = 0.037$] (Table 2). Among individuals who did not develop gestational conditions during pregnancy, there was no statistically significant association between Maven use and preterm birth.

Discussion

Among those who developed gestational conditions during pregnancy, increased use of a digital health platform was associated with a decreased likelihood of preterm birth. While evidence is limited, previous research has also indicated timely access to antenatal care via telehealth is associated with a decreased likelihood of preterm birth among individuals with gestational conditions.[21–23] Digital health has the ability to complement in person care by offering immediate access to critical healthcare services.[23,24] Through increased access to care, digital health may help address patient questions and potentially reduce preterm births by offering timely guidance at critical points between in-person prenatal visits.[23,25] While the

Table 1. Characteristics of Maven users[a,b], stratified by the presence of gestational conditions ($N = 3326$).

	Overall ($N = 3326$)	No gestational conditions ($N = 1936$)	≥1 gestational conditions ($N = 1390$)	*p*-value
Member characteristics				
Age, mean (SD)	32.3 (3.89)	32.0 (3.63)	32.8 (4.18)	<0.001
Race and ethnicity				
Non-Hispanic White	1547 (46.5)	934 (48.2)	613 (44.1)	0.03
Non-Hispanic Asian or Pacific Islander	747 (22.5)	419 (21.6)	328 (23.6)	
Hispanic	325 (9.8)	179 (9.2)	146 (10.5)	
Non-Hispanic Black	147 (4.4)	71 (3.7)	76 (5.5)	
Non-Hispanic Multiracial or American Indian	85 (2.6)	49 (2.5)	36 (2.6)	
Prefer not to say	475 (14.3)	284 (14.7)	191 (13.7)	
Pre-pregnancy body mass index (kg/m^2)				
Underweight (<18.5)	139 (4.2)	92 (4.8)	47 (3.4)	<0.001
Normal weight (18.5–24.9)	1906 (57.3)	1229 (63.5)	677 (48.7)	
Overweight (25.0–29.9)	803 (24.1)	433 (22.4)	370 (26.6)	
Obese (≥30)	478 (14.4)	182 (9.4)	296 (21.3)	
History of chronic conditions				
Thyroid disease	248 (7.5)	124 (6.4)	124 (8.9)	0.01
Autoimmune disease	99 (3.0)	49 (2.5)	50 (3.6)	0.07
Hypertension	80 (2.4)	3 (0.2)	77 (5.5)	<0.001
Diabetes (type 1 or type 2)	33 (1.0)	3 (0.2)	30 (2.2)	<0.001
Blood disorder	24 (0.7)	10 (0.5)	14 (1.0)	0.1
Heart disease	19 (0.6)	8 (0.4)	11 (0.8)	0.15
Thrombophilia	16 (0.5)	6 (0.3)	10 (0.7)	0.09
Kidney disease	11 (0.3)	7 (0.4)	4 (0.3)	0.77
HIV/AIDS	1 (0.0)	0 (0)	1 (0.1)	0.42
History of mental health conditions				
Anxiety	738 (22.2)	359 (18.5)	379 (27.3)	<0.001

(continued)

Table 1. Continued.

	Overall ($N = 3326$)	No gestational conditions ($N = 1936$)	≥1 gestational conditions ($N = 1390$)	p-value
Depression	393 (11.8)	177 (9.1)	216 (15.5)	<0.001
Digital health characteristics				
Trimester of enrollment in the digital health platform activation				
First	514 (15.5)	288 (14.9)	226 (16.3)	0.39
Second	1676 (50.4)	993 (51.3)	683 (49.1)	
Third	1136 (34.2)	655 (33.8)	481 (34.6)	
Number of days on the digital health platform, mean (SD)	125 (69.6)	126 (68.3)	125 (71.3)	0.60
Digital health use during pregnancy (hours), mean (SD)	8.10 (7.88)	8.02 (7.64)	8.21 (8.21)	0.70
Pregnancy outcomes				
Preterm birth (<37 weeks)	186 (5.6)	65 (3.4)	121 (8.7)	<0.001
Mode of birth, vaginal	2354 (70.8)	1482 (76.5)	872 (62.7)	<0.001
Gestational conditions[c]				
Hypertension	482 (14.5)	–	482 (34.7)	–
Gestational diabetes	357 (10.7)	–	357 (25.7)	–
Problems with the placenta	217 (6.5)	–	217 (15.6)	–
Preeclampsia, eclampsia, or HELLP	212 (6.4)	–	212 (15.3)	–
Vaginal blood loss (excluding labor)	198 (6.0)	–	198 (14.2)	–
Infant large for gestational age	145 (4.4)	–	145 (10.4)	–
Excess or diminished amniotic fluid	134 (4.0)	–	134 (9.6)	–
Issues with the cervix	100 (3.0)	–	100 (7.2)	–
Intrauterine growth restriction	90 (2.7)	–	90 (6.5)	–
Perinatal mood disorder	70 (2.1)	–	70 (5.0)	–
Cholestasis	56 (1.7)	–	56 (4.0)	–

SD: standard deviation; HELLP: hemolysis, elevated liver enzymes, low platelet count.
[a]Data are presented as n (%) unless otherwise specified.
[b]Data are displayed for users who enrolled in Maven Clinic and gave birth between 1 January 2020 and 19 September 2022.
[c]Users were asked to self-report their gestational conditions within the digital health platform upon enrollment and at birth.

effect is modest, this finding holds clinical significance and underscores the opportunity for digital health to be a component within a multi-faceted approach to reducing preterm birth. Further work is needed to determine how to leverage digital health to amplify its impact on reducing preterm birth.

Table 2. Adjusted association between digital health use (hours) and likelihood of preterm birth among Maven users, stratified by the presence of gestational conditions ($N = 3326$).[a]

	Overall ($N = 3326$)				No gestational conditions ($N = 1936$)				≥1 gestational conditions ($N = 1390$)[b]			
	Unadjusted OR (95% CI)	*p*-value	Adjusted OR (95% CI)	*p*-value	Unadjusted OR (95% CI)	*p*-value	Adjusted OR (95% CI)	*p*-value	Unadjusted OR (95% CI)	*p*-value	Adjusted OR (95% CI)	*p*-value
Digital health use (hours)	0.97 (0.95, 0.99)	0.01	0.98 (0.95, 0.998)	0.04	0.98 (0.95, 1.00)	0.13	0.99 (0.96, 1.01)	0.31	0.95 (0.91, 0.99)	0.02	0.95 (0.91, 0.99)	0.037

CI: confidence interval; OR, odds ratio; HELLP: hemolysis, elevated liver enzymes, low platelet count.

[a]All models were adjusted for maternal age, race and ethnicity, presence of chronic medical conditions, history of anxiety or depression, mode of delivery, and the number of days enrolled in Maven.

[b]Gestational conditions include user self-report of hypertension (diagnosed during pregnancy), gestational diabetes, problems with the placenta, preeclampsia, eclampsia, or HELLP, vaginal blood loss (excluding labor), infant large for gestational age, excess or diminished amniotic fluid, issues with the cervix, intrauterine growth restriction, perinatal mood disorder, and cholestasis.

Several limitations should be considered. The enrollment and post-birth questionnaires have not been validated, potentially impacting the precision of user responses. Additionally, the generalizability and scalability of our findings may be limited as our study population consisted primarily of commercially insured, non-Hispanic White individuals with internet access on a smartphone device or computer.

Conclusion

In this study, a digital health platform that provides continuous care coordination and access to providers and educational information demonstrated the potential to support disease management and reduce the likelihood of preterm birth. As the use of digital health during pregnancy increases, this model of care and education may serve as a blueprint for how digital health services may contribute to improving birth outcomes.

Acknowledgements: The authors are grateful to Maven users for using the application and providing the data analyzed in this research.

Contributorship: AKB and HRJ researched the literature and conceived the study. AKB analyzed the data and HRJ, SK, NH, CM, and NS provided interpretation of the results. AKB wrote the first draft of the manuscript. All authors reviewed and edited the manuscript and approved the final version of the manuscript.

Data sharing statement: Due to the sensitive nature of the questions asked in this analysis, respondents were assured raw data would remain confidential and would not be shared.

Declaration of conflicting interests: The authors declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: AKB, HRJ, NH, CM, SK, and NS hold positions at Maven Clinic and have equity in Maven Clinic.

Ethical approval: This study used de-identified data only, and the protocol was designated as exempt by WCG Institutional Review, an independent ethical review board.

Funding: The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was funded by Maven Clinic through the employment of authors. AKB was provided support by the National Institute of Child Health and Human Development of the National Institutes of Health under award number T32 HD091058.

Guarantor: Natalie Henrich

Informed consent: Written informed consent was obtained from all the subjects prior to study initiation. The data used in this analysis were collected on surveys within the digital health platform. Users provided informed consent for their de-identified data to be used in scientific research when they created an account and enrolled in the platform.

ORCID iDs: Alison K Brinson https://orcid.org/0000-0002-5191-1336
Natalie Henrich https://orcid.org/0000-0002-0293-1859

Supplemental material: Supplemental material for this article is available online.

References

1. Martin JA, Hamilton BE and Osterman MJK. Births in the United States, 2022. *NCHS Data Brief* 2023: 1–8.
2. Institute of Medicine (US) Committee on Understanding Premature Birth and Assuring Healthy Outcomes, Behrman RE and Butler AS (eds). *Preterm birth: causes, consequences, and prevention*. Washington, DC, USA: National Academies Press, 2007.
3. Vintzileos AM, Ananth CV, Smulian JC, et al. The impact of prenatal care in the United States on preterm births in the presence and absence of antenatal high-risk conditions. *Am J Obstet Gynecol* 2002; 187: 1254–1257.
4. McHale P, Maudsley G, Pennington A, et al. Mediators of socioeconomic inequalities in preterm birth: a systematic review. *BMC Public Health* 2022; 22: 1134.
5. Masten Y, Song H, Esperat CR, et al. A maternity care home model of enhanced prenatal care to reduce preterm birth rate and NICU use. *Birth Berkeley Calif* 2022; 49: 107–115.
6. Newnham JP, Dickinson JE, Hart RJ, et al. Strategies to prevent preterm birth. *Front Immunol* 2014; 5: 584.
7. Zork NM. Telehealth for the management of diabetes in pregnancy. *Curr Diab Rep* 2022; 22: 365–369.
8. Endehabtu BF, Gelaye KA, Mengiste SA, et al. Mapping the role of digital health interventions to enhance effective coverage of antenatal care: a scoping review. *J Multidiscip Healthc* 2024; 17: 71–82.
9. Rubin-Miller L, Henrich N, Peahl A, et al. Utilization of digital prenatal services and management of depression and anxiety during pregnancy: a retrospective observational study. *Front Digit Health* 2023; 5: 1152525.
10. Guille C, Henrich N, Brinson AK, et al. Improving the management of maternal mental health with digital health care. *Psychiatr Res Clin Pract* 2024; 6: 23–32.
11. Peahl A, Ojo A, Henrich N, et al. Association between utilization of digital prenatal services and vaginal birth after cesarean. *J Midwifery Womens Health* 2023; 68: 255–264.
12. Karwa S, Jahnke H, Brinson A, et al. Association between doula use on a digital health platform and birth outcomes. *Obstet Gynecol*. 2024; 143: 175–183.
13. Palmer KR, Tanner M, Davies-Tuck M, et al. Widespread implementation of a low-cost telehealth service in the delivery of antenatal care during the COVID-19 pandemic: an interrupted time-series analysis. *Lancet Lond Engl* 2021; 398: 41–52.

14. Maven Clinic Co. Maven maternity and newborn care | On-demand, personalized maternal and newborn care support. https://www.mavenclinic.com/programs/maternity-and-newborn-care (accessed 28 July 2023).
15. Kvalvik LG, Wilcox AJ, Skjærven R, et al. Term complications and subsequent risk of preterm birth: Registry based study. *BMJ* 2020; 369: m1007.
16. Su RN, Zhu WW, Wei YM, et al. Maternal and neonatal outcomes in multiple pregnancy: A multicentre study in the Beijing population. *Chronic Dis Transl Med* 2015; 1: 197–202.
17. Popova S, Dozet D, O'Hanlon G, et al. Maternal alcohol use, adverse neonatal outcomes and pregnancy complications in British Columbia, Canada: A population-based study. *BMC Pregnancy Childbirth* 2021; 21:74.
18. Ross MG, Downey CA, Bemis-Heys R, et al. Prediction by maternal risk factors of neonatal intensive care admissions: evaluation of >59,000 women in national managed care programs. *Am J Obstet Gynecol* 1999; 181: 835–842.
19. Greenland S, Pearl J and Robins JM. Causal diagrams for epidemiologic research. *Epidemiology* 1999; 10: 37–48.
20. Santo L, Ashman J and Xu J. Emergency department visits by adults with chronic conditions associated with severe COVID-19 illness: United States, 2017–2019. *Natl Health Stat Rep*. 2022: 1–14. doi:10.15620/cdc:119434
21. Xie W, Dai P, Qin Y, et al. Effectiveness of telemedicine for pregnant women with gestational diabetes mellitus: An updated meta-analysis of 32 randomized controlled trials with trial sequential analysis. *BMC Pregnancy Childbirth* 2020; 20: 98.
22. Moise IK, Ivanova N, Wilson C, et al. Lessons from digital technology-enabled health interventions implemented during the coronavirus pandemic to improve maternal and birth outcomes: a global scoping review. *BMC Pregnancy Childbirth* 2023; 23: 95.
23. Haleem A, Javaid M, Singh RP, et al. Telemedicine for healthcare: Capabilities, features, barriers, and applications. *Sens Int* 2021; 2: 100117.
24. Wade VA, Karnon J, Elshaug AG, et al. A systematic review of economic analyses of telehealth services using real time video communication. *BMC Health Serv Res* 2010; 10: 33.
25. Peahl AF, Smith RD and Moniz MH. Prenatal care redesign: Creating flexible maternity care models through virtual care. *Am J Obstet Gynecol* 2020; 223: 389.e1–389.e10.