



Patient Experience of Obstetric Care During the COVID-19 Pandemic: Preliminary Results From a Recurring National Survey

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Abstract

The experience of pregnant and postpartum patients continues to evolve during the COVID-19 pandemic. Limited clinical data and the unknown nature of the virus' impact and transmission routes have forced constant changes to traditional care delivery. Dependence on telehealth technology such as telephonic and videoconferencing has surged, and patients' willingness to visit traditional health care facilities has plummeted. We set out to create an ongoing surveillance system to monitor changes to prenatal and obstetric care and the patient experience during the COVID-19 pandemic.

Keywords

COVID-19, patient expectations, survey data, telehealth, women's health

Introduction

The pandemic of the severe acute respiratory syndrome coronavirus (SARS-CoV-2) has forced a rapid and dramatic change to when, where, and how prenatal care and obstetric services are delivered in order to reduce the risk of viral transmission.

Preliminary findings from two New York City hospitals demonstrated that 88% of COVID-19 positive obstetric patients had no symptoms on labor presentation, leading some facilities to treat all patients as presumed positive until tested, and altering many patients' delivery plans, including support persons in the room and choice of facility (1). Additionally, uncertainty about community prevalence has led to a reduction in support people allowed to attend prenatal visits, as well as labor and delivery.

COVID-19 is affecting areas of the United States in different ways and at different times, and there is no national pregnancy-related surveillance system allowing for the monitoring of COVID-19 transmission and impact on this population of patients. We hypothesize that pregnant patients are making health care decisions influenced by fear that they will contract COVID-19 within a healthcare setting, and concern that their support people will be prevented from accompanying them to both ambulatory and inpatient

obstetric visits. We wanted to understand how the delivery of prenatal and obstetric care has changed over the course of the COVID-19 pandemic in the United States, and how pregnancy experiences and birth plans have changed as a result.

Methods

We designed an ongoing, national patient experience surveillance system, the initial results of which were collected between April 18, 2020, and April 22, 2020, and are presented here. An email invitation to complete a survey was sent to pregnant and recently postpartum people in the United States, among users of a free mobile application focused on pregnancy and postpartum care. The survey contained the Perceived Stress Scale 4 (PSS-4) (2) to measure

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Table 1. Demographic Characteristics of a National Sample of Pregnant and Recently Postpartum Patients.^a

Demographics	#	%
Pregnant	1829	85.3
Postpartum (0-8 weeks)	316	14.7
Race		
White	1695	79.0
Black	177	8.3
Hispanic	230	10.7
Other	43	2.0
Relationship status		
Married/committed	2073	96.6
Single	56	2.6
Other	16	0.7
Education		
<High school	22	1.0
High school	398	18.6
Associates	301	14.0
Bachelors	794	37.0
Masters or above	611	28.5
Insurance		
Employer based	1796	83.7
Public (Medicaid/Medicare)	281	13.1
Other	269	12.5
Essential worker		
Self	770	35.9
Partner	1059	49.4
Someone in household	112	5.2

^an = 2145.

stress among participants and the Hunger Vital Sign 2-item screener, recommended by the American Academy of Pediatrics to assess food instability (3).

Results

A total of 2145 respondents completed the survey, at a completion rate of 74%. Among respondents, 85% reported being pregnant and 15% were 0 to 8 weeks postpartum. Pregnant respondents were evenly distributed across gestational weeks and all 50 US states and the District of Columbia were represented in the sample. See Table 1 for other demographic characteristics of the sample.

Birth Plans and Delivery

Less than 1% of respondents reported that they had been planning a home birth prior to the COVID-19 pandemic. At the time of the survey, the number of respondents planning a home birth had increased to 2.5%. Additionally, 24.5% of pregnant respondents reported that they had begun considering home birth as an option.

Prior to the pandemic, 59.2% of respondents planned to have family members and/or a doula present at delivery, in addition to their partner, which was reported nearly universally. At the time of the survey, only 14.4% planned to have a nonpartner attendant physically present at delivery. The

Table 2. Patient-Reported Changes to Birth Planning and Prenatal Care in April 2020, During the COVID-19 Pandemic.^a

	Birth plans			
	Before pandemic		During pandemic	
Total pregnant respondents	n	1829		
Delivery location	n	%	n	%
Hospital	1747	95.5%	1698	92.8%
Birth center	69	3.8%	86	4.7%
Home birth	13	0.7%	45	2.5%
Birth attendees				
Doula attending	150	8.2%	66	3.6%
Partner attending	1711	93.5%	1757	96.1%
Family members attending	933	51.0%	197	10.8%
Teleconference support people	8	0.4%	36	2.0%
Visit modifications during the pandemic				
Total scheduled visit(s)	n	3458		
Occurred as planned or is scheduled to occur as planned	2487	71.9%		
Rescheduled	154	4.5%		
Canceled	145	4.2%		
Modified	729	21.1%		
Video	273	37.5%		
Phone	287	39.4%		
Different physical location	28	3.8%		
Other	141	19.3%		

^an = 1829, visits = 3458.

number of respondents who were planning to teleconference support people into their delivery before the pandemic was just 0.4% and increased to 2% (Table 2).

Among postpartum respondents, 24.1% reported having to wear a mask during their deliveries, which occurred 0 to 8 weeks prior to the surveying period. Among these postpartum respondents, 31.3% were discharged early, and 6.6% reported delivering in a different location than they had planned to before the pandemic. A total of 4.1% reported being tested for COVID-19 at delivery.

Care Modification

A total of 10% of respondents reported using telehealth services prior to the COVID-19 pandemic. Among respondents who had a visit scheduled 4 weeks prior to or 4 weeks after the survey period, 30% of visits were modified, canceled, or rescheduled. Among visits that were modified, 37% were conducted by phone, and 39% were conducted by video (Table 2). Respondents reported being asked to take their own measurements or vital signs in 42.8% of remote visits, with 88.6% of respondents reporting at least some successful at-home measurements. About half (47.3%) of respondents with a remote visit felt that they received the same amount or more information and care compared to a traditional visit. Privacy concerns (4%) and logistical concerns, such as finding a quiet space to

conduct their remote visit (10%), were reported impediments to virtual prenatal and postpartum care.

Concerns and Insecurities

Top reported concerns among pregnant respondents related to the COVID-19 pandemic include the risk to personal health or their newborn's health (71%), fear that support people will be unable to attend delivery (72%), risk of contracting COVID-19 during a prenatal or obstetric appointment (43%), fear that support people will become sick with COVID-19 (36%), and concerns regarding financial or job security (29%).

The top concern among postpartum respondents was that their baby would become ill (75%), followed by concern about childcare access (40%), postpartum depression (34%), and access to well-child (35%) and postpartum (31%) visits.

A total of 15% of respondents indicated food insecurity based on responses to the Hunger Vital Sign 2-item screener, a validated measurement tool. This in comparison to the prepandemic average 11% of US households typically reporting food insecurity (4).

Respondents had a mean PSS-4 score of 6.4 of 16, with higher scores indicating higher stress, and no differences detected between pregnant and postpartum subgroups. This compares to a benchmark of 4.7 among women in the United States in 1988 and 6.38 among women in the United Kingdom in 2013 (5,6).

Discussion

This preliminary report is the first known national survey regarding changes to the patient experience of prenatal and obstetric care during the COVID-19 pandemic. This report shows that in mid-April 2020, a majority of prenatal and obstetric patients were receiving care in the usual way; however, traditional office visits were modified or disrupted and access to support people during the inpatient experience plummeted. Concern about postpartum depression is particularly high among postpartum patients, and pregnant and postpartum patients alike are experiencing stress at similar rates.

Like all Americans, pregnant and postpartum patients are fearful that they, their children, and their loved ones will become sick with COVID-19. To the extent that health care providers can mitigate these concerns, provide resources to reduce risk and exposure, and plan for potentially increased levels of postpartum depression in the coming weeks and months, their patients will be better served. It is worth noting that as interest in home births increases, it warrants the attention of health care providers and medical societies to ensure patients are making choices that will result in optimal outcomes for themselves and their babies. Health care systems have an opportunity to adapt workflows and visitor policies, and particularly to leverage teleconferencing technology, to safely support patients through childbirth at a time

when tradition in-person care increases risk of transmission. Technology-enabled modifications to care during delivery were reported to be satisfactory by nearly half of respondents who experienced these changes, though there is more work to be done to enhance these services to best serve our patients. Support for freestanding birth centers that could, appropriately managed, provide a welcoming alternative to in-hospital obstetric services could also cater to a patient population less inclined to receive their care in a traditional health care setting.

Limitations

Limitations of this report include sampling bias related to sampling those with access to a mobile application, Ovia Pregnancy, which is available in English and Spanish and requires the use of a smartphone. According to research conducted by Deloitte in 2018, Medicaid beneficiaries own smartphones at similar rates to the general US adult population (7). Additional limitations include the presentation of the same survey items to respondents living in different regions of the country, impacted by the pandemic at different times. The demographic makeup of respondents is not representative of the US population, making the results only generalizable to patients with similar profiles to respondents. However, all 50 states and all gestational ages were adequately represented in the sample.

Authors' Note

This study was deemed exempt from review by the Advarra IRB, and the need for informed consent was waived.

Declaration of Conflicting Interests

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References

1. Sutton D, Fuchs K, D'Alton M, Goffman D. Universal screening for SARS-CoV-2 in women admitted for delivery. *N Engl J Med*. 2020;382:2163-2164. doi:10.1056/NEJMc2009316
2. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *J Health Soc Behav*. 1983;24:385-96.
3. Food Security and Nutrition Assistance. USDA ERS—food security and nutrition assistance. 2020.
4. American Academy of Pediatrics. Addressing Food Insecurity: A Toolkit for Pediatricians. 2017. <https://frac.org/wp-content/uploads/frac-aap-toolkit.pdf>

5. Cohen S, Williamson GM. Perceived stress in a probability sample of the United States. In: Spacapan S, Oskamp S, eds. *The Social Psychology of Health*. Sage; 1988:31-67.
6. Warttig SL, Forshaw MJ, South J, White AK. New, normative, English-sample data for the short form perceived stress scale (PSS-4). *J Health Psychol*. 2013;18:1617-28.
7. Carroll W. Medicaid and Digital Health. 2018. <https://www2.deloitte.com/us/en/insights/industry/public-sector/mobile-health-care-app-features-for-patients.html> (accessed 22 April 2020).

Author Biographies

Dani Bradley, MS, MPH, completed her education at Tufts University School of Medicine and Tufts' Friedman School of Nutrition science and Policy. After her graduate studies she joined Ovia Health, a women's health technology company where she leads the Clinical and Research teams. She creates clinical programs, conducts research, and uses her knowledge of behavior science to inform user experience and design. She is passionate about applying technology and innovation to improve health and patient experience.

Arianna Blaine is a clinical solutions manager at Ovia Health, where she focuses on clinical efficacy and innovations for Ovia's suite of women's digital health products. These tools aim to be women's daily companion throughout their fertility, pregnancy, and parenting journey, helping to empower them and improve outcomes. She has an SM from the Harvard School of Public Health, focusing on maternal and child health.

Neel Shah, MD, MPP, FCOG, is an assistant professor of Obstetrics, Gynecology and Reproductive Biology at Harvard Medical School, and director of the Delivery Decisions Initiative at Harvard's Ariadne Labs. As an obstetrician-gynecologist at Beth Israel Deaconess Medical Center in Boston, Dr Shah cares for patients at critical life moments that range from childbirth to primary care to surgery. As a scientist and social entrepreneur, he is a globally recognized expert in designing solutions that improve health care.

Ateev Mehrotra, MD, MPH, is an associate professor of health care policy and medicine at Harvard Medical School and a

hospitalist at Beth Israel Deaconess Medical Center. Dr Mehrotra received his BS from the Massachusetts Institute of Technology, his MD from the University of California, San Francisco, and his residency in internal medicine and pediatrics at the Massachusetts General Hospital and Children's Hospital of Boston. His clinical work has been both as a primary care physician and as an adult and pediatric hospitalist. He also has received formal research training with a Master of Public Health from the University of California, Berkeley and a Master of Science in Epidemiology from the Harvard School of Public Health. In 2013, he received the Alice S. Hersh New Investigator Award from AcademyHealth for health services researchers early in their careers who show exceptional promise.

Rahul Gupta, MD, MPH, MBA, FACP, is the senior vice president and chief medical and health officer at March of Dimes. In his role, Dr Gupta provides strategic oversight for March of Dimes medical and public health efforts to improve the health of all moms and babies. Before joining the March of Dimes, Dr Gupta served under two Governors as the West Virginia's Health Commissioner. As the chief health officer, he led the state's opioid crisis response efforts and launched a number of pioneering public health initiatives such as the Neonatal Abstinence Syndrome Birthscore program to identify high-risk infants. Dr Gupta, a specialist in internal medicine and preventive medicine, served as an academic faculty in Tennessee and Alabama before moving to West Virginia originally in 2009 to lead the Kanawha-Charleston Health Department. He is also adjunct professor in the Department of Health Policy, Management and Leadership in the School of Public Health at West Virginia University and visiting faculty at TH Chan Harvard School of Public Health.

Adam Wolfberg, MD, MPH, is an obstetrician, physician-in-chief at Ovia Health, and chief medical officer at Current Health. Previously, he held leadership roles in medical affairs at athenaHealth and Ariosa Diagnostics and is also a founder and chief medical officer of Mindchild Medical. Before going into industry, he was on the academic faculty at Tufts Medical Center, where his research on fetal EKG was funded by the NICHD. He went to medical school at Johns Hopkins, did his residency at Brigham and Women's Hospital, and did his maternal-fetal medicine fellowship at Tufts.