

# Solving the Transportation Challenge for Pregnant Patients in Need: Rides for Moms

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## Detailed Methodology

The objective of this study is to assess the impact of Rides for Moms on the attendance rate of in-person prenatal appointments and on the financial and psychological well-being of patients. Table 2 shows a summary of data sources analyzed. We used a concurrent mixed method study to answer two evaluation questions:

- 1. Did Rides for Moms increase the in-person appointment attendance rate for patients at Mary's Center and Community of Hope?**
- 2. How, and to what extent, did Rides for Moms improve the wellbeing of its participants throughout the course of their pregnancies?**

The study population are patients who are seeking prenatal care at two federally qualified health centers (FQHCs): Mary's Center (MC) and Community of Hope (COH). All together, these two health centers serve approximately 20% of pregnant patients in D.C. and the patients are predominantly those with income that is below the federal poverty level.

For the quantitative components of this study, we analyzed the onsite prenatal attendance data of patients before and after the start of Rides for Moms. In addition, for the participants of the program, we also collected data on their demographic characteristics, and details about their rides with Uber.

Additionally, three surveys were conducted to provide more context on Rides for Moms. First, the Enrollment Survey (n=428, 93% of participants) was conducted within one week of

a participant signing up for Rides for Moms, and it collected variables related to transportation access, pregnancy-related stressors, and other sociodemographic variables. Second, the Post Appointment Survey (n=352, 77% of participants) was administered after the first appointment of participants after their enrollment in Rides for Moms. Different sets of questions were presented to participants depending on whether they used Rides for Moms or an alternative transportation to get to their appointment or if they missed their appointment. Third, the Post Program Survey (n=170, 37% of participants) was administered to patients who completed their pregnancy and are no longer considered a prenatal patient, and to participants who are receiving prenatal care at the end of data collection (June 30, 2022) of this program. All three surveys were offered in English and Spanish from January 11, 2021 to June 30, 2022 through the Alchemer platform<sup>13</sup>.

Table 1 is a summary of the datasets used in the quantitative component of this study.

**Table 1: Summary of quantitative data sources**

<b>Data source</b>	<b>Key information</b>	<b>Sample size</b>
Onsite attendance data	Completion status of each appointment, appointment date, appointment type (virtual or in-person), and health center	23,633 appointments after the start of Rides for Moms (January 2021 - June 2022)
Baseline attendance data	Completion status of each appointment, appointment date, appointment type (virtual or in-person), and health center	59,156 appointments before the start of Rides for Mom (January 2019 - March 2021)
Control data	Demographic characteristics, pregnancy risk level, health center, and expected delivery date	646 patients
Rides data	Ride duration, distance, fare, time of pick-up and dropoff	4,533 rides
Post program survey	Perception of the effectiveness and ease of use of Rides for Moms, and self-reported likelihood of attending appointment and travel time of appointment had Rides for Moms not existed	170 respondents

Post-appointment survey	Uber experience, ease of use of Rides for Moms, and self reported likelihood of attending appointment and travel time of appointment had Rides for Moms not existed	352 respondents
Enrollment survey	Difficulty and perceived barriers of traveling to appointments, modes of travel, the impact of COVID-19, and top stressors of pregnancy before enrolling in Rides for Moms.	428 respondents

Descriptive analyses were performed on the datasets described in Table 2 to estimate the effect of Rides for Moms on the attendance and cost savings of patients. We focused on several outcome metrics: the overall attendance rate, the in-person attendance rate, and the average cost savings per ride. A description and definition of each outcome metric is summarized in Table 2 (page 4).

**Table 2: Summary of outcome metrics used in this study**

<b>Outcome metric</b>	<b>Description</b>	<b>Operational definition</b>	<b>Data source</b>
Overall attendance rate	The percentage of all scheduled appointments (in-person or virtual, if available) that were completed by a patient	<p>For each patient, count the number of scheduled appointments (can be virtual or in-person), and the number of completed appointments (in-person or virtual).</p> <p>Divide the number of completed appointments by the total number of appointments and then multiply by 100.</p> <p>Compute the group mean of patient attendance rates for each group of interest (e.g., MC and COH)</p>	<p>Onsite attendance data</p> <p>Baseline attendance data</p> <p>Control data</p>

<p>In-person attendance rate</p>	<p>The percentage of scheduled in-person appointments that were completed by a patient</p>	<p>For each patient, count the number of scheduled in-person appointments and the number of completed in-person appointments.</p> <p>Divide the number of completed appointments by the total number of appointments and then multiply by 100.</p> <p>Compute the group mean of the patient attendance rate for each group of interest (e.g., COH and MC patients)</p>	<p>Onsite attendance data</p> <p>Baseline attendance data</p> <p>Control data</p>
<p>Cost savings per ride</p>	<p>The average cost per ride a respondent would have incurred in using Uber for her appointment in the absence of Rides for Moms</p>	<p>Compute the total of the estimated fare across all patients, and then divide the result by the total number of rides of all patients</p>	<p>Rides data</p> <p>Control data</p>

To estimate the effect of Rides for Mom on in-person attendance, we used a two sample, two-tailed t-test to compare the average in-person attendance rate between the participants and non-participants. However, results from this simple comparison will likely be biased by various unobserved confounding factors (summarized in Table 4). To address this issue, two steps were taken:

1. Identified observed variables in our datasets that could serve as proxies for the unobserved potential confounding factors (Table 3).
2. Segment the attendance data by the observed proxy variables (health center, appointment type, and the number of scheduled appointments) before comparing the in-person attendance between the participants and non-participants within each cross-category.

By comparing in-person attendance rates within each subgroup (cross-category) that we created, we control for the effects of confounding factors that could bias our results. That said, our findings could still be subjected to potential confounders, because the proxies could only capture some, but not all confounders.

**Table 3: Potential unobserved confounding factors that could be proxied by observed variables**

<b>Observed variable</b>	<b>Unobserved confounding factors that are proxied by the observed variable</b>
Health centers	Language
	Culture
	Education
	Method of booking rides
	Baseline attendance rate for prenatal care
Number of schedule appointments	Perceived value in prenatal care
	Level of satisfaction with care provided by health centers
	Other contextual barriers: childcare responsibilities, inflexible work schedules, distance from health center

## **Qualitative in-depth interviews**

Of the 457 participants enrolled in the program, those who completed the post-program survey were asked if they were willing to participate in a 45-minute in-depth interview (IDI) about their experiences and perceptions of the program. Of the 170 participants who completed the post-program survey, at least 64 consented to being contacted for the IDI, and 24 were ultimately interviewed. Verbal consent was obtained prior to the interview. Participants were given a \$50 e-gift card to Walmart as compensation for their time. Diversity in participants was sought in terms of how much the participants used the Rides for Moms throughout their pregnancy (i.e., heavy users, light users, and non-users) as well as participants who used both the Ride Coordinator and Vouchers.

Of the 24 participants in the IDIs, 14 were patients of Mary's Center and 10 were patients of Community of Hope. The average number of rides completed by participants was 12, where the maximum number of rides was 51 and the minimum number of rides was 0. The majority of participants had had at least 1 previous pregnancy.

An interview guide was created to include four main themes: (1) Initial perceptions of the program and the decision to enroll in Rides for Moms, (2) Program use and perceptions, (3) Choice and use of vouchers v. Ride Coordinators, and (4) Prenatal care experiences and perceptions. The interview team included one Spanish-speaking interviewer to complete interviews with participants from Mary's Center, which has a predominantly Spanish-speaking patient population. Each interview was recorded, translated if necessary, and transcribed for analysis. Before analysis began, a code frame was created that included six main themes in its code system: program drivers, program barriers, program perceptions, perceptions of prenatal care, alternative transportation options, and program improvements. Analysis of data was completed using MAXQDA 2022.

## **Limitations**

Data analyses on the survey and attendance data are descriptive, meaning that they could only be used to establish association between program participation and the outcome metrics in Table 3. In the absence of a randomized control trial, we are unable to claim that

the increase in attendance rate is *caused* by Rides for Moms participation. Instead, our analyses could only *suggest* that Rides for Moms might have increased attendance rate for a subgroup of patients, based on the observed differences in attendance between the participants and non-participants of that subgroup. In a similar way, the findings from our analyses on survey data is only suggestive.

However, our findings from attendance data is strongly supported by in-depth interviews of COH participants who, in the absence of Rides for Moms, indicated they would not attend some of their in-person appointments. Thus, we used qualitative data not only to add depth, detail, and meaning to our quantitative analyses, but also make them more convincing.

## **Selected survey items**

### ***Enrollment Survey***

Selected questions from the Enrollment Survey are included below.

4) In general, how difficult is it for you to find transportation for your daily activities right now?

Not at all     A little     Somewhat     Very     Extremely

5) How did you get to your most recent in-person visit at the health center? (Select all that apply.)

- I haven't had an in-person visit.
- Walked.
- Drove my own vehicle.
- Drove a borrowed vehicle.
- Used a ride-share, like Uber or Lyft.
- Used a "traditional" cab-for-hire (not a ride-share)
- Rode a bike.
- Rode a scooter, motorcycle, or similar transport.
- My baby's co-parent drove me.
- A family member/friend drove me.
- Got a ride from a stranger (i.e., hitchhiked).

- Took public transportation (bus and/or Metro).
- Medical transport, such as MetroAccessUsed MetroAccess
- Other, please specify: \_\_\_\_\_

6) Did any government or social program help pay for or arrange your transportation?

- No, no one helped pay
- DC-based program
- Prince George's County-based program
- Maryland-based program
- My insurance, including Medicaid
- Yes, but I don't know who
- Other, please specify: \_\_\_\_\_

8) When you think about how to get to your doctor appointments in particular, how important is.... Please indicate your 1st, 2nd, and 3rd choice out of the below options.

- \_\_\_\_\_ Cost
- \_\_\_\_\_ Reliability
- \_\_\_\_\_ Speed
- \_\_\_\_\_ Language accessibility
- \_\_\_\_\_ Environmental impact
- \_\_\_\_\_ Convenience
- \_\_\_\_\_ Weather
- \_\_\_\_\_ Parking
- \_\_\_\_\_ Disability access
- \_\_\_\_\_ Comfort
- \_\_\_\_\_ Crowdedness
- \_\_\_\_\_ Safety in general
- \_\_\_\_\_ Social/Physical distancing measures to avoid risk of coronavirus
- \_\_\_\_\_ Cleanliness/sanitation to minimize coronavirus exposure



12) How much stress are you feeling during your pregnancy because of... (Select one of the following options for each statement).

- (None)            (A little)            (Some)            (Much)            (A great deal)            (N/A)
- Concerns about you and your baby being exposed to coronavirus?
  - Concerns about people who travel with you being exposed to coronavirus?
  - Health concerns for you and your baby other than coronavirus?
  - Paying for what you need?
  - Difficulty getting time off work for doctor's appointments?

13) Next, please tell us about anything that makes attending your prenatal appointments hard. It's sometimes hard to go to my appointment(s) because... (Check all that apply)

- It is not hard to go to my appointments.
- It is hard to get time off work.
- It is hard to find childcare for my other children.
- I don't like how a staff member(s) treats me.
- I have had bad experiences with doctors before.
- The appointments are uncomfortable or painful.
- I have more doctor appointments than I really need.
- It is hard to get transportation.
- I'm concerned about being exposed to coronavirus at the clinic.
- I'm concerned about exposing others to coronavirus at the clinic.
- I'm having a hard time emotionally (sadness, anxiety, lack of motivation, etc.).
- Other, please specify: \_\_\_\_\_

14) Now we would like to ask you more about any difficulties you have with finding reliable transportation to your prenatal care appointments. It's sometimes difficult to get to my appointment because...? (Check all that apply)

- It is not difficult to get to my appointments.
- It takes too much time to get to the clinics.
- It costs too much.
- My appointments are at inconvenient dates/times.
- It's hard to keep track of public transit schedules.
- Public transportation is unreliable.
- The person/people who drives me to the clinic can be unreliable.
- It is uncomfortable or painful to travel.

- I'm worried about getting into a car accident.
- I'm concerned about the spread of coronavirus when traveling.
- Other, please specify: \_\_\_\_\_

23) The next questions are about how the coronavirus may have impacted your life. For each of the following, please indicate if you agree or disagree:

- Strongly disagree    Disagree    Neutral    Agree    Strongly agree
- My transportation options changed.
- I lost a reliable source of income because of the coronavirus.
- I lost a dependable place to live because of the coronavirus.

### ***Post Appointment Survey***

Selected questions from the Post Appointment Survey are included below.

6. How easy or hard would it have been to get to the appointment without Rides for Moms?  
 Very easy    Somewhat easy    Neither easy nor hard    Somewhat hard    Very hard

7. How long would it have taken to get to the appointment without Rides for Moms?  
 It would have taken more time  
 It would have taken about the same amount of time  
 It would have taken less time

8. Without Rides for Moms, how much more time would it have taken you to get to your appointment?  
 1 minute    30 minutes    60 minutes or more

18. Please tell us whether you agree or disagree with this statement: Getting to my appointment was easy.  
 Strongly disagree    Disagree    Neutral    Agree    Strongly agree

### ***Post Program Survey***

Selected questions from the Post Program Survey are included below.

2) We'd like to understand your experience with Rides for Moms. Please tell us whether you agree or disagree with the following statements.

Strongly disagree  Disagree  Neutral  Agree  Strongly agree

- The Uber rides to my appointments were easy.
- I felt drivers drove safely during the Uber rides to my appointments.
- Safety protocols were followed during Uber rides to my appointments.
- The Uber rides to my appointments were reliable.
- The Uber rides to my appointments saved me time.
- If I became pregnant again, I would like to use Rides for Moms to get to my prenatal care appointments.
- I would recommend Rides for Moms to a friend or family member that was pregnant.

3) Think about how you would have gotten to the clinic for your prenatal appointments if you weren't in the Rides for Moms program. Do you think you attended more or less appointments because of Rides for Moms?

- I would have attended many less appointments if I weren't in the program.
- I would have attended somewhat less appointments if I weren't in the program.
- I would have attended the same number of appointments if I weren't in the program.
- I would have attended somewhat more appointments if I weren't in the program.
- I would have attended many more appointments if I weren't in the program.

4) Generally speaking, how much easier or harder would it have been to get to your prenatal appointment without Rides for Moms?

A lot easier  Easier  Neither easier nor harder  Somewhat harder  A lot harder

16) In general, how difficult is it for you to find transportation right now?

Not at all  A little  Somewhat  Very  Extremely