The Impact of Modest Cash Incentives on Home Visiting Enrollment and Participation

Robin Tepper Jacob

Megan Foster Friedman

University of Michigan

Abstract

We present initial and persistent effects of an experimental evaluation of monetary incentives in the context of a Medicaid home visiting program for pregnant individuals. 218 participants enrolled in this study between 4/1/2019-10/1/2020. Our sample includes Medicaid-enrolled pregnant people referred to the home visiting program *who verbally agreed to enroll in the program and scheduled their initial home visit*, but had not yet completed this first visit. We randomly assigned individuals to groups based on their date of birth to: a) receive $20 cash for keeping their enrollment appointment; or b) a control group who did not receive an incentive at their enrollment appointment. We find that offering incentives increased the likelihood of completing the enrollment appointment and at least one subsequent appointment. The impact on keeping the enrollment appointment was substantially larger for Black families than families of other races. There was no impact on keeping the first appointment when the visit was conducted via telehealth. Increasing rewards for completing an enrollment visit may expand access to information about the program's risks and rewards, leading some to continue participation beyond that first appointment. One-time incentives may not be enough to encourage full program participation.

Key words: Medicaid, home visiting, maternal infant health, cash incentives, program participation, program enrollment

Classification codes: I18 - Health: Government Policy, Regulation, Public Health; I38 - Welfare, Well-Being, and Poverty: Government Programs, Provision and Effects of Welfare Programs; I32 – Measurement and Analysis of Poverty

I. Introduction

Despite large investments by state and local governments, many social programs are chronically under-utilized. In 2018, the most recent year for which data is available, participation in the Supplemental Nutrition Assistance Program (SNAP) by those who were eligible was as low as 55% in some states (Food and Nutrition Service, 2020).[1] Nationally, in that same year, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) served an estimated 56.9% of those eligible, with evidence that rates have been declining in recent years (Food and Nutrition Service, 2021). Programs and other activities designed to encourage healthy behaviors experience similar problems (e.g., Committee on Obstetric Practice, 2016; Bryant et al., 2006; Robroek et al., 2012; Lakerveld et al., 2008; Kruger et al., 2007). A number of factors contribute to low participation in social and health related programs: logistical barriers like transportation and scheduling; excessive paperwork required to enroll; other "small" hassles used to verify eligibility for participation (Bertrand et al., 2004); stigma (Moffit, 1983; Currie, 2004); and incomplete information regarding the costs and benefits of participating in a program (Finkelstein & Notowidigdo, 2019).

Not only is program uptake low, but participation after enrollment is often inconsistent. No-shows—when an individual agrees to participate in a program or activity but fails to keep appointments—are a persistent problem for many programs, and particularly so within the context of health care (Kheirkhah et al., 2016). No-show rates among Medicaid recipients are especially high (e.g., Elkhider et al., 2022). Low participation rates can have a negative impact on participants—they may not get the full benefit of the program, and/or referral for treatment or support may be delayed (Nguyen & Dejesus, 2010; Hwang et al., 2015). No-shows also place a substantial burden on program providers because missed appointments result in an inefficient

[1] Wyoming

use of staff time, coming at the cost of other activities (Yan, Reddy, & Tu, 2011). Missed appointments may also require providers to spend additional time giving information to participants who missed programming. All of this adds to program costs. In the case of Medicaid-funded programs, providers may also fail to receive reimbursement for these no-show appointments, and unlike participants covered by private insurance, providers cannot impose penalties on Medicaid recipients for missed appointments.

Appointment keeping and ongoing program participation face similar barriers to initial enrollment—transportation, scheduling, child-care and the like (e.g., Smith et al., 2022). These barriers may be particularly high for those with the highest level of need, because they potentially have the most limited bandwidth for seeking out programs, evaluating their costs and benefits, and making time and arrangements to enroll or attend (e.g., Bertrand et al., 2004; Mani et al., 2013; Mullainathan & Shafir, 2013). As Pavetti & Stanley (2016) note, living in poverty can impact individual motivation and decision-making. In situations of high poverty, scarcity of money, time, and food can crowd out other needs or desires—leaving little available cognitive or emotional capacity to identify longer-term goals or seek out opportunities to work towards them. In such instances, any mechanism to encourage participants to try the program or encourage ongoing retention has the potential to increase overall participation. As Bertrand et al. (2004) note, when situational barriers are present, “the opening up of a channel (such as an a priori commitment, or a first step)” may facilitate participation. This study tests whether financial incentives can offer such a “channel.”

Incentives (both monetary and material) have been used in a variety of contexts to encourage enrollment and participation in social programs, and to encourage appointment keeping and compliance in health care settings. Monetary incentives have been effective in increasing postpartum appointment keeping (Stevens-Simon et al., 1992); early initiation of prenatal care (Cygan-Rehm & Karbownik, 2022); enrollment in parent training programs (Dumas et al., 2010;

Gross et al., 2011); enrollment in online health behavior programs (Alexander et al., 2008); access to preventative care for children (e.g., Leininger & Levy, 2015); and enrollment in smoking cessation programs (Hennrikus et al., 2002). Across all these studies, the provision of incentives increased participation and appointment keeping, but the kind, amount, and frequency of the incentive produced varying results. Reviews suggest that incentives are often more effective than other approaches (e.g., reminders, educational interventions, increased outreach) at increasing enrollment, appointment keeping, and health care compliance (Stumbras et al., 2016; Stevens-Simon et al., 1997).

However, relatively few studies have explored whether incentive effects persist beyond the initial provision of the incentive—for example, whether an incentive to enroll in a program influences longer-term participation or reduces no-shows. One small case study that explored the impact of offering an incentive for pediatric appointment keeping found that the incentives were effective while they were in place, but after the incentives were ended, appointment keeping declined (Finney et al., 1990). Another explored different incentive schemes (pre-paid vs. promised and various incentive amounts) and looked at both enrollment and retention in an online health behavior program. None of the incentive schemes were positively and statistically significantly associated with retention, although sample sizes were small (Alexander et al., 2008). Finally, Gross et al. (2011) found that parents who were provided with a childcare discount for participating in a twelve week parenting program were more likely to enroll than the control group, but attendance rates were similar between the two groups.

There is more positive evidence about the persistence of incentive effects in international studies of health insurance subsidies. One randomized experiment conducted in a rural district of northern Ghana found that the effect of an initial subsidy persisted three years after the subsidy was discontinued (Asuming et al., 2021). A recent study in the Philippines randomized individuals to receive a 50% subsidy for enrolling in the national health insurance program.

Those who did not initially respond to the subsidy were randomly assigned to receive application assistance. The authors found that those offered the subsidy were more likely to enroll and to continue their participation even after the subsidy was no longer available (Baillon et al., 2022). However, those who did not respond to the initial subsidy (and were subsequently randomly assigned to receive application assistance in addition to the subsidy) were less likely to persist after the incentive was discontinued. This research, however, may not be entirely applicable to the current context, since these studies took place in an international environment, and decisions regarding the purchase of health insurance are likely quite different from the decision to participate in a social or health related program.

A more relevant literature focuses on the use of incentives to encourage Medicaid beneficiaries to participate in ongoing preventive services, like immunizations and well-child visits. In recent years, states and health systems have been using such programs more widely, but there is only limited evidence about their effectiveness (Redmond, Solomon & Lin, 2007; Van Fleet & Rudowitz, 2014). One early study explored the use of $10 gift certificates to encourage childhood immunizations, and found an increase in the number of immunized children after the program was implemented, but the program also provided transportation, home visits, and ongoing education to families (Browngoehl, Kennedy, Krotki, & Mainzer, 1997). It is unclear whether the incentives alone would have led to the observed increase. A Medicaid-CHIP health plan incentive demonstration program in California found similarly positive results with well-child appointment keeping. Again, the incentive scheme was part of a broader program of activities, so it is difficult to attribute the observed changes to the incentive (Felt-Lisk & Smieliauskas, 2005). Perhaps the most comprehensive exploration of the use of incentives among Medicaid recipients comes from the Medicaid Incentives for Prevention of Chronic Disease Program, created by the Patient Protection and Affordable Care Act (ACA). A 2017 report on the program used Medicaid claims to explore the impact of the incentive programs on outcomes in ten

states, and found some limited evidence that incentives increased initial enrollment in preventive activities such as smoking cessation or weight-loss programs, but found few impacts on key health outcomes like weight-loss or smoking rates (Hoerger et al., 2017). Unfortunately, each state used the incentive funds in varied ways, making it difficult to draw any definitive conclusions about incentives more broadly from these efforts. Further, the five-year demonstration program was ended before longer term outcomes could be assessed.

This study reports on both the initial and persistent effects of an experimental evaluation of monetary incentives in a home visiting program for pregnant individuals. Home visiting (HV) is an evidence-based strategy for promoting the health and well-being of pregnant people and babies (Stoltzfus & Lynch, 2009). Families enrolled in HV programs are visited by a trained professional (often a nurse or social worker) who comes to their home to provide education, social support, and resources throughout pregnancy, infancy, and early childhood. Home visitors offer families information and support across a wide range of issues, including healthy pregnancy and post-partum behaviors, safe sleep, breastfeeding, parent-child interactions, early learning, and developmental milestones. They also connect families with unmet mental, social, economic, or other needs to community resources.

Research demonstrates that HV positively affects families in many ways, including reducing adverse birth outcomes in infants and health problems in older children; improving language and cognitive development in children; preventing child maltreatment; increasing health care usage; and improving the quality of parenting and the home environment (Avellar & Supplee, 2013; Kendrick et al., 2000; Kitzman et al., 1997; Olds et al., 1986; Peacock et al., 2013; Roman et al., 2014). Although there are different models of HV (e.g. Nurse Family Partnership, Healthy Families America, Parents as Teachers), outcomes remain positive across different provider and model types (Avellar & Supplee, 2013; Kendrick et al., 2000; Peacock et al., 2013). Despite the large body of evidence pointing to their effectiveness, HV programs across the nation are

persistently underutilized. The National Home Visiting Resource Center (2018) estimates that current programs reach only 6% of the estimated 18 million pregnant people and families with children under age 6. Many (if not most) HV programs target pregnant people based on specific criteria (e.g., income, geographic location, prior history of risk factors, insurance type, etc.) in an effort to concentrate resources on those most in need. Yet, even so, their reach has been limited. Further, many programs experience a high number of no-show appointments. This is particularly problematic in the context of a home visiting program because social workers and nurses must travel to an individual's home—meaning that a missed in-home appointment can take substantially more of the provider's time than a missed office appointment. Since a visit did not occur, Medicaid will not reimburse the provider for this time.

HV interventions address some of the common barriers to social program participation, such as transportation and childcare, but several barriers to initial and ongoing participation remain. On a recent survey, many (29%) of participants cited scheduling conflicts as a reason for ending participation early (Jacob & Foster Friedman, 2020). Appointments typically take place during the week and during the day, and may conflict with work, school, or other obligations. Others (32%) said they did not enroll because they did not want someone coming into their home (Jacob & Foster Friedman, 2020). They may have been worried about being judged negatively by their home visitor, may have had concerns about their immigration status or that of a loved one, or may have feared that participation would lead to legal involvement or the involvement of child protective services.

These barriers are combined with a lack of widespread information and awareness about program benefits. Encouraging participation in family-based prevention programs can be challenging since the benefits of participation often accrue slowly and many participants do not perceive they have a need for services (Ingoldsby, 2010). Further, information about what the program entails is sometimes vague and potential participants may not fully understand what it

involves, or how they might personally benefit. Many eligible families, having a vague sense of the benefits of the program and real concerns about the potential risks, may choose not to participate. Yet, among home visiting participants, satisfaction is typically high, and participants often cite their relationship with their home visitor as a primary benefit of the program (Jacob & Foster Friedman, 2020).

In this study we examine whether offering a monetary incentive for keeping the initial enrollment appointment can help overcome the informational barriers described above. Providing monetary incentives increases the tangible benefit of program participation, which will hopefully help offset the costs, both psychological (concerns about having a stranger in the home) and actual (taking time off work to be available for the appointment), of appointment keeping.

Over 200 Medicaid-eligible pregnant people in Michigan were randomly assigned to a treatment group who were offered a $20 cash incentive for keeping their enrollment appointment as scheduled or to a control group that did not receive an incentive. We find that offering an incentive to keep the enrollment appointment increases the likelihood of keeping both that initial appointment and at least one subsequent appointment. The treatment group is also somewhat more likely to fully participate in the program (defined as keeping three or more appointments) but that difference is not statistically significant. The estimated impact of the incentive for Black families on keeping the initial enrollment appointment was larger than for families of other races, and was also somewhat larger for keeping additional appointments, although again, the differences were not statistically significant.

These findings suggest that increasing the reward for participating in an enrollment visit may provide individuals with access to more complete information about the risks and rewards of the program, leading at least a portion to choose to continue their participation beyond that first appointment. However, a one-time incentive may not be enough to encourage full participation in the program. Nonetheless, even participating in the program for a short period may provide

substantial benefits in the form of information provision and connections to services. Information about safe sleep practices, healthy eating during pregnancy, and connections to prenatal care, for example, can all be provided in just one or two visits. Given the many potential benefits of participating in HV, including reductions in preterm birth, infant mortality, and child maltreatment, we conclude the small financial investment required to provide the incentive is likely quite cost effective.

To our knowledge, this is one of the first studies to explore the persistence of incentive effects in the context of social program participation. It suggests that monetary incentives may be effective in not only encouraging initial enrollment or appointment keeping but may also encourage continued participation—particularly in instances in which participants experience informational barriers to participation. It is also, to our knowledge, the first study to explore the effectiveness of incentives in the context of a HV program. Given the high rates of infant and maternal mortality in the US, particularly among Black women and infants (United Health Foundation, 2018; Michigan Department of Health and Human Services, 2022), it is important to explore ways to encourage greater participation in effective preventative programs.

A. INSTITUTIONAL CONTEXT: MICHIGAN'S MATERNAL INFANT HEALTH PROGRAM

The state of Michigan has made a substantial investment in family support programs for pregnant individuals and their infants through the Maternal Infant Health Program (MIHP) home visiting program, which is available to all Medicaid-eligible pregnant people and infants in the state. It is the largest home visiting program in the state and it works to promote healthy pregnancies, birth outcomes, and infant growth and development. Program providers employ multidisciplinary teams of nurses, social workers, lactation consultants, and nutritionists who provide comprehensive information and coaching on nutrition, exercise, prenatal care, and breastfeeding; and educate parents on child development and positive parenting practices so that they can develop positive relationships and form good habits at an early age. Home visitors

also help identify and address health and social risk factors, work with parents to create a safe home environment, and link families to community-based resources to help meet their basic needs, such as food, housing, and other assistance.

MIHP is available during pregnancy and through a child's first year of life. The program is administered by a variety of independent agencies, who are reimbursed by the state for providing home visiting services. Agencies include county health departments, federally qualified health centers, health systems, and private providers. Research indicates that MIHP reduces preterm birth and low birth weight and increases the number of pre/post-natal and well-child visits among participants who enroll by the end of the second trimester and receive at least three home visits (Roman et al., 2014; Meghea et al., 2013).

Medicaid eligible pregnant individuals are referred to the MIHP program through a variety of referral sources. The three most frequent are Medicaid health plans, physicians, and WIC providers. People are generally referred to a specific MIHP provider and the provider then reaches out to schedule an enrollment appointment. At the enrollment appointment (which typically takes place in the home) the nurse or social worker completes a risk assessment profile and creates a plan of care for the individual that will be used in subsequent home visits.

The MIHP program reaches just 30% of the approximately 41,000 Medicaid-eligible pregnant people in the state who are qualified to participate each year, based on our own analysis of state administrative data (Jacob & Foster Friedman, 2020; Kaiser Family Foundation, 2020).

II. Methods

A. DATA AND SAMPLE

All demographic and program participation data were obtained directly from Michigan Medicine's MIHP program.

The study population included Medicaid-enrolled pregnant people who were referred to the Michigan Medicine (MM) MIHP program in the eighteen month window between 4/1/2019 and 10/1/2020. The sample includes patients *who verbally agreed to enroll in MIHP and had scheduled their initial home visit*, but had not yet completed this first visit. Only patients who are enrolled in Medicaid are eligible for MIHP, and all study participants were low-income (<195% of the Federal Poverty Level, or <$50,213 per year for a family of four). A total of 218 participants were enrolled in the study during the study period. Sample characteristics are shown separately by treatment and control group in Table 1. Approximately half of the sample is Black and approximately one third is White. Study participants were on average 27 years old. Approximately one third received their prenatal care at the Von Voigtlander Women's Hospital, the largest prenatal clinic in the Michigan Medicine system. The rest received care at smaller clinics in the area.

B. DESIGN AND EMPIRICAL STRATEGY

The study employed a randomized design, in which all individuals in Michigan Medicine's MIHP program who scheduled an enrollment appointment during the study period were randomly assigned to one of two groups: a) receive a $20 cash incentive for keeping their enrollment appointment; or b) a control group who did not receive an incentive at their enrollment appointment. Prior research comparing the effectiveness of different types of incentives suggests cash incentives may be more effective at influencing behavior than non-cash incentives such as coupons or supplies (e.g., Dykema et al., 2011; Giles et al., 2014). Small-dollar incentives may not be sufficient to incentivize participation in social programs (Dumas et al., 2010); however, there is also some evidence indicating that incentive effectiveness may decrease as the incentive amount increases (Giles et al., 2014). The study team chose a $20 cash incentive with the goal of providing an amount that was high enough to encourage the

desired behavior and acknowledge the time and resources a family would need to spend to attend the appointment, but not so high as to be coercive.

Since new referrals to MIHP occur daily, and patients need to be informed about the incentive at the time they schedule their appointment, the system for randomly assigning study participants needed to be easy both for the referral coordinator to implement, and for researchers to monitor. Individuals were randomly assigned to intervention groups based on their date of birth. Individuals born on an odd day of the month were assigned to receive the incentive; those born on an even day were assigned to the control condition. A referral coordinator at MM MIHP was responsible for scheduling all enrollment appointments. Following training from the study team, she implemented the random assignment scheme, and maintained a record of whether or not study participants kept their appointment and received an incentive. The study team reviewed these records monthly to ensure that random assignment was occurring as designed.

In offering the incentive, the referral coordinator followed a script. After an individual scheduled an enrollment appointment, the referral coordinator checked to see if the person was born on an odd day of the month. If they were, she read the following: "*Congratulations! You have been selected to receive $20 in cash as a thank-you for keeping your first home visiting appointment. If you are home and available for the appointment we just scheduled on [INSERT DATE & TIME], your home visitor will give you $20 in cash at your visit."* For those assigned to the control group, she scheduled and confirmed the appointment time according to standard protocol.

The day before the home visitor was scheduled to meet with an individual assigned to the treatment group, the assigned home visitor sent a text message reminder to the patient: *"This is a reminder that your first MIHP home visiting appointment is scheduled for tomorrow at [INSERT TIME] at your home. Remember that you will receive a $20 cash gift if you are home and available for this appointment. Your home visitor is looking forward to meeting you*

tomorrow. Please call [XXX-XXX-XXXX] if you need to reschedule for any reason. Thank you!" [2] For individuals assigned to the control group, home visitors sent a similar message, without the mention of the incentives: "*This a reminder that your first MIHP home visiting appointment is scheduled for tomorrow at [INSERT TIME] at your home. Your home visitor is looking forward to meeting you tomorrow. Please call [XXX-XXX-XXXX] if you need to reschedule for any reason. Thank you!"*

The study ran from 4/1/2019 to 10/1/2020. A total of 218 individuals were randomly assigned (56%, or n=122 to the treatment group, and 44%, or n=96 to the control group). This slightly uneven assignment ratio can partly be attributed to the fact that there are more odd days than even days in the calendar (an ordinary year has 186 odd days and 179 even days, thus any non-leap year has 51% odd days), and the relatively small sample size. The study team reviewed participant birth dates on a monthly basis to verify that only individuals born on an odd day of the month were offered an incentive. A joint F-test determined that the overall difference between treatment and control was not statistically significant at $p \leq 0.05$ (exact p-value=0.085). The treatment group had a higher proportion of Black individuals and a smaller proportion of White individuals than the control group, although these differences were not statistically significant. The mean age of the treatment group was also somewhat higher than that of the control group (and statistically significant at p=0.013). We control for these characteristics in our regressions, so results account for any differences that might arise from this observed imbalance, and for any factors for which these variables might be a proxy. The real concern is whether the sample is imbalanced on fully unobservable characteristics. However, since we were able to fully verify the randomization process, there is no reason to believe this would be the case—or at least no more reason than if the sample had been fully balanced on observable characteristics. For this reason, some have argued that balance tables are not necessary in

[2] Those who rescheduled did not receive the $20 incentive.

randomized designs (Altman, 1985; Hayes & Moulton, 2009; McKenzie, 2017). McKenzie (2017) contends that there are two instances where balance tables make conceptual sense—a) when the randomization process cannot be verified or b) in instances with sample attrition. Neither of these conditions holds in this study.

The last several months of the study occurred after the start of the COVID-19 pandemic, which had a significant impact on the delivery of home visiting services. A portion of the study was conducted during Michigan's stay-at-home order (3/23/20-6/1/20) and during the remaining four months of the study MIHP offered primarily telehealth visits. During this time, incentives were delivered to participants' homes after the completion of the visit. This ultimately proved too logistically taxing for MIHP agency personnel and so the study was discontinued prematurely (i.e., before reaching the target sample size in the pre-specified analysis plan). The pre-specified analysis plan can be found here.[3] The premature end to the study resulted in a final sample of n=218 individuals, which was less than the target sample of n=350 individuals outlined in the pre-analysis plan. We were originally powered to detect an increase in participation of 10 percentage points. The minimum detectable effect in the current sample is ~12 percentage points.

The primary analysis focuses on the impact of the incentive on the proportion of individuals keeping their scheduled appointment. This was the pre-specified primary outcome. We estimate program impacts by comparing average outcomes for the intervention groups to those in the control group, with a regression-adjustment for selected background characteristics, including age, race and ethnicity, and prenatal clinic. We estimate a linear probability model using a dichotomous outcome variable to indicate whether an individual kept their first appointment, controlling for the individual-level covariates above. As secondary outcomes, we also explore

[3] We are still waiting to obtain some of the data (health outcomes and additional covariates) specified in the analysis plan.

the impact of the program on the percentage of individuals who participate in at least one follow-up visit and at least three follow-up visits, which is considered "full participation" in the MIHP program (e.g., Roman et al., 2014). We estimate the following Linear Probability Model:

$$(1) \qquad Y_i = \beta_0 + \beta_1 T_i + \sum_2^k \beta_{ki} X_i + \varepsilon_i,$$

Where Y_i is equal to 1 if the individual kept their enrollment appointment (or attended at least one subsequent visit or attended at least three subsequent visits) and 0 otherwise, T_i is equal to 1 if the individual was born on an odd day of the month and offered the incentive and zero otherwise, and X_i is a vector of covariates including race and ethnicity, age, and prenatal clinic.

Not all individuals who kept their enrollment appointment ultimately enrolled in the program, meaning that some individuals declined any further home visits at the conclusion of the enrollment appointment. Further, some individuals who missed their enrollment appointment rescheduled and subsequently enrolled. As shown in Figure 1, the number of individuals who fall into these categories is small; however, we also use an instrumental variables approach to estimate the causal impact keeping the first appointment on enrolling in the MIHP program, and on the likelihood of later participation. To do so, we estimate the following two-stage least squares model:

$$(2) \qquad K_i = \pi_0 + \pi_i T_i \sum_2^k \pi_{ki} X_i + \varepsilon_i \quad \textit{(first stage)}$$

$$(3) \qquad E_i = \pi_0 + \pi_k \widehat{K_\iota} + \varepsilon_i \quad \textit{(second stage)}$$

Where K_i is equal to 1 if the individual kept their enrollment appointment and 0 otherwise and E_i is equal to 1 if the individual enrolled in the MIHP (or kept at least one subsequent appointment or kept three subsequent appointments) and 0 otherwise. All other variables are defined as above.

As noted above, prior research (Jacob & Foster Friedman, 2020) suggested differences based on race with regard to attitudes towards MIHP participation. White individuals were more likely than Black individuals to indicate resistance to having someone in the home, and to say they did not need MIHP services. At the same time, anecdotally Black pregnant people have expressed skepticism regarding whether White service providers (who make up a majority of the MIHP service providers) will be able to provide culturally competent care. Given these findings, we conducted exploratory analyses to compare program impacts across Black and White participants to understand whether the intervention had differential impacts based on the pre-intervention characteristics of the participants, although our statistical power is somewhat limited for these analyses.

Finally, we also show how the impact of the pandemic and the move to telehealth impacted participation rates among those offered the incentive, by including an interaction term between treatment status and participating via telehealth, in model (1) above.

III. Results

A. MAIN RESULTS

Figure 1 shows the pattern of participation among the treatment and control groups. Of the 122 individuals assigned to the treatment group a total of 101 (83%) kept their initial enrollment appointment, compared to 61% of the control group. No individuals in the treatment group who missed the initial appointment rescheduled and later enrolled. Among the control group, however, four individuals missed their scheduled appointment, but later rescheduled and enrolled in the program.

Figure 1 also shows the number and percentage of individuals who kept at least one appointment subsequent to the enrollment appointment, and the number who fully participated in the program (defined as attending at least three additional visits beyond the enrollment

appointment). 68% of the treatment group and 47% of the control group kept at least one subsequent appointment and 47% of the treatment group and 36% of the control group completed three or more visits. Most people who did not attend subsequent visits were lost to care, meaning that home visiting staff were not able to contact them to schedule subsequent appointments or the participant declined further visits. However, a small portion of the sample experienced a fetal loss during the course of the study (n=6, 5 treatment and 1 control group participant) or moved out of the agency's service area and were no longer eligible for services (n=3, 2 treatment and 1 control group participant). These individuals are retained in the sample for all analyses.

Table 2 shows the impact of being offered an incentive on the probability of keeping the enrollment appointment (the direct target of the intervention), of enrolling in MIHP, of attending the first follow-up visit after enrollment, and of attending three or more follow-up appointments (full participation). For each outcome, the first column shows the unconditional model; the second column shows impact estimates after controlling for participant background characteristics. After controlling for background characteristics, individuals in the treatment group were 20 percentage points more likely to keep their first appointment than those who did not receive an incentive. This is a 32 percent increase over the control group mean, which was 62%. The treatment group was 17 percentage points more likely to enroll in MIHP than the control group, and 15 percentage points more likely to keep at least one subsequent appointment (a 29 percent and a 32 percent increase, respectively). Finally, the treatment group was 4 percentage points more likely to fully participate in MIHP, but that difference was not statistically significant.

As shown in Table 3, the causal impact of keeping the enrollment appointment is quite strong. Individuals who keep their enrollment appointment are 0.85 percentage points more likely to enroll in the program, 0.80 percentage points more likely to keep at least their first subsequent

appointment and 0.26 percentage points more likely to keep at least three subsequent appointments (although this increase is not statistically significant in this sample).

B. DIFFERENCES BY RACE

As noted earlier, there are reasons to believe that the incentive could have a differential impact on participation, depending on a family's race. In prior research, White families indicated greater reluctance to have a stranger in their home, and greater skepticism about the benefits of the program. At the same time, anecdotal evidence suggests that Black families have concerns about the cultural competence of home visitors. To explore whether treatment effects varied by race, we included an interaction term for Black and treatment in model (1) above. The results are shown in the first columns of Table 4. We can see that the impact of offering an incentive on keeping the enrollment appointment was substantially larger (20 percentage points, and marginally statistically significant) for Black families than families of other races. While families of other races were 10 percentage points more likely to keep their initial enrollment appointment if offered an incentive, Black families were 30 percentage points more likely to keep the appointment if offered an incentive (a 48 percent increase over the control group average of 62 percent). The impact on keeping at least one subsequent appointment was also higher among Black families—Black families were 18 percentage points more likely to keep at least one subsequent appointment compared to a 12 percentage point increase among families of other races, but the difference was not statistically significant. As with the main results, the impact on keeping at least three visits was close to zero for this group of individuals, and not statistically significant, despite the large impact on keeping the first appointment. Running separate models for Black and White participants yields similar results.

C. EXPLORING THE IMPACT OF THE PANDEMIC AND THE MOVE TO TELEHEALTH

Finally, as noted above, the COVID-19 pandemic began approximately a year into the study, and most visits conducted after March 2020 were conducted via telehealth rather than as in-person home visits. Given that one of our key hypotheses was that offering an incentive would overcome some initial resistance to having someone in the home, we wanted to explore whether the move to telehealth had an impact on the effectiveness of the incentives. To do so, we included an interaction term for telehealth and treatment in model (1) above. The results are shown in the second columns in Table 4. The findings are consistent with our hypothesis; there was no impact of the incentive on keeping the first appointment for those whose enrollment visit was conducted via telehealth, and in fact the impact was trending negative for these families. This suggests that the incentive may have been helping to overcome some initial resistance to an in-home visit, but without the barrier of an in-home visit, the incentive offered little benefit. At the same time, telehealth was likely not the only factor at play during the early days of the pandemic—during this time families were likely more available for appointments and may have also felt a greater need for support, making they more likely to keep their scheduled appointments. The finding does suggest, however, that in the absence of the pandemic, the impact of the incentive on keeping the first appointment might have been even larger.

D. PROGRAM COSTS AND SAVINGS

One question that remains is whether or not the incentives are cost-effective. While a detailed cost analysis is beyond the scope of this paper, we can conduct some thought experiments to assess the general cost-effectiveness of the incentives. From a societal perspective, offering incentives for participation is almost surely cost-effective. For every 100 individuals offered an incentive, the incentives cost the program $1,640 dollars ($20 x the 82 individuals who kept their first appointment). For this investment, society gets an additional ~20 individuals to enroll in the program. Prior research estimates that the return on investment of MIHP is $19,620 per 100 individuals who participate in the program (or $196 per individual), based just on cost savings

from reductions in preterm births (Peters et al., 2015). That means for every 20 additional individuals who participate in the program, society saves $3,920 (20*$196). Less the cost of the incentives, the total societal saving per 100 individuals would be $2,280 ($3,920-$1,640). There are a total of 41,000 Medicaid eligible births in Michigan each year (Kaiser Family Foundation, 2020), which means that the total savings per year would be approximately $934,800 annually ((41,000/100)*$2,280). Reductions in preterm birth is just one of the many societal benefits that potentially accrue from participation (Roman et al., 2014). Research has also shown that the program reduces infant mortality (Meghea et al., 2015) and increases the number of prenatal and postnatal appointments attended (Meghea et al., 2013). To the extent that any or all of these benefits accrue, the societal savings would be quite large.

We can also think about the costs of the program from the perspective of an individual provider. In addition to the societal benefits of increased program participation, reducing the number of individuals who fail to keep their appointment also benefits individual providers. MIHP providers are paid on a per visit basis, at a rate of $108.89 dollars per visit, but are not paid if the visit does not occur. By reducing the number of “no shows”, the cost of the home visitors’ time is shifted from the provider to the state, thereby making it more likely that the provider can cover their costs and continue to provide services. Reducing “no shows” also ensures that staff are not spending time traveling to appointments that do not occur, when that time could be used for more productive activities. From the perspective of the provider the cost of the incentives, per 100 individuals is also $1,640 (82*$20 where 82 is the number of individuals who keep their appointment). The savings, in terms of costs shifted from the provider to the state, is $2,178 (20*$108.89 where 20 is the number of additional individuals who keep their appointment and $108.89 is the rate paid to the provider for the visit). Overall this yields averages savings to the provider of around $538 ($2,178-$1,640) per 100 individuals served annually, which are not substantial savings but still cost effective.

IV. Discussion

Consistent with prior literature, we find that the incentives had a large impact on the likelihood that an individual kept their first appointment, as scheduled. However, we also find that the initial offer of an incentive not only had an impact on keeping the enrollment appointment, but also on subsequent program participation. This offers some support for the notion that providing an incentive for keeping the first appointment might allow people access to more complete information about the program, and highlight the program benefits relative to the risks. The incentive may have provided a "foot in the door;" once the home visitor was able to enter the home, meet the client and establish a relationship, individuals were more likely to continue their participation. This conclusion is supported by the finding that the incentive had little impact during the period of time when all visits were being conducted via telehealth. It also suggests that other "foot in the door" strategies might also increase participation. For example, conducting the enrollment visit via telehealth, or offering a short telehealth "meet and greet" with the home visitor prior to the first in-home visit might yield some of the same benefits.

However, despite the large initial impact of the incentive on both the likelihood of keeping the enrollment appointment and of keeping at least one subsequent appointment, the incentive had a limited impact on full program participation. There are a number of hypotheses for why this might be the case. Families might have felt that they gained all or most of the benefits from the program after just one or two visits, at which point the cost of scheduling and being available for the home visit began to outweigh the benefits. Or it could be that after one or two visits families gained even more information about the program, which led them to conclude that it was not as beneficial as they had initially thought. It is also possible that individuals who received an incentive for keeping their first appointment mistakenly thought they would be receiving an incentive for keeping their second appointment and once they realized that they would not be receiving the incentive they discontinued their participation. However, we have no evidence

(anecdotal or otherwise) to support this. Regardless, more research is needed to understand why some families discontinue their participation prematurely.

References

Alexander, G. L., Divine, G. W., Couper, M. P., McClure, J. B., Stopponi, M. A., Fortman, K. K., Tolsma, D. D., Strecher, V. J., & Johnson, C. C. (2008). Effect of incentives and mailing features on online health program enrollment. American Journal of Preventive Medicine, 34(5), 382–388. https://doi.org/10.1016/j.amepre.2008.01.028

Alaeddini, A., Yang, K., Reddy, C., Yu, S. (2011.) A probabilistic model for predicting the probability of no-show in hospital appointments. Health Care Management Science, 14(2):146-157. doi:10.1007/s10729-011-9148-9

Altman, D. G. (1985). Comparability of Randomised Groups. Journal of the Royal Statistical Society. Series D (The Statistician), 34(1), 125–136. https://doi.org/10.2307/2987510

Asuming, P. O., Kim, H. B., & Sim, A. (2022). Selection and behavioral responses of health insurance subsidies in the long run: Evidence from a field experiment in Ghana. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.4037210

Avellar, S. A., & Supplee, L. H. (2013). Effectiveness of home visiting in improving child health and reducing child maltreatment. PEDIATRICS, 132(Supplement), S90–S99. https://doi.org/10.1542/peds.2013-1021g

Baillon, A., Capuno, J., O'Donnell, O., Tan, C. A., & van Wilgenburg, K. (2022). Persistent effects of temporary incentives: Evidence from a nationwide health insurance experiment. Journal of Health Economics, 81, 102580. https://doi.org/10.1016/j.jhealeco.2021.102580

Bertrand, M., Mullainathan, S., & Shafir, E. (2004). A behavioral-economics view of poverty. American Economic Review, 94(2), 419–423. https://doi.org/10.1257/0002828041302019

Browngoehl, K., Kennedy, K,, Krotki, K., & Mainzer, H. (1997). Increasing immunization: a Medicaid managed care model. Pediatrics, 99(1):E4. https://doi.org/10.1542/peds.99.1.e4

Bruhn, M., & McKenzie, D. (2008). In pursuit of balance: randomization in practice in development field experiments. No 4752, Policy Research Working Paper Series, The World Bank. https://EconPapers.repec.org/RePEc:wbk:wbrwps:4752.

Bryant, A. S., Haas, J. S., McElrath, T. F., & McCormick, M. C. (2006). Predictors of compliance with the postpartum visit among women living in healthy start project areas. Maternal and Child Health Journal, 10(6), 511–516. https://doi.org/10.1007/s10995-006-0128-5

Committee on Obstetric Practice. (2016). Committee Opinion No. 666. Obstetrics & Gynecology, 127(6), e187–e192. https://doi.org/10.1097/aog.0000000000001487

Currie, J. (2004). The take-up of social benefits. NBER Working Paper No. w10488, available at SSRN: https://doi.org/10.2139/ssrn.527143

Cygan-Rehm, K., & Karbownik, K. (2022). The effects of incentivizing early prenatal care on infant health. Journal of Health Economics, 83, 102612. https://doi.org/10.1016/j.jhealeco.2022.102612

Dumas, J. E., Begle, A. M., French, B., & Pearl, A. (2010). Effects of monetary incentives on engagement in the PACE Parenting Program. Journal of Clinical Child & Adolescent Psychology, 39(3), 302–313. https://doi.org/10.1080/15374411003691792

Dykema J., Stevenson J., Kniss, C., Kvale, K., Gonzalez, K., & Cautley, E. (2011). Use of monetary and nonmonetary incentives to increase response rates among African Americans in the Wisconsin Pregnancy Risk Assessment Monitoring System. Maternal Child Health Journal, 16, 785-791. https://doi.org/10.1007/s10995-011-0780-2

Elkhider, H., Sharma, R., Sheng, S., Thostenson, J., Kapoor, N., Veerapaneni, P., Siddamreddy, S., et al. (2022). Predictors of No-Show in Neurology Clinics. Healthcare, 10(4), 599. MDPI AG. Retrieved from http://dx.doi.org/10.3390/healthcare10040599

Felt-Lisk, S., & Smieliauskas, F. (2005). Evaluation of the Local Initiative Rewarding Results Collaborative Demonstration: interim report. Mathematica Policy Research. https://www.mathematica.org/-/media/publications/pdfs/evaluationlocal.pdf

Finkelstein, A., & Notowidigdo, M. J. (2019). Take-up and targeting: Experimental evidence from SNAP. The Quarterly Journal of Economics, 134(3), 1505–1556. https://doi.org/10.1093/qje/qjz013

Finney, J. W., Lemanek, K. L., Brophy, C. J., & Cataldo, M. F. (1990). Pediatric appointment keeping: Improving adherence in a primary care allergy clinic. Journal of Pediatric Psychology, 15(4), 571–579. https://doi.org/10.1093/jpepsy/15.4.571

Food and Nutrition Service. (2020). SNAP participation rates by state, all eligible people. Food and Nutrition Service; U.S. Department of Agriculture. https://www.fns.usda.gov/usamap/2018

Food and Nutrition Service. (2021). National- and state-level estimates of WIC eligibility and WIC program reach in 2018 with updated estimates for 2016 and 2017. Food and Nutrition Service; U.S. Department of Agriculture. https://www.fns.usda.gov/wic/national-and-state-level-estimates-wic-eligibility-and-wic-program-reach-2018-updated

Giles, E. L., Robalino, S., McColl, E., Sniehotta, F. F., & Adams, J. (2014). The effectiveness of financial incentives for health behavior change: systematic review and meta-analysis. PLoS One, 9(3), e90347. https://doi.org/10.1371/journal.pone.0090347

Gross, D., Johnson, T., Ridge, A., Garvey, C., Julion, W., Treysman, A. B., Breitenstein, S., & Fogg, L. (2011). Cost-effectiveness of childcare discounts on parent participation in preventive parent training in low-income communities. The Journal of Primary Prevention, 32(5-6), 283–298. https://doi.org/10.1007/s10935-011-0255-7

Hayes, R. J., & Moulton, L. H. (2009). Cluster Randomised Trials, Chapman and Hall/CRC, New York.

Hennrikus, D. J., Jeffery, R. W., Lando, H. A., Murray, D. M., Brelje, K., Davidann, B., Baxter, J. S., Thai, D., Vessey, J., & Liu, J. (2002). The SUCCESS Project: The effect of program format and incentives on participation and cessation in worksite smoking cessation programs. American Journal of Public Health, 92(2), 274–279. https://doi.org/10.2105/ajph.92.2.274

Hoerger, T., Boland, E., Acquah, J. K., et al. (2017). Medicaid Incentives for Prevention of Chronic Diseases: final evaluation report. RTI International & National Academy for State Health Policy. https://downloads.cms.gov/files/cmmi/mipcd-finalevalrpt.pdf

Hwang, A. S., Atlas, S. J., Cronin, P., Ashburner, J. M., Shah, S. J., He, W., & Hong, C. S. (2015). Appointment “no-shows” are an independent predictor of subsequent quality of care and resource utilization outcomes. Journal of General Internal Medicine, 30(10):1426-1433. https://doi.org/10.1007/s11606-015-3252-3

Ingoldsby, E. M. (2010). Review of interventions to improve family engagement and retention in parent and child mental health programs. Journal of Child and Family Studies, 19(5), 629–645. https://doi.org/10.1007/s10826-009-9350-2

Jacob, R., & Foster Friedman, M. (2020). Opportunities to increase participation in Michigan’s Maternal Infant Health Program. Policy Brief, University of Michigan Youth Policy Lab. https://youthpolicylab.umich.edu/uploads/opportunities-to-increase-participation-in-mihp_final.pdf

Kaiser Family Foundation. (2020). Births financed by Medicaid. KFF; Kaiser Family Foundation. https://www.kff.org/medicaid/state-indicator/births-financed-by-medicaid/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22

Kendrick, D., Elkan, R., Hewitt, M., Dewey, M., Blair, M., Robinson, J., & Brummell, K. (2000). Does home visiting improve parenting and the quality of the home environment? A systematic review and meta analysis. Archives of Disease in Childhood, 82(6), 443–451. https://doi.org/10.1136/adc.82.6.443

Kheirkhah, P., Feng, Q., Travis, L. M., Tavakoli-Tabasi, S., & Sharafkhaneh, A. (2016). Prevalence, predictors and economic consequences of no-shows. BMC Health Services Research, 16(13). https://doi.org/10.1186/s12913-015-1243-z

Kitzman, H., Olds, D.L., Henderson Jr., C.R., Hanks, C., Cole, R., Tatelbaum, R., McConnochie, K.M., Luckey, D.W., Shaver, D., Engelhardt, K., James, D., & Barnard, K. (1997). Effect of prenatal and infancy home visitation by nurses on pregnancy

outcomes, childhood injuries, and repeated childbearing. A randomized controlled trial. JAMA, 278(8), 644-652. doi:10.1001/jama.1997.03550080054039

Kruger, J., Yore, M. M., Bauer, D. R., & Kohl, H. W. (2007). Selected barriers and incentives for worksite health promotion services and policies. American Journal of Health Promotion, 21(5), 439–447. https://doi.org/10.4278/0890-1171-21.5.439

Lakerveld, J., IJzelenberg, W., van Tulder, M. W., Hellemans, I. M., Rauwerda, J. A., van Rossum, A. C., & Seidell, J. C. (2008). Motives for (not) participating in a lifestyle intervention trial. BMC Medical Research Methodology, 8(1). https://doi.org/10.1186/1471-2288-8-17

Leininger, L., & Levy, H. (2015). Child health and access to medical care. The Future of Children 25(1), 65-90.

Mani, A., Mullainathan, S., Shafir, E., & Zhao, J. (2013). Poverty impedes cognitive function. Science, 341(6149), 976–980. https://doi.org/10.1126/science.1238041

McKenzie, D. (2017). Should we require balance t-tests of baseline observables in randomized experiments? World Bank Blogs, June 26, 2017. Accessed December 20, 2022. https://blogs.worldbank.org/impactevaluations/should-we-require-balance-t-tests-baseline-observables-randomized-experiments

Meghea, C. I., Raffo, J. E., Zhu, Q., & Roman, L. (2013). Medicaid home visitation and maternal and infant healthcare utilization. American Journal of Preventive Medicine, 45(4), 441–447. https://doi.org/10.1016/j.amepre.2013.05.005

Meghea, C. I., You, Z., Raffo, J., Leach, R. E., & Roman, L. A. (2015). Statewide Medicaid enhanced prenatal care programs and infant mortality. PEDIATRICS, 136(2), 334–342. https://doi.org/10.1542/peds.2015-0479

Michigan Department of Health and Human Services, Division for Vital Records and Health Statistics. (2022). Michigan infant death statistics, January 1 through December 31, 2020. Michigan.gov; State of Michigan. https://vitalstats.michigan.gov/osr/annuals/Infant%20Deaths%202020.pdf

Moffit, R. (1983). An economic model of welfare stigma. American Economic Review, 73(5), 1023-1025.

Mullainathan, S., & Shafir, E. (2013). Scarcity: Why having too little means so much. Times Books, Henry Holt And Company.

National Home Visiting Resource Center. (2018). 2018 Home visiting yearbook. National Home Visiting Resource Center. James Bell Associates and the Urban Institute. https://www.nhvrc.org/wp-content/uploads/NHVRC_Yearbook_2018_FINAL.pdf

Nguyen, D.L., Dejesus, R.S. (2010.) Increased frequency of no-shows in Residents' primary care clinic is associated with more visits to the emergency department. Journal of Primary Care and Community Health,1(1):8-11. doi:10.1177/2150131909359930

Olds, D.L., Henderson Jr., C.R., Tatelbaum, R., & Chamberlin, R. (1986). Improving the delivery of prenatal care and outcomes of pregnancy: a randomized trial of nurse home visitation. Pediatrics, 77(1): 16-28. https://doi.org/10.1542/peds.77.1.16

Pavetti, L., & Stanley, M. (2016). Using incentives to increase engagement and persistence in two-generation programs: A review of the literature with key insights. In Building Better Programs. Center on Budget and Policy Priorities. http://www.buildingbetterprograms.org/wp-content/uploads/2016/12/Incentives-Literature-Review-Final1.pdf

Peacock, S., Konrad, S., Watson, E., Nickel, D., & Muhajarine, N. (2013). Effectiveness of home visiting programs on child outcomes: A systematic review. BMC Public Health, 13(1). https://doi.org/10.1186/1471-2458-13-17

Peters, C., McKane, P., & Meghea, C. (2015). Return on investment: Cost savings to Medicaid from Maternal Infant Health Program due to reduction in preterm birth rate. Michigan Department of Community Health, ROI Fact Sheet Series 1(1). https://zero-to-three.s3.amazonaws.com/images/2330/5f0bc761-9cb5-4ec4-a958-0b77cd3d2017-original.jpg?1530040437

Redmond, P., Solomon, J., & Lin, M. (2007). Can incentives for healthy behavior improve health and hold down Medicaid costs? Issue Brief, Center for Budget and Policy Priorities. https://www.cbpp.org/research/can-incentives-for-healthy-behavior-improve-health-and-hold-down-medicaid-costs

Robroek, S. J., Schuring, M., Croezen, S., Stattin, M., & Burdorf, A. (2012). Poor health, unhealthy behaviors, and unfavorable work characteristics influence pathways of exit from paid employment among older workers in Europe: A four year follow-up study. Scandinavian Journal of Work, Environment & Health, 39(2), 125–133. https://doi.org/10.5271/sjweh.3319

Roman, L., Raffo, J. E., Zhu, Q., & Meghea, C. I. (2014). A statewide Medicaid enhanced prenatal care program. JAMA Pediatrics, 168(3), 220-227. https://doi.org/10.1001/jamapediatrics.2013.4347

Smith et al. (2022). The effect of a public transportation expansion on no-show appointments, Health Services Research,57(3):472-81. https://doi.org/10.1111/1475-6773.13899

Stevens-Simon, C., Dolgan, J. I., Kelly, L., & Singer, D. (1997). The effect of monetary incentives and peer support groups on repeat adolescent pregnancies: A randomized trial of the Dollar-a-Day Program. Journal of the American Medical Association (JAMA), 277(12), 977. https://doi.org/10.1001/jama.1997.03540360045029

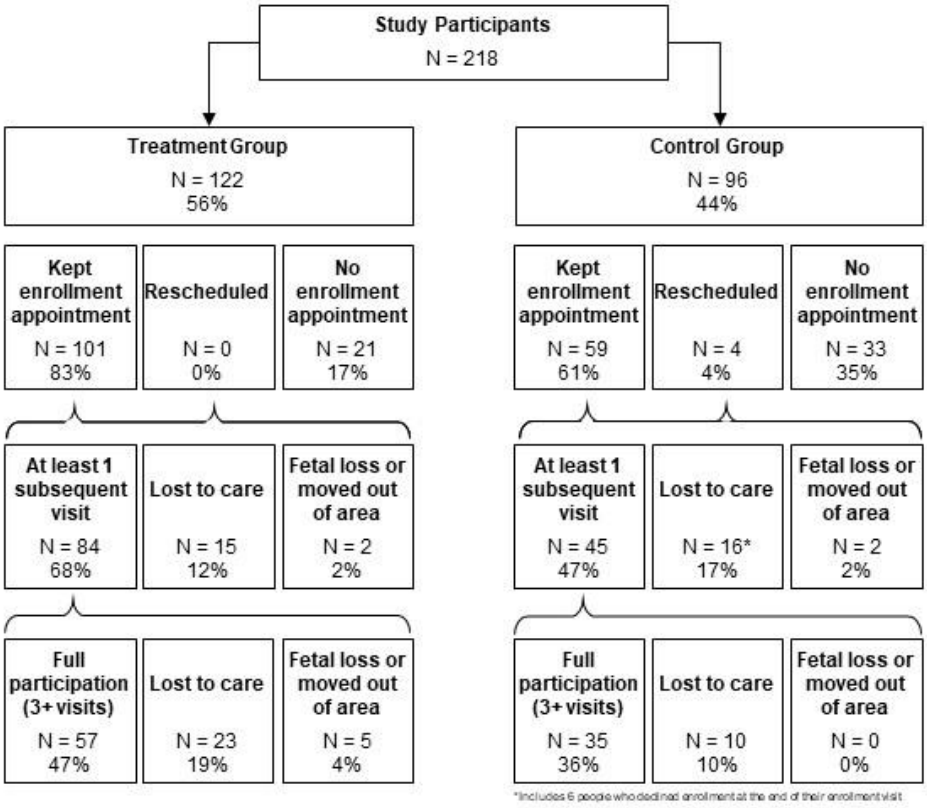
Stoltzfus, E., & Lynch, K. E. (2009). Home Visitation for Families with Young Children. Congressional Research Service. https://www.everycrsreport.com/files/20091023_R40705_9180cd7c853cfa09567961616dabaa2777187472.pdf

Stumbras, K., Rankin, K., Caskey, R., Haider, S., & Handler, A. (2016). Guidelines and interventions related to the postpartum visit for low-risk postpartum women in high and upper middle income countries. Maternal and Child Health Journal, 20(S1), 103–116. https://doi.org/10.1007/s10995-016-2053-6

Van Fleet, A., & Rudowitz, R. (2014). An overview of Medicaid Incentives for the Prevention of Chronic Diseases (MIPCD) program. Issue Brief, Kaiser Family Foundation. https://www.kff.org/medicaid/issue-brief/an-overview-of-medicaid-incentives-for-the-prevention-of-chronic-diseases-mipcd-grants/

United Health Foundation. (2018). Health of women and children: Maternal mortality. America's Health Rankings; United Health Foundation. https://www.americashealthrankings.org/explore/health-of-women-and-children/measure/maternal_mortality_a/state/MI

Figure 1. MIHP Participation Patterns by Study Group: Full Sample



Legend

Figure 1: This figure shows the pattern of participation among the treatment and control groups in the study. Participation patterns for the treatment group are depicted on the left side of the figure. Participation patterns for the control group are depicted on the right side of the figure. The first row of boxes below each group depicts the number and percent of study participants who: kept their enrollment appointment as scheduled; rescheduled and later completed an enrollment appointment; and did not complete an enrollment appointment. The second row of boxes depicts the number and percent of study participants who: completed at least one subsequent visit; were lost to care (e.g., fell out of contact); or experienced a fetal loss or moved out of the area after the enrollment appointment. The bottom row of boxes depicts the number and percent of study participants who: completed at least 3 home visits; were lost to care; or experienced a fetal loss or moved out of the area after completing one subsequent visit.

Table 1. Sample Demographics

	Incentive Group		Control Group		Total	
	N	col %	N	col %	N	col %
Race/Ethnicity:						
Black	65	53	42	44	107	49
White	39	32	38	40	77	35
Multiracial	7	6	2	2	9	4
Hispanic/Latinx	5	4	3	3	8	4
Arab	1	1	2	2	3	1
Asian	2	2	0	0	2	1
Other	0	0	1	1	1	0
missing	3	2	8	8	11	5
Prenatal Clinic:						
Von Voigtlander	40	33	27	28	67	31
Other MM clinic	59	48	44	46	103	47
Other non-MM clinic	22	18	18	19	40	18
missing	1	1	7	7	8	4
Age (years):						
Mean	27.8		25.8*		26.9	
Total	122		96		218	

*t-test between treatment and control statistically significant at p=0.013.

A Wald test was used to determine whether there was a systematic difference between the two samples based on the characteristics included in this table. Joint test of difference between groups: F-value=1.969, p=0.085.

Table 2. Impact of offering an incentive for keeping first appointment: Full Sample

	Kept First Enrollment Appointment		Enrolled in MIHP		Completed at least one Subsequent Visit		Full MIHP Participation (>=3 Visits)	
	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)
Incentive	**0.21**** (0.06)	**0.20***** (0.06)	**0.23**** (0.06)	**0.17***** (0.06)	**0.22**** (0.07)	**0.15**** (0.07)	0.11 (0.07)	0.04 (0.07)
Covariates		X		X		X		X
Control group average	0.62		0.59		0.47		0.38	
Total	218	218	218	218	218	218	218	218

NOTE. – Covariates include age, race, and prenatal clinic. Missing covariates were imputed using mean imputation and an indicator for missingness.
* p < .05
** p < .01
*** p < .001

Table 3. Impact of keeping enrollment appointment on subsequent appointments: Full Sample

	Causal estimate of keeping enrollment appointment		
	Enrolled in MIHP	**Completed at least one Subsequent Visit**	**Full MIHP Participation (>=3 Visits)**
	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)
Kept first enrollment appointment	**0.85***** (0.10)	**0.80***** (0.24)	0.24 (0.30)
Covariates	X	X	X
Total	218	218	218

NOTE. – Covariates include age, race, and prenatal clinic. Missing covariates were imputed using mean imputation and an indicator for missingness.

* p < .05
** p < .01
*** p < .001

Table 4. Impact of race and telehealth on offering an incentive for keeping first appointment: Full Sample

	Unconditional							
	Kept First Enrollment Appointment		**Enrolled in MIHP**		**Completed at least one Subsequent Visit**		**Full MIHP Participation (>=3 Visits)**	
	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)
Incentive	0.10 (0.09)	**0.23*** ** (0.07)	0.10 (0.08)	**0.20*** ** (0.07)	0.12 (0.09)	0.12 (0.08)	0.03 (0.10)	0.01 (0.08)
Black * Incentive	**0.20*** (0.12)		0.12 (0.12)		0.06 (0.13)		0.01 (0.14)	
Telehealth * Incentive		-0.08 (-0.08)		-0.10 (-0.08)		0.06 (0.09)		0.07 (0.10)
Covariates	X	X	X	X	X	X	X	X
Control group average	0.62		0.59		0.47		0.38	
Total	218	218	218	218	218	218	218	218

NOTE. – Covariates include age, race, and prenatal clinic. Missing covariates were imputed using mean imputation and an indicator for missingness.
* p < .05
** p < .01
*** p < .001