Mayors for a Guaranteed Income Pilots

Mixed Method Research Design

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Mayors for a Guaranteed Income

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Executive Summary

Guaranteed income (GI) is a recurring cash payment made directly to individuals with no strings attached. GI is targeted to individuals who meet certain eligibility criteria within a community and is a policy solution with growing support as a means to redress inequality. Mayors for a Guaranteed Income (MGI) is a coalition of over 60 mayors and operates as a centralized clearinghouse that provides funding and technical assistance. MGI has contracted with Abt Associates to evaluate GI pilots in seven cities, building off a mixed-methods evaluation framework developed by the Center for Guaranteed Income Research (CGIR) at the University of Pennsylvania.

Through surveys every six months and qualitative interviews, the evaluation will assess:

1. How does GI impact income volatility for participants?
2. What is the relationship between income volatility and financial well-being, psychological distress, and physical functioning of participants?
3. What is the relationship between GI and individual agency of participants?

Abt researchers will collaborate with each city to implement a random controlled trial (RCT), assigning a minimum of 110 applicants to receive GI (the intervention group) and 132 applicants who will not receive GI but will participate in ongoing compensated research activities (the active control group). Each city's pilot must be a minimum of 12 months. Some cities have larger sample sizes and/or longer pilots. Regardless of the pilot's duration, evaluation continues six months after the pilot has ended to understand the impacts of GI even after participants stop receiving monthly payments. Each city or a program implementation partner will identify a community-based research fellow to join the Abt research team and encourage participants to complete research activities.

Abt will produce a city-specific report for each of the seven study sites when the GI pilot ends.

1. Introduction

Guaranteed income (GI) is recurring cash payments made directly to individuals with no strings attached. GI is targeted to specific individuals within a community who meet certain eligibility criteria. The concept, along with universal basic income—which is available to all—has regained traction in recent years as a way to address systemic economic inequities (Visram, 2021). Advocacy for GI goes back decades, with the last time it gained popular momentum among a national audience being during the Civil Rights Movement, when it was championed by the late Rev. Dr. Martin Luther King Jr. Since King brought this concept to the national stage in the US, experiments have been done across the globe in Kenya, Finland, India, the US, and Canada (Stanford Basic Income Lab, 2021).

Since 2018 there have been several notable GI experiments, such as those done in Stockton, CA and in Vancouver, B.C., that have attracted national and international attention. Successful findings from these studies across economic, social, and psychological domains have further propelled the momentum for testing GI. In the Stockton Economic Empowerment Demonstration (SEED), 125 randomly selected Stocktonians received $500 a month for 24 months. Preliminary findings from the program's first year found that, relative to the control group, GI recipients:

- Had lower monthly income volatility and greater ability to cover an unexpected expense
- Increased their employment (from 28 to 40% employed in treatment group)
- Had improved physical, mental, and emotional health
- Experienced a greater sense of self-determination, choice, goal-setting, and positive risk-taking

In interviews, participants reported that their food security improved, and they had leisure time to do "normal things that a lot of people take for granted" like spend time with loved ones, self-care (like deferred medical and dental needs) or pursue hobbies.

Additionally, researchers tracked spending on GI recipients' debit cards and saw that the largest categories of expenditures were food, followed by utilities and transportation, with less than one percent being spent on alcohol and tobacco (West et al., 2019).

In this context, Mayors for a Guaranteed Income (MGI) was founded in 2020 by the former mayor of Stockton, CA, Michael D. Tubbs, and has led the way for cities across the U.S. to host pilots of GI in their cities, including a coordinated evaluation effort to build the knowledge base and policy conversation around the benefits and potential scale-up of GI more broadly.

More than 60 cities have joined the MGI coalition, over two dozen of which have received funding from MGI to host pilot GI programs and evaluate them in a coordinated way. The Center for Guaranteed Income Research (CGIR) at the University of Pennsylvania evaluated the first GI experiment, the Stockton Economic Empowerment Demonstration (SEED), set the evaluation framework for the additional MGI-funded pilot cities, and is evaluating additional MGI pilots.

In August 2021, MGI contracted Abt Associates to evaluate 7 pilot cities: Atlanta, Georgia; Baltimore, Maryland; Birmingham, Alabama; Houston, Texas, Louisville, Kentucky; Mount Vernon, New York; and Shreveport, Louisiana.

Each city is conducting its pilot independently and will be making its own decisions (in consultation with Abt and MGI) about eligibility, targeting, sampling, and additional research domains of interest. MGI requires cities to operate at least a 12-month pilot, but some cities have raised funds to conduct longer pilots. Each city is also launching their pilot on its own timeline. Four of the seven pilots disbursed their first GI payments in the first quarter of 2022, one in the second quarter of 2022; the final two will make their first disbursements by the first quarter of 2023.

This document presents Abt's umbrella research design for mixed method evaluation in each city. In large part we follow the SEED design and pre-analysis plan (Martin-West et al., 2019) to ensure that there will be comparable data across all MGI-funded cities. Since cities vary somewhat in their designs and timelines, this research design presents the general design for each city's evaluation, providing city-specific information when we have it and flagging areas that will be updated as cities finalize their decisions.

The following sections describe our research questions (Section 2), methodology (Section 3), the role of research fellows hired by each city (Section 4), our analysis plan (Section 5), and the project timeline (Section 7).

2. Research Questions

Across the seven different sites, the primary research questions are:

1. How does GI impact income volatility for participants?
2. What is the relationship between income volatility and financial well-being, psychological distress, and physical functioning of participants?
3. What is the relationship between GI and individual agency of participants?

In addition to these three main questions, each pilot city will designate additional research questions that help assess the degree to which the intervention is meeting the intended theory of change. For example, Birmingham, Alabama plans to target their funds to female-identifying heads of family who are the sole

financial providers for at least one child under 18. Accordingly, Birmingham is interested in studying whether GI has an effect on participants' childcare situation or on parents' education.

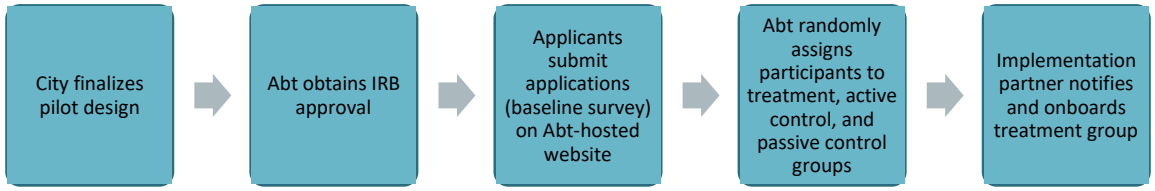
3. Research Design and Methodology

We use an integrated mixed methods methodology with a convergent design—where quantitative and qualitative data collection occur within similar timeframes and inform the subsequent data collections (Fetters et al., 2013). Our research design follows the SEED design and pre-analysis plan (Martin-West et al., 2019), as much as is practical for our cities and with exceptions noted below, to gather comparable data across all MGI-funded cities. In this mixed methods design, qualitative data collection will occur midway through quantitative data collection. This timing allows the research team to customize the qualitative research in targeted ways so that it both enriches our understanding of the quantitative data and provides insight into research questions not answerable through surveys. In combination, these modes will provide the most robust answers possible to the research questions (Fetters et al., 2013).

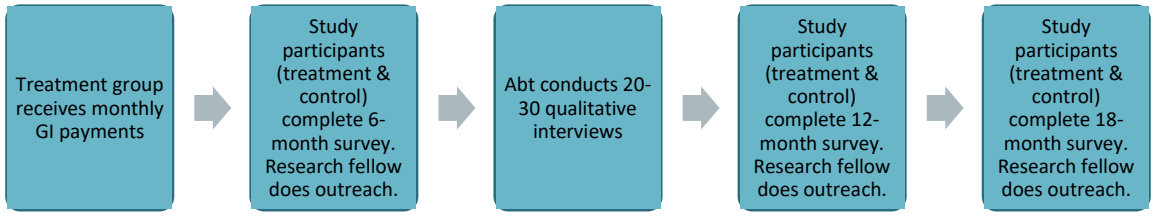
Cities vary in the details of their pilots and evaluations, with a minimum pilot duration of 12 months and a minimum sample size of 110 treatment and 132 active control group members. For a city conducting the standard 12-month pilot, the project would proceed as shown in Exhibit 1.

Exhibit 1. MGI Pilot Launch and Data Collection

Launch Stage



Data Collection Stage



Cities implementing longer pilots (18 or 24 months) would have additional follow up data collection at 6-month intervals ending 6 months after the conclusion of the pilot.

Key features of pilot implementation and evaluation for each city are shown below in Exhibit 2.

Exhibit 2. Pilot Features by City

City	Proposed sample size	Proposed duration in months	Eligibility criteria	Guaranteed income amount
Atlanta	275 Treatment 132 Control	12	18+ City residents 200% FPL (~60% AMI) (self-reported)	$500
Baltimore	130 Treatment	24	18-25 years old	$1,000

	156 Control		Parents/guardians Household income does not exceed 300% FPL City residents	
Birmingham	110 Treatment 132 Control	12	City residents Single mothers	$375
Houston	110 Treatment 132 Control	12	18+ City residents with additional weighting preference given to residents who identified that they live in a Complete Community neighborhood Income <200% FPL	$375
Louisville	151 Treatment 180 Control	12	18-24 years old residents of one of three implementation neighborhoods	$500
Mount Vernon	200 Treatment 227 Control	12	18+ City residents Annual income between $15,000 - 80% of AMI	$500
Shreveport	110 Treatment 132 Control	12	Single parents; 50% chosen from city's five poorest zip codes Incomes will be up to 120 percent of FPL	$660

The next section (3.1) introduces the partners who are contributing to the research; followed by a detailed explanation of the quantitative (3.2) and qualitative (3.3) research designs.

3.1 Study Partners and Roles

Several partners contribute to the GI pilots. Pilots are championed by the mayor's office. For day-to-day implementation, most cities will contract with an independent implementation partner, such as a local non-profit. The implementation partner's role will vary somewhat by city but may include targeted outreach, providing access to the online application (i.e., having iPads available), onboarding participants including benefits counseling (see "Participant Notification and Onboarding in Section 3.2), managing the disbursement partner, and ensuring participants can access their GI. The disbursement partner makes the GI benefit available to participants, such as through a prepaid debit card or direct deposit. Abt will lead and manage all research activities. The city, in consultation with Abt and the implementation partner, will hire a research fellow (see below).

Abt Pilot Team

Across the seven cities, Abt has one overall project director and a team of co-Principal Investigators (PI) with expertise on quantitative methods, qualitative methods, and GI. The Abt team also includes a survey director and survey programmers. Each city has a dedicated team consisting of a senior site liaison and a junior site liaison, supported by a quantitative and a qualitative co-PI. The site liaisons handle all day-to-day aspects of the research, including city-specific survey adjustments, developing qualitative research

questions, mentoring and supervising research fellows, and engagement with city partners. The co-PIs provide support on overall research approach and other topics as needed.

Research Fellow

A core part of the approach incorporates working with a research fellow at each site. City staff or implementation partners will identify and MGI will hire a research fellow based on their standard research fellow job description, with additional input from Abt staff and Mayoral staff at each site. Among other core duties, research fellows will assist with managing logistical aspects of the survey (for example, reminding participants to complete surveys, dispersing gift cards), and supporting interviews with treatment group members (for example, scheduling and note-taking). Abt project leaders will mentor research fellows to provide them with an opportunity to learn more about the process of conducting a policy evaluation. Research fellows will also participate in the activities coordinated by MGI for the overall cohort of research fellows. Seminars or trainings offered to Abt research fellows will be offered to the entire cohort of MGI research fellows.

3.2 Quantitative Design

Methodological Approach: Randomized Control Trial

The project relies on a randomized controlled trial (RCT) as described below. It is possible that one or more pilot cities will be unable to implement an RCT. If so, we will design and implement a rigorous quasi-experimental study in that city. For the study's quantitative component, we plan to follow the general approach described in the SEED pre-analysis plan (Martin-West et al., 2018) and preliminary report (West et al., 2021). We will adjust as necessary to accommodate the specific needs of each city.

Selection of Participants

Each city will choose its target population and eligibility criteria independently based on local goals. From a quantitative perspective, it is preferable for cities to use broader, simpler eligibility criteria—such as any resident 18 or older who resides within the city limits. However, Abt will work with each city's preferences to include other eligibility criteria and understand how or to what degree they are verifying a person's eligibility. For example, if a city chooses to target single-parent households, Abt will consult with them about how they are defining single parenthood and to make sure we understand whether or how implementation partners are verifying participants' household composition.

Outreach and recruitment is the sole responsibility of each city and its implementation partner. Abt will play no role in these activities, although we can suggest language to the city and its partner. Interested individuals will be directed to a landing page on the city's website that explains the intervention and study, outlines eligibility criteria, and—in some cases—allows prospective applicants to verify aspects of their eligibility such as whether their address is within a targeted neighborhood prior to beginning the application. No data should be collected or retained by the city or Abt at this stage. Applicants will then click on a link to Abt's website to begin the application process.

The application consists of an explanation of the study, informed consent to participate in research, eligibility confirmation, and a web-based survey. The survey incorporates core elements common across all MGI evaluations and will be fielded using the Confirmit platform. Confirmit is an integrated, mixed-mode data collection platform for collecting high-quality survey data. Abt has used Confirmit for more than a decade to collect data via phone and the web. Recently, we migrated our Confirmit platform to the cloud in conjunction with Amazon Web Services (AWS). This provides us with a federally compliant level of data security to collect and store various sensitive and personal indicators in a secure and controlled environment.

MGI strongly encourages cities to use a trust-based system for eligibility: that is, to allow applicants to self-certify that they meet the eligibility criteria. As such, Abt will not verify eligibility prior to random assignment except, in some cases, to verify that a participant's address is within the eligible geographic area. For easily defined geographical boundaries such as zip codes, we will build this into Confirmit so

that a determination can be made prior to applicants initiating the baseline survey. For more complex geographical boundaries such as neighborhoods defined by street addresses, such verification would need to happen after the baseline survey is completed but prior to random assignment. Any potential participant not self-identifying as having met the inclusion criteria will be informed that they are ineligible prior to being offered the baseline survey. Such applicants may then re-start the application process if desired (for example, if they erroneously entered the wrong zip code for their address).

Random Assignment to Groups

Eligible individuals who complete the baseline survey will be randomly assigned to one of three groups: treatment, active control, and administrative (passive) control. The treatment group (n = 110 minimum) will have access to the intervention of between $375 and $1,000 USD per month for between 12 and 24 months and will be invited to participate in qualitative and quantitative data collection activities. The active control group (n = 132 minimum) will not have access to the intervention and will be invited to participate in compensated qualitative and quantitative data collection activities. The passive control group (n = remainder of eligible applicants) will not have access to the intervention and will not participate in primary data collection activities beyond the baseline survey. We will analyze the passive control group's application data to ensure that the treatment and control groups are reflective of the overall pool of applicants, thereby ensuring that the sample of applicants in the study is a random sample. Balance checks will be conducted at this stage to ensure balance of sociodemographic characteristics across the treatment and control conditions. Any characteristics on which the treatment and control groups are not balanced will be included as control variables in the analytic model.

A subsample of the treatment (n = approximately 5) will be asked to volunteer to participate in a purposive political sample (Miles and Huberman, 1994; Teddlie and Tashakkori, 2009) aimed at informing public discourse on deservedness, the benefits cliff, and GI, through media engagement and storytelling activities. Data will be collected on this purposive sample and will be analyzed separately from the main treatment and control groups. If the sample is not significantly different from the treatment and active control groups, their data will be included in the final quantitative analysis.

Participant Notification and Onboarding

Notification of treatment group members is the responsibility of the city and its implementation partner. In general, members of the treatment group will be notified of their inclusion in the treatment group by phone call, voice message, and text message. During the phone call, pilot staff will invite the participant to attend a one-on-one onboarding appointment. The onboarding appointment—which is also the responsibility of city and pilot staff—will include benefits counseling, informed consent to receive GI, introduction to key pilot and research staff, and enrollment with the GI disbursement partner (a service such as Steady or MoCaFi). (Participants may also have funds directly deposited into participants' bank accounts in some cities). The purpose of benefits counseling is to ensure that the participants are fully aware of any risks associated with the disbursements potentially interacting with their health insurance or other benefits.[1] In some (but not all) cities, pilot staff are working with local and state governments to obtain waivers to exempt treatment group members' guaranteed income from consideration for benefits eligibility determinations. Research fellows will notify members of the active control group of their status by telephone and will invite them to continue participation in all data collection activities. Members of the passive control group will not receive notification of their group status.

At this stage, participants in the treatment group may elect not to participate in the intervention (although we hope they will continue to participate in research activities) and a refresher sample of participants will be selected from the administrative control group into the treatment group. Similarly, a refresher sample

[1] See Castro Baker, et al. (2020) for the ethical framework and description of sampling and participant onboarding from SEED. The article includes a table of benefits from SEED showing relevant benefits, potential impact of GI on those benefits, and recommendation from the implementation partner.

of participants from the administrative control group will be assigned to the active control group. We will assess balance across the treatment and control group after including the refresher samples. Any unbalanced characteristics will be included as covariates in the analytical model, along with a dummy variable for the refresher sample.

Follow up surveys

Web-based follow-up surveys will be administered every six months during the pilot, and again six months after the end of benefit receipt (that is, for a 12-month pilot we would administer surveys at 6, 12, and 18 months). Using core questions developed for the SEED evaluation, these follow-up surveys will collect information on demographic and household composition, income volatility, psychological distress and physical functioning, and other secondary outcomes. As with the baseline survey, we will use the Confirmit platform for survey administration.

Study participants will be compensated in the amount of $50 for each survey they complete. These payments aim to incentivize the completion of the questionnaires across the length of the study. Some degree of attrition, nonetheless, is still inevitable. We will assess the severity of attrition between baseline and endline. We will test whether attrition is correlated with treatment, and whether attriters differ from non-attriters by testing whether attrition status can be predicted from baseline outcomes. We will also test whether baseline characteristics of attriters in the treatment group are different from those of attriters in the control group by restricting the sample to attriters and regressing baseline outcomes on treatment assignment. If we find worrying levels of attrition, we will use the approach proposed by Lee (2009) to bound our treatment effect estimates (replacing them with Horowitz-Manski bounds if there is reason to believe that the monotonicity assumption is violated).

Survey-Based Quantitative Measures

The overall aim of this research is to determine the effect of treatment (GI) on the primary outcomes, which include changes in financial well-being, psychological distress, and physical functioning. These outcomes were chosen by CGIR for three reasons. First, from prior research on income volatility, CGIR anticipates the GI intervention to produce detectable effects on the primary outcomes with the given sample size. Second, the primary and secondary outcomes listed below are consistent with other GI experiments currently underway, including Y Combinator's Basic Income Study and the Income and the Developing Brain Study, which will allow for appropriate cross-study comparisons. Third, these outcomes are critically important to the broader social science community and to laying the foundation for policy proposals aimed at strengthening the social safety net.[2]

Primary Outcomes

Income volatility. CGIR and Abt hypothesize that the GI intervention will lead to reductions in monthly income volatility and provide greater income sufficiency. Income volatility data will be measured through self-reporting and calculated by the coefficient of variation, similar to the method used by the U.S. Financial Diaries study.

Psychological distress and physical functioning. CGIR hypothesizes that reduced income volatility will in turn lead to reduced psychological stress and improved physical functioning. The survey will collect health indicators of physical functioning and psychological distress quantitatively via the SF-36 and the Kessler 10 (RAND Corporation, 2018; Kessler, et al., 2002) within a longitudinal survey and through in-depth qualitative interviews.

Secondary Outcomes

The survey collects information on family dynamics and parenting, food security, material hardship, and perceived stress, and financial well-being. Each city may select additional secondary outcomes in up to two domains. The survey instrument for each domain will comprise between 5-15 additional questions specific to that domain. Survey instruments for most or all domains of interest have already been

[2] See Martin-West, S., et al. (2019) for a full description of outcome variables.

developed by CGIR using validated measures, and we will adopt those instruments in their entirety for consistency.

Additional Measures

Other quantitative measures include age, gender, education, employment status, and housing cost, quality, and stability. Surveys will also include space for qualitative responses on the degree to which participants considered how disbursements may interfere with safety net benefits, such as food stamps, health insurance, or Supplemental Security Income, and to network strain. It is possible that a treated subject will affect individuals within their own "network" of family and friends. These network individuals may be considered non-experimental units, and we will collect data from the recipient about the extent to which they are supporting friends and family with the GI.

3.3 Qualitative Design

One-time Interviews

For qualitative research in each city, we expect to work closely with city policymakers and stakeholders to develop the most appropriate qualitative research approach. We have a standard approach we will implement in each city—up to 30 in-depth interviews with treatment group members, held after we have initial results from the 6-month survey. Depending on their research questions and resources, some cities may request additional qualitative research.[3]

In qualitative research, validity (the process of ensuring that the results are accurate) and reliability (the process of ensuring other researchers can repeat the analysis) are established through a variety of mechanisms in the design, data collection, analysis, and reporting processes. In a mixed methods study such as this one, qualitative researchers with quantitative researchers to construct data collection instruments that address the study's overall goals, including triangulating information across quantitative and qualitative streams.

In our interviews we will ask some core questions of all interviewees but there will be a unique interview protocol for each city that incorporates questions related to the city's theory of change, target population, local context, and research questions. The protocol will also include questions to enhance our understanding of preliminary observations emerging from an analysis of the 6-month RCT survey responses. Interviews will either be ethnographic (narrative and/or with interactions with relevant objects, or processes observed and discussed during interview), or semi-structured interviews (covering a pre-determined set of topics but following a conversational flow with probe questions tailored to the respondent), depending on the research questions and appropriateness for each city's target population. We will establish the most appropriate sampling strategy based on the research questions and in conversation with city stakeholders.

The interview guide will be designed to provide a flowing conversation with program participants that moves through key topics of interest while ensuring that we are capturing data that will enable us to answer the research questions. The interview will take 75 minutes on average, with a range of roughly 60 to 90 minutes. The interview protocol includes questions, prompts (also called "probes") designed to elicit further elaboration of initial responses, definitions of key terms, and instructions to the interviewer. Interview participants will be compensated in the amount of $60.

Examples of the types of questions we may include, based on what CGIR has asked in other cities, are:

- **How has the amount of time you have during the day changed since joining the program?**
  - Tell me more about what that's been like.

[3] Such activities might include a second wave of qualitative interviews, focus groups, or observation of relevant participant activities, such as onboarding sessions where they might consider how GI will interact with benefits they receive.

  - Please describe a typical day for you.
- **What was it like the first time you used your GI payment?**
  - How did you decide what to spend it on?
  - What plan did you have for the GI?
- **Some of the people we speak with are keeping the $500 a secret and some are only telling a few people. Who have you decided to tell?**
  - What led to that decision to tell them?
  - (If you told someone) What questions did they ask?
  - What types of concerns or cautions did they mention?
  - Have you decided to tell more people as time went on?
  - Do you have any regrets about telling certain people?

Data Collection

To ensure validity in the data collection process, we will provide in-depth training to all data collectors and monitor data as they are collected to ensure high quality, consistent data collection. The qualitative PIs will lead the training for interviewers. Prior to the training, each interviewer will review the research design and interview protocols to become familiar with the research approach and protocol content and identify any questions they wish to raise during the training. The training will cover best practices for interviewing, discuss the motivation behind each question, explain the theoretical justification and/or substantive background on GI, and include time for practicing the interviews.

Research fellows will contact eligible participants (according to our sampling criteria) and schedule interviews with participants following the recruitment language in Appendix B. Our plan as of January 2022 is to conduct interviews in person following COVID safety protocols, preferably outside or inside and masked if a participant prefers. We will reassess the public health situation and city stakeholders' preferences closer to the time for interviews to gauge if we should conduct some or all interviews remotely.

Abt staff members (either the senior or junior site liaison for each city) will carry out the interviews and the research fellow from each city will take notes. The Abt interviewer will lead the interview following the semi-structured guide while the research fellow takes notes. We will not have computers during the interviews since having an interviewer type notes into a computer interferes with establishing good interviewer-interviewee rapport. Interviews will be conducted in English or Spanish. If we need to conduct interviews in additional languages, we will work with the Abt survey call center to identify staff fluent in those languages to provide remote, real-time translation.

We will record the interviews—audio recording for in-person interviews and recording of the video call if conducted remotely. Recording these interviews allows for greater accuracy in capturing data, creates the possibility for data audits, and allows the interviewer to focus on the interview content and verbal prompts. Using a transcriptionist then enables a "verbatim transcript" of the interview (Jamshed, 2014). All English language interviews will be recorded and transcribed by Noble Transcription; we will selectively transcribe interviews in other languages in-house. Research fellows will hand-write notes in an interview template that contains interviewer instructions, each question and its associated probes, and a field for recording each response as well as non-verbal cues like body language, participant energy, questions participants had difficulty answering or were reticent about, and so on. The notes from the interview will supplement the transcripts.

Following the interview, the interviewer and research fellow will discuss any issues that arose during the interview, such as questions that respondents had difficulty understanding, or potential modifications to

the sequencing of items that might improve their flow. Following the first day of interviews, the study team will convene by phone to discuss these initial interviews to identify any questions needing clarification and to refine the protocol, if necessary.

3.4 Privacy and Data Security

Data security procedures are explained in detail in the MGI Evaluations' overall Data Security Plan. In brief, data collected from participants will include the following individual-level data on program applicants (i.e., treatment and control group members):

- Direct identifiers will be collected from the treatment group and control group participants and shared with the implementation partner for enrollment into the intervention:
  - Name
  - Address (if there are multiple, they provide multiple rows of it)
  - Phone number (if there are multiple, they provide multiple rows of it)
  - Email
  - Social media handle
  - Best way to reach (phone, text, email)
  - Best time to call or text
  - Primary language

By the start of each city's GI pilot, key staff from Abt Associates and the research fellows will have: 1) completed study-specific training that incorporates this data security plan, 2) received a copy of the project's data security plan, and 3) completed the general trainings to promote data security and compliance. Abt Associates will manage the training for Abt staff and for research fellows.

4. Analysis and Reporting

In most pilot city evaluations, we will conduct two rounds of survey data collection (baseline and 6-month) that will then inform the questions asked in the qualitative interviews. Analysis of the qualitative interviews will then inform subsequent survey data collection (12- and 18-month) and analysis, where possible.

We will conduct quantitative analysis after each wave of survey data collection. We will use preliminary findings from the 6-month survey to tailor our qualitative interview protocol. For example, if survey responses in one city indicate that participants are changing their work hours or are moving, we would add interview questions about those topics, to help us interpret the survey responses.

We will hold two workshops at key junctures to synthesize the strands of qualitative and quantitative evidence.

Quantitative Analysis

The analysis of the effect of the GI will be examined using two different econometric models. The first is a conventional Ordinary Least Squares (OLS) model used to estimate the effects of the treatment on the outcomes. We use an ANCOVA approach in that we condition on baseline outcomes to maximize power (McKenzie, 2012). To further investigate the GI intervention on the treatment group, a second model using Hierarchical Linear Modeling (HLM) with repeated observations and unconditional growth will be used. Level 1 of the model will test individual growth curves, or within-subject variation along the primary outcomes, and Level 2 will determine difference in treatment response, or between-subject variation (Lininger, Spybrook, Cheatham, 2015; Spybrook, et al., 2011).

For further details on the analytic model specification, please refer to the SEED Pre-Analysis Plan (Martin-West, et al, 2018).

Qualitative Analysis

The qualitative study will seek to identify findings related to the research questions as well as emergent findings from the participant interviews. We will use applied thematic analysis as the methodological grounding for the study (Guest, MacQueen, & Namey, 2012). Applied thematic analysis is very flexible and can be adjusted and used to build theoretical models as well as to find solutions to real world problems. For example, in the case of these interviews, this analytical approach could be used to develop a theory of how program participants' sense of agency changes while receiving GI. On the other hand, the proposed interviews could make visible for policy makers the concrete, real world challenges that participants face and provide insights from participants about how programs might respond to address those challenges.

Applied thematic analysis draws on a variety of approaches to systematically analyze qualitative data sources. The approach is structured by the research questions while allowing new ways of understanding the research study topic to emerge from the data. During the analysis, validity and reliability are established through several tools and procedures:

- developing and using a precise codebook;
- checking for consistent coding across coders by using multiple coders and inter-coder agreement checks;
- external and/or peer review of coding;
- documenting steps taken within the analysis process in an "audit" document within the project that can be reviewed by an external reviewer;
- triangulating data sources;
- using negative case analysis where analysts look for examples in the data that contradict the finding of a theme; and
- using verbatim quotes to support themes and interpretations (Guest et al., 2012).

All transcriptions and notes from the interviews will be organized and analyzed using NVivo 12.0, a software package designed for the management and analysis of qualitative data. This software facilitates efficient data organization and systematic, reliable, and replicable analyses. Within NVivo, each set of notes will be organized according to program and respondent.

The codebook (a list of all codes for a given research study) is developed based on codes the researchers expect to be relevant to the research questions and study topic and is established before coding. This codebook is tested on the first several interviews; it is then refined based on observations of how well the code book works with the data and adjusted to include new codes observed as analysts code the data. These kinds of adjustments continue while all the data are coded.

A codebook is used to begin sorting and categorizing the data into codes, which are labels for classifying a short phrase, text or sometimes an entire paragraph. This classification allows the researcher to observe the frequency of any specific code and to understand the varied meanings and contexts associated with it. One way that we manage coding is to start with sorting data into larger categories before finalizing smaller sub-categories of codes. For example, we might have a code for participants' references to time. We would categorize all instances of the interview that mention time (how the person uses time, whether they have enough time, etc.) into that code.

Each code will have a clear definition. We will discuss any conflicting interpretations of data with coders to ensure consistent coding. If the definition needs to be adjusted based on a new understanding of a topic resulting from the interviews, we will adjust the definition and associated coding accordingly.

Throughout the data collection and analysis phases, the interviewers, project leaders, and coders will meet to discuss emergent themes and data quality. We will use these emergent themes to further refine the coding structure for the data, and then use this revised codebook to code the remaining notes and interview transcripts. Previously coded interviews will be updated to account for revisions to the coding structure.

Once the data is coded, we then look for "themes," or broader categories and patterns in the data at a higher level. After analyzing patterns in and reviewing the relevant and related codes, in the example of the "time" code, we might find the theme, "participants describe the GI as giving them more time to take care of their families." Themes allow a researcher to answer a specific research question or to observe a new idea or theory within the broader study topic.

Applied thematic analysis draws on a variety of tools to surface these broader themes. Some of these approaches include diagrams of the relationships between codes; written memos that document observed relationships between themes; and constructing matrices of code frequency related to research questions. A critical part of this process is drawing on the knowledge of all members of the research team, particularly the analysts conducting the coding.

Mixed Methods Synthesis

The Abt team will conduct two analytic workshops to draw out the findings from the quantitative and qualitative study components: (1) after preliminary analysis of the 6-month survey results, before qualitative data collection and (2) after all data collection, to identify key themes for the final report.

Typical analytic workshops involve development of pre-workshop memos that highlight key findings from each of the study components. Teams then share and organize findings, brainstorming and exploring convergent and divergent findings using collaboration tools such as Mural. The analysis team then develops from these findings a storyboard of the key findings that will be highlighted in the report.

Additional analyses may occur as findings are refined while the team develops the report outline.

Final Report

The Abt team will prepare a final report about each city's pilot after final surveys six months after the intervention ends. Results for 12-month pilots will be published in late 2023; results for pilots of longer duration will follow.

Reports will be written in accessible language for a wide readership. We will present key findings from the quantitative and qualitative research in an integrated story, supporting the narrative with high-quality tables, graphics, and images (as desired by a city). Technical details will be kept to a minimum; if desired, we can include them in an appendix.

To disseminate the findings further, we will also prepare a policy brief and dissemination materials for a press conference, social media blast, and Abt's website and newsletter. We will choose the topic and focus of the policy brief and social media content in consultation with each city.

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