Data Analysis Plan

Mayors for a Guaranteed Income Pilot Evaluations

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Prepared for:
Mayors for a Guaranteed Income
Stockton, CA

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EXHIBITS

I. Introduction

Across the United States, cities have begun testing guaranteed income (GI) payments to improve people's well-being and financial stability. These programs provide people with recurring cash payments they can use on any type of expense. Generally, cities use GI payments to alleviate inequality, targeting economically vulnerable populations. Mayors for a Guaranteed Income (MGI) has been a driving force behind the rise of GI programs. As a coalition of more than 100 mayors, MGI operates as a centralized clearinghouse that provides funding and technical assistance for cities looking to adopt their own GI payments.

MGI and others have contributed funding towards GI pilot programs, each lasting one to two years, in some of these cities.

I.1 GI Pilot Designs

Each pilot site decides how to design its pilot program. Pilots differ from one another in three ways. First, the GI amount varies by pilot. All GI pilots provide unrestricted cash payments to recipients, but these payments vary from $375 to $1,000 a month. Second, the duration and size of the GI programs vary. MGI requires pilots they fund to last at least 12 months and include at least 110 participants who receive a guaranteed income, but some sites have raised funds to conduct longer pilots and/or pilots that include more participants. Pilot durations vary from 12 months to 36 months.[1] Third, each pilot has different eligibility requirements for entry (see Appendix 1 for pilot details). Eligibility is assessed at several points up through when a participant is successfully onboarded, including in the application, prior to randomization, and during initial notification. Once an applicant has had their initial eligibility verified and has been selected to receive GI, there is no reassessment of their eligibility, and they continue to receive the monthly payments for the duration of the pilot regardless of any changes to their circumstances.[2] Onboarding serves to connect participants to the pilot's cash disbursement mechanism, provide benefits counseling, and confirm contact information.

Beyond the cash disbursements, MGI requires two additional elements of pilots they support: 1) mixed methods evaluation (see Section I.2), and 2) public engagement to effect narrative change. As part of the public engagement strategy, in each pilot, MGI requires each site to recruit a cohort of "storytellers," who are GI participants who agree to publicly share their experiences with GI receipt.[3] This storytelling sample is included in the quantitative research but excluded from the qualitative research outlined below. The storytelling cohort elect to share their experiences with the public while the research is occurring. The aim is to stimulate public conversations about the social contract and deservedness while establishing empirical data through the evaluations about receipt of unconditional cash.

I.2 Evaluation and Analysis Plan

A key component of these MGI-supported pilots is a mixed methods research component intended to build evidence on how GI affects participants' lives. Some of these evaluations are being led by Abt Associates (Abt) and others are being led by the Center for Guaranteed Income Research (CGIR) at the

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1. Some cities began as 12 months but expanded to 24 months. Others have recruited a second cohort.

2. For example, a GI pilot can initially require a participant to reside in a certain ZIP code, but after onboarding they can move to another ZIP code within that jurisdiction or leave the jurisdiction altogether without losing their GI benefits. One pilot stipulates that payments discontinue to participants who become incarcerated.

3. Formally, this is a voluntary politically purposive sample (Miles & Huberman, 1994; Patton, 2014). MGI has retained the approach to the storytelling cohort developed for the Stockton Economic Empowerment Demonstration (SEED) (Martin-West, S., et al., 2019), although the field of GI is rapidly diversifying its narrative change approaches.

University of Pennsylvania, who developed the common data collection instruments for the MGI evaluations. In this document, we specify an analysis plan that Abt Associates and CGIR will apply to MGI-sponsored pilots that are using random assignment to select participants for a randomized controlled trial (RCT).[4] By creating this analysis plan, Abt, in collaboration with MGI, CGIR, and co-Principal Investigators (PIs) affiliated with pilots across the United States, can provide a roadmap for future researchers seeking to evaluate GI programs.[5] Further, applying that roadmap will create transparency around how GI programs are evaluated and build similar types of evidence across different contexts, thus allowing policymakers to weigh the benefits of adopting their own GI program.

The analysis plan specified in this document is distinct from the pre-analysis plan developed by CGIR for the Stockton Economic Empowerment Demonstration (SEED), and it differs from the SEED pre-analysis plan in several ways. These differences result from changes to: the scope of the analysis; the evaluation design; the data collection instruments; and the preferences of the larger research team. As described in the remainder of this document, the plan developed by the Abt/CGIR team ensures that analyses and reporting will be well-coordinated across all of MGIs cities, using up-to-date methodology that adheres to best practices in the field and tailored to the specific research designs being used in those cities.

These evaluations of MGI-supported pilots are based on a theoretical framework developed by CGIR that prolonged episodes of scarcity exacerbate risky financial conditions, reduce cognitive capacity, undermine coping strategies (Mani, et. al., 2013; Shah, Mullainathan & Shafir, 2012), generate negative health and wellbeing outcomes, curtail hope, and psychologically trap individuals in the present (West & Castro, 2023; West, Castro, & Doraiswamy, 2023). Conversely, guaranteed income may alleviate scarcity and thereby improve mental health and other life outcomes (West, Castro, & Doraiswamy, 2023).

In each of the MGI RCTs, we will answer the following research questions:

1. How does guaranteed income affect participants' quality of life, namely:
   a. Financial well-being
   b. Psychological distress
   c. Physical functioning
   d. Time use
   e. Parenting practices and child well-being
   f. Housing security and quality
   g. Food security
2. What is the relationship between guaranteed income and participants' subjective sense of self, namely:
   a. Agency, hope, future planning, ability to set and meet goals, positive risk-taking
   b. Community connection and trust (e.g., sense of being invested in, valued, and worthy)
   c. Perception of relationships with other people
3. How does guaranteed income affect participants' income, and through what mechanisms; namely, does GI receipt affect:
   a. The balance of paid and unpaid work

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[4] Additional MGI pilots use quasi-experimental designs (QEDs) or are non-experimental and will follow analytic methods described in pilot-specific analysis plans published separately from this document.

[5] At the time this plan was written, it covered 21 pilots. Of those, Abt Associates is the evaluator for 6 pilots. The remaining 15 pilots are working with CGIR, some in collaboration with a local principal investigator, to establish evidence for GI programs. We anticipate that other GI pilots being evaluated by Abt and CGIR might adopt these analytic methods going forward to support standardized analysis and comparisons across them.

b. Job quality

c. Educational attainment and aspirations

4. What can participants' experiences teach us about the administration of safety net programs, including guaranteed income and other existing benefits programs, namely:

a. Onboarding and pilot experiences

b. Experiences with other benefits programs

c. Future pilot and permanent GI policy design implications

I.3 In This Document

The remainder of this analysis plan proceeds as follows. Section II describes the mixed methods approaches being used in each of the pilots being evaluated under this plan. Section III describes sample selection, recruitment, and randomization, including how participants were onboarded to receive GI payments. Section IV describes our data collection processes for quantitative and qualitative data. We describe our analytic sample for the quantitative component of the study, including how we calculate overall and differential attrition.

Section V describes the analytic methods we plan to use: (1) the methods to evaluate the quantitative impacts of the GI programs, including how we estimate impacts, handle missing data and outliers, and define the subgroups we plan to analyze; and (2) the analytic approach to evaluating the qualitative data. We also describe (3) the process of integrating the two sets of data and analytic insights. Because each pilot will have a slightly different approach to the mixed methods analysis, Appendix 2 describes the specific evaluation designs we used in each pilot.

II.   Mixed Methods Approaches

The MGI evaluations following this analysis plan adopt mixed methods designs to answer our questions more holistically and completely than we could achieve with a single method. Mixed methods research combines qualitative and quantitative data sources to achieve a more complete understanding of the issue under study. Mixed methods research designs are very nuanced and varied, but those differences can be distilled into variations on parallel design or sequential designs, with sequential designs being further broken down into explanatory or exploratory sequential (Creswell & Plano Clark, 2017). The research designs of the pilots under this analysis plan follow one or other of these mixed methods approaches.

As such, this section briefly describes each type of mixed methods approach being used in the covered GI pilots (see Appendix 2 for the mixed methods framework for each pilot). When choosing a mixed methods approach, the research team for each pilot considered the (1) timeline for the pilot and evaluation, (2) pilot- and population-specific research questions, and (3) merits of repeating designs across pilots, such as in terms of comparability and project management for teams working on multiple pilots. Evaluations being led by CGIR are conducting the qualitative and quantitative arms of the study in parallel while evaluations being led by Abt are sequencing them (see Section V for further discussion of mixed methods approaches in the studies). Some pilots have additional research questions and outcomes of interest beyond the core research questions listed above; these are shown in Exhibit 7.

II.1   Parallel Designs

Approximately half of the pilots covered by this analysis plan (15 of 21) are using parallel designs.

Parallel designs (QUANT + QUAL) represent mixed methods designs where the quantitative and qualitative strands begin with the same primary exploratory research questions while incorporating independent but related research questions (Teddlie & Tashakkori, 2009). Data collection and analysis for the quantitative and qualitative strands occur concurrently, and the findings are not integrated until the first round of analysis is complete within each strand (See Exhibit 1). After each independent analysis concludes, the findings are integrated into meta-inferences, which are overarching explanations or conclusions surrounding the primary research questions that are supported through both strands of data. The related research questions that remain outside of data integration function as sub-studies that can be reported on either with the primary findings or as separate reports. For example, quantitative data on time use is prohibitively lengthy, but remains a key domain of interest. Therefore, within this particular evaluation approach, time use data is collected only qualitatively as a sub-study. The main advantage of this design is the ability to answer exploratory and confirmatory research questions within the same study. Given that minimal empirical data on unconditional cash in the United States exists, leaving us with few priors, a parallel design allows us to build on what was learned in recent studies while continuing to explore an emerging field.

Exhibit 1. Parallel Design
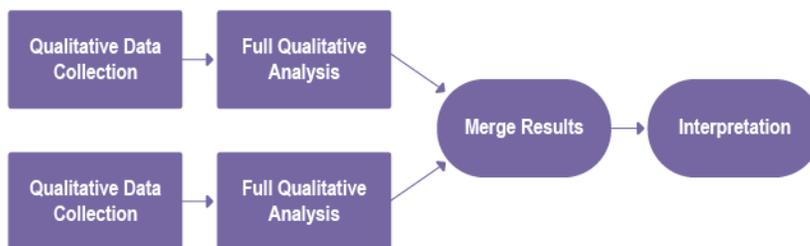
II.2 Explanatory Sequential Designs

Approximately one third of the covered MGI pilots (6 of 21) use an explanatory sequential design. In this design, qualitative methods are used to help explain quantitative results. Typically, the quantitative strand is conducted first, followed by qualitative data collection designed to aid in interpreting quantitative findings. Abt's MGI evaluations adopt an iterative variation of an explanatory sequential design. In it, Abt will conduct the first two to three waves of quantitative data collection—that is, surveys at baseline, 6 months, and in the case of a longer pilot, 12 months—followed by qualitative interviews. Abt's evaluations will integrate qualitative and quantitative findings through ongoing informal and several formal mechanisms in the project life cycle. Informally, qualitative and quantitative team members (quantitative and qualitative co-PIs, directors of analysis, pilot site liaisons) will stay informed about all aspects of project design, progress, and issues through ongoing team meetings and coordination. As data are collected, we will have formal forums for integrating quantitative and qualitative data.

The qualitative interviews were designed to complement and extend beyond the domains of the quantitative survey (i.e., focusing on participants' narratives and additional topics). Based on initial qualitative analysis, Abt will identify hypothesized mechanisms that could explain changes in quantitative measures. Quantitative and qualitative team leaders will discuss the hypothesized mechanisms and how GI changes participants' outcomes. Then, the team will discuss whether to add additional survey questions to remaining survey waves that would enable the team to test some of those mechanisms in a later analysis. Additionally, the team will discuss whether a single point in time (e.g., 18-month survey) is sufficient to answer the question, compared to longitudinal data for other survey measures. For example, if having time to give back to one's community emerges as an important change qualitatively, we could add a survey question asking whether GI allowed a participant to begin or increase their volunteer commitments. Exhibit 2 shows this research design graphically.

Exhibit 2. Explanatory Sequential Design
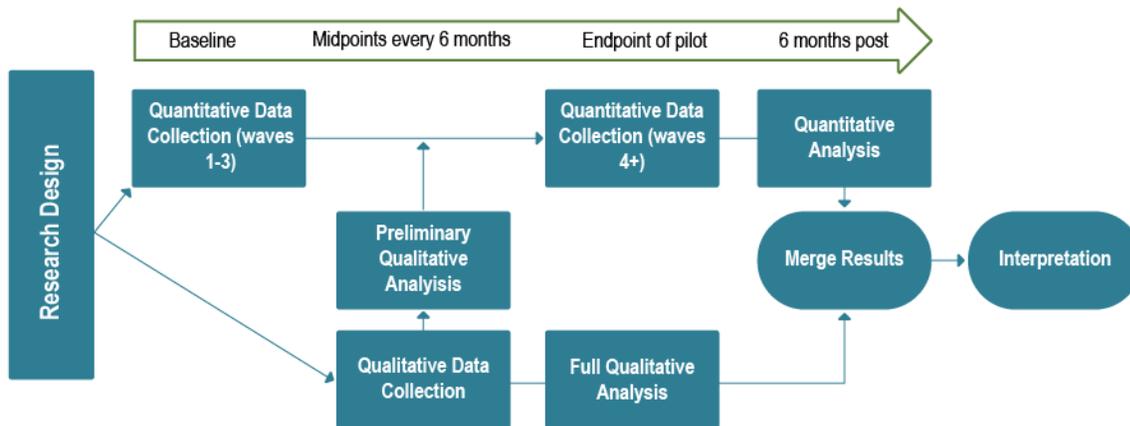
The overall research design is that Abt will field the survey designed by CGIR, with qualitative interviews after the mid-point (6-month or 12-month) survey window and before the end of the pilot. As discussed above, this will allow the qualitative work to help explain the quantitative findings from the RCT, as well as generate additional insights solely based on the qualitative data.

After baseline data are collected, we will hold meetings of the mixed methods teams to discuss the demographics of the treatment and control group members, along with insights we had from discussing the pilot eligibility, outreach, theory of change, and community context we had learned from the cities and implementation partners during the design and launch of the pilot. Those meetings, plus further

consultation with cities and an example instrument from CGIR, will inform the development of Abt's qualitative interview guide.

III.   Sample Selection and Recruitment

By randomly assigning study participants to the treatment or control group, the research teams can draw conclusions about the impacts of GI on employment and financial, mental, and physical well-being. In each GI pilot, the creation of the treatment and control groups proceeds in three steps. First, the research team collects applications and screens them for eligibility based on self-reported information supplied on the application. Second, the research team randomly assigns eligible applicants to be part of either a *treatment group* that receives GI payments, a *control group* that participates in evaluation activities but does not receive GI payments, or an inactive group that is neither part of the evaluation nor receives GI payments. Third, either the sponsoring government or its implementing partner provides the treatment group members with onboarding services, which include benefits counseling and additional eligibility verification.

If any treatment group members decline benefits or are deemed ineligible during onboarding, the research team randomly selects additional treatment group members from the inactive group until all benefits have been claimed. (Treatment group members who decline benefits or are deemed ineligible during onboarding remain in the analytic sample, making this an intent-to-treat analysis.) Exhibit 3 illustrates this three-stage process.

Exhibit 3. Three Stages of Randomizing Applicants to the Treatment
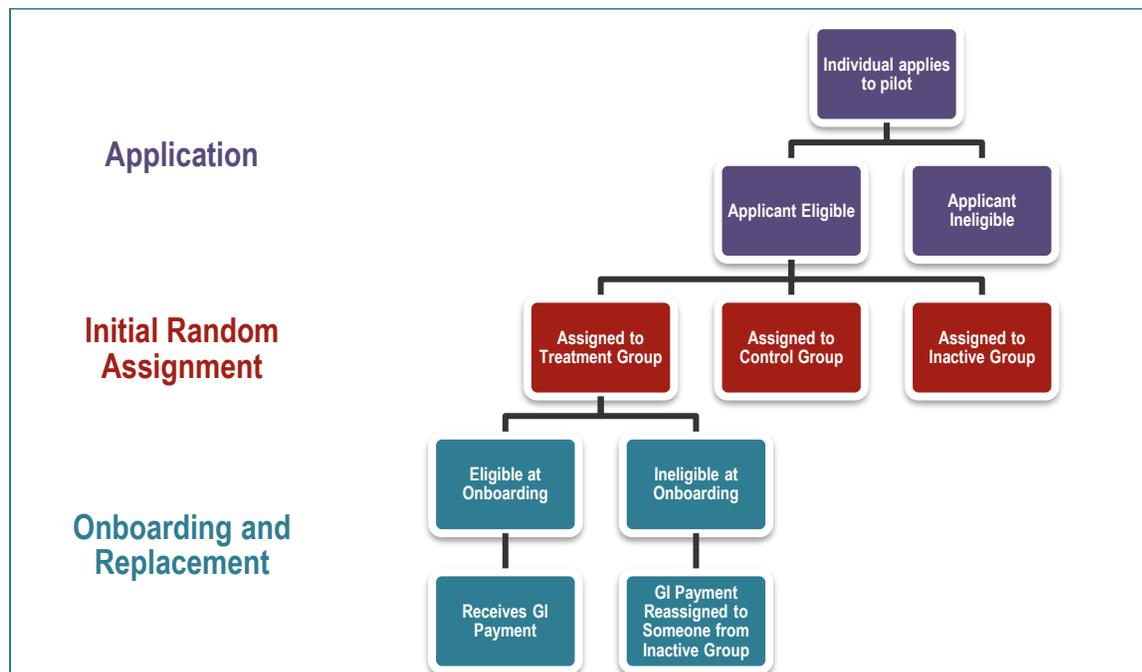
We describe the application, random assignment, and onboarding stages in detail below:

1. **Application Stage.** Applicants are asked to read and complete an eligibility screener, a consent form, and a baseline survey. All three documents are accessible online and hosted on the research team's servers. After the application closes, the research team screens applicants based on the eligibility criteria established for that pilot (for pilot-specific eligibility criteria, see Appendix 1). The optional baseline survey asks participants questions about demographics; their physical, financial, and emotional well-being; and their household structure and consumption habits.

2. **Initial Random Assignment.** The research team randomly assigns eligible applicants to a treatment group, a control group, or an inactive group. The number of applicants selected into the treatment group corresponds to the number of GI recipients funded by the pilot (see Exhibit 4 for the number of GI recipients by pilot). The number of control group slots is pre-determined based on funding for the evaluation and other factors. All eligible applicants not assigned to either the treatment or control group are assigned to an inactive group. In most pilots, GI recipients are assigned based on a simple random process, but four pilots use blocked randomization to oversample certain populations (Exhibit 5). After completing randomization, the research team provides partner cities with the initial list of treatment group members.

3. **Onboarding and Replacement.** Sponsoring government or implementing partner staff verify that participants assigned to the treatment group are eligible to participate in the GI program. Staff also provide benefits counseling to determine whether the participants' public benefits would be affected by the GI payments. At this point, treatment group members can either (1) be eligible and willing to participate in the GI program (i.e., successfully onboarded), (2) be deemed ineligible to participate in the GI program, or (3) be eligible but unwilling to participate in the GI program. Treatment group members who are deemed ineligible or who are unwilling to participate (i.e., not successfully onboarded) do not receive GI benefits; however, to maintain the integrity of random assignment, they remain in the treatment group for analytic purposes.

To ensure that all GI payments are distributed, the research team replaces ineligible treatment group members and unwilling treatment group members by selecting a sufficient number of additional treatment group members from the inactive group, using the same random process as was used to select the initial treatment group, until all benefits are claimed.[6]

The recruitment and sample selection process results in an initial analytic sample composed of two groups of study participants in each pilot's GI evaluation:

1. Treatment group members

   a. *Active* treatment group members (successfully onboarded; also called *GI recipients*)

   b. *Passive* treatment group members (not successfully onboarded)

2. Control group members

Quantitative impact analyses compare all study participants assigned to the treatment group with all study participants assigned to the control group. This is commonly described as an intent-to-treat (ITT) analysis.[7]

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[6] For cities that use a block randomization process, the research team provides replacements based on the block. For instance, if a potential participant was drawn from a certain neighborhood as part of the randomization schema, then their replacement would be from the same neighborhood.

[7] When informative, we also might calculate the effect of treatment on the treated using a Bloom (1984) correction to augment the main analyses.

Exhibit 4. Sample Sizes, by Pilot Site and Treatment Condition

Pilot Site	GI Recipients (Active Treatment Group)	Passive Treatment Group	Control Group
Abt Pilot Sites			
Atlanta, GA	275	46	132
Baltimore, MD	130	23	156
Birmingham, AL	110	21	132
Louisville, KY	151	43	180
Mount Vernon, NY	200	*	227
Shreveport, LA	110	55	132
CGIR Pilot Sites			
Cambridge, MA	130		156
Columbia, SC	100		131
Durham, NC	109		138
Gainesville, FL	115		137
Ithaca, NY	110		132
Los Angeles, CA (BIG LEAP)	3,202		5,000
Los Angeles County, CA (BREATHE)	200		450
Madison, WI	146		171
Mountain View, CA	110		132
Newark, NJ	400		800
Oakland, CA	300		360
Paterson, NJ	310		381
Providence, RI	110		132
San Diego, CA	150		150
Tacoma, WA	110		132

* Mount Vernon has not completed treatment group onboarding, so the inactive treatment group size cannot be determined at this time.

Exhibit 5. Guaranteed Income Pilots with Additional Randomization Criteria

Pilot Name	Additional Randomization Criteria
Abt Evaluation Sites	
Louisville	The treatment and control groups are equally drawn from three different neighborhoods in Louisville (i.e., 1/3 of participants live in the California neighborhood, 1/3 of participants live in the Russell neighborhood, 1/3 of participants live in the Smoketown neighborhood)
Mount Vernon	44% of the treatment and control groups are between 0 and 30% of Area Median Income; 29% are between 30 and 50% Area Median Income; 26% are between 50 and 80% Area Median Income; 1 percent are at 80% Area Median Income
Shreveport	50% of the treatment and control groups live in ZIP codes 71101, 71103, 71107, 71108, or 71109
CGIR Evaluation Site	
Newark	Treatment and control groups were weighted by the nine eligible zip codes so that a similar proportion of each group resided in each zip code.

IV. Data Collection

IV.1 Quantitative Data

All pilots fielded a version of the core quantitative survey as part of their application (baseline) and at six-month follow-up intervals thereafter. This survey asks study participants questions about their:

- Personal characteristics and household composition

- Employment and income

- Financial well-being

- Psychological distress

- Physical functioning

- Housing and food security

- Sense of self

For the full set of measures used in this study, see Appendix 3.

In addition to the core survey administered in every pilot, certain pilots elected to add survey domains. Cities chose these survey domains based on how they wanted to understand additional aspects of the effects of the GI program. Exhibit 6 lists additional survey questions and domains and the pilots using them.

Data collection occurs for the study participants in the active treatment group and control groups every 6 months following disbursement of the first GI payment.[8] Most pilots offer 12 months of GI payments, so they administer surveys at baseline and 6, 12, and 18 months to capture the 6-month post-treatment effects. For the 24-month pilots, surveys are administered at baseline and 6, 12, 18, 24, and 30 months to capture the 6-month post-treatment effects.

Exhibit 6. Additional Survey Questions/Domains and Follow-up Intervals, by Pilot Site

Pilot Site	Additional Research Question	Additional Survey Domain	Survey Administration Period
Abt Pilot Sites			
Atlanta, GA	None	None	Baseline 6, 12, 18 months
Baltimore, MD	• How does GI change participants' access to childcare? • How does GI change participants' parental engagement in child well-being?	• Childcare • Parental Engagement in Child Well-Being	Baseline 6, 12, 18, 24, 30 months
Birmingham, AL	• How does GI change participants' access to childcare?	• Childcare	Baseline 6, 12, 18 months

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[8] Because members of the inactive treatment group were deemed unlikely to respond to follow-up surveys, the research team decided not to attempt follow-up surveys with this group to avoid further antagonizing them. Therefore, inactive treatment group members will be treated as survey non-respondents and correspondingly will be included in measures of attrition and non-response weighting as described below.

Pilot Site	Additional Research Question	Additional Survey Domain	Survey Administration Period
Louisville, KY	None	None	Baseline 6, 12, 18 months
Mount Vernon, NY	None	None	Baseline 6, 12, 18 months
Shreveport, LA	How does GI change educational outcomes for participants' children?	Educational Outcomes	Baseline 6, 12, 18 months
CGIR Pilot Sites			
Cambridge, MA	• How does GI change participants' access to childcare? How does GI change participants' life attitudes? How does GI change participants' parental involvement and child academic performance? How does GI change participants' internet access at home?	• Life Attitude Scale • Childcare • Parental Involvement and Academic Performance • Internet Access at Home	Baseline 6, 12, 18 months
Columbia, SC	• How does GI change participants' life attitudes?	• Life Attitude Scale	Baseline 6, 12, 18 months
Durham, NC	• How does GI change participants' access to housing? • How does GI affect participants' ability to find employment?	• Re-Entry Housing • Employment Barriers • Contact with Family while Incarcerated	Baseline 6, 12, 18 months
Gainesville, FL	• Does guaranteed income reduce recidivism? • Does guaranteed income promote housing security? • Does guaranteed income mediate rejection sensitivity and promote positive identity?	• Living Situation/Neighborhood • Rejection Sensitivity Scale-Adult	Baseline 6, 12, 18 months
Ithaca, NY	• How does GI affect participants' experience as caregivers? • How does GI change parental stress?	• Housing Stability/Stock • Caregiving • Parent Stress Scale	Baseline 6, 12, 18 months

Pilot Site	Additional Research Question	Additional Survey Domain	Survey Administration Period
Los Angeles, CA (BIG LEAP)	• How does GI change participants' likelihood of experiencing IPV? • How does GI change participants' access to recreational opportunities for their children? • How does GI affect neighborhood safety?	• Interpersonal Violence • Incarceration • Access to Recreational Opportunities for Children • Neighborhood Safety	Baseline 6, 12, 18 months
Los Angeles County, CA (Breathe)	• How does GI affect child development and wellbeing? • How does GI change participants' experience of material hardship?	• Material Hardship • Survey of Well-Being of Young Children (SWYC)	Baseline 6, 12, 18, 24, 30, 36, 42 months
Madison, WI	• How does GI change participants' access to transportation? • How does GI change participants' children's interactions with the justice system?	• Transportation • Youth Programming Access & Participation • Youth Justice System	Baseline 6, 12, 18 months
Mountain View, CA	• How does GI impact housing affordability and quality? • How does GI impact internet access at home?	• Mountain View Housing • Internet Access	Baseline 6, 12, 18, 24, 30 months
Oakland, CA	• How does GI change participants' access to childcare?	• Childcare • Oakland Housing	Baseline 6, 12, 18, 24 months
Paterson, NJ	None	None	Baseline 6, 12, 18 months
Providence, RI	• How does GI change participants' life attitudes? • How does GI affect participants' civic engagement?	• Schooling • Life Attitude Scale • Civic Engagement	Baseline 6, 12, 18, 24 months
San Diego, CA	• How does GI change participants' access to childcare?	• Childcare • Protective Factors Scale	Baseline 6, 12, 18, 24, 30 months

Pilot Site	Additional Research Question	Additional Survey Domain	Survey Administration Period
Tacoma, WA	• How does GI change participants' access to childcare? • How does GI change participants' life attitudes? • How does GI change participants' involvement with their children? • How does GI change participants' access to transportation?	• Childcare • Life Attitude Scale • Transportation • Parental Involvement	Baseline 6, 12, 18 months

A potential concern with the follow-up data collection process is participant attrition. The research team attempts to administer the survey to everyone assigned to the active treatment group and control group and maximizes response rates by reaching out through several modalities (phone/email/in-person), as well as provides a $50 monetary incentive for each survey completion. Nonetheless, not every participant will complete the survey (called *attrition*) and not every survey respondent will answer each question (called *item non-response*). Several reasons exist for why attrition and item non-response could occur. First, participants are not required to participate in the research component of GI pilots to receive their GI payment. Second, study participants assigned to the control group might resent not receiving a GI payment and refuse to complete the surveys, or they might be difficult to locate. Third, participants can choose to skip certain questions on the survey, as every question is voluntary.

To help readers understand the magnitude of attrition, we will calculate and present rates of both overall attrition and *differential* attrition, defined as the difference in attrition rates between the treatment group (including both active and inactive treatment group members) and the control group, for each outcome. We will calculate overall attrition as:

$$Overall\ attrition = \frac{\#\ of\ participants\ without\ outcome\ data}{\#\ of\ participants\ in\ treatment\ group\ and\ control\ group}$$

We will calculate differential attrition as:

$$Differential\ attrition = \frac{\#\ of\ treatment\ group\ members\ without\ outcome\ data}{\#\ of\ treatment\ group\ members} - \frac{\#\ of\ control\ group\ members\ without\ outcome\ data}{\#\ of\ control\ group\ members}$$

We will present the overall and differential attrition rates at each follow-up time point.

If participant attrition or item non-response happens randomly, then estimates of the effect of GI would remain unbiased. However, if attrition or item non-response is potentially related to outcomes of interest,

then unadjusted estimates of GI's effect on participant outcomes could be biased.[9] As described below, the research team will impute missing outcome data to help correct for any such bias.

IV.2 Qualitative Data

The qualitative data collection fits within an overarching framework that centers the experience of the participants in the GI pilots. The qualitative teams also build in concepts from the human capability approach[10] (Sen, 1992) and the social welfare literature on deservedness, shame, and blame (Abramovitz, 2017; Baumberg, 2016; Piven & Cloward, 1993; Tach & Edin, 2017). Our theoretical framework informs the design of protocols, approach, and orientation towards the GI pilot participants and how they are invited to collaborate in documenting their experiences in the pilot. In data collection, the framework ensures participants drive data collection interactions and that researchers are sensitive to and aware of the kinds of narratives, stress, and shame that participants can bring with them into the research setting.

To provide some continuity across sites, most of the qualitative research draws on a core interview protocol that includes core substantive domains developed by Amy Castro at CGIR. Each pilot site incorporates some or all of these domains dependent on the research questions under consideration, and pilot PIs adapt the protocol to meet their theoretical orientation or methods.

Interviews range from $n=15$ to $n=50$, most occurring at one time point over the course of the pilot, with seven pilots conducting multiple waves of interviews. Interview locations can include the participant's home, a local park or library, a café, or site in the community. Some participants might opt to interview over the phone or by video. Transcripts will be professionally transcribed verbatim. In some cities, additional qualitative research includes ethnography, time use diaries, or oral histories. Exhibit 7 shows qualitative methods used in each MGI pilot.

Exhibit 7. Qualitative Research, by Pilot Site

Pilot Site	In-depth Interviews	Additional Qualitative Research Method*	Additional Research Domains	Timing
Abt Pilot Sites				
Atlanta, GA	$n=30$			Mid-point in pilot
Baltimore, MD	$n=50$		Household members' health	Mid-point in pilot
Birmingham, AL	$n=30$		Childcare	Mid-point in pilot
Louisville, KY	$n=30$		Community and local government	Mid-point in pilot
Mount Vernon, NY	$n=30$			
Shreveport, LA	$n=30$		Child education outcomes	Mid-point in pilot

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[9] Consider a case in which survey response is strongly related to income—perhaps higher-income participants feel less stress and thus are more likely to take the time to respond to the survey—and in which GI has a strongly beneficial effect on income. In such a case, an unbiased evaluation would find a beneficial effect of the program by comparing (mostly higher-income) treatment group members versus (higher- and lower-income) control group members. However, if only higher-income participants in both groups respond to the survey, the evaluation would find no effect of the program (because only higher-income participants in both groups completed the survey). This impact estimate would be said to be *biased*. In this example, differences in attrition rates between the treatment and control groups would provide a hint that the impact estimate might be biased.

[10] The human capability approach moves beyond just understanding equitable life outcomes and articulates the importance of freedom of opportunity for individuals' full development of their potential in the absence of external challenges. In other words, increased freedom of opportunity means greater individual functioning. For example, having control over one's environment, such as politically (e.g., right to free speech) and materially (e.g., ability to seek employment on an equal basis as others), is critical to full development of equitable life outcomes for an individual.

Pilot Site	In-depth Interviews	Additional Qualitative Research Method*	Additional Research Domains	Timing
CGIR Pilot Sites				
Cambridge, MA	n=25		Housing cost burden Care work	Mid-point in pilot
Columbia, SC	n=25		Fatherhood Structural inequality	Mid-point in pilot
Durham, NC	n=25		Criminal justice Employment and housing discrimination Structural inequity	Mid-point in pilot
Gainesville, FL	n=25	Ethnography	Criminal justice Employment and housing discrimination Structural inequity	Throughout the pilot
Ithaca, NY	Time 1: n=25 Time 2: n=25	Oral histories Two waves of interviews	Care work	Mid-point in pilot After end of pilot
Los Angeles City, CA	Time 1: n=35 Time 2: n=20	Oral histories Two waves of interviews	Care work Structural inequity	Mid-point in pilot After end of pilot
Los Angeles County, CA	n=50	Oral history Two waves of interviews	Care work Structural inequity Parenting	Mid-point in pilot After end of pilot
Madison, WI	Time 1: n=20 Time 2: n=20	Two waves of interviews		Mid-point in pilot After end of pilot
Mountain View, CA	n=25			Mid-point in pilot
Newark, NJ	Time 1: n=40 Time 2: n=40	Two waves of interviews, split by wave and payment type	Comparison of lump sum payments to recurring payments Structural inequity and community belonging	Year 1 Year 2
Oakland, CA	Time 1: n=15 Time 2: n=15	Two waves of interviews	Care work Parenting Housing and childcare cost burden	Year 1 Year 2
Paterson, NJ	n=25		Community belonging Reciprocity Structural Inequity	Mid-point in pilot
Providence, RI	n=20			Mid-point in pilot
San Diego, CA	Year 1: n=25 After pilot: n=10	Two waves of interviews	Community belonging Parenting Care work	Mid-point in pilot End-point of pilot
Tacoma, WA	n=25		Housing cost burden	Mid-point in pilot

* For additional research questions guiding the additional qualitative research, see Exhibit 6.

IV.2.1 Abt Evaluated Pilots

Abt's qualitative research centers GI participants' lived experiences of economic inclusion and exclusion (Bourdieu, 2005; Gil, 1973; Marshall 1950; Ortner, 1998). It is designed to assess the degree to which pilots enable participants to meet their human needs (Gil, 1973; Mullainathan & Shafir, 2013; Human Rights Declaration, 1948) and capabilities (Sen, 1992). Additionally, we contextualize our qualitative research in the narrative shifts in the 1990s and 2000s towards a discourse of "personal responsibility" (Hacker, 2019) and the shame Americans associate with not making it on their own (McNamee & Miller, 2004). By listening closely in our interviews, we learn about how GI intersects with participants' ongoing experiences of exclusion and deprivation, how the systems that excluded or deprived them respond, and any changes in how they think about what we owe one another as fellow community members (Dudley, 1994; Maynes et al., 2008).

To elicit these lived experiences, all Abt-evaluated pilots use a narrative interview style. The interview guide is semi-structured, incorporating some core CGIR protocol questions, but the flow of interviews will be driven by participants' narratives; interviewers draw out experiences using follow-up questions and prompts (also called "probes") to elicit further detail about key ideas raised by the participant and specific examples from their life.

Core topics in the interviews include:

- Introduction, including what life was like before receiving GI

- Experience with receiving GI (how it has changed their life)

- Description of the application process and being selected for GI

- Practical aspects of GI receipt, such as their experience with the disbursement mechanism and any issues with payments

- Psychological and philosophical aspects of GI receipt

- Experience with other benefits programs

- End of the pilot and policy implications

This interview format means we ask some core questions of all interviewees but follow a participant's lead in which topics and issues to cover, and in an organic conversational flow (i.e., not in a standard order except for the opening and closing questions). The strength of this type of interviewing is that it tends to uncover not only the specific issues of interest to the interviewer, but also the most salient issues for the interviewee, including issues the interviewer had not anticipated. Further, narrative interviews naturally surface the interconnections among topics in a participant's life—and usually more efficiently and in greater depth than asking more structured questions does. A limitation of the narrative interview approach, however, is that not all participants respond to the same questions, and therefore all frequencies in interviews should be treated as the minimum but not definitive frequency of how common a theme is.

In each site, except as specified in Exhibit 7, Abt interviews 20 to 30 treatment group members. Interviews typically last 60 to 90 minutes and are recorded using a digital recorder. They will be preferentially conducted in person, with a back-up option for a video or phone interview. Interview participants are compensated for their time in the amount of $60.[11]

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[11] In Baltimore, interview participants receive $50 gift cards.

We will also interview the key implementation partners about their program design, political context, program implementation, and lessons learned. The number of implementation interviews will depend on the number of partners involved in each pilot.

IV.2.2   CGIR Evaluated Pilots

Each stage of qualitative data collection and analysis is informed by CGIR's overarching theoretical framework described in Section I.2. Qualitative data collection in CGIR sites uses three approaches: semi-structured interviews, rapid ethnographic field work, and open-ended survey responses. In most CGIR sites semi-structured interviews occur once at the mid-point of the pilot, with some adjustments made based on local context, population, and the programmatic cycle of the implementation team. Interviews are recorded on digital voice recorders, last one to two hours depending on how participants answer questions. They are compensated with either a $40 or $50 gift card. In each site, except as specified in Exhibit 7, CGIR aims to interview approximately 20 members of the treatment group and 10 members of the control group. If saturation is reached with the control group in early pilot sites, control group interviews will cease.

In four sites, CGIR is conducting a second round of interviews two to six months after participants receive their final disbursement. Additional sites might incorporate a second-round interview if unique gaps appear during analysis necessitating further inquiry. The core semi-structured guide includes prompts on program design, trust, pooling behaviors, housing, finances, well-being, benefits interactions, relationships, ideology, decision-making, time, and care work. The open-ended survey questions primarily occur on the baseline instrument and are informed by the deservedness literature. Rapid ethnographic field work occurs when our research team is physically present in the field and involves participant observation of key community settings, neighborhoods, and social service settings.

Finally, at the conclusion of qualitative analysis, informal interviews will be conducted with the implementation team on their program design, benefits counseling process, and experiences with off-boarding participants.

V.   Analytic Plan

V.1   Quantitative Data

In this section, we provide details on our quantitative approach. Specifically, we outline our approach to missing data, both for explanatory (independent) and outcome (dependent) variables; our approach to outliers in the data; and the analytic model we will use to estimate the impacts of receiving GI payments.

V.1.1   Dealing with Missing Data

Missing data can result from treatment or control group members choosing to not participate in a data collection wave or the research team being unable to locate them, by them skipping over survey questions, or as a result of data cleaning to remove inconsistent or obviously incorrect responses. Our approach to missing data follows guidance on best practices from the U.S. Department of Education's What Works Clearinghouse for both outcome and explanatory (baseline) variables. *Outcome variables* are the ultimate variables of interest (e.g., food security) that are used to measure the impact of GI payments. *Explanatory variables* are the pre-randomization measures of the outcomes of interest and the participant characteristics measured at baseline. Explanatory variables would be used in a regression model to explain pre-existing variation in outcomes of interest to improve the precision of the impact estimates; to identify subgroups of interest; or to generate non-response weights.[12]

For both missing explanatory variables and missing outcome variables, the research team will impute data—that is, assign alternative values in place of missing data—using a method called multivariate imputation by chained equations (MICE) (Azur et al., 2011).[13] This widely used approach, which accounts for the statistical uncertainty in the imputations, is quite flexible and can handle variables of varying types (e.g., continuous or binary). Unlike complete case analysis, MICE does not rely on the assumption that data are missing completely at random.[14]

V.1.2   Dealing with Outliers

The research team will (1) identify extreme outliers using traditional distributional statistics and subject matter knowledge, and (2) replace those outliers with Winsorized values. Because most measures used in this study are based on scales, the research team will attempt to identify outliers only for the variables described in Exhibit 8.

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[12] Because each pilot covered by this analysis plan is an RCT, the impact of the intervention could in principle be estimated simply by comparing the treatment group mean versus the control group mean at follow-up. The purpose of including explanatory variables in the regression model is therefore to improve statistical precision (i.e., smaller standard errors), rather than to affect the estimated impact of GI payments.

[13] In plain language, MICE works by using a sophisticated algorithm to predict and fill in ("impute") missing data rather than discarding those respondents' records. Doing so can reduce bias in the impact estimates that might result from respondents with certain types of outcomes (e.g., worse psychological well-being) being less likely to respond to surveys than other respondents. MICE is endorsed by multiple federal evidence review organizations such as the What Works Clearinghouse, and it has been shown to perform well under a wide range of conditions.

[14] MICE operates under the assumption that given the variables used in the imputation procedure, the missing data are missing at random (MAR), which means that the probability that a value is missing depends only on observed values and not on unobserved values (Schafer & Graham, 2002).

Exhibit 8. Continuous Measures Used in GI Evaluations

Measure Name	Description	Smallest Plausible Value
Age	How old a participant is, based on their reported date of birth and application date.	18
Number of Children	The number of people under the age of 18 that people report living with them.	For GI pilots that screen based on whether applicants are parents, 1. For GI pilots that do not screen based on whether applicants are parents, 0.
Household Size	The number of children and adults living in a household.	For GI pilots that screen based on whether applicants are parents, 2. For GI pilots that do not screen based on whether applicants are parents, 1.
Household Income, Annual	The amount of income, including gifts, loans, and cash benefits, for a household.	0 for control group members; the GI amount for treatment group members.
Personal Income, Annual	The amount of income, including gifts, loans, and cash benefits, for the survey respondent.	0
Number of Jobs	The number of jobs a respondent reports collecting income from.	0
% of Income from Employment, Last Month	Percentage of income a respondent reports coming from employment.	0
% of Income from Public Benefits, Last Month	Percentage of income a respondent reports coming from public benefits.	0
% of Income from Retirement or Pension, Last Month	Percentage of income a respondent reports coming from retirement or pension benefits.	0
% of Income from Other Sources, Last Month	Percentage of income a respondent reports coming from sources other than employment, public benefits, or retirement or pension benefits.	0
% of Income Used for Rent or Mortgage Payments	Percentage of income a respondent reports using on rent or mortgage payments.	0

One common feature of all the variables in Exhibit 8 is that each has a well-defined smallest plausible value, shown in the rightmost column. For values that are lower than that smallest plausible value, the research team will replace the implausible value with the smallest plausible value. For instance, if a respondent reports having a household size of zero, the research team will replace that value with 1 for pilots where having children is not an eligibility requirement and with 2 for pilots where having children is part of the eligibility requirement.

The research team will identify outliers with extreme large values using traditional distributional statistics (e.g., identifying values that lie well outside the interquartile range) and subject matter knowledge (e.g., the knowledge that no study participants will have incomes of $500,000 or households with 20 children). Any outliers identified through this process will be replaced with plausible values using a process called Winsorization, in which outliers are set equal to a specified percentile of the data (tentatively 95%).[15] To

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[15] For measures that are percentages, the natural upper bound will be 100%. However, because the construction of these measures depends on other variables, such as income or housing costs, the research team will investigate variables used to construct these measures, as well.

ensure that the choice to Winsorize outliers does not substantively affect the results, the research team will test multiple approaches towards outliers.[16]

V.1.3   Assessing Baseline Balance in the Analytic Sample

Random assignment ensures that, in expectation, demographic characteristics and pre-randomization measures of the outcome of interest will be balanced across the treatment and control groups at the time of randomization. Because of attrition, this will not necessarily be true in the analytic sample, even after imputing missing values. To reassure readers that any estimated impacts are the result of the intervention, rather than a result of pre-existing differences between the treatment and control groups in the analytic sample, the research team will assess the magnitude of differences in demographic characteristics and pre-randomization measures of outcomes of interest between the two groups in the analytic sample at each survey wave. The research team will not report statistical tests of imbalance for each baseline measure.[17] Instead, we will report baseline descriptive statistics for the weighted treatment and control groups in the full randomized sample and again in the analytic sample at each follow-up. We will comment on the measured magnitude of the differences in baseline measures between the two groups that our statistical tests of impact will control for.

We will, however, conduct a joint test for balance across all baseline measures of the outcomes of interest (i.e., a test of whether there is a *systematic* imbalance when considering all variables). To do so, the research team will estimate the following model:

$$Treatment_i = \beta_0 + Y_i'\Lambda + X_i'\gamma + \epsilon_{i,t=0}$$

Where *Treatment* is an indicator for whether a participant was assigned to the treatment group ($Treatment_i = 1$) or to the control group ($Treatment_i = 0$), i indexes a participant, $\mathbf{Y}$ is the vector of pretest outcomes, and $\boldsymbol{X}$ is a vector of control variables such as demographic characteristics. For cities that use block randomization, the research team will estimate an additional term that will be a set of indicator variables based on blocking criteria. Then, we will test the joint significance of the coefficients estimated in $\boldsymbol{\Lambda}$ and $\boldsymbol{\gamma}$ using an F-test. This approach lets the research team test for overall group balance, rather than outcome-level differences.

V.1.4   Estimating Program Impacts

The research team will estimate the impact of GI payments on outcomes of interest using the following regression model:

$$y_{i,t\neq0} = \beta_0 + \beta_1(Treatment_i) + B_2(y_{i,t=0}) + X_i'\gamma + \epsilon_{i,t\neq0}$$

Where i indexes a participant during survey follow-up t. Similar to the prior equation, we regress our outcome of interest, y, onto a treatment indicator, *Treatment*, and include a vector of control variables, $\mathbf{X}$.

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[16]   In addition to estimating linear regressions with and without identified outliers, the research team will also estimate median regressions. In the case where the results from linear regressions are substantively different from median regressions, the research team will closely investigate the effect that outliers have on the results.

[17]   The research team prefers not to conduct baseline balance tests for several reasons, including these: (1) The research team's knowledge of the random assignment processes, inspection of the computerized routine used, etc., should be sufficient to conclude that assignment was random. (2) Statistical tests will find significant differences between the treatment and control groups about α% of the time, causing alarm for the client and the reader, regardless of the practical significance of those differences in the magnitude of the imbalance. (3) The fact that rejection of the null hypothesis will be due to the occurrence of a bad draw, which does not establish that the treatment and control groups were created by random sampling from different populations (Senn, 1994).

If applicable, the research team will include indicator variables based on any blocking criteria that are used in creating the treatment and control groups. Additionally, we include the outcome variable at baseline, $y_{i,t=0}$, to account for any remaining baseline differences between treatment and control that might have resulted from attrition and were not fully corrected through imputation. The research team will use two-tailed tests for significance testing. Linear regression models with heteroskedasticity-robust standard errors will be used to estimate impacts on all outcomes in the body of the report, including for non-normally distributed outcomes. Estimates from alternative specifications might occasionally be reported in appendices (e.g., when the team believes readers will be curious about sensitivity to estimation methods and error modeling).[18]

V.1.5   Reporting Results

For each survey wave, the research team will report tables that are variants of the following table shells:

Exhibit 9. Example Table Shell for Baseline Equivalence in the Analytic Sample, by Survey Wave

Outcome (Survey Wave)	Treatment Group	Control Group	Difference	Treatment Group N	Control Group N
Household Income Measured at Baseline					
(Wave 1, full randomized sample)	$15,000	$14,000	$1,000	110	132
(Wave 2, 6-month analytic sample)	$15,000	$14,000	$1,000	105	95
(Wave 3, 12-month analytic sample)	$15,000	$14,000	$1,000	95	55
(Wave 4, 18-month analytic sample)	$15,000	$14,000	$1,000	85	35

Notes. This table reports the treatment group mean, control group mean, and difference between the treatment and control groups at baseline for the full analytic sample (i.e., including imputed data) at each survey wave. The columns reporting treatment and control group N's show the number of non-missing survey respondents in the treatment and control groups at each survey wave.

Exhibit 10. Example Table Shell for Impacts

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact (%)	95% Confidence Interval
Household Income						
6-month follow-up	$15,000	$10,000	$5,000**	$2,400	50%	[$200, $9,800]
12-month follow-up	$15,000	$10,000	$5,000**	$2,400	50%	[$200, $9,800]
18-month follow-up	$15,000	$10,000	$5,000**	$2,400	50%	[$200, $9,800]

Notes. This table reports the adjusted treatment group mean, control group mean, and difference between the treatment and control groups. Regressions include controls for household income, household size, and the outcome of interest at baseline. Robust standard errors are reported. Statistical significance, based on difference between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level. Standardized mean differences will be shown in an appendix.

In addition to these tables, the research team will produce tables and figures to describe the overall, treatment group, and control group samples at each survey wave. With each set of quantitative results, the

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[18]   We note that regression analysis is not necessary to obtain unbiased program impact estimates from an RCT. Simply comparing average outcomes would suffice for this purpose. Rather, regression models are used to obtain superior precision for a given sample size by netting out chance variation in the outcome that can be explained using covariates. It has been well established that with "sufficiently large" sample sizes, statistical tests using ordinary least squares and other methods are equivalent. At least two recent papers show that this is true even with very small sample sizes—certainly much smaller than the samples we will have in the GI experiments (see Judkins & Porter, 2016; Lumley et al., 2002).

larger research team will meet to discuss how qualitative interviews and findings could reveal the mechanisms behind any observed differences in outcomes between the treatment and control groups.

V.2 Qualitative Data

Pilot evaluations are using a variety of qualitative analysis approaches, tailored to their overall research approach and population of participants. Across the pilots covered by this plan, research teams are using variations on three qualitative analysis approaches—thematic analysis, grounded theory, and Big Qual—alone or in combination, as shown in Appendix 2. Each is described in turn below.

V.2.1 Abt Evaluated Pilots: Applied Thematic Analysis

Evaluations being led by Abt Associates use a variation on thematic analysis developed for applied research settings. This applied thematic analysis approach is designed to maintain the rigor of qualitative research while working with the goals (such as program development or policy analysis) and practical constraints such as timelines and budgets, of applied research and evaluation projects. Applied thematic analysis incorporates elements of several qualitative analysis approaches—namely grounded theory, interpretivism, phenomenology, and positivism—into a single approach (Guest et al., 2012).[19] For data management, we also draw on Deterding and Water's (2018) work on flexible coding for coding large qualitative data sets efficiently.

Abt's approach is structured by the research questions (deductive coding) while allowing new ways of understanding the research study topic to emerge from the data (inductive coding). During the analysis, validity and reliability are established through several tools and procedures, which are explained in more depth in following sections:

- Developing a codebook and coding data in two stages

- Ensuring quality by checking for consistent coding across coders, by using multiple coders and documenting steps taken within the analysis process for transparency

- Using myriad strategies to identify and substantiate themes, including repeated patterns in the data; negative case analysis, where analysts look for examples in the data that contradict a theme (to understand the limitations of a finding); and using verbatim quotes to support themes and interpretations

- Triangulating data sources; in this case, through implementation interviews and mixed methods integration with survey results (described in Section V.3).

All transcripts and notes from the interviews and open-ended survey responses 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.

Developing a codebook

Qualitative codes are labels applied to segments of qualitative data, such as a short phrase, sentence, or sometimes an entire paragraph. This classification allows the researcher to observe the frequency of any

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[19]   *Grounded theory* refers to purely inductive analysis coding data line by line to construct theories from the data, most often following Strauss and Corbin (1990). *Interpretivism*, as popularized by Geertz (1973), among others, seeks to identify deeper meanings of discourse and social action. *Phenomenology* focuses on understanding the subjective experiences of individuals. *Positivism* grounds all interpretations strictly in the data collected, emphasizes systematic and replicable procedures, and uses quantification to describe the prevalence of findings in qualitative inquiry.

particular code and to understand the varied meanings and contexts associated with it. The codebook lists all the codes for a given research study, along with definitions and instructions for how to apply (and what to exclude from) that code.

Following Deterding and Water's (2018) flexible coding model, Abt's coding of participant interviews will take place in two stages. For Stage 1, we develop an initial deductive codebook prior to data collection. These initial top-level codes are structured around the research questions, primary interview topics, and initial team debriefs after data collection. Its purpose is to identify overarching *topics* prevalent in the interviews, such as discussion around work, childcare, mental health, other benefits programs, and the pilot's application and onboarding process. Then during the Stage 1 coding, we add emergent codes as new, unanticipated topics arise; when they do, previously coded interviews are re-coded to include the new codes. For example, a Stage 1 code for "time" would simply include all instances of the interview that mention time (how the person uses time, whether they have enough time, etc.), leading to large volumes of text under broad categories.[20]

More detailed analytic coding happens in Stage 2, with the purpose of identifying *key themes* prevalent in the interviews, such as the mechanisms by which GI changes people's lives. Stage 2 coding proceeds inductively: qualitative task leaders review content coded to each Stage 1 code to identify key themes within the topic. They identify descriptive and process codes, including a focus on processes that might represent mechanisms to explain changes in quantitative outcomes. Example *descriptive codes* include emotions such as "self-satisfaction with parenting" and "mental accounting" for how a participant thinks about GI relative to their other income. An example of a *process code* would be "buying a car" if it appears that purchasing a car is an important factor for participants to gain or improve their employment prospects (e.g., to be able to reliably get to work or access parts of the city with better employment opportunities), be able to attend school, or improve the financial returns to work (e.g., by no longer paying for expensive ride-sharing services to commute). The Abt team will use a variety of techniques, including additional manual coding, text searches, and queries in NVivo to code material to Stage 2 codes. It is typically these Stage 2 codes, and the relationships among them, that become the basis of theories about how GI works.

Implementation interviews will be coded in Excel by one of the co-PIs using a single-stage inductive coding process. Once the codebook is stable (i.e., no new codes are observed), the interview transcripts will be reviewed a second time to ensure that all data has been coded into the correct categories. Site summaries will then be created to review key implementation questions.

Coding and quality assurance

Coders will work in different teams in Stages 1 and 2. Stage 1 coding is organized by pilot site, with each analyst applying the full Stage 1 codebook to transcripts from their assigned cities. Small teams (two to three coders) will work on each pilot site. In Stage 2, coders will focus thematically on nodes—that is, they will code and query within Stage 1 topics (rather than by reviewing the full set of transcripts from a pilot site). Small teams of coders (one to three) will analyze each topic in Stage 2.

Throughout data collection and analysis, the interviewers, coders, and project leaders will meet semi-weekly to discuss emergent themes, coding consistency, and data quality. We will discuss any conflicting interpretations of data or the meaning of codes, to ensure consistent coding. If a code 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. Semi-weekly meetings will also be used to discuss emergent themes to further refine the coding structure for the data. Previously coded interviews will be updated to account for revisions to the coding structure.

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[20] Interested readers can request a copy of Abt's Stage 1 codebook.

Identifying themes in qualitative data

After Stage 2 coding, analysts will write thematic memos for each pilot site, summarizing findings by research question and by hypothesized mechanisms of change. Abt's analytic process draws on a variety of tools to surface these broader themes. A critical part of this process is drawing on the knowledge of all members of the research team, including through the mixed methods synthesis described in Section V.3.

Specific techniques include examining or looking for:

- Repeated ideas or noticeable patterns in the data

- Specific language, such as metaphors that participants use to indicate their thought processes, worldviews, and emotional states (e.g., the GI being "a blessing" or living "like a zombie" before GI)

- Examples that contradict other themes observed, when those exceptions reveal something about the "rule" in the rest of the data (often the limitations in a social process or idea). For example, if most participants keep information about their GI receipt private, understanding how the situations and thought processes of the few people who disclose that information differ would be instructive.

- Relationships between topics that indicate a possible mechanism for change (e.g., being able to purchase a car, which enables a participant to pursue additional or better opportunities for work or education)

- Prior empirical knowledge, such as from the literature, discussions with other GI researchers on their emerging findings, and other research conducted by team members (e.g., literature on the effects of scarcity on future orientation and the benefits of alleviating child poverty through mechanisms such as the Earned Income Tax Credit)

- Absence of data; that is, lack of data that aligns with our prior expectations (e.g., if participants had not talked about their aspirations for their children, that gap would have defied our expectations). Or identifying patterns in missing data (e.g., if our interviewees do not match the demographics of all pilot participants, or if young adults do not discuss benefits receipt)

V.2.2 CGIR Evaluated Pilots

CGIR will be using three forms of qualitative analysis: thematic analysis, grounded theory, and "Big Qual." All three approaches are informed by the theoretical framework noted prior, while remaining flexible for inductive analysis. Thematic analysis and grounded theory will apply to the semi-structured narrative data. Big Qual will apply to the open-ended survey data, narrative data, and cross-site sub-samples for specific populations and/or experiences with GI, should they arise in the data. Recursive thematic mapping, structured memo-writing, and coding in Dedoose software will apply to each method outlined below.

Thematic analysis and grounded theory

First, we will employ Braun and Clark's (2012) of analysis on a semantic level to address the following domains: (1) pathways and barriers to policy take-up; (2) decision-making and adaptation; (3) well-being; (4) and how households might perceive and use GI within their specific policy sub-system, network, and community. The analytic plan will incorporate the first four phases of analysis which are familiarization with transcriptions, code generation and application within the coding software Dedoose, code collation into themes, and developing thematic maps. Structured memo-writing guided by the theoretical framework will occur after each encounter with the data. Analysis will focus on *process coding* to determine strategies, tactics, and outcomes of decision-making and *values coding* to determine how beliefs about care work, market, employment, or institutional failures could influence behavior and

motivations for engaging with GI programs and other initiatives participants might be involved with (Saldana, 2010).

Second, we will simultaneously use a grounded theory approach that employs focus and theoretical coding at scale on a latent level. This analytic component will focus on the themes of agency, care work, pooling behaviors, perspectives on deservedness and the social contract, and structural vulnerability. Though there are currently more than 100 GI programs across the United States, their proliferation represents a rapid expansion of an intervention that has rarely been tried here, outside of experimentation in the 1970s and 1980s in very specific locations. Further, these MGI pilot sites were implemented in direct response to the COVID-19 pandemic, meaning participants are, en masse, experiencing an emerging intervention and historic event simultaneously. Given that participants in pandemic-era GI pilots are experiencing a historic event collectively and individually, integrating focus and theoretical coding alongside thematic analysis is an optimal choice because it creates space for explicitly surfacing an unfolding phenomenon that is experienced by many but still lacks shared understanding (Charmaz, 2014).

Because we are working with an unusually large qualitative data set, we will employ two modifications to Braun and Clarke's (2012) and Charmaz's (2014) approaches. In the first modification, we use a theory-driven codebook where the conceptual framework for the entire mixed method design guides specific codes we anticipate we might see, based on the literature in combination with inductive code generation. This occurs in two stages. In stage one the CGIR research leads (the co-PIs and research scientists) generate a thick description of the corpus of data by reading all field work, de-identification, and interview memos from that site in one sitting, followed by a close read of a sub-sample of transcripts from each site, to elicit inductive codes based on the primary research questions. This step occurs independently from the theoretically driven codes. In stage two, research leads meet, forming what has been called an "interpretive community" (Fish, 1980, p.338) to revisit the theoretical frameworks driving the entire analysis to determine whether additional theoretical work is necessary to further guide the codebook. The coding team then begins deploying the codebook in tandem with consistent meetings with research leads to determine the degree to which the codebook is suited for the data.

The second modification occurs after the entire corpus of data is coded and sorted into a thematic map based on the theoretical framework. In this step, the research leads generate an additional thick description memo based on the analytic steps noted prior. The first memo requires the lead to read all the coding memos, then generate code frequency charts and code reoccurrence charts for their respective site. This includes determining (1) if an additional round of coding is necessary on any discrete or unclear themes, (2) identifying where codes collapsed or overlapped based on saliency, (3) noting where the tail ends of the charts do or do not appear credible, and (4) summarize recurring themes with a particular focus on any recurring themes from the theory-driven section of the codebook.

Big Qual

Big Qual references using large primary or secondary qualitative data sets ($N \geq 100$), often within a mixed methods design, to add depth and breadth concurrently within the same research study (Brower et al., 2019; Davidson et al., 2019; Fontaine et al., 2020). In this case, we will use the Big Qual approach to analyze open-ended responses in survey data. The advantage of a Big Qual approach with these data is that it permits the researcher to link individually lived experiences of a similar phenomenon on a systemic level across institutional and geographic boundaries (Davidson et al., 2019). In this case, it allows us to create typologies, or case studies, about who GI works for and how, while accounting for policy sub-system variation.

First, we will employ content analysis with the open-ended survey responses on deservedness and the social contract. These responses were collected at baseline before participants knew whether they were randomized into the treatment or control group, providing a qualitative baseline of perception. This

involves using a conventional content analysis approach in Dedoose, an approach suited for emerging phenomenon where prior empirical and theoretical data are limited (Hsieh & Shannon, 2005). Inductive code development then occurs through repetitive line by line readings of the primary corpus of data without pre-set, deductive coding frames (Patton, 2015). The data are then uploaded to Dedoose for analysis while continuing to employ recursive thematic mapping throughout each stage of the process. Second, the deservedness portions of the grounded theory analysis noted prior will be triangulated in a compare/contrast format with the open-ended survey responses, to determine how GI is perceived within public discourse. Finally, as distinct sub-populations or typologies develop in the primary narrative analysis noted above, we will identify which ones necessitate further inquiry at scale. For example, should analysis produce a finding unique to participants with prior criminal justice involvement, we will create a cross-site sub-sample of all participants meeting that criterion, for a separate analysis.

V.3 Mixed Methods Integration

The point at which mixed methods integration happens and the strategies used for it vary according to the study's mixed methods frame. As in Section II, we describe integration strategies for each design in turn below.

V.3.1 Abt Evaluated Pilots: Explanatory Sequential Designs

Abt's teams will hold site visit debriefs immediately after teams conduct interviews with treatment group members in each pilot site. Interviewers, qualitative team leaders, and quantitative team leaders will discuss key takeaways and themes that interviewers observed in the interviews and site visits.

At the end of Stage 2 qualitative coding, the qualitative team will present the quantitative team with memos describing hypothesized mechanisms for changes (the *explanatory* function of explanatory sequential design). The teams will then meet for the first of multiple synthesis workshops. Quantitative and qualitative team leaders will discuss the hypothesized mechanisms and how GI changes participants' outcomes. Then, as described in Section II.2 above, the team will discuss whether to add additional survey questions to remaining survey waves that would enable the team to test some of those mechanisms in a later analysis.

Once quantitative analysis is also complete, the qualitative and quantitative teams will synthesize findings for each research question using data from each part of the study. The team will then convene for a "storyboarding" workshop to identify the key findings from each strand of research, how they converge, and where they diverge. Each team will present key findings and together will use collaboration tools (such as a digital whiteboard) to document a preliminary storyboard—that is, the key ideas that will structure the final report for each pilot.

In final reports, findings will be presented in an integrated way by research question. For example, quantitative results will present the overall finding across participants; qualitative findings will provide a more detailed understanding of what changes (or lack thereof) in participants' lives look like and the mechanisms that might explain changes. The reports will discuss convergence and divergence in findings, including hypotheses for divergences, and will include quotes to substantiate qualitative themes.

V.3.2 CGIR Evaluated Pilots: Parallel Designs

Generating meta-inferences during integration relies on the degree to which the mixed method design adequately suits the initial research aims and the inference quality within each strand (quantitative, qualitative) prior to integration (O'Cathain et al., 2007; Teddlie & Tashakkori, 2009). We accomplish the latter by consistently auditing each strand for credibility, fidelity, and dependability according to normative credibility standards through each stage of within-strand analysis. These include design suitability, fidelity, within-design consistency, analytic adequacy, and interpretive and theoretical consistency (Teddlie & Tashakkori, 2009).

At the integration phase, each team is provided with the full within-strand analysis and inferences from the other strand at the conclusion of their work. The quantitative and qualitative leads then meet as an interpretive community to delineate interpretive meta-inferences about the data according to each primary research question. Each meta-inference is tested for integrative efficacy (Teddlie & Tashakkori, 2009) and evaluated against the first three components of Dellinger and Leech's (2007) validation framework. Integrative efficacy involves (1) determining whether the meta-inferences adequately reflect within-strand inferences, and (2) evaluating whether there are credible inconsistencies or findings from each strand that stand in tension. If findings stand in tension, we return to the theoretical framework, internal analysis, and audit process to determine whether there is an alternative explanation, there is a methodological error, or each strand is capturing different components of the same phenomenon (Erzberger & Kelle, 2003).

Finally, in the third component, we employ the first three components of the validation framework: the foundational element, inferential consistency, and utilization (Dellinger & Leech, 2007). The foundational element requires deep engagement with the literature and theoretical anchors surrounding the phenomenon of interest prior to engaging in study design. It also includes a transparent internal evaluation of how the researcher's perceptions or social contexts are or are not influencing analytic decisions, as a core component of ensuring construct validation. Inferential consistency builds upon integrative efficacy and evaluates whether the inferences remain consistent with the literature, define a new phenomenon of interest, point towards new hypotheses for future work, or deviate entirely. Finally, the utilization element (also called historical) addresses whether or not the study's measures, variables, and analytic approach remain historically consistent within a sub-field.

In sum, the aforementioned integrative approach creates space for establishing the consistency and transferability of a meta-inference while maintaining methodological rigor when findings from each strand are held in tension.

Appendix 1. Pilot Details, by Pilot Site

Pilot Site	Pilot Name	Payment Amount (Monthly)	Duration	Treatment Group Size	Control Group Size	Eligibility Criteria		
						Income	Age	Other Criteria
Abt Evaluation Sites								
Atlanta, GA	I.M.P.A.C.T: The Income Mobility Program for Atlanta Community Transformation	$500	12 months	275	132	Less than 200% of the Federal Poverty Line	18 years or older	
Baltimore, MD	Baltimore Young Families Success Fund	$1,000	12 months	130	156	Less than 300% of the Federal Poverty Line	18-24 years old	Biological or adoptive parents, guardians, or have full or partial care taking responsibilities
Birmingham, AL	Embrace Mothers	$375	12 months	110	132		18 years or older	Female identifying as single head of a family with children in the household under 18 years of age
Louisville, KY	YALift!: Young Adult Louisville Transformation	$500	12 months	151	180		18-24 years old	Residing in the following neighborhoods: California, Russell, and Smoketown
Mount Vernon, NY	Level Up – Mount Vernon Guaranteed Income Program	$500	12 months	200	227	Between $15,000 and 80% of the Area Median Income	18 years or older	
Shreveport, LA	Shreveport Guaranteed Income Program	$660	12 months	110	132		18 years or older	A single parent with school age children
CGIR Evaluation Sites								
Cambridge, MA	Rise Cambridge, MA	$500	18 months	130	156	Less than 80% Area Median Income	18 years or older	Single (unmarried) caregiver of at least one child under the age of 18
Columbia, SC	CLIMB Columbia, SC	$500	12 months	100	131		18 years or older	Fathers currently or recently enrolled in a program with the Midland Fathers Coalition

Pilot Site	Pilot Name	Payment Amount (Monthly)	Duration	Treatment Group Size	Control Group Size	Eligibility Criteria		
						Income	Age	Other Criteria
Durham, NC	Excel Durham Durham, NC	$600	12 months	250	400	Less than 60% Area Median Income	18 years or older	Released from prison (NC State prison, a prison in another state, or federal prison) within the last 60 months (5 yrs) prior to application
Gainesville, FL	Gainesville Cohort 1 Gainesville	$500	12 months	Cohort 1: 57 Cohort 2: 58	Cohort 1: 67 Cohort 2: 70		18 years or older	Within six months of their release from federal/Florida state prison, released from jail with a felony or beginning felony probation
Ithaca, NY	IGI Ithaca	$450	12 months	110	132	At or Below 80% Area Median Income	18 years or older	Primary unpaid caregivers to children and aging or disabled adults
Los Angeles, CA	BIG LEAP	$1000	12 months	3048	3658	At or Below 100% Federal Poverty Line	18 years or older	Resident with at least one dependent child (younger than 18 or a student younger than 24) or are pregnant
Los Angeles County, CA	BREATHE	$1000	36 months	1000	2000	At or Below Area Median Income for a single person household or 120% Area Median Income for a household with 2 or more persons	18 years or older	Resident in a neighborhood identified as being at or below LA County's Area Median Income; have been financially negatively affected by the COVID-19 pandemic; and not concurrently participating in another guaranteed income program
Madison, WI	MGIP Forward Fund Madison	$500	12 months	110	100	Less than 200% of the Federal Poverty Line	18 years or older	Resident with a child under 18 years old living at home
Mountain View, CA	Elevate MV Mountain View	$500	24 months	110	132	At or Below 30% Area Median Income	18 years or older	Parental/custodial caregiver with at least one child under the age of 18 at the time of application

Pilot Site	Pilot Name	Payment Amount (Monthly)	Duration	Treatment Group Size	Control Group Size	Eligibility Criteria		
						Income	Age	Other Criteria
Newark, NJ	Newark Movement for Economic Equity	Group 1: $250 biweekly ; Group 2: $6,000 annually	24 months	400	800	Less than 200% of the Federal Poverty Line	18 years or older	Impacted by COVID-19
Oakland, CA	Oakland Thrives Oakland	$500	18 months	600	360	Less than 25% Annual Median Income or 138% of the Federal Poverty Line	18 years or older	
Paterson, NJ	GIPP Paterson	$400	12 months	110	131	At or Below New Jersey Living Wage ($30,000 for a single person or $88,000 for a family)	18 years or older	
Providence, RI	PGI Providence	$500	12 months	110	132	Less than 200% of the Federal Poverty Line	18 years or older	
San Diego, CA	Resilient Communities San Diego	$500	24 months	150	150		18 years or older	Resident with a child who is 12 yrs old or under in the household, and living within the zip codes: 92114 (Encanto/San Diego), 92139 (Paradise Hills/San Diego), 91950 (National City), and 92173 (San Ysidro)
Tacoma, WA	GRIT Tacoma	$500	12 months	110	132		18 years or older	Reside in Tacoma neighborhoods of Eastside, Hilltop, South Tacoma or the South End

Appendix 2. Evaluation Design, by Pilot Site

Pilot Site	Project Title	Evaluator	Mixed Methods Design	Quantitative Methodology	Qualitative Analysis Approach
Abt Evaluation Sites					
Atlanta, GA	IMPACT	Abt Associates	Explanatory sequential	RCT	Applied Thematic Analysis
Baltimore, MD	Baltimore Young Families Success Fund	Abt Associates	Explanatory sequential	RCT	Applied Thematic Analysis
Birmingham, AL	Embrace Mothers	Abt Associates	Explanatory sequential	RCT	Applied Thematic Analysis
Louisville, KY	YALift!	Abt Associates	Explanatory sequential	RCT	Applied Thematic Analysis
Mount Vernon, New York	Level Up – Mount Vernon Guaranteed Income Program	Abt Associates	Explanatory sequential	RCT	Applied Thematic Analysis
Shreveport, LA	Shreveport Guaranteed Income Program	Abt Associates	Explanatory sequential	RCT	Applied Thematic Analysis
CGIR Evaluation Sites					
Cambridge, MA	Rise Cambridge, MA	Center for Guaranteed Income Research (CGIR)	Parallel	RCT	Thematic Analysis
Columbia, SC	CLIMB Columbia, SC	CGIR	Parallel	RCT	Thematic Analysis & Grounded Theory
Durham, NC	Excel Durham Durham, NC	CGIR and Lucius Couloute, Suffolk University	Parallel	RCT	Thematic Analysis & Grounded Theory
Gainesville	Gainesville Cohort 1, Cohort 2	CGIR and Lucius Couloute, Suffolk University	Parallel	RCT	Thematic Analysis & Grounded Theory
Ithaca, NY	IGI Ithaca, NY	CGIR	Parallel	RCT	Thematic Analysis & Grounded Theory
Los Angeles City, CA	BIG LEAP	CGIR and Bo-Kyung Elizabeth Kim, University of Southern California	Parallel	RCT	Thematic Analysis & Grounded Theory

Los Angeles County, CA	BREATHE[21]	CGIR, Judith Perrigo, UCLA, and Margaret Thomas, University of Chicago	Parallel	RCT	Thematic Analysis & Grounded Theory
Madison, WI	MGIP Forward Fund Madison, WI	CGIR and Katherine Magnuson, University of Wisconsin- Madison	Parallel	RCT	Thematic Analysis
Mountain View, CA	Elevate MV Mountain View, CA	CGIR	Parallel	RCT	Thematic Analysis
Newark, NJ	Newark Movement for Economic Equity	CGIR	Parallel	RCT	Grounded Theory
Oakland, CA	Oakland Thrives Oakland, CA	CGIR	Parallel	RCT	Thematic Analysis
Paterson, NJ	GIPP Paterson, NJ	CGIR	Parallel	RCT	Thematic Analysis & Grounded Theory
Providence, RI	PGI Providence, RI	CGIR	Parallel	RCT	Thematic Analysis
San Diego, CA	Resilient Communities San Diego, CA	CGIR	Parallel	RCT	Thematic Analysis
Tacoma, WA	GRIT Tacoma, WA	CGIR	Parallel	RCT	Thematic Analysis & Grounded Theory

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[21] The Breathe study noted here pertains to the first LA County GI program providing 1,000 individuals with $1,000 month over three years. This pre-analysis plan does not apply to the second LA County pilot focused on youth who have aged out of foster care.

Appendix 3. Measures Tables

Table 1. Participant Characteristics

Measure	Question from Survey	Definition
Age **Age_c**	[DOB] What is your date of birth? (MM/DD/YYYY) [SurveyEnd] Survey completion time recorded by ConfirmIT	The difference between the date that someone completed the survey and their date of birth. [Survey End] – [DOB]
Gender	[Gender] What is your gender? Select all that apply.	The gender that a respondent self-identifies with. 1 = Male 2 = Female 3 = Non-binary/Non-conforming 4 = Transgender 5 = Other gender
Number of Children **HH_NumChild_c**	[HH_Children] Do any children under 18 live with you most of the time? [HH_ChildAge*] Please list the ages of the children that live with you most of the time.	If a participant answered that children lived with them, then the number of children is set to the number of non-missing ages. If the participant answered that no children under the age of 18 live with them, then the number of children is set to 0. If [HH_Children] = "Yes" then [HH_NumChild_c] = Number of non-missing [ChildAges]; Else [HH_NumChild_c] = 0;
Household Size **HH_Size_c**	[HH_AdultsAll] Not including yourself, how many other adults (people 18 or older) live with you all of the time? [HH_ChildAge*] Please list the ages of the children that live with you most of the time.	The total number of people living in a household, defined as the number of full-time adults and children living in a household. [AdultsAll] + [HH_NumChild_c] + 1
Household Income **Fin_IncAmtHHAnn_c**	[Fin_IncAmtHH] What was the total income after taxes for your household (all the people counted previously) for the following months? Include all money from jobs, gifts, loans, and cash benefits	Annual income, imputed by the number of months that a participant reported their income.

	like Social Security, disability, retirement or pensions, and unemployment. [show previous 6 months based on current month]	(Sum of [Fin_IncAmtHH])* (12 / Number of Months [Fin_IncAmtHH] was reported
Public benefits receipt [Fin_Services]	[Fin_Services] Have you used any of the following programs in the past year? Select all that apply	Which public benefits program has the participant used in the past year? 1 = SSI 2 = SNAP, Food Stamps, EBT 3 = Classes at the YMCA 4 = WIC 5 = SSDI
Rental Assistance Hsg_RentAssist	[Hsg_RentAssist] Do you currently receive any rent reductions or rent vouchers? [show if Hsg_Status does not equal Homeowner] [Hsg_RentAssistType] Please check all vouchers or reductions you receive. Select all that apply. [show if Hsg_RentAssist is Yes]	If a participant is not a homeowner, the type of rental assistance that they receive (if any). 1 = Public housing 2 = Section 8 Voucher/Housing Choice Voucher 3 = Landlord-reduced rent because someone in your household works for them or for the super 4 = Landlord-reduced rent because someone in my household is related to them or the super 5 = I receive free or reduced housing as a part of my job
Marital Status MaritalStat	[MaritalStat] What is your marital status? Select one. [PartnerStat] Do you live with your spouse or partner?	1 = Married 2 =Partnered/in a relationship 3 = Single 1 = Yes 0 = No

Race/Ethnicity	[Race] What is your race? Select all that apply. [RaceTribe_Specify] If you selected American Indian or Alaska Native, please specify tribe/s. [RaceTwoOrMore_Specify] If you selected "Two or more races," please specify. [RaceAsian_Specify] If you selected "Asian," please specify country. [RacePI_Specify] If you selected "Native Hawaiian or Other Pacific Islander," please specify. [RaceOther_Specify] If you selected "Some other race," please specify. [Ethnicity] Are you a person of Hispanic, Latino, or Spanish origin?	The races (White, Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Two or more races, Some other race) that a participant identifies as and whether the participant is of Hispanic, Latino, or Spanish Origin. If [Race] = White then Race_White = 1; Else White = 0 If [Race] = Black then Race_Black = 1; Else Black = 0 . . . If [Race] = Some Other Race then Race_Other = 1 Else Other Race = 0 If [Ethnicity] = "Yes" then Ethnicity = 1; Else Ethnicity = 0
Education Level **Edu**	[Edu] What is the highest level of education you have completed? Select one.	Highest level of education that a participant reported completing. 1 = No formal education 2 = Elementary school (through Grade 5) 3 = Middle school (6th grade - 9th grade) 4 = High school (10th - 12th grades) 5 = GED (diploma equivalency test) 6 = Trade or technical school

		7 = Associate's Degree (2-year college degree) 8 = Bachelor's Degree (4-year college degree)
		9 = Other post-graduate degree
		10 = Other education choice not listed
		11 = Some college

Table 2. Employment and Income

Measure	Domain	Question from Survey	Definition
Employment Employment_c	**Employment**	[Fin_Emp] What is your primary employment status? Select one. [Fin_Occ] What type of occupation best describes your primary job? Select one. [show if Employ is full time, part time, or seasonally]	The employment status of a participant is a combination of three variables, [Fin_Emp], [Fin_Occ]], and [Fin_Edu]. We construct two variables to indicate the type of employment a participated reported and whether they report being a student. If [Fin_Emp] = Employed full time and [Fin_Occ]] != Unpaid Stay-At Home Caregiver, Self-Employed, or Self-Employed in the Gig Economy (For example, Uber, Lyft, or Door Dash) then [Employment_c] = Employed full time If [Fin_Emp] = Employed part time or I work seasonally and [Fin_Occ]] != Unpaid Stay-At Home Caregiver, Self-Employed, or Self-Employed in the Gig Economy (For example, Uber, Lyft, or Door Dash) then [Employment_c] = Employed part time/seasonally employed If ([Fin_Emp] = Employed full time or Employed part time and [Fin_Occ]] = Unpaid Stay-At Home Caregiver) or ([Fin_Emp] = Stay at home parent or caregiver) then [Employment_c] = Stay at home parent or caregiver If [Fin_Emp] = Employed full time or Employed part time and [Fin_Occ]] = Business Owner or Self-Employed then [Employment_c] = Business owner/self-employed If [Fin_Emp] = Employed full time or Employed part time and [Fin_Occ]] = Self-Employed in the Gig

			Economic (For example, Uber, Lyft, or Door Dash then [Employment_c] = Gig worker

If [Fin_Emp] = Retired or Disabled then [Employment_c] = Retired or disabled

If [Fin_Emp] = I am student and do not work then [Employment_c] = Full time student

If [Fin_Emp] = Unemployed looking for work then [Employment_c] = Unemployed, but looking for work

If [Fin_Emp] = Unemployed not looking for work then [Employment_c] = Unemployed, and not seeking work

If [Fin_Emp] = I am student and do not work or StudentStatus = I am a full-time student or I am a part-time student then [Student] = 1; Else [Student] = 0 |
| **Student Student_c** | **Employment** | [Fin_Edu] What is your educational status? Select one. | An indicator variable for whether a person is a student (either full- or part-time).

If [Fin_Emp] = I am student and do not work or Fin_Edu = I am a full-time student or I am a part-time student then [Student_c] = 1; Else [Student_c] = 0 |

Paid or Unpaid Work PaidUnpaid_c	**Employment**	[Employment]	An indicator for whether a participant is employed or a caregiver. If [Employment_c] = Employed full time or Employed part-time/seasonally employed or Stay at home parent or caregiver or Business owner/self-employed or Gig worker then [PaidUnpaid_c] = 1; Else [PaidUnpaid_c] = 0;
Number of Jobs Num_Jobs_c	**Employment**	[Fin_IncSrcPerson] How much money did you personally receive from the following sources last month? Please use a dollar amount.	Sets the number of jobs a person has based on whether they filled out the amount of money earned in their main, second, or third jobs. If not missing Your third job then [Num_Jobs_c] = 3; Else if not missing Your second job then [Num_Jobs_c] = 2; Else if not missing Your main job then [Num_Jobs_c] = 1; Else if missing Your main job and [Employment_c] = Employed full time, Employed part time/seasonally employed, Business owner/self-employed, or Gig worker then [Num_Jobs_c] = 1; Else if missing all three job amounts and Employment_c = Unemployed, Retired or Disabled) Num_Jobs_c = 0 Else [Num_Jobs_c] = .;

Job Fulfillment JobFulfill	**Employment**	[JobFulfill] To what extent, if at all, do you find your job personally fulfilling? Select one. [show if Employ is full time, part time, or seasonally]	1 = Very fulfilling 2 = Fairly fulfilling 3 = Not very fulfilling 4 = Not at all fulfilling . = Don't know
Job Meaningfulness [JobMeaningful]	**Employment**	[JobMeaningful] Do you think that your job is or is not making a meaningful contribution to the world? Select one. [show if Employ is full time, part time, or seasonally]	1 = Is making a meaningful contribution to the world 2 = Is NOT making a meaningful contribution to the world . = Don't know
Wanted to Find Work LE_Work_1	**Employment**	[LE_Work_1] Some people look for work because they want to work. Others do it primarily because it is expected of them. Please indicate how much you agree or disagree with the following two statements.	A scale indicating how much a person wanted to find work. 1 = Strong Disagree 2 = Disagree 3 = Neither Agree or Disagree 4 = Agree 5 = Strongly Agree
Expected to Find Work LE_Work_2	**Employment**	[LE_Work_2] Some people look for work because they want to work. Others do it primarily because it is expected of them. Please indicate how much you agree or disagree with the following two statements.	A scale indicating how much a person felt expected to find work. 1 = Strong Disagree 2 = Disagree 3 = Neither Agree or Disagree 4 = Agree 5 = Strongly Agree
Unemployment reason LE_FindWork	**Employment**	[LE_FindWork] Could you explain why you haven't taken any steps towards finding paid work in the last 6 months? More than one answer is possible. [LE_FindWork_Other] You responded "Other reason", please specify. [show if "Other reason" selected above]	Reasons provided for not finding paid work in the last six months: 1 = I didn't look for work because I'm already working. 2 = Because I did not expect to find a suitable job. 3 = Because of caring commitments. 4 = Because of my education or studies. 5 = Because of sickness or incapacity for work. 6 = Because of holidays or lack of time.

			7 = Because I expected little result. 8 = Because I expect to start work soon. 9 = Other reason: [LE_FindWork_Other] . = Do not know / no answer.
Household income, annual **Fin_IncAmtHHAnn_c**	**Income**	[Fin_IncAmtHH] What was the total income after taxes for your household (all the people counted previously) for the following months? Include all money from jobs, gifts, loans, and cash benefits like Social Security, disability, retirement or pensions, and unemployment. [show previous 4 months based on current month]	Annual income of the participant's household, imputed by the number of months that a participant reported their income. (Sum of [Fin_IncAmtHH])* (12 / Number of Months [Fin_IncAmtHH] was reported
Personal income, annual **Fin_IncAmtPersAnn_c**	**Income**	[Fin_IncAmtPerson What was the total income after taxes for you personally for the following months? Include all money from jobs, gifts, loans, and cash benefits like Social Security, disability, retirement or pensions, and unemployment. [show previous 4 months based on current month]	Annual income of the participant, imputed by the number of months that a participant reported their income. (Sum of [Fin_IncAmtPerson])* (12 / Number of Months [Fin_IncAmtPerson] was reported
% of income from employment, last month	**Income**	[Fin_IncSrcPerson] How much money did you personally receive from the following sources last month? Please use a dollar amount.	To create the percentage of personal income that came from earned income (jobs): Sum of ([[Fin_IncSrcPerson] - Your main job], [[Fin_IncSrcPerson] - Your second job], [[Fin_IncSrcPerson] - Your third job], [[Fin_IncSrcPerson] - Under the table jobs]) / Sum of categories for [[Fin_IncSrcPerson]]
% of income from public benefits, last month	**Income**	[[Fin_IncSrcPerson]] How much money did you personally receive from the following sources last month? Please use a dollar amount.	The percentage of personal income that came from public benefits (TANF, Disability/SSI-Disability, Social Security (65+), Unemployment). Sum of ([[Fin_IncSrcPerson] - TANF], [[Fin_IncSrcPerson] - Disability/SSI-Disability], [[Fin_IncSrcPerson] - Social Security], [

			[Fin_IncSrcPerson] - Unemployment]) / Sum of categories for [[Fin_IncSrcPerson]]
% of income from retirement or pension, last month	**Income**	[[Fin_IncSrcPerson]] How much money did you personally receive from the following sources last month? Please use a dollar amount.	The percentage of personal income that came from public benefits (Retirement/Pension). [[Fin_IncSrcPerson] - Retirement/Pension] / Sum of categories for [[Fin_IncSrcPerson]]
% of income from other sources, last month	**Income**	[[Fin_IncSrcPerson]] How much money did you personally receive from the following sources last month? Please use a dollar amount.	The percentage of personal income that came from other sources (Gifts, Loans, Other sources). Sum of ([[Fin_IncSrcPerson] - Gifts], [[Fin_IncSrcPerson] - Loans], [[Fin_IncSrcPerson] - Other sources]) / Sum of categories for [[Fin_IncSrcPerson]]

Table 3. Financial well-being, Psychological Distress, and Physical Functioning

Measure	Domain	Question from Survey	Definition
5-Point Financial Well-Being Scale	**Financial Well-Being**	[FW_1] How well does this statement describe you or your situation? [FW_2] How often does this statement apply to you?	Self-reported scale for how well participants perceive themselves doing financially. There are not categorical cut-offs and the scoring varies based on whether the participant is 18-61 or 62+. More on scoring can be found here: https://files.consumerfinance.gov/f/documents/bcfp_fin-well-being_short-scorecard.pdf
Emergency Expense **Emergency_exp_c**	**Financial Well-Being**	[Fin_Emergency] Suppose that you have an emergency expense that costs $400. Based on your current financial situation how would you pay for this expense? Select one.	A constructed indicator variable for whether a participant can cover an unforeseen $400 expense using cash or credit. If [Fin_Emergency] = "Pay using cash" or "Pay using a credit card paid in full" then [Emergency_exp_c e] = 1; Else [Emergency_exp_c = 0]
Types of debt	**Financial Well-Being**	[Debt] Please list how much you personally owe in the following categories:" Mortgage or house note Past due utility bills Medical bills Bank loan Payday loan or cash advance Loans from family, friends, or employer	The types of debt (if any) that a participant reports amounts for. Fin_Debt_House Fin_Debt_Util_WX Fin_Debt_Med_WX Fin_Debt_BkLoan_WX Fin_Debt_Advance_WX Fin_Debt_FamLoan_WX Fin_Debt_Other_WX Fin_Debt_VehLoan_WX Fin_Debt_Cred_WX Fin_Debt_PersStudLoan_WX Fin_Debt_FamStudLoan_WX

		Other debts	
		Vehicle loans	
		Credit cards	
		Student loans for myself	
		Student loans for my family members	
% of income used for rent or mortgage payments **Hsg_RentAmt**	**Financial Well-Being**	[Fin_IncAmtHHAnn_c [Hsg_RentAmt]] How much do you pay for rent or mortgage each month?	The percentage of total household income spent on rent or mortgage payments. [Hsg_RentAmt]]*12/[Household income, annual]
Savings **Fin_Savings**	**Financial Well-Being**	[Fin_Savings] How much money do you have saved? Select one.	The amount of savings a participant reports having. 1 = $0-$50 2 = $51-$100 3 = $101-$200 4 = $201-$300 5 = $301-$400 6 = $401-$500 7 = $501-$1000 8 = More than $1000

Financial Situation LE_FinSit	Financial Well-Being	[LE_FinSit] What is the current financial situation in your household? 'Just managing' means having just enough money to be able to pay the absolute minimum necessary costs of living.	The self-reported financial situation for a household. 1 = I am going into debt 2 = I am living on my savings 3 = I am just managing 4 = I have a bit of money left over 5 = I have enough left to be able to save 6 = I do not know 7 = I prefer not to say
Psychological distress K10_*	Psychological Distress	[K10] The following questions ask about how you have been feeling during the past 30 days. For each question, please select the option that best describes how often you had this feeling.	The self-reported amount of psychological distress for participants based on the Kessler 10 scale. Score is constructed by summing each of the 10 responses in the K10 scale (where None of the Time = 1 and All of the Time = 5) If sum of [K10] between 10-15, inclusive, then [Psychological distress] = 1 (Low level of psychological distress); Else sum of [K10] between 16 and 21, inclusive, then [Psychological distress] = 2 (moderate level of psychological distress); Else sum of [K10] between 22 and 29, inclusive, then [Psychological distress] = 3 (high level of psychological distress); Else sum of [K10] between 30 to 50, inclusive, then [Psychological distress] = 4 (very high level of psychological distress)
Physical Cause to Psychological Distress K10phys	Psychological Distress	[K10phys] During the past 30 days, how often have physical health problems been the main cause of these	A scale for how often the feelings measures in K10 are caused by physical issues. 1 = All of the time 2 = Most of the time 3 = A good bit of the time 4 = Some of the time 5 = A little of the time

		feelings?	6 = None of the time
# of Doctors Visits K10med	**Psychological Distress**	[K10med] During the past 30 days, how many times did you see a doctor or other health professional about these feelings?	Count of the number of times an individual has visited a doctor or other health professional based on K10 responses.
General Health	**Physical Functioning**	[SF_HealthGen] In general, would you say your health is: [SF_Health] How TRUE or FALSE is each of the following statements for you?	General health, measured from a 0 to 100 scale. 100 indicates positive outcomes.
Physical functioning	**Physical Functioning**	[SF_HealthLim] The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?	The self-reported physical function for participants is based on the SF-36. Each response is scored as 0 (Yes, limited a lot); 50 (Yes, limited a little); or 100 (No, not limited at all). Averages closer to 100 indicate better physical functioning while averages closer to 0 indicate worse physical functioning.
Role limitations due to physical health	**Physical Functioning**	[SF_Phys] During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?	A set of indicators for whether a person's physical health affected their work or other activities. 100 indicates (e.g., more No's) positive outcomes.
Perceived Stress PS_*	**Psychological Distress**	[PS_*] The questions in this section ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by selecting how often you felt or thought a certain way.	Self-reported perceived stress for respondents. Two questions (In the last month, how often have you felt that you were unable to control the important things in your life? and In the last month, how often have you felt difficulties were piling up so high that you could not overcome

			them?) should be reverse coded. Scaling directly from the full survey, 0-5 indicates low stress; 6-10 indicates moderate stress; 11-16 indicates high stress.

Table 4. Housing and Food Security

Measure (Variable Name)	Domain	Question from Survey	Definition
Food Insecurity HHFI_*	**Food Security**	[HHFI_Insuf] In the past four weeks, did you worry that your household would not have enough food? [HHFI_Pref] In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources? [HHFI_NotPref] In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food? [HHFI_Less] In the past four weeks, did you or any other household member have to eat less in a day because there was not enough food?	A measure of whether a household experienced food insecurity. If [HHFI_Insuf] = "Yes" or [HHFI_Pref] = "Yes" or [HHFI_NotPref]] = "Yes" or [HHFI_Less] = "Yes" then [Food Insecurity] = 1; Else [Food Insecurity] = 0
Housing type Hsg_Status	**Housing Security and Quality**	[Hsg_Status] What is your housing status? Select one.	The type of housing a participant has. 1 = Renter 2 = Homeowner 3 = Rent-to-own 4 = Living in a Public Housing Authority building 5 = Living with friends or family 6 = Other housing status 7= Homeless
Evicted Hsg_Evict	**Housing Security and Quality**	[Hsg_Evict] How many times have you been evicted from your home in the past 6 months?	To create an indicator for whether a participant was evicted in the last six months:

			If [Hsg_Evict]] > 0 then [Evicted] = 1; Else [Evicted] = 0
Mortgage Default Hsg_MortDefault]	**Housing Security and Quality**	[Hsg_MortDefault] How many times have you received a mortgage default notice in the past 5 years?	To create an indicator for whether a participant received a mortgage default notice in the past five years: If [Hsg_MortDefault] > 0 then [Mortgage Default] = 1; Else [Mortgage Default] = 0
Household Chaos CHAOS_*	**Housing Security and Quality**	[CHAOS] For each statement below, please indicate how much each statement describes your home environment.	Scores for the CHAOS scale range from 15-60. Following past research (i.e., not the user manual), households are grouped into four categories: <25 = low household chaos; 25-30 = moderate/low chaos; 31-35 = moderate/high chaos; > 35 = high chaos

Table 4. Sense of Self

Measure (Variable Name)	Domain	Question from Survey	Definition
Adult Hope Scale **AH_***	**Hope; Ability to Set and Meet Goals**	[AH] Read each item carefully. Using the scale shown below, please select the response that best describes YOU. (Scale: Definitely False (1), Mostly False (2), Somewhat false (3), Slightly false (4), Slightly True (5), Somewhat true (6), Mostly True (7), Definitely True (8))	Self-reported scale for how much adults perceive having hope for the future. Scores of 40-48 indicate that adults are hopeful, 48-56 are moderately hopeful, and 56 or higher are high hope (presumably not inclusive of the top number). Item scoring is 1 (definitely false) to 8 (definitely true).
Work Life Balance	**Agency; Ability to Set and Meet Goals**	[LE_Comm] Considering your commitments at and outside of work, on a scale from 1 to 5, where 1 means "strongly disagree" and 5 means "strongly agree," how much do you agree or disagree with the following statement? I often find it difficult to fulfill my commitments outside of work (such as chores or care of children) because of the amount of time I spend working.	Self-reported difficulty in ability to fulfill commitments outside of work. 1 = Strong Disagree 2 = Disagree 3 = Slightly Agree 4 = Agree 5 = Strongly Agree 6 = Prefer not to Answer

Adult Mattering AM_*	Perception of relationships with other people	[AM] Below are a series of statements that represent feelings toward other people. Think about your relationships with other people in general and indicate the degree to which each statement is in line with these relationships. When you respond to these statements, do not think of specific people in your life; rather, try to focus on everyone in general (your parents, family, friends, teachers, team members). Think of all these people as a whole when responding to these items.	Self-reported scale for how much adults interact with the people around them and how they perceive their impression on others. Item scoring is 1 (Strongly Disagree) to 5 (Strongly Agree).

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