

Project Title: Increasing SNAP Enrollment Among Eligible Medicaid Beneficiaries: A Randomized Controlled Trial Pilot Study

Registration Number: AEARCTR-0017545

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Version: 1.0

Date: April 2, 2026

Executive Summary

This pre-analysis plan describes a four-arm household-randomized controlled trial testing interventions to increase SNAP enrollment among Connecticut Medicaid beneficiaries who are likely eligible for but not currently enrolled in SNAP. Over a 5-month period (April through August 2026), we will randomize approximately 200,000 households in a 15:1:1:3 ratio to: (1) Control (business-as-usual communications, N=150,000), (2) Information via SMS messaging (N=10,000), (3) Information via SMS messaging + application assistance (N=10,000), or (4) Information via SMS messaging + application modernization (N=30,000).

Primary Hypothesis: All intervention arms will significantly increase SNAP enrollment rates within 6 months compared to control, with information paired with assistance producing larger enrollment effects than information alone, and the information + application modernization producing the largest increase in enrollment.

Primary Outcome: Binary indicator for any SNAP enrollment within 6 months of randomization, measured via Connecticut Department of Social Services administrative data.

Secondary Outcomes: Duration of SNAP enrollment over 12 months; enrollment at alternative timepoints (within 3-months, within 12-months); cost per additional enrollment; heterogeneous effects by demographics and message variations.

Statistical Approach: Intention-to-treat analysis using individual-level OLS regression with cohort fixed effects (e.g., week of randomization), household-clustered standard errors, and pre-specified baseline covariate adjustment (to improve precision). The study is powered to detect minimum effects of 0.6 percentage points (11% relative increase) for Arm 4 vs. Control and 0.9 percentage points (18% relative increase) for either Arm 2 or Arm 3 vs. Control, both at 80% power with $\alpha=0.05$ (two-sided).

This pilot study will inform the design of a subsequent large-scale RCT evaluating causal effects of SNAP enrollment on health outcomes, healthcare utilization, and Medicaid spending. Specifically, this pilot evaluates the strength of the first stage (enrollment) for the large-scale RCT.

1. Introduction

1.1 Background

The Supplemental Nutrition Assistance Program (SNAP, formerly food stamps) provides nutrition assistance to millions of low-income Americans annually. Despite high eligibility rates among Medicaid beneficiaries, substantial gaps exist between SNAP eligibility and enrollment. Specifically in Connecticut, the broad-based categorical eligibility (BBCE) program allows households to qualify for SNAP with gross income under 200% of the Federal Poverty Level, creating substantial overlap between Medicaid and SNAP eligibility. Administrative data from Connecticut in recent years indicate that approximately 250,000 Medicaid-enrolled households may be eligible for but not enrolled in SNAP. This represents a critical gap in safety net coverage, as SNAP benefits average \$180 per person per month and may alleviate food insecurity, improve health outcomes, and reduce healthcare utilization.

Research demonstrates that information barriers and application complexity may be the primary drivers of low take-up among eligible populations. Further, behavioral interventions including informational messaging and application assistance have shown promise in increasing enrollment in other benefit programs. However, evidence on effective SNAP outreach strategies remains limited, particularly for working-age Medicaid populations and in the context of modern digital communication channels.

1.2 Study Objectives

Primary objective: To evaluate the effectiveness of different low- to moderate-cost intervention strategies (informational messaging alone versus informational messaging plus application assistance versus informational messaging and a modernized application) in increasing SNAP enrollment among Connecticut Medicaid beneficiaries who are likely eligible for but not currently enrolled in SNAP.

Secondary objective: Inform the design of a subsequent large-scale RCT evaluating the impact of the SNAP on health outcomes by empirically determining first-stage enrollment effects that determine required sample size, feasibility of implementation at scale, and optimal messaging strategies and content.

2. Study Design and Randomization

2.1 Study Design Overview

This study is a **four-arm**, parallel-group, household-randomized controlled trial designed to evaluate the effectiveness of different outreach strategies in increasing SNAP enrollment among eligible Connecticut Medicaid beneficiaries.

Study Setting: Connecticut Medicaid

Study Arms:

- **Arm 1 (Control)**
- **Arm 2 (Information)**
- **Arm 3 (Information + Assistance)**
- **Arm 4 (Information + Modernization)**

Randomization: Household-level randomization in a 15:1:1:3 ratio (Arm 1: Arm 2: Arm 3: Arm 4). Randomization occurs weekly over a 5-month intervention period, generally excluding the first and last week of every month.

Study Period: Intervention period over 5 months. Primary outcome assessment over 6 months post-intervention. Secondary outcomes assessed up to 12 months after intervention.

2.2 Study Population and Eligibility Criteria

Target Population: Connecticut Medicaid heads of household aged 18-64 who are likely eligible for SNAP but not currently enrolled (plus all Medicaid beneficiaries within those households).

Inclusion Criteria (all must be met):

1. The head of household (as defined by DSS) is currently enrolled in Connecticut Medicaid at time of randomization. The head of household must be enrolled in a Medicaid eligibility category (Husky D - able-bodied adult without dependent or Husky A - Parent/Caretaker relative) indicating their household income is below the SNAP eligibility limits.
2. The head of household was also enrolled in Medicaid 6 months prior to randomization and in a qualifying eligibility group.
3. No household member is currently enrolled in SNAP or was enrolled within 12 months prior to randomization. No household member had a denied SNAP application within the previous 12 months.
4. The head of household is between the ages of 18 and 64.
5. The Household has not been previously randomized to a treatment arm in an earlier cohort.
6. The head of household has a valid mobile phone number in DSS systems.

Exclusion Criteria (excluded in any of the following are true):

1. Current or recent (within 12 months prior) SNAP enrollment or application submission by any household member.
2. The head of household has opted out of DSS communications.
3. The head of household belongs to multiple unique Medicaid cases.
4. The head of household's phone number is used by another distinct head of household.

2.3 Sample Size and Statistical Power

Total Sample Size: 200,000 households randomized over 5 months.

Allocation:

- Arm 1 (Control): 150,000 households (75%)
- Arm 2 (Information): 10,000 households (5%)
- Arm 3 (Information + Assistance): 10,000 households (5%)
- Arm 4 (Information + Modernization): 30,000 households (15%)

Power Calculations: The study is powered to detect minimum detectable effects (MDEs) of:

- **Arm 2 or Arm 3 vs. Control:** 0.9 percentage points (19% relative increase from assumed 5% baseline) with 80% power at $\alpha = 0.05$ (two-sided)
- **Arm 4 vs. Control:** 0.6 percentage points (11% relative increase from assumed 5% baseline) with 80% power at $\alpha = 0.05$ (two-sided)

Assumptions: Power calculations assume baseline SNAP enrollment rate of 5% in the control group (based on historical Connecticut administrative data 2018-2019, pre-COVID), simple random assignment, no clustering beyond household level.

The 15:1:1:3 allocation ratio was selected to maximize statistical power while remaining within operational and budgetary constraints given Connecticut Foodshare's capacity to provide application assistance to approximately 300 additional applicants per month (1,200 over 4 months in Arm 3) and Connecticut DSS capacity to process approximately 1000 additional SNAP applications per month without overwhelming eligibility determination systems. The larger allocation to the modernization arm (Arm 4) reflects our hypothesis that enrollment effects will be largest within this group and that it is not as prohibitively costly as providing application assistance.

2.4 Randomization Procedures

Randomization Unit: Household (as defined by DSS administrative records linking Medicaid beneficiaries who reside at same address and report being members of same household unit)

Randomization Schedule:

- **Each week, excluding first and last weeks of each month:**
 - The research team identifies eligible households and conducts randomization
 - DSS sends out SMS communications according to randomization assignments
- **First and last week of each month:** No interventions are randomized as DSS experiences high incoming application request volume at month-end and month-start.
- The process will repeat over a 5 month period until approximately 200,000 units have been randomized across the 4 arms of the trial.

Randomization Procedure:

1. **Eligibility Determination:** At the beginning of each week, the research team identifies current Medicaid enrollment and SNAP enrollment from DSS systems and applies the inclusion/exclusion criteria to identify eligible households.
2. **Exclusion of Previously Randomized:** Any household randomized in a previous monthly cohort is excluded from current week's randomization to ensure each household is randomized only once.
3. **Random Number Generation:** Each eligible household is assigned a pseudorandom number using a pseudorandom number generator.
4. **Rank and Allocation:** Households are sorted by random number. The first 850 are assigned to Arm 2 (Information), the next 850 are assigned to Arm 3 (Information + Assistance), the next 2,550 are assigned to Arm 4 (Information + Modernization) and the remainder (up to 12,750) are assigned to the control group for that week. If > 17,000 households are eligible in a given week, the excess is withheld from randomization and potentially targeted in the following week.
5. **Within-Arm Randomization to Message Variations:** Within Arm 4, households are further stratified to receive specific message variations (content) using the same random number generation and sorting procedure in the previous step. Within Arm 4, sorted by the pseudorandom number, the first 850 receive variant 1, the second 850 receive variant 2 and the last 850 receive the third message variant.
6. **Quality Control:** After randomization, the research team checks balance on key baseline characteristics (age, gender, Medicaid eligibility category) to validate the randomization procedure.
 - a. The research team will insert dummy records (sent to members of the research team) into each intervention arm every week to validate that messages are sent successfully and are correctly aligned with the intended intervention. If there are any operational problems which cause interventions to be unsuccessful, that week will be noted and analyses will be conducted excluding all households targeted during the problematic weeks.
7. **Documentation:** Complete randomization roster (household ID, assigned arm, message variation, randomization date) are saved.

2.5 Study Arms and Interventions

Arm 1: Control (N = 150,000 households)

Participants receive standard "business-as-usual" communications from Connecticut Department of Social Services. No additional outreach or intervention beyond normal DSS program operations are sent to households. Participants remain eligible to apply for SNAP independently or seek application assistance through existing channels. While DSS does not specifically message Medicaid beneficiaries about enrolling in SNAP benefits, these beneficiaries may receive communications, from DSS or other sources, related to changes in SNAP (e.g., due to upcoming work requirement changes from H.R.1) which could be viewed as "informing" beneficiaries about the existence of the SNAP program.

Arm 2: Information (N = 10,000 households)

Participants receive SMS text messages from Connecticut DSS informing them of likely SNAP eligibility and providing application information. The message text was developed in collaboration with Connecticut DSS communications staff to ensure clarity, cultural appropriateness, and effectiveness. All messages are approximately 160-300 characters and include opt-out instructions. See Appendix A for exact messages. The message will be sent from official Connecticut DSS phone numbers delivered via DSS automated SMS messaging systems during normal hours (8 AM - 8 PM). Messages are translated in Spanish. Members will receive a Spanish communication if their language preference indicates Spanish, otherwise messages will be sent in English.

Arm 3: Information + Assistance (N=10,000 households)

Participants receive SMS text messages identical or similar to Arm 2, plus contact information for Connecticut Foodshare, which provides free SNAP application assistance. Connecticut Foodshare is a non-profit member of Feeding America with trained staff and volunteers specializing in SNAP application assistance. Staff complete training on SNAP eligibility rules, application procedures, confidentiality requirements, and cultural competency. Members will receive a Spanish communication if their language preference indicates Spanish, otherwise messages will be sent in English.

Assistance Services:

- Explanation of application process and requirements
- Help gathering required documentation (proof of identity, income, residency, household composition)
- Assistance completing application forms with participant
- Submission of application to Connecticut DSS on participant's behalf
- Follow-up on application status if needed

Assistance Delivery:

- Participants who respond to messages expressing interest or who call Connecticut Foodshare number are connected with trained assistance staff
- Provided by phone (no in-person meetings required)
- Available in English or Spanish based on participant preference
- Entirely voluntary; participants can decline at any time without consequences
- Typically 30-45 minutes per participant (duration varies based on complexity)
- Available throughout study period during normal business hours (Monday-Friday, 9am-5pm)

Arm 4: Information + Application Modernization (N=30,000 households)

Participants receive SMS text messages identical or similar to Arm 2 but are directed to apply for SNAP benefits using a modernized and streamlined and mobile-friendly application experience. Applicants will also be able to request basic assistance when filling out their application and will receive standard support (i.e., reminders to schedule or complete their SNAP interview) throughout the application process. We will test three variants of initial text messages within this treatment arm. See Appendix A for exact messages.

3. Outcome Measures

3.1. Primary Outcome

SNAP Enrollment within 6 Months: A binary indicator at the individual level equal to 1 if the beneficiary enrolls in SNAP at any point during the 6-month period following intervention and 0 otherwise.

Data Source: Connecticut DSS administrative databases, which maintain comprehensive electronic records of all SNAP data including enrollment start dates, benefit amounts, and household composition. These data are already collected for program administration, federal reporting, and benefit distribution, ensuring high accuracy and completeness. The data capture all SNAP enrollments in Connecticut regardless of how individuals applied (online, in-person, by phone, or through assistance partners).

Operationalization: The intervention date is defined as the date when the household is scheduled to receive a text message from DSS. The 6-month follow-up period begins on the intervention date and extends for exactly 180 days (approximately 6 months).

3.2 Secondary Outcomes

Duration of SNAP Enrollment: Measured as the number of months beneficiary is enrolled in SNAP during the 12-month period following intervention. This continuous outcome variable ranges from 0 months (never enrolled during follow-up period) to 12 months (enrolled for entire follow-up period). The outcome is calculated by counting the number of calendar months in which the beneficiary has at least one day of SNAP enrollment recorded in Connecticut DSS administrative data. This outcome provides important information beyond binary enrollment measures by distinguishing between interventions that produce faster time-to-enrollment versus those where beneficiaries may take longer to obtain SNAP eligibility but eventually become eligible for SNAP.

SNAP Enrollment at Alternative Timepoints: Binary indicators for enrollment within 3 months and within 12 months post-intervention, analyzed as sensitivity analyses to primary within 6 month outcome.

Enrollment Outcomes by Message Variations: Binary enrollment within 3/6/12 months stratified by message variations within Arm 4 to identify optimal messaging strategies.

Application Approval Rate and Benefit Allotment: The share of submitted SNAP applications which are successfully approved and lead to benefits as well as the amount of benefits received conditional on SNAP eligibility.

Cost per Additional Enrollment: Calculated by dividing total intervention costs (components below) by number of additional SNAP enrollments attributable to each intervention arm relative to the control group.

4. Statistical Analysis Plan

4.1 Primary Identification

Intention-to-Treat Analysis: All primary and secondary analyses will follow an ITT design, analyzing participants according to their randomized assignment regardless of intervention receipt, adherence, or engagement. Sensitivity and robustness analyses will use two-stage-least squares analyses to address non-adherence.

Statistical Model: Individual-level ordinary least squares (OLS) regression:

$$Y_i = \phi_{c(i)} + \beta_2 Z_{i2} + \beta_3 Z_{i3} + \beta_4 Z_{i4} + \delta X_i + \epsilon_i$$

where:

- Y_i is the outcome (e.g., any SNAP enrollment within 6 months) for participant i
- $\phi_{c(i)}$ are randomization cohort fixed effects (e.g., weekly cohorts)
- Z_{i2} is a binary indicator for assignment to Arm 2 (Information)
- Z_{i3} is a binary indicator for assignment to Arm 3 (Information + Assistance)
- Z_{i4} is a binary indicator for assignment to Arm 4 (Information + Modernization)
- β_2 is the treatment effect for Arm 2 vs. Control
- β_3 is the treatment effect for Arm 3 vs. Control
- β_4 is the treatment effect for Arm 4 vs. Control
- X_i is vector of baseline covariates
- ϵ_i is the individual error term

Standard Errors: Clustered at household level.

Model Specifications:

Two models will be estimated:

1. **Unadjusted:** Treatment indicators and cohort fixed effects only
2. **Covariate-Adjusted (Primary):** Model 1 plus baseline covariates X_i to improve precision.

Baseline Covariates (X_i):

- Age, calculated at the date of randomization
- Gender, categorical (e.g., male, female, other)

- Medicaid eligibility category, categorical (e.g., parents/caretakers, children, expansion adults)
- Chronic condition indicators (binary indicators for: diabetes, cardiovascular disease, hypertension, asthma/COPD, mental health disorders, substance use disorders). Measured from Medicaid claims within 6-12 months prior to randomization.
- Location (e.g., ZIP or town of residence)
- Prior healthcare utilization and spending (e.g., ED visits, hospitalizations, total medicaid spending per-member-per-month)

Primary Hypothesis Tests:

Three primary hypothesis tests using two-sided t-tests with $\alpha=0.05$:

- $H_0: \beta_2 = 0$ (no effect of the Information intervention relative to control)
- $H_0: \beta_3 = 0$ (no effect of the Information + Assistance intervention relative to control)
- $H_0: \beta_4 = 0$ (no effect of the Information + Modernization intervention relative to control)

Multiple testing approach: We will **not adjust** for multiple comparisons across these tests for the primary outcome. These represent three distinct, policy-relevant questions specified a priori as primary comparisons. Each addresses a different intervention strategy with independent operational implications. All comparisons are tested at $\alpha=0.05$ (two-sided) and reported with exact p-values and 95% confidence intervals. Results for secondary comparisons will be reported with the Bonferroni correction to account for multiple testing.

4.2 Exploratory Subgroup analyses

For each pre-specified subgroup g in which we have partitioned the data based on a characteristic S , we estimate:

$$Y_i = \phi_{c(i)} + \delta_{2g(S)}(Z_{i2} * S_i) + \delta_{3g(S)}(Z_{i3} * S_i) + \delta_{4g(S)}(Z_{i4} * S_i) + \theta_g * S_i + \delta X'_i + \epsilon_i$$

where:

- S_i is an indicator (or set of fixed effect indicators for multi-category subgroups) for subgroup membership
- $\delta_{2g(S)}$, $\delta_{3g(S)}$ and $\delta_{4g(S)}$ measure the differential treatment effects across subgroups within that characteristic relative to the control arm for that subgroup.
- X_i is vector of baseline covariates, excluding the subgroup characteristic S

Hypothesis test: For each subgroup:

- $H_0: \delta_{2g(S)} = 0$ (no heterogeneity in Arm 2 effect across subgroup)
- $H_0: \delta_{3g(S)} = 0$ (no heterogeneity in Arm 3 effect across subgroup)

- $H_0: \delta_{4g(S)} = 0$ (no heterogeneity in Arm 4 effect across subgroup)

Multiple testing approach: Estimates will be reported with the Bonferroni correction to account for multiple testing.

4.2.1 Pre-Specified Subgroups

We will potentially examine heterogeneous treatment effects across following subgroups, all defined using baseline (pre-randomization) characteristics:

- 1. Head of Household Age Categories:** Age 18-30 (Young adults); Age 31-45 (Middle-aged adults); Age 46-64 (Older working-age adults)
 - a. Rationale:** Younger adults may be more responsive to SMS-based interventions due to greater familiarity with text messaging. Prior research focused exclusively on elderly populations (Finkelstein & Notowidigdo, 2019); testing effects across age groups addresses external validity.
- 2. Gender:** Male or Female
 - a. Rationale:** Gender may proxy for differential responsibilities (caregiving, household food provisioning) or differential information channels affecting responsiveness.
- 3. Medicaid Eligibility Categories:** Parents and Caretaker Relatives (adults with dependent children, income <185% FPL); Children (individuals under 18 in households with income <185% FPL); Medicaid Expansion Adults (able-bodied adults without dependents, income <138% FPL)
 - a. Rationale:** Eligibility categories proxy for different household structures, economic circumstances, and motivations for SNAP enrollment. SNAP enrollment effects and motivation may differ for adults with and without children.
 - b. Note:** Children not targeted for interventions (only adult heads of household receive messages), but we measure household-level enrollment effects.
- 4. Nutrition-sensitive chronic conditions** Diabetes (ICD-10 E08-E13); Cardiovascular disease (ICD-10 I20-I25, I50, I60-I69); Hypertension (ICD-10 I10-I15); **Other chronic conditions** Asthma/COPD (ICD-10 J44-J45); Mental health disorders (ICD-10 F20-F48); Substance use disorders (ICD-10 F10-F19)
 - a. Subgroup definitions:** Any nutrition-sensitive chronic condition (Yes/No); Any chronic condition (Yes/No); Number of chronic conditions (0, 1, 2, 3+); Specific condition indicators
 - b.** All identified from Medicaid claims data in 6-12 months prior to randomization.
 - c. Rationale:** Individuals with nutrition-sensitive chronic conditions may be particularly motivated given potential health benefits of improved nutrition for disease management. These individuals could be primarily targeted for subsequent large-scale RCT evaluating health outcomes.
- 5. Household Composition:** Household size (1, 2-3, 4+ Medicaid beneficiaries); Presence of children (Any household member age <18 (Yes/No)); Single adult household (Exactly 1 adult age 18+ (Yes/No))

- a. **Rationale:** Household composition affects SNAP benefit amounts and may affect motivation, application complexity, and ability to gather documentation.
- 6. **Prior Healthcare Utilization:** Emergency department visits (0, 1, 2, 3+ in prior 6 months); Inpatient hospitalizations (0, 1+ in prior 12 months); Total Medicaid spending (quantiles)
 - a. **Rationale:** Prior utilization may proxy for health status, complexity of conditions, and engagement with the healthcare system. High utilizers may benefit most from SNAP enrollment if food insecurity contributes to acute care use.
- 7. **Geographic Region:** Urban (Hartford, New Haven, Bridgeport, Stamford counties); Suburban (Fairfield, Middlesex, New London counties); Rural (All other counties)
 - a. **Rationale:** Urban/rural differences in access to assistance providers, SNAP retailers, transportation, and social services may moderate intervention effectiveness.
- 8. **Duration of Previous Medicaid Enrollment:** 6-12 months; 13-24 months; 25-36 months; 37+ months (3+ years)
 - a. **Rationale:** Longer-enrolled beneficiaries may be more stable and receptive to information about additional benefits. Alternatively, newly enrolled beneficiaries may be actively seeking all available assistance and will eventually get onto SNAP without additional prompting.

4.3 Attrition and Non-Compliance

4.3.1 Overview

This study involves minimal attrition from outcome measurement because the primary outcomes are measured via administrative data available for all participants regardless of intervention receipt. However, we may face non-compliance where participants do not receive the assigned intervention due to bad phone numbers or non-delivery of messages.

Non-compliance scenarios:

1. Message non-delivery (wrong number, disconnected, blocking)
2. Message opt-out (reply STOP). This would cause non-compliance with receipt of potential reminder messages after receiving the initial contact message

Attrition Scenarios:

1. Members move out of state
2. Members die during the outcome period

Given the nature of low-touch informational text messages, we do not expect the messages to have an impact on either of these reasons for attrition. The randomized design thus ensures that the presence of attrition within our sample would be balanced across treatment arms.

4.3.2 Instrumental Variables (2SLS) Analysis: Compliance-Adjusted Effects

To complement our primary ITT specification, we will conduct instrumental variables (IV) analyses to estimate the effect of actually receiving the intervention message among compilers. Because individuals in the control group do not receive messages, we cannot identify the members who would have had message failures had they been assigned to treatment arms. Thus excluding individuals with failed message receipt jeopardizes the randomized balance across treatment arms if particular groups of individuals are more likely to have bad phone numbers.

The instrumental variables analysis will use a two-stage estimation procedure in which the first stage evaluates the impact of assigning treatment to individual i (Z_i) on receipt of that actual treatment by the individual (D_i). With three treatments indexed by j (Arm 2, Arm 3, Arm 4), we will estimate the following three first-stage equations (allowing for Arm 1, the control arm, to be the omitted treatment group):

$$D_{2i} = \phi_{2c(i)} + \beta_2 Z_{2i} + \delta_2 X_i + \epsilon_{2i}$$

$$D_{3i} = \phi_{3c(i)} + \beta_3 Z_{3i} + \delta_3 X_i + \epsilon_{3i}$$

$$D_{4i} = \phi_{4c(i)} + \beta_4 Z_{4i} + \delta_4 X_i + \epsilon_{4i}$$

We use these first stage regressions to predict receipt of each intervention $\hat{D}_{2i}, \hat{D}_{3i}, \hat{D}_{4i}$ for each individual and estimate the second equation using these predicted treatment receipts:

$$Y_i = \phi'_{c(i)} + \sum_{j=2}^4 \gamma_j \hat{D}_{ji} + \delta' X_i + \epsilon'_i$$

This two-stage instrumental variables strategy results in estimates, γ_j , of treatment effects for each intervention (relative to the omitted control arm) which account for non-compliance and leverage the random assignment to provide unbiased estimates of intervention effects.

4.4 Additional Sensitivity Analyses

Alternative Model Specifications:

- Logistic regression for primary and secondary binary outcomes.

Robustness Checks:

- Exclude participants who disenroll from Medicaid during follow-up
- Exclude knowingly deceased participants

5. Balance Checks and Randomization Verification

5.1 Baseline Balance Assessment

Balance Table: We will present means and standard deviations for baseline characteristics by study arm, including demographics (age, gender, household size); Medicaid information (eligibility category, enrollment duration); health status (chronic conditions), and health care utilization and spending (e.g., Medicaid spending in prior 6 months).

For each characteristic we will present the results of a bivariate linear regression to test for differences in the average value (or prevalence for binary characteristics) across treatment groups. We will report coefficients and standard errors for the differences relative to the control group (Arm 1) as well as the p-value for a test of no differences in that average value across any of the 4 intervention arms.

Appendix A

	Arm 2 (Information)	Arm 3 (Information + Assistance)	Arm 4 (Information + Modernization)
Initial Message 1	CT DSS: Hello [FirstName] (Client ID: XXXX). What could more grocery money do for you and your family? You may have unclaimed SNAP benefits waiting for you! Participants get an extra \$190/month on average. Apply for SNAP for FREE online at www.connect.ct.gov Reply OptOutApply to stop SNAP app texts	CT DSS: Hello [FirstName] (Client ID: XXXX). What could more grocery money do for you and your family? You may have unclaimed SNAP benefits waiting for you! Participants get an extra \$190/month on average. Apply for SNAP for FREE online at www.connect.ct.gov Or, visit www.ctfoodshare.org/sms for help with your application. Reply OptOutApply to stop SNAP app texts	CT DSS: Hello [FirstName] (Client ID: XXXX). What could more grocery money do for you and your family? You may have unclaimed SNAP benefits waiting for you! Participants get an extra \$190/month on average. Apply for SNAP for FREE at www.openfrontdoor.com/ydss Reply OptOutApply to stop SNAP app texts
Initial Message 2	N/A	N/A	CT DSS: Hello [FirstName] (Client ID: XXXX). You may have unclaimed SNAP benefits waiting for you! SNAP provides extra money for groceries. 1 in 10 Connecticut neighbors already participate! Apply for SNAP for FREE at www.openfrontdoor.com/ydss Reply OptOutApply to stop SNAP app texts
Initial Message 3	N/A	N/A	CT DSS: Hello [FirstName] (Client ID: XXXX). You may be eligible to get extra money for groceries with SNAP! The application only takes 30 minutes. Apply for SNAP for FREE at www.openfrontdoor.com/ydss Reply OptOutApply to stop SNAP app texts
Reminder	CT DSS: Hello [FirstName] (Client ID: XXXX). This is a reminder that you may qualify for extra grocery money with SNAP. If you haven't yet, apply for SNAP for FREE online at www.connect.ct.gov Reply OptOutApply to stop SNAP app texts	CT DSS: Hello [FirstName] (Client ID: XXXX). This is a reminder that you may qualify for extra grocery money with SNAP. If you haven't yet, apply for SNAP for FREE online at www.connect.ct.gov Or, visit www.ctfoodshare.org/sms for help with your application. Reply OptOutApply to stop SNAP app texts	CT DSS: Hello [FirstName] (Client ID: XXXX). This is a reminder that you may qualify for extra grocery money with SNAP. If you haven't yet, apply for SNAP for FREE at www.openfrontdoor.com/ydss Reply OptOutApply to stop SNAP app texts