



Program Delivery Effectiveness and Health Outcomes of Maternal Cash Transfer Program

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1. Background

In the last couple of decades, cash transfers have been considered an important policy tool used by government, NGOs, and international agencies to alleviate poverty and reduce vulnerability. Cash transfer programs, which today reach between 750 million and 1 billion people, have demonstrated to have wide range of positive effects, including increasing school participation, enabling start of micro-enterprise, and increasing earnings of vulnerable populations.

In the context of Myanmar, a country with 70% rural population living in poverty and where ongoing internal conflict and vulnerability to natural disasters regularly create population of internally displaced people, cash transfer programs has a high potential as to be effective as a social protection mechanism. In addition, cash transfers, with low administrative cost, may be an appropriate option for a country where institutions that are providing public good are already strained with limited resources. Recognizing the potential impact of this approach, The Government of Myanmar (GoM) recently launched a National Protection Strategy that include monthly cash allowances for vulnerable populations, including a cash allowances for mothers and for children under two. Cash allowance is meant to address the healthcare and nutritional needs of the first 1,000 days of life when the proper nutrition has the most potential to have positive impact on the child's physical and cognitive growth. Addressing the healthcare and nutritional needs of a child in utero and during the first two years can have significant impact in Myanmar which has the third highest malnutrition rates in Southeast Asia with 35% of children under five stunted (UNICEF 2013). Nutrition remains a critical intervention area for the country and cash transfer has the potential to address these important issues in the country.

Save the Children (SC), supported by Livelihoods and Food Security Fund (LIFT), is delivering a maternal cash transfer program called Learning, Evidence Generation, and Advocacy for Catalysing Policy (LEGACY), as pilot of a potential implementation of future national policy. The purpose of this research is to evaluate the intended and unintended effects of the program and to assess the efficacy of the different program delivery modalities.

1.1 LEGACY Program

LEGACY program is being implemented in select villages in three townships in the Dry Zone of Myanmar with the aim of improving nutritional status of pregnant women and their children. Select villages in Pakkoku, Yesagyo, and Mahlaing townships will be covered by the program. Pregnant women, in their second and third trimesters, who are permanent residents of the program villages will be invited to enroll in LEGACY program. Program beneficiaries will receive monthly cash transfers of 10,000 kkyat for remainder of their pregnancy and for the first 23 months of the child's life. The monthly cash transfers are meant to facilitate the beneficiaries' purchase of nutritious foods and access to proper healthcare. Beneficiaries enrolled in select subset of villages will receive intensive behavioral change communication (BCC) related to nutrition, infant and young child feeding practices (IYCF), antenatal and postnatal care (ANC, PNC), and child illnesses, in addition to the cash transfers.

A "soft" conditionality will also be applied to encourage close linkages to the health infrastructure and to ensure an adequate dosage of nutrition promotion. This will include attendance at nutrition and hygiene promotion sessions, attendance to ante- and post-natal services, and immunization of children according to the national immunization schedule. However, non-compliance with the soft conditionality does not exclude the beneficiaries from the program.

LEGACY program's cash transfer is scheduled to launch in June 2016 and run until November 2018 with intended over 11,000 mother and child pairs. The program as of now is planned to be implemented in two phases:

- **Phase 1:** will enroll women in the last 6 months of pregnancy in 355¹ villages in the three townships for a maximum of 30 months of cash transfers. The anticipated date of the first cash transfer is June 2016 in these Phase 1 villages. SC expects to enroll about 1,500 pregnant women during the first enrollment month.
- **Phase 2:** will enroll pregnant women in the last 6 months of pregnancy in additional villages for a maximum of 25 months from the last 6 months of pregnancy until the child reaches 19-24 months of age. The number of Phase 2 villages will be determined based on confirmation of enrollment rate in Phase 1 villages. Phase 2 cash transfer is scheduled to launch in October or November 2016 depending also on the enrollment rate during Phase 1.

SC will work with Myanmar Nurses and Midwives Association (MNMA) to enroll women into the program and to deliver BCC programming in the program villages. For the cash delivery, SC will work with PACT Microfinance and its existing network of MFI agents to deliver the cash to the program beneficiaries.

In addition to MNMA and Pact Microfinance, SC is exploring the possibility of involving staff of Ministry of Health (MoH) in Pakkoku Township to enroll program beneficiaries and to deliver the cash. If such arrangement is made, healthcare personnel who are part of MoH health delivery system will be tasked with enrolling women and delivering cash to pregnant women in some randomly selected subset of program villages. This potential module of program delivery will be referred to as "Gov't model" in remainder of the document. SC is also exploring possibility of using mobile money as a cash delivery mechanism. Feasibility of studying program effectiveness (to be discussed later) is contingent one of these arrangements being realized.

2. Review of Evidence and Study Rational

The overall study and in particular the research component of it, has the following broad rational.

1. Effectiveness as Nutrition Intervention

The first objective of the study is to understand the effects of the cash transfers on nutrition outcomes of pregnant mothers and children and to measure any incremental impact of accompanying BCC. With regards to the program's potential impact on nutrition outcomes, the study contributes to a broad existing literature that looks at the effects of cash transfers on children's nutrition. Manley et al (2013) provides a good overview of the impacts of several programs on children's nutritional

¹ This number may reduce based on the confirmation of the enrollment rate in the first villages of enrollment in April 2016. Phase 1 villages have been sub-divided in tranches of enrollment. The enrollment of a new tranche of villages will be conditioned by the total number of pregnant women already enrolled in the previous tranches.

status with a particular focus on height-for-age i.e. the most important indicator of malnutrition. Rigorous evidence on the effects of cash, combined with complementarity activities such as BCC, is lacking. For in-depth review of the existing literature on effect of cash transfer, please refer to feasibility study². Cash transfers, when packaged with BCC on IYCF, hygiene, and health seeking behaviors, has been shown to increase uptake of positive breastfeeding, diet diversity and health care practices in other countries (SCI evaluation in Niger, Ahmed et al. 2009, Ferre' and Sharif, 2014 in Bangladesh) and in SCI's work in Rakhine State in Myanmar (Tat Lan Project). Rigorous study of the TMRI Program in Bangladesh demonstrates that cash alone provides some improvements in child dietary diversity and quality, but it did not significantly decrease stunting rates. Instead, when coupled with BCC, children's stunting decreased significantly, by 8%.

2. Effectiveness as Social Protection Strategy

Moreover, LEGACY program serve as a small-scale demonstration of an intervention that has been proposed as a national social protection strategy. In addition to nutrition outcomes, the study will assess the program's real impact on a wide range of common indicators such as consumption, health care behavior, desired fertility, labor supply, and intra-household bargaining to assess full ramification of the program effects (UNICEF, 2015 for a review on potential effects³). The analysis of these additional outcomes will provide more well rounded understanding of the program's intended and unintended consequences. Evaluating unintended outcomes of maternal cash transfer is crucial as in several settings, cash transfers have been shown to change consumption patterns (Bailey, 2013 for a review of main studies) increase fertility and change contraceptives use (Darney et al 2013, Arenas et al. 2015, Feldman et al 2009, Stecklov G et al 2007), change health care behavior (Glassman et al, 2013 for a review of main studies) and parent's labor supply (Bosh et al. 2012) both in developing and developed countries.

Moreover, as a social protection mechanism, as the LEGACY program is not a targeted cash transfer program, the evaluation will contribute to a small body of empirical evidence on the impacts of universal programs. Most of the past cash transfer programs have been targeted at poor households and thus there is limited evidence on the impact of a universal approach. Additionally, the program will not have any "hard" conditionalities on program participation unlike many health-focused cash transfer programs which make cash contingent on interaction with healthcare system. Thus, the evaluation have chance evaluate how a program without such conditionality, which may be expensive to monitor and administer, may achieve the desired health outcomes.

3. Effects on program effectiveness

If a variation in program delivery is possible, either through implementation of the program in select villages by health personnel of MoH or through cash delivery via mobile money, then the evaluation will be able to assess the program delivery effectiveness of the multiple implementation modules. Understanding the program delivery effectiveness of various models can inform national scale-up of the program.

² "Feasibility study: Technical options to implement a universal maternal and child cash transfer program", prepared for Department of Social Welfare with the support of Save the Children, UNICEF and IGC.

³ UNICEF 2015, Social Cash Transfers and Children's Outcomes

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By “effectiveness of the program”, we are broadly referring to correct management of cash: timely delivery of cash, delivery of cash to eligible beneficiaries, delivery of the right amount of cash. As explained above, two main alternative cash delivery options are under discussion.

If study of Gov’t model is possible, the research will contribute to existing literature on effects of gov’t welfare programs. Past studies have explored local capture in a school system in Uganda (Reinikka and Svensson 2004); targeted welfare programs in Indonesia (Alatas et al. 2013); agriculture and food subsidy programs in Malawi (Basurto et al 2015); and public health subsidies in Uganda, Kenya, and Ghana (Dizon-Ross et al 2015). The literature finds mixed evidence on programs’ effectiveness. Furthermore, it is hard to draw conclusions from existing literature on what kinds of institutions should be involved in the implementation of these welfare programs. We study how the different approaches of delivering cash have impacts on outcomes described above. Overall, the program aims to show effects on program’s effectiveness and inform the Government on the best approach to deliver cash at a national scale, and which institution has capacity to deliver the cash most effectively.

If the program is able to implement mobile money mechanism in such a way that the study can rigorously evaluate the mobile money model, the study will contribute to very limited knowledge on the mobile money delivery of cash transfers. Aker et al. (2011) is one of the few evaluations of a cash transfer program delivered via mobile phones in Niger. The authors show that monthly cash transfers via a mobile money system is the most cost-effective approach, and shows that it has positive impacts on diet diversity, assets and intra-household decision-making. Haushofer and Shapiro (2013) use the well-established M-Pesa platform in Kenya to evaluate impact of unconditional cash transfers via mobile money, but the effects of delivery mechanism is not studied here.

3. Research Study Design and Overall Methodology: **Cash Transfer and Behavioral Change Component**

3.1. Objectives

The overall aim of the main randomized controlled trial (RCT) is to primarily evaluate whether the introduction of cash transfer program reduces prevalence of stunting. Specifically, we will evaluate the effectiveness of cash transfer + minimal behavioral change communication compared to cash transfer + intensive behavioral change communication affect the prevalence of stunting rate of targeted population. In addition, we will look at a broader set of economic outcomes that might inform how the cash affect household decisions and dynamics.

The primary specific objectives of this evaluation are:

- 1) To assess the effect of cash transfer and minimal BCC on the stunting rate of children under two and nutritional status of mothers.
- 2) To determine the additional effect of a heavy BCC component on stunting rate of children and nutritional status of mothers, as compared with minimal BCC.

The secondary specific objectives of this evaluation are:

- 1) To determine the effect of the cash and BCC on self-reported knowledge of infant and young child feeding practices (IYCF), healthcare seeking behavior, and children's dietary diversity within the household.
- 2) To determine whether and how the monthly cash transfer change the household consumption, and labor supply.
- 3) To understand the effect of the cash transfer on the household decision making dynamics and desired fertility.
- 4) To understand spillover effect to existing siblings of the child beneficiaries in the households receiving cash transfers or other children in the household.

Refer to Annex 1, Table 1 for a detailed description of outcomes, indicators, sample and data used.

3.2. Study Design

The study will be implemented in three townships in the Dry Zone of Myanmar: Pakokku, Yesagy and Mahlaing and will last for 30 months. The study area will cover all 355 villages that are slated to be part of Phase 1 enrollment. In addition, 185 villages, not participating in the program, in the three townships will be included in the study. The study will employ randomization-controlled trial (RCT).

The study uses existing Ministry of Health (MoH) healthcare catchment area as units of randomization. Healthcare catchment area covers on average 5-6 villages and could be classified as sub-rural healthcare center, rural-healthcare center or station hospital. This catchment area is already in use by midwives and other healthcare personnel and has been selected on basis of ease of implementation. We refer to the health catchment areas as clusters for rest of this document.

Randomization Process

Starting with all 137 sub-rural health center catchment areas in the three townships, we select 120 clusters that are within two hours from town and thus assessed to be easier for program implementation. We create natural clusters based on closer proximity through Kmean algorithm⁴, and within each group we randomly match group of 3 clusters by closest distance (unique permutations efficient algorithm⁵). 102 clusters were matched to triplets. The remaining 18 clusters were not found to have match within the sample clusters. In each random triplet of clusters, one cluster is assigned to T1, one to T2, and one to Control group. These 102 clusters and corresponding 540 villages are considered part of the study with 355 villages in 68 clusters receiving either T1 or T2. **Please see Annex 2 for diagram of the randomization process.**

Specifically, clusters and villages are randomly assigned as follows:

1. Intervention group 1 (T1 - CASH + BCC): the maternal cash transfer program will be implemented along with intensive BCC. This includes 177 villages in 34 clusters.

⁴ <http://www.mathworks.com/help/stats/kmeans.html> for explanation and code

⁵ <http://www.mathworks.com/> for function code.

2. Intervention group 2 (T2 – CASH + Light advertisement): eligible pregnant mothers will receive a monthly maternal cash transfer and will receive some information through promotional materials on how to use the money received. This includes 178 villages in 34 clusters.

3. Control group (CG – No Intervention): pregnant mothers in areas where no intervention will ever be implemented during the course of the project. This includes 185 villages in 34 clusters.

T1 and T2 are referred to as “Intervention areas” as SC will deliver LEGACY program. Control group will be used for research as part of the study areas, but no cash or BCC/light advertisement will be implemented. SC will work in 68 clusters in 355 villages, reaching about 1531 pregnant women in the initial month of enrollment⁶.

It is important to note that while the LEGACY program will be delivered in two phases, **only the Phase 1 villages (540 villages in 102 clusters) will be part of the research study**. Depending on enrollment numbers of Phase 1, SC will enroll eligible women in Phase 2 villages. Phase 2 villages can be selected from the following options:

- a. Clusters within two hours from the main cities not selected for RCT (about 18 clusters, 82 villages)
- b. Clusters further than two hours away (about 17 clusters, 92 villages)

4. Research Study Design and Overall Methodology: Cash Delivery Modalities and Program Effectiveness

4.1. Objectives

The overall aim of program effectiveness intervention is to monitor and investigate the efficacy and cost-effectiveness of different cash delivery modalities.

The main scope is to measure how the specific modality of delivering cash such as employing the Gov’t model, mobile money or utilizing existing MFI agents in the area (referred to as MFI model) affect program effectiveness measured by inclusion and exclusion of eligible participant, timing of the cash delivery, and receipt of the correct cash transfer amount.

Please look at Annex 1 Table 2 for a detailed description of outcomes, indicators, sample and data used.

4.2. Study Design

Further variation will be introduced to test the efficacy of different modality of cash delivery in the villages who receive the program (“Intervention area”). It is not clear at this point on what may be feasible to implement, but a brief overview of the proposed comparison is outlined below.

OPTION A) MFI vs Gov’t model of cash delivery

⁶ This estimates is an average between expected pregnant women in the last six months of pregnancy between Village survey data collection and listing of women provided by MNMA (please see Section 7 for more details). The final number of villages may differ.

In intervention areas, we plan to randomize half of the villages to cash delivery through the Gov't model, while the other half are assigned to the MFI model. The two treatment arms are the following:

T1 Gov't model: SCI will use gov't health workers to enroll and deliver cash. MNMA will assist the gov't health workers with the process in initial months of the program launch.

T2. MFI model: SCI will instead utilize an existing MFI to deliver the cash. Save will still utilize MNMA to enroll and validate enrollment, but cash will be delivered directly to recipients by MFI agents.

OPTION B) Mobile money cash delivery

In intervention areas, we plan to randomize half of the villages to cash delivery through mobile money, while the other half are assigned to manual cash delivery by MFI agents.

5. Choice of Outcomes and Indicators

Please look at Table 1 for outcomes for “Main intervention”, while Table 2 for potential outcomes from any of the two “Government effectiveness” interventions in Annex 1.

6. Study Participants

The RCT will include women who are immediately eligible to participate in the Legacy program at the initial roll-out of Phase 1. The program eligibility specifies women who are between 4-9 months of pregnancy who are considered to be permanent resident of the village. All eligible women in the RCT area will be invited to participate in the study. The RCT will focus on these initial enrollees as only they have the potential to receive 30 months of cash transfer. These women and their children are expected to receive 24-30 months of cash transfer and expected to exhibit the biggest impact of reducing malnutrition.

In addition, random sample of married women of childbearing age will be invited to participate in the study. These women, may or may not have existing children and have potential to become program participant. This population is necessary for the following main reasons:

- Enough observations on children under 5 will be necessary to compare intervention and control areas and test that before intervention they are comparable (“Baseline balance check”). This will allow us to attribute effects of the program at Midline/Endline only to the intervention, especially in term of health seeking behavior, diet diversity and other children outcomes.
- This population, together with first time beneficiaries, will be studied to look at the overall average effect of the program. We can study effects of the program for all newborn children of beneficiaries, even if they will not receive the full 30 month cash transfer.
- Observations on children under 5 within household of beneficiaries or childbearing women in the village are necessary to investigate whether the program has spillovers effects on other children and among women. We expect not only knowledge, but also practices can be applied from beneficiaries not only to the child the cash transfer is linked to, but also to other children

in the households. Also, they can be passed from beneficiaries to other mothers or women in the village.

The main analysis will be using all the sample (beneficiaries and other child-bearing women) to study the effects of the program (see Table 1 for sample used in each effect).

7. Surveys and Data Collected

7.1. Village Survey

Before starting any household data collection and implementing any intervention, we collected basic information of villages in the three townships. These information have been crucial to gather knowledge about the areas, to conduct the randomization and define details of potential other interventions.

The village survey was conducted in February 2016. We collect village-level data of all rural villages in the three program townships. We interview the Village Administrative Clerk (or the Community Leader), and Government Health Worker or Volunteer in the village. We ask the respondents for basic socio-demographic information; population estimates; main work activities available in the village; prevalence of migration; access to health care services and presence of health workers and responsibilities; existing governmental institutions; the access to markets and foods and town; and existing village infrastructure, such as roads, schools, water, phone coverage, and internet.

In addition, we compiled a list that included all pregnant women in the village and women between 18-40 years of age. The list included the women's age, whether she was pregnant, her marital status, and a names and age of any of her existing children under 5. The list was compiled by midwives at the request of MNMA. Given the lack of administrative data on pregnant women in the village, the list provided the number of pregnant women in the village, which is required for randomization. The list will also inform the type of proportion of childbearing women who will be included in the study as secondary sample.

7.2. Household Surveys

We will implement household surveys at different points in time to collect information from households in different intervention groups. The data collection consists of three sets of data points:

7.2.1. Baseline, scheduled for May 2016

The baseline survey will be conducted on all the pregnant women in the initial enrollment period of Phase 1, estimated at 2,300 in the study area, which includes both control and treatment areas, and a sub-sample of roughly 2,000 non-pregnant women of child bearing age in the study area. Total estimate of about 4,300 women will be interviewed. The baseline will cover the following modules:

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Modules	Description
Household Roster	<ul style="list-style-type: none"> Name, age, gender, education and literacy for all household members Main occupations of household members, working status, type of work, time.
Consumption and Expenditure	<ul style="list-style-type: none"> Consumption information for last 7 days Expenditures for last 12 months
Healthcare Seeking	<ul style="list-style-type: none"> ANC and PNC Delivery information Morbidity
IYCF Awareness and Practice	<ul style="list-style-type: none"> Knowledge about IYCF practice
Food security	<ul style="list-style-type: none"> Household hunger scale
Diet Diversity	<ul style="list-style-type: none"> Household Pregnant women Children
Access to Credit and Debt and Saving	<ul style="list-style-type: none"> Access to sources of credit Existing debts and savings
Decision Making	<ul style="list-style-type: none"> Decision making between spouses regarding household expenditures
Household Characteristic	<ul style="list-style-type: none"> House structure material, assets, durable, phones and internet Hand washing practices
Desired Fertility	<ul style="list-style-type: none"> Family planning preference of the respondent and her partner (as reported by the respondent) Family planning use
Anthropometric Measurements	<ul style="list-style-type: none"> MUAC of pregnant women and mothers Height and weight measurements for existing children (under 5)

[7.2.2. Midline, scheduled 12-14 months after intervention.](#)

Estimate of 2,300 initial enrollees (who were pregnant) would be tracked and interviewed both in treatment and control areas.

[7.2.3. Endline, scheduled to launch November/December 2018](#)

Endline will be administered after receipt of 24-30 months of cash delivery. The original baseline sample will be tracked and interviewed. Data will be collected on same modules as the Baseline. Additionally, we will also ask the program beneficiaries their experience of cash delivery (whether she received the full amount and received the money in timely manner) and her use of cash. Anthropometrics of existing children under 5, including children born of women who were pregnant at time of baseline, will be taken.

The baseline will be mainly used to establish equivalence between Control and Treatment areas (“Baseline balance check”). In addition data from the baseline survey will be used in the analysis as a control if any unbalance exists between interventions and control areas.

8. Sample Size

1. Cash Transfer and BCC

In this evaluation, the catchment areas for sub-rural health centers serve as the unit of randomization. A minimum number of approximately 102 health catchment areas (referred to as clusters) is needed to detect a reduction in 8 percentage points difference in the mean stunting rate of children over a 30 months period (from 35% to 27%). For the calculation⁷, we assume power at 0.8, alpha at 0.05, and intra cluster correlation at 0.03. Power calculations require a minimum of 21 women per clusters at baseline to detect the same 8 percentage points effect. With a similar number of observations (20 women per cluster), we are powered to detect a change in mean HAZ score from -1.42 to -1.12, using data from SC pilot program implemented Rakhine state, assuming power at 0.9, alpha at 0.01, intra cluster correlation at 0.03, and standard deviation at 1.14. Given that we expect to encounter more than 20 women per cluster from the listing compiled by MNMA and the village survey data, the study is well powered to detect these effects between each pair arms (treatment 1 vs control group, treatment 2 vs control group).

2. Cash Delivery Modality

We calculate the power necessary to observe outcomes related to program delivery effectiveness of two different models. The comparison can be between Gov’t model and MFI model or mobile money and MFI model. We assume power at 0.8, alpha at 0.05 to detect a 10 percentage point difference in the proportion of beneficiaries that do receive cash transfer (or that do receive cash transfer in time or the correct amount, from a baseline of 70%). Given these assumptions, calculations require a minimum of 313 participants in each treatment arm, for a total of about 626 in the two intervention areas. Power calculations will need to be adjusted depending on number of beneficiaries encountered and feasibility of implementation of any cash delivery model in our study areas, depending on conversation with MOH and mobile phone provider.

9. Analysis

(1) Cash Delivery and BCC

Given the project design, the empirical approach is pretty straightforward. The analysis will be implemented at individual level (mother or children), or at village level if necessary depending on

⁷ STATA 14, `Sampsi` and `sampclus` commands

the main outcome we will be looking at. If baseline data establish equivalence on sample characteristics, only comparison of endline data is necessary without the need for controlling for any baseline characteristics. We plan to add controls in the analysis from baseline in the event that certain characteristics are not balanced between Control and Treatment sample at baseline or to increase precision in our model, i.e. reducing standard errors and explicative power of the model (R^{squared}).

The main specification (described at individual level here) is the following:

$$Y_{it} = \alpha + \beta * T1_{ct} + \gamma * T2_{ct} + \partial_c + \varepsilon_{ct} \quad (1)$$

Where *i* refers to individual, *t* time and *c* cluster (group of villages in the same sub-rural health center catchment area). *Y_{it}* is our main outcome of interest (child is stunted, underweight, wasted children, mother uses exclusive breastfeeding, etc); *T1_{ct}* is an indicator variable that takes value 1 if the cluster (group of villages in the same sub-rural health center catchment area) received the first type of intervention, i.e. cash transfer and light advertisement, while *T2_{ct}* is an indicator variable that takes value 1 if the cluster received the cash transfer plus BCC. We plan to add group FE at the level of triplets of clusters (matched between T1, T2, CG) to account for any possible pre-existing difference among grouping (*∂_c*) that could bias the results on the program's impact. The effects will practically come from comparisons between T1, T2, CG within each (similar) triplet. *ε_{ct}* represents clustered standard errors at sub-rural health center catchment area. *β* and *γ* are our parameters of interest and they represent the causal effects of the two intervention arms on the outcomes of interest.

(2) Program Effectiveness

The analysis will be implemented at individual level. The main specification is the following:

$$Y_{ivt} = \alpha + \beta * T_{vt} + \gamma * X_{ivt} + \varepsilon_{vt} \quad (2)$$

Where *Y_{ivt}* is our main outcome of interest for the program's recipient *i* in village *v* at time *t* (whether the mother received any cash transfer, whether the mother received delayed cash transfer, whether the mother received the correct amount, etc.); *T_{vt}* is a indicator variable that takes value 1 if the village received a certain intervention (Government model vs MFI delivery approach, or mobile money vs manual delivery). *X_{ivt}* are individual controls (if necessary), while *ε_{vt}* represents clustered standard errors at village level. *β* is our parameter of interest and it represents the causal effect of the main intervention arm on the outcomes of interest.

10. Ethical Consideration

The study design, consent form and questionnaire have been submitted to Department of Medical Research (DMR) of Ministry of Health in Myanmar as well as Institutional Review Boards of Innovations for Poverty Action and Duke University.

Per DMR and IPA protocol, the study participants will be given information to report any complaints or concerns with the study process. The IRB procedure will review these cases on annual bases and the study must obtain yearly approval to move forward.

11. Dissemination of Results

At the conclusion of the project, the Principal Investigators plan to publish their results in peer reviewed academic journals and draft policy paper geared toward donor agencies and implementing organizations. IPA plans to hold dissemination event to present the study results to government and donor stakeholders and other partner organizations. IPA will also disseminate the results through its own website and other communication sources, the International Growth Center (IGC) blog, and other media sources.

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Annex 1

Table 1: Cash and BCC

Survey section		Sample	Data Collection	Outcome	Indicators
1. HH roster	Comparisons: T1 vs CG, T2 vs CG, T2 vs T1	Program's beneficiaries at first time enrollment and potential future beneficiaries (child bearing women)	Baseline - balance check Midline/Endline - main effects	Labor supply - (Socio demographics will be used only for balance check at baseline)	1. Type of occupation 2. Spend time working 3. Income from work
2. Consumption	Comparisons: T1 vs CG, T2 vs CG, T2 vs T1	Program's beneficiaries at first time enrollment and potential future beneficiaries (child bearing women)	Baseline - balance check Midline/Endline - main effects	Consumption	1. Budget shares by type of consumption (food, not-food, health, education, etc)
3. Health seeking behavior	Comparisons: T1 vs CG, T2 vs CG, T2 vs T1	Program's beneficiaries at first time enrollment and potential future beneficiaries (child bearing women) for mothers' outcomes. Children of beneficiaries, other children under 5 in the household for children outcomes and siblings comparison	Baseline - balance check Midline/Endline - main effects	ANC, Delivery, PNC, morbidity	1. Whether seek care 2. Where/who assisted in deliver/provide ANC, PNC 3. How often 4. Costs/loans taken 5. Vaccinations type and number of times 6. Children mortality
4. IYFC Awareness and Practice	Comparisons: T1 vs CG, T2 vs CG, T2 vs T1	Program's beneficiaries at first time enrollment and potential future beneficiaries (child bearing women)	Baseline - balance check Midline/Endline - main effects	IYFC awareness and practices	1. Any knowledge question on breastfeeding and foods/liquid 2. Spillovers on other women
5. Food security	Comparisons: T1 vs CG, T2 vs CG, T2 vs T1	Program's beneficiaries at first time enrollment and potential future beneficiaries (child bearing women)	Baseline - balance check Midline/Endline - main effects	Hunger scale	Hunger scale measure (SC)
6. Diet Diversity	Comparisons: T1 vs CG, T2 vs CG, T2 vs T1	Program's beneficiaries at first time enrollment and potential future beneficiaries (child bearing women), children of beneficiaries, other children under 5 in the household (sibling comparison)	Baseline - balance check Midline/Endline - main effects	Diet diversity	1. Diet diversity score for household 2. Diet diversity score for pregnant women 3. Diet diversity score for children under 2 and children under 5.
7. Credit&Savings	Comparisons: T1 vs CG, T2 vs CG, T2 vs T1	Program's beneficiaries at first time enrollment and potential future beneficiaries (child bearing women)	Baseline - balance check	Credit and savings	1. Amount borrowed 2. Amount saved 3. Type of loans (from formal and informal sources)
8. Decision Making	Comparisons: T1 vs CG, T2 vs CG, T2 vs T1	Program's beneficiaries at first time enrollment and potential future beneficiaries (child bearing women)	Baseline - balance check Midline/Endline - main effects	Intra-household bargain power	1. Who take decisions on different household issues (health, money, etc)
9. Household characteristics	Comparisons: T1 vs CG, T2 vs CG, T2 vs T1	Program's beneficiaries at first time enrollment and potential future beneficiaries (child bearing women)	Baseline - balance check	Proxy for wealth	1. DHS type wealth indicator 2. Owning assets/land and amount 3. Owning and sharing mobile phone 4. Water/Hygiene indicators (SC)
10. Desired Fertility & contracept	Comparisons: T1 vs CG, T2 vs CG, T2 vs T1	Program's beneficiaries at first time enrollment and potential future beneficiaries (child bearing women)	Baseline - balance check Midline/Endline - main effects	Desired feartility and contraceptives	1. Desired number of children 2. Desired spacing 3. Whether used FM 4. Type of FP used 5. Intentions use FP in future
11. Anthropometrics measureme	Comparisons: T1 vs CG, T2 vs CG, T2 vs T1	Program's beneficiaries at first time enrollment and potential future beneficiaries (child bearing women), children of beneficiaries and children of potential beneficiaries	Baseline - balance check Midline/Endline - main effects	Malnutrition	a. Stunting (height for age z-score) b. Wasting (weight for height z-score) c. Under-weight (weight for age) - WHO indicators d. MUAC of mothers (SC)
Note: all other information will be mainly used for balance check at Baseline, and controls (if necessary) in the analysis at midline/endline					

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Table 2: Cash Delivery Modality

Survey section	Comparison	Sample	Data Collection	Outcome	Indicator
[to be defined in Midline/Endline]	Treatment1 vs Treatment2	Beneficiaries of the program in intervention areas	Midline/Endline	Program effectiveness (leakages)	a. No. women not receiving cash / No. women enrolled
[to be defined in Midline/Endline]	Treatment1 vs Treatment2	Beneficiaries of the program in intervention areas	Midline/Endline	Program effectiveness (leakages)	b. No. delayed payments / No. payments over entire duration of the program
[to be defined in Midline/Endline]	Treatment1 vs Treatment2	Beneficiaries of the program in intervention areas	Midline/Endline	Program effectiveness (leakages)	c. No. not correct amount received / No. payments over entire duration of the program
[to be defined in Midline/Endline]	Treatment1 vs Treatment2	Beneficiaries of the program in intervention areas	Midline/Endline	Exclusion Error	d. No. women eligible, but not enrolled / No. women eligible
[to be defined in Midline/Endline]	Treatment1 vs Treatment2	Beneficiaries of the program in intervention areas	Midline/Endline	Inclusion Error	e. No. women not eligible, but enrolled / No. women enrolled
Option A: Treatment1: MFI cash delivery, Treatment2: Governmental cash delivery					
Option B: Treatment1: mobile money, Treatment2: manual delivery through MFI					

Annex 2: Diagram of Village Selection

