Muralidharan, Niehaus, Sukhtankar and Weaver
March 6, 2019

Pre-Analysis Plan for Year 1 of Jharkhand ICDS Cash Transfer Study

I. Introduction

The prevalence of underweight children in India is among the highest in the world, and "has its origins almost entirely during the first two to three years of life" (World Bank, 2009). In the state of Jharkhand, where this study is based, 43% of children are stunted, 15% are wasted, and 42% are underweight, with particularly acute malnutrition rates among tribal groups. Among women aged 15-49 years, 69.5% are anaemic, and about 43% are classified as "thin" on the Body Mass Index scale (Raykar et al., 2015). Undernutrition affects the poor disproportionately. Among Indian households in the lowest wealth quintile, 51% of children less than five years old are stunted, compared to only 22% for the highest quintile (National Family Health Survey-4).

The government of India is exploring cash transfers as a way of improving early childhood nutrition. One policy option is increased spending on early childhood by augmenting existing initiatives with cash transfers. There is a large evidence base linking cash transfers to reductions in monetary poverty, increases in household expenditure, use of health services, and anthropometric measures (Bastagli et al., 2016), but there is mixed evidence on the overall effect of income on nutrition outcomes (Alderman, 2015). Moreover, the impact of cash transfers seems to rest on the particular design features of the programme, such as conditionality or information and awareness building (Thomas, 1990; Duflo, 2003; Benhassine et al., 2015; Adato et al., 2000; Leroy et al., 2009).

Our study adds to the existing global literature on the channels through which increased household income alters early childhood health. We expect this study to be first of this scale and rigor in India, filling in evidence gaps and providing policy-relevant feedback. In the first year of the study, we will primarily focus on whether cash transfers that *supplement* existing government in-kind transfer programs reduce incidence of child wasting and stunting.

We will additionally address the following secondary questions in order to explain our findings on the primary question of maternal and child health:

1. Whether the existing financial infrastructure in rural India is sufficiently developed for regular delivery of cash transfers to vulnerable populations?
2. Are cash transfers to mothers used for food for the mother or child?
3. How does the effect of transfers depend on characteristics of beneficiary households, such as gender of child, age of mother, birth order of child, and socio-economic status?
4. Do cash transfers to women improve their position within the household, and does this lead to improvement in other health behaviors?

In the second year of the study, for which we will later submit a separate pre-analysis plan, we will address the following sets of research questions.

1. What is the child age at which receiving cash transfers has the greatest benefit? This is not obvious; even if it is better to provide nutrition *in utero*, as the literature suggests, transfers made when the child are older may have a greater chance of being spent on nutritional inputs.
2. What is the additional return (if any) to making two years rather than one year of cash transfers to children?

Experimental Design

ICDS is an Indian central government initiative to improve early childhood health and nutrition through initiatives at anganwadi centres (AWCs). Our intervention was run through the local community health worker at the AWC, known as the sevika. For a period of 2.5 months, sevikas in all of the sampled AWCs (960 AWCs) informed pregnant women in their first and second trimesters that they were eligible to register for the treatment, known as the "Poshan Pahal" scheme. Unlike some other government programs for pregnant women, there were no eligibility requirements, aside from stage of pregnancy.

These women were informed that if they were one of the AWCs selected, they would receive a year of monthly cash transfers of Rs. 500, where half of AWCs will be selected. Transfers would be made into the bank accounts of the selected women and would not be conditional on the actions of the women, since conditionality can create bottlenecks that slow transfers. In order to register, women needed only to supply their bank account information and fill out a simple form, where assistance was provided to women who did not currently have bank accounts. After the two and half month registration window ended, women could no longer register for the scheme.

After registration was complete, women were randomized into four groups, with transfers going out after randomization. The study sample is composed of 960 randomly selected AWCs from 8 districts and 24 blocks, representative of the entire state of Jharkhand. *Figure 1* summarizes the experimental design.

- Treatment Group 1: Pregnant women from 240 AWCs receive a monthly Rs. 500 cash transfer for two years, starting after the registration window closes (approximately from ages 0 months to 24 months for the child)
- Treatment Group 2: Pregnant women from 240 AWCs receive a monthly Rs. 500 cash transfer for one year, starting after the registration window closes (approximately from ages 0 months to 12 months for the child)
- Treatment Group 3: Pregnant women from 240 AWCs receive a monthly Rs. 500 cash transfer for one year, starting one year after the first round of transfers began for treatment groups 1 and 2 (approximately from ages 12 months to 24 months for the child)
- Control group: 240 AWCs will serve as the control group for the three treatments

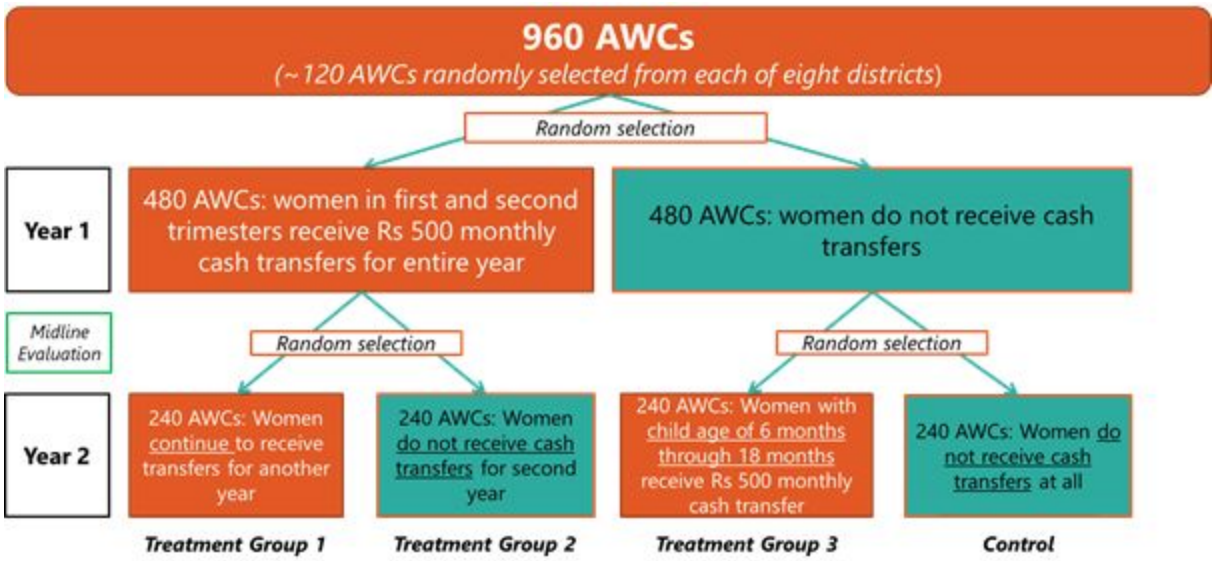

Figure 1 - Study Design and Randomization

In the treatment arms, the cash transfers are framed as intended for maternal and child nutrition. Cash transfers are made monthly, and at the time of transfer, beneficiaries with cell phones receive an interactive voice response phone call to notify them of the transfer and reinforce the framing.

The current pre-analysis plan focuses only on year 1 outcomes. We will file a second pre-analysis plan for year 2 outcomes in the future. Thus the control group is the 480 AWCs that did not receive transfers, while the treatment group is the 480 AWCs in which women received Rs. 500 monthly transfers for the entire year. Data for the first year of analysis comes from two sources: a midline survey and an endine survey with all women who registered for the program in treatment and control areas.

II. Year 1 Primary Outcomes

A. Child health

The key goal of this program is improving child health. We will report results for three anthropometric measures of child health and development.

CH1: Child weight for age and sex
CH2: Child length for age and sex
CH3: Child weight for length for age and sex

We define weight and length for age in standard deviation units, according to World Health Organizations guidelines. Length will be measured during the endline survey using length measuring board, and weight using a digital scale. For this calculation, child age will be calculated by rounding to the closest integer of fully completed months since their birth. Sex will be defined as biological sex at birth.

B. Food consumption by mother and child

Along with health, we want to see whether the cash transfers change consumption patterns. We consider this separately from anthropometric measures for two reasons. First, anthropometric measures can be noisy measures of health status, and so it may be that even if food consumption was increased, it did not manifest in gains in height/weight (but might in other dimensions of health). Second, it is useful to know whether food consumption is increased. This is one of many inputs into health, and it may be that even if the intervention increased food consumption, complementary efforts are required to see improvements in health (e.g. transfers may be effective alongside improved sanitation to reduce disease-related shocks). During the survey, we will ask questions to get recall of all consumption of the mother and child over the previous day.

For consumption of food by the mother, we will use the Indian Food Consumption Tables (IFCT) to translate their consumption into calories, macro-nutrients, and micro-nutrients, based on an exhaustive listing of the quantity of each type of food consumed over those periods. For example, if the individual consumed 200g of atta wheat flour, this would be translated into 0.84mg of Thiamine (vitamin B1), 0.3mg of Riboflvain (B2), etc. We will construct the following outcomes based on this data:

- *MC1: Caloric consumption of mother*

We will use the consumption recall data to measure the total caloric consumption of the mother based on the IFCT conversion tables.

- *MC2: Index of nutrients consumed by the mother:*

We will construct an index of the dietary quality of the mother using the IFCT conversion tables to measure consumption of the following macronutrients and micronutrients:

- Macronutrients and minerals: Energy, protein, visible fat, calcium, iron
- Micronutrients: thiamine, riboflavin, niacin equivalent, pyridoxin, dietary folate, magnesium, zinc

Using guidelines from the National Institute of Nutrition, we will calculate what percent of the recommended daily quantity of each of the micro and macronutrients that the mother consumed, capping this at 100% if the mother is at or in excess of the recommended daily consumption. We will then combine these measures into an index using the method of Kling et al (2007), and evaluate differences between treatment and control groups on this index.

MC3: Diet Quality Index International (DQI-I):

DQI-I assigns a score between 0 and 100 (higher score indicates a healthier diet) by considering four aspects of the diet - variety, adequacy, moderation, and overall balance.

- Variety: Inclusion of at least one serving per day from each of the food groups. Additionally, variety of protein sources is observed
- Adequacy: Whether the Recommended Nutrient Intake (RNI) of fruits, grains, fibre, protein, calcium, iron, and vitamin C are met

- Moderation: Consumption of total fat, saturated fat, cholesterol, sodium, and empty calorie foods
- Overall balance: Ratio of carbohydrate:protein:fat and ratio of fatty acids (PUFA:MUFA:SFA)

We will use our data to calculate DQI-I for all mothers in the sample.

We will measure consumption of food by the child using the following two outcome measures:

CC1: Childhood Dietary Diversity Score: measures the consumption of complementary foods for children between 6-23 months of age

An index between zero and seven, which is equal to the number of the following dietary groups from which the child has received food over the previous day: (1) grains, roots and tubers; (2) legumes and nuts; (3) dairy products (milk, yogurt, cheese); (4) flesh foods (meat, fish, poultry and liver/organ meats); (5) eggs; (6) vitamin A rich fruits and vegetables; (7) other fruits and vegetables. We will follow the World Health Organization guidelines (pg 7) for categorizing foods into these categories. We will also report a binary measure of *Minimum Dietary Diversity*, whether the child has received food from four or more of those food groups over the previous day.

CC2: Minimum Meal Frequency: measures overall food consumption of the child

Following the World Health Organization guidelines, this is a binary indicator for children aged 6-23.9 months of age. It is equal to one if they receive solid, semi-solid, or soft foods or milk feeds the minimum number of times or more over the previous day. That is equal to 2 times a day for breastfed infants 6-8 months, 3 times for breastfed children 9-23 months, and 4 times for non-breastfed children 6-23 months.

III. Year 1 Secondary Outcomes

A. Child Health

CH4-5: Whether child is moderately or severely stunted or wasted

CH6-8: Mean weight for age/length for age/weight for length z-score among children in the lowest 25% of z-scores.[1]

We will also provide information on the binary outcome of whether the child is stunted or wasted (moderately or severely). These outcome variables are defined using the World Health Organization definition and growth charts (2 standard deviations or more below median length-for-age and weight-for-length respectively).

Since our intervention may be the most effective for the most vulnerable children, as a secondary outcome, we focus on the bottom portion of the distribution. For the three main child

[1] A priori, we expect the intervention to have the largest effect among the most malnourished children. This focuses our estimates on that subset.

health outcomes, we will also test for an effect solely among the bottom quarter of treatment and control children on this outcome.

B. Household Consumption and Spending

S1: Spending on food in last week (in Rs)

S2: Spending on all other items over the past month (in Rs)[2]

S3: Spending on sin goods (alcohol, tobacco) (in Rs)

When considering the underlying theory of change, one important mechanism is that households may take the cash to spend more on food. We will capture spending on a long list of possible items using a household expenditure survey. We will compare that between treatment and control, and then use that to estimate what fraction of the transfer is going to food versus other ends.[3]

FH1: Total per capita household caloric consumption (other household members)

In order to calculate the total consumption of mother and child, we collect information on the total food cooked in the household over the previous day. We will calculate the total calories produced, and then subtract out the amount consumed by the mother and child. Following that, we will divide by the number of other members of the household to estimate the total consumption of those members.

C. Child Morbidity

A number of conditional cash transfer programs have found positive effects on morbidity, while unconditional programs have not. However, this is confounded by geography, since all of those unconditional programs were in Africa. Since illness is an input into long-term health, this is a useful mechanism to investigate as to why cash transfer programs may have an effect.

CM1: Probability of illness (e.g. diarrhea or cough) in the past three months

On the survey, mothers will be asked if their child experienced an adverse health event during the past three months. Since it may be difficult to separate illness episodes, we will code this as a binary variable rather than a continuous one (i.e. number of episodes).

CM2: Probability of being taken to a formal medical provider in the event of illness

For the illness episodes, the respondent will be asked if they took their child to a formal medical provider. We will code this as a binary variable in the event of illness. If there is no effect on the reported prevalence of illness, we will consider this outcome for the set of children who were sick in treatment and control, and interpret this as related to the direct effect of the treatment.

---

[2] Due to an error discovered mid-way through the data collection process, this outcome was not collected for 600 of the AWCs. We will evaluate this outcome using data only from the 360 AWCs for whom this data was collected.

[3] They may also spend more on categories such as healthcare that improve child health, but we do not code that as a separate category given the difficulting in parsing which spending items are directly related to child health (e.g. clothing for the child)..

D. Maternal Outcomes

Another mechanism of interest is how cash transfers to mothers affect their status and behavior.

MO1: Empowerment and household decisionmaking

Using questions on female empowerment from JPAL's "A Practical Guide to Measuring Women's and Girls' Empowerment in Impact Evaluations", we will construct an index based on a simple average of these normalized outcomes. *Ex ante*, it is difficult to know which domain of household decisionmaking will be affected, so we prefer to combine a number that are of interest.

MO2: Weight for height (BMI)

We will measure the weight and height of the mothers and translate this into body mass index (BMI). We will then compare that between treatment and control as a measure of whether the additional cash has translated into additional consumption for the mothers.

MO3: Stress and Depression

Using questions adopted from the Patient Health Questionnaire-9 that diagnose mental health, we will construct an index measure of stress and depression for the mother. The index will be a simple average of normalized outcomes. The question wordings are included in the appendix to this pre-analysis plan.

E. Beliefs and Behavior Change

It is possible that our intervention not only changes the budget constraints of households, but also their beliefs about the importance of good diet or health-related behaviors. For example, giving money for nutrition may cause households to update their prior beliefs on the value of nutrition for pregnant women.

BB1: Beliefs and Attitudes towards nutrition

The outcome of interest will be an index of questions on beliefs and attitudes towards nutrition during pregnancy. The wording of these questions can be found in the PAP appendix

F. Summary Statistics on Program Implementation

One of the key outputs for policy from this intervention is the success of the cash transfers in reaching target households.

P1a,b: Inappropriate Registrations

A concern with large cash transfer programs is that ineligible individuals will figure out ways to gain access. For example, in this program, it may be that the health workers register women who are not actually pregnant. The first variable, P1a, is equal to the percent of registrees who are necessarily ineligible (those who are not pregnant women). The second variable, P1b, is the percent of registrees who are ineligible under the rules of the experiment, but would be eligible if

the program were implemented at scale. The main two cases for this are: a) the child is too old to have been included in this scheme; (b) the woman falls outside the catchment area of the treatment AWC. If the scheme were implemented universally, this would be irrelevant.

Since asking about program implementation as part of the main survey could bias the responses (either due to surveyor or respondent effects), the following questions will be asked by the backcheckers to a subset of households.

P2: Receipt of transfers and IVR messaging
P3: Payment in order to register for the scheme
Respondents will be asked whether or not they had to give anything in order to register for the scheme, and if they did, then the value of what they had to give.

P4: Frequency of pick-up of transfers
P5: How they picked up the transfers
This will measure how they got the transfers, e.g. from a bank/ATM/etc. These outcomes are important to consider in implementation design of future cash transfer programs.

IV. Statistical Methods

A. Balance Tests

Since primary baseline outcomes are impossible to obtain for children (they are not born yet) and very difficult to obtain for mothers (would need to survey immediately after we know they are pregnant), we did not do a baseline survey. Nonetheless, since we randomized after beneficiaries had registered for the program and stratified on number of registrations in each anganwadi center, we expect our sample to be balanced. We will test for joint balance on three sets of variables using an F-test:

I. Time invariant characteristics of treatment and control households (individual-level)
   a. *BTA1: education of mother (in years);*
   b. *BTA2: whether household is SC or ST*
   c. BTA3: Birth order of child
II. AWC-level characteristics:
   a. *BTA4: Number of women registered for scheme*
III. Village-level characteristics (2011 census):
   a. *BTA5: Whether can match the village to the census*
   b. *BTA6: % of households living in poor condition houses*
   c. BTA7: % of households with toilets
   d. BTA8: Area of village in hectares
   e. BTA9: Distance from all-weather road
   f. BTA10: Distance from nearest bank
   g. BTA11: Distance from regular market/mandi
   h. *BTA12: % ST+%SC households*

B. Estimation

We will report ITT estimates, which compare average outcomes in treatment and control AWCs among women who registered for the program. Our primary outcomes are defined at the child level, which is the unit of analysis. Specifications include fixed effects at the level of the randomization stratum and will be estimated using inverse sampling probabilities as weights. Standard errors will always be clustered at the unit of randomization (AWC).

For the analysis of data from year 1, we will estimate the following regression specification:

[R1] Y_iasd = alpha + beta treatment_asd + delta_sd + gamma*X_iasd + epsilon_iasd*

Where i is the individual, a is the AWC, s is the randomization stratum and d is the district. *delta_sd* is a stratum fixed effect. *X_iasd* is a vector of time invariant characteristics of the household that are predictive of the outcomes. The characteristics to be included in *X_iasd* will be selected using LASSO. We will test whether beta = 0 using randomization inference.

C. Heterogeneity Analysis

We want to test whether effects of the treatment are heterogeneous depending on the individual characteristics of the beneficiary. We will include relevant interaction terms for these characteristics in the main specifications:

1. Birth order - *Jayachandran and Pande (2016) indicates that lower birth order children are systematically disadvantaged. We will compare the treatment effect among first births against that for children who are a second birth order or higher child.*
2. Below Poverty Line (BPL) status: *we use this as a measure of household wealth, as well as a policy-relevant group in India*
3. Age of child at start of transfers: *kids began receiving transfers across a range of ages. We will test whether the treatment effect varies depending on the initial age of the child when transfers began by splitting the sample at the median.*
4. Distance to nearest bank

D. Attrition

We will check for differential attrition across treatment and control, particularly due to child mortality (which could be a function of the treatment). If there is differential attrition, we will also present Lee bounds on our estimates.

E. Exclusion

During the registration, some ineligible women may have registered for the experiment. We exclude a woman from analysis in the following cases:

- Individuals were only supposed to be registered if their pregnancy had not reached the third trimester. We will drop individuals from both the treatment and control whose children were past 7 months of gestational age at the beginning of registration
- Incomplete pregnancies: in cases where the pregnancy did not come to term (e.g. miscarriage, terminated pregnancy), we will drop the mothers from the analysis. For

many of our valued outcomes of interest (e.g. child height), it is not possible to measure for children who have expired, so it does not make sense to include these women.

We will not exclude:

- Sevika herself is registered: it is possible that the sevika herself will be pregnant and register for the transfers. As long as she meets the criteria for inclusion, she will be included.
- Geographically ineligible women: it may be that some women were not eligible for the program because they did not live in the catchment area of the AWC, but they nonetheless registered. We will not drop these women as long as their children are the appropriate age.

We will also check if the rate of ineligibility differs across treatment and control, although this is highly unlikely, given that treatment status was not known at the time of registration.

V. Sampling

Sample Size: We calculate the intracluster correlation on multiple outcomes of interest using the 2006 wave of the National Family Health Survey. Across the different outcomes, the highest value is 0.09, so we use that in our power calculations in order to be conservative. From comparisons with other cash transfer programs of similar magnitudes, we anticipate and wish to detect effect sizes of around 0.15 standard deviations for all of the questions of interest.

The key to our design is direct comparisons across treatment groups at age 2. In order to have 80% power to detect a difference in outcomes of 0.15 standard deviations between each of the treatment groups, we require a sample size of 240 AWCs within each treatment arm and the control group (based on an estimate of 5 enrollees per AWC). Since there are three unique treatment groups, this is a total of 960 AWCs.

We randomly sampled 960 AWCs across 8 districts. These are selected so that the treatment effect estimates generalize to the entire state of Jharkhand. The sampling had four stages described below. This produced a total sample size of:

- 8 districts (5 districts in phase I, 3 districts in phase II)[4]
- 24 projects - exactly 3 projects per district. A project is the unit of geography below a district, and roughly equivalent to a block/taluk.
- 80 sectors- either 3 or 4 per project. This is the level of geography below a project, where each sector has a single lady supervisor who oversees the work of anganwadi centers in the sector. There were 50 sectors sampled in phase I and 30 in phase II.
- 960 anganwadi centers - exactly 12 centers per sector.

[4] For implementation purposes, the intervention was first rolled out in 5 districts (phase I), and then in another 3 districts (phase II).

District level sampling

The process for this was:

1. *Exclusion:* Current IGMSY districts (East Singhbhum, Simdega) are excluded since they are currently part of a different cash transfer program.
2. *Construction of index for expected implementation quality/health status:* to define a diverse set of districts, we use the first principal component of a set of district characteristics that are likely related to implementation or health status. Districts are divided based on their percentile rank on this index. These district characteristics were used to form the index:
    a. Low birth-weight %, # SAM children; CRISIL inclusix scores; birth registrations; under-5 mortality; # of functional AWCs (GoJH administrative data)
    b. Literacy rate, population density (2011 census)
    c. % households on salary income as proxy for poverty level (NSS Round 68, 2011-2012)
3. Split the districts into 5 groups ordered from highest to lower on this index, where the number of districts per group makes the total population of each group roughly equal.
4. Sample one district from each group using PPS[5].
5. Jharkhand is divided into 5 geographical regions called “divisions”. For any divisions that were not been sampled in the first phase of 5 districts, we randomly select one district from that division using PPS.
6. We then split the remaining unsampled districts into groups based on the earlier PCA index. For example, if all divisions were sampled in the first stage, we would have three groups; if one division were not sampled in the second stage, we would have two, etc. The remaining districts are ordered based on the PCA index, and divided into groups in that order, with each group having roughly equal populations.
7. One district is sampled from each group according to PPS.

Project-Level Sampling

1. Match projects to their equivalent “block” in the 2011 Census of India dataset, for the purposes of conducting a stratified sample.
2. Divide each district into two strata. “Projects” within a district are allocated to strata based on a PCA index of census data from the matched block. The following variables were used: % rural population; % literacy; % population that is “working population”; % ST/SC; % main workers that are agricultural / cultivator.[6]
3. Within each strata, one project is selected according to PPS sampling.

---

[5] Another option would have been to take a simple random sample of districts within each strata, and then in the second stage sampling, allocate proportionally more sub-units to larger districts. We elected to use PPS in the first stage because there is a such a small number of districts selected, meaning that with a simple random sample, there is a high probability of undersampling large districts in the first stage due to chance.

[6] Within a district, strata population are as close to equal as possible. For example, if Ranchi district had a population of 18,000 pregnant women, the population of each strata would be as close to 9,000 as possible, maintaining the stratification.

4. After removing the selected projects from each district, draw another project from each district according to PPS (without stratification). This yields a total of three sample projects per district.[7]

Sector-Level Sampling:

1. Each selected project is initially allocated three sectors. These are selected via a simple random sample.
2. Based on the overall project and sector numbers, there are some projects that will have an additional sector sampled. To select these projects, we take a simple random sample of X projects, where X is the number of projects that we wish to have four sectors sampled.
3. Within each project, we sample the allocated number of sectors using PPS. The measure of population used for PPS is number of AWCs in the sector, since that is our best measure of population.

AWC-level sampling:

1. Take a simple random sample of 12 AWC per sampled sector

Representativeness

We compare the selected projects to the universe of other projects in Jharkhand using the 2011 census data (houselisting and PCA datasets). We use a t-test for equality of means. Of the 26 variables tested for differences in means between sampled and non-sampled projects, only one difference is statistically significant at the 5% level. Sex ratio is slightly lower in sample areas, meaning that there are more women relative to men. Another difference is statistically significant at the 10% level, where sampled areas have slightly fewer government middle schools than non-sampled areas. These discrepancies are about what would be expected by chance, and are not along dimensions that we expect to interact significantly with the treatment (e.g. distance to ATM or market). This means that we can comfortably generalize our results to the entire state.

VI. Randomization

Registration for the program was done across all 960 AWCs prior to the randomization. This was done because if we had not done registration in AWCs that were allocated to control, it would have been difficult to identify the women who would have registered. We conducted the randomization at the point at which registration was nearly complete, meaning that we had preliminary numbers for the amount of women registered at each AWC, as there were substantial differences across AWCs. To ensure comparability and maximize power, we stratified the randomization by sector and number of women registered in the AWC.

[7] We elected to partially stratify because of the relatively small number of projects per district. This makes it difficult to form three strata with approximately evenly-sized populations, and uneven strata cause a larger coefficient of variation on the sampling weights. By only having two of the projects selected via stratification, the coefficient of variation in sampling probabilities drops by a third.

Each sampled sector had 12 AWCs sampled for the experiment, so within each sector, we wished to select 6 AWCs to be treatment and 6 to be control for year 1. Within each sector, we formed three strata (highest 4 in number of registrations, middle 4, and lowest 4). Within each strata, we randomly allocated two of the AWCs to treatment status and two into control. Thus there are a total of 80x3=240 randomization strata for year 1 of the experiment.

VII. Appendix: Survey Questions

We create indices from the following questions on “Stress and Depression” and “Beliefs and Attitudes Towards Nutrition”.

1. Stress and Depression

The next few questions relate to feelings of stresses and happiness that people get. Such feelings happen to everyone from time to time - sometimes we feel happy and excited, at other times we feel sad and unhappy. I will read out some sentences which relate to such problems, please let me know if you have been bothered by these problems over the last two weeks.
1. In the last 2 weeks, how often have you felt nervous or stressed
2. Often there are multiple tasks that you have to do in a day like cooking, cleaning, taking care of your child, etc. In the last two did you feel that you couldn't manage all these tasks?
3. In the last 2 weeks, how often did you have trouble falling or staying asleep, or sleeping too much
4. In the last 2 weeks, how often were you feeling tired or having little energy
5. In the last 2 weeks, how often were you having trouble concentrating on things?
6. Now I will show you a picture of people who look very sad, sad, neutral, happy, and very happy.
7. Think about all the reasons to be happy or sad in your life. Taking all these things together, how happy would you say you are? *Note to surveyor: Please ask the respondent to point at the scale and show you*

2. Beliefs and Attitudes Towards Nutrition

1) During pregnancy, how much do you think a woman should eat - less than normal, same as normal, or more than normal?

2) While breastfeeding, how much do you think a woman should eat - less than normal, same as normal, or more than normal?
3) During pregnancy, if a woman eats more than normal, do you think it has any effect on her child's intelligence?
4) During pregnancy, if a woman eats more than normal, do you think it has any effect on her child's height?
5) If a child eats a nutritious diet, do you think it has any effect on the child's intelligence once he/ she grows up?
6) If a child eats a nutritious diet, do you think it has any effect on the child's height once he/ she grows up?