Oxford Policy Management Asia

Bihar Child Support Programme (BCSP)

Evaluation Baseline Report

Oxford Policy Management

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This assessment is being carried out by Oxford Policy Management New Delhi. For further information contact Tom Newton-Lewis (tom.newtonlewis@opml.co.uk). The BCSP and this evaluation is funded by DFID through the Bihar Technical Assistance Support Team (BTAST) for the Government of Bihar.

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Executive Summary

Introduction

The Bihar Child Support Programme (BCSP) is a pilot programme that explores whether or not a conditional cash transfer (CCT) could be a cost-effective policy instrument to reduce child under-nutrition. Besides being an opportunity to contribute to the current national debate on the merits of CCTs in India, the BCSP is also an opportunity to develop a "best practice" standard of cash transfer implementation that can be a beacon to all other schemes, using cutting edge technology.

This report presents the results of the baseline survey conducted in late 2013 for the Bihar Child Support Programme (BCSP), before the start of programme implementation. The baseline survey is the first part of a formal impact evaluation that will be completed by an endline survey towards the end of programme implementation.

An overview of the BCSP

The Bihar Child Support Programme will be targeted at pregnant women and mothers of young children. Beneficiaries will be eligible for a monthly payment of Rs. 250 between the end of the first trimester of pregnancy and the child's third birthday (a total of 42 months), if they meet certain conditions.

The pilot will be implemented in three blocks, from **Gaya** District. All pregnant women will be eligible for the scheme from the 3rd month of pregnancy onwards. Approximately 8,880 women will join the scheme per year, with a total of 22,200 beneficiaries enrolled by the end of the pilot.

The monthly transfer will be **conditional** in order to channel behaviour. Two versions of the BCSP are being implemented to compare the relative merits of different types of conditions. In one block (Wazirganj) a relatively "soft" set of conditions are attached to the transfer. These include:

- Monthly attendance at Village Health and Nutrition Days/Village Immunisation Days
- Weight gain monitoring of pregnant women
- Growth monitoring of children
- Treatment of diarrhoea of children with Oral Rehydration Salts (ORS)

Because one of the biggest drivers of low maternal and child nutrition outcomes (Lancet 2013) is insufficient spacing between pregnancies, beneficiaries in Wazirganj will through the BCSP receive a **birth spacing bonus** of Rs. 2000 if they have not become pregnant again 24 months after giving birth, and an additional Rs. 3000 if they have not become pregnant again 36 months after giving birth. Therefore, the BCSP will be worth up to Rs. 15,500 per beneficiary in Wazirganj when this is combined with the monthly transfers.

In another block (Atri), several other "hard" conditions have been added. The evaluation will test whether the benefits from the additional behaviour change incentives provided by these additional conditions outweigh the practical and transaction costs they impose on beneficiaries. The hard conditions are:

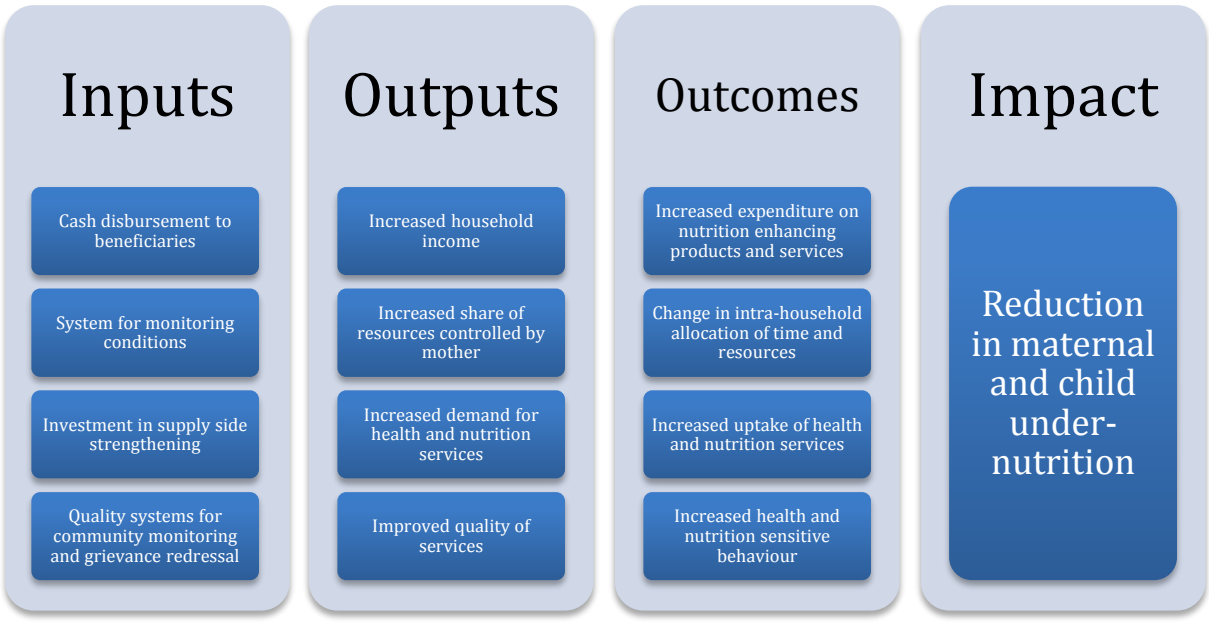
- The taking of Iron and Folic Acid (IFA) tablets by pregnant women
- Exclusive breastfeeding until six months
- Registration of child at birth
- Weighing of child at birth
- Measles vaccination

In Atri, instead of the birth spacing bonus, a **child growth bonus** will be introduced that will work exactly like the former but will based on the child's weight being normal i.e. child not being underweight at the age of 24 months and 36 months, respectively. This outcome bonus is being piloted so as to see the impact of transferring the responsibility of ensuring positive outcomes on to the mothers and the family of the children on child nutrition outcomes in the light of the fact that a lot of desirable conditions are not measurable or easy to monitor and therefore are not possible to include in the programme.

The BCSP operates through the structures of the Social Welfare Department's Integrated Child Development Scheme (ICDS). One of the aims of the programme is to support and strengthen ICDS delivery through synergies with the cash transfer. In particular, the village level front line worker of the ICDS, the **Anganwadi Worker**, is the fulcrum of the BCSP as she will be responsible for registering beneficiaries, reporting on their receipt of conditions and providing some of the services that the conditions are based on. In turn, the cash incentives encourage uptake of available services.

The BCSP Theory of Change

The BCSP theory of change is summarised on the following diagram:



The ultimate aim of the programme is to achieve impact through reduced maternal and child under-nutrition. There are several transmission mechanisms by which this could happen.

Firstly, the provision of cash to beneficiaries is expected to lead to increased expenditure on things that improve nutrition status, including food consumption and health services, as well as increase the degree of autonomy and empowerment of the woman in the household as the direct recipient of the cash.

Secondly, the conditions attached to the transfer are designed to incentivise changes in household and individual behaviour in ways that improve nutrition outcomes. These include the treatment of diarrhoea with ORS, and, in the hard conditions block, promoting exclusive breastfeeding until six months. The birth spacing bonus is also designed to encourage beneficiaries to increase the spacing time between births.

Thirdly, the rest of the conditions attached to the transfer are designed to encourage the uptake of services available under ICDS that could promote improved nutrition outcomes. These include:

- Monthly attendance at Village Health and Nutrition Days/Village Immunisation Days as a proxy for the receipt of services available at these Days
- Weight gain monitoring of pregnant women and growth monitoring of children – to alert mothers and Anganwadi Workers when a pregnant woman or child is not developing as expected, so that this can be acted on
- The taking of IFA supplementation by pregnant women

Furthermore, the investments of the programme (including ensuring the availability of weighing scales, training and incentivisation of Anganwadi Workers and the provision of the mobile phone based performance management system) may influence nutrition outcomes through improving the quality and coverage of the supply of nutrition relevant services. Furthermore, the conditionality of the programme may increase the demand for timely and quality services, and promote improved service delivery through social accountability.

Evaluation Methodology

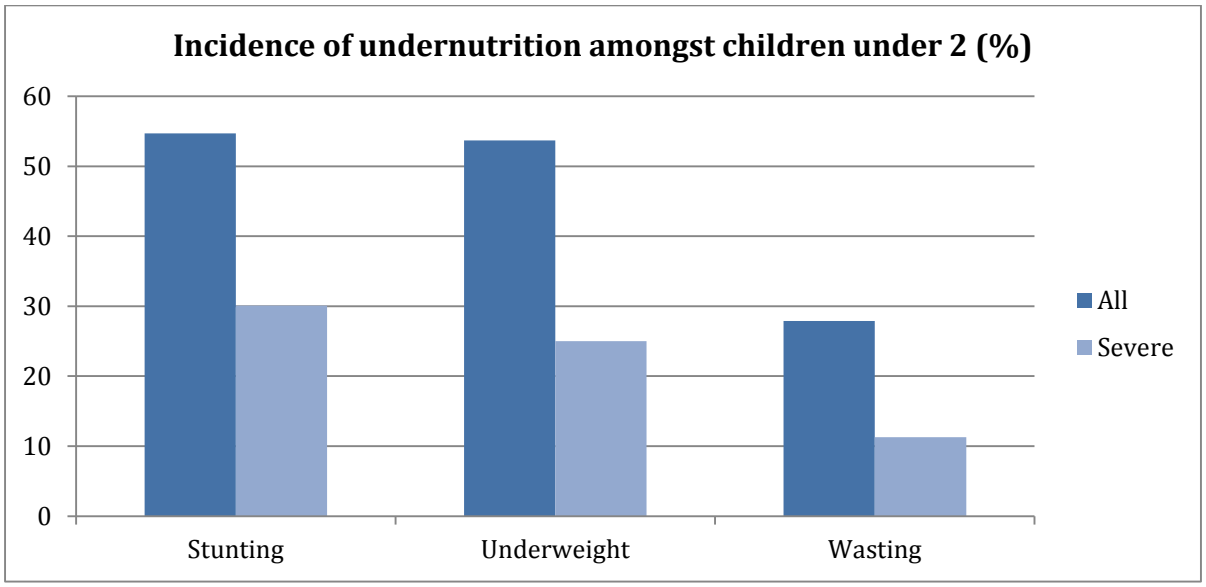
The BCSP is being accompanied by a rigorous impact evaluation in order to measure the impacts of the cash transfer on child nutrition and maternal health status, to inform scale-up decisions by the Government and contribute to the national and international evidence base and policy debate. The impact evaluation will compare changes in nutrition outcomes and other indicators before and after the cash transfer, compared to a control block. A separate block just receiving the technology underpinning the cash transfer is also included for evaluation purposes, to see the relevant importance of this compared to the demand side incentive, as it is likely to independently improve outcomes through supply side improvements.

The programme implementation is not fully randomised (i.e. treatment villages randomly assigned to the different treatment and control programmes) – rather, treatment status is applied to discrete geographical areas – administrative Blocks. This is therefore a difference-in-differences approach using a quasi-experimental approach. This will be accompanied by operational reviews early on in the programme to refine the design and ensure lessons are fully learned and disseminated, and qualitative research to examine in more depth issues that are difficult to capture within a quantitative framework.

Main Baseline Findings

Nutrition outcomes

In terms of child nutrition, the baseline survey collected anthropometric measurements (weight and height) of children under 2 years of age. The data indicates that 54.7 percent of children are stunted, indicating chronic malnutrition, whilst 28 percent of children are wasted, indicating acute malnutrition. The composite indicator reflecting both acute and chronic malnutrition indicates that 53.6 percent of children under 2 years of age are underweight. Additionally, 30.1 percent of children are severely stunted, 25 percent are severely underweight, and 11.3 percent are severely wasted. These figures are significantly higher than the whole of Bihar figures reported in the 2005/06 NFHS and are shown on the following graph:



Analysis of anthropometric outcomes of mothers as measured by the body mass index reveals that 48.5 percent of them are underweight. In terms of biomedical outcomes of the mothers, the prevalence of anaemia in the mothers in the BCSP sample was 69.4 percent, with 3 percent having severe anaemia, 39.1 percent having moderate anaemia and 27.3 percent having mild anaemia.

Consumption expenditure, caloric intake, food security and health expenditure

The baseline survey measured household consumption expenditure, calorie intake, food security and health seeking behaviour in order to be able to establish the effects of the BCSP cash on these factors.

In terms of the food consumption expenditure, the baseline survey reveals that the monthly per capita expenditure on food on average is Rs. 851. According to our data, per capita calorie consumption is 2298. Finally, in terms of food security, we find that 92.6 percent of the households reported having enough food for the household in the last 12 months before the date of the survey, and only 448 households responded in the negative.

In terms of health-seeking behaviour and expenditure, we find that someone was consulted in 93.1 percent of the cases when was a child was reported to be ill in the past month. Over 80

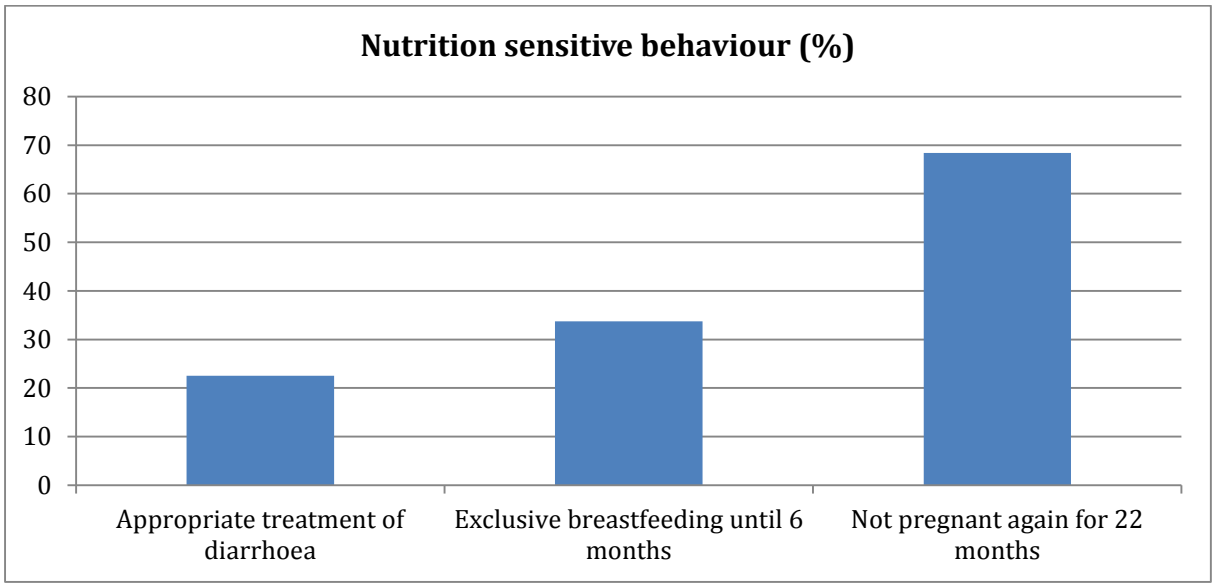
per cent of children with illness are taken to private health institutions, either a hospital or a maternity home. The main reasons for not going to a government hospital are: first, there is no government facility in the village or is simply too far away; second, even if accessible, there is a lack of faith in such institutions. In terms of access to healthcare facilities, over 80 per cent of households live within 10 kilometres of a health facility, with a little under half living within 2 kilometres. Time-wise, this translates to over 90 per cent of households with access to a health facility that lies within two hours of travel. The travel to the first facility was mostly done on foot (55.1 percent) followed by tempo/ auto/ tractor (34.2 percent). Notwithstanding the variations across the four programme blocks, the average cost of travel to the first facility is Rs. 78.2 and of treatment at the same is Rs. 476.2.

Women's empowerment

Women's employment in our sample is low as only 13 percent of the women are engaged in any kind of paid employment. Out of the women who are involved in some kind of employment (paid and self-employed) 36 per cent of women report being employed in a regular (throughout the year) and full-time job. The average monetary payment an employed woman received in the month before the survey happened was approximately 1900 rupees though the standard deviation was very high. As far as decision-making is concerned, 40 per cent of women report that primarily they themselves decide how their earnings would be spent. Only 28 per cent make the same decision jointly with their husbands. Additionally, 84 per cent of the sample did not have a bank or post-office account.

Nutrition sensitive behaviours

The (i) treatment of diarrhoea with ORS, and (ii) exclusive breastfeeding until 6 months of age are two nutrition-sensitive behaviours that BCSP intends to promote, as well as appropriate birth spacing.



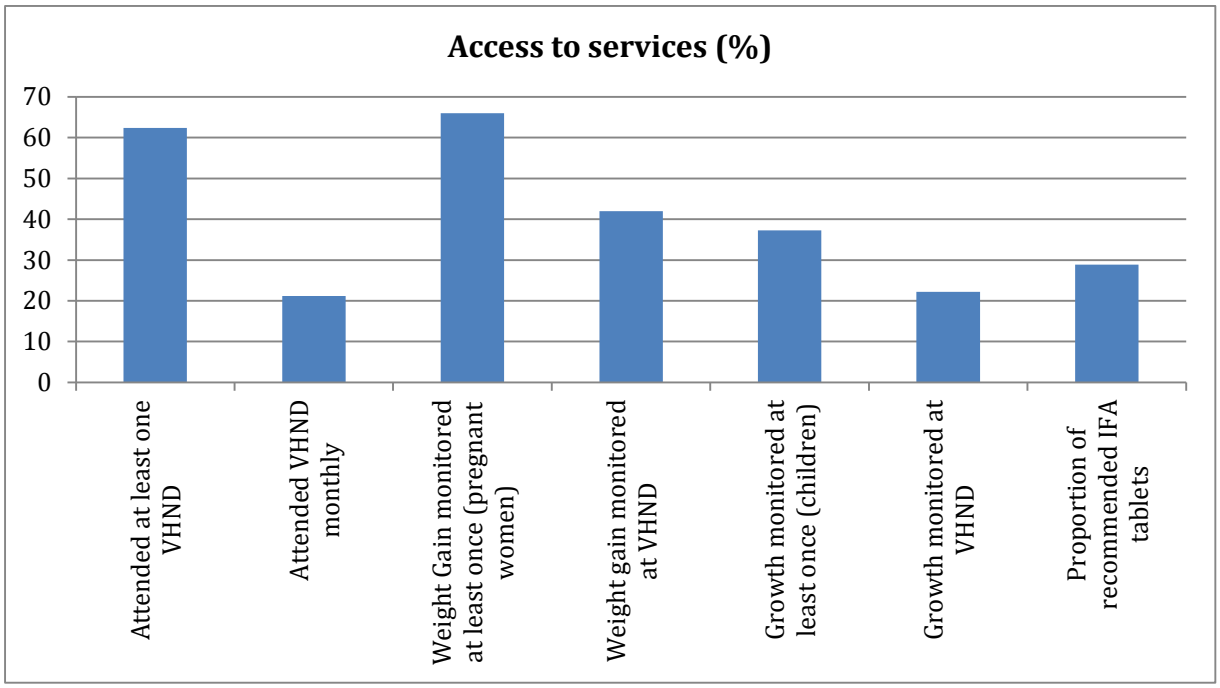
When asked about actions to take when child gets diarrhoea, only 9 percent women responded with 'give ORS and Zinc solution' and an additional 8 percent responded 'give ORS solution'. Only about one in three children suffering from diarrhoea were reported to have been given ORS. Diarrhoea prevalence rates were estimated as 37.8%

With respect to exclusive breastfeeding and other IYCF practices, only about 40 percent of the children in our sample are exclusively breastfed for the first six months of their lives. When those mothers who had not exclusively breastfed their child for the first six months were asked their reason(s) for doing so, as multiple responses, the most popular reasons were not having enough milk to feed the child (40.8 per cent)[1], and giving water to the baby due to the heat (33.2 per cent). Other popular responses were that the respondent's family didn't allow exclusive breastfeeding (19.1 per cent), that the mother/child was unwell in the first 6 months (14.6 per cent), and the lack of knowledge (14.2 per cent).

Approximately 68% of women in the sample had not become pregnant again 22 months after giving birth (which is the closest estimate of appropriate birth spacing behaviour that can be estimated from the end line).

Uptake of services

Some of the conditions attached to the transfer are designed to encourage the uptake of services available under ICDS that could promote improved nutrition outcomes. These include monthly attendance at Village Health and Nutrition Days/Village Immunisation Days, weight gain monitoring of pregnant women and growth monitoring of children, and the taking of IFA supplementation by pregnant women.



Within the sample, 38 per cent reported that during their last pregnancy they had never attended a VHN Day, 28.4 per cent had attended it for a few months, and 21 per cent had attended it for the entire duration of their pregnancy. When those who had never attended a VHND were asked for a reason for doing so, 23 per cent of those who said no, were not aware of it, and 14 per cent did not feel VHN Days necessary to attend. Women reported that during their pregnancy, while attending the VHN Days, most of them received services like growth monitoring (42 per cent), IFA tablets (55 per cent) and tetanus injections (84 per cent).

[1] Not having enough breast milk to feed should be seen as a reason that could be overstated because breastfeeding has to be learned as well as timely for women to be able to exclusively breastfeed their children.

However, relatively less women received advice on birth preparedness (31 per cent), nutrition (30 per cent), child care (24 per cent) and feeding practices (21 per cent).

Moving on to attendance after childbirth, we find that 56 per cent of the women surveyed visited the AWC with their child on the VHN Day. However, 7 per cent of the sample is not aware of the concept of VHN Days. when those who did not attend a VHND with their child were asked their reason(s) for not doing so, popular responses were the lack of knowledge about the VHND (23.9 per cent), the opinion that it was unnecessary (17.3 per cent), the family not allowing it (16.7 per cent) and that no one was at home to look after the household chores (15.2 per cent). Of the women attending the VHN Day with their child, the frequency of their visits is considerably less than the stipulated norm. Sixty six per cent of these women attend the VHN Days less often than once a month.

Regarding weight monitoring, 66 per cent of women reported that their weight was monitored at least once during the last month of pregnancy. However, as a part of the Ante-Natal check-up done at the VHN Day, growth monitoring happened only for 42 per cent of the women. The baseline survey also shows that barely one in five children (below 24 months of age) are *ever* weighed. Additionally, over sixty per cent of households report having young children who have never been weighed or growth monitored.

IFA supplementation levels are also very poor – as opposed to 90, it was observed that on an average, a woman received only 26 IFA tablets during her last pregnancy. Seventy eight per cent of the women received IFA tabled from the Anganwadi Centre, the ANM or the ASHA.

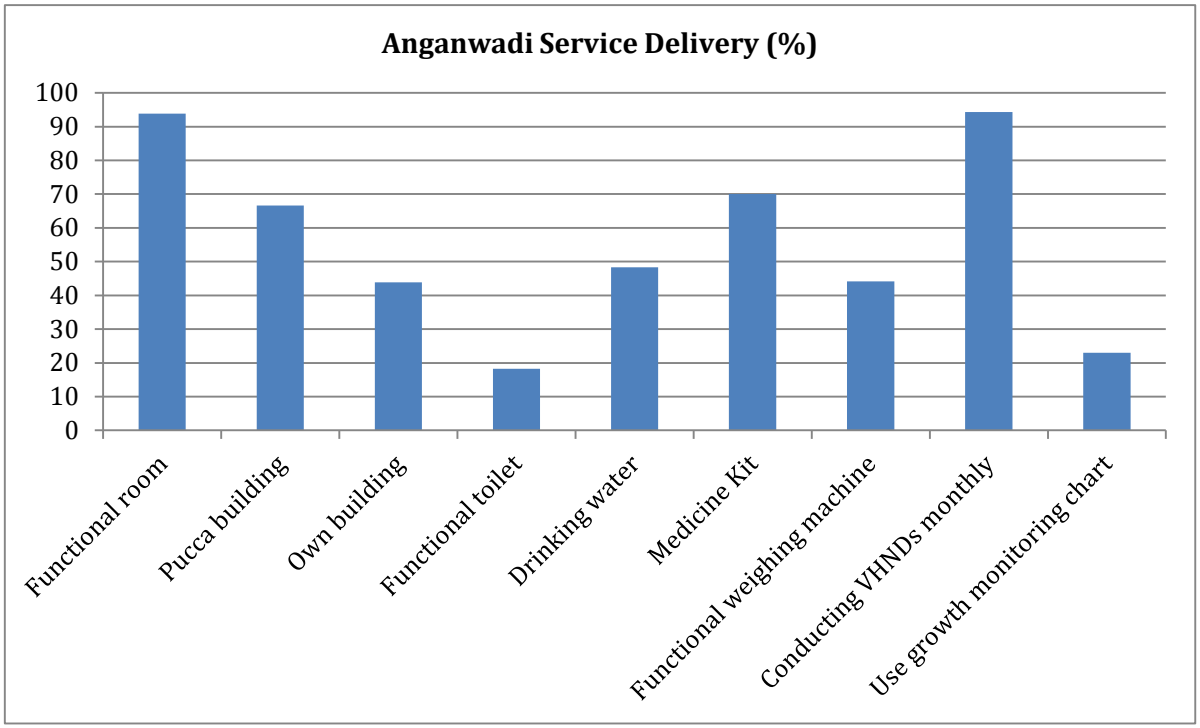
The supply side

As part of the BCSP baseline survey, information was collected on the basis of visits to 220 Anganwadi Centres.

In terms of infrastructure facilities, the data reveals that almost 93.81% of AWCs have at least one room to function the centre, but only 66.67% of these are in Pucca buildings. Only 44% of AWCs have their own building built as centres. Only 18% have toilet facility and 48.87% have drinking water facility through hand pumps or tap water. Seventy percent of AWCs have basic medicine kit to treat simple injuries. Out of 170 AWCs reported to have weighing machine, only 94 are working i.e. only in 44% AWWs there is growth monitoring facility.

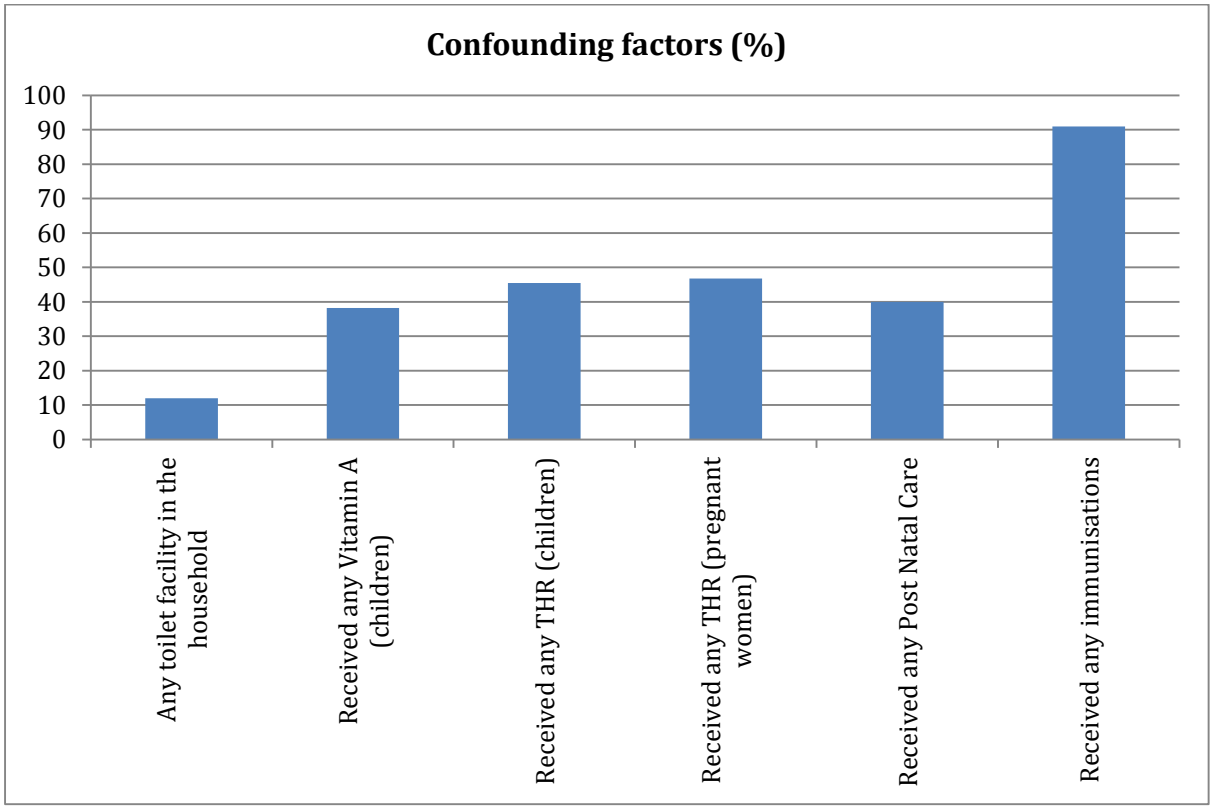
Given the importance of VHNDs for the successful completion of BCSP conditions, it is critical to note that in more than 94% AWCs, VHND or RI is carried out once every month. During these, ANMs attend for more than 93% and ASHAs attend more than 85%.

The survey also checked the stock levels of various items at the AWCs. Only 25% of Anganwadi Workers had packets of ORS and Zinc for the treatment of diarrhoea; 11% had stocks of condoms and oral contraceptive pills (OCPs), 16% had malaria tablets and 69% had deworming tablets.



Confounding factors

There are many other factors that affect nutrition outcomes that are outside of the BCSP programme, including water and sanitation infrastructure and other nutrition and health services (such as child immunisation, Take Home Rations). The following table shows some of the key figures for these confounding factors:



Contribution to the nutrition debate

There is currently extensive debate in India as to why rates of undernutrition are stubbornly high in India considering the rates of economic growth; and why they are so much higher than comparatively poorer countries in Africa[2].

One of the challenges faced by researchers and policy analysts is the lack of recent, high quality nutrition data. The comprehensiveness of the BCSP dataset means that it could potentially add considerable evidence and value to the ongoing debate.

Therefore, we use the BCSP data to "test" two of the current hypotheses surrounding the disproportionately high rates of undernutrition in India. The first, based on work by Spears (2013) posits the importance of open defecation in explaining the nutrition picture[3]. The second, by Jayachandran and Pande (2012) identifies son preference and cultural based gender norms as a key driver[4], which manifests itself through substantially lower outcomes for girls born after the first male child.

Our key conclusions are:

- There is a strongly significant relationship between the frequency of diarrhoea and other illnesses and nutrition outcomes.
- Access to a toilet (and not defecating openly) do seem to reduce the disease and illness prevalence of children within the household, but that this is not statistically significant for all illnesses
- Access to a toilet (and not defecating openly) does not have any direct impact on nutrition outcomes
- Therefore, the data does not seem to strongly support the hypothesis of Spears
- The data does show that lower birth order children have lower height-for-age and height-for-weight outcomes, although there is no significant relationship for weight-for-age (partially reflecting the age profile of our sample)
- The data confirms the analysis of Jayachandran and Pande because the nutrition outcomes are significantly worse for lower birth order girls as compared to boys

After this, we use the data to try and identify econometrically the impact of the Take Home Rations scheme on nutrition outcomes. The Take Home Rations scheme, described elsewhere in the report, is a key part of ICDS; however there is very little evidence on its effectiveness. The key conclusions of this analysis are:

- The Take Home Rations scheme seems to be well targeted, in that it is received by children who have significantly worse nutrition outcomes

[2] *India's Malnutrition Enigmas: Why They Must Not Be a Distraction from Action*, Lawrence Haddad, IDS August 2013 and the special editions of EPW in 2013

3 Spears, D. 2013. *How Much International Variation in Child Height Can Sanitation Explain?* Policy Research Working Paper 6351. World Bank. February.

[4] Jayachandran, Seema, and Rohini Pande. "The Puzzle of High Child Malnutrition in South Asia." presentation slides." *International Growth Centre* (2012).

- However, our econometric analysis suggests that, when controlling for the other determinants of nutrition outcomes, the Take Home Rations scheme has no significant impact on nutrition outcomes

Conclusion

Validity of evaluation design

To conclude the discussions on the programme and evaluation design, programme impact outcomes and indicators as well as a brief discussion of the nutrition debate, there is a review of whether there are any statistically significant differences across the four blocks in terms of the primary programme outcome indicators. The evaluation design is a **difference-in-differences** approach using a **quasi-experimental approach**, and in this case (with three comparison groups built in in a step-wise approach), it warrants that we focus on pairwise tests for differences to ensure that the matching of blocks on the basis of the potential confounding factors is appropriate as below:

a) Mohra (pure control) vs Khizarsarai (just technology) – to isolate the impact of the technology system and supply side interventions on programme outcomes
b) Khizarsarai (just technology) vs Wazirganj (soft conditions) – to measure the impact of the soft conditions CCT when added to the technology system
c) Wazirganj (soft conditions) vs Atri (hand conditions) – to measure the impact of switching
d) from soft to hard conditions

We find that there are no statistically significant differences between the pairs of blocks in a majority of the outcome indicators. This can be seen as a validation of the matching exercise carried out at the design stage and it is clear that the quasi-experimental approach adopted is appropriate based on the baseline indicators.

Implications on data quality in future survey rounds

From the baseline survey exercise and analysis, we also learnt that of a two-fold problem faced with respect to questions on infant and young child feeding knowledge, practices and behaviour. In particular, there are two implications for the quantitative and qualitative work to follow: (i) intensive training of enumerators to convey the meaning of *exclusive* breastfeeding and building in consistency checks in the CAPI to ensure that contradictions about child feeding practices can be avoided, and (ii) incorporation of survey tools on the basis of WHO IYCF measurement guide, especially on complementary feeding practices.

Modification to the programme design

Based on expert feedback as well as learnings from the field implementation and the evaluation baseline, it has been decided to pilot a new outcome bonus in one block– a **child growth bonus** (in place of the **birth spacing bonus**) which will work like the birth spacing bonus. Under this, the beneficiaries will receive a bonus of Rs. 2000 for the child's weight being normal i.e. child not being underweight at the age of 24 months, and an additional Rs. 3000 if the child is not underweight at the age of 36 months, respectively.

The rationale behind introducing an outcome condition in the programme design is that a CCT programme cannot influence *all* the outputs required to cause substantial impact on the final programme outcomes, measured in this case through child nutrition outcomes, because not all outputs are possible to monitor or measurable. This outcome bonus is being piloted in the

revised design to test the impact of putting the responsibility of adopting behaviours and outputs necessary for improved child nutrition outcomes on mothers and families instead of relying entirely on health and nutrition frontline workers. Our understanding is that this will be the first time an outcome level condition has been included in a conditional cash transfer in this way.

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List of Abbreviations

ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
AWC	Anganwadi Centre
AWW	Anganwadi Worker
BCC	Behaviour Change Communication
BCG	Bacillus Calmette–Guérin
BCSP	Bihar Child Support Programme
BMI	Body Mass Index
BPL	Below Poverty Line
CCT	Conditional Cash Transfer
CDPO	Child Development Project Officer
CHC	Community Health Centre
DH	District Hospital
DHS	Directorate of Health Services
ECCD	Early Childhood Care and Development
GP	Gram Panchayat
Hb	Haemoglobin
HFA	Height for Age
HPV	Human papillomavirus
ICDS	Integrated Child Development Scheme
IFA	Iron and Folic Acid
IYCF	Infant and Young Child Feeding
JSY	Janani Suraksha Yojana
LHV	Lady Health Visitor
LPG	Liquefied Petroleum Gas
MAM	Moderate Acute Malnutrition
MCHN	Maternal and Child Health and Nutrition
MDE	Minimum Detectable Effect
MGRS	Multicentre Growth Reference Study
MNCHN	Maternal New-Born Child Health and Nutrition
NFHS	National Family Health Survey
NGO	Non-governmental Organization
NIPCCD-CMU	National Institute of Public Cooperation and Child Development – Central Monitoring Unit
NIS	National Immunization Schedule
NRC	Nutrition Rehabilitation Centre
NRHM	National Rural Health Mission
NSS	National Sample Survey
OBC	Other Backward Classes
OCP	Oral Contraceptive Pills
OPM	Oxford Policy Management
ORS	Oral Rehydration Therapy
PHC	Primary Health Centre
PSU	Primary Sampling Units

RBC	Reinforced Brick Concrete
RCC	Reinforced Cement Concrete
RI	Routine Immunization Day
SAM	Severe Acute Malnutrition
SC	Scheduled Caste
SD	Standard Deviation
ST	Scheduled Tribe
SWD	Social Welfare Department
THR	Take Home Ration
UNICEF	United Nations Children's Fund
VHND	Village Health and Nutrition Day
WFA	Weight for Age
WHO	World Health Organization
WQ	Wealth Quintile

1 Introduction: The Bihar Child Support Programme

1.1 Introduction

This report presents the results of the baseline survey conducted in late 2013 for the Bihar Child Support Programme (BCSP), before the start of programme implementation. The baseline survey is the first part of a formal impact evaluation which will be completed by an endline survey towards the end of programme implementation and supplemented by interim qualitative work. Chapter 2 describes the impact evaluation strategy. This chapter introduces the BCSP.

In recent years, the continued high rate of child undernutrition in India has become an important policy issue at central and state level, and has received significantly greater focus amongst academics and researchers[5]. This reflects a renewed interest in the issue globally, culminating in the headline 2013 Series on Maternal and Child Nutrition published in The Lancet[6], based around the understanding that child undernutrition has irreversible long run consequences for mental and physical development.

In Bihar, rates of child malnutrition are especially, and stubbornly, high, despite improvements in other development indicators. Despite intensive efforts by the Government, child malnutrition rates in the State remain high; 55% of children under 3 years of age are underweight, 50% are stunted and 33% are wasted (NFHS 3).

The **Bihar Child Support Programme** (BCSP) is a pilot programme that explores whether or not a **conditional cash transfer** (CCT) could be a cost-effective policy instrument to reduce child under-nutrition. CCTs have been piloted and implemented globally in the last decade, although the evidence base on their effectiveness is generally mixed, especially around the benefits of conditionality[7].

The BCSP is also an opportunity to contribute to the current national debate on the merits of CCTs in India[8]. This debate has been given momentum by the demonstrated logistical and implementation issues with existing schemes. However, there is a limited evidence base within India over the potential merits of cash transfers. Furthermore, many States in India have rushed out cash transfers without developing safe and effective systems for registration of beneficiaries, monitoring of conditions and distributing cash. The BCSP is an opportunity to develop a "**best practice**" standard of cash transfer implementation that can be a beacon to all other schemes, using cutting edge technology.

1.2 An overview of the BCSP

The pilot Bihar Child Support Programme will be targeted at pregnant women and mothers of young children. Beneficiaries will be eligible for a monthly payment of Rs. 250 between the end of the first trimester of pregnancy and the child's third birthday (a total of 42 months), if

[5] See e.g. *India's Malnutrition Enigmas: Why They Must Not Be a Distraction from Action*, Lawrence Haddad, IDS August 2013 and the special editions of EPW in 2013.
[6] See e.g. *Maternal and child undernutrition and overweight in low-income and middle-income countries*, Black et al, The Lancet, Volume 382, Issue 9890, Pages 427 - 451, 3 August 2013
[7] *How Effective are Cash Transfer Programmes at Improving Nutritional Status*, Manley, et al, (2011).
[8] *Introducing Conditional Cash Transfers in India: A Proposal for Five CCTs*, Santosh Mehrotra, Director-General, Institution of Applied Manpower Research, Planning Commission 03/12/2010.

they meet certain conditions. The transmission mechanism between the cash and expected impact (a reduction in child and maternal undernutrition) is explained in the subsequent section.

The pilot will be implemented in three blocks, from **Gaya** District. All pregnant women will be eligible for the scheme from the 3rd month of pregnancy onwards. Approximately 8,880 women will join the scheme per year, with a total of 22,200 beneficiaries enrolled by the end of the pilot.

The monthly transfer will be **conditional** in order to channel behaviour. Conditions have been chosen based on the following parameters:

- **Realistic** – is it realistic to think that a cash transfer can change the behaviour of beneficiaries?
- **Feasible** – are there ways for beneficiaries to meet the conditions – i.e. does the supply side exist or is it possible to easily improve it? Is it in control of the programme implementers? Ideally there would be flexibility as well with multiple sources of provision
- **Practical** – can the conditions be measured and monitored without too much scope for discretion and opportunities for corruption?
- **Impactful** – are the conditions promoting behaviours or services that have proven levels of efficacy in terms of improving nutrition outcomes?

Two versions of the BCSP are being implemented. In one block (Wazirganj) a relatively "soft" set of conditions are attached to the transfer. These include:

- Monthly attendance at Village Health and Nutrition Days/Village Immunisation Days
- Weight gain monitoring of pregnant women
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Because one of the biggest drivers of low maternal and child nutrition outcomes (Lancet 2013) is insufficient spacing between pregnancies, beneficiaries in Wazirganj will through the BCSP receive a **birth spacing bonus** of Rs. 2000 if they have not become pregnant again 24 months after giving birth, and an additional Rs. 3000 if they have not become pregnant again 36 months after giving birth. Therefore, the BCSP will be worth up to Rs. 15,500 per beneficiary in Wazirganj when this is combined with the monthly transfers.

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outcomes on to the mothers and the family of the children on child nutrition outcomes in the light of the fact that a lot of desirable conditions are not measurable or easy to monitor and therefore are not possible to include in the programme.

The BCSP operates through the structures of the Social Welfare Department's Integrated Child Development Scheme (ICDS). One of the aims of the programme is to support and strengthen ICDS delivery through synergies with the cash transfer. In particular, the village level front line worker of the ICDS, the **Anganwadi Worker**, is the fulcrum of the BCSP as she will be responsible for registering beneficiaries, reporting on their receipt of conditions and providing some of the services that the conditions are based on. In turn, the cash incentives encourage uptake of available services.

The Anganwadi Worker will be provided with a mobile phone upon which a **BCSP application** will be pre-loaded. She will register beneficiaries on the application, report on service availability and record which beneficiaries receive which services. The phone will automatically transmit data to a central server. The server will automatically calculate whether beneficiaries have met the necessary conditions and generate payment lists. CDPOs will be responsible for signing off block level payment lists and the DPO for compiled payment lists. If services are not available at a particular Village Health and Nutrition Day, the conditions will be relaxed so that the beneficiary is not penalised[9].

The Anganwadi Worker will receive **incentive payments** (up to Rs. 450 per month) to ensure that they complete their duties under the BCSP. The incentive structure is designed so that Anganwadi Workers have strong incentives to report truthfully and not over-state service provision, including financial penalties if their reporting is found to be untruthful.

The mobile phone application will also enable the Anganwadi Worker to improve her own **service delivery** through a case management tool and having pre-installed Behavioural Change Communication (BCC) messages that can be played to beneficiaries. Furthermore, when she enters growth monitoring data, it will tell the AWW the nutritional status of the child (e.g. severely under-weight) and give appropriate instructions (e.g. refer to the Nutrition Rehabilitation Centre (NRC)). The server has the ability to automatically send text message alerts to beneficiaries, either with BCC messages or time specific alerts about the need for or the receipt of services.

The data generated on the server can be used by the Department and the various administrative layers (e.g. CDPOs, Lady Supervisors) in their **performance management** and support of front line workers by e.g. identifying areas where services are not available, or coverage is low. There will be real time information generated per Anganwadi Centre that will be displayed using a Geographic Information System display. To make the most of this opportunity, there will be a series of capacity building trainings at multiple levels to help SWD and district staff to interpret and use the performance management information to its fullest extent.

There will be multiple tiers of oversight, monitoring and grievance redressal. **Community Monitoring Groups** will be formed in each village. These will be formed from existing structures, such as Self-Help Groups, to minimize set-up costs. They will attend the VHND

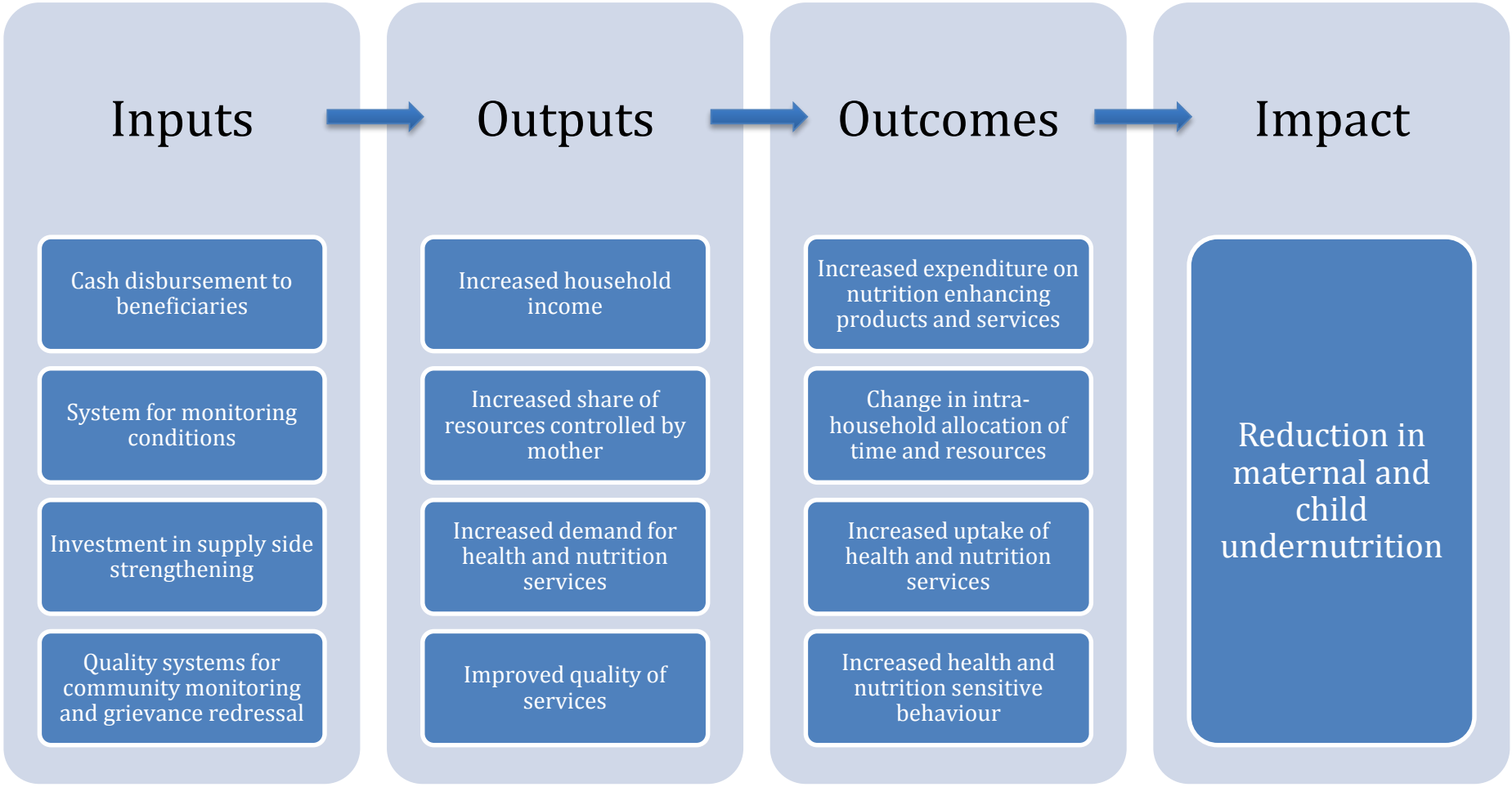
[9] The evaluation of the BCSP will also look at the relative contribution of the technology system to support the ICDS programme, and the cash transfer itself, to changes in health and nutrition outcomes through having one Block (Khizersarai) which is just receiving the technology and not the cash transfer

and monitor the programme, mobilise community members to enrol on the scheme and attend VHNDs, monitor reporting and be the first line of grievance redressal at the community level.

Lady Supervisors will be responsible for ensuring effective implementation in their defined area, including coordinating VHND Micro-Plans, verifying grievances where necessary and supporting GP Mobilisers.

1.3 Programme Theory of Change

The BCSP programme theory of change is summarised in the following diagram:



The ultimate aim of the programme is to achieve impact through reduced maternal and child undernutrition. There are several transmission mechanisms by which this could happen, each of which have multiple assumptions underpinning the expected chain from inputs to impact. They are detailed in this section.

1.3.1 Direct effect 1 – Cash

The programme works through the direct transfer of cash to beneficiaries. This could improve the nutrition status of women and children through two transmission mechanisms:

- Increasing expenditure on things that improve nutrition status, including food consumption, which increases the caloric intake of beneficiaries or improves micronutrient intake, or other goods and services which improve nutrition outcomes (e.g. health services and medicines which reduce caloric wastage)

- Increasing the degree of autonomy and empowerment of the women in the household as the women is the direct recipient of the cash which could improve maternal and child nutrition outcomes through changing intra-household resource allocation and changing the way that the different household members allocate their time in a way that favours child care

Both of these transmission mechanisms assume that the mechanics of the cash transfer work smoothly; i.e. that the right amount of cash is disbursed to the right people at the right time, with minimum fiduciary risk, leakage or transaction costs (e.g. expenditure on transport to reach the bank to withdraw the money). The BCSP is predicated on the idea that a small, routine and predictable cash transfer is more likely to be spent on consumption than a lumpy, infrequent larger value cash transfer (such as IGMSY) where, due to credit market imperfections, expenditure tends to be higher on asset investment rather than consumption (Manley et al).

The translation of household level income into improved nutrition outcomes can come through increased expenditure on food, or expenditure on other nutrition enhancing expenditure items, such as soap, or visits to the doctor in the case of diarrhoea. The translation of increased income into increased caloric intake is not straightforward. In general, it is believed that for every additional 1 Rs a household receives, only 70% is spent on food, and of this half is spent on increasing caloric intake and half on substituting towards higher cost calories (like sugar rather than cereals) (Deaton and Dreze). Therefore, only 35% on average is translated into increasing caloric intake (although the substitution effects may improve micronutrient intake). This is for the household as a whole; the increment that goes to the mother and child could be a fraction of this (and the impacts on child nutrition outcomes if the child is breastfeeding would be minimal). Therefore, the strength of this transmission mechanism on the desired programme impacts may not be high. An additional benefit may come if the transfer reduces negative consumption smoothing strategies (e.g. skipping meals) for households through an insurance function if households do not have other means to achieve this.

There may also be an effect through intra-household dynamics. The programme will distribute cash to mothers. This may have an empowering effect and influence the intra-household distribution in favour of mothers and children, assuming mothers have inherently different preferences towards intra-household distribution. It may also change the pattern of activities in the household such that mothers have increased time for nutrition enhancing activities (such

as breastfeeding or kangaroo mother care) if, for example, the cash transfer reduces the amount of time women have to spend working.

Overall, even if these transmission mechanisms are validated, for them to have an impact on nutrition outcomes requires the value of the cash transfer to be of sufficient magnitude. The BCSP has been calculated based on the "rule of thumb" that a cash transfer will only have significant effects on outcomes if it is at least one third of household consumption expenditure (DFID Evidence Paper).

1.3.2 Direct effect 2 – behavioural conditions

Some of the conditions attached to the transfer are designed to incentivise changes in household and individual behaviour in ways that improve nutrition outcomes. These include the treatment of diarrhoea with ORS, and, in the hard conditions block, promoting exclusive breastfeeding until six months. The birth spacing bonus is also designed to encourage beneficiaries to increase the spacing time between births.

There are various programmatic assumptions underpinning this transmission mechanism – that Anganwadi Workers and beneficiaries understand the conditions and that the monitoring system is able to adequately record data on whether the conditions are being met.

In terms of impacts, the ORS condition assumes that ORS packets are available (although a salt and sugar solution is sufficient); that the taking of ORS actually reduces the effects of diarrhoea (which is unclear if they are mixed with dirty water) and that the value of the cash transfer is enough to induce behaviour change.

For the breastfeeding condition to have an impact also assumes that the value of the cash transfer is enough to induce behaviour change. It also assumes that women are physically able to breastfeed. This is discussed in more detail in the relevant chapter but is a complex assumption; many women find it difficult to breastfeed, especially when they are malnourished and don't initiate early breastfeeding, and what might be good in the aggregate may not be best for the individual.

The effectiveness of the birth spacing bonus depends on the magnitude of the incentive being enough to change behaviour, which will be influenced by intra-household issues (the beneficiary receiving the cash may not have control over sexual decision making) as well as the availability of family planning methods and awareness of their existence and how they should be used.

1.3.3 Direct effect 3 – service delivery conditions

The rest of the conditions attached to the transfer are designed to encourage the uptake of services available under ICDS that could promote improved nutrition outcomes. These include:

- Monthly attendance at Village Health and Nutrition Days/Village Immunisation Days as a proxy for the receipt of services available at these Days
- Weight gain monitoring of pregnant women and growth monitoring of children – to alert mothers and Anganwadi Workers when a pregnant woman or child is not developing as expected, so that this can be acted on

- The taking of IFA supplementation by pregnant women

There are several assumptions that would need to be fulfilled for these conditions to impact on nutrition outcomes. Firstly, the value of the cash transfer has to be sufficient to induce an increased demand for services. The elasticity of demand will depend on the quality of services available, as well as the out of pocket costs (e.g. of transport) of accessing them. It also requires that the services are available, so that the increase in demand can be realised. The services need to be of the appropriate quality to translate into improved health and nutrition outcomes.

1.3.4 Indirect effect – improving the supply side

The investments of the programme (including ensuring the availability of weighing scales, training and incentivisation of Anganwadi Workers and the provision of the mobile phone based performance management system) may influence nutrition outcomes through improving the quality and coverage of the supply of nutrition relevant services. Furthermore, the conditionality of the programme may increase the demand for timely and quality services, and promote improved service delivery through social accountability. The strength of these transmission mechanisms will depend on the relative magnitude of the supply side improvements compared to the existing deficiencies.

1.3.5 The likely magnitude of the effect

The above has shown that the BCSP may improve final nutrition outcomes through a variety of direct and indirect transmission mechanisms; although these are all predicated on multiple assumptions that will be measured and tested as part of the evaluation. It is also important to note that there are many other determinants of nutrition outcomes that are not covered by the BCSP because they would not be appropriate conditions for a cash transfer. These confounding factors include the age of first pregnancy for mothers; the quality of the sanitation infrastructure and the quality and coverage of health providers. These confounding factors are examined in the latter chapters of this document.

The international experience of cash transfers suggests that whilst conditional cash transfers tend to be effective at increasing the uptake of health and nutrition services, the extent to which this is translated into improved final outcomes is highly mixed, and tends to be higher in contexts where the quality and coverage of service delivery is relatively strong[10][11].

Most of the available evidence comes from Latin America where some of the big success stories include Columbia (Attansio et al), which found a 6.9% relative reduction in stunting for children under the age of 2, Nicaragua (Maluccio et al) which found a net reduction of 5.5 percentage points in underweight children under 5 after 2 years of the programme and Mexico (Hoddinott and Bassett) which found that the prevalence of stunting amongst children under 3 reduced by 7.3 percentage points.

These kinds of magnitude have been replicated outside of Latin America, although the evidence from South Asia is limited. A recent Impact Evaluation of the Mchinji Social Cash Transfer Pilot in Zambia by USAID, UNICEF and Boston University found that after 1 year, the difference in difference impact estimates of BMI for underweight adults was 2.5 percentage

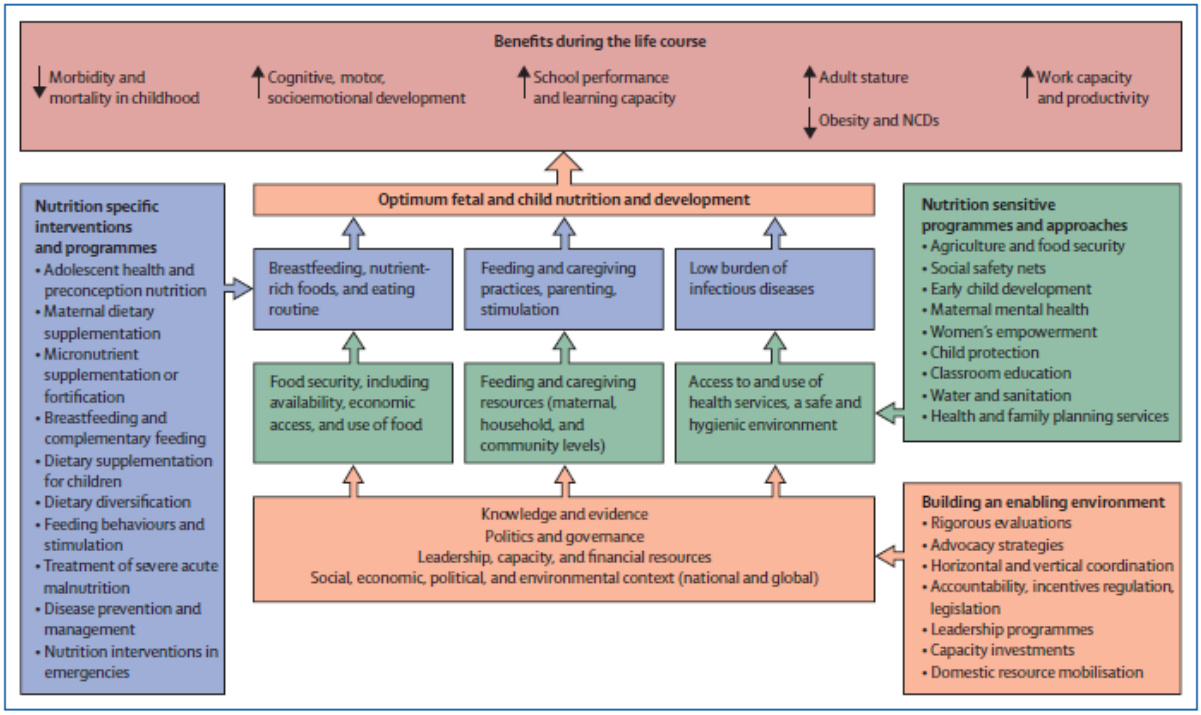
[10] *Cash Transfers to Support Better Household Decisions,* Glassman, Todd and Gaarder, Centre for Global Development (2009)
[11] *ibid*

points, for wasting in children it was 2.2 percentage points, for stunting it was 4.2 percentage points and for underweight it was 10.5 percentage points.

There are reasons to think that a similar magnitude of effect may be realistic for the BCSP, especially given the high baseline rates of malnutrition, suggesting significant potential gains. However, malnutrition rates have been stubbornly high in India and do not tend to show rapid changes; and the confounding factors, especially around sanitation and hygiene, are considerable. The evaluation has been designed around an expected reduction in rates of malnutrition of five percentage points.

1.4 Comparing the programme with the latest understanding of the nutrition evidence base

The Lancet series of 2013 uses the following framework for understanding interventions aimed at reducing undernutrition:

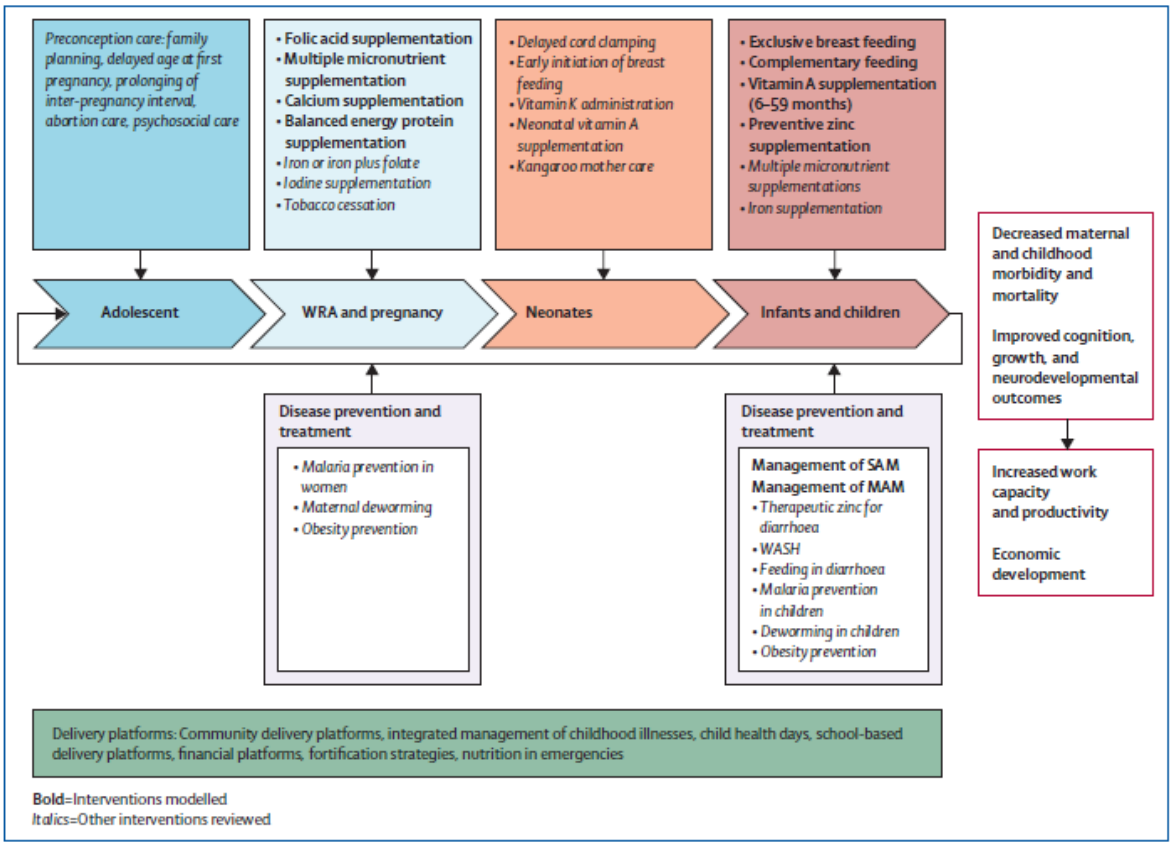


The Lancet framework "outlines the dietary, behavioural and health determinants of optimum nutrition, growth and development, and how they are affected by underlying food security, caregiving resources and environmental conditions, which are in turn shaped by economic and social conditions, national and global contexts, capacity, resources and governance".

The BCSP cuts across this framework as it includes focus on both nutrition **specific** interventions that address the immediate causes of sub-optimum growth and development (through the conditions) as well as nutrition **sensitive** programmes and approaches which address the underlying determinants of malnutrition.

The conditions attached to the BCSP, especially the provision of IFA supplementation to pregnant women, the promotion of breastfeeding and the identification of SAM and MAM children through the growth monitoring, are in line with the most effective at improving nutrition

outcomes identified by The Lancet series. They also cut across the whole lifecycle of beneficiaries as per the classification of nutrition specific interventions identified in The Lancet:



1.5 The structure of this baseline report

This report presents the results of the baseline survey conducted in late 2013 for the BCSP, before the start of programme implementation. The baseline survey is the first part of a formal impact evaluation which will be completed by an endline survey towards the end of programme implementation. Chapter 2 describes the impact evaluation strategy.

Chapter 3 presents the evidence on the nutrition landscape in the programme area, including the headline impact indicators.

Chapters 4, 5, 6 and 7 cover the direct and indirect transmission mechanisms identified above; including the impact of the cash (chapter 4), the impact on nutrition sensitive behaviours (chapter 5), the impact on the uptake of services (chapter 6) and the indirect effects on the quality and coverage of the supply side (chapter 7).

Chapters 8 and 9 outline the status of confounding factors that will co-determine impact indicators, including other nutrition behaviours and services not affected by the programme (chapter 8) and health services (chapter 9).

Chapter 10 uses the data collected to test two hypotheses recently posited to explain high levels of undernutrition in India, including the importance of sanitation (Spears 2013) and discrimination against lower birth order girls (Jayachandran and Pande 2012). It also uses the

data to try and estimate the impact of the Take Home Rations scheme of the Social Welfare Department.

Chapter 11 concludes the report with some reflections on the validity of the evaluation design, data collection and quality learnings and a note on the introduction of an outcome bonus in the programme design.

The annexes contain the tables underpinning the main sections (Annex C) and describe the sample population (Annex A) and PSUs (Annex B). Annex D presents a detailed note on the research ethics protocol and data quality assurance followed in the data collection process. Annex E contains the main references.

2 Evaluation Strategy

2.1 Introduction

The BCSP is being accompanied by a rigorous impact evaluation in order to measure the impacts of the cash transfer on child nutrition and maternal health status, to inform scale-up decisions by the Government and contribute to the national and international evidence base and policy debate. The impact evaluation will compare changes in nutrition outcomes of beneficiaries before and after the cash transfer, compared to a control block. This is therefore a **difference-in-differences** approach using a **quasi-experimental approach**. This will be accompanied by operational reviews early on in the programme to refine the design and ensure lessons are fully learned and disseminated, and qualitative research to examine in more depth issues that are difficult to capture within a quantitative framework. The operational reviews and qualitative research are not included in this baseline report as they are sequenced to happen later on in the programme lifetime.

2.2 Key Impact Areas and Indicators

The Terms of Reference outlines that the programme will ultimately be judged on its impact on four headline “final outcome” indicators which measure maternal and child nutritional and health status: stunting and wasting of children, and levels of underweight and anaemia amongst mothers.

However, the international evidence suggests that whilst nutrition focused cash transfers tend to effectively improve “intermediate outcomes” such as food consumption and health seeking behaviour, this may only deliver significant improvements to nutritional outcomes if health and nutrition services are of a high coverage and quality and holistic interventions around the other determinants of nutritional status are implemented.

It will therefore be important to measure during the evaluation the effect of the BCSP on these intermediate outcomes to that these transmission mechanisms are clearly investigated. This means testing whether cash transfers are an **effective** lever on intermediate outcomes at a household and individual level. Does the cash promote increased and better food consumption of pregnant and lactating mothers? Does it change time use in a way that improves care for the child? Does it promote healthy and health service seeking behaviour (and how does this differ for the two different blocks)?

The next key learning is whether these intermediate outcomes deliver significant **impact** to “final” outcomes in terms of maternal and child health and nutrition status. Are current initiatives to develop and improve service delivery in Bihar sufficient to translate the increases in food consumption and health seeking behaviour arising from the BCSP into improved nutritional and health outcomes? What else could be done to further amplify the impact of the BCSP?

Therefore, the evaluation will focus on testing the strength of the transmission mechanisms underpinning the programme theory of change, identified in the previous chapter, along with the associated assumptions.

This has been operationalised into the following indicator matrix:

<table>
<tr><td colspan="3">IMPACT</td></tr>
<tr><td colspan="3">1. Percentage of underweight (weight-for-age <-2 SD) children under two years of age
2. Percentage of stunted (Height-for-age <-2 SD) Children under two years of age
3. Percentage of wasted (weight-for-height <-2 SD) children under two years of age
4. Percentage of women (in age group 19- 49) who have BMI < 18.5
5. Percentage of women with Hb levels <12</td></tr>
<tr><td>DIRECT OUTCOME 1: Improved uptake of health services</td><td>DIRECT OUTCOME 2: Changes in household behaviour</td><td>DIRECT OUTCOME 3: Direct impact of cash</td></tr>
<tr><td>Overall
1. Proportion of women attending VHND every month
2. Average number of VHND attended by a beneficiary per year
During Pregnancy
3. Proportion of pregnant women not weighed during pregnancy/weighed at least once/weighed at least twice/weighed more than twice
Infancy
4. Proportion of children weighed every month; never; at least once a year; at least once a quarter</td><td>1. Proportion of pregnant women reported to consume more than 30 IFA tablets during pregnancy
2. Proportion of mothers reported to have exclusively breast fed the child for first six months
3. Proportion of mothers who reported that their child had diarrhoea reported take up of appropriate treatment
4. Proportion of eligible beneficiaries for spacing bonus actually spaced their next child birth (and received the bonus after two years)
5. Proportion of eligible beneficiaries for spacing bonus actually spaced their next child birth (and received the bonus after three years)</td><td>Time Use
1 Proportion of women reporting that cash transfer has changed their time use in a way that favours child care
Expenditure
1. Impact of receipt of cash transfer on spending on:
1.1. Health Services
1.2. Medicines and supplements
1.3. Food
2. Sanitation and hygiene expenditure
3. Children’s Education
Women’s Empowerment
1 Proportion of women reported to have full control over monthly cash transfer
2 Proportion of women reporting increased bargaining power in the household as a result of the cash transfer</td></tr>
<tr><td colspan="3">INDIRECT OUTCOME 1: Supply Side Improvements</td></tr>
<tr><td colspan="3">1. Proportion of AWWs reporting monthly to have functional weighing machines
2. Proportion of AWWs reporting monthly to have service availability to conduct VHNDs
3. Proportion of AWCs where VHND happened every month in an year
4. Average number of VHNDs conducted per AWC in an year
5. Proportion of AWCs where ANM has more than 90% attendance at VHND</td></tr>
</table>

2.3 Evaluation Strategy

The programme implementation is not fully randomised (i.e. treatment villages randomly assigned to the different treatment and control programmes) – rather, treatment status is applied to discrete geographical areas – administrative Blocks, for practical reasons of implementation of a programme of this nature.

As a purely randomised approach is not possible the evaluation is based on a **quasi-experimental** approach where changes over time to key indicators in the different blocks are compared. This is a **difference-in-differences** based evaluation specification.

Comparing changes to key indicators between different geographic units in this way runs the risk of producing biased or misleading results if there are systematic differences between the geographic areas, or if confounding factors unrelated to the programme influence the key indicators unequally across the different areas. To minimise this bias, we have done three things.

Firstly, the blocks were selected based on a **matching** algorithm that "paired" blocks that are as similar as possible. Econometrically, matching is not done on the evaluation indicators, rather than on factors that may have a confounding effect on these indicators. Furthermore, it is generally better to limit the number of matching factors to avoid over-specification and use continuous scale variables.

Based on this, to match Blocks as closely as possible, we took into account the following variables:

- Female literacy
- Population per Anganwadi Worker (to proxy service delivery)
- Anganwadi Worker per Lady Supervisor (to proxy supervisory levels)
- Average population per village (to proxy population density)
- Proportion of socially excluded groups(SCs), who may face differential access to services due to discrimination
- Male: female population ratio as a proxy for migration

This was achieved using information from the 2011 Census, internal data of the SWD and manually collected data from the CDPOs.

Based on this matching exercise, the best match (measured by the lowest sum of the absolute percentage point variances from the weighted average of indicator values from Wazirganj and Atri) was Khizersarai, so this was selected as the first control block (which will receive the technology system). The next best match was Mohra which will be the pure control.

The variance levels were low (less than 10 percentage points on average) so it was confirmed that these make good matches.

Secondly, because we have before-after estimates of key indicators, we will be comparing changes in the values of indicators between treatment and control areas rather than the absolute values, in a **difference in differences** specification. This removes one major source of endogeneity – the impact of time invariant unobservables.

Thirdly, to supplement the raw difference-in-difference estimates, econometric models will be estimated at the endline to control for time variant factors that may co-determine the impact indicators .Even with the matching approach it is possible that statistically significant differences will be observable between the two groups. In addition it may therefore be necessary to control for time variant idiosyncrasies that have a potential influence on the impact indicators, allowing for the further isolation of the **direct impact attributable to the programme**.

2.4 Sampling Strategy

As per the above evaluation strategy, the evaluation will be conducted in the four selected blocks:

– **Pure control block** – where there is no cash transfer or mobile phone application to improve service delivery

– **Control block (with technology system)**- where there is no cash transfer but the Anganwadi workers will be using the mobile phone application to improve service delivery

– **Treatment block 1**- where there is cash transfer conditional upon soft conditions

– **Treatment block 2**- where there is cash transfer conditional upon hard conditions

Having the additional control block allows the evaluation to distinguish between the effect of the cash transfer and the effect of the technology system, and to evaluate whether the technology system could work without the demand- and supply-side cash incentives to glue the system together.

The evaluation requires a repeated cross section design as children currently alive at the time of the baseline will not be eligible to receive the transfer. Therefore, a panel is not possible. The survey samples from mothers of children under two years of age.

A sample size of 6,000 households (1500 per block) was finalised. This gives a Minimum Detectable Effect (MDE) of 5 percentage points or better for the key impact indicators, taking into account the design effects reported in the NFHS data.

The survey was completed between July and October 2013. The sample is described in the appropriate chapters of the report.

3 Programme Impact: Nutrition Outcomes

3.1 Introduction

The Bihar Child Support Programme ultimately aims to improve the nutrition status of beneficiaries. To assess nutritional status, the BCSP Baseline Survey included an anthropometric module in which all children under two years of age were weighed and measured. Mothers were also weighed and their height measured, and haemoglobin tests were undertaken to measure levels of anaemia. The chapter is organised in a manner such that the following sub-sections detail the definitions and measurement methods of nutrition outcomes and the BCSP survey results for children and then for women.

3.2 Anthropometric Outcomes of Children

Evaluation of nutritional status is based on the rationale that, in a well-nourished population, there is a statistically predictable distribution of children of a given age with respect to height and weight. In any large population, there is variation in height and weight; this variation approximates the normal distribution. Use of a standard reference population as a point of comparison facilitates the examination of differences in the anthropometric status of subgroups in a population and of changes in nutritional status over time. The use of a reference population is based on the empirical finding that well-nourished children in all population groups for which data exists follow very similar growth patterns, particularly in the group of children less than two years of age, for which anthropometric data was collected in the BCSP Baseline Survey.

The BCSP anthropometric data has been standardised with reference to the WHO Multicentre Growth Reference Study (MGRS) population (WHO 2006). The MGRS population was built on longitudinal growth data from healthy children living under optimal environmental conditions, likely to favour achievement of their full genetic growth potential, in six developing and developed countries – Brazil, Ghana, India, Norway, Oman and the USA. The population can be used to assess children's growth regardless of country, location, ethnicity, socioeconomic status and type of feeding.

Three standard indices of physical growth that describe the nutritional status of children are presented in this report, as defined in Cogill (2003):

- Height-for-age (HAZ)
- Weight-for-height (WHZ)
- Weight-for-age (WAZ)

Each indicator is expressed in standard deviation units (z-scores) from the median of the standard population. Each of the indices provides different information about growth and body composition, which is used to assess nutritional status:

Stunting (length-height-for-age – length is measured for children below 2 years of age, height is measured for children aged 2): identifies past or present chronic undernutrition, but cannot measure short-term changes in undernutrition, i.e. it is not responsive to recent changes in dietary intake or health status. Stunting in a child occurs when growth falters or stops altogether, resulting in a failure to achieve expected height- for-age compared to a healthy well-nourished child. It is associated with a number of long-term factors, often in combination, including chronic insufficient protein, energy and micro-nutrient intake, frequent infection/disease, sustained inappropriate feeding practices and poverty.

Children whose height-for-age z-score is below minus two standard deviations (-2 SD) from the median of the standard population are considered to be stunted and are chronically undernourished. Children below minus three standard deviations (-3 SD) from the standard population are considered to be severely stunted.

Wasting (weight-for-height/length): identifies children suffering from current or acute undernutrition, with weight significantly below the weight expected of a child of the same length or height in the standard population. Causes include inadequate current food intake, incorrect feeding practices, disease and infection or, more frequently, a combination of these factors. Wasting in individual children can change rapidly and shows marked seasonal patterns associated with changes in food availability or disease prevalence.

Children whose z-score is below minus two standard deviations (-2 SD) from the median of the standard population are considered wasted for their height and are acutely undernourished. Children whose z-score is below minus three standard deviations (-3 SD) from the median of the standard population are considered to be severely wasted.

Underweight (weight-for-age): is a composite measure of stunting and wasting. As such, it measures both past (chronic) and present (acute) undernutrition, although it is impossible to distinguish between the two.

Children with z-scores below minus two standard deviations (-2 SD) from the median of the standard population are considered to be underweight. Children whose z-score is below minus three standard deviations (-3 SD) from the median of the standard population are considered to be severely underweight.

Before analysing the anthropometric data, some consistency checks as employed by WHO's Anthro Plus software programme were employed and 230 observations were flagged for potential data quality issues. We ran the analyses for both sets of data and found that while the Z-score values were slightly lower when flagged observations were dropped, the overall trends were similar. For the sake of this baseline report, the full sample has been retained but the summary statistics from the reduced sample are also presented in Tables C.3.2 and C.3.5. The evaluation will use at the endline difference in difference calculations for both the full and restricted sample to ensure any findings are robust and unbiased.

Rates of prevalence

In terms of prevalence rates, 54.7 percent of children are stunted, indicating chronic malnutrition, whilst 28 percent of children are wasted, indicating acute malnutrition. The composite indicator reflecting both acute and chronic malnutrition indicates that 53.6 percent of children under 2 years of age are underweight (Fig 3.1).

Additionally, 30.1 percent of children are severely stunted, 25 percent are severely underweight, and 11.3 percent are severely wasted (Fig 3.2)

Figure 3.1: Rates of prevalence of stunting, underweight and wasting, by programme block

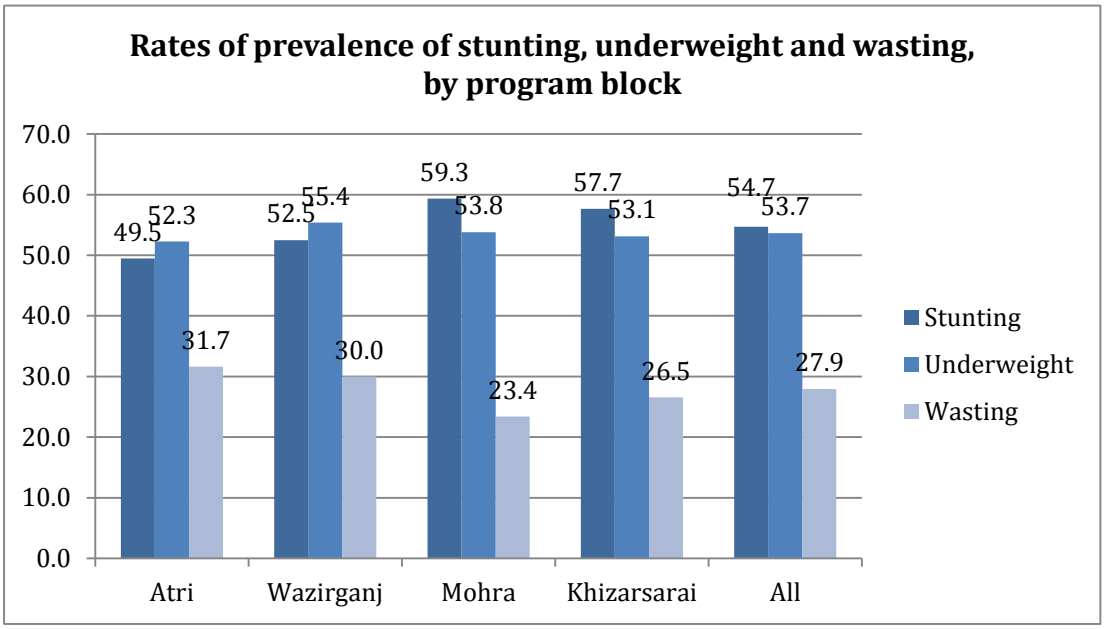
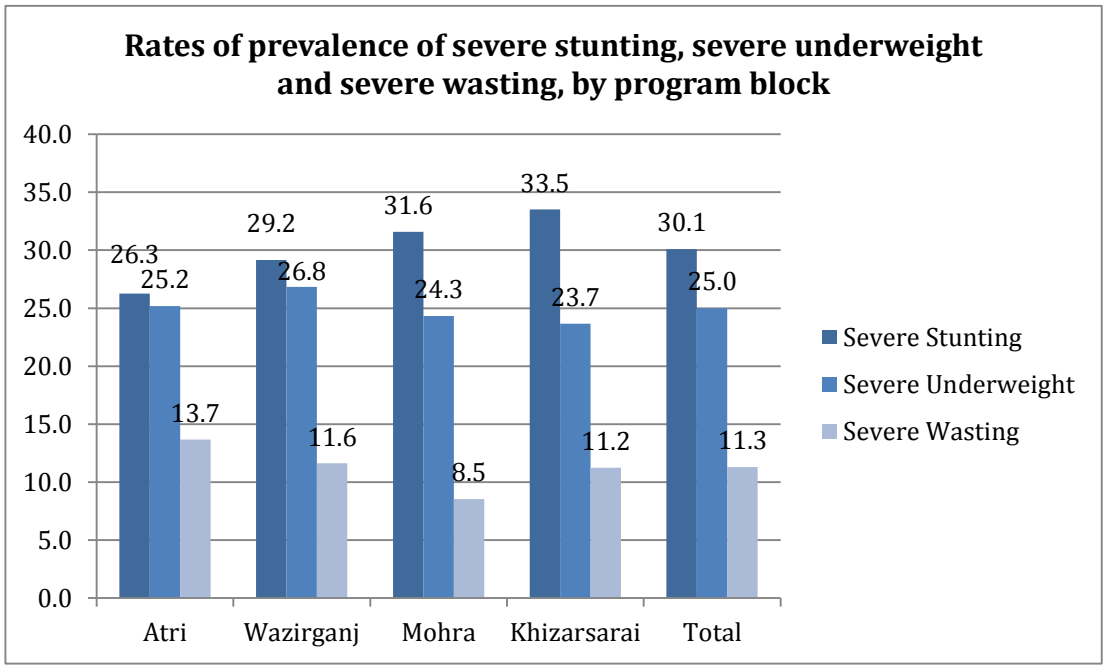


Figure 3.2: Rates of prevalence of severe stunting, severe underweight and severe wasting, by programme block



HAZ and WHZ scores are significantly different in Mohra and Khizarsarai from those in Atri for all and most sub-groups. This is also reflected in the prevalence rates of stunting and wasting.

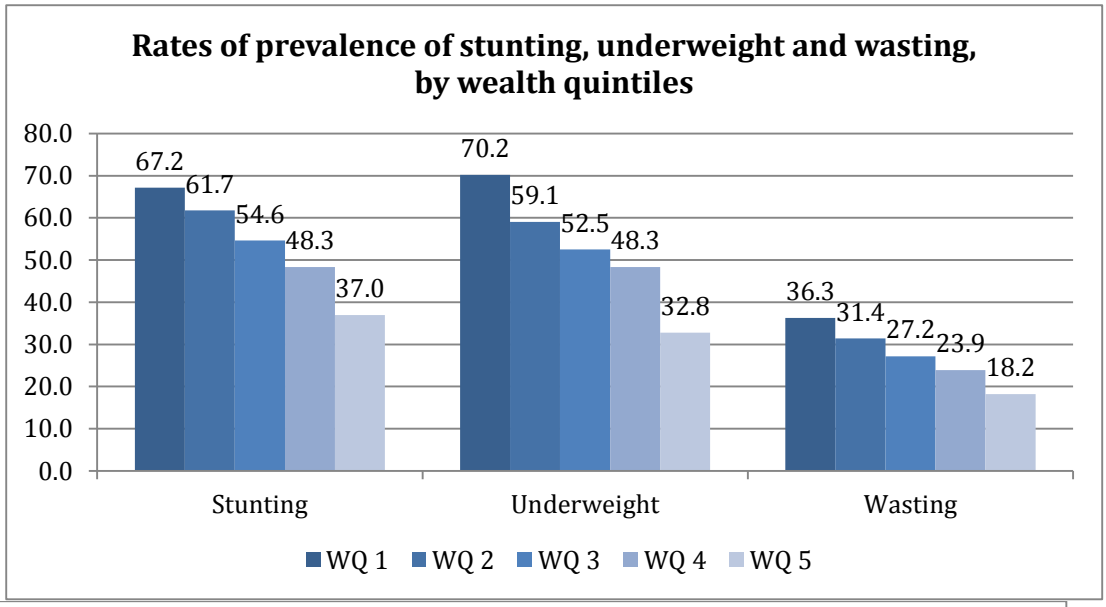
In terms of the wealth quintiles[12], the rates of stunting, underweight and wasting all show an improvement going from the poorest quintile to the wealthiest quintile. While the rates of stunting, underweight and wasting in the wealthiest quintile are 37 percent, 32.8 percent and 18.2 percent, respectively, they rise dramatically with decreasing wealth to 67.2 percent, 70.2

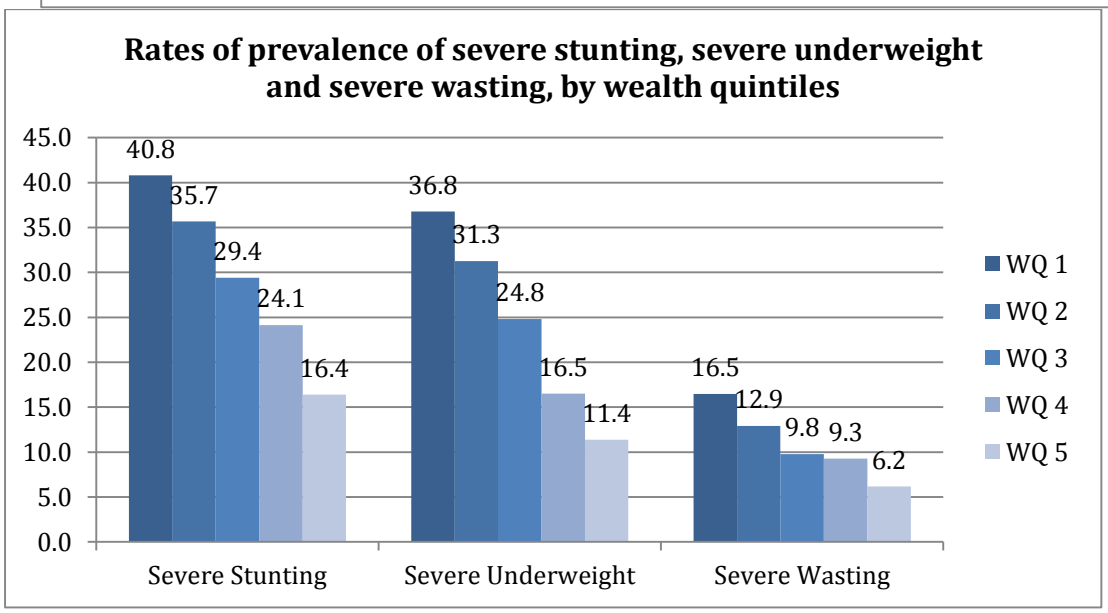
[12] See Annex A.3 for the methodology employed for the creation of the wealth quintiles and reasons for not being directly comparable to NFHS-3.

percent and 36.3 percent, respectively in the poorest quintile (Fig 3.3). Fig 3.4 further shows the rate of prevalence of severe stunting, severe underweight and severe wasting by wealth quintiles.

Figure 3.3: Rates of prevalence of stunting, underweight and wasting, by wealth quintiles

Figure 3.4: Rates of prevalence of severe stunting, severe underweight and severe wasting, by wealth quintiles





Comparison with NFHS-3

A comparison with the NFHS-3 (2005-06)[13] estimates is shown below in Fig 3.4, Fig 3.5 and Fig 3.6. It is important to note that the NFHS data is for Bihar as a whole (due to the

[13] International Institute for Population Sciences (IIPS) and Macro International (2008). *National Family Health Survey (NFHS-3), India, 2005-06: Bihar.* Mumbai, India.

unavailability of the district codes in the dataset), so the data is not directly comparable. The comparison here is simply for contextual reference. While the prevalence of stunting in the BCSP sample is higher than the NFHS-3 for age groups 0 – 6 months, 6 – 12 months, and 12 – 24 months, respectively, the prevalence of wasting is lower for all the age groups[14]. Our estimate for proportion of underweight children is lower than the NFHS-3 estimates for the 0 – 6 months and 12 – 24 months age groups but higher for the 6 – 12 months age group.

Figure 3.5: Comparison of prevalence of stunting with NFHS-3, by age group

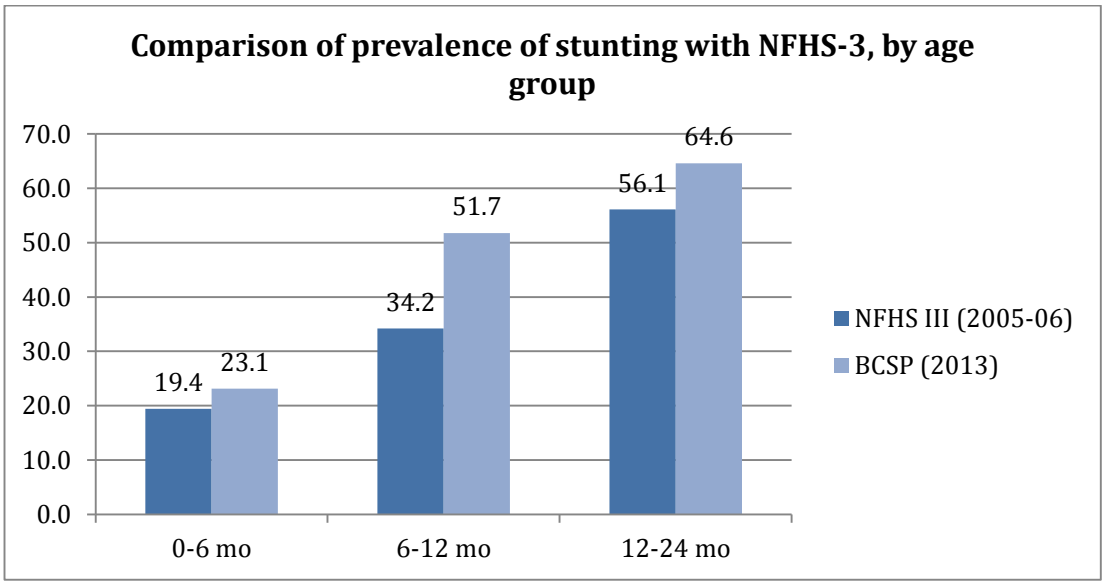
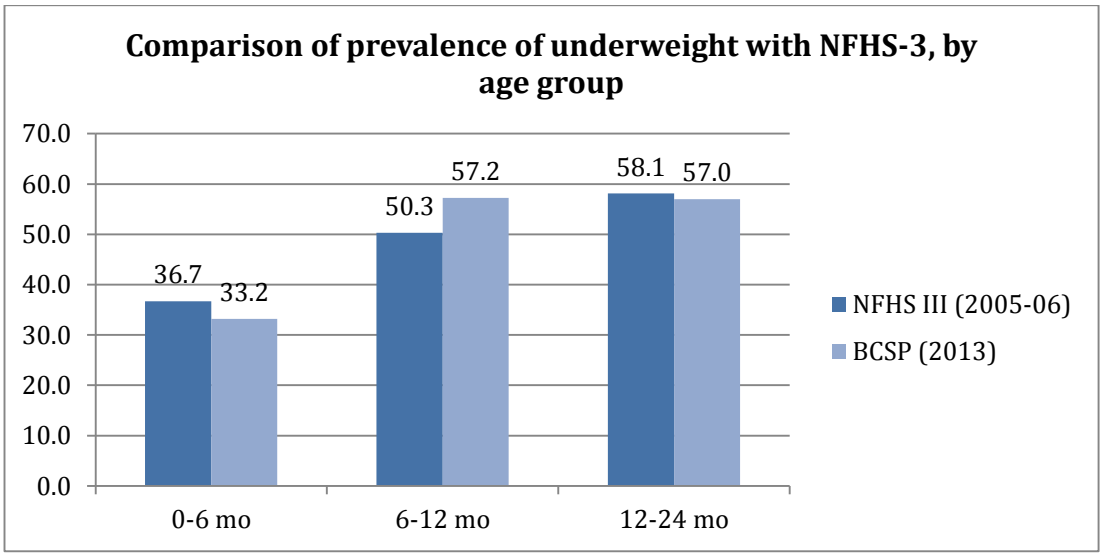
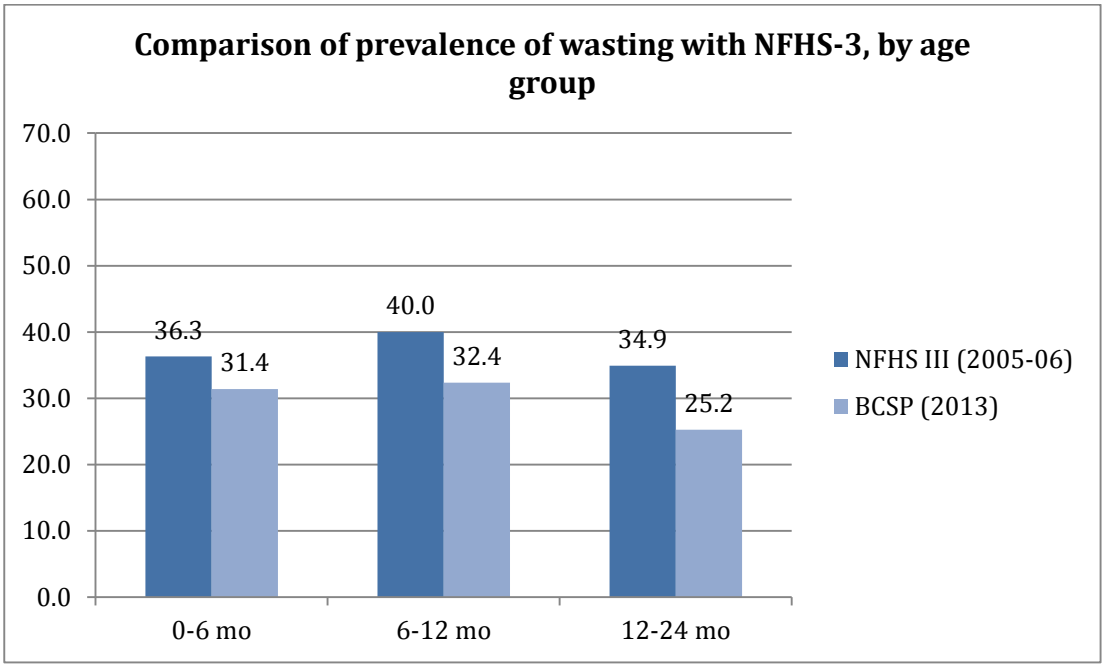


Figure 3.6: Comparison of prevalence of underweight with NFHS-3, by age group



[14] The breakup of estimates by age groups in this context is likely to overlook "unobserved" undernutrition because infant and child mortality is not taken into consideration.

Figure 3.7: Comparison of prevalence of wasting with NFHS-3, by age group



3.3 Anthropometric Outcomes of Mothers

Adult nutritional status is determined by the body mass index (BMI), measured as (kg/m^2). Mean BMI results are presented in Table C.3.7. The overall mean BMI of mothers in the sample was a very low 18.9. Using the BMI classification from the WHO Global Database on Body Mass Index[15], it was found that 48.5 percent of the women were underweight, i.e. the BMI was less than 18.5 (Table C.3.8).

3.4 Biomedical Outcomes of Women

The survey also took blood samples to measure rates of anaemia in the sampled mothers with children under 2 years of age. Mean haemoglobin (Hb) among the mothers was 11.08 g/dL (C.3.7).

The cut-off for being diagnosed as anaemic is Hb to be less than 12 g/dL[16]. Overall, the prevalence of anaemia in the mothers in the BCSP sample was 69.4 percent, with 3 percent having severe anaemia, 39.1 percent having moderate anaemia and 27.3 percent having mild anaemia (Table C.3.8). While the overall rate of anaemia prevalence is close to the NFHS 2005-06 figure of 67 percent of ever-married women, nearly 42 percent are reported to have with moderate or severe anaemia as opposed to 17 percent as per the NFHS 2005-06.

These finding are important in the light of evidence that iron deficiency anaemia in pregnancy is a risk factor for preterm delivery and subsequent low birth weight, and possibly for inferior neonatal health[17]. Low birth weight is in itself a very crucial negative outcome as it is highly

[15] http://apps.who.int/bmi/index.jsp?introPage=intro_3.html

[16] WHO. Haemoglobin concentrations for the diagnosis of anaemia and assessment of severity. Vitamin and Mineral Nutrition Information System. Geneva, World Health Organization, 2011 (WHO/NMH/NHD/MNM/11.1) (http://www.who.int/vmnis/indicators/haemoglobin.pdf, accessed 12 December 2013).

[17] Allen, L. H. (2000). Anemia and iron deficiency: effects on pregnancy outcome. *The American journal of clinical nutrition*, *71*(5), 1280s-1284s.

correlated to poor nutrition outcomes in children (Lancet 2013). There are many other adverse consequences of anaemia on infant development such as high mortality, high morbidity as well as negative effects on cognitive development[18].

[18] Stoltzfus RJ, Mullany L, Black RE. Iron deficiency anaemia. In: Ezzati M, Lopez AD, Rodgers A, Murray CLJ, eds. Comparative quantification of health risks: global and regional burden of disease attributable to selected major risk factors. Geneva: World.

4 Direct Transmission Mechanism 1 - Effects of receiving the cash

4.1 Introduction

As outlined in the introductory chapter, the programme works through the direct transfer of cash to beneficiaries. This could improve nutrition status of women and children through the following transmission mechanisms:

- Increasing expenditure on food consumption, which increases the caloric intake of beneficiaries or improves micronutrient intake
- Increasing expenditure on other goods and services which improve nutrition outcomes (e.g. health services and medicines which reduce caloric wastage)
- Increasing the degree of autonomy and empowerment of the women in the household as the women is the direct recipient of the cash which could improve maternal and child nutrition outcomes through changing intra-household resource allocation and other outcomes

The baseline status for these areas is presented in this chapter.

4.2 Changes in food consumption

4.2.1 Food consumption expenditure

Income and consumption are two main monetary indicators of household welfare. In developing countries, consumption is usually preferred to income as a welfare indicator both for theoretical and practical reasons. To some extent, consumption is a measure of welfare achievement whereas income can be seen as an 'opportunity'. While income can be negative, consumption is always positive. Furthermore, income tends to be more affected by seasonality, whilst, due to efforts undertaken by households to smooth consumption, consumption tends to be more stable. Moreover, it is usually easier to collect data about consumption than income. Therefore, data about household consumption has been collected in the BCSP baseline survey to measure household welfare. This is also in agreement with country practice, where the consumption aggregate is used to produce official poverty estimates.

To make this analytically tractable, it has been converted into consumption expenditure, which is the monetary value of goods consumed. Food consumption expenditure is a measure of the market value of food consumed by the household. It includes purchased food, own produced food and food received in kind. It is converted into a monetary value so that it can be easily aggregated, compared and analysed. To measure the effect of receiving cash under BCSP, it is critical to understand the per adult equivalent monthly consumption expenditure patterns of households in the sample. This will allow us to understand how households use BCSP cash and measure the extent to which it is spent on increasing food consumption. As part of the BCSP baseline survey, data was collected on household expenditure on food. Table 4.1 presents the average monthly per capita expenditure (in Rs.) on different food groups. The

development of the questionnaires was guided by the National Sample Survey for the consumption expenditure module.

We find that the monthly per capita expenditure on food on average is Rs. 851 approximately. While it is the lowest in Wazirganj (Rs. 816) and highest in Atri (Rs. 879), it is closer to the average in Mohra (Rs. 865) and Khizarsarai (Rs. 843).

In terms of specific food groups, cereals are unsurprisingly the food group on which a majority of the expenditure is made (Rs. 288) followed by vegetables (Rs. 108), and milk and milk products (Rs. 97).

Table 4.1: Monthly per capita expenditure (in Rs.) on different food groups, by programme block

Food Groups	Atri Mean	Wazirganj Mean	Mohra Mean	Khizarsarai Mean	Total Mean
Total monthly per capita expenditure	***879.4***	***816.3***	***865.1***	***842.9***	***850.9***
A. Milk and milk products	99.0	89.9	99.8	100.6	97.3
B. Meat, Poultry & Fish	64.2	39.9	48.5	39.7	48.2
C. Cereals	284.0	279.3	299.5	288.3	287.6
D. Pulses	64.4	57.5	60.9	57.9	60.2
E. Edible Oils and Fats	54.9	52.3	50.3	50.5	52.0
F. Fresh fruits	21.7	19.3	11.8	14.5	16.9
G. Dry fruits	6.2	6.5	3.9	4.0	5.1
H. Vegetables	109.7	100.9	118.5	104.9	108.4
I. Condiments and Spices	43.0	45.2	45.0	46.0	44.8
J. Sugar, Honey and Sugar Preparations	27.6	28.7	24.8	31.1	28.1
K. Non-alcoholic beverages	6.9	7.7	6.8	6.8	7.1
L. Misc. food items	27.7	30.2	28.7	30.5	29.3
M. Tobacco and Alcohol	70.1	59.0	66.6	68.1	65.9

4.2.2 Calorie intake

Calorie intake is calculated by converting the household food consumption expenditure data above into caloric equivalents, and then dividing by the number of members in the household. In India, the norm is to give all household members equal weighting (e.g. not give children different weightings to adults). This is in line with Deaton and Dreze (2009)[19] where they "mostly stick with the per capita measures recognizing that they almost certainly provide conservative estimates of a more appropriate measure of the fall in calories" (p. 5).

Calories are calculated, following the NSS practice, by multiplying reported quantities by a set of caloric conversion factors which are themselves revised from time to time. We have used conversion factors from NSS 66th Round (2009-10).

The BCSP will analyse the extent to which increases in consumption expenditure translate into increased caloric intake. The elasticity of calories to total consumption is less than one because households spend at least a proportion of additional resources on substituting

[19] Deaton, A., & Drèze, J. (2009). Food and nutrition in India: facts and interpretations. *Economic and political weekly*, 42-65.

towards high cost calories (e.g. sugar) not just increasing consumption at the same cost per calorie. The Deaton and Dreze work suggests that if a household gains 1 additional Rupee, 70% of it is spent on increasing food consumption, but this is split evenly between increasing total caloric intake and increasing the cost per calorie.

According to our data, per capita calorie consumption is 2298. The lowest per capita calorie consumption is the lowest in Wazirganj (2209 calories) followed by Atri (2302 calories). The estimates for both Mohra and Khizarsarai are around 2340 calories (Table 4.2).

Table 4.2: Average number of calories consumed, by programme block

	Atri	Wazirganj	Mohra	Khizarsarai	Total
Total calories consumed by household per week	111992.3	102679.9	110104.4	102770.5	106877.4
Per capita calories consumed per week	16115.5	15464.4	16383.1	16387.8	16083.0
Per capita calories consumed per day	2302.2	2209.2	2340.4	2341.1	2297.6

4.2.3 Food insecurity

Food security is an important facet to look into in the context of a programme like BCSP. A routine predictable cash transfer such as those under the BCSP can be used for consumption smoothing and may help reduce negative coping strategies. According to the data presented in Table 4.3, 92.6 percent of the households reported having enough food for the household in the last 12 months before the date of the survey. Only 448 households responded in the negative.

In these 448 households, on an average day, children aged 10 years and under in a household normally ate 3.6 times. These households reported not having enough food nearly 3 months out of the past 12 months. This was particularly high for households from Atri at 4.4 months. In the last 30 days, the number of days any adult or child under 10 years of age went hungry was 1.5 and 0.8, respectively. Again, Atri had the highest estimates followed by Wazirganj, Mohra and Khizarsarai, in that order.

The development of this survey module was guided by the Household Hunger Scale[20].

Table 4.3: Responses to questions related to food access and insecurity, by programme block

Questions related to food access & insecurity	**Atri** **Percent**	**Wazirganj** **Percent**	**Mohra** **Percent**	**Khizarsarai** **Percent**	**Total** **Percent**
During the last 12 months did you always have enough food for your household?	91.4	91.5	93.7	93.9	92.6
Of the 448 households who answered 'No':	**Mean**	**Mean**	**Mean**	**Mean**	**Mean**
On an average day how many times a day do children 10-year and under in your household normally eat	3.6	3.6	3.7	3.6	3.6

[20] Ballard, Terri; Coates, Jennifer; Swindale, Anne; and Deitchler, Megan. *Household Hunger Scale: Indicator Definition and Measurement Guide*. Washington, DC: Food and Nutrition Technical Assistance II Project, FHI 360.

(including snacks and meals outside the house or at school)?					
For how many months in the last 12 months did you not have enough food for your household?	4.4	2.6	2.2	1.9	2.9
During a bad week (a week when you don't have enough food), how many times a day do children 10-year and under in your household normally eat (including snacks and meals outside the house or at school)?	2.4	2.7	3.3	3.0	2.8
During the last 30 days, how many days did any ADULT in this household go to bed hungry because there wasn't enough food?	2.3	1.8	0.6	0.9	1.5
During the last 30 days, how many days did any CHILD 10-year and under in this household go to bed hungry because there wasn't enough food?	1.2	0.9	0.3	0.4	0.8

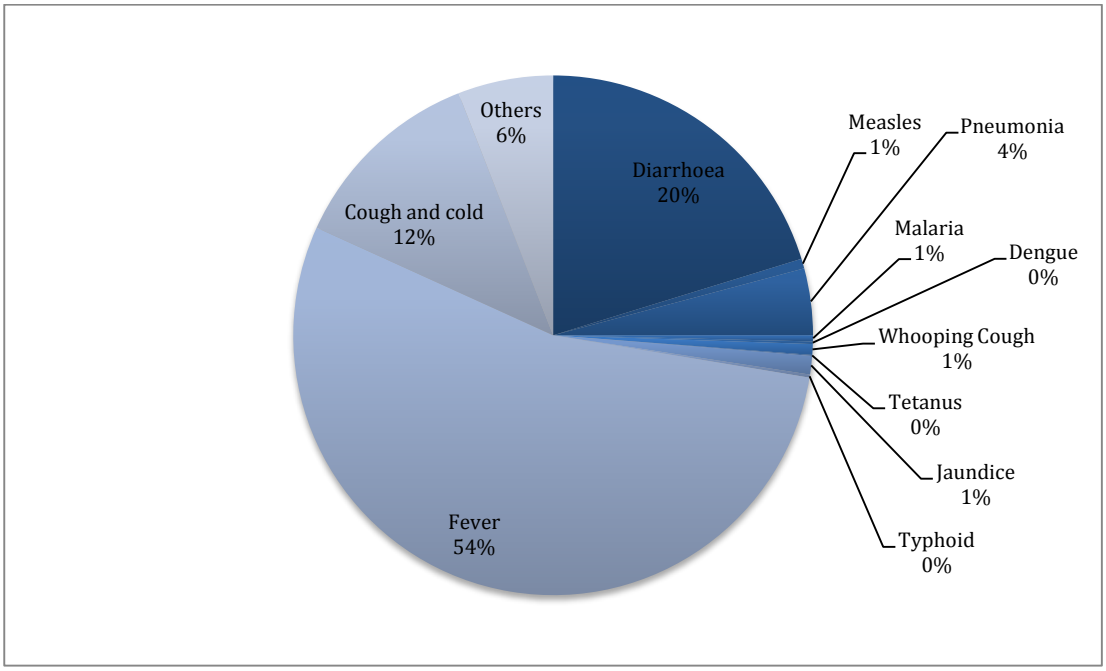
4.3 Health seeking behaviour and expenditure

An important potential impact of BCSP cash could be an improvement in health-seeking behaviour as cash inflow may be used to increase expenditure on health services, medicines and supplements. This section provides an overview of the child illnesses reported as well as the nature and quality of medical care sought for the same, including the question of access in terms of costs incurred and distances travelled. These survey modules were guided by the NFHS questionnaires.

Type of child illness in the past 30 days

Child illness is fairly prevalent, with over two in five children (44.7 percent) having been reported ill in the past 30 days. There is some block-wise variation with Mohra block reporting a number some distance below the mean while the number goes up to one in two for Wazirganj block. The most prevalent illnesses in the last 30 days had been fever (82.1 per cent), diarrhoea (37.8 per cent), and cough and cold (33 per cent). For those children who were reported to be ill in the last 30 days, the average number of days that the child was sick was 7 days with no major variations across the four blocks (Table C.4.1).

Figure 4.1: Latest type of child illness reported in the last 30 days

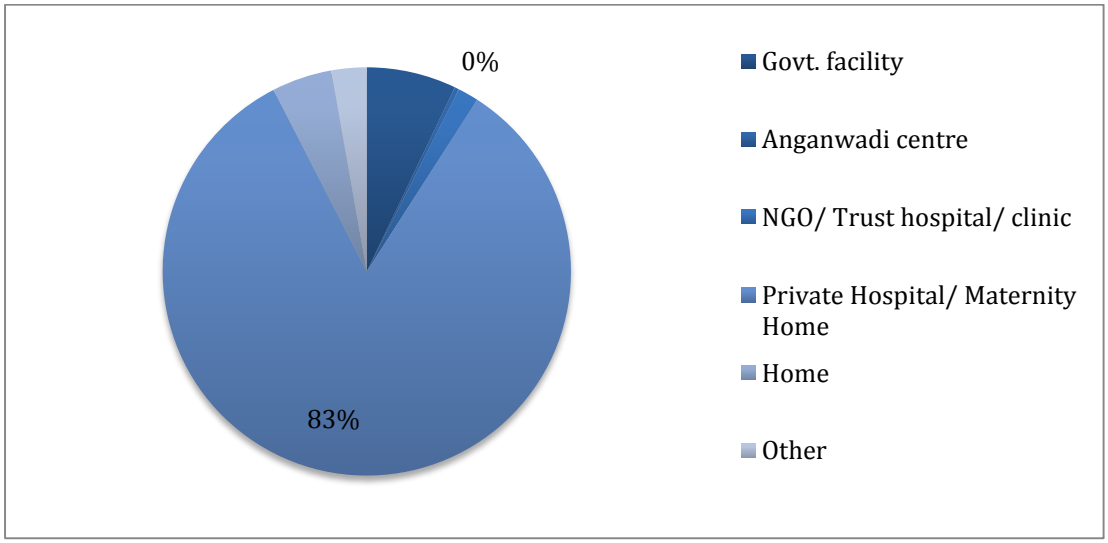


Of the children reported ill in the previous 30 days, the most common illness reported as the *latest* illness that the child had is predictably fever (54 percent), with over half the number of children in each block being affected by it. This is understandable because fever is a symptom of a wide range of diseases. Of the children reported ill, 34.9 percent were still ill at the time of the survey with 40.8 percent still ill in Atri and only 27.1 percent in Mohra.

Type of consultation sought for child illness (if any)

For the latest illness suffered by the child, someone was consulted in 93.1 percent of the cases. Over 80 per cent of children with illness are taken to private health institutions, either a hospital or a maternity home. The main reasons for not going to a government hospital are: first, there is no government facility in the village or is simply too far away; second, even if accessible, there is a lack of faith in such institutions (Table C.4.2).

Figure 4.2: First facility approached in case of child illness



Access to healthcare facilities

According to Table C.4.3, over 80 per cent of households live within 10 kilometres of a health facility, with a little under half living within 2 kilometres. Time-wise, this translates to over 90 per cent of households with access to a health facility that lies within two hours of travel. The travel to the first facility was mostly done on foot (55.1 percent) followed by tempo/ auto/ tractor (34.2 percent). Notwithstanding the variations across the four programme blocks, the average cost of travel to the first facility is Rs. 78.2 and of treatment at the same is Rs. 476.2. The cost of travel in Atri is nearly double (Rs. 114) that of the average of the same in the other three blocks (Rs 63).

4.4 Women's empowerment and decision making

4.4.1 Women's employment

Keeping aside household activities, 87 per cent of the sample population of women are not engaged in any kind of paid employment. Only 5 per cent reported as being self-employed and 7.8 per cent as engaged in paid employment (Table C.4.4).

Out of the women who are involved in some kind of employment (paid and self-employed) 36 per cent of women report being employed in a regular (throughout the year) and full-time job. However, 23 per cent are employed full-time in a seasonal job. A substantial portion of the employed women, 65 per cent, work outside of their homes. Almost equal proportion of the sample receives payments in cash (49 per cent) or in kind (42 per cent). It should also be noted that 1.9 per cent of the population, despite being employed does not receive payment in cash or in kind.

The average monetary payment an employed woman received in the month before the survey happened was approximately 1900 rupees though the standard deviation was very high. Out of the four survey blocks, women in Mohra block receive the highest monetary payment (approx. 2250 rupees), whereas, those in Khizarsarai receive the lowest payment (approx. 1500 rupees) (Table C.4.4).

Table 4.4: Women's empowerment and decision-making, by programme block

	Atri	Wazirganj	Mohra	Khizarsarai	Total
Respondents engaged in paid/self-employment	14.1	12.1	12.8	13.8	13.2
Respondents primary decision-maker for spending own salary	35.6	36.4	51	36.4	39.7
Respondents joint decision-maker for spending own salary with husband	27.1	36.4	20.4	29.6	28.3
Respondents having permission to go all alone to local market/ health facility/ homes of friends in neighbourhood/ nearby place of worship	52	54.5	55.8	62	56

4.4.2 Autonomy and decision-making

As far as decision-making is concerned (Table 4.4), 40 per cent of women report that primarily they themselves decide how their earnings would be spent. Only 28 per cent make the same decision jointly with their husbands. According to the block wise distribution, in all the blocks, a higher percentage of women report themselves as the primary decision-makers, rather than their husbands.

On an average, 565 rupees out of their earnings were kept with the women to spend on themselves in the month before the survey happened.

Eighty-four per cent of the sample did not have a bank or post-office account. A block-wise disaggregation shows that the highest proportion of women having a bank or post-office account is 18 per cent of women from Atri block, whereas the figure is only 13 per cent of women from Khizarsarai block. From the sample surveyed, 89.5 per cent has never gone to a bank. A minute proportion, only 0.8 per cent goes to the bank once a week. The average cost, across all four blocks, of going from the woman's house to the bank is 41 rupees. According to the women surveyed, the average amount they can personally gain access to quickly, say for an emergency, is approximately 3400 rupees.

4.4.3 Empowerment

When asked about being given permission to go to particular places on their own (Table C.4.5), 10 per cent of women are never permitted to go all alone to the local market to buy things. This figure is almost half (4.8 per cent) with respect to never being permitted to go all alone to visit a local health facility or doctor.

In terms of membership of different groups, micro-credit groups attract most attention. Approximately 13 per cent of women surveyed were involved with micro-credit groups, whereas only 2 per cent and 2.4 per cent were involved with religious groups and cooperative groups (cottage industry) outside their homes. All these groups were predominantly comprised of females.

Regarding the universal adult suffrage, the two extremes consist of 44 per cent of women who always vote and 32 per cent women who don't even have a voter card made.

4.4.4 Intra-household resource allocation

Maternal nutrition outcomes are also key impact indicators for the BCSP because nutritional outcomes are highly inter-generational (WHO, 2007)[21]. Therefore, in this section, we focus on the intra-household allocation of food, not just total consumption. On an average, women who were interviewed said they had consumed 3 meals in the last 24 hours (Table C.4.6). Most of the women in the total sample (85 per cent) said this was their usual intake, while 12 per cent said that it was more than normal. Women were consuming more or less meals than usual mostly because they were ill that day (48 per cent), or without any specific reason (33.5 per cent).

[21] World Health Organization. (2007). World Food Programme/United Nations System Standing Committee on Nutrition/United Nations Children's Fund. *Community-based management of severe acute malnutrition: a joint statement by the World Health Organization, the World Food Programme, the United Nations System Standing Committee on Nutrition and the United Nations Children's Fund*.

For each household, a meal diary for the previous 7 days was created to record information on the food s and respective amount consumed in the last 7 days. Table 4.5 shows the percentage of mothers in the BCSP sample who consumed each of the listed food items consumed by the entire household at least once in the last 7 days. Overall, the percentage of women who consumed cereals, edible oils and fats, vegetables, and condiments and spices was around 99 percent. Protein rich pulses were consumed by only 93 percent of the women while only half the women consumed calcium rich milk and milk products. Meat, poultry and fish were consumed by 33 percent of the sampled mothers. Another nutrient rich food source, fresh fruits, was consumed by the sampled mothers only in 37.5 percent. It is clear that carbohydrate-rich food groups largely dominate women's diets and maternal diet diversity is very low. Since our estimates are done for households who reported consuming certain food groups in the previous 7 days (and not just the sampled mothers of children under 2 years of age), it is also a strong indicator of the intra-household distribution of nutrients.

Table 4.5: Food groups consumed by sampled mothers in the last 7 days, by programme block

Food Groups	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
A. Milk and milk products	50.3	50.5	49.6	51.6	50.5
B. Meat, Poultry & Fish	38.0	28.2	34.4	31.6	33.0
C. Cereals	99.8	99.9	99.9	100.0	99.9
D. Pulses	93.2	93.3	93.1	93.9	93.4
E. Edible Oils and Fats	97.4	99.3	99.4	99.7	98.9
F. Fresh fruits	41.3	43.9	26.3	37.7	37.5
G. Dry fruits	9.0	9.1	6.8	7.3	8.1
H. Vegetables	98.8	99.3	99.7	99.8	99.4
I. Condiments and Spices	99.5	99.9	100.0	99.9	99.8
J. Sugar, Honey and Sugar Preparations	71.7	75.0	72.6	75.6	73.7
K. Non-alcoholic beverages	50.7	60.5	58.3	58.0	56.8
L. Misc. food items	50.0	57.4	57.6	59.6	56.1
M. Tobacco and Alcohol	14.3	12.4	12.3	11.9	12.7

5 Direct Transmission Mechanism 2 - Effects of the conditions on nutrition related behaviours

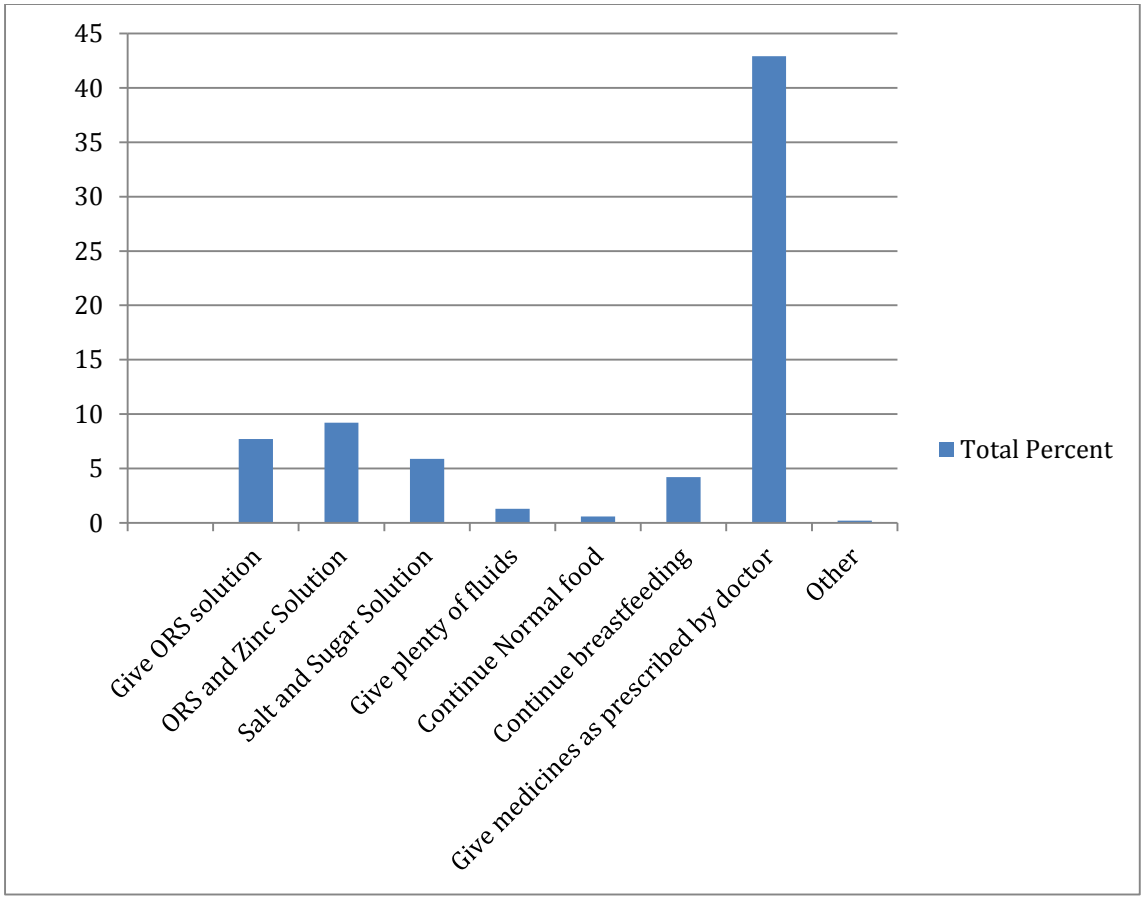
5.1 Introduction

As described in the introductory chapter, some of the conditions attached to the transfer are designed to incentivise changes in household and individual behaviour in ways that improve nutrition outcomes. These include the treatment of diarrhoea with ORS, and, in the hard conditions block, promoting exclusive breastfeeding until six months. The birth spacing bonus is also designed to encourage beneficiaries to increase the spacing time between births.

5.2 Use of ORS

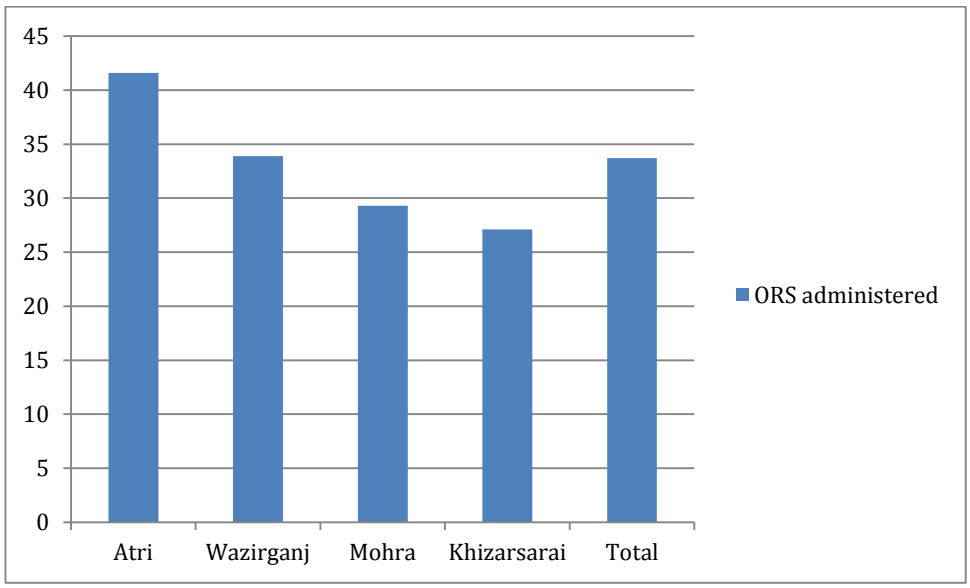
Regarding women's awareness levels, two of the most popular responses when asked about actions one should take if child gets diarrhoea (apart from giving medicines prescribed by the doctor) were: give ORS and Zinc solution (9 per cent) and give ORS solution (8 per cent) to the child (Figure 5.1)

Figure 5.1: Actions that respondents think should be taken if child gets diarrhoea



When we look at specific diseases within households reporting illness, we find that diarrhoea prevalence is evenly spread across all blocks with numbers hovering around the 20 per cent mark. About one in three children suffering from diarrhoea are reported to have been given ORS (Figure 5.2).

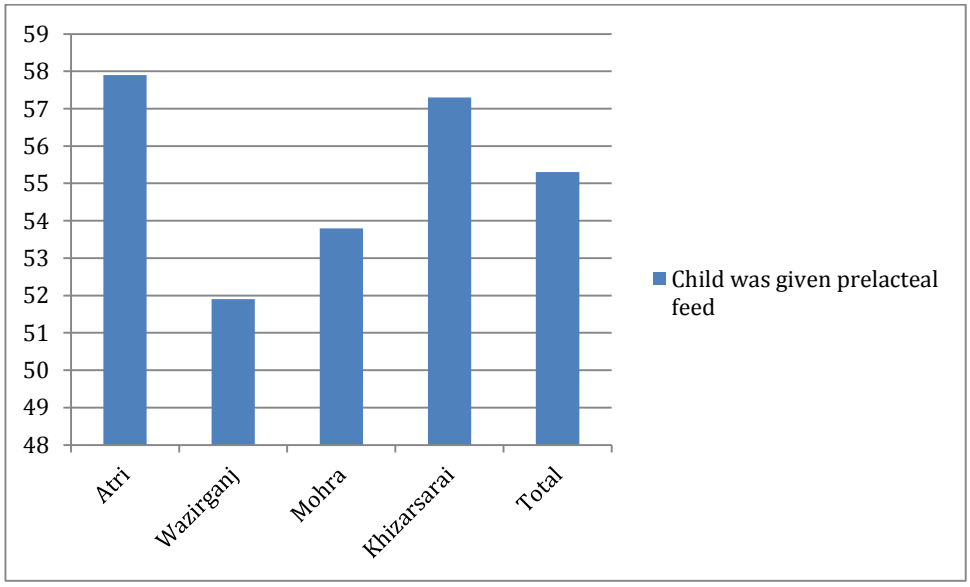
Figure 5.2: ORS administered (if child got diarrhoea), by programme block



5.3 Exclusive breastfeeding and other IYCF Practices

From the data, we understand that 55 per cent of the children in the sample were given prelacteal feed[22] (Figure 5.3). Eighty eight per cent of infants were breastfed for the first time within 24 hours of birth. Another finding was that 85 per cent of the infants in our sample were still being breastfed (Table C.5.2)

Figure 5.3: Percentage of children who were given prelacteal feed, by programme block



According to WHO's report 'Indicators for assessing infant and young child feeding (IYCF) practices', these practices are huge determinants of child nutrition outcomes[i]. Exclusive

[22] Prelacteal feed are those foods that are given to new-borns before the initiation of breastfeeding, usually within the first day after birth.

breastfeeding up to six months is a particularly important feeding practice that an Anganwadi worker is also supposed to promote in her respective coverage area.

WHO (2008)[23] defines the indicator for 'Exclusive Breastfeeding' as the proportion of infants 0-5 months of age (i.e. children under the age of 6 months) who are fed exclusively with breast milk.

Specifically, it equals:

$$\frac{\text{Infants 0–5 months of age who received only breast milk during the previous day}}{\text{Infants 0–5 months of age}}$$

At the time of the survey, mothers were asked about the liquids and food fed to the child over the past day. Based on their responses, the proportion of infants between 0-5 months of age, who received only breast milk during the previous day was calculated (39.6 per cent). The calculated indicator shows that 60.4 per cent infants between 0-5 months were *not* exclusively breastfed over the past day.

To triangulate this data, respondents were asked how long they exclusively breastfed their child. All responses that were under 6 months were taken into account. Further, the sample was restricted to include only those children who were over 6 months of age, to account for the possibility that children under 6 months might change their breastfeeding practices before completing 6 months of age.

Self-reported data by the respondents shows that 42.6 per cent of a sample of children between 6 months and 24 months of age were not exclusively breastfed. However, our experience in the field has shown that the respondents do not fully understand that 'exclusive breastfeeding' is meant to apply to only the feeding of mother's breast milk, and not complementary feeding of other liquids such as water. Hence, this data is unreliable.

As another point of triangulation, we consider a question where the respondents were asked when they started feeding the child any other fluids or foods. The average age reported for when the child was given other fluids, semi-solid food and solid food was 4.6, 6.3 and 7.3 months, respectively. Additionally, the average age till which children were exclusively breastfed was 4.2 months.

Data from this question shows that 58.4 per cent of a sample of children between 6 and 24 months of age were given other fluids/semi-solid food/solid food before reaching 6 months of age (Table C.5.4).

This figure matches the estimates calculated according to the WHO indicator, which was for a sample of children below 6 months of age.

When those mothers who had not exclusively breastfed their child for the first six months were asked their reason(s) for doing so, as multiple responses, the most popular reasons were not having enough milk to feed the child (40.8 per cent)[24], and giving water to the baby due to the heat (33.2 per cent). Other popular responses were that the respondent's family didn't allow

[23] World Health Organization (WHO). (2008). *Indicators for Assessing Infant and Young Child Feeding Practices: Conclusions of a Consensus Meeting Held 6-8 November 2007 in Washington DC, USA*. World Health Organization (WHO).

[24] Not having enough breastmilk to feed should be seen as a reason that could be overstated because breastfeeding has to be learned as well as timely for women to be able to exclusively breastfeed their children.

exclusive breastfeeding (19.1 per cent), that the mother/child was unwell in the first 6 months (14.6 per cent), and the lack of knowledge (14.2 per cent) (Table 5.1)

Exclusive breastfeeding is only included as a condition in the hard conditions block for the BCSP. This is because it is unclear as to whether it is a good condition for a conditional cash transfer. On the one hand, the evidence (as shown by The Lancet series of 2013) is very clear that an increase in rates of exclusive breastfeeding up until six months would contribute to significant improves in child nutrition outcomes. However, what is good on average is not necessarily good for the individual. For some women, breastfeeding is medically inadvisable. A conditional cash transfer is a blunt policy instrument as it does not allow for individual discretion; some women may be harmed, or unfairly penalised, if breastfeeding is included as a condition. A conditional cash transfer is not an entitlement, so the conditions need to be very carefully selected. As the BCSP is a pilot, breastfeeding has been included in only one block so that the evaluation can assess the merit of it as a condition.

Table 5.1: Reasons for not exclusively breastfeeding during the first 6 months

Reasons for not exclusively breastfeeding during the first 6 months	Atri	Wazirganj	Mohra	Khizarsarai	Total
	Percent	Percent	Percent	Percent	Percent
Not necessary	9.3	3.4	4.2	1.4	4.7
Not customary	4.5	3.6	1.8	0.8	2.7
Family did not allow	17.5	22.2	21.6	15.6	19.1
Mother didn't have enough milk to feed	38.1	36.9	43.2	45.1	40.8
Mother/child was unwell in first 6 months	17.2	12.9	14.8	13.3	14.6
Thought that milk was insufficient	7.6	8.3	10.8	10.5	9.2
Too hot, had to give water	22.6	33.9	40.9	36.3	33.2
Lack of knowledge	14.5	14.4	14.3	13.4	14.2
Didn't have enough time during household work schedule	1.6	1.3	1.8	0.3	1.3
Mother was working somewhere else	3.4	2.9	1.2	0.5	2.0
Other	5.9	3.9	3.2	3.1	4.1

5.4 Birth spacing

The birth spacing bonus of the BCSP aims to incentivise greater spacing between births. Too frequent births, especially for malnourished mothers, is a key cause of poor neo-natal health outcomes.

The BCSP gives a bonus of Rs. 2000 for women who have not become pregnant again two years after giving birth to the child who is receiving the BCSP and a further Rs. 3000 if they have not become pregnant again on year later (three years after giving birth).

As the evaluation is only focused on children under two, given the condensed nature of the pilot, it is difficult to calculate this perfectly from a population survey. The way we are calculating it is to focus on women of children aged over 22 months (as we do not have any children aged over 24 months in the survey) as a proxy. We then calculate how many of them

are not currently pregnant, and have not been pregnant at all in the last 22 months (i.e. after the index child has been born).

The figures we calculate are as follows:

%	Atri	Wazirganj	Mohra	Khizarsarai	Average
Have become pregnant again after 22 months	33.93	35.45	30.25	27.39	31.64
Have not become pregnant again after 22 months	66.07	64.55	69.75	72.61	68.36

Because we do not have mothers of children aged more than 24 months to calculate this variable more accurately, we have also focused on the use of family planning methods as an intermediate variable to see whether the incentive changes family planning behaviour.

Eighty one per cent of the total sample of women across all sample blocks reported that they desired their last pregnancy at the time, while 12.4 per cent said they would have liked the pregnancy to occur later. Six per cent of the women said they had not desired to get pregnant at all.

Despite this, only 17.1% of women had ever used any method to avoid or delay pregnancy. Of these, only 54.9% were using modern methods; with two fifths using the rhythm method or withdrawal.

This was not due to supply side constraints; most women (98% of the total sample) did not face any difficulty in accessing family planning products and services. Largely, the constraints were on the demand side, both due to low levels of awareness of different products and services, as well as cultural attitudes.

6 Direct Transmission Mechanism 3 - Effects of the conditions on the uptake of services

6.1 Introduction

The third transmission through which the programme goal can be reached, introduced before, is through the effect of the conditionality on uptake of services.

Some of the conditions attached to the transfer are designed to encourage the uptake of services available under ICDS that could promote improved nutrition outcomes. These include:

- Monthly attendance at Village Health and Nutrition Days/Village Immunisation Days as a proxy for the receipt of services available at these Days
- Weight gain monitoring of pregnant women and growth monitoring of children – to alert mothers and Anganwadi Workers when a pregnant woman or child is not developing as expected, so that this can be acted on
- The taking of IFA supplementation by pregnant women

6.2 VHNDs

Village and Health Nutrition Days (VHNDs) are a major initiative of the National Rural Health Mission (NRHM) to improve access to maternal, new-born, child health and nutrition (MNCHN) services at the village level. Across the country, VHNDs are held once a month, usually at the Anganwadi Centre (AWC) or any other suitable location. VHNDs provide a range of health and nutrition services and counselling to the community at a pre-decided date, time and place.

Accredited Social Health Activists (ASHAs) along with Anganwadi Workers (AWWs) are responsible for encouraging the community to attend VHNDs and holding health education sessions. Auxiliary Nurse Midwives (ANMs) provide maternal, new-born and child health services such as antenatal care (ANC) and routine immunizations. AWWs provide growth monitoring session, refer children with severe acute malnutrition to the appropriate health facilities and distribute supplementary nutrition. The uptake of this package of services at VHNDs can considerably improve ante-natal care, post-natal care, along with the nutrition and well-being of the pregnant women and subsequently their children (NRHM, 2013)[25].

Monthly attendance at the VHNDs is a soft condition of the cash transfer. Women are meant to attend both during pregnancy and after birth with their children.

6.2.1 Attendance during pregnancy

Within the sample, 38 per cent reported that during their last pregnancy they had never attended a VHN Day, 28.4 per cent had attended it for a few months, and 21 per cent had attended it for the entire duration of their pregnancy.

[25] Adolescent Division, Ministry of Health and Family Welfare, Government of India. (2013). National Rural Health Mission (NRHM), *Guidelines for Control of Iron Deficiency Anaemia*. New Delhi, India.

Table 6.1: Details of VHN Days in village

Details of VHN Days in village	Percent
Awareness of VHND being held in the village	
Fully aware	42.1
Partially aware	22.4
Not aware	35.5
VHN Days attended during last pregnancy	
Attended all months	21.2
Few months	28.4
Only once or twice	12.8
Never attended	37.6

When those who had never attended a VHND were asked for a reason for doing so, 23 per cent of those who said no, were not aware of it, and 14 per cent did not feel VHN Days necessary to attend. Women reported that during their pregnancy, while attending the VHN Days, most of them received services like growth monitoring (42 per cent), IFA tablets (55 per cent) and tetanus injections (84 per cent). However, relatively less women received advice on birth preparedness (31 per cent), nutrition (30 per cent), child care (24 per cent) and feeding practices (21 per cent) (Table C.6.1)

6.2.2 Attendance after birth

Figure 6.1 depicts that 56 per cent of the women surveyed visited the AWC with their child on the VHN Day. However, 7 per cent of the sample is not aware of the concept of VHN Days. Block-wise disaggregation shows that about 70 per cent of women in Khizarsarai visited the AWC with their child for the VHN Days, a figure that is some way above the mean of 56 per cent (Table C.6.2).

As can be noted from Table C.6.1, when those who did not attend a VHND with their child were asked their reason(s) for not doing so, popular responses were the lack of knowledge about the VHND (23.9 per cent), the opinion that it was unnecessary (17.3 per cent), the family not allowing it (16.7 per cent) and that no one was at home to look after the household chores (15.2 per cent).

Of the women attending the VHN Day with their child, the frequency of their visits is considerably less than the stipulated norm. Sixty six per cent of these women attend the VHN Days less often than once a month (Table 6.2). Generally, a third of the VHNDs are organized around immunization drives: this is reflected by the fact that immunization accounts for 60 per cent of the reported services provided. VHND in practice has also come into being a synonym for immunisation day. The other important service provided during a VHN Day is growth monitoring of the child (20 per cent).

Figure 6.1: VHND visits with child

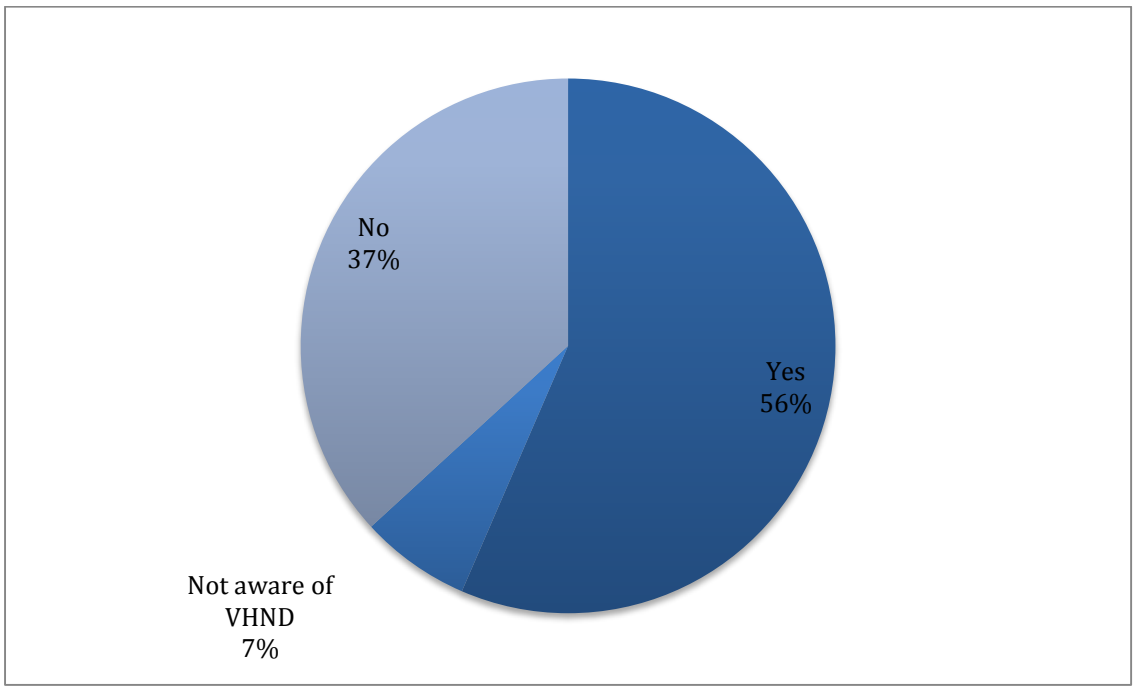
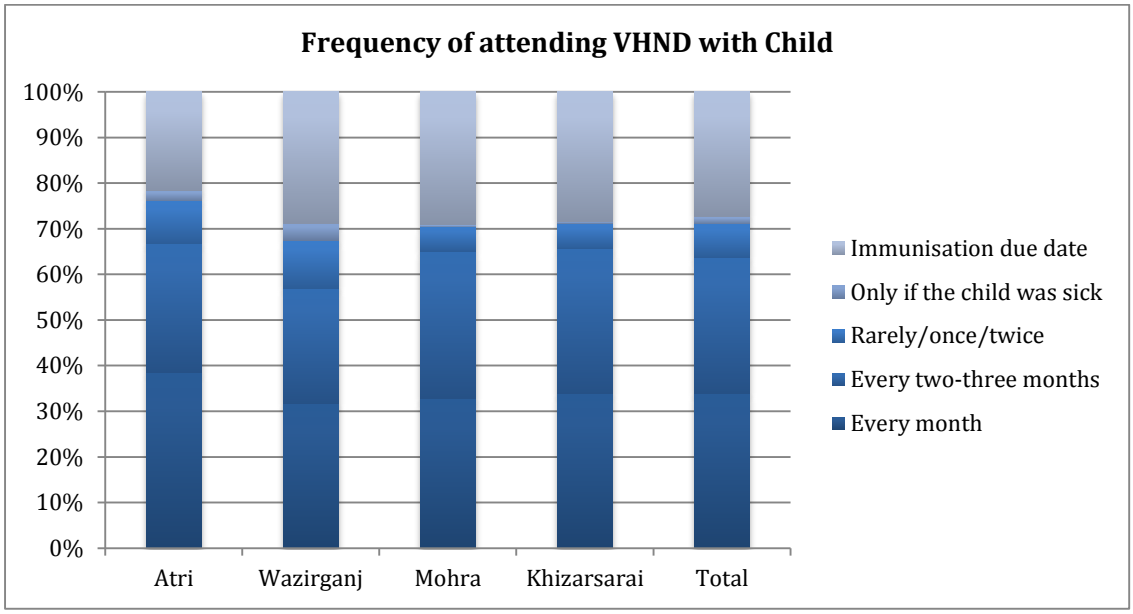


Figure 6.2: Frequency of attending VHND with child



6.3 Weight gain monitoring

An Ante-Natal care check-up undertaken by frontline workers at the VHN Days is a package of services that is provided, such as, abdomen check, blood pressure monitoring, weight gain monitoring, urine test, breast examination and a sonogram/ultrasound. About 44 per cent of women reported having an ante-natal care check-up done in a health facility. The average number of antenatal check-ups received by a woman during her last pregnancy was 1.4, and the average month in which a woman received the first check-up was at the start of the second trimester.

Regarding weight monitoring, 66 per cent of women reported that their weight was monitored at least once during the last month of pregnancy. However, as a part of the Ante-Natal check-up done at the VHN Day, growth monitoring happened only for 42 per cent of the women.

6.4 Growth monitoring

ICDS guidelines clearly stipulate that children below 3 years of age must be weighed once every month while children between 3 to 6 years of age must be weighed quarterly at the Anganwadi Centre. Their weight-for-age cards are also maintained to help in growth monitoring and nutrition surveillance. However, the household survey shows that barely one in five children (below 24 months of age) are *ever* weighed. Additionally, over sixty per cent of households report having young children who have never been weighed or growth monitored.

Figure 6.3: Percentage of children weighed, by programme block

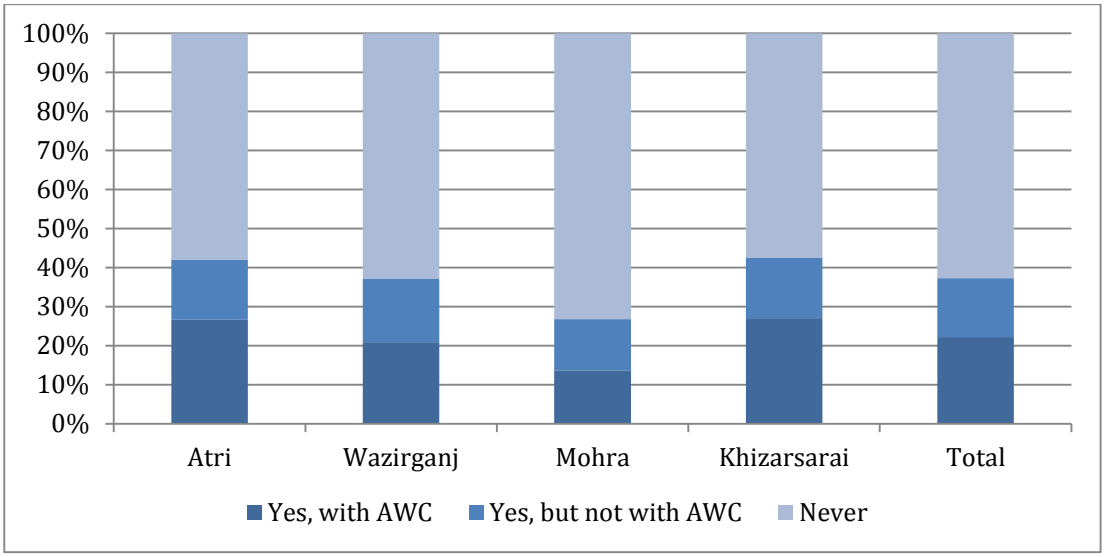


Figure 6.4: Location for weighing child (if not AWC)

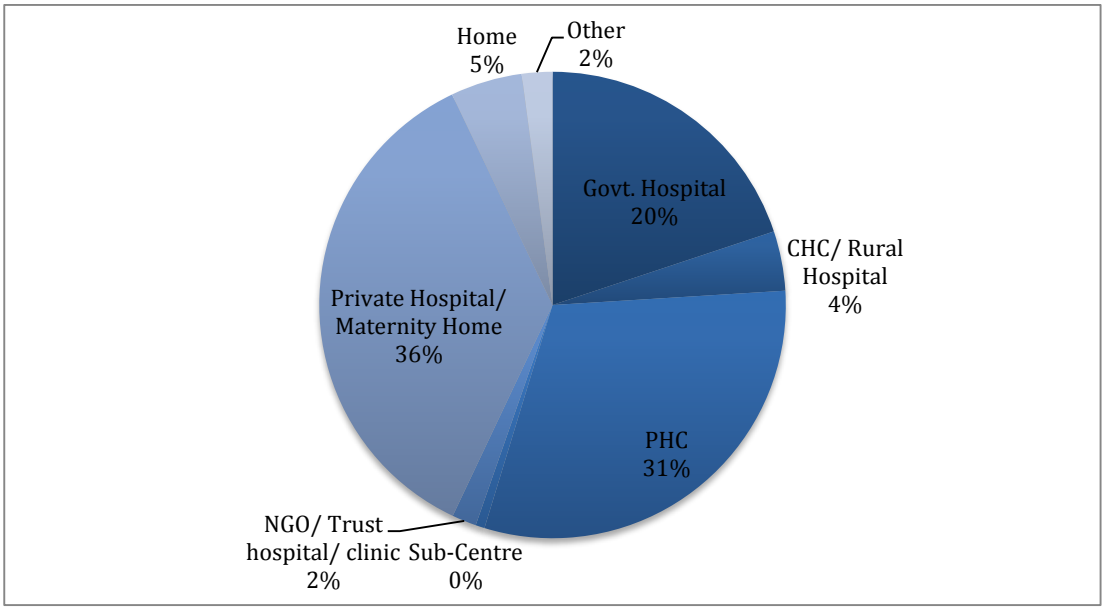
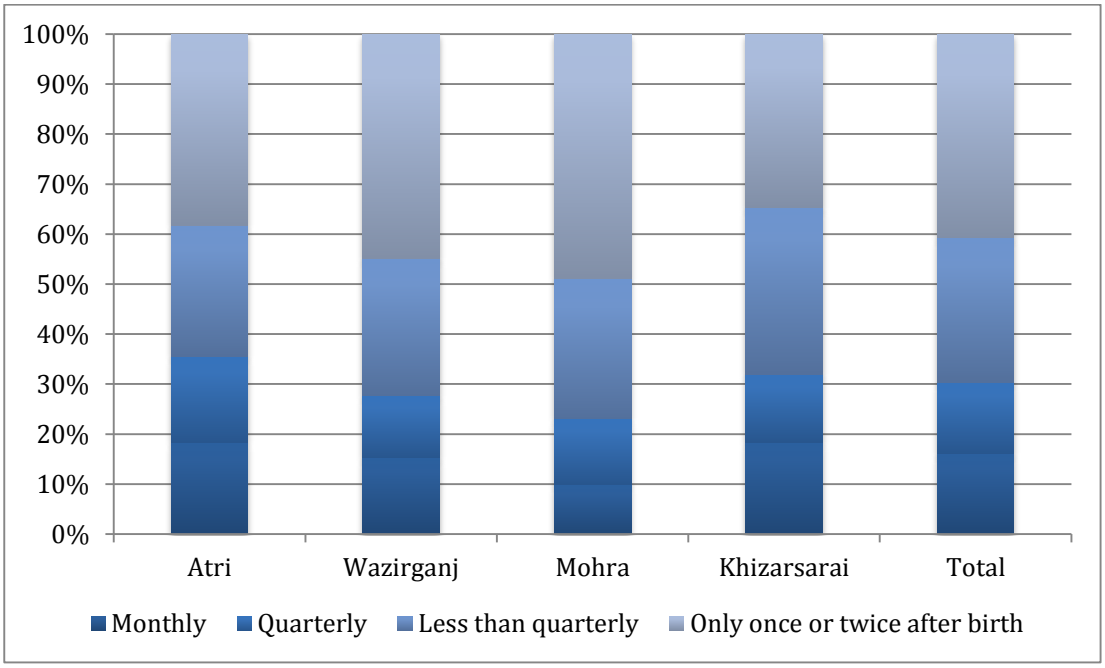


Figure 6.5: Frequency of weighing child, by programme block



The reasons for non-delivery or infrequent growth monitoring services at the AWCs are diverse, major being service unavailability i.e. child weighing machines being unavailable or non-functional, accounting for more than a third of the households overall. Indeed, one in two households report a lack of awareness or access to services as the main reason for not having weighed the child. When focussing specifically on households with access to Anganwadis yet reporting not having been weighed, we find again that the lack of a weighing machine at the AWC is a major hurdle (Table C.6.4).

There is some block-wise variation in these numbers, with Mohra performing particularly poorly and Atri and Khizarsarai doing somewhat better. However, it is telling that when we focus only on those children who have been weighed at the AWC, even in the best-performing blocks, the weighing is done on a monthly basis for about twenty per cent of the households.

To summarize, the data seems to indicate that the overall picture is bleak on two fronts: one, over half the households have children below the age of two who have never been weighed; and two, even when weighed, the frequency of being weighed is well below the norm of once every month.

6.5 IFA supplementation

According to the 'Guidelines for Control of Iron Deficiency Anaemia' given by the National Rural Health Mission (NRHM) Iron and folic acid (IFA) tablets are distributed through sub-centres (SC), primary health centres (PHCs), community health centres (CHCs) and district hospitals (DHs) to all pregnant women and lactating mothers. The ideal dosage of the IFA supplementation (100 mg elemental iron and 500 mcg of folic acid) should be every day for at least 100 days, starting after the first trimester, at 14–16 weeks of gestation followed by the same dose for 100 days in post-partum period.

This nutrition counselling is to be provided not only during antenatal/postnatal check-ups but during monthly Village Health & Nutrition Day (VHND) also to the pregnant women and lactating mothers.

The current condition under the programme is such that the mother has to receive at least 30 IFA tablets sometime between the 4th month and the 6th month of pregnancy. However, they are expected to consume at least 90 over the whole period of their pregnancy. From the sample surveyed, it was observed that on an average, a woman received 26 IFA tablets during her last pregnancy. Seventy eight per cent of the women received IFA tabled from the Anganwadi Centre, the ANM or the ASHA. While women in Wazirganj and Khizarsarai received an average of 30 and 29 tablets respectively, women in Atri and Mohra received 22 and 23 tablets. Fifty four percent of the total women reported that they consumed all the IFA tablets they received and 78.5 per cent said they received the tablets from the Anganwadi Centre, the ANM or the ASHA. Out of the women who did not consume any IFA tablets (14 per cent of the total sample), 46 per cent of them said it was because they weren't given any tablets by the service provider (Table C.6.5 and C.6.6).

7 Indirect Transmission Mechanism: The Supply Side

7.1 Introduction

Ultimately, the Bihar Child Support Programme aims to support and add value to the services provided under the Integrated Child Development Scheme (ICDS). The ICDS is considered as "*India's response to the challenge of breaking the vicious cycle of malnutrition, impaired development, morbidity and mortality in young children*" (NIPCCD-CMU,2008), and is operationalised through the presence of village level nutrition and ECCD workers (Anganwadi Workers) present at Anganwadi Centres.

These Anganwadi Workers are the fulcrum of the BCSP. They are responsible for registering beneficiaries and reporting against the conditions, using the mobile phone application. They are also responsible for providing some of the conditions that the BCSP is based on, including growth monitoring of children, weight gain monitoring of mothers and the provision of IFA tablets and counselling on a range of topics such as hygiene, nutrition and appropriate treatment of diarrhoea.

For the purpose of the evaluation, there are four reasons to focus on Anganwadi Workers:

- They are important determinants of whether the programme is able to deliver the expected outputs (e.g. whether they comply with the programme)
- As a provider of some of the conditions, they are partial determinants of whether the programme is able to translate outputs into outcomes (e.g. increases in uptake of services)
- They provide other services e.g. Take Home Rations, that are not part of the BCSP but will have a confounding effect on project impacts
- We might expect the programme to have an indirect effect on the quality and coverage of services

In terms of the fourth bullet, chapter 2 outlined how the BCSP may through its operational design improve the coverage and quality of nutrition services provided by the Anganwadi Worker to beneficiaries, and that this may improve nutrition outcomes over and above the improvements due to the more direct transmission mechanisms of the cash transfer.

This could happen in multiple ways, including through the investments of the programme (including ensuring the availability of weighing scales, training and incentivisation of Anganwadi Workers and provision of mobile phone based performance tools). Furthermore, the conditionality of the programme may increase the demand for timely and quality services, and promote improved service delivery through social accountability.

This chapter presents the baseline picture of the functioning of Anganwadi Workers and Anganwadi Centres, and some of the drivers of these performance levels, including motivation and infrastructure.

7.2 Methodology

This is based on a dedicated survey of Anganwadi Centres and Workers undertaken as part of the evaluation. The observation of Anganwadi Centres included the collection of information on overall infrastructure facilities, classroom and teaching facilities, status of hot cooked meal provision, maintenance of registers and the Anganwadi Worker's behaviour towards the children. The interview with the Anganwadi Worker interview was mainly designed to understand the worker's personal characteristics such as social and education backgrounds, motivation and attitudes, awareness and knowledge about key messages she is mandated to deliver and the main constraints a worker feels she has to face in doing her job.

Below table shows the total number of Anganwadi Centres (AWCs), sampled AWCs and survey completed AWCs in four evaluation blocks of BCSP.

Table 7.1: AWC survey sample size

	Atri	Wazirganj	Mohra	Khizarsarai	Total
Number of AWCs	59	192	77	169	497
Sampled number of AWCs	55	55	55	55	220
Survey Completed number of AWCs	52	52	53	53	210

The completion rate of the AWC survey is 95.45%. Out of 220 AWCs visited, we couldn't collect information from 10 AWCs. This was mainly because of the following reasons-

- AWC was not functional
- Anganwadi Worker (AWW) was not present during both the days of survey to share information
- AWW was suspended
- AWC running was under some legal disputes

This chapter presents the baseline findings around the Anganwadi Centres first, and then the findings about the Anganwadi Workers.

7.3 Anganwadi Centre

7.3.1 Coverage and Attendance

The first table outlines the number of beneficiaries noted in the AWC registers on the day of survey for the last month. On an average an AWC in our selected blocks have 40 children between 3-6 years, 9 (approx.) pregnant and lactating women and 41 children between 6-36 months.

Table 7.2: On the day of survey

Beneficiary Status from the AWC Register	Atri	Wazirganj	Mohra	Khizarsarai	Average
Children 3-6 years	39.19	37.10	37.75	37.89	37.99
Pregnant Women	9.81	9.27	8.15	8.17	8.84
Lactating Mothers	9.56	8.78	7.84	8.90	8.76
Children 6 m - 3 years	43.37	41.21	40.08	39.27	40.9

On the day of survey, 91.59% AWWs and 88.73% Anganwadi helpers were present.

Table 7.3: AWW and Helper Attendance

AWW Attendance	Frequency	Percent	Helper Attendance	Frequency	Percent
Present	196	91.59	Present	189	88.73
Absent	18	8.41	Absent	24	11.27
Total	214	100.00	Total	213	100.00

7.3.2 Infrastructure Facilities

The survey collected a range of information on infrastructure facilities at the AWCs. The below table describes various infrastructure facets of AWCs with block averages and total average across four blocks.

Table 7.4: Infrastructure facilities

Infrastructure Facilities	Atri	Wazirganj	Mohra	Khizarsarai	Total
AWCs with at least one room	96.30	100.00	94.00	84.91	93.81
AWCs with Pucca building	75.93	64.81	67.31	58.49	66.67
AWCs having own building	57.41	46.30	34.62	36.54	43.87
AWCs with functional toilet	27.78	9.43	28.30	7.55	18.22
AWCs with drinking water	62.96	43.40	47.17	39.62	48.36
AWCs with medicine kit available	63.46	60.38	69.23	86.76	70
AWCs with functional weighing machine	66.67	47.17	18.87	43.40	44.13

Almost 93.81% of AWCs have at least one room to function the centre, but only 66.67% of these are in Pucca buildings. Only 44% of AWCs have their own building built as centres. Rest of them function in rented houses, or at AWWs houses, or as an extension to other government buildings.

Influence of clean drinking water and sanitation are considered as factors influencing young children's health and nutrition (Spears, 2012). In our sampled AWCs, only 18% have toilet facility and 48.87% have drinking water facility through hand pumps or tap water.

70% of AWCs have basic medicine kit to treat simple injuries. Out of 170 AWCs reported to have weighing machine, only 94 are working i.e. only in 44% AWWs there is growth monitoring facility. If BCSP needs to function smoothly, it is crucial to make sure the percentage of functional weighing machines in programme blocks is 100% because growth monitoring of children and mothers are one of the key BCSP conditions.

7.3.3 Class Room and Teaching Facilities

Though more than 90% of AWCs have at least one room, during our survey only 68.75% AWCs use it to provide class room for children. In rest of the AWCs (31.25%) children were using verandas as class rooms. In AWCs, 47.62% children are seated on plain mud or cemented floor, 51.43% use old plastic sacks as rugs to sit. A detailed table on class room facilities by block can be seen below.

Table 7.5: Classroom and teaching facilities

Class Room and Teaching Facilities	Atri	Wazirganj	Mohra	Khizarsarai	Total
Seated inside a room	69.81	73.08	68.63	63.46	68.75
Seated on plain floor (mud and cemented)	54.72	36.54	51.93	47.17	47.62
Seated on rough rugs brought by children	43.40	63.46	48.08	50.94	51.43
Blackboard available	22.22	42.31	13.21	26.42	25.94
Out of available blackboards, usage rate by the AWW	91.67	77.27	100	92.86	87.27
Nutrition Posters on the walls of AWCs	50	75	60.38	52.83	59.43
Teaching aids displayed	66.67	71.15	78.85	69.81	71.56

Provision of black boards in AWCs is not considered as a main mandate of ICDS due to inflexible and delayed fund provision. However, in 25.94% AWCs survey teams could find black boards and out of those the usage rate is 87.27%. Nutrition or health messages posters were given out by the government as part of IEC strategies of various programs run in a village. Teaching aids displayed in an AWC are mainly bought with marginal funds given out in the past or due to AWW's initiative to make the centre a bit more attractive for children. Almost 60% of AWCs there were some type of nutrition or health posters displayed on the days of survey. 72% AWCs any posters or pictures' enabling pre-school learning was displayed.

7.3.4 Overall Services at the AWC

Main AWC services listed below are- provision of hot cooked meals, arrangement of VHND every month and provision of take home rations.

Table 7.6 (a): Overall service delivery at AWC

Overall Service Delivery at the AWC	Atri	Wazirganj	Mohra	Khizarsarai	Total
Percentage of AWCs conducted Immunisation day once a month	94.34	98.11	90.57	94.34	94.34
Percentage of AWCs conducted VHND once a month	88	98.08	94.00	96.08	94.09

Percentage of AWCs where ASHA always attend VHND	80	90.57	78	94.12	85.78
Percentage of AWCs where ANM always attend VHND	86	96.23	92	100	93.66

Table 7.6 (b): Overall service delivery at AWC

Overall Service Delivery at the AWC	Atri	Wazirganj	Mohra	Khizarsarai	Total
Average number of days hot cooked meal was served in last month	17.84	21.84	22.53	7.25	17.32
Average number of beneficiaries received THR last month	44.54	52.61	54.96	53.02	51.29

All of the data represented in the above table are collected from AWC registers with the help of AWW.

7.3.4.1 Hot Cooked Meals and Take Home Ration

On an average in the four surveyed blocks of Gaya, children between 3-6 years received hot cooked for meals for about 17 days in the calendar month of before the survey. This average varies across blocks with Wazirganj has the highest average days of hot cooked meal delivery.

In the case of take home ration supply, on average 51 beneficiaries received take home rations compared to the ICDS norms of 56 (50 children aged 6 months – 3 years, 8 lactating mothers and 8 pregnant women).

7.3.4.2 Village Health and Nutrition Days (VHNDs)

During the survey to capture whether the AWCs had monthly VHNDs, we approached it in two ways. In parts of Bihar, the term VHND is not commonly used. Instead, AWWs and beneficiaries identify it as 'Routine Immunisation Day (RI)' or *tika karan din'*. In our survey we asked the AWWs whether they conducted VHNDs and RI days. Both VHND and RI days were same for the four surveyed blocks in Gaya. In more than 94% AWCs, VHND or RI carried out once every month. During these ANMs attend for more than 93% and ASHAs attend more than 85%.

7.3.5 Stock of Selected items at the AWC

The survey checked the stock levels of various items at the AWCs. Only 25% of Anganwadi Workers had packets of ORS and Zinc for the treatment of diarrhoea; 11% had stocks of condoms and oral contraceptive pills (OCPs), 16% had malaria tablets and 69% had deworming tablets.

Table 7.7: Availability of Stock of Contraceptives and Medicines

Availability of Stock	Percent
ORS and Zinc	25%
Condoms and OCP	11%
Malaria Tablets	16%
Deworming Tablets	69%

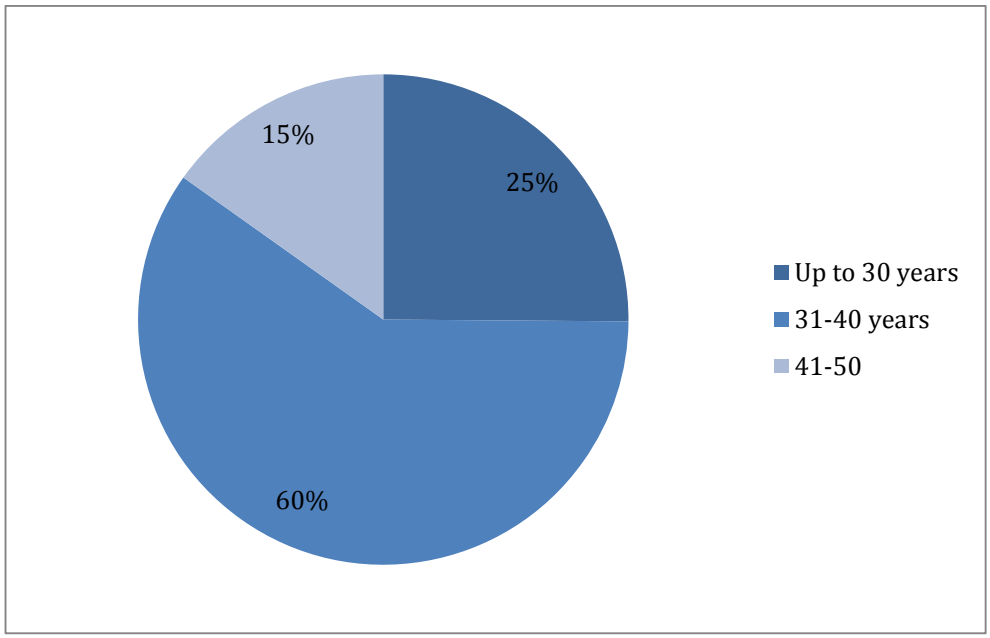
7.4 Anganwadi Workers

7.4.1 Background characteristics

7.4.1.1 Age

Average current age of AWWs in BCSP blocks is 35 years. Age distribution of AWWs can be seen below.

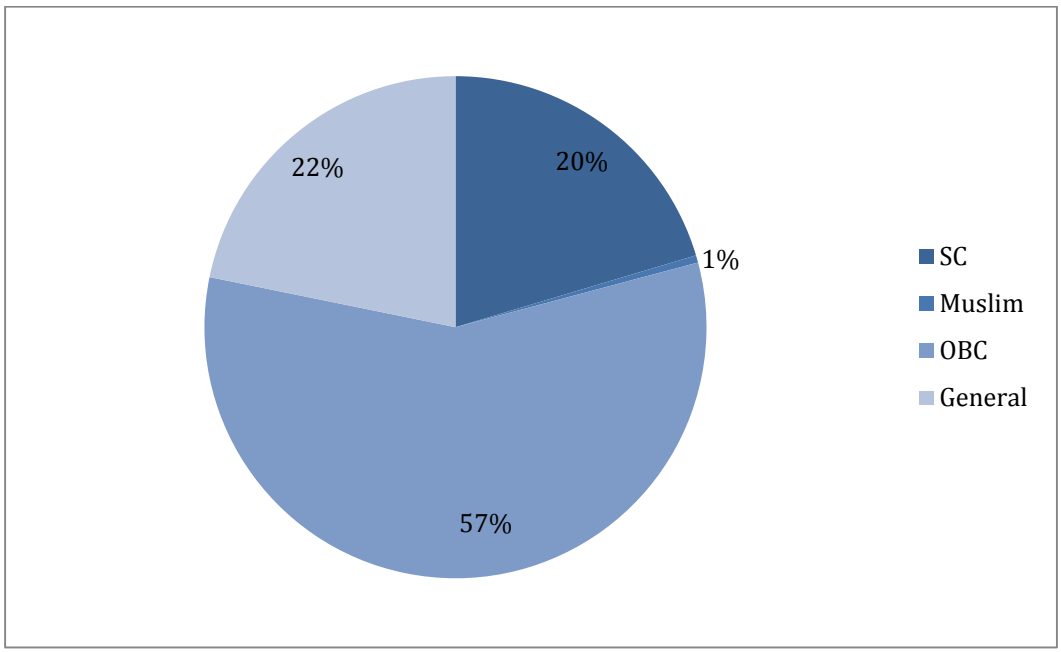
Figure 7.1: Percentage of AWWs, by age groups



7.4.1.2 Caste

AWWs in BCSP blocks mostly belong to Other Backward Classes (57.35%), 20.38% belong to Scheduled caste, only 0.47% (i.e. one AWW out of 211) is Muslim and 21.80% are from the general category.

Figure 7.2: Percentage of AWWs, by caste groups



[26]

7.4.1.3 Education

None of the AWWs are illiterate in the region surveyed. Only 2% have just primary and middle school education. 34.6% of AWWs are secondary school educated and 45% have higher secondary education. 1.42% has passed a diploma or certificate course. 14.69% of AWWs are graduates and 3% are post-graduates.

Table 7.8: Education of AWW

Education of AWW	Percent
Primary	0.47
Middle	0.85
Secondary	34.60
High Sec	45.02
Diploma/Certificate	1.42
Grad	14.69
Post Grad	2.84

7.4.1.4 Experience

On an average AWWs in Gaya have 10 years of work experience as an AWW. The bar chart below in detail shows the percent of AWWs belong to different years of experience.

[26] This pie-chart value is rounded off.

Figure 7.3: Percentage of AWWs, by years of experience

AWWs also reported the years of functioning of surveyed AWCs. Average years of functioning can be seen from table below.

	Atri	Wazirganj	Mohra	Khizarsarai	Total
Avg number of years AWCs have been functional	11.36	10.29	10.43	8.79	10.21

7.4.1.5 Reporting

AWWs in four surveyed blocks on an average maintain 23 registers. Data shows 80.09% of AWWs reported to possess growth monitoring book, but only 53.25% of growth monitoring book were updated in the last two months.

88.04% AWCs had registers with date of birth of children recorded by AWWs. 85.24% AWCs have been visited by lady supervisor or CDPO during last month.

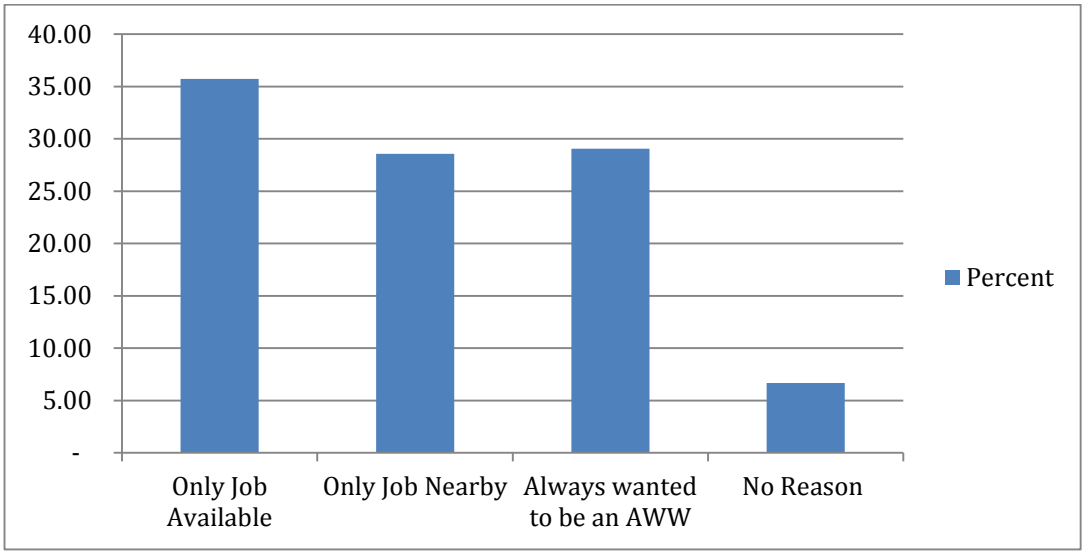
Reporting	Percent
Growth Monitoring Book available	80.09
Out of available Growth Monitoring Book Updated	53.25
AWCs with DoB of children recorded	88.04
AWCs recorded supervisor visits	85.24

7.4.2 Motivation and Awareness about Key Nutrition and Health Messages

7.4.2.1 Motivation to Become an AWW

The data describes the main reason to become an AWW is that it's the only job opportunity available for the respondents. Almost 36% of AWWs report this as the reason to become an AWW. Almost 30% AWWs reported that they always wanted to become an AWW. 64% therefore became an Anganwadi Worker for "negative" reasons (only work available) and just 39% for "positive" reasons.

Figure 7.4: Motivation to become an AWW

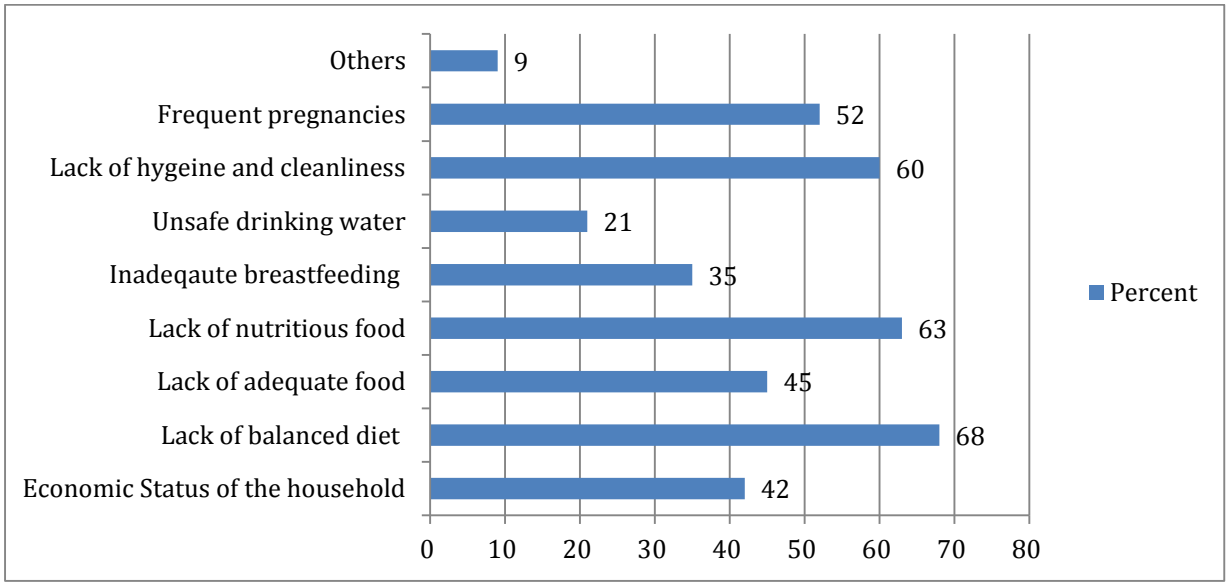


7.4.2.2 Awareness about Malnutrition, Identification and Cure

From our data it is clear that 99% of AWWs in BCSP blocks are aware of the word 'malnutrition' (in Hindi: *Kuposhan*). This word is also used as synonymous with undernutrition in the ICDS ecosystem. Also, 91.39% of AWWs think that their area has malnourished children.

The Table below shows what AWWs think as reasons for malnutrition.

Figure 7.5: Reasons for malnutrition according to AWWs



The table above shows what majority of AWWs thought as the reasons for malnutrition without any probing during the interview. Three reasons most AWWs reported are-

1. Lack of Balanced Diet – 68%
2. Lack of Nutritious Food- 63%

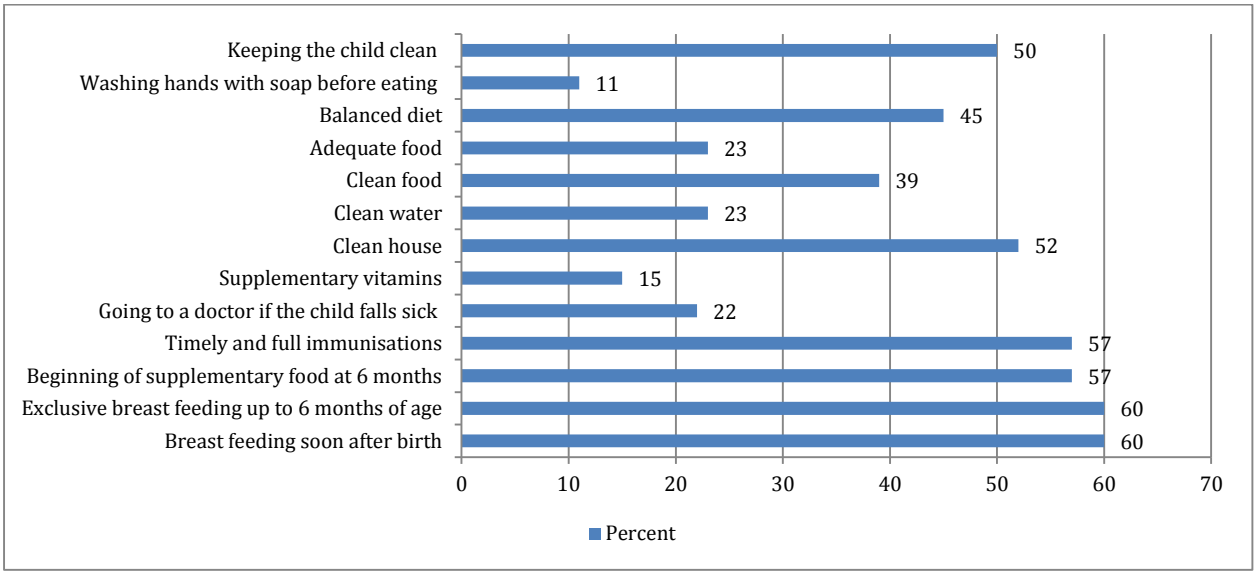
3. Lack of Hygiene and Cleanliness- 60%

Also, 52% AWWs thought frequent pregnancies by the mother will cause child malnutrition.

Only 21% AWWs considered unsafe drinking water as one reason for malnutrition. Though unsafe drinking water is not a directly linked to child malnutrition, water borne diseases such as diarrhoea is one of the crucial reasons for child malnutrition in India (Mishra and Rutherford, 2000).

A follow up question asked Anganwadi Workers about how they thought a child could be kept healthy and strong. The top reasons AWWs thought are- breast feeding after birth, exclusive breastfeeding up to 6 months of age, beginning of supplementary food at 6 months, timely and full immunisation, clean house and keeping the child clean. Very few AWWs identified washing hands with soap before eating, using clean water and supplementary vitamins.

Figure 7.6: AWWs' thoughts on how to keep children healthy and strong



7.4.2.3 Identification and Cure of Malnourished Children

Almost 75% of AWWs reported that they identify a malnourished child by seeing the child and by measuring the weight of the child. Only 23% AWWs reported that they plot height and weight measurements of the baby on the growth chart.

How does AWW recognise malnourished children	Percent
By seeing the child	75%
By holding the child	16%
By measuring the weight of the child	75%
By measuring the height of the child	30%
By plotting the weight and height measurements of the child on a growth chart	23%

District level Nutrition Rehabilitation Centres (NRCs) are supposed to be set up in every district to treat severely and acutely malnourished babies. Only 15.64% AWWs are aware of the concept of NRCs and even if they are aware, only 33% AWWs ever referred a child to NRCs.

7.4.3 Challenges faced by AWWs

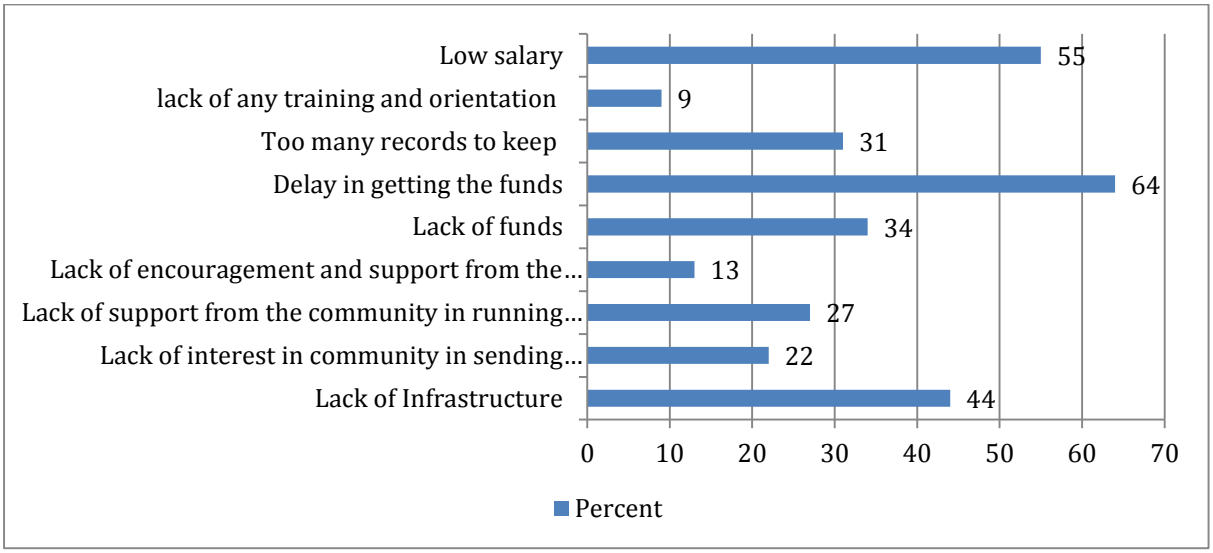
There is increasing consensus that the ICDS is not delivering on its goal (Hungama, 2011).

Partly, this is due to problems with the ICDS policy design; there is a mismatch between what the ICDS is mandated to deliver and what has been proven to contribute to reductions in child malnutrition domestically and globally (World Bank, 2012). However, there are also substantial problems with the way the ICDS is implemented, irrespective of the policy design.

A few main challenges faced by ICDS are due to lack of capacity enhancement of AWWs, institutional issues, resource constraints and social exclusion issues. During this survey, we aimed to understand what AWWs considered as their challenges in delivering services.

During the survey from a list of constraints specific to ICDS, AWWs were asked to choose the three main constraints they face during AWC functioning in the village. The graph below depicts which are the reasons AWWs thought mostly affecting them.

Figure 7.7: Challenges faced by AWWs



64% AWWs thought delay in getting funds (as in honorarium and fund for supplementary nutrition) as one of their top three problems. Second most important challenge for AWWs is their low salary. Currently an AWW in Gaya receives Rs. 3000 as honorarium and in most cases this honorarium doesn't arrive on time. Data shows, out of 58 AWWs we interviewed in July (18th to 31st July) one each last received salary in December and January (1.72% each), 9 of them received last received salary in February 2013 (15.52%), 16 received their last salary in March 2013 (27.29%), 8 of them received last salary in April 2013, 14 last received salary in May 2013. A cumulative percentage of 82.76% AWWs interviewed in the month of July 2013 had delays in receiving their salary.

Other issues more than one third of AWWs thought as constraints are –

- Lack of infrastructure
- Lack of funds
- Too many records to keep

8 Confounding Factors 1 - Other Nutrition Related Behaviours and Services

8.1 Introduction

As outlined in the introductory chapter, there is a possibility of confounding factors unrelated to the programme that can influence the key indicators unequally across different areas. Some of these confounding factors can be due to infrastructure differences in the areas of the programme. For instance, differential access to water and toilet facilities across PSUs (AWCs) in the programme areas can lead to varying disease environments, which influences the nutrition outcomes of women and children across the PSUs to different levels.

Other nutrition related services for infants – which are not a part of BCSP -- may also pose as confounding factors. For instance, government-mandated Vitamin A dose administration and Take Home Rations can impact the nutrition status of children, making it problematic to separate out the impact of BCSP on child nutrition, from these services.

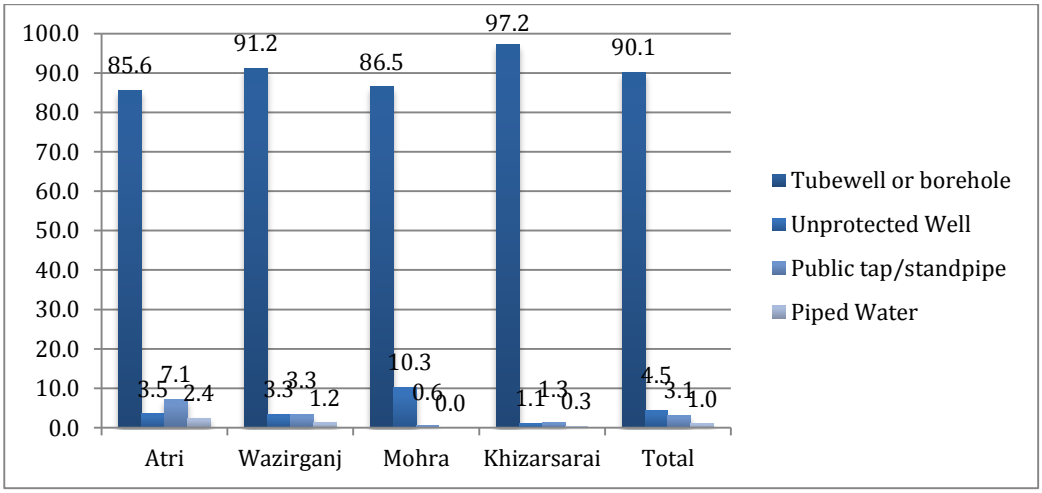
8.2 Water and sanitation

On an average, across all the four blocks, 64 households in a PSU had hand pumps (Table B.7). Each PSU also had 10.6 government hand pumps. 21 households in a PSU had toilets. A PSU in Wazirganj had, on average, 31 households with toilets, while only 17.9, 12.2 and 22.8 households in a PSU in Atri, Mohra and Khizarsarai (respectively) had toilets.

8.2.1 Water

Table C.8.1 provides information on the main source of household drinking water. Overall, the major source is a tube well or borehole, with about 90.1% of households using it as the main source of drinking water. The next highest main source reported by households was an unprotected well (4.5 percent) followed by public tap/ standpipe (3.13 percent). The estimates regarding piped water are abysmally low at 1 percent. A significantly higher number of households use tube wells as their main source of drinking water in Khizarsarai than in the other three blocks. While the estimate regarding the same in Atri stands at 85.6 percent, it is much higher for public tap at 7.12 percent in Atri than in the other 3 blocks.

Figure 8.1: Source of drinking water, by programme block

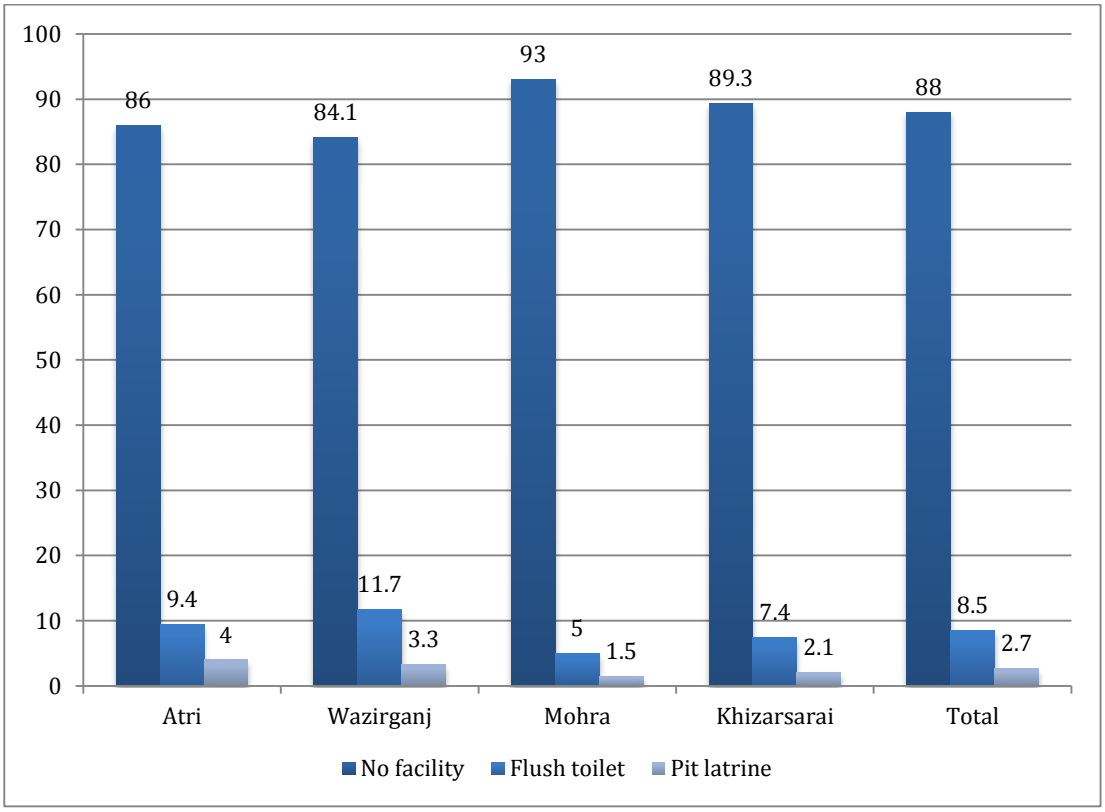


8.2.2 Sanitation

Toilets

Estimates about the type of toilet used by the household are presented in Table C.8.2. A substantial percentage of the households (88%) do not have any system of toilet in the house and they are most likely to go defecate in the open. Only 8.5 percent households own or have access to flush-type toilets.

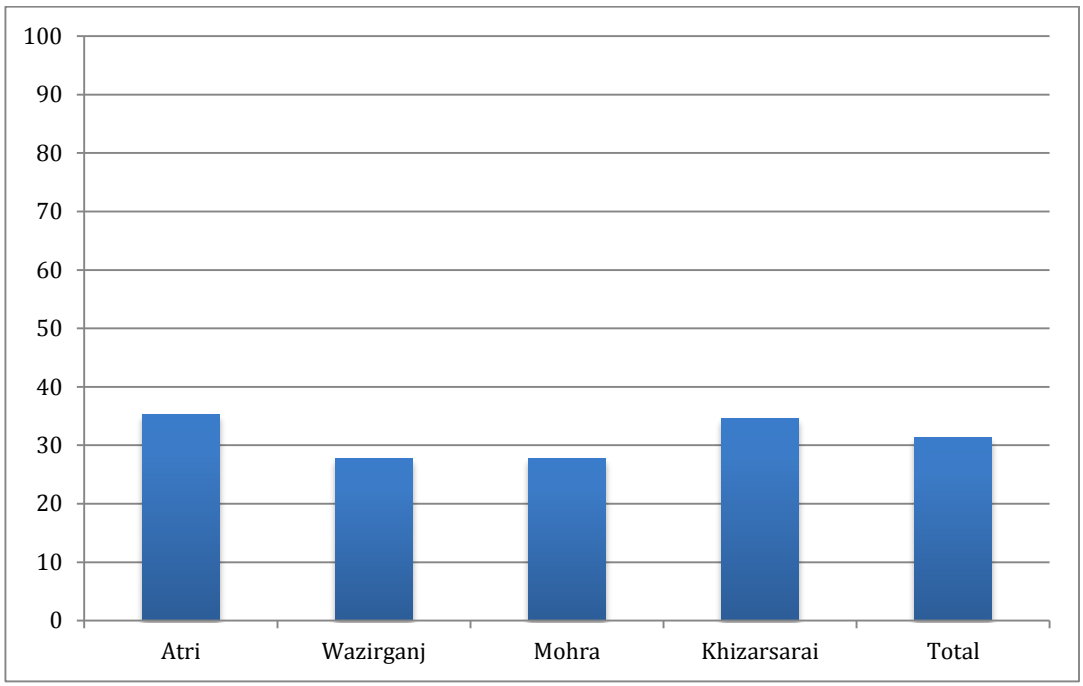
Figure 8.2: Access to toilet facilities, by programme block



Drainage

Overall, 31.3 percent of the total PSUs reported having access to drainage facilities, and 25.4 percent had access only in some areas (Table B.2). The coverage in Atri (35.2 percent) and Khizarsarai (34.6 percent) was greater than in Wazirganj and Mohra (27.8 percent in each), but only 11.1 percent PSUs in Atri had drainage in only some areas; a small figure compared to Wazirganj (29.6 percent), Mohra (25.9 percent) and Khizarsarai (34.6 percent).

Figure 8.3: Access to drainage facilities, by programme block



8.3 Vitamin-A Doses administration

According to the National Rural Health Mission (NRHM) guidelines, Vitamin-A doses are required for infants once during 6-9 months (first dose), once during 12-15 months (second dose) and once during 21-24 months (third dose). Overall, 38.2 per cent of households have ever received Vitamin A, a rate that barely changes by block (Table C.8.3). Of those received, majority of the households report having only obtained it once. The norm, however, is at least 5 doses per child as per the NRHM guidelines.

8.4 Take home rations (THR)

Supplementary nutrition is provided through take-home ration to pregnant and lactating women, and children between 6 months to 3 years. Once a month, the beneficiaries are provided with a month's supply of rice and pulses by their Anganwadi Centre.

Table 8.1: Summary information on THR, by programme block

	Atri	Wazirganj	Mohra	Khizarsarai	Total
Proportion of beneficiaries who received THR					
Children	39.3	43.1	43.7	56.0	45.5
Women	41.5	42.9	46.4	56.7	46.8
Use of THR meant for child					
Only for child	10.5	7.7	2.9	7.2	7.1
Whole family but primarily child	54.9	48.9	43.3	42.9	47.1
Frequency of THR received by women					
All months of pregnancy	47.1	56.3	39.6	43.0	46.2
Only a few months of pregnancy	37.6	32.9	46.4	45.3	41.0
Only once or twice	15.2	10.8	14.0	11.8	12.9

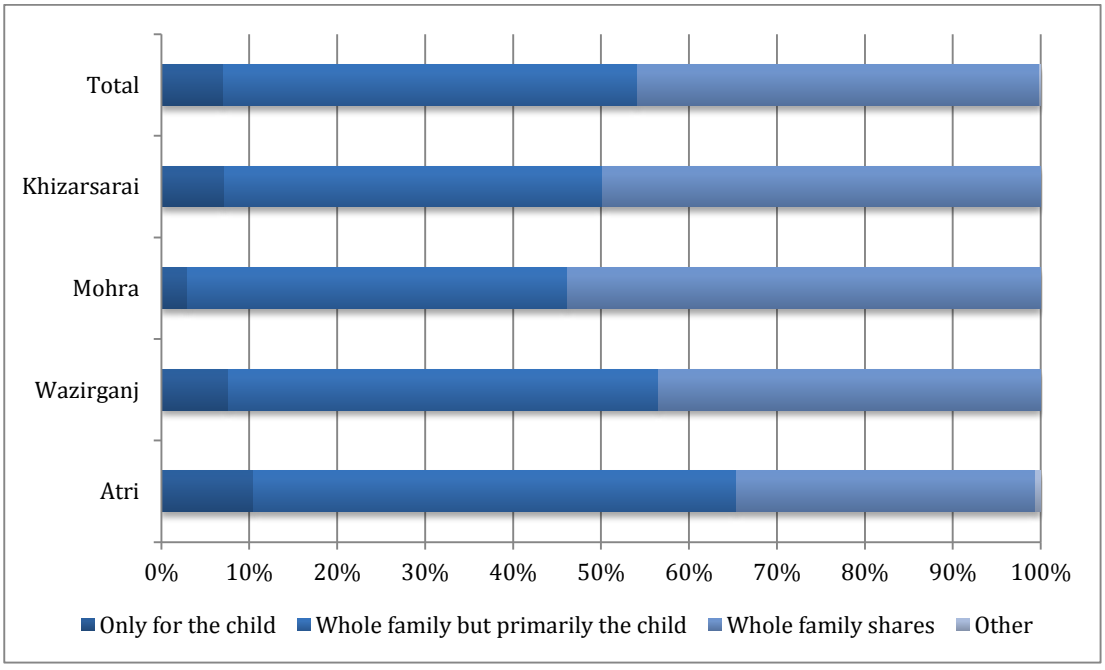
Children are supposed to access take-home rations (THR) during the VHND. Of the sample blocks, the number of children actually having access to THR varies from 39.3 per cent in Atri to about 56 per cent in Khizarsarai (Table C.8.4).

The THR should ideally be used only for the child – however, this proves to be true only in 7 per cent of the cases across the sample with the number dropping to as low as 2.9 per cent in Mohra (Table C.9.1). Usually, the whole family shares the THR, with or without primacy being given to the child.

Forty seven per cent of the women surveyed received a take home ration from the Anganwadi centre during their last pregnancy (Table C.8.4). Of these, 46 per cent women received ration during all months of pregnancy, and 41 per cent received it during a few months of their pregnancy.

In Chapter 10, we measure the impact of THR on nutritional outcomes of the eligible women and children.

Figure 8.4: Use of THR received from AWCs



9 Confounding Factors 2 – Health Services

9.1 Introduction

Several aspects of health care (including antenatal, delivery and postnatal care) that a woman receives may also act as confounding factors on the programme impact indicators and thus need to be measured as part of the evaluation.

9.2 Antenatal Care

On an average, a woman realized that she was pregnant in her second month of pregnancy (Table C.9.2). A majority of the women in the total sample (67 per cent) said that their name was noted by a service provider in a register, during their last pregnancy (Table C.9.3). Most of the women (73 per cent) also received a MCHN card during their last pregnancy. During their pregnancy, women's names were noted in a register by the Anganwadi Worker in most cases (39 per cent), or by the ASHA (26.5 per cent).

The average number of antenatal check-ups received by a woman during her last pregnancy was 1.4, and the average month in which a woman received the first check-up was at the start of the second trimester (Table C.9.5). When asked why less than 4 antenatal check-ups were received, most women said that they felt the check-ups were unnecessary (45 per cent), while 24 per cent said they didn't know about such check-ups (Table C.9.4). Women were usually motivated by their husbands to receive antenatal check-ups (23 per cent), or by themselves (19.4 per cent). Almost 50 per cent of the women said they received antenatal check-ups at a private hospital/maternity home, while 27.3 per cent availed of them at an Anganwadi Centre or at the VHND. A majority of the total sample had their weight measured (66 per cent), blood pressure checked (55 per cent), blood tested (56 per cent), urine examined (64 per cent) and abdomen examined (56 per cent) at least once during their last pregnancy. Only 14 per cent of all the women had their height checked, 21 per cent had their breast examined, and 33 per cent received a sonogram/ultrasound at least once during their last pregnancy. While most women (34 per cent) said they didn't receive any advice on possible complications during pregnancy and delivery, birth preparedness, family planning or child care, 23 and 19 per cent women received advice on pregnancy and delivery complications, and birth preparedness respectively (Table C.9.7).

A woman received an average of 2 tetanus injections during the pregnancy (Table C.9.6). 7% of the total sample received less than 2 injections, and, of them, 28 per cent said it was because of lack of knowledge, and 18 per cent felt it was unnecessary (Table C.9.7).

Paleness/Giddiness/Weakness and excessive fatigue appear to be the common health problems during pregnancy, with 58 per cent and 42 per cent of all women in the sample suffering from them respectively (Table C.9.7).

When asked where they sought consultation or treatment, a majority of the sample (54 per cent) said they did not seek any treatment at all, while 30 per cent went to the hospital or a maternity home (Table C.9.7).

9.3 Delivery

Table C.9.7 shows that for 41 one per cent of the women the last delivery took place at their own homes. About 11 per cent and 20 per cent of women delivered in a government hospital and a Primary Health Centre (PHC) respectively. Of the women who did not deliver in a health facility, 31.5 per cent felt that delivering in a health facility was not necessary and 16 per cent of women did not have enough time to go to a health facility. Ten percent of women from Atri district gave health facility being too far and no transport availability as a reason for not going to health facility to deliver.

As multiple responses, it was predominantly the ASHA (25 per cent), the husband (20 per cent) and the mother-in-law (14 per cent) who motivated or facilitated the sample population to deliver in a health facility.

For majority of the sample, 41 per cent, an ANM or Nurse or Midwife or LHV conducted the women's delivery. For 25 per cent of the women a doctor conducted the delivery and for 27 per cent a Dai conducted the delivery.

A tempo/auto/tractor was the main mode of transportation for about 58 per cent of the women surveyed and about 13 per cent took a government ambulance to reach the health facility for delivery. On an average, women spent about 360 rupees on transportation at the time delivery. The total cost at the time of delivery, excluding transportation was approximately 2600 rupees (Table C.9.9). With respect to arranging for financial resources at the time of delivery, 53 per cent of women said that they had enough resources, 24 per cent took a loan and 15 per cent saved during pregnancy (Table C.9.8). Only 38 per cent received government assistance under the Janani Suraksha Yojana (JSY). And the average amount a woman received under this scheme was 1380 rupees.

9.4 Post-natal Care

Forty per cent of the women said they received a post natal care check-up after delivery. As part of this check-up, abdomen examination (for 78 per cent women), advice on breast feeding (for 63 per cent women) and advice on baby care (for 64 per cent women) was given. However, an essential part of the check-up, advice on family planning, was given to only 26 per cent of the sample surveyed (Table C.9.10).

Of those women who did not receive a post-natal care check-up, 52 per cent did not consider it necessary to get a check-up and 16 per cent cited 'lack of knowledge' as a reason for not receiving a post-natal care check-up.

On an average it was two hours after delivery that a woman received her first post natal care check-up and the place where most women reported having received it was a private hospital/maternity home (29 per cent) or the Community Health Centre (CHC)/ rural hospital (25 per cent), as described in Table C.9.10.

Table C.9.11 details the respondent's awareness of Diarrhoea and Pneumonia. As part of post-natal care of the child, giving medicines as prescribed by the doctor (43 per cent) was one of the most universal responses when asked about the actions the women should take if the child gets diarrhoea. Some of the other responses given by the women were- giving ORS and zinc solution (9 per cent), give ORS solution (8 per cent), give salt and sugar solution (6 per cent).

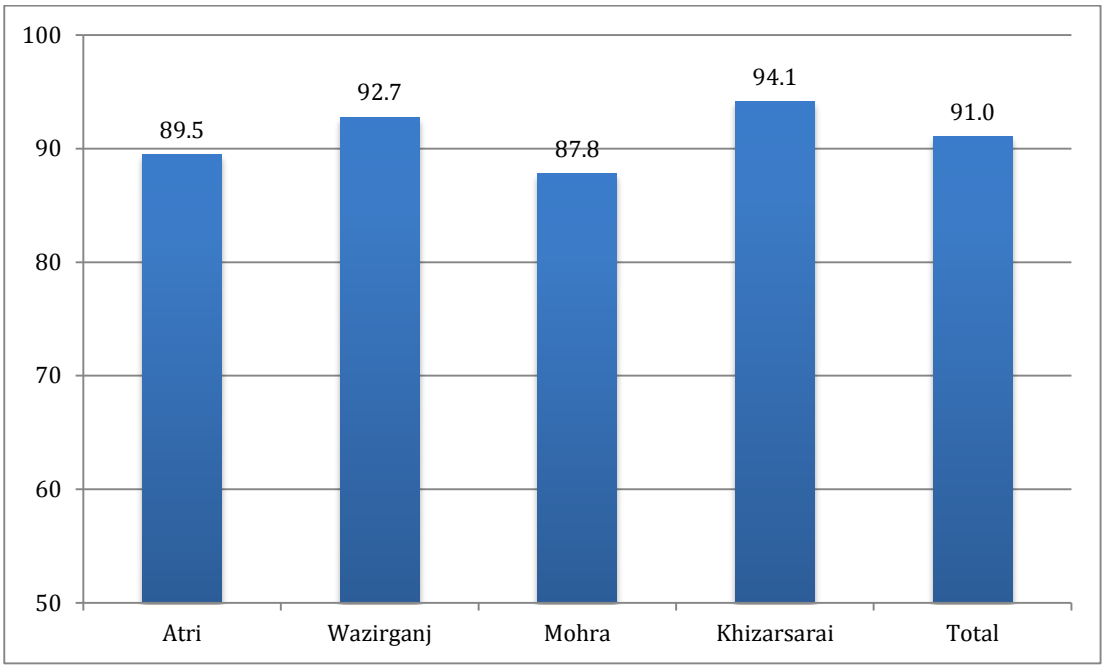
When asked about their awareness of signs of pneumonia in a child, chest in-drawing (26 per cent), difficulty in breathing (15 per cent) and pain in chest and productive cough (10 per cent) were the most post popular responses. Twenty-two per cent of the population was not aware of the signs of pneumonia in a child.

Forty four per cent of the sample was told about these pneumonia signs in a baby by a doctor. Seventeen per cent knew about the signs on their own and through their experience.

9.5 Child immunization

Overall, 91 percent of the children have ever been immunized (Figure 9.1).

Figure 9.1: Percentage of children ever immunized, by programme block



According to the Immunization Handbook for Medical Officers[27] published by the National Rural Health Mission, Government of India, the following is the National Immunization Schedule (NIS) for Infants:

Vaccine	When to give
BCG	At birth or as early as possible till one year of age
Polio0	At birth or as early as possible within the first 15 days
Polio1, 2 and 3	At 6, 10 and 14 weeks
DPT1, 2 and 3	At 6, 10 and 14 weeks
HPV1, 2 and 3	At 6, 10 and 14 weeks
Measles	9 completed months - 12 months (give up to 5 years if not received at 9-12 months)
Vitamin-A (1st dose)	At 9 months with measles

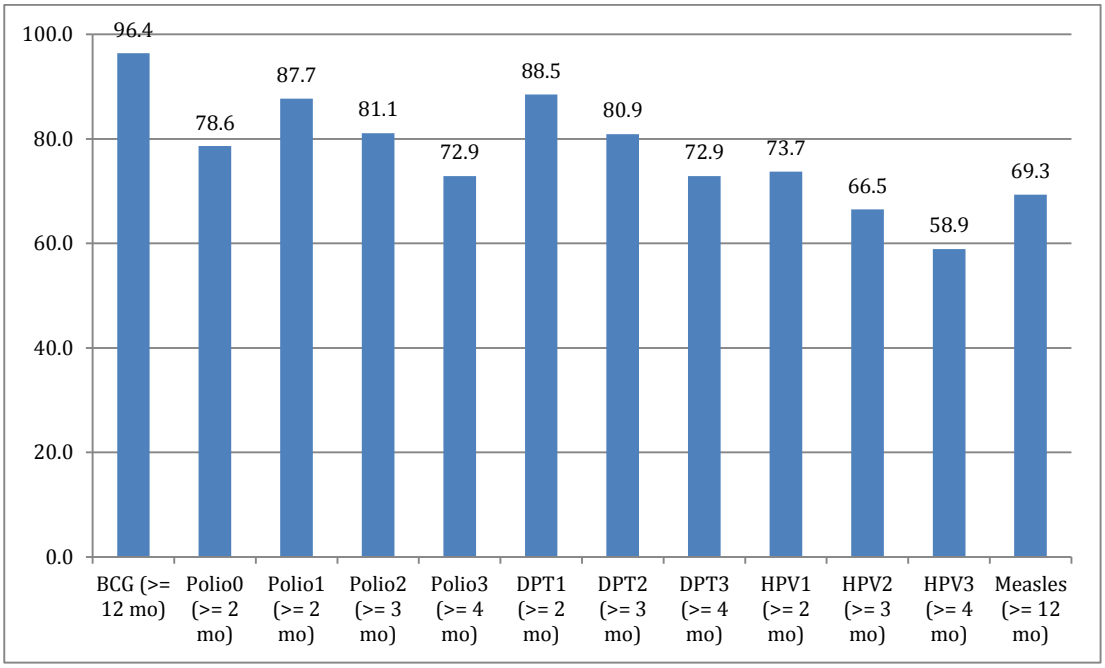
[27] Department of Health and Family Welfare, Government of India. (2008). National Rural Health Mission (NRHM). *Immunization Handbook for Medical Officers.* New Delhi, India.

Since the BCSP baseline survey collected age in months and the immunization dates for each child are not easy to capture due to lack of good records or even maintenance of immunisation cards at the household level, it is difficult to give very precise estimates of the correctness of the timing of administering the aforementioned vaccinations. However, in Table C.9.12, we present rates of child immunization for each of these vaccines in two ways: (i) in a wider age range than the prescribed (for instance, for Polio0, we see rates of immunization of all children below 2 months of age in our sample), and (ii), in the sample of children above the age that serves as the upper age limit (for instance, for Polio0, we see rates of immunization of all children aged 2 months or more).

In the cases when children are older than the age of administration of specific vaccines, the overall rates of immunization are 96.4 percent for BCG, 78.6 percent for Polio0, 87.7 percent for Polio1, 81.1 percent for Polio2, 72.9 percent for Polio3, 88.5 percent for DPT1, 80.9 percent for DPT2, 72.9 percent for DPT3, 58.9 percent for HPV1, 69.3 percent for HPV2, 66.5 percent for HPV3, and 73.7 percent for Measles, respectively.

In all the cases when children fall in the age bracket around the prescribed age for administering the specific vaccines, the sample size is significantly reduced but we find that the rates of immunization are lower than their corresponding rates of immunization. In particular, there is a bigger difference in the cases of Polio2 and 3, DPT2 and 3, and HPV2 and 3. Though it is difficult to conclude anything from the reduced age-specific samples, it is not surprising that the immunization rates in the correct age brackets are not high.

Figure 9.2: Rates of immunization, by age group



The baseline survey collected information on the reasons for not getting children immunized and the main reasons were found to be lack of knowledge (30.8 percent), thinking it was not necessary (26.2 percent), family not allowing it (18.5 percent), and not having enough time to go (18 percent) (see C.9.13).

10 Contribution to the Nutrition Debate

10.1 Introduction

There is currently extensive debate in India as to why rates of undernutrition are stubbornly high in India considering the rates of economic growth; and why they are so much higher than comparatively poorer countries in Africa[28].

One of the challenges faced by researchers and policy analysts is the lack of recent, high quality nutrition data. The comprehensiveness of the BCSP dataset means that it could potentially add considerable evidence and value to the ongoing debate.

In this section, we use the BCSP data to "test" two of the current hypotheses surrounding the disproportionately high rates of undernutrition in India. The first, based on work by Spears (2013) posits the importance of open defecation in explaining the nutrition picture[29]. The second, by Jayachandran and Pande (2012) identifies son preference and cultural based gender norms as a key driver[30], which manifests itself through substantially lower outcomes for girls born after the first male child.

Our key conclusions are:

- There is a strongly significant relationship between the frequency of diarrhoea and other illnesses and nutrition outcomes.
- Access to a toilet (and not defecating openly) do seem to reduce the disease and illness prevalence of children within the household, but that this is not statistically significant for all illnesses
- Access to a toilet (and not defecating openly) does not have any direct impact on nutrition outcomes
- Therefore, does not seem to strongly support the hypothesis of Spears
- The data does show that lower birth order children have lower height-for-age and height-for-weight outcomes, although there is no significant relationship for weight-for-age (partially reflecting the age profile of our sample)
- The data confirms the analysis of Jayachandran and Pande because the nutrition outcomes are significantly worse for lower birth order girls as compared to boys

After this, we use the data to try and identify econometrically the impact of the Take Home Rations scheme on nutrition outcomes. The Take Home Rations scheme, described elsewhere in the report, is a key part of ICDS; however there is very little evidence on its effectiveness. The key conclusions of this analysis are:

[28] *India's Malnutrition Enigmas: Why They Must Not Be a Distraction from Action*, Lawrence Haddad, IDS August 2013 and the special editions of EPW in 2013

29 Spears, D. 2013. *How Much International Variation in Child Height Can Sanitation Explain?* Policy Research Working Paper 6351. World Bank. February.

[30] Jayachandran, Seema, and Rohini Pande. "The Puzzle of High Child Malnutrition in South Asia." presentation slides." *International Growth Centre* (2012).

- The Take Home Rations scheme seems to be well targeted, in that it is received by children who have significantly worse nutrition outcomes

- However, our econometric analysis suggests that, when controlling for the other determinants of nutrition outcomes, the Take Home Rations scheme has no significant impact on nutrition outcomes

10.2 Sanitation: Testing the Hypothesis of Spears

10.2.1 Background

Over 600 million people in India – 53 per cent of Indian households – defecate in the open, without using a toilet or latrine (UNICEF and WHO 2012). This open defecation is an important cause of infant and child and disease mortality. Spears observes that open defecation can statistically account for much of the variation across poor countries in average child height.

With specific reference to India, Spears argues that sanitation is a large part of the answer to the "Asian enigma" of Indian stunting and that "difference in open defecation is sufficient to statistically explain much or all of the difference in average height between Indian and African children". The mechanism through which open defecation corrodes is two-fold: one, it increases diarrhoea that causes significant loss of nutrient intake; two, it results in chronic enteropathy – a predicament caused by "repeated faecal contamination that … increases the small intestine's permeability to pathogens while reducing nutrient absorption". Both of these cause "malnutrition in various forms, stunting and cognitive deficits, even without necessarily manifesting as diarrhoea or otherwise observable illness".

Using the data collected, we are well-placed to test for the relationship between sanitation and disease outcomes. We can also follow this up with tests for the impact on the nutrition indicators of the children: the height-for-age, the weight-for-age and the weight-for height z-scores of the child.

A few caveats are in order here, before we progress: our dependent variable is at the *household* level, a measure of whether members of the household defecate in the open or otherwise. However, the literature seems to suggest that a community-based variable like the number of latrines per capita may be sometimes preferable. Also, our data covers children only up to the age of two years. One of the key impact indicators – the height-for-age score – is a "stock" variable, reflecting long-term trends in the child's health and could, potentially, require a longer time to reflect concerns. For instance, Pande et al (2012) use children under five years as part of their data. Such a problem is not observed with respect to the height-for-weight and weight-for-age outcomes which are "flow" indicators, reflecting child's health in the immediate term. Finally, our variables for illness prevalence in children are based on reporting by the members of the household: one could argue that there may be a bias here.

10.2.2 Analysis

We begin with a simple regression looking to establish a relationship between disease prevalence in the child and a binary that categorizes the toilet access of the household as closed or open defecating type. The results are presented in Table C.10.1. The findings are somewhat counterintuitive, with a whole host of variables – including the access to a toilet –

seemingly *positively* related to child illness in the recent past. However, actual access to a toilet could be potentially endogenous and that could confound both the direction and magnitude of the relationship between clean sanitary practices and child illness.

Therefore, to overcome the problem of endogeneity, we employ a two-stage process, first calculating a proxy for defecation-type of the household and then regressing this variable on the disease outcomes. The proxy variable we use here is a variable that calculates each household's probabilistic access to a toilet based on other observable outcomes. This probabilistic variable (Probability of Accessing toilet) is continuous as opposed to the earlier discontinuous binary.

The results of this regression are presented below in Table C.10.2. As one can see, there is considerable difference in both the magnitude and importantly, the direction, of the relationship between probabilistic sanitary access and disease occurrence here as opposed to earlier. Crucially, the result is more in line with what has been hypothesized: an increase in the likelihood of access to toilet makes it significantly less likely for the child to suffer from fever (at the 5 % level of significant) and reduces the average days of illness suffered per child (at the 10 % level of significance). It also seems to share a negative relationship with the general prevalence of illness from all diseases in the past thirty days and diarrhoea occurrence in the same period, but this is not statistically significant.

Having weakly established the link between open defecation and disease environment – with the link to diarrhoea being in the right direction but not significant – we proceed to see if there is any direct impact of open defecation to nutrition outcomes. Table C.10.3 shows us the results. What we see is that while the probability of accessing a toilet seems to impact health outcomes positively, this relationship is not significant.

However, a host of variables seem to significantly impact these scores, prominent amongst them being: frequency of antenatal care received, whether the mother has attended school, being a *girl* child and the wealth of the household; those that impact health outcomes negatively include having suffered from diarrhoea in the past month and child age.

The tentative conclusions that can be drawn from the three sets of regressions is the following: the access to toilets (and not defecating openly) seems to impact disease prevalence of children within the household (during the past month); two, there seems to be no direct impact of this on the actual nutrition outcomes as measured by the z-scores for height-for-age, weight-for-age and weight-for-height indices of children. However, recent illnesses and in particular diarrhoea seem to be strongly correlated with nutrition outcomes. Therefore, one could argue that access to toilets seems to impact nutrition outcomes through reduction in disease prevalence and not any other direct mechanism.

10.3 Sanitation and Birth Order: Testing the Hypothesis of Pande (2012)

Another explanation, put forward by Jayachandran and Pande (2012) suggests that parental preferences across birth order of children explain the bulk of the difference in outcomes between India and Africa. This theory argues that, culturally, Indian parents are more partial towards first-borns and, more so, first-born males. This explains the fact the Indian first-borns actually have better height-for-age outcomes than their African counterparts, but this

advantage is dramatically reversed when one compares across second-borns and worsens with increase in birth-order.

The results from our data are presented in the table below. We find that birth-order has a significant impact on the weight-for-age and weight-for-height outcomes, implying that, in the short-run at least, children with lower birth-order seem to be doing worse. However, there is no such impact on the key indicator of child nutrition: the height-for-age score, one that reflects long term trends. A possible explanation here is that our sample covers only children below the age of two years, too short a time for long-run trends to show. A surprising finding here is that there seems to be a strong gender preference *towards* girls and *against* boys. This is counter-intuitive, but once again, the explanation may perhaps lie in the age-bracket of children in our sample. There is some evidence to suggest that, at very young ages, girls are naturally better off than boys.

Finally, we try an alternate specification, interacting gender with birth-order. This allows us to see the combined impact of gender and birth-order. The results are presented in the table below: we find that there is a significant *negative* impact of the interaction term on the height-for-age score (earlier insignificant), indicating that later-born girls are differentially discriminated against. This is more in line with traditional findings elsewhere.

We also find that birth-order alone is positively related with height-for-age score, going against the basic essence of the birth-order hypothesis. When we look at the weight-for-height score, a flow indicator, we find it continues to be negatively related with birth-order, but not the weight-for-age score.

In totality, we find that the relationship between birth-order and outcomes is complex: on the one hand, when it comes to flow variables, there seems to be more-than-fair evidence of a strong negative relationship between them and birth-order; we then find that, when interacted with gender, later born girls are differentially discriminated, but an increased birth order results in an increased height-for-age score (l.o.s 10 %).

10.4 Estimating the impact of the THR programme

We start off our analysis by looking at simple tests of means of z-scores between children who receive THR and those who don't (See Table C.10.1). There seems to be a negative correlation here, seeming to indicate that children who are worse-off receive THR. It is unlikely that the reverse is true i.e. that children are worse-off *because* of the THR. Thus, it is reasonable to assume that THR is being targeted well. This applies to both children who are stunted and malnourished.

To dig a little deeper, we run a few regressions to see the impact of THR on nutrition outcomes. Here too, rather than use the binary variable of whether a child receives THR or not, we run a two-stage process to control for endogeneity issues, first predicting the probability of a child's access to THR and then using that as a proxy for actual access in the subsequent regressions. As the table below shows, there seems to be no such relation, further strengthening the argument that the negative correlation may indeed be a good case of targeting.

To sum up, here are the main take-aways:

a) THR has no impact on health outcomes in terms of z-scores of height-for-age, weight-for-age, and weight-for-height. This result holds even for those families who claim that the THR is used exclusively for the child.

b) The key variables that impact health outcomes are the usual suspects from previous results: Meat Consumption (+), Milk (-), Diarrhoea (-), Fever (-), Antenatal Care (+), Mother's Education (+), Gender (+ for girls), Child age (-ve), Assets (+). Indeed, if anything, these variables really seem to stand the test of robustness, routinely proving significant over the many varied specifications we use.

c) Finally, the fact that THR seems to be given to children with significantly poorer health outcomes points towards the conclusion that such children are targeted for THR purposes.

11 Conclusion

11.1 Introduction

Following the chapters explaining the programme and evaluation design, programme impact outcomes and indicators as well as a brief discussion of the nutrition debate, this chapter concludes the report with implications of the baseline survey exercise on the evaluation design and data quality issues to be considered for the endline survey exercises.

11.2 Validity of the evaluation design

In this section, we review whether there are any statistically significant differences across the four blocks in terms of the primary programme outcome indicators. The evaluation design is described in Chapter 2 in detail as a **difference-in-differences** approach using a **quasi-experimental approach.** Unlike in a purely random sampling design where we would be concerned with the difference in outcome indicators using the control (or any one) block serving as the base category, the evaluation design in this case (with three comparison groups built in in a step-wise approach) warrants that we focus on pairwise tests for differences to ensure that the matching of blocks on the basis of the potential confounding factors is appropriate as below:

a) Mohra (pure control) vs Khizarsarai (just technology) – to isolate the impact of the technology system and supply side interventions on programme outcomes
b) Khizarsarai (just technology) vs Wazirganj (soft conditions) – to measure the impact of the soft conditions CCT when added to the technology system
c) Wazirganj (soft conditions) vs Atri (hand conditions) – to measure the impact of switching from soft to hard conditions

In Tables C.3.9 – C.3.12, we present the results of the results of the tests for differences between two blocks at a time (as outlined above). In Table C.3.9, we find that there is no statistically significant difference between the blocks in any pair for HAZ, WAZ and WHZ. In the case of stunting prevalence, we find that Wazirganj and Khizarsarai are different at the 5% level of significance (Table C.3.10). Next, we find that the difference in maternal BMI between Mohra and Khizarsarai is statistically significant (also at 5% level of significance). Finally, in Table C.3.12, we note that there is a statistically significant difference between Wazirganj and Atri in the *obese* maternal BMI class (1% level of significance). These results are summarised in Table 11.1.

As is evident from Table 11.1, there are no statistically significant differences between the pairs of blocks in a majority of the outcome indicators. This can be seen as a validation of the matching exercise carried out at the design stage and it is clear that the quasi-experimental approach adopted is appropriate based on the baseline indicators.

Table 11.1: Summary of pairwise tests for differences across programme outcome indicators across blocks

	Statistically significant difference between blocks in 3 pairs		
	Mohra – Khizarsarai	**Khizarsarai – Wazirganj**	**Wazirganj – Atri**
HAZ	-	-	-
WAZ	-	-	-

WHZ	-	-	-
Stunting	-	Yes (p<0.05)	-
Underweight	-	-	-
Wasting	-	-	-
BMI	Yes (p<0.05)	-	-
Haemoglobin level	-	-	-
Maternal BMI Class			
Underweight	-	-	
Normal	-	-	-
Pre-Obese	Yes (p<0.05)	-	-
Obese	-	-	Yes (p<0.01)
Anaemia Status			
Severe	-	-	-
Moderate	-	-	-
Mild	-	-	-
Non-Anaemia	-	-	-

11.3 Data quality reconsidered

The ethics protocol and quality control issues during the baseline survey have been extensively documented in Annex D. However, there are certain learnings from the baseline survey that we would like to incorporate in the future rounds, both quantitative and qualitative.

There was a two-fold problem faced during the baseline with respect to questions on infant and young child feeding knowledge, practices and behaviour:

i. ***Exclusive* breastfeeding** – It was very difficult to convey the meaning of *exclusivity* of breastfeeding as an infant feeding practice or behaviour to the respondent women. Often, the response to the question about whether the child was *exclusively* breastfed was 'yes' even though the response was at odds with the one about whether the child was given any prelacteal feed or the information given when asked about the time of introduction of semi-solid and solid feeding. These contradictions were discovered at the time of enumeration and then confirmed at the time of data analysis. It is critical that enumerators are trained further in the future on conveying the meaning of *exclusive* breastfeeding and some consistency checks are built into the CAPI for the endline survey to prompt the enumerator to clarify the responses.

ii. **Compliance of survey tools with WHO IYCF measurement guide** – While all the questions in the IYCF module were suited for the baseline analysis, it would be advisable to include all the relevant questions suggested by the WHO's IYCF measurement guide to be able to calculate the recommended 8 core indicators. The survey tool would benefit from adding additional questions with regards to complementary feeding questions.

11.4 Programme design reconfigured

In the programme design, there was a **birth spacing bonus** to influence the insufficient spacing between pregnancies and the corresponding negative impacts on child nutrition outcomes. Under this, beneficiaries were to through the BCSP receive a birth spacing bonus

of Rs. 2000 if they have not become pregnant again 24 months after giving birth, and an additional Rs. 3000 if they have not become pregnant again 36 months after giving birth.

Based on expert feedback as well as learnings from the field implementation and the evaluation baseline, it has been decided to pilot a new outcome bonus in one block– a **child growth bonus** (in place of the **birth spacing bonus**) which will work like the birth spacing bonus in terms of timelines and monetary incentive values but will be based on the child weight being normal i.e. child not being underweight at the age of 24 months and 36 months, respectively.

The rationale behind introducing an outcome condition in the programme design is as follows: A CCT programme cannot influence *all* the outputs required to cause substantial impact on the final programme outcomes, measured in this case through child nutrition outcomes. This is because (a) monitoring all advisable behavioural conditions is next to impossible, and (b) the beneficiaries do not have any control on the supply-side factors such as services at the AWC or those provided by the ANM.

It is hence desirable to test an outcome condition that puts the burden of adopting those outputs that may not necessarily be part of the CCT conditions on the mothers and family of children instead of leaving it all for the Anganwadi worker and other health and nutrition service providers. Our understanding is that this will be the first time an outcome level condition has been included in a conditional cash transfer in this way.

Annex A Characteristics of the sample population

A.1 Demographics

Head of household and household size

The mean age of the household head is 42.3 years. This figure stands at 44.1 years for Atri but the same for Wazirganj and Khizarsarai at 41.7 years and 40.4 years, respectively, is statistically different. In total, 96.45 percent households are male-headed while only 3.55 percent households have a female head and there is no statistical difference between the four blocks. (Table A.4)

The average household size is 6.8 though the range across the four blocks of the means is 6.4 in Khizarsarai to 7.2 in Atri. The average number of adults per household is 3.47 (Table A.4).

Religion

In terms of the religion of the household head, the data indicates that 95.12 percent are Hindus, 4.83 percent are Muslims, 0.03 Jains, and 0.02 Buddhists. While one household only in both Mohra and Khizarsarai follows Jainism, one household in Mohra follows Buddhism. The proportion of Muslims is more than double in Atri (6.23 percent) and Wazirganj (6.91 percent) in comparison to Mohra (2.96 percent) and Khizarsarai (3.1 percent) but there is no statistically significant difference (Table A.5).

Caste

In the sample, 46.6 percent of household heads report that they belong to the Scheduled Castes, 44 percent belong to the Other Backward Classes, and 9.5 percent fall in the General category. Treating Atri (41 percent) as the base block, the proportion of SCs is statistically different in Wazirganj (50.8 percent) and Khizarsarai (49.4 percent). This is the case for OBCs as well where the figure in Atri is 51.9 percent, respectively, whereas the same for Wazirganj is 37 percent, respectively (Table A.5).

Educational attainment

Table A.6 illustrates that the educational attainment of female household members is lower than that of male household members with 61 percent of females aged 14 years and above being illiterate as compared to 32 percent of males. For each level of educational attainment, the figures for men are better than women across all blocks.

Target mothers: Approximately 57 percent mothers in our sample are illiterate and less than 32 percent have had any formal schooling at all. For no level of educational attainment does the data indicate a statistically significant difference between the four blocks (Table A.7).

A.2 Amenities

Access to basic household facilities and ownership of household and productive assets is important in promoting the socioeconomic welfare of households. In particular, the provision of safe drinking water and access to hygienic sanitation facilities are vital for good health. In

order to ascertain the current status, a module on housing was administered in the survey.

Dwelling characteristics

Information about housing tenure was also collected in the questionnaire. Estimates show that overall almost 94.5 percent of households own their dwelling or another house. In our sample, the average number of rooms per household that are used for sleeping is 2 (Table A.8).

The questionnaire also provides information about the material used for the roof, floor and wall. Overall, nearly 30.8 percent of households have used RCC/ RBC/ cement or concrete for roofs, followed by thatch/ palm leaf or reed (23.2 percent) and tiles (19.7 percent) (Table A.9). Around 81.9 percent of households used mud/ clay or earth and 12.8 percent used cement/concrete for flooring (Table A.10). Mud was the main material used for exterior walls at 48.8 percent followed by burnt bricks at 28.15 percent (Table A.11).

Access to water

Table C.8.1 provides information on the main source of household drinking water. Overall, the major source is a tube well or borehole, with about 90.1% of households using it as the main source of drinking water. The next highest main source reported by households was an unprotected well (4.5 percent) followed by public tap/ standpipe (3.13 percent). The estimates regarding piped water are abysmally low at 0.1 percent. A significantly higher number of households use tube wells as their main source of drinking water in Khizarsarai than in the other three blocks. While the estimate regarding the same in Atri stands at 85.6 percent, it is much higher for public trap at 7.12 percent in Atri than in the other 3 blocks.

Access to toilet facilities

Estimates about the type of toilet used by the household are presented in Table A.12. Unfortunately, and yet unsurprisingly, a substantial percentage of the households (88%) do not have any system of toilet in the house and they are most likely to go defecate in the open. Only 8.5 percent households own or have access to flush-type toilets.

Access to electricity, gas and telephone

Around 42.4 percent of the households in our sample have access to electricity. Access to LPG or natural gas is very limited. Overall, only 3.2 percent of households have access to this type of fuel for cooking. With respect to telephones, a huge proportion of households (88.4 percent) possess mobile phones while other type of telephones account for barely 0.3 percent (Table A.1).

Table A.1: Access to electricity, LPG/ natural gas and telephone

Block	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Electricity	38.38	53.72	38.24	39.01	42.39
LPG/Natural gas	3.15	4.37	1.79	3.43	3.2
Mobile phone	86.59	89.11	88.72	89.37	88.43
Any other telephone	0.26	0.46	0.14	0.2	0.26

A.3 Assets

Land ownership

Land ownership is the predominant determinant of the economic and social status of a household in rural Bihar. Table A.13 presents information on this aspect in the BCSP sample. Overall, 45.4 percent of households own any agricultural land at all. The average size of the landholding is 1.3 acres/hectares but it is the distribution of land across households, which are indicative of the phenomenon of a few big landholders and a majority of marginal and small landholders. We find that 99.1 percent of the households own less than 10 acres/ hectares of land.

Productive assets and household goods

The possession of productive assets and household goods is presented in Table A.14.

Livestock

Overall, 99.1 percent of the households in the sample own any kind of livestock. Table A.15 demonstrates that cows (35.1 percent), buffaloes (23.6 percent), bulls (23.4 percent) and goats (22.2 percent) appear to be the most popular types of livestock to own.

Wealth index

For the sake of the BCSP baseline report, a wealth index has been constructed using the basic methodology employed by the DHS (NFHS-3). The following extract from the NFHS-3 report on Bihar explains the methodology in brief:

The wealth index is constructed by combining information on 33 household assets and housing characteristics such as ownership of consumer items, type of dwelling, source of water, and availability of electricity, into a single wealth index. The household population is divided into five equal groups of 20 percent each (quintiles) at the national level from 1 (lowest, poorest) to 5 (highest, wealthiest).

However, it is imperative to note that the analyses in this report using this wealth index is not directly comparable with the corresponding analyses in the NFHS-3 report for Bihar because the quintiles of the wealth index are defined at the national level in the latter, and hence the proportion of the population of a particular state that falls in any specific quintile varies across states. Based on the wealth index, the state of Bihar is poorer than the nation as a whole. Only 9 percent of Bihar's households (3% of rural households) are in the highest wealth quintile, compared with one-fifth of households in India. Almost one-third (31%) of households in Bihar (35% of rural households) are in the lowest wealth quintile.

Table A.2 below shows the total population and corresponding number of households in each of the five wealth quintiles adding up to 5996 households. Please note that the PCA score could not be generated for 65 households in the BCSP sample because of some missing observations.

Table A.2: 5 Quintiles determined by Principal Components Analysis

Total population	1	2	3	4	5	Total
8137	0	0	0	0	1,028	1,028
8138	0	1,291	0	0	0	1,291
8141	0	0	0	1,109	0	1,109
8151	1,354	0	0	0	0	1,354
8152	0	0	1,214	0	0	1,214
Total	**1,354**	**1,291**	**1,214**	**1,109**	**1,028**	**5,996**

Table A.3 below shows that 22.6 percent of the households are in the poorest quintile, 21.5 percent in the second quintile, 20.3 percent in the third quintile, 18.5 percent in the fourth quintile and 17.1 percent in the wealthiest quintile. The proportion of the households in the poorest quintile is the highest in Mohra (28 percent). Wazirganj, on the other hand, has the highest proportion of households (22.1 percent) in the wealthiest quintile.

Table A.3: Proportion of households in wealth quintiles, by programme block

Quintiles	Atri	Wazirganj	Mohra	Khizarsarai	Total
	Percent	Percent	Percent	Percent	Percent
(Poorest) 1	22.5	20.0	28.0	20.1	22.6
2	20.8	21.2	21.5	22.7	21.5
3	19.6	18.1	20.8	22.6	20.3
4	20.1	18.6	16.4	18.7	18.5
(Wealthiest) 5	17.0	22.1	13.4	15.9	17.1

Table A.4: Household characteristics (Continuous variables), by programme block

Block	Atri		Wazirganj		Mohra		Khizarsarai		Total	
N	1558		1534		1454		1515		6061	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Mean Age of HH Head	44.05	15.70	41.69*	15.26	43.11	15.10	40.40***	14.33	42.32	15.17
Average HH Size	7.17	3.13	6.79*	2.91	6.84*	2.69	6.38***	2.53	6.80	2.84
Average No. of Adults per HH	3.68	1.94	3.45*	1.76	3.52	1.70	3.22***	1.56	3.47	1.76
Male	1.86	1.10	1.76	1.01	1.76	0.96	1.62***	0.90	1.75	1.00
Female	1.83	1.00	1.69*	0.89	1.76	0.88	1.60***	0.80	1.72	0.90

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.
Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table A.5: Household characteristics (Categorical variables), by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
N	1558	1534	1454	1515	6061
	Proportion	Proportion	Proportion	Proportion	Proportion
Female-headed Households	3.85	3.39	3.65	3.3	3.55
Religion of Household Head					
Hinduism	93.77	93.09	96.91	96.83	95.12
Islam	6.23	6.91	2.96	3.1	4.83
Jainism	0	0	0.07	0.07	0.03
Buddhism	0	0	0.07	0	0.02
Caste of Household Head					
SC	40.95	50.78**	45.12	49.44**	45.12
OBC	51.86	37.03**	43.81	43.04	43.97
None of them	7.19	12.19	11.07	7.52	9.47

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.
Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table A.6: Educational attainment of household members aged 14 and above, by programme block and sex

Category	All	Male	Female

Block	A	W	M	K	Total	A	W	M	K	Total	A	W	M	K	Total
N	6,184	5,705	5,481	5,178	22,548	3,122	2,914	2,727	2,604	11,367	3,062	2,791	2,754	2,574	11,181
Illiterate	45.4	43.4	52.8**	45.2	46.6	30.0	30.5	38.0**	31.5	32.4	61.1	56.8	67.4*	59.1	61.1
Literate without formal education	8.1	10.2*	7.2	8.9	8.6	8.0	9.5	7.6	8.1	8.3	8.2	10.9*	6.9	9.7	8.9
Primary	11.3	13.2*	12.4	11.5	12.1	13.7	16.2*	15.7	14.0	14.9	8.9	10.0	9.1	9.0	9.2
Middle	14.4	13.0	11.1**	13.0	12.9	17.9	16.4	14.6*	16.0	16.3	10.9	9.5	7.6**	10.1	9.5
Secondary	11.2	11.2	9.5	12.9	11.2	16.3	15.3	14.0	17.9	15.8	6.0	7.0	5.0	8.0*	6.5
Higher secondary	6.1	5.5	4.4*	5.0	5.3	8.9	7.0	6.1**	7.0	7.3	3.3	4.1	2.7	3.0	3.3
Diploma/certificate	0.7	0.5	0.6	0.9	0.7	1.1	0.8	1.0	1.5	1.1	0.3	0.1	0.3	0.4	0.3
Graduate	2.1	2.5	1.9	2.1	2.1	3.3	3.7	2.9	3.3	3.3	0.8	1.3	0.9	0.8	0.9
Postgraduate & above	0.3	0.4	0.2	0.4	0.3	0.4	0.6	0.3	0.7	0.5	0.1	0.2	0.1	0.1	0.1
Other	0.4	0.1	0.0	0.0*	0.1	0.4	0.0	0.0	0.0	0.1	0.5	0.1	0.0	0.0	0.2

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.
Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table A.7: Educational attainment of sampled mothers, by programme block

Category	BCSP Women				
Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
N	1,557	1,534	1,453	1,513	6,057
Illiterate	57.0	51.1	63.6	56.1	56.9
Literate without formal education	11.1	14.0	9.1	12.0	11.6
Primary	10.4	10.9	9.9	9.4	10.2
Middle	9.9	9.9	7.9	9.2	9.2
Secondary	6.2	7.4	4.8	8.3	6.7
Higher secondary	3.3	4.4	3.4	3.7	3.7
Diploma/certificate	0.3	0.2	0.4	0.4	0.3
Graduate	1.0	1.7	1.0	1.0	1.2
Postgraduate & above	0.2	0.3	0.1	0.1	0.2
Other	0.6	0.2	0.0	0.0	0.2

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.

Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table A.8: Dwelling characteristics, by program, block

Block	Atri		Wazirganj		Mohra		Khizarsarai		Total	
N	1558	1534	1454	1515	6061	1558	1534	1454	1515	6061
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Average number of rooms used for sleeping	2.1	1.3	2.0	1.1	2.0	1.0	1.9	1.0	2.0	1.1
	Proportion		Proportion		Proportion		Proportion		Proportion	
Separate room for kitchen	38.5		37.3		25.9		33.1		33.8	
HH owns this house or another house	83.1		97.8		99.2		98.6		94.5	

Table A.9: Main material of roof, by programme block

Main material of the roof	Atri	Wazirganj	Mohra	Khizarsarai	Total
	Percent	Percent	Percent	Percent	Percent
No roof	0.51	0	0.07	0	0.15
Thatch/palm leaf/Reed	24.78	21.64	21.73	24.55	23.2
Mud	3.21	1.17	0.28	0.33	1.27
Sod/mud and grass mix	8.54	6.39	7.7	6.86	7.38
Plastic/polythene sheets	0.96	0.85	0.69	0.26	0.69
Rustic mat	0.58	0.33	0.14	0	0.26
Palm/bamboo	4.69	2.61	2.13	2.71	3.05
Raw wood planks/timber	2.31	1.04	0	0.13	0.89
Unburnt brick	1.41	1.3	1.72	2.71	1.78
Loosely packed stone	0.13	0.26	0.07	0.07	0.13
Metal/GI	1.03	0.13	0	0	0.3
Wood	0.64	0.13	0	0.07	0.21
Calamine/cement fibre	9.31	6.32	2.2	3.23	5.33
Asbestos sheets	1.8	2.28	3.16	1.19	2.1
RCC/RBC/cement/concrete	18.81	36.64	29.57	38.48	30.82
Roofing shingles	1.09	0.26	0.07	0.07	0.38

Tiles	17.27	16.56	27.99	17.49	19.72
Slate	1.03	1.11	2.34	0.79	1.3
Burnt brick	1.8	0.98	0.14	1.06	1.01
Other	0.13	0	0	0	0.03

Table A.10: Main material of floor, by programme block

Main material of the floor	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Mud/clay/earth	75.67	78.36	88.38	85.74	81.92
Sand	6.1	0.72	0.89	0.13	2
Dung	2.5	0.46	0.07	0.07	0.79
Raw wood planks	0.19	0	0	0	0.05
Brick	1.35	0.39	0.28	0.4	0.61
Stone	0.26	0	0	0.07	0.08
Parquet or polished w	2.37	0.59	0	0	0.76
Vinyl or asphalt	0.19	0	0	0	0.05
Ceramic tiles	0.64	0.85	0.69	0.86	0.76
Cement	10.14	18.51	9.7	12.67	12.79
Carpet	0.26	0.13	0	0.07	0.12
Polished stone/marble	0.32	0	0	0	0.08

Table A.11: Main material of exterior walls, by programme block

Main material of exterior walls	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
No walls	0.39	0.13	0.28	0.26	0.26
Cane/palm/trunks/bamboo	2.44	0.85	0.55	0.13	1.01
Mud	50.96	44.26	54.75	45.35	48.77
Grass/reeds/thatch	0.45	0.26	0	0.07	0.2
Bamboo with mud	2.25	1.04	0	0.2	0.89
Stone with mud	0.39	1.24	2.54	1.45	1.39
Plywood	0.26	0	0	0.07	0.08

Cardboard	0.13	0	0	0.07	0.05
Unburnt brick	2.57	2.54	1.72	3.1	2.49
Raw wood/reused wood	2.7	0.46	0.48	0.79	1.12
Cement/concrete	3.53	2.48	0.48	0	1.65
Stone with lime/cement	1.54	0.39	0.07	0.13	0.54
Burnt bricks	17.33	31.03	28.75	37.23	28.51
Cement blocks	14.12	14.67	8.94	10.83	12.19
Wood planks/shingles	0.77	0.46	1.44	0.26	0.73
Gi/metal/asbestos sheets	0.19	0.2	0	0.07	0.12

Table A.12: Type of toilet facility used by households, by programme block

Type of toilet facility	Atri	Wazirganj	Mohra	Khizarsarai	Total
	Percent	Percent	Percent	Percent	Percent
Flush to piped sewer	0.58	0.59	0.34	0	0.38
Flush to septic tank	3.72	8.21	3.03	5.61	5.16
Flush to pit latrine	3.02	2.41	1.31	1.58	2.1
Flush to somewhere else	1.67	0.07	0	0	0.45
Flush, don't know where	0.45	0.46	0.34	0.2	0.36
Ventilated improved pit	0.32	0.52	0.34	0.59	0.45
Pit latrine with slab	1.22	3.13	1.38	1.98	1.93
Pit latrine without s	2.76	0.13	0.07	0.13	0.79
Twin pit/composting toilet	0.19	0.2	0.14	0	0.13
Dry toilet	0.06	0.2	0.07	0.59	0.23
No facility/uses open	86.01	84.09	92.98	89.31	88.02

Table A.13: Agricultural land ownership, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total

	Percent		Percent		Percent		Percent		Percent	
HHs who own agricultural land	55.4		40.4		45.1		40.6		45.4	
	Avg	**SD**	**Avg**	**SD**	**Avg**	**SD**	**Avg**	**SD**	**Avg**	**SD**
Average size of agricultural land owned (in acres?)	1.6	2.3	1.2	2.6	1.1	1.7	1.3	2.3	1.3	2.3
	Percent		**Percent**		**Percent**		**Percent**		**Percent**	
Size of agricultural land holding (in acres?)										
Less than 10	99.0		98.6		99.5		99.4		99.1	
10-20	0.9		1.3		0.3		0.3		0.7	
20-30	0.1		0.0		0.2		0.2		0.1	
30-40	0.0		0.0		0.0		0.2		0.0	
More than 40	0.0		0.2		0.0		0.0		0.0	

Table A.14: Possession of productive assets and household goods, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
	Percent	Percent	Percent	Percent	Percent
Electricity	38.4	53.7	38.2	39.0	42.4
Mattress	45.4	51.2	44.8	49.4	47.8
Pressure Cooker	13.2	14.3	10.1	10.8	12.1
Chair	50.6	56.0	55.8	58.6	55.2
Cot/Bed	80.1	87.4	86.6	86.0	85.0
Table	23.3	23.9	19.5	18.2	21.3
Fan (Ceiling, Table, Pedestal, Exhaust)	21.5	31.2	18.7	21.9	23.4
Radio/Cassette player	7.1	10.0	10.9	9.0	9.2
TV Black & White	2.4	3.1	1.7	1.8	2.3
TV Colour	9.2	16.0	8.5	11.6	11.4
Sewing/Knitting machine	8.5	9.3	6.6	8.2	8.2
Mobile Phone	86.6	89.1	88.7	89.4	88.4

Any other telephone	0.3	0.5	0.1	0.2	0.3
Refrigerator	0.8	1.8	0.4	1.1	1.0
Watch/Clock	60.7	63.4	57.7	61.6	60.9
A Computer	0.6	0.9	0.3	0.5	0.6
Bicycle	52.4	48.8	40.1	48.8	47.6
Motorcycle/Scooter	8.3	8.5	5.3	7.1	7.3
Car	0.7	0.5	0.3	0.5	0.5
Water Pump	11.0	7.0	8.3	11.6	9.5
Agricultural Tools (e.g. sickle, crowbar, shovels)	27.7	23.1	30.3	27.7	27.2
Cart/Wheelbarrow	2.6	1.8	0.6	1.7	1.7
Plough	23.6	15.9	19.1	15.4	18.5
Thresher	5.2	2.2	2.1	2.9	3.1
Tractor	2.0	1.2	0.8	1.5	1.4

Table A.15: Ownership of livestock, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
	Percent	Percent	Percent	Percent	Percent
Cows	38.4	35.4	36.4	30.2	35.1
Bulls	30.9	20.3	26.5	15.8	23.4
Buffaloes	27.5	14.9	22.1	30.0	23.6
Horses/Donkeys/Mules	1.0	0.1	0.2	0.3	0.4
Goats	26.8	20.1	23.9	17.8	22.2
Sheep	0.5	0.3	0.2	0.2	0.3
Chicken & Ducks	9.3	10.2	6.4	8.9	8.7
Pigs/Piglets	2.2	3.1	2.1	2.4	2.5

Annex B Characteristics of the PSUs

B.1 Health Infrastructure

Health sub centres, ASHAs sub centres

While 81.5 percent of the total sample reported the presence of an ASHA, 67.6 percent of the total sample reported that they did not have a sub-centre. The total mean of women who delivered in hospitals in a PSU was 15.7, and that of women who received JSP benefits in the past one year was 14.9.

Distance to nearest PHC, hospitals, clinics

Information about a nearby nutrition rehabilitation centre was unavailable for 55.1 percent of the total sample. 19.5 percent of the total sample reported that such a centre was more than 10 kilometres from the PSU. While 31.3 percent and 20.4 percent of the PSUs in Atri and Wazirganj respectively were more than 10 kilometres from a nutrition rehabilitation centre, 10 percent of the PSUs in Mohra and 17 percent in Khizarsarai reported similar distances (Table B.3).

Overall, 31.8 percent of the total sample was within 5 kilometres of a PHC. 37.3 percent of the total sample was between 5-10 kilometres, and 30.4 percent was more than 10 kilometres away. In Wazirganj, a majority of the PSUs (42.6 percent) were located 5-10 kilometres from a PHC. The majority of PSUs in Mohra (44.4 percent) were located more than 10 kilometres from the nearest PHC. In Khizarsarai, the majority of PSUs (40 percent) were situated 5-10 kilometres away from the PHC.

Eighty five percent of the total sample was located more than 10 kilometres away from a district/government hospital. 52.1 percent of the sample was more than 10 kilometres away from a government dispensary. However, 75.2 percent of the total sample was within 5 kilometres of a private clinic.

B.2 Other Infrastructure

Water and sanitation

On an average, across all the four blocks, 64 households in a PSU had hand pumps. Each PSU also had 10.6 government hand pumps. 21 households in a PSU had toilets. A PSU in Wazirganj had, on average, 31 households with toilets, while only 17.9, 12.2 and 22.8 households in a PSU in Atri, Mohra and Khizarsarai (respectively) had toilets.

Drainage

Overall, 31.3 percent of the total PSUs reported having access to drainage facilities, and 25.4 percent had access only in some areas. The coverage in Atri (35.2 percent) and Khizarsarai (34.6 percent) was greater than in Wazirganj and Mohra (27.8 percent in each), but only 11.1 percent PSUs in Atri had drainage in only some areas; a small figure compared to Wazirganj (29.6 percent), Mohra (25.9 percent) and Khizarsarai (34.6 percent) (Table B.2).

Electricity

Overall, 73.3 percent of the PSUs across all blocks had an electricity supply. This figure was larger for Atri (81.5 percent) and Wazirganj (83.3 percent), compared to Mohra (59.3 percent) and Khizarsarai (69.1 percent). 39.4 percent of the PSUs across all blocks had electricity for more than 6 hours a day, 35.4 percent had electricity for less than 6 hours a day, and 19.7 percent of the PSUs had an irregular supply (Table B.2).

B.3 Other Characteristics

Livelihoods

In each of the 4 blocks, agriculture/shared agriculture is the dominant profession, with 28.6 percent of the PSUs reporting it as a main occupation. 23 percent of the total sample was employed in agriculture labour, and 22.4 percent in non-agriculture labour. Around 17.6 percent of the PSUs reported having people working elsewhere as migrants, and 6.3 percent of the sample reported that petty businesses/shop keeping was a main occupation (Table B.1).

Distance to nearest town, district HQ, educational institutions

Overall, 50.2 percent of the total sample was within 5 kilometres of the nearest town. While 64.8 percent PSUs in Atri and 56.4 percent PSUs in Khizarsarai were within 5 kilometres of the nearest town, only 46.3 percent PSUs in Wazirganj and 33.3 percent PSUs in Mohra were similarly located.

Seventy eight percent of the total PSUs across all blocks were within 5 kilometres of the Gram Panchayat. 94.5 percent of all PSUs were more than 10 kilometres from the district headquarters.

In terms of distance from the nearest schools, 99.1 percent, 94.9 percent and 76.3 percent of the total PSUs were within 5 kilometres of the primary, middle and secondary schools, respectively. About 48 percent of the total PSUs were within 5 kilometres of the higher secondary school. While 66 percent of the PSUs in Atri were within 5 km of the higher secondary school, only 48.2 percent of the PSUs in Wazirganj, and 38.9 percent in and 38.2 percent of the PSUs in Mohra and Khizarsarai respectively, were similarly situated. 69.3 percent of the total sample was situated more than 10 kilometres from a college (Table B.3).

Diseases and disasters

Overall, 3.2 percent of the total PSUs had incidences of Cholera, and 16.1 percent reported occurrence of chicken pox. 31.8 percent of the total sample had been affected by drought, 9.2 percent by extreme cold, and 5.1 percent by hailstorms. PSUs within Atri reported a noticeably higher incidence of earthquakes (11.3 percent), floods (5.7 percent), cyclones (7.6 percent) and extreme cold (20.4 percent), viz-a-viz the other 3 blocks (Table B.4 and Table B.5).

Gram Sabhas, banks

A Village Health and Sanitation Committee, or a Gram Sabha did happen in 51.4 percent of the total PSUs across all four blocks. Mohra reported the largest absence of a Committee or Gram Sabha (72.2 percent) (Table B.6).

Demographics and facilities

The mean of the total population in a PSU was approximately 1196, of which almost 623 are male, and 568 female. The total mean of the scheduled caste and scheduled tribe PSUs was 419 and 8.5 respectively. The total mean of Muslim PSUs was 66. Mohra had the lowest mean for Muslims (39.6) compared to the other three blocks.

There was an average of 160 households in a PSU. On average, 65.9 of these households were Scheduled Caste, 2.4 were Scheduled Tribe, and 10.5 were Muslim (Table B.7).

Table B.1: Main occupations in the PSUs, by programme block

Block Main Occupation	Atri	Wazirganj	Mohra	Khizarsarai	Total
Agriculture/shared agriculture	31.3	27.2	27.2	28.7	28.6
Agriculture labour	21.9	22.2	24.1	23.8	23.0
Non agriculture labour	21.9	21.6	24.7	21.3	22.4
Migration	11.3	18.5	18.5	22.0	17.6
Petty business/shopkeeper	9.4	7.4	4.9	3.7	6.3
Mobile vendors	0.6	0.0	0.0	0.6	0.3
Others (specify)	3.8	3.1	0.6	0.0	1.9

Table B.2: Access to drainage and electricity, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
Access to Drainage facility					
Yes	35.2	27.8	27.8	34.6	31.3
Only in some areas	11.1	29.6	25.9	34.6	25.4
Electricity supply					
Yes	81.5	83.3	59.3	69.1	73.3
Only in some areas	5.6	7.4	3.7	7.3	6.0
Quantum of electricity supply					
Electricity less than 6 hours per day	33.3	27.8	37.2	44.7	35.4
Electricity more than 6 hours per day	38.9	48.2	37.2	31.9	39.4
Irregular, no set pattern	24.1	22.2	16.3	14.9	19.7
Not applicable	3.7	1.9	9.3	8.5	5.6

Table B.3: Distance from facilities, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
Nearest Town					
0 - 5 kilometres	64.8	46.3	33.3	56.4	50.2
5 - 10 kilometres	18.5	42.6	22.2	30.9	28.6
More than 10 kilometres	16.7	11.1	44.4	12.7	21.2
Gram Panchayat					
0 - 5 kilometres	87.0	75.9	63.0	87.3	78.3
5 - 10 kilometres	13.0	16.7	16.7	9.1	13.8
More than 10 kilometres	0.0	7.4	20.4	3.6	7.8
District Headquarters					
0 - 5 kilometres	0.0	3.7	3.7	0.0	1.8
5 - 10 kilometres	9.3	0.0	1.9	3.6	3.7
More than 10 kilometres	90.7	96.3	94.4	96.4	94.5
Nearest Railway Station					
0 - 5 kilometres	1.9	48.2	42.6	3.6	24.0
5 - 10 kilometres	24.1	31.5	14.8	9.1	19.8
More than 10 kilometres	74.1	20.4	42.6	87.3	56.2
Nearest Bus Station					
0 - 5 kilometres	50.0	51.9	63.0	54.6	54.8
5 - 10 kilometres	22.2	31.5	11.1	21.8	21.7
More than 10 kilometres	27.8	16.7	25.9	23.6	23.5
Primary School					
0 - 5 kilometres	98.1	100.0	98.2	100.0	99.1
5 - 10 kilometres	1.9	0.0	1.9	0.0	0.9
Middle School					
0 - 5 kilometres	94.3	94.4	90.7	100.0	94.9
5 - 10 kilometres	5.7	5.6	9.3	0.0	5.1

Secondary School					
0 - 5 kilometres	80.8	74.1	70.4	80.0	76.3
5 - 10 kilometres	15.4	22.2	24.1	18.2	20.0
More than 10 kilometres	3.9	3.7	5.6	1.8	3.7
Higher Secondary School					
0 - 5 kilometres	66.0	48.2	38.9	38.2	47.7
5 - 10 kilometres	24.5	35.2	25.9	41.8	31.9
More than 10 kilometres	9.4	16.7	35.2	20.0	20.4
College					
0 - 5 kilometres	13.5	22.2	3.7	10.9	12.6
5 - 10 kilometres	9.6	31.5	14.8	16.4	18.1
More than 10 kilometres	76.9	46.3	81.5	72.7	69.3
Madrasa					
0 - 5 kilometres	44.9	44.4	23.4	27.5	35.3
5 - 10 kilometres	12.2	24.1	8.5	17.7	15.9
More than 10 kilometres	38.8	27.8	68.1	54.9	46.8
Not applicable	4.1	3.7	0.0	0.0	2.0
Nutrition Rehabilitation Centre					
0 - 5 kilometres	16.7	9.3	6.0	11.3	10.7
5 - 10 kilometres	6.3	5.6	4.0	5.7	5.4
More than 10 kilometres	31.3	20.4	10.0	17.0	19.5
Not applicable	0.0	11.1	12.0	13.2	9.3
Information not available	45.8	53.7	68.0	52.8	55.1
Primary Health Centre (PHC)					
0 - 5 kilometres	37.0	37.0	27.8	25.5	31.8
5 - 10 kilometres	38.9	42.6	27.8	40.0	37.3
More than 10 kilometres	24.1	20.4	44.4	32.7	30.4
Information not available	0.0	0.0	0.0	1.8	0.5
Additional PHC					

0 - 5 kilometres	55.6	44.4	48.1	47.3	48.5
5 - 10 kilometres	15.6	38.9	21.2	29.1	26.7
More than 10 kilometres	17.8	14.8	30.8	23.6	21.8
Not applicable	11.1	1.9	0.0	0.0	2.9
District/Government Hospital					
0 - 5 kilometres	11.8	9.3	5.6	3.6	7.5
5 - 10 kilometres	9.8	11.1	1.9	7.3	7.5
More than 10 kilometres	78.4	79.6	92.6	89.1	85.1
Government Dispensary					
0 - 5 kilometres	24.5	24.1	24.5	20.0	23.2
5 - 10 kilometres	20.4	37.0	17.0	16.4	22.8
More than 10 kilometres	49.0	37.0	58.5	63.6	52.1
Not applicable	4.1	0.0	0.0	0.0	1.0
Information not available	2.0	1.9	0.0	0.0	1.0
Nearest Private Clinic					
0 - 5 kilometres	84.3	85.2	57.4	74.6	75.2
5 - 10 kilometres	13.7	13.0	25.9	21.8	18.7
More than 10 kilometres	2.0	1.9	16.7	3.6	6.1
Nearest Private Hospital/Nursing Home					
0 - 5 kilometres	37.3	43.4	22.2	43.6	36.6
5 - 10 kilometres	23.5	41.5	24.1	43.6	33.3
More than 10 kilometres	39.2	15.1	53.7	12.7	30.1
Nearest Bank Branch					
0 - 5 kilometres	64.8	59.3	55.6	61.8	60.4
5 - 10 kilometres	27.8	27.8	18.5	32.7	26.7
More than 10 kilometres	7.4	13.0	25.9	5.5	12.9
Nearest ATM					
0 - 5 kilometres	20.8	31.5	5.6	25.5	20.8
5 - 10 kilometres	20.8	44.4	13.0	43.6	30.6

More than 10 kilometres	58.5	24.1	81.5	30.9	48.6
Others (specify)					
0 - 5 kilometres	85.7	63.6	100.0	81.8	81.1
5 - 10 kilometres	14.3	36.4	0.0	9.1	16.2
More than 10 kilometres	0.0	0.0	0.0	9.1	2.7
Others (specify)					
JEEViKA	*0.0*	*20.0*			*14.3*
Post Office	*100.0*	*80.0*			*85.7*

Table B.4: Diseases reported in the past year, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
Cholera	3.8	1.9	1.9	5.5	3.2
Malaria	11.3	3.7	5.6	3.6	6.0
Kala-azar (Black fever)	5.7	3.7	0.0	1.8	2.8
Dengue/Chikungunya	5.7	0.0	0.0	1.8	1.9
Chicken pox	18.5	20.4	11.1	14.6	16.1

Table B.5: Natural calamities reported in the past year, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
Earthquakes	11.3	1.9	0.0	1.8	3.7
Floods	5.7	1.9	0.0	0.0	1.9
Cyclones	7.6	3.7	3.7	0.0	3.7
Drought	29.6	31.5	33.3	32.7	31.8
Landslides	3.8	1.9	5.6	0.0	2.8
Hailstorm	5.6	7.4	0.0	7.3	5.1
Extreme Cold	20.4	9.3	3.7	3.6	9.2

Table B.6: Existence of Village Health & Sanitation Committee, bank customer service points, ASHAs, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
PSU covered under a health and sanitation committee or gram Sabha					
Yes	42.6	37.0	14.8	29.6	31.0
No	42.6	44.4	72.2	46.3	51.4
Don't know	14.8	18.5	13.0	24.1	17.6
Any bank customer service points					
Yes	7.4	11.3	9.4	11.1	9.8
No	88.9	86.8	90.6	88.9	88.8
Don't know/Can't Say	3.7	1.9	0.0	0.0	1.4
Residence of Gram Mukhiya					
Yes	27.8	27.8	15.1	18.2	22.2
Accredited Social Health Activists (ASHAs)					
Yes	87.0	83.3	67.9	87.3	81.5
No	13.0	16.7	30.2	12.7	18.1
Don't know	0.0	0.0	1.9	0.0	0.5
Sub-centres					
Yes	35.2	31.5	24.5	36.4	31.9
No	64.8	66.7	75.5	63.6	67.6
Don't know/Can't Say	0.0	1.9	0.0	0.0	0.5

Table B.7: Demographics and facilities, by programme block

Block	Atri		Wazirganj		Mohra		Khizarsarai		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Total population	1175.0	304.2	1282.2	318.5	1069.5	197.2	1260.1	313.8	1196.4	297.7
Male	608.8	126.0	656.0	167.2	567.8	112.3	658.1	168.0	622.7	149.3
Female	545.9	135.4	621.9	161.2	504.9	105.3	599.1	154.9	568.1	147.2
Scheduled Caste	357.3	266.9	465.5	351.3	398.0	264.9	453.7	343.3	419.3	310.6

Scheduled Tribe	32.8	116.0	0.0	0.2	0.0	0.0	1.8	8.1	8.5	58.7
Muslims	83.6	184.4	84.3	171.8	39.6	91.9	60.3	135.9	66.5	149.4
Total number of HH in the PSU	168.7	153.9	161.0	50.6	135.8	37.8	175.2	65.4	160.1	90.2
Total number of HH in the PSU - SC	77.0	93.8	62.0	45.5	55.2	46.1	69.5	51.8	65.9	62.3
Total number of HH in the PSU - ST	7.8	25.2	1.8	11.0	0.0	0.0	0.3	1.1	2.4	13.9
Total number of HH in the PSU - Muslims	15.2	36.1	13.2	24.9	4.3	11.9	9.6	22.1	10.5	25.1
Total number of landless HH in the PSU	43.1	49.4	47.6	65.2	49.5	58.3	52.1	39.4	48.2	53.8
Total number of homeless HH in the PSU	18.4	36.8	13.6	25.2	14.5	26.6	9.9	26.8	14.0	29.0
Total number of HH with hand pumps in the PSU	65.4	52.6	62.6	51.8	50.9	35.9	77.9	48.2	64.1	48.2
Total number of government hand pumps in the PSU	11.8	13.0	9.9	6.4	9.1	8.0	11.5	13.7	10.6	10.7
Total number of HH with toilets in the PSU	17.9	35.4	31.5	46.1	12.2	17.5	22.8	39.9	21.0	36.6
Total number of women who delivered in hospitals in the PSU	15.2	10.1	16.4	8.7	14.4	10.8	16.7	8.6	15.7	9.6
Number of women who received JSY benefits in last one year	13.7	10.5	15.6	8.2	14.8	15.1	15.4	8.6	14.9	11.0

Annex C Additional Tables

Table C.3.1: Mean HAZ, WAZ and WHZ scores among children 0-24 months of age, by programme block, age group and sex

Block	Atri			Wazirganj			Mohra			Khizarsarai			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
HAZ															
All	-1.88	2.05	1558	-2.08	1.90	1554	-2.24***	1.77	1488	-2.23***	1.89	1552	-2.11	1.91	6152
By age:															
0-6 mo	-0.18	2.58	198	-0.58	2.43	217	-0.65	2.17	195	-0.62	2.35	216	-0.51	2.39	826
6-12 mo	-1.75	1.93	532	-1.94	1.56	559	-2.19**	1.61	520	-2.17***	1.70	546	-2.01	1.71	2157
12-24 mo	-2.30	1.84	954	-2.54*	1.70	881	-2.66**	1.55	888	-2.71***	1.63	894	-2.54	1.69	3617
By sex:															
Male	-1.97	2.04	807	-2.11	1.98	778	-2.32**	1.88	742	-2.33**	1.91	761	-2.18	1.96	3088
Female	-1.79	2.06	751	-2.04*	1.82	776	-2.16**	1.65	746	-2.13**	1.88	791	-2.03	1.86	3064
WAZ															
All	-2.12	1.41	1557	-2.18	1.51	1554	-2.12	1.33	1488	-2.12	1.30	1552	-2.13	1.39	6151
By age:															
0-6 mo	-1.54	1.79	198	-1.53	1.56	217	-1.34	1.62	195	-1.59	1.52	216	-1.50	1.62	826
6-12 mo	-2.26	1.34	532	-2.26	1.26	559	-2.29	1.31	520	-2.23	1.31	546	-2.26	1.31	2157
12-24 mo	-2.17	1.33	953	-2.30	1.58	881	-2.22	1.22	888	-2.22	1.22	894	-2.23	1.34	3616
By sex:															
Male	-2.13	1.42	806	-2.16	1.68	778	-2.18	1.40	742	-2.16	1.36	761	-2.16	1.47	3087
Female	-2.12	1.39	751	-2.20	1.33	776	-2.05	1.26	746	-2.08	1.24	791	-2.11	1.31	3064
WHZ															
All	-1.51	1.61	1557	-1.42	1.89	1549	-1.22***	1.41	1488	-1.23***	1.55	1550	-1.35	1.63	6144
By age:															
0-6 mo	-1.90	2.26	198	-1.42	2.18	214	-1.15***	1.70	195	-1.55	1.99	215	-1.50	2.06	822
6-12 mo	-1.65	1.61	532	-1.51	1.47	559	-1.37*	1.47	520	-1.29**	1.70	546	-1.45	1.57	2157
12-24 mo	-1.37	1.39	953	-1.38	1.99	879	-1.17*	1.31	888	-1.15**	1.28	893	-1.27	1.52	3613

By sex:														
Male	-1.51	1.60	806	-1.42	2.22	775	-1.29*	1.49	742	-1.27*	1.57	760	-1.37	1.75	3083
Female	-1.52	1.62	751	-1.41	1.48	774	-1.15***	1.33	746	-1.20**	1.52	790	-1.32	1.50	3061

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.
Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table C.3.2: Mean HAZ, WAZ and WHZ scores among children 0-24 months of age after dropping flagged observations, by programme block, age group and sex

Block	Atri			Wazirganj			Mohra			Khizarsarai			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
HAZ	-1.90	1.76	1475	-2.08*	1.59	1491	-2.25***	1.58	1450	-2.21***	1.67	1506	-2.11	1.66	5922
WAZ	-2.03	1.28	1474	-2.10	1.24	1491	-2.08	1.22	1450	-2.07	1.22	1506	-2.07	1.24	5921
WHZ	-1.38	1.29	1474	-1.32	1.24	1488	-1.17**	1.22	1450	-1.18**	1.32	1505	-1.26	1.27	5917

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.
Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table C.3.3: Mean HAZ, WAZ and WHZ scores among children 0-24 months of age, by wealth quintiles

Block	Atri		Wazirganj		Mohra		Khizarsarai		All	
HAZ										
N	**1524**		**1542**		**1478**		**1543**		**6087**	
Wealth quintiles	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
1	-2.1	2.4	-2.7	1.6	-2.6	1.9	-2.6	1.9	-2.5	2.0
2	-2.1	2.2	-2.5	2.2	-2.4	1.5	-2.5	1.9	-2.3	2.0
3	-1.8	1.9	-1.9	2.0	-2.2	2.0	-2.4	1.7	-2.1	1.9
4	-1.8	1.8	-1.8	1.8	-1.9	1.5	-2.0	1.9	-1.9	1.8
5	-1.5	1.8	-1.5	1.6	-1.6	1.7	-1.5	1.7	-1.5	1.7
Total	-1.9	2.0	-2.1	1.9	-2.2	1.8	-2.2	1.9	-2.1	1.9
WAZ										
N	**1523**		**1542**		**1478**		**1543**		**6086**	
Wealth quintiles	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**

1	-2.5	1.5	-2.8	1.3	-2.5	1.3	-2.6	1.3	-1.7	1.6
2	-2.3	1.4	-2.6	1.4	-2.2	1.2	-2.3	1.3	-1.4	1.6
3	-2.1	1.4	-2.0	2.0	-2.1	1.4	-2.2	1.2	-1.3	1.9
4	-2.0	1.3	-2.0	1.3	-1.9	1.2	-1.9	1.2	-1.2	1.6
5	-1.6	1.2	-1.6	1.2	-1.5	1.3	-1.5	1.1	-1.0	1.4
Total	-2.1	1.4	-2.2	1.5	-2.1	1.3	-2.1	1.3	-1.3	1.6
WHZ										
N	**1523**		**1537**		**1478**		**1541**		**6079**	
Wealth quintiles	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
1	-1.9	1.7	-1.8	1.5	-1.5	1.3	-1.6	1.7	-2.6	1.4
2	-1.7	1.6	-1.6	1.7	-1.2	1.4	-1.2	1.6	-2.3	1.4
3	-1.5	1.5	-1.2	2.9	-1.2	1.6	-1.3	1.4	-2.1	1.5
4	-1.3	1.6	-1.4	1.8	-1.1	1.4	-1.1	1.5	-1.9	1.3
5	-1.1	1.3	-1.1	1.3	-0.9	1.4	-0.9	1.6	-1.6	1.2
Total	-1.5	1.6	-1.4	1.9	-1.2	1.4	-1.2	1.5	-2.1	1.4

Table C.3.4: Rates of stunting, underweight, and wasting among children 0-24 months of age, by programme block, age group and sex

Block	**Atri**	**Wazirganj**	**Mohra**	**Khizarsarai**	**Total**
Details of Stunting, Underweight and Wasting	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
Stunting					
All	49.6	52.5	59.4***	57.6***	54.7
By age:					
0-6 mo	20.7	20.3	23.6	27.8	23.1
6-12 mo	47.0	47.4	58.7**	54.2*	51.7
12-24 mo	57.8	64.0*	69.4***	67.8***	64.6
By sex:					
Male	51.7	54.1	61.1**	58.7*	56.3
Female	47.4	50.9	57.8**	56.5**	53.2

Underweight					
All	52.2	55.4	54.0	53.0	53.6
By age:					
0-6 mo	36.4	34.1	27.7	34.3	33.2
6-12 mo	57.0	56.7	57.9	57.3	57.2
12-24 mo	53.7	60.4*	58.1	56.0	57.0
By sex:					
Male	51.7	55.7	56.9	54.7	54.7
Female	52.7	55.2	51.1	51.3	52.6
Wasting					
All	31.9	30.0	23.5***	26.5*	28.0
By age:					
0-6 mo	39.4	24.8**	25.1**	36.3	31.4
6-12 mo	37.0	33.3	27.7**	31.3	32.4
12-24 mo	28.3	29.5	20.8**	22.2*	25.2
By sex:					
Male	31.4	31.7	25.5*	28.2	29.3
Female	32.4	28.3	21.6***	24.9*	26.8

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.
Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table C.3.5: Rates of stunting, underweight, and wasting among children 0-24 months of age after dropping flagged observations, by programme block, age group and sex

Block Details of Stunting, Underweight and Wasting	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Stunting	49.8	52.6	59.5***	57.6**	54.9
Underweight	50.5	54.3	53.2	52.3	52.6
Wasting	29.6	28.0	22.4***	25.2*	26.3

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.
Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table C.3.6: Rates of stunting, underweight and wasting among children 0-24 months of age, by wealth quintiles

Details of Stunting, Underweight and Wasting	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	All Percent
Stunting					
N	**1524**	**1542**	**1478**	**1543**	**6087**
Wealth quintiles	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
1	57.7	71.5	71.1	68.2	67.2
2	55.9	64.9	60.3	65.3	61.7
3	48.8	51.8	59.4	57.5	54.6
4	45.6	41.5	52.7	54.2	48.3
5	36.7	34.0	41.7	37.6	37.0
Total	49.5	52.5	59.3	57.7	54.7
Underweight					
N	**1523**	**1542**	**1478**	**1543**	**6086**
Wealth quintiles	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
1	66.9	74.8	69.4	70.5	70.2
2	57.8	66.5	56.2	56.0	59.1
3	50.2	51.8	51.4	56.1	52.5
4	48.2	53.7	44.0	46.8	48.3
5	34.5	32.6	33.7	30.6	32.8
Total	52.3	55.4	53.8	53.1	53.7
Wasting					
N	**1523**	**1537**	**1478**	**1541**	**6079**
Wealth quintiles	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
1	40.6	40.4	30.4	35.4	36.3
2	37.5	38.2	21.8	28.4	31.4
3	33.0	25.6	24.3	26.1	27.2
4	24.3	28.6	19.1	22.8	23.9

5	20.6	18.2	15.6	17.8	18.2
Total	31.7	30.0	23.4	26.5	27.9

Table C.3.7: BMI and haemoglobin level of mothers, by block

Block	Atri			Wazirganj			Mohra			Khizarsarai			Total		
	Mean	Std Dev.	N	Mean	Std Dev.	N	Mean	Std Dev.	N	Mean	Std Dev.	N	Mean	Std Dev.	N
BMI	18.79	2.32	1526	18.92	2.43	1522	18.77	2.29	1446	19.02*	2.48	1505	18.88	2.38	5999
Haemoglobin level	11.02	1.51	1492	11.08	1.41	1504	11.11	1.44	1441	11.11	1.43	1499	11.08	1.45	5936

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.
Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table C3.8: Maternal BMI class and anaemia status, by block

Block BMI and Anaemia Status	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Maternal BMI Class					
Underweight	49.0	48.0	50.3	46.9	48.5
Normal	47.2	48.5	47.7	49.7	48.3
Pre-Obese	1.8	2.7	1.4	2.6	2.1
Obese	2.1	0.9**	0.6**	0.8**	1.1
Anaemia Status					
Severe	4.1	2.6	2.4*	2.7	3.0
Moderate	38.6	39.8	40.9	37.0	39.1
Mild	25.7	27.9	26.3	29.5*	27.3
Non-Anaemia	31.6	29.7	30.5	30.8	30.6

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.
Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table C.3.9: Mean HAZ, WAZ and WHZ scores among children 0-24 months of age, by programme block (with pairwise tests for differences)

Block	Mohra			Khizarsarai		
	Mean	SD	N	Mean	SD	N
HAZ	-2.24	1.77	1488	-2.23	1.89	1552
WAZ	-2.12	1.33	1488	-2.12	1.30	1552
WHZ	-1.22	1.41	1488	-1.23	1.55	1550
Block	**Wazirganj**			**Khizarsarai**		
	Mean	SD	N	Mean	SD	N
HAZ	-2.08	1.90	1554	-2.23	1.89	1552
WAZ	-2.18	1.51	1554	-2.12	1.30	1552
WHZ	-1.42	1.89	1549	-1.23+	1.55	1550
Block	**Atri**			**Wazirganj**		
	Mean	SD	N	Mean	SD	N
HAZ	-1.88	2.05	1558	-2.08+	1.90	1554
WAZ	-2.12	1.41	1557	-2.18	1.51	1554
WHZ	-1.51	1.61	1557	-1.42	1.89	1549

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.
Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table C.3.10: Rates of stunting, underweight, and wasting among children 0-24 months of age, by programme block (with pairwise tests for differences)

Block	Mohra	Khizarsarai
	Percent	Percent
Stunting	59.4	57.6
Underweight	54.0	53.0
Wasting	23.5	26.5

Block	Wazirganj	Khizarsarai
	Percent	Percent
Stunting	52.5	57.6*
Underweight	55.4	53.0
Wasting	30.0	26.5
Block	**Atri**	**Wazirganj**
	Percent	**Percent**
Stunting	49.6	52.5
Underweight	52.2	55.4
Wasting	31.9	30.0

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.
Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table C.3.11: BMI and haemoglobin level of mothers, by programme block (with pairwise tests for differences)

Block	Mohra			Khizarsarai		
	Mean	SD	N	Mean	SD	N
BMI	18.77	2.29	1446	19.02*	2.48	1505
Haemoglobin level	11.11	1.44	1441	11.11	1.43	1499
Block	**Wazirganj**			**Khizarsarai**		
	Mean	**SD**	**N**	**Mean**	**SD**	**N**
BMI	18.92	2.43	1522	19.02	2.48	1505
Haemoglobin level	11.08	1.41	1504	11.11	1.43	1499
Block	**Atri**			**Wazirganj**		
	Mean	**SD**	**N**	**Mean**	**SD**	**N**
BMI	18.79	2.32	1526	18.92	2.43	1522
Haemoglobin level	11.02	1.51	1492	11.08	1.41	1504

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.
Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table C.3.12: Maternal BMI class and anaemia status, by programme block (with pairwise tests for differences)

Block	Mohra	Khizarsarai
	Percent	Percent
Maternal BMI Class		
Underweight	50.3	46.9
Normal	47.7	49.7
Pre-Obese	1.4	2.6*
Obese	0.6	0.8
Anaemia Status		
Severe	2.4	2.7
Moderate	40.9	37.0+
Mild	26.3	29.5+
Non-Anaemia	30.5	30.8
Block	**Wazirganj**	**Khizarsarai**
	Percent	**Percent**
Maternal BMI Class		
Underweight	48.0	46.9
Normal	48.5	49.7
Pre-Obese	2.7	2.6
Obese	0.9	0.8
Anaemia Status		
Severe	2.6	2.7
Moderate	39.8	37.0
Mild	27.9	29.5
Non-Anaemia	29.7	30.8
Block	**Atri**	**Wazirganj**
	Percent	**Percent**

Maternal BMI Class		
Underweight	49.0	48.0
Normal	47.2	48.5
Pre-Obese	1.8	2.7
Obese	2.1	0.9**
Anaemia Status		
Severe	4.1	2.6+
Moderate	38.6	39.8
Mild	25.7	27.9
Non-Anaemia	31.6	29.7

Notes: Testing for statistical significance was done using linear or probit regression (as appropriate), controlling for PSU.
Significant effects: * p < 0.05, ** p < 0.01, *** p < 0.001.

Table C.4.1: Child illness and health seeking behaviour, by programme block

Block Illness and health seeking behaviour	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Child ill in last 30 days	49.0	50.8	37.2	41.5	44.7
Illnesses in last 30 days (Multiple Response)					
Diarrhoea	38.8	35.5	38.4	38.8	37.8
Measles	1.1	0.8	0.5	0.8	0.8
Pneumonia	5.1	5.1	7.0	6.5	5.8
Malaria	1.6	0.5	0.4	0.9	0.9
Dengue	1.0	0.1	0.2	0.5	0.5
Whooping Cough	3.4	2.6	4.5	3.2	3.4
Tetanus	0.0	0.3	0.5	0.2	0.2
Jaundice	2.1	1.8	5.4	1.7	2.6
Typhoid	2.0	0.9	0.7	1.1	1.2
Fever	85.6	80.3	80.6	81.5	82.1
Cough and Cold	32.2	30.6	31.6	38.2	33.0

Others (Specify)	6.8		6.3		4.7		6.3		6.1	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
No. of days that the child was sick in the last 30 days	7.6	6.3	6.1	4.3	6.8	5.3	6.5	4.3	6.8	5.2
Latest illness in the last 30 days	**Percent**		**Percent**		**Percent**		**Percent**		**Percent**	
Diarrhoea	20.3		20.6		19.8		20.2		20.2	
Measles	1.7		0.3		0.3		0.0		0.6	
Pneumonia	4.0		3.6		4.9		4.2		4.1	
Malaria	1.0		0.2		0.1		0.2		0.4	
Dengue	0.4		0.1		0.1		0.0		0.2	
Whooping cough	0.5		1.0		0.7		0.5		0.7	
Tetanus	0.1		0.0		0.1		0.0		0.1	
Jaundice	0.9		0.7		2.4		0.8		1.2	
Typhoid	0.5		0.0		0.1		0.2		0.2	
Fever	56.8		53.1		51.6		55.4		54.2	
Cough and cold	9.2		12.0		13.8		14.8		12.3	
Other (specify)	4.6		8.4		6.0		4.0		5.9	

Table C.4.2: Type of consultation sough for child illness (if any)

Block	**Atri**	**Wazirganj**	**Mohra**	**Khizarsarai**	**Total**
	Percent	**Percent**	**Percent**	**Percent**	**Percent**
Somebody consulted for child's latest illness					
Yes	93.31	91.38	94.79	93.54	93.1
First facility approached					
Govt. hospital	5.3	2.1	1.7	2.1	2.9
CHC/ rural hospital	0.8	1.0	1.3	0.5	0.9
PHC	1.8	4.0	3.6	2.0	2.8
Sub-centre	1.1	0.3	0.0	0.3	0.5

Anganwadi centre	0.4	0.1	0.8	0.2	0.4
NGO/ Trust hosp/ clinic	2.7	1.6	0.8	1.2	1.7
Private hospital/ maternity home	82.5	83.3	81.8	85.9	83.4
Home	4.5	5.3	4.6	4.6	4.8
Other	1.0	2.3	5.5	3.3	2.8
Reasons for not going to a Govt facility					
No Govt. facility	45.9	40.3	41.2	35.8	40.9
Doctors never available	5.5	4.2	6.4	6.3	5.5
Doctors not available	2.6	3.0	2.1	1.8	2.4
Cannot treat complications	2.3	3.9	4.1	4.9	3.8
Staff not helpful	3.7	4.7	2.5	5.4	4.1
Too far away	15.2	11.7	10.5	13.7	12.9
No female staff	1.1	2.4	4.3	4.7	3.0
Timing not suitable	5.2	3.9	6.0	5.1	5.0
Medicines ineffective	4.9	5.3	4.1	4.9	4.9
Not enough medicines	4.6	11.9	2.7	4.4	6.2
No faith in government system	7.9	7.2	15.5	12.6	10.4
Others	1.1	1.5	0.6	0.4	0.9

Table C.4.3: Access to healthcare facilities

Block	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Distance from health facility					
Less than 2 km	42.76	41.31	50	50.16	45.55
2 - 5 km	29.36	21.2	20.83	25.66	24.48
5 - 10 km	12.99	21.2	8.14	11.68	14.01
10 km or more	14.88	16.28	21.02	12.5	15.96
Time taken to reach health facility					

Less than 1 hour	61.71		62.11		68.18		74.67		66.16	
1 - 2 hours	21.52		30.37		24.05		21.05		24.41	
2 - 5 hours	11.1		5.47		6.06		4.11		6.87	
5 hours or more	5.68		2.05		1.7		0.16		2.57	
	Avg	**SD**	**Avg**	**SD**	**Avg**	**SD**	**Avg**	**SD**	**Avg**	**SD**
Cost of travel to first facility	113.8	322.4	60.7	94.2	69.2	105.9	58.7	96.3	78.2	198.6
Cost incurred for treatment of first facility	511.8	822.9	477.4	753.3	425.2	750.8	475.6	804.8	476.2	785.4

Table C.4.4: Women's employment

Block	**Atri**	**Wazirganj**	**Mohra**	**Khizarsarai**	**Total**
Employment Characteristics	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
Whether engaged in paid employment besides household activities					
Paid-employment	7.5	6.9	8.8	8.2	7.8
Self-employment	6.6	5.2	4	5.6	5.4
Not-employed	86	87.9	87.2	86.2	86.8
Type of employment					
Regular & Full-time	37.2	30.7	35.5	41.2	36.3
Regular & Part-time	36.7	40.9	41.4	31.6	37.4
Seasonal & Full-time	23.4	24.2	23.1	25.8	24.2
Seasonal & Part-time	2.8	4.3	0	1.4	2.1
Whether this work is done at home or outside					
Outside-home	65.1	59.1	64.5	70.7	65
At-home	34.9	40.9	35.5	29.3	35
Payment type for the work					
In-cash	56.4	57.5	50	34.1	49.4
In-kind	37.2	32.8	41.9	53.4	41.5
In-cash&kind	4.6	8.1	7.5	9.1	7.3
No	1.8	1.6	0.5	3.4	1.9

	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
Total amount earned from current employment last month/last employment season	1569	4046.1	2199.6	3769.8	2265.3	4173.1	1468	2746.4	1883.9	3783

Table C.4.5: Block wise disaggregation of empowerment of women in a household

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
Empowerment details of women in the household	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
Whether respondent has permission to go all alone or not to the following places:					
Local market to buy things					
Alone	47.6	49.7	52.1	58	51.8
Alone	40.2	42	36.5	33.9	38.2
Never	12.2	8.3	11.4	8.1	10
Local health facility or doctor					
All alone	47.8	50.6	51.2	58.7	52
Not alone	45.3	45.9	43.9	37.5	43.2
Never	6.9	3.5	5	3.8	4.8
Homes of friends in neighbourhood					
All alone	57.5	60.8	63.3	67.1	62.1
Not alone	32.5	32.3	29.5	25.4	30
Never	10	6.9	7.2	7.5	7.9
Nearby temple or shrine or mosque					
All alone	55.1	56.8	56.5	64.1	58.1
Not alone	36.7	37.8	36.9	31.2	35.6
Never	8.2	5.4	6.6	4.8	6.3
Whether respondent is involved in religious groups outside home					
Yes	2	1.8	2.6	1.7	2
Whether religious groups is only female or mixed					
Females	51.6	60.7	97.4	73.1	72.4
Whether respondent is involved in a Cooperative (cottage industry) outside home					

Yes	3.5	1.9	1.9	2.2	2.4
Whether cooperative is only female or mixed					
Females	81.8	100	96.3	97.1	91.7
Whether respondent is involved in any Microcredit group outside home					
Yes	15.2	11.9	10.4	13.5	12.8
Whether microcredit group is only female or mixed					
Females	88.6	93.4	93.4	93.1	91.9
Whether respondent is involved in any Women's Organization outside of home					
Yes	12.5	7.1	5.3	5.8	7.7
Whether Women's organization is only females or mixed					
Females	72.7	77.1	75.3	63.6	72.4
Whether respondent is involved in any other groups outside home					
Yes	0.8	0.1	0.3	0	0.3
Whether other groups only female or mixed					
Females	38.5	100	100		57.9
Whether respondent votes at local body/provincial/national assembly election					
Always votes	44.6	42.6	44.8	43.7	43.9
Sometimes Votes	11.8	8.3	4.7	8.9	8.5
Never Votes	15.5	14.4	14.9	13.2	14.5
Too young to vote	0.3	1.2	1.6	0.7	0.9
Voter Card not made	27.8	33.4	34	33.5	32.1

	Mean	**Std. Dev**	**Mean**	**Std. Dev**	**Mean**	**Std. Dev**	**Mean**	**Std. Dev**	**Mean**	**Std. Dev**
No. of months woman has been part of RELIGIOUS groups	11.1	13.1	24.1	20.6	23.6	14.5	24.5	23.4	20.7	18.5
No. of times per month woman meets outside of the house as part of RELIGIOUS groups	3.2	2.7	5	9.6	4.8	5.5	3.3	4.1	4.1	6
No. of months woman has been part of COOPERATIVES groups (e.g. Cottage industry)	16.8	15.3	19.3	11.3	10.3	12.9	17.9	11.5	16.4	13.5

No. of times per month woman meets outside of the house as part of COOPERATIVES groups	3.6	2.5	3.7	1	3.1	1.5	4	1.9	3.6	2
No. of months woman has been part of MICRO-CREDIT groups	18.5	12	19	12.9	7.3	8.8	23.4	14.5	17.7	13.5
No. of times per month woman meets outside of the house as part of MICRO-CREDIT groups	4.5	4.4	4.1	3.2	4.4	1.9	5	4.5	4.5	3.8
No. of months woman has been part of WOMEN'S groups	19.5	13.9	18.3	12.1	14	13.3	29	20.1	20.1	15.5
No. of times per month woman meets outside of the house as part of WOMEN'S groups	7.2	8.3	6.9	7.5	5.8	5.1	9.8	12.1	7.4	8.6
No. of months woman has been part of ANY OTHER groups	24.7	16.7	18	0	1	0	0	0	18.1	17.3
No. of times per month woman meets outside of the house as part of ANY OTHER groups	4.8	2.7	12	0	1	0	0	0	4.2	3.4

Table C.4.6: Intra-household resource allocation, by programme block

Block	Atri		Wazirganj		Mohra		Khizarsarai		Total	
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
	3.3	1	3.4	1	3.2	0.7	3.2	0.8	3.2	0.8
Whether more or less than the usual number of meals eaten in any day										
More	11.2		12.4		15.2		11.8		12.6	
The same as usual	85.3		84.8		84.1		85.9		85.1	
Fewer meals	3.5		2.8		0.7		2.3		2.3	
Special reasons for more/fewer meals										
Ill Today	55.1		54.3		39.4		43.5		48.1	
Away from home	7.9		7.3		11.3		5.1		8	
Festival/Holiday	9.7		9.9		0.4		3.3		5.9	
Celebration	2.2		1.7		0.4		4.2		2.1	
Not enough food in house	0.9		1.7		0.4		1.4		1.1	

No Specific Reason	22.9	24.1	46.8	40.7	33.5
Other	1.3	0.9	1.3	1.9	1.3

Table C.4.7: Frequency (consumption days[31]) of food groups consumed by sampled mothers in the last 7 days, by programme block

Food Groups	Atri Mean	Wazirganj Mean	Mohra Mean	Khizarsarai Mean	Total Mean
A. Milk and milk products	3.8	3.6	3.8	3.7	3.7
B. Meat, Poultry & Fish	0.8	0.5	0.7	0.6	0.6
C. Cereals	14.7	14.7	14.7	14.8	14.7
D. Pulses	5.5	5.4	5.6	5.5	5.5
E. Edible Oils and Fats	6.9	7.0	7.0	7.0	7.0
F. Fresh fruits	1.3	1.3	0.7	1.0	1.1
G. Dry fruits	0.7	0.6	0.4	0.5	0.5
H. Vegetables	19.1	17.1	20.3	17.3	18.5
I. Condiments and Spices	18.9	19.5	20.0	19.9	19.6
J. Sugar, Honey and Sugar Preparations	4.5	4.9	4.8	4.9	4.8
K. Non-alcoholic beverages	3.2	4.0	3.8	3.8	3.7
L. Misc. food items	3.0	3.5	3.4	3.4	3.3
M. Tobacco and Alcohol	1.15	1.12	1.27	1.07	1.15

Table C.5.1: ORS administered to child, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
ORS administered if child has diarrhoea					
635 reported diarrhoea but this is out of 558	41.6	33.9	29.3	27.1	33.7
Actions to take if child gets diarrhoea:					
Give ORS solution	11.9	9.8	3.3	5.2	7.7

[31] To look at frequency of consumption across food-groups, we simply calculate the "consumption-days" of any group in a week. This is obtained by simply adding the number of days consumed across all food items within a group. In some ways, this measure is very similar to the pivotal "man-day" concept used to look at work-generation under the NREGA. In Table C.4.7, the consumption-day figures are reported block-wise. As expected, there is very little variation across blocks. Also, the food-groups reporting maximum frequency of consumption are vegetables (19.1 consumption-days a week), cereals (14.7 consumption-days a week), condiments and spices. At the other end of the spectrum are the expensive luxury consumption items: meat, poultry and spices (0.6 consumption-days a week) and dry-fruits (0.5 consumption-days a week).

ORS and Zinc Solution	12.5	10.5	6	7.3	9.2
Salt and Sugar Solution	8.1	6.7	4.3	3.9	5.9
Give plenty of fluids	1.5	1.5	1	1	1.3
Continue Normal food	0.4	0.4	1	0.7	0.6
Continue breastfeeding	3.6	4.1	4.9	4.4	4.2
Give medicines as prescribed by doctor	33.9	41.4	46.9	50.5	42.9
Other	0.6	0.2	0	0.1	0.2

Table C.5.2: Infant and young child feeding and dietary practices, by programme block

Block IYCF and dietary practices	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Child give prelacteal feed	57.9	51.9	53.8	57.3	55.3
Time of first breastfeed:					
Immediately/within one hour of birth	50.7	54.5	50.5	50.8	51.6
Within 24 hours	37.2	33.5	37.7	38.7	36.8
2 to 3 days	9.2	9.9	10.2	8.5	9.4
After 3 days	2.5	1.7	1.5	1.7	1.9
Never breastfed	0.4	0.4	0.1	0.4	0.3
Still breastfed children	85.1	85.4	82.8	87.0	85.1

Table C.5.3: WHO IYCF indicators, by programme block

Block IYCF Core indicator	Age group	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Exclusive breastfeeding under 6 months	Less than 6 months	39.4	38.7	44.1	36.6	39.6
Continued breastfeeding at 1 year	12 – 15 months	90.9	91.4	90.4	92.4	91.3
Consumption of iron-rich or iron-fortified foods	6 – 8 months	1.0	0.3	0.1	0.1	0.4

Table C.5.4: Non-exclusive breastfeeding, by programme block

Block	Age group	Atri	Wazirganj	Mohra	Khizarsarai	Total
Percentage of infants given non-exclusive breastfeeding	6-24 months	42.7	41.1	43.0	43.5	42.6
Percentage of infants given other liquids/foods before 6 months of age	6-24 months	61.67	57.61	58.52	55.12	58.4

Table: Contraceptive use, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
Details of Contraceptive Use	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
At the time of last pregnancy, was the pregnancy desired then, later, or never					
Then	82.9	78.7	80.7	80.4	80.7
Later	11.8	13.7	11.9	12.4	12.4
Not at all	4.6	6.7	7.2	7.1	6.4
Not willing to answer	0.8	0.9	0.2	0.1	0.5
Whether any methods have ever been used to delay/avoid pregnancy					
Yes	15.9	19.5	14.9	18	17.1
Method of contraception respondent is currently using					
IUD	10.2	6.1	5.3	5.5	7
Oral-contraceptive-Daily Pills	5.6	10.1	6.6	11	8.3
Oral-contraceptive-Weekly-Pills	1.9	3	2.6	6.6	3.5
Injectables	3.7	2	2.6	2.2	2.7
Condom/nirodh	41.7	36.4	21.1	27.5	32.6
Female condom	0.9	1	1.3	0	0.8
Rhythm-method	8.3	8.1	5.3	9.9	8
Withdrawal	25.9	28.3	50	34.1	33.4
Others	1.9	5.1	5.3	3.3	3.7
Any difficulty faced in getting method					
No-problem	97	98.4	100	98	98.1
Not regularly available with PHC	0	0	0	2	0.5
Not regularly available with ANM/ASHA	1.5	0	0	0	0.5
Not regularly available with medical shops/chemist	1.5	1.6	0	0	0.9
Reasons for not using any contraceptive methods currently					

Not having sex	11.6	6.4	3.1	3.5	6.2
Husband away	7.9	10.8	15.9	9	10.9
Menopause	1.8	1.9	2.8	3.8	2.6
Hysterectomy	1.2	1.4	2.4	2.5	1.9
Breastfeeding	12.3	12.9	15.3	18.7	14.8
Up to god	4.6	5.2	6.4	5.9	5.5
Respondent opposed	12.9	11.4	10.4	8.9	10.9
Husband opposed	6.1	6.2	5.1	5.6	5.8
Religious prohibition	5.1	4.5	4.4	4.7	4.7
Knows no method	4.5	9.6	7	8.7	7.4
Know no source	5.7	5.3	3	2.6	4.1
Health related concerns	2.9	3.4	2.2	2.3	2.7
Fear of side effects	5	4.9	5.8	5.5	5.3
Lack of access/ too far	3.1	3.3	3.8	6.4	4.1
Costs too much	2.2	1.2	3.8	4	2.8
Difficult/inconvenient to get method	0.7	1.4	1.7	1	1.2
Inconvenient to use	0.1	0.4	0	0.1	0.2
Interferes with body's normal processes	0.1	0.1	0	0	0.1
Do not like existing methods	0.2	0.3	0.1	0.1	0.2
Afraid of sterilization	1.4	1.8	0.8	0.6	1.1
Cannot work after sterilization	0.5	1	0.2	0.7	0.6
Other	2.5	3.2	2.6	2.8	2.8
Don't know	5.7	2.5	2	2	3.1
Methods of contraception respondent has heard about:					
Not heard of any methods	15.1	10.9	10.4	8.3	11.2
Female Sterilization	32.3	31.5	38	36.1	34.3
Male Sterilization	5.3	5.9	7.1	7.1	6.4
IUD	11.2	11.9	7.8	9.8	10.2
Oral-contraceptive-daily PILLS	14.5	16.4	16.7	15.4	15.7
Oral-contraceptive-weekly-pills	2.5	3.4	3.9	4	3.4

Injectables	8.6	10.2	9.5	10.6	9.7
Condom/nirodh	7	7.2	5.9	7.2	6.8
Female-condom	0.6	0.3	0.1	0.2	0.3
Rhythm-method	1	0.4	0.4	0.5	0.6
Withdrawal	1.7	1.8	0.2	0.9	1.2
Others	0.4	0.1	0.1	0	0.2
Methods of contraception respondent has ever used					
Female sterilization	32	37.4	32.9	33.2	34
Male sterilization	2.3	6	6.3	8.3	5.8
IUD	4	3	1.2	1.5	2.5
Oral-contraceptive-da	8.3	11.5	9.8	12	10.5
Oral-contraceptive-we	2.7	1.8	3.9	4.3	3.1
Injectables	1.7	1.8	1.6	1.5	1.7
Condom/nirodh	27.3	20.8	19.2	20.6	22
Female-condom	1	0.3	0.8	0	0.5
Rhythm-method	4	2.1	2	3.4	2.9
Withdrawal	15.7	14.2	20.8	14.2	15.9
Others	1	1.2	1.6	0.9	1.2

Table C.6.1: Details on Village Health and Nutrition Days, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
Details on Village Health and Nutrition Days	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
Respondent aware of VHND in village					
Yes, fully aware	35.7	42.7	38.6	51.3	42.1
Yes, partially aware	22.5	20.3	23.7	23.4	22.4
Not aware	41.8	37.0	37.8	25.3	35.5
VHN Days attended during last pregnancy					
All months	19.6	22.5	18.8	24.0	21.2
Few months	22.6	24.6	29.9	36.9	28.4
only once or twice	12.3	14.3	11.6	12.9	12.8

Never	45.6	38.7	39.8	26.3	37.6
Services received at VHND during pregnancy					
Growth monitoring	46.2	45.1	29.8	47.1	42.4
Provision of IFA Tablets	54.4	60.6	46.4	58.6	55.3
Provision of Tetanus Injections	84.9	82.6	82.8	84.9	83.8
Birth preparedness advice	28.7	31.2	30.3	34.7	31.5
Nutrition Advice	34.7	28.7	27.1	30.4	30.1
Child care advice	26.4	23.6	19.2	25.2	23.6
Feeding practices	20.8	21.4	17.6	22.7	20.8
Reason for not attending VHND during last pregnancy					
Not necessary	18.7	13.0	11.4	9.6	13.8
Not customary	3.3	1.5	0.9	0.8	1.8
Cost too much	1.7	1.0	0.9	1.0	1.2
Too far/no transport	2.8	1.0	1.4	4.8	2.3
Poor quality service	10.5	11.2	17.8	12.6	12.9
Family did not allow	5.2	6.6	6.6	9.1	6.6
Don't know whether or	12.6	15.4	9.7	11.1	12.3
Lack of knowledge	16.3	23.2	26.1	28.6	22.8
No one to accompany	1.8	0.9	0.9	0.8	1.1
No one at home to loo	6.8	3.4	8.8	3.5	5.9
Not enough time to go	3.8	3.6	3.5	4.3	3.7
Indifferent behaviour	3.3	4.1	4.0	4.3	3.8
Community/other caste	0.3	0.7	0.4	0.5	0.4
Other	1.6	5.3	1.9	3.8	3.0
No VHN day conducted	11.3	9.3	5.9	5.5	8.4
Reason for not attending VHND after birth of child					
Not necessary	22.5	15.4	13.6	15.6	17.3
Not customary	6.7	4.3	2.7	2.2	4.3
No VHND is organized	11.4	9.9	12.8	10.0	11.1

Not aware if VHND is being organized	10.5	13.6	9.5	14.1	11.7
Too far/no transport	8.5	5.7	9.1	10.0	8.2
Poor quality service	8.6	9.0	16.2	9.8	10.7
Family did not allow	10.6	18.9	17.7	23.6	16.7
Lack of knowledge	19.5	28.6	26.9	20.6	23.9
No one to accompany	3.6	3.9	4.8	6.1	4.4
No one at home to look after household chores	15.7	14.0	15.7	15.6	15.2
Not enough time to go	8.4	7.0	11.9	7.2	8.7
Indifferent behaviour from service	6.3	6.9	6.5	9.5	7.1
Community/Other caste members	1.5	0.6	0.2	0.4	0.7
Others (Specify)	1.9	4.1	3.5	1.3	2.8

Table C.6.2: Attending VHND with child, by programme blocks

Block Attending VHND	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Yes	45.3	54.7	55.8	70.6	56.5
Not aware of VHND	8.7	7.9	6.0	4.0	6.7
No	46.1	37.4	38.2	25.4	36.8

Table C.6.3: Frequency of VHND visits, by programme blocks

Block Frequency of VHND visits	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Every month	38.39	31.59	32.78	33.79	33.96
Every two-three month	28.28	25.44	32.3	31.89	29.67
Rarely/ once/twice	9.43	10.45	5.38	5.51	7.49
Child gets sick	2.32	3.72	0.36	0.45	1.61
Immunisation due date	21.58	28.8	29.19	28.36	27.26

Table C.6.4: Child weighing practices and preferences, by programme block

Block Weighing practices and preferences	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Whether Child was weighed					
Yes with AWC	26.6	20.9	13.7	27.0	22.2
Yes but not with AWC	15.5	16.3	13.1	15.4	15.1
Never	58.0	62.8	73.2	57.6	62.7
Reasons for child not being weighed					
Service not available	34.4	32.3	41.6	36.1	36.3
Not necessary	21.7	23.0	18.8	21.7	21.2
Not customary	5.2	3.3	1.9	2.9	3.3
Cost too much	3.2	1.0	1.8	2.9	2.2
Too far/no transport	5.3	1.8	1.0	1.9	2.5
Poor quality service	2.9	3.5	4.1	4.8	3.8
Family did not allow	1.4	2.2	1.6	0.9	1.6
Lack of knowledge	14.3	21.4	18.6	17.2	18.0
No one to accompany	1.2	0.8	0.6	0.3	0.7
No one at home to loo	1.3	2.4	0.5	1.0	1.3
Not enough time to go	2.5	3.2	4.8	4.3	3.7
Indifferent behaviour	1.9	1.1	2.2	1.8	1.8
Community/other caste	0.2	0.6	0.2	0.4	0.4
Superstitious beliefs	2.9	1.4	1.7	2.9	2.2
Other	1.7	1.8	0.6	1.0	1.3
If not AWC, location of weighing the child					
Hospital	26.8	15.6	21.9	15.7	19.9
CHC/ rural hospital	4.0	4.7	8.2	0.4	4.1
PHC	20.8	38.9	28.1	34.3	30.7
Sub-centre	1.6	0.4	0.0	0.4	0.6
NGO/ trust hospital /clinic	1.2	2.7	2.0	0.8	1.7

Hospital/ Maternity home	35.6	30.0	37.2	41.3	35.9
Home	5.6	5.8	1.5	6.2	5.0
Other	4.4	2.0	1.0	0.8	2.1
Reasons for not weighing child at AWC					
Service not available	59.2	51.4	45.4	31.4	47.1
Timings don't suit	12.8	9.7	15.3	17.8	13.8
Indifferent behaviour	6.4	10.9	13.8	17.4	12.0
Poor quality	10.8	13.6	13.3	20.3	14.5
Other	10.8	14.4	12.2	13.2	12.7
Frequency of weighing the child					
Monthly	18.4	15.4	10.0	18.4	16.2
Quarterly	17.2	12.3	13.2	13.7	14.3
Less than quarterly	26.2	27.5	27.9	33.2	28.8
Only once or twice after birth	38.2	44.9	48.9	34.7	40.7

Table C.6.5: IFA tablets received during pregnancy

Block	Atri		Wazirganj		Mohra		Khizarsarai		Total	
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
No. of IFA tablets received by woman during her last pregnancy	22.5	32.4	30.4	35.0	23.1	33.9	29.4	34.0	26.4	34.0

Table C.6.6: IFA tablets received and consumed during pregnancy

Block	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Proportion of IFA tablets consumed by woman during her last pregnancy:					
All of them	47.6	51.1	60.2	57.6	53.88
More than half of them	12.9	14.4	14.1	13.6	13.74
Half of them	11.1	12.1	9.0	8.9	10.35

Less than half of them	10.4	7.8	6.2	7.4	8
None of them	18.0	14.6	10.5	12.5	14.03
IFA tablets received from:					
AWC/ANM/ASHA	78.2	80.4	73.6	80.6	78.5
Govt Facilities	5.5	6.6	9.6	8.1	7.4
Pvt Facility	15.3	12.0	15.8	10.6	13.1
Chemist/Drug Store	0.3	0.8	0.9	0.8	0.7
NGO/Trust Hospital/clinic	0.8	0.3	0.2	0.0	0.3
Reasons for not consuming or receiving IFA tablets:					
Not necessary	13.8	9.2	10.4	11.3	11.3
Not customary	3.3	1.7	0.8	1.2	1.8
Cost too much	2.1	1.3	0.9	0.4	1.2
Tastes bad	3.1	2.2	1.3	2.5	2.3
Wasn't available with ANM/AWW	8.6	12.4	9.7	10.1	10.1
Family did not allow	2.2	1.1	2.3	2.3	2
Lack of knowledge	13.6	14.2	14	12.3	13.5
Causes vomiting and nausea	6.4	11	5.7	9.5	8
Fear of side effects	2	4.4	2.3	4.1	3.1
Not given tablet by service provider	44.2	42	52.4	45.8	46.2

Table C.8.1: Source of drinking water, by programme block

Block **Source of drinking water**	**Atri** **Percent**	**Wazirganj** **Percent**	**Mohra** **Percent**	**Khizarsarai** **Percent**	**Total** **Percent**
N	**1558**	**1534**	**1454**	**1515**	**6061**
Piped into dwelling	**1.1**	**0.7**	**0.0**	**0.1**	**0.5**
Piped to yard/plot	**1.3**	0.5	0.0	0.3	0.5
Public tap/standpipe	**7.1**	3.3	0.6	1.3	3.1
Tube well or borehole	**85.6**	91.2	86.5	97.2	90.1

Protected well	**1.1**	1.0	2.5	0.1	1.2
Unprotected well	**3.5**	3.3	10.3	1.1	4.5
Protected spring	**0.2**	0.0	0.0	0.0	0.1
Unprotected spring	**0.1**	0.0	0.1	0.0	0.0
Cart with small tank	**0.1**	0.0	0.0	0.0	0.0

Table C.8.2: Type of toilet facility used by households, by programme block

Block	**Atri**	**Wazirganj**	**Mohra**	**Khizarsarai**	**Total**
Type of toilet facility	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
Flush to piped sewer	0.6	0.6	0.3	0.0	0.4
Flush to septic tank	3.7	8.2	3.0	5.6	5.2
Flush to pit latrine	3.0	2.4	1.3	1.6	2.1
Flush to somewhere else	1.7	0.1	0.0	0.0	0.5
Flush, don't know where	0.5	0.5	0.3	0.2	0.4
Ventilated improved pit	0.3	0.5	0.3	0.6	0.5
Pit latrine with slab	1.2	3.1	1.4	2.0	1.9
Pit latrine without s	2.8	0.1	0.1	0.1	0.8
Twin pit/composting toilet	0.2	0.2	0.1	0.0	0.1
Dry toilet	0.1	0.2	0.1	0.6	0.2
No facility/uses open	86.0	84.1	93.0	89.3	88.0

Table C.8.3: Vitamin-A administration rates, by programme block

Block	**Atri**	**Wazirganj**	**Mohra**	**Khizarsarai**	**Total**
Vitamin-A administration rates	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
Vitamin-A received?					
Yes	39.6	37.1	34.9	40.9	38.2
No	50.7	49.3	53.8	48.2	50.5
Not eligible	6.7	10.6	8.7	9.1	8.8
Don’t know	3.0	2.9	2.6	1.9	2.6
Frequency of Vitamin-A received					
Once	69.9	69.1	68.3	65.8	68.2

Twice	25.0	24.6	23.5	29.0	25.7
Thrice	2.2	3.1	4.8	1.7	2.9
More than thrice	0.6	0.3	0.6	0.3	0.5
Don't know/don't remember	2.3	2.9	2.9	3.1	2.8

Table C.8.4: Details on Take home ration, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
	Percent	Percent	Percent	Percent	Percent
Take Home Ration received from Anganwadi Centre for child					
Yes	39.3	43.1	43.7	56.0	45.5
Take Home Ration received from Anganwadi Centre during last pregnancy					
Yes	41.5	42.9	46.4	56.7	46.8
Frequency of Take Home Ration received from Anganwadi Centre during last pregnancy					
All months of pregnancy	47.1	56.3	39.6	43.0	46.2
Few months of pregnancy	37.6	32.9	46.4	45.3	41.0
Only once or twice	15.2	10.8	14.0	11.8	12.9

Table C.9.1: Use of Take Home Rations, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
Use of Take Home Rations	Percent	Percent	Percent	Percent	Percent
Only for the child	10.53	7.66	2.91	7.18	7.06
Whole family but primarily for the child	54.87	48.9	43.27	42.94	47.1
Whole family shares	33.96	43.45	53.82	49.89	45.7
Other specify	0.63	0	0	0	0.14

Table C.9.2: Month in which woman got to know she was pregnant, by programme block

Block	Atri		Wazirganj		Mohra		Khizarsarai		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Month in which woman got to know she was pregnant	2.3	0.9	2.2	0.9	2.0	0.9	2.0	0.9	2.1	0.9

Table C.9.3: Registration of Pregnancy, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
	Percent	Percent	Percent	Percent	Percent
During last pregnancy:					
Respondents name noted in a register by any of the					
Informed and Noted	64.4	67.8	61.8	74.4	67.1
Informed but don't know whether noted	10.5	14.3	16.1	12.0	13.2
Informed but not noted	3.2	2.6	4.9	2.2	3.2
Neither informed, nor noted	11.0	6.9	7.6	6.0	7.9
Don't know	10.9	8.4	9.6	5.4	8.6
MCHN Card received					
Yes	71.4	71.4	68.8	78.7	72.8
No	27.9	27.7	30.8	21.1	26.7
Don't Know/Don't Remember	0.8	0.9	0.4	0.2	0.6

Table C.9.4: (Multiple Response) Details of Ante-natal Care check-ups, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
Ante-natal Care check-up details	Percent	Percent	Percent	Percent	Percent
Name noted in register by the following:					
Govt Doctor	4.6	4.0	4.1	2.9	3.9
Pvt Doctor	8.3	7.6	7.1	4.9	6.9
ANM	20.7	15.8	17.7	16.3	17.6
Anganwadi Worker	35.2	39.5	36.5	42.9	38.7
Asha	22.4	27.6	26.0	29.7	26.5
Other Health Facility	0.3	0.5	0.1	0.1	0.3
Not Registered	8.5	5.1	8.5	3.3	6.2
Reasons for not going for at least 4 antenatal check-ups:					
Not necessary	39.1	48.1	50.3	44.0	44.7
Not customary	4.0	2.0	1.2	2.3	2.6
Cost too much	9.9	12.0	13.8	14.1	12.2

Too far/ No transport	4.7	3.4	3.0	3.0	3.7
Poor quality service	4.0	1.6	0.6	1.3	2.1
Family did not allow	5.1	3.4	4.5	3.3	4.1
Lack of knowledge	24.3	22.7	22.8	26.4	24.1
No one to accompany	2.3	3.0	1.2	1.8	2.1
No one at home to look after household chores	1.4	0.7	0.3	0.5	0.8
Not enough time to go	2.9	1.4	1.8	3.0	2.3
Indifferent behaviour	1.6	0.2	0.6	0.5	0.8
Community/ other caste members object	0.4	0.0	0.0	0.0	0.1
Other (specify)	0.4	1.6	0.0	0.0	0.5
Facilitated or motivated to avail antenatal check-up by:					
Doctor	6.9	4.2	6.0	6.6	5.9
ANM/Nurse	4.0	1.9	1.4	1.2	2.2
Male Health Worker	0.4	0.0	0.0	0.2	0.2
Asha	17.1	22.6	14.4	17.3	18.0
AWW	7.4	4.4	4.4	5.9	5.6
Dai	0.8	0.4	0.2	0.4	0.5
Husband	23.6	21.9	25.2	20.3	22.7
Mother-in-law	10.3	11.2	13.3	10.9	11.3
Mother	5.8	6.6	7.2	8.8	7.1
Relatives/friends	6.0	7.0	6.9	8.5	7.1
Self	17.5	19.5	21.0	20.0	19.4
Other	0.4	0.3	0.0	0.0	0.2
Place where antenatal check-up(s) were received during last pregnancy:					
Govt. hospital	7.0	4.3	4.7	4.1	5.1
Dispensary	0.2	0.2	0.0	0.3	0.2
CHC/ Rural hospital	3.6	6.3	3.7	3.6	4.3
PHC	5.5	9.8	11.0	11.3	9.2
Sub centre	0.8	1.7	0.2	0.3	0.8
AWC/VHND	28.1	26.7	25.5	28.6	27.3

NGO/ Trust hospital/clinic	1.8	1.6	1.8	1.2	1.6
Pvt. hospital/ maternity home	48.7	47.5	52.4	50.2	49.5
Home	3.9	1.7	0.8	0.5	1.9
Other (specify)	0.5	0.2	0.0	0.0	0.2
Proportion of women who received the following at least once during the last month of pregnancy:					
Weight measured	60.7	67.9	63.3	72.0	65.9
Height measured	15.4	15.1	12.4	12.5	14.0
Blood Pressure	49.6	55.2	59.0	58.1	55.1
Blood Tested	50.4	55.5	60.1	60.1	56.1
Urine tested	56.7	62.4	69.4	68.2	63.6
Abdomen Examined	49.4	58.1	58.6	60.4	56.2
Breast Examined	16.4	22.2	22.8	23.0	20.9
Sonogram/Ultrasound	29.2	35.3	36.9	30.1	32.6

Table C.9.5: Details of Ante-natal Care check-ups, by programme block

Block	Atri		Wazirganj		Mohra		Khizarsarai		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
No. of times woman received ante-natal check-up(s) during her last pregnancy	1.6	2.0	1.5	2.0	1.2	1.8	1.4	2.0	1.4	2.0
Month of pregnancy in which woman received her first ante-natal check-up	3.2	1.3	3.3	1.3	3.2	1.2	3.2	1.2	3.2	1.3

Table C.9.6: Tetanus injections received during pregnancy, by programme block

Block	Atri		Wazirganj		Mohra		Khizarsarai		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
No. of times woman got tetanus injections during her last pregnancy	2.0	0.6	2.0	0.5	1.9	0.6	2.0	0.4	2.0	0.5

Table C.9.7: Details of last pregnancy, by programme block

Block Details of last pregnancy	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Advice on any of the following received at least once during last pregnancy (Multiple Response):					
Advice on possible complications during pregnancy and delivery	21.5	23.2	27.3	22.8	23.4
Advice on birth preparedness	22.9	20.3	13.7	18.6	19.4
Advice on family planning	8.9	7.8	5.1	5.9	7.1
Advice on child care	13.7	15.4	15.6	18.6	15.7
No advice given	33.0	33.4	38.3	34.1	34.4
Reasons for not taking 2 tetanus injections (Multiple Response):					
Not necessary	16.2	17.1	22.2	13.8	18.1
Not customary	5.4	1.7	3.4	0.0	3.1
Cost too much	5.4	0.9	0.7	0.0	2.0
Too far/ No transport	2.3	0.9	2.7	1.7	2.0
Poor quality service	4.6	2.6	6.0	10.3	5.3
Family did not allow	6.9	5.1	4.7	8.6	6.0
Lack of knowledge	23.1	29.1	33.6	25.9	28.4
No one to accompany	7.7	15.4	10.7	12.1	11.2
No one at home to look after household chores	3.1	5.1	0.7	3.5	2.9
Not enough time to go	14.6	9.4	6.0	10.3	9.9
Indifferent behaviour	0.8	0.0	2.7	0.0	1.1
Community/ other caste members object	2.3	2.6	0.0	0.0	1.3
Other (specify)	7.7	10.3	6.7	13.8	8.8
Proportion of respondents who suffered from the following health problems during last pregnancy (Multiple Response):					
Swelling of hands, feet and face	35.5	32.5	37.8	42.8	37.1
Paleness/Giddiness/Weakness	51.9	53.2	61.1	65.1	57.8
Visual Disturbances	24.4	24.8	29.8	28.1	26.7
Excessive Fatigue	43.6	40.2	43.4	40.7	42.0

Convolutions not from fever	19.6	19.0	15.9	16.6	17.8
Weak or no movement of foetus	10.8	8.2	7.1	6.9	8.3
Abnormal position of foetus	6.5	4.3	3.7	4.0	4.6
Malaria	3.8	2.2	2.4	2.2	2.7
Excessive vomiting	36.6	35.3	37.8	37.6	36.8
Hypertension/High BP	6.7	4.3	2.8	3.6	4.4
Jaundice	2.7	1.2	0.5	0.9	1.4
Excessive Bleeding	2.5	1.4	0.9	1.4	1.6
Vaginal Discharge	2.6	2.0	1.4	1.5	1.9
Consultation/treatment sought at (Multiple Response):					
Hospital	13.7	5.8	6.2	6.4	8.1
CHC/rur hospital	2.7	3.1	1.8	2.0	2.4
PHC	2.5	4.7	4.0	5.6	4.2
Sub centre	0.7	0.6	0.3	0.1	0.4
Ngo/Trust hospital/clinic	1.4	0.4	0.6	0.8	0.8
Hospital/Maternity home	31.8	37.0	24.1	26.8	29.9
Other	0.5	0.2	0.4	0.2	0.3
Did Not Seek Treatment	46.8	48.2	62.6	58.2	54.0
Location of last delivery					
Govt Hosp	13.2	11.1	8.3	9.8	10.6
CHC/RUR Hosp	9.8	13.1	6.9	7.5	9.4
PHC	16.3	23.8	17.9	22.4	20.1
Sub Centre	0.1	0.0	0.0	0.0	0.0
Medical colleges	0.1	0.1	0.0	0.0	0.1
NGO/trust hosp/clinic	0.1	0.2	0.3	0.1	0.2
Hosp maternity home/c	16.3	13.7	11.7	16.4	14.6
At home	39.8	32.6	50.5	40.4	40.7
At parents' home	2.5	2.2	2.6	2.3	2.4
Workplace	1.4	2.5	1.8	0.9	1.7
On way to hosp	0.1	0.5	0.1	0.3	0.2

Other	0.3	0.3	0.0	0.0	0.1
Reason for not delivering in health facility					
Not necessary	34.0	30.3	28.0	34.3	31.5
Not customary	1.5	1.2	1.1	0.9	1.2
Cost too much	2.6	2.9	4.3	6.5	4.1
Too far/no transport	10.3	5.9	7.9	4.8	7.3
Poor WC_Quality of se	3.8	5.2	6.4	3.3	4.7
family did not allow	8.5	11.5	11.6	9.6	10.3
Lack of knowledge	3.4	2.8	3.1	3.3	3.2
Nobody to accompany	2.9	3.1	2.4	2.3	2.6
Sudden unexpected lab	13.8	13.1	13.8	12.8	13.4
Household chores	4.7	4.1	3.0	4.4	4.0
Not enough time to go	12.5	17.6	17.5	16.2	16.0
Indifferent behaviour	0.9	0.9	0.0	0.5	0.5
Community/other caste	0.2	0.0	0.1	0.0	0.1
Other	1.0	1.6	0.8	1.2	1.1
Facilitated or motivated to health facility for delivery by:					
Doctor	5.6	2.1	3.9	3.0	3.6
ANM/Nurse	5.1	1.9	1.0	1.0	2.3
Male Health worker	0.4	0.1	0.1	0.1	0.2
ASHA	22.9	28.3	19.6	25.9	24.6
Dai	1.1	0.6	0.4	0.3	0.6
Husband	20.1	18.0	19.6	20.7	19.5
Mother-in-law	12.7	14.4	13.8	14.3	13.8
Mother	10.0	10.9	12.8	11.1	11.1
Relatives/friends	9.9	12.0	17.0	13.8	13.0
Self	12.2	11.9	11.9	9.9	11.5
Others	0.1	0.0	0.0	0.0	0.0
Person who conducted last delivery					
Doctor	25.1	22.2	27.6	25.9	25.2

ANM/nurse/midwife/lhv	37.5	48.5	35.5	42.4	41.0
Dai	30.4	25.1	28.5	25.4	27.3
Relatives/friends	5.6	3.1	4.8	3.6	4.3
Other	0.1	0.0	0.0	0.1	0.0
No one	1.3	1.2	3.7	2.7	2.2
Type of delivery					
Normal	89.2	89.9	92.7	88.6	90.1
Caesarean	9.3	8.6	5.8	9.0	8.2
By instrument or assisted	1.5	1.4	1.5	2.4	1.7
Main mode of transportation used to reach health facility for delivery					
Ambulance-Govt	14.5	7.5	16.3	14.7	12.7
Ambulance-pvt	0.6	1.0	1.8	1.4	1.2
Jeep/car	7.0	4.2	7.9	6.1	6.1
Motorcycle/scooter	6.1	3.7	3.1	4.1	4.3
Bus/train	2.6	2.1	4.7	1.2	2.5
Tempo/auto/tractor	55.9	57.6	51.9	63.3	57.5
cart	1.0	1.6	0.7	0.8	1.1
foot	6.4	2.6	3.6	2.7	3.8
Other	1.1	3.4	2.4	0.6	1.9
N.A	4.8	16.5	7.6	5.1	9.1

Table C.9.8: Arranging financial resources at the time of delivery, by programme block

Block Financial situation during delivery	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Arrangement of financial resources for delivery					
Had enough resources	53.4	53.8	52.8	52.2	53
Saved during pregnancy	16	16.5	13.5	14.5	15.1
Took loan	21.8	22.4	24.4	27	23.9
Sold Cattle	0.9	0.4	0.1	0.1	0.4
Sold property	0.9	0.2	0.3	0.1	0.4

DNK/Family Arranged	7	6.7	9	6.1	7.2
Government assistance received for delivery under JSY					
Yes	37.5	45.4	30.2	38	37.9

Table C.9.9: Expenditure at the time of delivery and government assistance provided

Block	Atri		Wazirganj		Mohra		Khizarsarai		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Cost of transportation at the time of delivery	384.4	441.3	315.4	293.6	417.5	461.7	324.3	319.6	355.6	380.4
Total cost (excluding transport) at the time of delivery	2366.9	4893.2	2927.7	6139.2	2353.3	5559.1	2710.3	5501.2	2582.8	5526
Total govt. assistance received in hand after delivery in a Govt institution under JSY	1376.6	116.8	1369	128.6	1374.4	112.6	1377.8	112	1374.2	118.6

Table C.9.10: Post natal care check-up details, by programme block

Block	Atri	Wazirganj	Mohra	Khizarsarai	Total
Details on Post-natal care check-up	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
Post-natal check-up received after delivery					
Yes	38.6	44.4	35.1	42.3	40.2
Reason for not receiving post-natal check-up					
Not necessary	48.5	54.4	52.2	51.3	51.5
Not customary	5.7	2.6	4.6	4.2	4.3
Cost too much	4.4	6.5	8.9	10.0	7.4
Too far/no transport	5.0	1.8	2.7	1.1	2.7
Poor quality service	2.4	2.4	1.9	3.0	2.4
Family did not allow	3.2	4.0	2.8	2.3	3.0
Lack of knowledge	15.3	16.0	14.2	17.6	15.7
No one to accompany	1.9	1.9	1.4	0.8	1.5
No one at home to loo	5.6	3.5	4.1	3.7	4.3
Not enough time to go	2.4	3.8	4.6	3.3	3.5
Indifferent behaviour	4.0	2.7	2.4	2.4	2.9

Community/other caste	1.1	0.2	0.0	0.1	0.4
Other	0.6	0.4	0.3	0.2	0.4
Services received during post-natal check-up					
Abdomen examined					
Yes	65.9	77.5	84.9	83.5	77.8
Advice on breast-feeding					
Yes	56.0	66.1	65.2	63.7	62.8
Advice on baby care					
Yes	62.7	62.6	64.8	65.4	63.8
Advice on family planning					
Yes	23.4	26.7	25.4	28.7	26.1
Baby examined					
Yes	58.2	70.0	69.9	70.4	67.2
Location of first post-natal check-up					
Hospital	16.6	11.9	12.9	13.1	13.6
CHC/Rur Hosp	16.4	18.4	10.2	10.9	14.2
PHC	17.1	25.5	28.8	30.3	25.4
Sub Centre	0.2	0.0	0.0	0.0	0.0
AWC/VHND	0.8	0.2	0.2	0.0	0.3
NGO/trust. Hosp	0.0	0.4	0.4	0.8	0.4
Pvt.Hosp/Maternity.ho	31.4	27.4	26.6	30.1	28.9
Home	17.6	16.1	20.9	14.8	17.1
other	0.0	0.2	0.0	0.0	0.0

	Mean	**Std. Dev**	**Mean**	**Std. Dev**	**Mean**	**Std. Dev**	**Mean**	**Std. Dev**	**Mean**	**Std. Dev**
No. of hours after delivery that woman received the first post natal check-up	2.9	9.4	2.3	9.2	0.9	2.0	1.5	3.6	2.0	7.1

TableC.9.11: Respondent's awareness of symptoms of Diarrhoea and Pneumonia in a child, by programme block

Block Awareness about Diarrhoea and Pneumonia	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Actions to take if child gets diarrhoea:					
Give ORS solution	11.9	9.8	3.3	5.2	7.7
ORS and Zinc Solution	12.5	10.5	6	7.3	9.2
Salt and Sugar Solution	8.1	6.7	4.3	3.9	5.9
Give plenty of fluids	1.5	1.5	1	1	1.3
Continue Normal food	0.4	0.4	1	0.7	0.6
Continue breastfeeding	3.6	4.1	4.9	4.4	4.2
Give medicines as prescribed by doctor	33.9	41.4	46.9	50.5	42.9
Other	0.6	0.2	0	0.1	0.2
Awareness about signs of pneumonia:					
Difficulty in breathing	18.9	15.9	11.7	14	15.2
Chest indrawing	24.4	27.3	25	26.7	25.9
Not able to drink or take feed	6.4	4.5	6.1	5.5	5.6
Keep awake	3.2	2.6	3.9	3.2	3.2
Pain in chest and productive cough	8.8	9.2	10.9	12.2	10.3
Wheezing/whistling	7	9.8	11.3	9.3	9.4
Rapid breathing	2.6	2.8	3.1	2.8	2.8
Running nose	4.2	5.5	4.8	6.3	5.2
Other	0.4	0.3	0.1	0.1	0.2
Not aware	24.1	22	23.1	19.9	22.3
Person who told respondent about danger signs of Pneumonia					
Doctor	40.8	36.9	50.3	49	44.2

ANM	5.2	1.7	1.1	1.2	2.3
Other health worker	1	0.1	0	0.2	0.3
Anganwadi worker	2.9	2.2	2	0.8	2
ASHA	4.8	2.2	0.4	1.7	2.3
NGO/CBO	0.2	0.1	0.1	0.2	0.2
Husband	2.1	1	1.2	1.2	1.4
Mother-in-law	9.1	12.8	13.1	11.8	11.7
Mother	7.6	9.9	6.9	6.3	7.7
Relatives/friends	10.3	14.3	11.2	9.8	11.4
Self/Experience	15.8	18.9	13.7	18	16.6
Others	0.1	0.1	0	0	0.1

Table C.9.12: Rates of child immunization, by programme block and age (given for a lenient age group as per immunization schedule as well as for all kids older than the outer limit)

	Age (months)	N	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
BCG	>= 12	3433	96.2	96.7	96.0	96.8	96.4
Polio0	< 2	140	82.1	87.0	66.7	67.7	77.9
Polio0	>= 2	5562	83.0	77.2	77.1	77.2	78.6
Polio1	>1 & <3	115	72.7	69.7	68.0	68.6	69.6
Polio1	>= 2	5562	87.2	88.0	85.3	90.2	87.7
Polio2	>2 & <4	125	46.7	17.7	50.0	43.6	38.4
Polio2	>= 3	5447	79.8	81.2	78.7	84.4	81.1
Polio3	>3 & <5	146	20.0	40.6	39.5	47.2	36.3
Polio3	>=4	5322	71.9	71.5	70.2	77.5	72.9
DPT1	>1 & <3	115	68.2	63.6	56.0	65.7	63.5
DPT1	>= 2	5562	86.5	89.2	88.4	89.9	88.5
DPT2	>2 & <4	125	43.3	20.6	50.0	43.6	38.4

DPT2	>= 3	5446	79.4	81.8	79.2	83.0	80.9
DPT3	>3 & <5	146	20.0	37.5	36.8	41.7	33.6
DPT3	>=4	5321	70.4	74.4	70.4	76.1	72.9
HPV1	>1 & <3	115	68.2	54.6	56.0	54.3	57.4
HPV1	>= 2	5561	73.1	71.0	74.7	76.1	73.7
HPV2	>2 & <4	125	50.0	11.8	45.5	33.3	33.6
HPV2	>= 3	5446	66.7	62.5	67.4	69.6	66.5
HPV3	>3 & <5	146	17.5	31.3	34.2	41.7	30.8
HPV3	>=4	5321	59.0	54.7	60.6	61.6	58.9
Measles	>=9 & <= 13	1536	55.3	53.1	53.6	56.8	54.7
Measles	>= 12	3433	67.1	71.0	67.0	72.1	69.3

Table C.9.13: Reasons for not getting children immunised, by programme block

Block Immunization details	Atri Percent	Wazirganj Percent	Mohra Percent	Khizarsarai Percent	Total Percent
Reasons for not immunizing child (multiple responses):					
Not necessary	21.2	20.7	21.0	11.9	19.5
Not customary	4.3	4.5	1.7	2.2	3.1
Cost too much	6.1	0.0	1.1	1.1	2.4
Too far/no transport	6.7	2.7	1.1	0.7	3.1
Poor quality service	10.2	6.3	8.6	1.1	7.4
Family did not allow	17.8	9.9	15.8	7.5	13.8
Lack of knowledge	20.2	18.3	27.6	25.0	**23.0**
No one to accompany	4.3	3.6	2.8	4.1	3.6
No one at home to look after household	3.1	3.6	2.8	7.8	3.9
Not enough time to go	11.6	9.9	15.6	16.0	13.3
Indifferent behaviour from service provider	4.3	4.5	6.9	4.5	5.2
Community/other caste members object	2.4	2.7	2.8	6.7	3.3
Superstitious beliefs	5.5	3.6	1.7	4.5	3.7
Other	10.6	12.6	11.3	14.6	11.9

Service not available	2.9	9.0	6.2	2.2	5.1

Table C.10.1: Regression of binary toilet access variable on child illness outcomes

	(1) Child Fell Ill in the Past 30 days	(2) Days of Illness	(3) Diarrhoea	(4) Fever
main				
Toilet Access (Binary)	0.254***	0.467	-0.0833	0.0778
	(3.28)	(1.58)	(-0.75)	(0.96)
Immunization Score	0.0260***	0.0978***	0.0250***	0.0154***
	(4.82)	(5.25)	(3.27)	(2.67)
Last Delivery at Home (Binary)	-0.0505	-0.101	-0.0724	0.000242
	(-1.08)	(-0.59)	(-1.07)	(0.00)
Frequency of Antenatal Care	0.0150	0.119**	0.0148	-0.0113
	(1.40)	(2.51)	(0.99)	(-0.99)
Mother's Schooling	0.111***	0.311*	0.0443	0.0816**
	(2.75)	(1.92)	(0.76)	(2.01)
Mother's age at marriage	-0.0203***	-0.0965***	-0.00799	-0.0209***
	(-2.85)	(-3.87)	(-0.77)	(-2.91)
Child Gender (1 = Boy; 2 = Girl)	-0.0176	0.118	-0.0581	0.0317
	(-0.49)	(0.97)	(-1.17)	(0.81)
Child age	-0.00549**	-0.0199*	-0.0109***	-0.00440
	(-1.97)	(-1.96)	(-2.70)	(-1.40)
Birth Weight	0.00587	-0.0159	-0.00427	0.0137
	(0.44)	(-0.27)	(-0.24)	(0.95)
BPL	-0.0640*	-0.193	0.0513	-0.0537
	(-1.68)	(-1.28)	(0.98)	(-1.25)
Asset Index	-0.0714***	-0.204***	-0.0107	-0.0506***
	(-4.44)	(-3.68)	(-0.43)	(-2.84)

Clean Cooking (Binary)	-0.149 (-1.40)	-0.169 (-0.43)	-0.450*** (-2.58)	0.0311 (0.28)
Number of Female adults	0.0383 (1.17)	0.248** (2.03)	0.0788 (1.60)	0.0187 (0.56)
weight	-0.0145 (-1.48)	-0.0591 (-1.48)	-0.0176 (-1.11)	-0.00640 (-0.67)
_cons	-0.544 (-0.50)	-1.286 (-0.24)	-1.796*** (-2.94)	2.918*** (2.72)
Caste Dummies	Yes	Yes	Yes	Yes
Religion Dummies	Yes	Yes	Yes	Yes
Household Flooring Dummies	Yes	Yes	Yes	Yes
Household Roof Dummies	Yes	Yes	Yes	Yes
Household Wall Dummies	Yes	Yes	Yes	Yes
Block Dummies	Yes	Yes	Yes	Yes
GP Dummies	Yes	Yes	Yes	Yes
ANC Dummies	Yes	Yes	Yes	Yes
N	6047	6055	4945	5996

Table C.10.2: Regression of probabilistic access to toilet on child illness outcomes

	(1) Child Fell Ill in the Past 30 days	(2) Days of Illness	(3) Diarrhoea	(4) Fever
main				
Probability of Accessing toilet	-0.241 (-1.33)	-1.150* (-1.87)	-0.155 (-0.65)	-0.424** (-2.04)
Immunization Score	0.0256***	0.0964***	0.0249***	0.0151***

	(4.77)	(5.18)	(3.25)	(2.61)
Last Delivery at Home (Binary)	-0.0498 (-1.06)	-0.0991 (-0.58)	-0.0731 (-1.07)	0.00217 (0.04)
Frequency of Antenatal Care	0.0175 (1.62)	0.127*** (2.68)	0.0153 (1.01)	-0.00916 (-0.80)
Mother's Schooling	0.109*** (2.72)	0.311* (1.93)	0.0463 (0.79)	0.0828** (2.04)
Mother's age at marriage	-0.0194*** (-2.75)	-0.0929*** (-3.74)	-0.00786 (-0.76)	-0.0199*** (-2.77)
Child Gender (1 = Boy; 2 = Girl)	-0.0196 (-0.55)	0.107 (0.89)	-0.0586 (-1.18)	0.0282 (0.72)
Child age	-0.00544* (-1.95)	-0.0197* (-1.94)	-0.0108*** (-2.68)	-0.00438 (-1.39)
Birth Weight	0.00543 (0.41)	-0.0164 (-0.29)	-0.00402 (-0.23)	0.0139 (0.97)
BPL	-0.0646* (-1.69)	-0.197 (-1.30)	0.0496 (0.95)	-0.0550 (-1.28)
Asset Index	-0.0379** (-2.17)	-0.107* (-1.81)	-0.00899 (-0.34)	-0.0226 (-1.18)
Clean Cooking (Binary)	-0.103 (-0.93)	-0.0166 (-0.04)	-0.446*** (-2.59)	0.0748 (0.64)
Number of Female adults	0.0348 (1.06)	0.242** (1.98)	0.0808 (1.64)	0.0181 (0.54)
weight	-0.0151 (-1.53)	-0.0607 (-1.53)	-0.0178 (-1.12)	-0.00697 (-0.73)

_cons	-0.449 (-0.42)	-0.819 (-0.15)	-1.813*** (-3.00)	2.999*** (2.79)
Caste Dummies	Yes	Yes	Yes	Yes
Religion Dummies	Yes	Yes	Yes	Yes
Household Flooring Dummies	Yes	Yes	Yes	Yes
Household Roof Dummies	Yes	Yes	Yes	Yes
Household Wall Dummies	Yes	Yes	Yes	Yes
Block Dummies	Yes	Yes	Yes	Yes
GP Dummies	Yes	Yes	Yes	Yes
ANC Dummies	Yes	Yes	Yes	Yes
N	6047	6055	4945	5996

Table C.10.3: Regression of probabilistic access to toilets on child nutrition outcomes

	(1) Height-for-age	(2) Weight-for-age	(3) Weight-for-height
Probability of Accessing toilet	0.213 (0.96)	0.135 (0.88)	0.0501 (0.28)
Meat Consumed (past 24 hrs.)	0.729** (2.28)	0.615*** (2.91)	0.264* (1.70)
Milk Consumed (past 24 hrs.)	-0.110** (-2.06)	-0.0625 (-1.49)	0.0157 (0.31)
Last Delivery at Home (Binary)	-0.000208 (-0.00)	-0.0193 (-0.38)	-0.0184 (-0.29)
Postnatal	0.0111 (0.19)	-0.00433 (-0.10)	-0.0192 (-0.34)

Immunization Score	-0.0133* (-1.68)	0.00162 (0.31)	0.0140** (2.54)
Frequency of Antenatal Care	0.0480*** (3.15)	0.0211* (1.92)	-0.00924 (-0.64)
Mother's Schooling	0.306*** (5.13)	0.250*** (5.64)	0.102* (1.97)
Mother's age at marriage	0.0119 (1.49)	0.00323 (0.51)	-0.00546 (-0.78)
Child Gender (1 = Boy; 2 = Girl)	0.172*** (3.50)	0.0812** (2.16)	0.0810* (1.72)
Child age	-0.0855*** (-18.10)	-0.0191*** (-6.09)	0.0192*** (4.76)
Birth Weight	0.0259 (1.35)	0.0186 (1.28)	0.00667 (0.33)
BPL	-0.0256 (-0.54)	-0.0150 (-0.40)	0.00153 (0.03)
Asset Index	0.0959*** (4.10)	0.0821*** (5.38)	0.0327 (1.62)
Clean Cooking (Binary)	0.0407 (0.23)	-0.0237 (-0.25)	-0.0311 (-0.24)
Number of Female adults	-0.00307 (-0.07)	0.0645* (1.90)	0.101** (2.56)
weight	-0.00143 (-0.12)	-0.0195** (-2.17)	-0.0316*** (-2.86)
_cons	-3.816*** (-4.39)	-3.252*** (-3.68)	-2.082** (-2.02)

Caste Dummies	Yes	Yes	Yes
Religion Dummies	Yes	Yes	Yes
Household Flooring Dummies	Yes	Yes	Yes
Household Roof Dummies	Yes	Yes	Yes
Household Wall Dummies	Yes	Yes	Yes
Block Dummies	Yes	Yes	Yes
GP Dummies	Yes	Yes	Yes
ANC Dummies	Yes	Yes	Yes
N	6049	6048	6041

Table C.10.4: Regression of birth order on child nutrition outcomes

	(1) Height-for-age	(2) Weight-for-age	(3) Weight-for-height
birth_order	0.0118 (0.67)	-0.0307** (-2.06)	-0.0530*** (-3.27)
Probability of Accessing toilet	0.327 (1.41)	0.182 (1.15)	0.0169 (0.09)
Meat Consumed (past 24 hrs)	0.688** (2.18)	0.592*** (2.90)	0.303* (1.82)
Milk Consumed (past 24 hrs)	-0.0837 (-1.52)	-0.0558 (-1.30)	0.00361 (0.07)
Diarrhoea	-0.154** (-2.16)	-0.264*** (-4.26)	-0.271*** (-3.62)
Fever	-0.0509 (-0.83)	-0.135*** (-2.92)	-0.141** (-2.33)

Last Delivery at Home (Binary)	-0.0198 (-0.29)	-0.0148 (-0.28)	0.00384 (0.06)
Postnatal	0.0360 (0.61)	0.0130 (0.29)	-0.0160 (-0.28)
Immunization Score	-0.0105 (-1.28)	0.00281 (0.51)	0.0136** (2.38)
Frequency of Antenatal Care	0.0477*** (3.11)	0.0183 (1.60)	-0.0141 (-0.96)
Mother's Schooling	0.314*** (5.24)	0.250*** (5.53)	0.0924* (1.75)
Mother's age at marriage	0.00802 (0.95)	-0.00237 (-0.35)	-0.00980 (-1.27)
Child Gender (1 = Boy; 2 = Girl)	0.161*** (3.24)	0.0653* (1.70)	0.0672 (1.40)
Child age	-0.0892*** (-17.86)	-0.0216*** (-6.70)	0.0180*** (4.37)
Birth Weight	0.0210 (1.11)	0.0154 (1.07)	0.00693 (0.33)
BPL	-0.0699 (-1.41)	-0.0319 (-0.85)	0.0134 (0.27)
Asset Index	0.0858*** (3.67)	0.0717*** (4.56)	0.0256 (1.23)
Clean Cooking (Binary)	0.00863 (0.05)	-0.0169 (-0.17)	0.0140 (0.10)
Number of Female adults	0.0242 (0.52)	0.0412 (1.07)	0.0476 (1.05)

weight	-0.00589 (-0.43)	-0.00648 (-0.64)	-0.00954 (-0.75)
_cons	0.152 (0.12)	-2.701*** (-2.83)	0.363 (0.81)
Caste Dummies	Yes	Yes	Yes
Religion Dummies	Yes	Yes	Yes
Household Flooring Dummies	Yes	Yes	Yes
Household Roof Dummies	Yes	Yes	Yes
Household Wall Dummies	Yes	Yes	Yes
Block Dummies	Yes	Yes	Yes
GP Dummies	Yes	Yes	Yes
ANC Dummies	Yes	Yes	Yes
N	5719	5718	5713

Table C.10.5: Regression of birth order on child nutrition outcomes

	(1) Height-for-age	(2) Weight-for-age	(3) Weight-for-height
birth_order	0.0885* (1.88)	-0.0130 (-0.37)	-0.0917** (-2.28)
birth_order_sex	-0.0512* (-1.79)	-0.0118 (-0.53)	0.0259 (1.08)
Probability of Accessing toilet	0.332 (1.44)	0.184 (1.16)	0.0145 (0.08)
Meat Consumed (past 24 hrs)	0.693** (2.20)	0.593*** (2.90)	0.301* (1.80)
Milk Consumed (past 24 hrs)	-0.0828	-0.0556	0.00313

	(-1.51)	(-1.29)	(0.06)
Diarrhoea	-0.150** (-2.13)	-0.264*** (-4.24)	-0.273*** (-3.64)
Fever	-0.0498 (-0.82)	-0.135*** (-2.92)	-0.142** (-2.35)
Last Delivery at Home (Binary)	-0.0173 (-0.25)	-0.0143 (-0.27)	0.00259 (0.04)
Postnatal	0.0366 (0.62)	0.0131 (0.30)	-0.0163 (-0.29)
Immunization Score	-0.0106 (-1.29)	0.00279 (0.50)	0.0136** (2.39)
Frequency of Antenatal Care	0.0480*** (3.13)	0.0183 (1.61)	-0.0143 (-0.97)
Mother's Schooling	0.314*** (5.24)	0.250*** (5.53)	0.0925* (1.75)
Mother's age at marriage	0.00798 (0.95)	-0.00238 (-0.35)	-0.00978 (-1.27)
Child Gender (1 = Boy; 2 = Girl)	0.304*** (3.18)	0.0981 (1.30)	-0.00504 (-0.06)
Child age	-0.0891*** (-17.83)	-0.0216*** (-6.69)	0.0180*** (4.37)
Birth Weight	0.0218 (1.16)	0.0156 (1.08)	0.00652 (0.31)
BPL	-0.0703 (-1.42)	-0.0320 (-0.86)	0.0136 (0.27)
Asset Index	0.0854***	0.0717***	0.0258

	(3.65)	(4.56)	(1.24)
Clean Cooking (Binary)	0.00672 (0.04)	-0.0174 (-0.18)	0.0150 (0.11)
Number of Female adults	0.0268 (0.58)	0.0418 (1.09)	0.0463 (1.02)
weight	-0.00622 (-0.45)	-0.00656 (-0.65)	-0.00937 (-0.74)
_cons	-0.192 (-0.15)	-2.785*** (-2.85)	-0.517 (-0.63)
Caste Dummies	Yes	Yes	Yes
Religion Dummies	Yes	Yes	Yes
Household Flooring Dummies	Yes	Yes	Yes
Household Roof Dummies	Yes	Yes	Yes
Household Wall Dummies	Yes	Yes	Yes
Block Dummies	Yes	Yes	Yes
GP Dummies	Yes	Yes	Yes
ANC Dummies	Yes	Yes	Yes
N	5719	5718	5713

Table C.10.6: T-test of difference in means of child nutrition outcomes

	Height-for-age	Weight-for-age	Weight-for-height
THR received?	-2.24***	-2.18**	-1.32
(n = 2813)	(0.03)	(0.03)	(0.03)
THR not received	-1.99	-2.09	-1.37
(n = 3335)	(0.03)	(0.02)	(0.03)

Table C.10.7: Regression of probabilistic access to |THR on child nutrition outcomes

	(1) Height-for-age	(2) Weight-for-age	(3) Weight-for-height
Probability of receiving THR	-0.442 (-0.53)	0.398 (0.75)	1.075 (1.38)
THR consumed by child only	0.138 (0.99)	0.142 (1.53)	0.0857 (0.74)
THR consumed by entire family but child awarded primacy	-0.0774 (-1.04)	-0.179*** (-3.55)	-0.193*** (-3.27)
THR shared by family	-0.0563 (-0.77)	0.0150 (0.29)	0.0898 (1.42)
Probability of Accessing toilet	0.209 (0.93)	0.102 (0.65)	0.00591 (0.03)
Meat Consumed (past 24 hrs)	0.726** (2.29)	0.594*** (2.86)	0.233 (1.51)
Milk Consumed (past 24 hrs)	-0.109** (-2.02)	-0.0561 (-1.35)	0.0240 (0.47)
Diarrhoea	-0.148** (-2.13)	-0.240*** (-3.85)	-0.240*** (-3.32)
Fever	-0.0605 (-1.00)	-0.123*** (-2.73)	-0.117** (-2.06)
Last Delivery at Home (Binary)	-0.00309 (-0.04)	-0.0277 (-0.55)	-0.0291 (-0.46)
Postnatal	0.0250 (0.43)	0.00277 (0.06)	-0.0210 (-0.37)
Immunization Score	-0.00708 (-0.57)	-0.00107 (-0.13)	0.00328 (0.29)

Frequency of Antenatal Care	0.0456*** (2.92)	0.0221** (1.98)	-0.00499 (-0.35)
Mother's Schooling	0.313*** (5.23)	0.262*** (5.93)	0.115** (2.21)
Mother's age at marriage	0.0128 (1.56)	0.00572 (0.93)	-0.00196 (-0.29)
Child Gender (1 = Boy; 2 = Girl)	0.181*** (3.61)	0.0717* (1.83)	0.0576 (1.16)
Child age	-0.0844*** (-14.50)	-0.0211*** (-5.77)	0.0149*** (2.92)
Birth Weight	0.0241 (1.25)	0.0188 (1.30)	0.00861 (0.42)
BPL	-0.00512 (-0.09)	-0.0306 (-0.69)	-0.0442 (-0.80)
Asset Index	0.0939*** (3.97)	0.0801*** (5.21)	0.0318 (1.59)
Clean Cooking (Binary)	0.0239 (0.13)	-0.0257 (-0.27)	-0.0195 (-0.14)
Number of Female adults	-0.00740 (-0.25)	0.0161 (0.64)	0.0240 (0.89)
_cons	-1.225 (-1.08)	-3.325*** (-3.90)	-1.959** (-2.29)
Caste Dummies	Yes	Yes	Yes
Religion Dummies	Yes	Yes	Yes
Household Flooring Dummies	Yes	Yes	Yes

Household Roof Dummies	Yes	Yes	Yes
Household Wall Dummies	Yes	Yes	Yes
Block Dummies	Yes	Yes	Yes
GP Dummies	Yes	Yes	Yes
ANC Dummies	Yes	Yes	Yes
N	6018	6017	6010

Annex D Ethics Protocol and Quality Control

This annex lists out various ethics procedures and quality control (at various levels) OPM followed in designing and managing the baseline evaluation survey.

Research Ethics

Our research was conducted to the highest ethical standard, in line with the principles outlined in DfID's Ethics Principles for Research and Evaluation (July 2011). This included ensuring that expectations were not raised, confidentiality was maintained and respondents were informed about the purpose of the survey and asked to participate voluntarily.

Informed verbal consent was obtained from the research subjects. It was ensured that only female interviewers take the consent and interview of the female respondent.

No personal identifiers were used in any form of reporting or dissemination. Personal identifications were linked with a unique identifier and were kept securely.

No information was published that could identify the respondent. Paper copies of questionnaires were stored for three years in a secure location; only the investigation team were able to access them.

Participation in the research was voluntary and respondents were free to stop interviews at any time or skip any questions they did not want to answer. They had the right to ask questions at any point before, during or after the interview was completed.

The research staff and the participants were informed about the purpose, methods and benefits and intended possible uses of the research.

All interviews were conducted by trained staff and in conditions of privacy. All interviews at the level of the community were usually conducted at the person's dwelling, or in a private room.

Only highly trained enumerators were allowed to take anthropometric information.

Pre Evaluation Preparation Phase

- **Pre-test:** The main purpose of this was to finalise the design and content of the instruments. Refinements and finalisation of the quantitative and qualitative instruments were made on the basis of (several rounds of) pre-testing with 2 aims in mind – (1) to ensure local specific contexts were adequately addressed by the tools and (2) information collected using tools were providing information to calculate relevant indicators to reflect the theory of change. This included a full **pilot** after the tools had been initially redesigned. This was conducted by the national survey team working alongside the field team supervisors. It tested survey protocols, procedures and instruments in an environment as close as possible to those that were eventually encountered in the actual survey. The translation, consistency and integrity of the quantitative instruments was checked. Lessons learned from the pilot were incorporated into the design before roll-out of the survey.

- **Finalised Evaluation Plan** and draft tables

- **Development of manuals and guidelines:** fieldwork manuals were developed for enumerators and guidelines were developed for other key staff: fieldwork monitoring teams and data entry staff.

- **Training and full team pilot:** the fieldwork team underwent a 10-day long training course specific to the needs of the survey. Extensive training is vital to successful data collection. The training involved international experts to provide technical expertise. It combined an introduction to the survey and the instruments with detailed training on the instruments as well as the protocols for their application. It used role plays and extensive practical exercises in the field it were concluded by a pilot phase in the field ('a dress rehearsal').

- **Community preparation:** prior to visiting a community, the community needed to be informed in order to facilitate cooperation and as a basic matter of courtesy. Furthermore there was a need to secure the necessary permissions to facilitate the fieldwork.

Evaluation Phase

Fieldwork was carried out in an intensive manner. The survey was carried out by 10 teams with each team comprised of 6 members as follows –

- Three enumerators to interview households' heads and women
- Two dedicated health enumerators to take anthropometric measurements of women and children and to carry out haemoglobin tests for women
    - Health enumerators had previous experience in measuring height and weight of young children mothers. They were separately trained in class room and field by a senior anthropometry expert. Their care and concern towards the beneficiary and hygiene practice while performing the task were monitored thoroughly.
    - For anthropometry measurements, OPM are using high quality weight and height scales by the reputed brand Tanita. One baby weight machine with height measure, one adult machine and one height stadiometer and one Hemocue were provided per team.
- One dedicated supervisor.

The fieldwork was completed on the 20th September 2014. Due to the high non-response rate overall in the survey, caused by households travelling during the festival season, all PSUs were revisited so that households who were previously absent were included in the final sample.

Overall, to achieve the target of 6,000 households, we had sampled 6,600 households and assumed a non-response rate of 10%. We ended up with 6,056 households, so the survey was larger than the original target. Of these households, 5954 consented to anthropometric measurement and 5896 to haemoglobin readings.

The summary matrix for the completed sample is:

	Main			Revisit			Total		
Block	**Main Call**	**Main Anthro**	**Main HB**	**Revisit Call**	**Revisit Anthro**	**Revisit HB**	**Total call**	**Total Anthro**	**Total HB**
Atri	1250	1214	1182	308	306	306	1558	1520	1488
Wazirganj	1319	1275	1258	215	215	215	1534	1490	1473
Mohra	1219	1210	1207	230	229	229	1449	1439	1436
Khizarsarai	1144	1134	1128	371	371	371	1515	1505	1499
Total							**6056**	**5954**	**5896**

Data processing and monitoring

Data entry was undertaken in the field using Computer Assisted Personal Interviewing (CAPI) technology. A full time data editor reviewed data on a daily basis and fed back observed issues to the teams to recheck specific values and correct mistakes. The CAPI software had extensive consistency, range and validity checks.

Full time field supervisors and field monitors ensured that around 10% of interviews were spot-checked and a further 5% were back checked. Throughout the period of data entry, enumerators and supervisors were expected to be available for any query on individual questionnaires where necessary.

Sample completion rates and losses were reviewed and reported.

Annex E References

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