Program Evaluation
Integrated Nutrition Program
Krishna District, Andhra Pradesh

November, 2019
## LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AWC</td>
<td>Anganwadi Center</td>
</tr>
<tr>
<td>2</td>
<td>AWW</td>
<td>Anganwadi Worker</td>
</tr>
<tr>
<td>3</td>
<td>HH</td>
<td>Household</td>
</tr>
<tr>
<td>4</td>
<td>ICDS</td>
<td>Integrated Child Development Services</td>
</tr>
<tr>
<td>5</td>
<td>INP</td>
<td>Integrated Nutrition Program</td>
</tr>
<tr>
<td>6</td>
<td>IEC</td>
<td>Information Education and Communication</td>
</tr>
<tr>
<td>7</td>
<td>LW</td>
<td>Lactating Women</td>
</tr>
<tr>
<td>8</td>
<td>MWCD</td>
<td>Ministry of Women and Child Development</td>
</tr>
<tr>
<td>9</td>
<td>PLW</td>
<td>Pregnant &amp; Lactating women</td>
</tr>
<tr>
<td>10</td>
<td>PW</td>
<td>Pregnant Women</td>
</tr>
<tr>
<td>11</td>
<td>VHND</td>
<td>Village Health Sanitation and Nutrition Day</td>
</tr>
<tr>
<td>12</td>
<td>VPC</td>
<td>Vijayawada Parliamentary Constituency</td>
</tr>
<tr>
<td>13</td>
<td>WHO</td>
<td>World Health Organisation</td>
</tr>
<tr>
<td>14</td>
<td>IFA Tablet</td>
<td>Iron/Folic Acid Tablet</td>
</tr>
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EXECUTIVE SUMMARY

Anganwadi Centres were set up under the ICDS Scheme to work as the village hub for all health and nutrition-related activities in the village. The key beneficiaries of the scheme included children in the age group of 0-6 years, pregnant women and lactating mothers.

There are over 1,000 AWCs operating in villages of Vijayawada rural parliamentary constituency. A baseline study was conducted by Vijayavahini Charitable Foundation (VCF) of 477 AWCs which function from their own buildings to assess the on-ground condition of these centres. The results revealed that most centres were operating in a dire state:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Attributes</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure</td>
<td>Separate store room, flooring, boundary wall, almirah, dustbin, tube light</td>
<td>Only c. 50% of AWCs had access to 3 of 5 infrastructure facilities</td>
</tr>
<tr>
<td>Utilities</td>
<td>Electricity, toilet, children’s commode, handwashing facility</td>
<td>c. 90% of AWCs had access to only 2 of 5 utilities</td>
</tr>
<tr>
<td>Tools</td>
<td>Salter weighing machine, weighing scale attached to roof, weighing sack, infantometer, stadiometer, MUAC tape, PW MUAC tape, PW examination table</td>
<td>c. 70% of AWCs had access to less than 7 desired tools</td>
</tr>
<tr>
<td>Knowledge levels</td>
<td>Select attributes of IYCF and sanitation</td>
<td>Less than 50% of respondents successfully recognizing correct practices</td>
</tr>
</tbody>
</table>

The above conditions had led to:

- Significantly poor awareness levels among PLWs, with less than 15% of respondents being able to successfully recognize correct practices, and
- Decline in enrolment and attendance levels of beneficiaries

This led to Tata Trusts taking up a Transformation of Anganwadi Centres program to:

- Provide an enabling environment to beneficiaries
- Enhance joyful learning for kids
- Improve hygiene practices
- Improve awareness of IYCF practices
- Increase attendance
- Increase community participation

The approach adopted towards implementing the program is indicated in figure below:
The program has been under implementation for more than a year now. At this stage, Tata Trusts intends to evaluate and document the impact of activities undertaken so far and assess the sustainability of the outcomes in the context of the program objectives. Arete Advisors LLP was engaged for undertaking this study.

As part of the program evaluation study, Arete visited 50 AWCs across 15 mandals and 36 villages and also interviewed 261 beneficiaries including pregnant women, lactating women and mothers of preschool children.

The following were the key insights from the study:

**Impact on physical condition of AWC**

- The program has enabled creation of a conducive environment for beneficiaries of transformed AWCs with availability of better infrastructure and access to utilities vs non-transformed centres and with respect to condition observed in the past (during baseline survey)\(^1\)

<table>
<thead>
<tr>
<th></th>
<th>Infrastructure</th>
<th>Utilities</th>
<th>Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed centres (baseline)</td>
<td>3.1</td>
<td>2.5</td>
<td>2.7</td>
</tr>
<tr>
<td>Non-transformed centres (Now)</td>
<td>3.2</td>
<td>2.6</td>
<td>4.1</td>
</tr>
<tr>
<td>Transformed centres (Now)</td>
<td>4.2</td>
<td>3.1</td>
<td>4.2</td>
</tr>
</tbody>
</table>

- Access to tools on the other hand, has largely improved across transformed and non-transformed AWCs vs results observed from the baseline survey as the Government of Andhra Pradesh (under the POSHAN Abhiyan has helped in providing weighing machines and Stadiometers) and VCF, both have helped improve availability.

- **There is a need to put-in-place a monitoring and inspection framework to evaluate condition of facilities (physical) provided as part of the program, there intended use and reduce breakdown time.**

**Impact on IYCF knowledge on AWWs**

- Knowledge level of AWWs (assessed across select attributes of IYCF) has improved, especially for the workers who have undergone training as part of the program

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\(^1\) Results are expressed as average score calculated based on availability of infrastructure, utilities and tools. Maximum score that can be scored is Infrastructure – 6, utilities – 5 and tools – 5.
- Our findings suggest a need for increasing engagement with AWWs below the age of 30; with a focus on disseminating knowledge on breastfeeding benefits, positions and attachment guidelines.

Impact of IYCF knowledge on PLWs:

- VHNDs significantly impact knowledge levels (assessed across select attributes of IYCF) of PW, much more than impact of only the AWC transformation (through art paintings).
- On the other hand, knowledge levels of mothers attending transformed AWCs has been observed to be at par with those attending VHNDs.
- In both cases, knowledge levels of beneficiaries associated with transformed centres are better than beneficiaries of non-transformed centres.

<table>
<thead>
<tr>
<th></th>
<th>Pregnant women</th>
<th>Mothers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Score</td>
<td>12.0</td>
<td>19.0</td>
</tr>
<tr>
<td>Non-transformed centres</td>
<td>9.1</td>
<td>11.6</td>
</tr>
<tr>
<td>Transformed centres</td>
<td>9.4</td>
<td>12.5</td>
</tr>
<tr>
<td>Not attending VHNDs</td>
<td>6.6</td>
<td>9.9</td>
</tr>
<tr>
<td>Attending VHNDs</td>
<td>9.7</td>
<td>12.5</td>
</tr>
</tbody>
</table>

- Research indicates a need to increase engagement with PW below 30 years of age with specific focus on breastfeeding practices and increase awareness towards the importance of VHNDs.

Impact on hygiene awareness and practices:

- Knowledge regarding hygiene practices is only marginally better among PLWs, however the same is significantly better for children associated with transformed AWCs.

<table>
<thead>
<tr>
<th></th>
<th>PLWs (% of respondents)</th>
<th>Children (% of respondents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Transformed AWC</td>
<td>75%</td>
<td>38%</td>
</tr>
<tr>
<td>Transformed AWC, Handwashing instances while dealing with children (&gt;2 activities):</td>
<td>62%</td>
<td>78%</td>
</tr>
<tr>
<td>Non Transformed AWC</td>
<td>55%</td>
<td>67%</td>
</tr>
<tr>
<td>Transformed AWC, Handwashing practice (using soap):</td>
<td>60%</td>
<td>78%</td>
</tr>
</tbody>
</table>

- In addition to administering knowledge around hygiene, infrastructure availability needs to be prioritized for specific infrastructure directly linked with behavioural change (e.g.: c. 74% of children in centres with toilets indicated awareness about using them vs c. 47% of children in centres without toilets).

Perception on AWC Transformation:

- Majority (c. 94%) beneficiaries have indicated that the implementation of the transformation program has improved the infrastructure of the AWC.
- Majority beneficiaries (c. 58-63%) have indicated that the implementation of the transformation program has improved the performance of AWWs.
Impact on beneficiary enrolment and attendance

- Attendance and enrolment has improved by c. 10% for PLWs in transformed AWCs and declined by c. 10% in non-transformed AWCs over the last two years (2017 – 2019)
- Enrolment of children has reduced across all AWCs – transformed and non-transformed, on account of parents’ preference for private schools, driven by reasons including better learning outcomes, better teachers, English medium of teaching, better infrastructure, etc.
- However, the success of the program can be gauged by the fact that, children attendance has marginally improved for AWCs transformed during the initial stages of the program (i.e. prior to June 2018, have been in operation for over a year)

<table>
<thead>
<tr>
<th>PW – Enrolment</th>
<th>LW – Enrolment</th>
<th>Children – Enrolment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Transformed</td>
<td>7.04</td>
<td>5.81</td>
</tr>
<tr>
<td>Transformed</td>
<td>6.53</td>
<td>5.18</td>
</tr>
<tr>
<td>Non Transformed</td>
<td>6.24</td>
<td>5.49</td>
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<tr>
<td>Transformed</td>
<td>6.93</td>
<td>5.99</td>
</tr>
<tr>
<td>Non Transformed</td>
<td>16.87</td>
<td>15.30</td>
</tr>
<tr>
<td>Transformed</td>
<td>15.26</td>
<td>13.89</td>
</tr>
<tr>
<td>Transformed</td>
<td>20.40</td>
<td>17.89</td>
</tr>
<tr>
<td>Transformed</td>
<td>20.40</td>
<td>17.89</td>
</tr>
<tr>
<td>Non Transformed</td>
<td>15.26</td>
<td>13.89</td>
</tr>
<tr>
<td>Transformed</td>
<td>15.30</td>
<td>13.89</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PW – Attendance</th>
<th>LW – Attendance</th>
<th>Children – Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Transformed</td>
<td>6.37</td>
<td>5.38</td>
</tr>
<tr>
<td>Transformed</td>
<td>6.28</td>
<td>5.01</td>
</tr>
<tr>
<td>Non Transformed</td>
<td>5.64</td>
<td>4.99</td>
</tr>
<tr>
<td>Transformed</td>
<td>6.33</td>
<td>5.38</td>
</tr>
<tr>
<td>Non Transformed</td>
<td>13.36</td>
<td>11.55</td>
</tr>
<tr>
<td>Transformed</td>
<td>12.51</td>
<td>10.74</td>
</tr>
<tr>
<td>Transformed</td>
<td>12.44</td>
<td>13.59</td>
</tr>
<tr>
<td>Transformed</td>
<td>12.44</td>
<td>13.59</td>
</tr>
<tr>
<td>Non Transformed</td>
<td>11.55</td>
<td>10.74</td>
</tr>
<tr>
<td>Transformed</td>
<td>12.51</td>
<td>10.74</td>
</tr>
<tr>
<td>Transformed</td>
<td>12.44</td>
<td>13.59</td>
</tr>
</tbody>
</table>

Impact on children learning levels

- A significant majority of households (85-90%) have noticed an improvement in the learning levels and behaviour of children across all AWCs
- Interactions with children indicate that:
  - Learning outcomes of children of transformed AWCs are only marginally better than non-transformed AWCs
  - The frequency of classroom activities (e.g. art & craft, readiness) significantly impact learning outcomes
- Need to structure learning at AWCs by supporting them in creating a defined time table and ensuring availability of educational kits
Background
Introduction to the project
1 BACKGROUND

Anganwadi Centres (AWCs) were set up under the Integrated Child Development Services (ICDS) Scheme. The centres were envisioned to function as a hub for all health and nutrition-related activities in the village. Key beneficiaries of the scheme include children in the age group of 0-6 years, pregnant women and lactating mothers.

The AWCs are expected to offer six key services to their beneficiaries:
1. Supplementary Nutrition
2. Pre-School Non-Formal Education
3. Nutrition and Health Education
4. Immunization
5. Health Check-ups
6. Referral Services

For every AWC to effectively carry out these activities, they require basic infrastructure, utilities and facilities.

The scheme mandates that each AWC must at least have:
- A separate sitting-area for children and women
- A kitchen
- A store room
- Informative center for PLWs
- Pre-school education
- Child-friendly toilets
- Space for children to play
- Child-friendly environment

1.1 Need for program evaluation

The AWC Transformation Program was launched by VCF as part of their Integrated Nutrition Program in Mid-2018.

With the initial phases of the Transformation project complete and the next phases in progress, VCF intends to evaluate and document the impact of the program activities and the sustainability of the outcomes in the context of the program objectives. The objectives of this assessment included:

- Enrolment and attendance trends at Transformed AWCs
- Effectiveness of the program by comparing with Non-transformed AWCs
- Knowledge, attitude and practices among Anganwadi Workers (AWWs), Pregnant & Lactating Women (PLWs) with regard to 1,000 days (Outcome of the art paintings)
- Impact, if any, on learning outcomes of the pre-school children
- Impact on VHND events
- Perception on overall services provided by the Transformed AWCs

Towards this, Arete Advisors LLP was engaged for undertaking a comprehensive impact assessment study of the Transformation project.

About ICDS

Launched in 1975, the Integrated Child Development Services Scheme is one of the flagship programs of the Government of India. The key objectives of the Scheme are:

1. To improve the nutritional and health status of children in the age-group 0-6 years
2. To lay the foundation for proper psychological, physical and social development of the child
3. To reduce the incidence of mortality, morbidity, malnutrition, and school dropout rate
4. To achieve effective co-ordination of policy and implementation across various departments to promote child development;
5. To enhance the capability of the mother to look after normal health and nutritional needs of the child through proper nutrition and health education.
2 TRANSFORMATION PROGRAM

2.1 Need for transformation

More than 1,000 AWCs are currently operational in rural areas in the Vijayawada Parliamentary Constituency (VPC). To assess the current status of AWCs in the VPC region, VCF conducted a detailed survey of more than 477 AWCs operating from their own building. The baseline study sought to identify the physical condition of the AWCs, attendance and knowledge levels of AWWs and beneficiaries.

The study covered the following areas:

<table>
<thead>
<tr>
<th>Survey theme</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical condition</td>
<td>• Infrastructure – Separate store room, flooring, boundary wall, almirah, dustbin, tube light</td>
</tr>
<tr>
<td></td>
<td>• Utilities – Electricity, toilet, children’s commode, handwashing facility</td>
</tr>
<tr>
<td></td>
<td>• Tools – Salter weighing machine, weighing scale hook attached to roof, weighing sack, infantometer, stadiometer, MUAC tape, pregnant woman weighing scale, pregnancy MUAC tape, pregnant woman examination table</td>
</tr>
<tr>
<td>Attendance trends</td>
<td>Average attendance levels of children and pregnant and lactating women (PLWs)</td>
</tr>
<tr>
<td>Knowledge indicators</td>
<td>Knowledge of AWWs on:</td>
</tr>
<tr>
<td></td>
<td>• Breastfeeding practices – Initiation of breastfeeding, exclusive breastfeeding up to 6 months, position and attachment of breastfeeding</td>
</tr>
<tr>
<td></td>
<td>• Complementary feeding</td>
</tr>
<tr>
<td></td>
<td>• Growth monitoring of children</td>
</tr>
<tr>
<td></td>
<td>• Hygiene practices</td>
</tr>
<tr>
<td></td>
<td>Knowledge of beneficiaries (PLWs)</td>
</tr>
<tr>
<td></td>
<td>• Breastfeeding practice – Exclusive breastfeeding up to 6 months, initiation of breastfeeding</td>
</tr>
<tr>
<td></td>
<td>• Complementary feeding</td>
</tr>
</tbody>
</table>

The results of the survey indicated that the AWCs were in a dire situation with respect to the availability of infrastructure, utilities and tools and knowledge levels of AWWs.

- Physical condition of AWCs - The results of the survey have been interpreted by assigning a score of 1 point for each parameter, if available at the AWC, across infrastructure, utilities and tools.

Availability of infrastructure:

Only c. 50% of AWCs had access to at least 3 out of 5 infrastructure facilities covered as part of the survey. Infrastructure predominantly found lacking included boundary wall (present in only c. 27% cases) and separate store room (present in only c. 44% cases).

![Figure 2-1: Availability of infrastructure (baseline survey)](image-url)
Access to utilities:
c. 70% of the AWCs had access to at least 2 out of 5 basic utilities with significantly limited access to children’s commode (present in only c. 5% cases), handwashing (present in only c. 13% cases) and toilet (present in only c. 38% cases)

Access to tools:
c. 70% of the AWCs had access to less than at least 7 out of 9 necessary tools with limited availability of pregnant woman examination table (present in only c. 25% cases), infantometer (present in only c. 28% cases), weighing sack (present in only c. 40% cases), and stadiometer (present in only c. 49% cases)

- Knowledge levels of AWWs – Knowledge levels were tested across select attributes of IYCF, nutrition and hygiene practices. The results were found to be below average with a recollection rate of less than 50% across all attributes

The poor physical condition of AWCs and lack of proper knowledge among AWWs had translated into poor knowledge and awareness among attending beneficiaries and a consequent decline in attendance and enrolment at these AWCs.

- Knowledge level of PLWs – Knowledge of PLWs was assessed on three select attributes related to IYCF practices – initiation of breastfeeding, exclusive breastfeeding up to 6 months and complementary feeding. The results were very poor with recollection rate of only 15%, 12% and 13% respectively.

- Attendance trends – The attendance levels across all beneficiaries were found to be lower than the State average.

The survey results established an immediate need for revival of these AWCs through upgradation of physical infrastructure and capacity building of AWWs to improving beneficiary enrolment and attendance levels. This led to the initiation of the ‘Transformation of AWCs’ program, by VCF, as a part of the Integrated Nutrition Program.
2.2 Objectives of the transformation program

The objectives of the Transformation program are:
1. Provide an enabling environment to the beneficiaries
2. Enhance joyful learning for the kids
3. Increase in attendance
4. Improvement in hygiene practices
5. Improve the awareness on IYCF practices
6. Increase in community participation

2.3 Approach to program implementation

1. **Situational Analysis**: As part of the program, VCF conducted an as-is assessment of the condition of AWCs (results of which have been discussed above in Section 2.1) to establish the need of the program and identify interventions required for improvement.

2. **Civil Works**: Civil contractors have been appointed to address infrastructure gaps. A total of 23 contractors have been on-boarded for the project. To ensure accurate project monitoring, daily MIS reporting standard has been set in place.

3. **Stakeholder meetings**: Stakeholder meetings are conducted in every village to create awareness about the program. Stakeholders include Sarpanchs, Ward members, SHG women, VDC members, ICDS supervisors, and AWWs of identified AWCs.

4. **Art paintings/IEC**: Artists have been brought on-board to finalize the art paintings / posters for IEC related to IYCF, Nutrition and Hygiene practices to improve awareness levels of AWWs, PLWs and children.

5. **Supply of basic equipment and tools**: AWCs are being supplied with necessary tools including community growth charts, IEC posters, growth monitoring devices, and key tools.

**Existing status of the program**

- **Transformation process has been completed in 35 AWCs of VPC while another 94 AWCs are currently in-progress**.
- The component on pre-school education is in the pipeline along with capacity building of AWWs and supply of educational kits to AWCs.
Study Design

Need, Approach and Methodology employed
3 STUDY: NEED, APPROACH & METHODOLOGY

3.1 Approach

1. Understanding the Program Design

The study was initiated with a review of existing project documents including findings from the baseline survey on infrastructure availability at AWCs and a midline evaluation of knowledge of AWWs and HHs. We interacted extensively with the program team to understand implementation strategy and current status of the program.

2. Research Design

Log frame for the project was constructed to identify program impact, its output and outcome parameters based on interventions undertaken as part of the program. The same has been detailed below:

<table>
<thead>
<tr>
<th>Impact</th>
<th>Improving nutritional outcomes of AWC beneficiaries (Children, PLWs)</th>
<th>Improvement in learning outcomes of children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcomes</td>
<td>Increased number of AWCs as centres of excellence</td>
<td></td>
</tr>
<tr>
<td>Outputs</td>
<td>• Increased access to better infrastructure facilities</td>
<td>• Increased awareness among AWWs</td>
</tr>
<tr>
<td></td>
<td>• Increased access to improved utilities</td>
<td>• Increased awareness among PLWs and Children</td>
</tr>
<tr>
<td></td>
<td>• Increased access to improved tools</td>
<td>• Increased attendance of PWs/LWs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increased attendance of children</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increased access to educational kits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increased number / frequency of activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tasks</td>
<td>• Upgrading infrastructure at AWCs – separate store room, flooring,</td>
<td>• Conducting capacity building programs for</td>
</tr>
<tr>
<td></td>
<td>boundary wall, tube light, almirah and dustbins</td>
<td>AWWs</td>
</tr>
<tr>
<td></td>
<td>• Upgrading access to utilities at AWCs – toilet, children’s</td>
<td>• Awareness campaigns for beneficiaries</td>
</tr>
<tr>
<td></td>
<td>commode, electricity and handwashing facility</td>
<td>• Putting-up awareness-related art work / charts in AWCs</td>
</tr>
<tr>
<td></td>
<td>• Providing tools at AWCs – salter scale, weighing sack, pregnancy</td>
<td>• Supply of tools to aid education delivery</td>
</tr>
<tr>
<td></td>
<td>weight scale, infantometer and stadiometer</td>
<td></td>
</tr>
</tbody>
</table>
There are 477 AWCs in VPC, however the program has only touched upon a few centres in a phased manner. Thus, while evaluating impact of the program, two approaches were followed:

- **Experimental trial** – Random selection of a sample of transformed AWCs to measure the pre (captured as part of baseline survey) and post-program change across key evaluation parameters. The selection of AWCs was based on factors including:
  - Time period, post transformation: 41% of AWCs selected had been in operation for more than a year (covered in phase 1 of program) and 55% of AWCs had been in operation for atleast six months
  - Geographical representation: AWCs selected covered most mandals of the VPC
- **Random control trial** – A controlled group (i.e. non-transformed AWCs) was selected against the randomly selected transformed AWCs to measure impact across key evaluation parameters from the baseline survey, till date. The selection of non-transformed AWCs was based on factors including:
  - The centre is not covered as part of the program
  - The centre is located in the same geography (i.e. village / mandal) as the transformed AWC(s)

### 3. Program evaluation

The results of the field research were collated and analysed to assess the impact of the program. Impact was measured by:

- Comparing changes in evaluation parameters for transformed centres from baseline survey, till date
- Comparing evaluation parameters between transformed and non-transformed centres

### 3.2 Methodology of study

#### 3.2.1 Secondary research

Secondary research was conducted with two key objectives:

1. **Identifying baseline scenario** – Review of baseline study (Baseline survey of ICDS services in VPC) and survey (Survey report of AWCs in VRPC) done prior to program conceptualisation and implementation were done to identify key evaluation metrics covered and which can be used as baseline to measure impact

2. **Identifying evaluation parameters for impact assessment** – Review of interventions done as part of the capacity building program (e.g.: art paintings related with alphabets, fruits, etc. put up with the objective of improving children’s learning) and guidelines on ideal practices associated with IYCF and sanitation (e.g.: Knowledge imparted on importance of 1,000 days)

#### 3.2.2 Primary (field) research

Field research spanned across mandals within the Vijayawada Parliamentary Constituency. The map below indicates the scale:
Field-research consisted of two key components:

1. **Centre visits** – The objective was to understand the impact of the program on access to infrastructure, utilities and tools, knowledge levels of the AWWs and attendance / enrolment trends. The sampling included a quasi-experimental design to ensure higher coverage of AWCs transformed during the first stage of the project. The centres were also chosen to ensure sufficient representation from all mandals.

<table>
<thead>
<tr>
<th>Centre visits (##)</th>
<th>Transformed AWCs</th>
<th>Non-transformed AWCs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>29 (Phase 1: 12, Phase 2: 16, Phase 3: 1)</td>
<td>21</td>
</tr>
</tbody>
</table>

2. **Beneficiary interactions** – The objective was to understand the impact of the program on knowledge levels of beneficiaries (PLWs and Children). The beneficiaries interviewed were those associated with transformed and non-transformed AWCs covered as part of the centre visits. A stratified approach was used to determine the number of PLW beneficiaries to be interviewed at each AWC, while 2-3 children were interviewed at each AWC on the day of the visit. Random selection was done to identify PLW and children.

<table>
<thead>
<tr>
<th>Mandal name</th>
<th>Transformed AWCs</th>
<th>Non-Transformed AWCs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PW</td>
<td>LW</td>
</tr>
<tr>
<td>A. Konduru</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Chandralapadu</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Gampalagudem</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Ibrahimpatnam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jaggayapeta</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Kanchikacherla</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Mylavaram</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Nandigama</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>Reddygudem</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Tiruvuru</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Veerulapadu</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>
3.3 Sample details

3.3.1 Field research tool

The data was gathered from the field using a mix of three tools – questionnaire administered at the AWC, questionnaire administered to PW/LWs and questionnaire administered to the children

1. **AWC questionnaire** – The questionnaire was designed with reference to evaluation parameters covered as part of the baseline survey, guidelines for operation of AWC and knowledge levels of AWWs as defined by the Ministry of Women and Child Development and attendance / enrolment statistics of beneficiaries. The key sections of the questionnaire included:

<table>
<thead>
<tr>
<th>Section</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AWC profile</strong></td>
<td>• Location (Village / mandal), Transformation timeline, Type of centre (Main / mini), Building ownership (Own/rented/shared/standalone)</td>
</tr>
<tr>
<td><strong>AWC operations</strong></td>
<td>• Operational timings and days of the centre, Daily time table, Frequency of pre-school activities, Supplementary nutrition provided and its frequency, AWW attendance, VHNDs conducted and attendance</td>
</tr>
<tr>
<td><strong>AWW demographics</strong></td>
<td>• Qualification and age</td>
</tr>
<tr>
<td><strong>AWW knowledge on IYCF practices</strong></td>
<td>• Trainings received, Knowledge levels around breastfeeding initiation, breastfeeding position and attachments, WHO growth charts and complementary feeding initiation</td>
</tr>
<tr>
<td><strong>AWC facilities</strong></td>
<td>• Availability of infrastructure, utilities and tools</td>
</tr>
</tbody>
</table>

2. **PLW questionnaire** – The questionnaire was designed with reference to evaluation parameters covered as part of the baseline survey and expectations on knowledge levels of PLWs based on awareness activities undertaken (via discussions / art paintings) at the AWC. The key sections of the questionnaire included:

<table>
<thead>
<tr>
<th>Section</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Respondent profile</strong></td>
<td>• Demographics including age, caste and education level, Ration card availability and Month of pregnancy / post-partum</td>
</tr>
<tr>
<td><strong>Household profile</strong></td>
<td>• House Type (Kacca, Pucca, Semi-Pucca), Rooms in House and Availability of assets (TV, Fridge, Coolers, Computers, 2 wheelers)</td>
</tr>
<tr>
<td><strong>AWC operations</strong></td>
<td>• Timings of the AWC visited by the respondent, Supplementary nutrition provided at the centre, THR provision frequency at the centre, Satisfaction with operation of AWC, VHNDs conducted by AWC</td>
</tr>
<tr>
<td><strong>Transformation Impact</strong></td>
<td>• Post transformation impact on the AWC and AWWS</td>
</tr>
<tr>
<td><strong>Hygiene knowledge</strong></td>
<td>• Knowledge regarding handwashing technique and instances of</td>
</tr>
</tbody>
</table>
3. **Children questionnaire** – The questionnaire was designed based on expectations on knowledge levels of children based on learning activities undertaken (via classes / art paintings) at the AWC. Key sections included:

<table>
<thead>
<tr>
<th>Section</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent profile</td>
<td>Demographics including age and caste</td>
</tr>
<tr>
<td>Learning level</td>
<td>Ability of introducing oneself, ability to identify fruits, body parts and animals and ability to count</td>
</tr>
<tr>
<td>Hygiene practices awareness</td>
<td>Knowledge levels associated with toilet usage and handwashing technique</td>
</tr>
</tbody>
</table>

All the questionnaires were prepared online via google forms, while attendance data was captured as notes (digitized post the completion of field research).

### 3.3.2 Field research

Field visits were conducted between the 27th of August, 2019 to 14th of September 2019 to select AWCs in Vijayawada parliamentary constituency. A total of five researchers (Two senior and three junior-level) were deployed on the field during the said period. All researchers underwent an initial two day period of training on administering the questionnaire followed by close handholding by the senior researchers on the team during the first week of field research.

All interviews were conducted in teams of two with each team covering AWCs in 2-3 villages per day, conducting about 15-20 interviews per team per day. Time spent on interviews ranged from 30-45 minutes for the AWC interview, 15-20 minutes for a PLW interview and 10 minutes for a child’s interview.

The interview at AWC, was followed by a physical verification of the facility (infrastructure, utilities and tools), an inspection and recording of attendance / enrolment numbers and capturing photographs (if any) to substantiate research findings.
Study Coverage

Mandal description & demographic profile
4 STUDY AREA CHARACTERISTICS

4.1 Anganwadi centres

- Anganwadi center operate typically for 7 hours opening at 9am, closing at 4pm with children spending most of the day at the center. However PW/LW typically visit the center only during the lunch hour
- AWW profile at across both, transformed and non-transformed centres were almost similar:
  - Majority workers (67%-69%) had received formal education up to 10th Standard
  - c. 70% workers had attendance levels of >95% in a month
  - Workers with experience of 10 years+ were marginally higher at non-transformed centres (86%) vs Transformed centres (77%)

![Figure 4-1: AWC and AWW details](image-url)
4.2 Respondent demographics

The respondents (PWs, Lactating mothers, mothers of children (6m-6 years) interviewed as part of field research are spread across SC, ST and OBC segments. c. 64% of all interviewed respondents scoring below average on the affluence scale²

<table>
<thead>
<tr>
<th>Caste</th>
<th>SC</th>
<th>ST</th>
<th>OBC</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>43%</td>
<td>32%</td>
<td>77%</td>
<td>38%</td>
<td>42%</td>
</tr>
<tr>
<td>39%</td>
<td>64%</td>
<td>33%</td>
<td>50%</td>
<td>100%</td>
</tr>
<tr>
<td>18%</td>
<td>5%</td>
<td>23%</td>
<td>8%</td>
<td>4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Affluence</th>
<th>Disadvantaged</th>
<th>Below Average</th>
<th>Above Average</th>
<th>Affluent</th>
</tr>
</thead>
<tbody>
<tr>
<td>23%</td>
<td>100%</td>
<td>56%</td>
<td>41%</td>
<td>39%</td>
</tr>
<tr>
<td>36%</td>
<td>29%</td>
<td>25%</td>
<td>29%</td>
<td>33%</td>
</tr>
<tr>
<td>18%</td>
<td>8%</td>
<td>10%</td>
<td>6%</td>
<td>8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location</th>
<th>SC</th>
<th>ST</th>
<th>OBC</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Konduru Chandra lapadu</td>
<td>36%</td>
<td>32%</td>
<td>36%</td>
<td>41%</td>
</tr>
<tr>
<td>Gampala guudem</td>
<td>15%</td>
<td>31%</td>
<td>38%</td>
<td>38%</td>
</tr>
<tr>
<td>Ibrahim patnam</td>
<td>10%</td>
<td>24%</td>
<td>26%</td>
<td>8%</td>
</tr>
<tr>
<td>Jaggaya peta</td>
<td>100%</td>
<td>42%</td>
<td>100%</td>
<td>25%</td>
</tr>
<tr>
<td>Kanchi kacherla</td>
<td>17%</td>
<td>11%</td>
<td>21%</td>
<td>21%</td>
</tr>
<tr>
<td>Mylavaram</td>
<td>28%</td>
<td>38%</td>
<td>38%</td>
<td>25%</td>
</tr>
<tr>
<td>Nandiguda</td>
<td>29%</td>
<td>29%</td>
<td>38%</td>
<td>38%</td>
</tr>
<tr>
<td>Reddy guudem</td>
<td>50%</td>
<td>29%</td>
<td>29%</td>
<td>14%</td>
</tr>
<tr>
<td>Tiruvuru</td>
<td>38%</td>
<td>25%</td>
<td>23%</td>
<td>41%</td>
</tr>
<tr>
<td>Veenulapadu</td>
<td>14%</td>
<td>23%</td>
<td>14%</td>
<td>48%</td>
</tr>
</tbody>
</table>

Figure 4-2: Respondent demographics

² - Affluence computation: Affluent – HHs with pucca house, 3 or more rooms in house and holding 4 or more assets out of five; Above average – HHs with pucca house and holding 3 or more assets out of five; Below average – HHs with Pucca or Semi-pucca house holding 2 or more assets out of five; Disadvantaged – All other remaining HHs
Research Findings

Findings from survey
5 RESEARCH FINDINGS

5.1 Availability of infrastructure

Availability of infrastructure is better among Transformed AWCs. However, even among Transformed AWCs, accessibility to boundary wall (41%), separate store room (52%) and dustbin (55%) is relatively poor (presence in 50% or less cases) as compared to other infrastructure facilities.

The images taken during the field visit are presented below:

**Transformed AWCs:** Boundary wall present along with educational paintings at Rajugudem AWC, almirahs and cupboards available for storage in Nallakunta AWC, and separate kitchen and storage room neatly demarcated in Bandipalem AWC. The painting of boundary walls, rooms has created a cheerful and welcoming environment.

**Non-transformed AWCs:** Boundary wall absent around the AWC at Chandrupatla Peda Thanda, rat infestations leading to absence of flooring at AWC Chandralapadu 5 AWC, and non-availability of store room / kitchen in multiple cases leading to storage of food in children’s room and combined kitchen and storage room in Chevitikallu AWC.

In order to evaluate the impact of the program, AWCs – both Transformed and Non-transformed have been scored based on infrastructure availability. Transformed AWCs have also been compared to the status of infrastructure facilities observed during the baseline survey.
Key attributes of infrastructure include:

- Separate store room
- Flooring
- Boundary wall
- Tube light
- Almirah
- Dustbin

Each attribute has been given one point, if it is available at the AWC.

**Transformed AWCs score higher when compared to Non-transformed AWCs on availability of infrastructure;**

Compared to baseline the score has improved by 0.86 SD

Absence of infrastructure impacts attendance levels at AWCs and beneficiary engagement. This is corroborated from anecdotal evidence gathered from field research:

**Perspective on lack of infrastructure**

“There is no boundary wall around the centre and there are always men hanging out around the premises which makes us uncomfortable to attend and sit in the Anganwadi Centre.”

-Beneficiary, Gowravaram 1

“The centre is infested with rats. The kitchen and store rooms are ruined and we had to dig up the flooring due to rat infestation. Even the registers and almirahs are eaten by rats making them unusable. With the cooking happening in the same room as the children sitting, teaching becomes difficult”

-Anganwadi Worker, Chandralapadu 5

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3 - Rajivnagar AWC was not included in baseline survey
4 - AWC VPC baseline calculated based on 477 AWCs included in baseline survey
5.2 Access to utilities

Access to utilities is better among Transformed AWCs. However, even among Transformed AWCs, access to handwashing facility (17%), children’s commode (48%) and toilets (86%) is less than desirable.

Images taken during the field visit are presented below:

**Transformed AWCs:** Municipal or Panchayat taps available for washing hands at Kothuru AWC and functional toilets in Chandralapadu AWC

**Non-transformed AWCs:** No facility to wash hands in Chitella AWC, incomplete toilet construction at Nemali SC AWC; and toilet being used as a store room at Kotha Repudi AWC

In order to evaluate the impact of the program, AWCs – both Transformed and Non-transformed have been scored based on availability of key utilities. Utilities in transformed AWCs have also been compared to availability and functional status observed during the baseline survey.
Utilities include:

- Toilets
- Children’s commode
- Electricity
- Handwashing facilities
- Drinking Water (Municipal Supply/Panchayat Tap)

Each utility has been given one point, if available at the centre.

Transformed AWCs score higher when compared to Non-transformed AWCs on availability of infrastructure; Compared to baseline the score has improved by 0.68 SD

Field research has indicated that access to specific utilities is necessary to improve awareness levels and inculcate behavioral change.

Thus, access to utilities with direct impact to awareness levels / behavioral change should be prioritized; e.g.: toilets (86% access observed during survey), children’s commode (48% access observed during survey), etc.

It is also imperative to ensure availability of utilities (or prevent misuse) to achieve the targeted behavioral change; e.g.: Use of toilet as store room, as observed in Kotha Repudi AWC during field visit

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5. Rajivnagar AWC was not included in baseline survey
6. AWC VPC baseline calculated based on 477 AWCs included in baseline survey
5.3 Access to tools

Availability of tools is similar across Transformed and Non-transformed AWCs. Availability of a few important tools such as weighing sack, infantometer and stadiometer is less than desirable. Images captured during the field research can be seen below:

**Transformed AWCs:** Presence of a salter scale along with a weighing bag to measure a child’s weight in Maddulaparava AWC, a medical kit at Cheemalapadu Peda Thanda AWC and presence of a functional salter scale at Kotha Repudi AWC

**Non-transformed AWCs:** Faulty stadiometer present in Chitella Main AWC and a faulty chart used to measure height at Chevitikallu AWC

In order to evaluate the impact of the program, AWCs – both Transformed and Non-transformed have been scored based on availability of necessary tools. Status of tools in transformed AWCs has also been compared to availability during the baseline survey.
Key tools include
- Salter Scale
- Weighing Sack
- Pregnancy weight scale
- Infantometer
- Stadiometer.

Each utility has been given one point, if available at the centre.

**Transformed AWCs score higher when compared to Non-transformed AWCs on availability of tools;**

**Compared to baseline the score has improved by 1.57 SD**

Growth monitoring of children (0-5 years) is one of the most important activity of an AWC. This requires skill of the AWW (for proper weighing, plotting and interpreting the results) and availability of tools (infantometer – to measure height of infants, stadiometer – measure height of children above 2 years, salter scale – to measure weight of infants and children, etc.) to carry out the task.

Field research has indicated that despite the provision of tools by VCF and/or GoAP (under POSHAN Abhiyan), there were centres providing limited/no growth monitoring services to the beneficiaries. Key reasons for the same included:

- **Lack of usage of tools:** Few households have reported lack of growth monitoring by the AWC, despite availability of stadiometer (e.g: Ganaparavam 1 AWC).
- **Non-functional instruments:** More than one instance of broken stadiometers has been observed (Chandralapadu 3 and Chitella AWC). Interactions with AWWs indicate that typical time required to replace a non-functional instrument is about 1-2 months. Further, the process doesn’t appear to be structured (i.e. relying on verbal communication and notification to the VCF representative).

There is a need to set-up a monitoring and inspection framework to periodically assess use of tools (can also include infrastructure and utilities) provided to the AWC and knowhow of AWWs on the correct method of operation. An online asset register (for facilities provided as part of the program) can also be created to maintain a list of facilities provided and monitor their health. The register can be linked with the AWC online app (currently being used by AWWs), through which AWWs can raise ‘repair / replacement requests’. The service requests can be serviced centrally by the VCF team, through maintenance tie-ups with OEMs and civil contractors.

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7. Rajivnagar AWC was not included in baseline survey
8. AWC VPC baseline calculated based on 477 AWCs included in baseline survey
Knowledge
AWWs & Beneficiaries
5.4 Knowledge regarding IYCF – AWWs

5.4.1 Knowledge dissemination

Knowledge dissemination under the program has been done through a mix of wall art paintings and capacity building workshops for AWWs. The workshops covered topics such as:

- Importance of 1,000 days including prenatal period and first two years of life of a child
- Best practices in breastfeeding
- Complementary foods and their introduction
- Immunization
- Feeding during illness

Food and nutrient intake to prevent SAM among children, anemia among adolescent girls and PLWs

![Figure 5-16: Wall art at Kamaturu AWC](image1)

![Figure 5-17: Wall art at Chemalapadu Peda Thanda AWC](image2)

5.4.2 Field observations

Art paintings (including informative posters) have been put-up across all Transformed AWCs. However, capacity building intervention has reached only few AWWs – with only **32% of the AWWs having undergone training as part of the transformation program**.

5.4.3 Impact assessment approach

As part of field research, AWWs were interviewed on select attributes of IYCF practices (covered as part of the program through art paintings and capacity building workshops). The areas of enquiry are listed in Table 2: Table 1:
### Table 1: IYCF attributes – AWW knowledge assessment

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Ideal Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation of breast feeding</td>
<td>• Within an hour of birth</td>
</tr>
<tr>
<td>Initiation of complementary feeding</td>
<td>• After 6 months</td>
</tr>
<tr>
<td>Benefits of breast milk</td>
<td>• Provides Energy                                                                                                                   • Source of High quality protein                                  • Source of Vitamin A   • Anti-Infective properties</td>
</tr>
<tr>
<td>WHO growth chart</td>
<td>• Can accurately plot child’s weight &amp; age                                                                                           • Can accurately identify child’s nutritional state</td>
</tr>
<tr>
<td>Recommended positions for breastfeeding (Mother)</td>
<td>• Relaxed &amp; Comfortable                                                                                                              • Straight &amp; Well supported back                                      • Trunk facing forward &amp; Lap flat</td>
</tr>
<tr>
<td>Recommended positions for breastfeeding (Infant)</td>
<td>• Turned towards mother                                                                                                             • Close to mother &amp; facing breast                                      • Whole body supported  • Neck is straight/slightly bent</td>
</tr>
<tr>
<td>Recommended attachment for breastfeeding</td>
<td>• Chin touching breast                                                                                                              • Mouth wide and open                                                  • Lip turned outward    • More areola seen above baby’s mouth</td>
</tr>
</tbody>
</table>

Different attributes have been assigned specific scores and cumulative scores computed for each AWC worker based on the number of best/recommend practises recollected. The maximum score that can be achieved by a worker is 23, break-up of which is indicated in figure below:

**Figure 5-18: Methodology for evaluation**

5.4.4 Insights – knowledge levels of AWWs on IYCF

AWWs of Transformed AWCs performed better with an average score better by c. 4% vs AWWs of Non-transformed AWCs. The performance is marginally better for AWWs who have undergone capacity building training. However, in either cases score achieved is only c. 60% of maximum score implying further need for capacity building for AWWs.
AWWs of Transformed AWCs display better knowledge on initiation of breastfeeding, complementary feeding and WHO growth chart interpretation.

Older AWWs, irrespective of experience, displayed greater knowledge levels compared to AWWs aged 30 or younger.

Knowledge levels of AWWs are key towards improving adoption of best practices by beneficiaries. Going forward, it is recommended that the program team create a focused plan to build capacity of the AWWs. Indicative interventions could include:

- **Capacity building** by extending capacity building activities to cover all AWWs (from the existing only c. 32%) with specific focus on topics of breastfeeding benefits and recommended positions and attachment guidelines; or a plan to transfer knowledge from trained AWWs to all AWWs in transformed AWCs

- **Increased engagement with young AWWs** (below 30 years age)
5.5 Knowledge regarding IYCF – PWs

5.5.1 Knowledge dissemination

Knowledge dissemination of IYCF among pregnant women has taken place through a mix of wall art paintings and regularization of VHNDs. The topics covered include:

- Importance of 1,000 days including prenatal period and first two years of life of a child
- Care during pregnancy and delivery
- Appropriate feeding practices
- Good hygiene practices
- Prevention of diseases

While NHRM guidelines mandate VHNDs should be organized every month

5.5.2 Field observations

VHNDs are perceived to be ‘immunization camps’, both by beneficiaries and AWWs. Many beneficiaries are completely ignorant about activities taken up at VHNDs.

5.5.3 Impact assessment approach

As part of the field research, c. 95 PWs were interviewed to gauge their knowledge of select IYCF practices. The areas of enquiry are listed in Table 2

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Ideal Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation of breast feeding</td>
<td>Within an hour of birth</td>
</tr>
<tr>
<td>Initiation of complementary feeding</td>
<td>After 6 months</td>
</tr>
<tr>
<td>Frequency of breastfeeding</td>
<td>10-12 times a day</td>
</tr>
<tr>
<td>Continuation of breastfeeding</td>
<td>Up to 2 years</td>
</tr>
<tr>
<td>Tetanus Toxoid (TT)</td>
<td>2 doses between 5th and 8th months</td>
</tr>
</tbody>
</table>

Table 2: IYCF attributes – PWs knowledge assessment
Different attributes have been assigned specific scores and cumulative score computed for each PW based on the number of best/recommended practices recollected. The maximum score that can be achieved by a PW is 12, break-up of which is indicated in figure below:

![Figure 5-25: Methodology for scores](image)

### 5.5.4 Insights – knowledge levels of PWs on IYCF

VHNDs have a significant impact on knowledge levels of IYCF practices, with regular attendees scoring c. 48% better than beneficiaries not attending them. On the contrary, knowledge levels of PWs of Transformed AWCs is only marginally better (c. 3%) than those of Non-transformed AWCs.

![Figure 5-26: IYCF knowledge score - Transformed vs Non-transformed centre PWs](image)

![Figure 5-27: IYCF knowledge score – PWs attending vs not-attending VHNDs](image)

Further, Pregnant beneficiaries of Transformed AWCs display better knowledge on complementary feeding and TT vaccine. The knowledge levels of PWs has a direct correlation with their age (improves with age).

![Figure 5-28: Knowledge levels of PWs across select IYCF attributes](image)

![Figure 5-29: Knowledge levels on select IYCF attributes of PWs vs age of PWs](image)

PWs need to be thorough with their understanding on importance of nutrition, vaccination and hygiene while dealing with infants. Thus, it is required that:
Knowledge dissemination should be continued with a focus on breastfeeding practices (respondents knowledge of BF practices was comparatively poorer when compared to other topics)

Consistent and regular engagement with younger expecting mothers

Increase awareness around VHNDs to position them as hubs for nutrition and health, rather than as mere immunization camps
5.6 Knowledge regarding IYCF – Mothers

5.6.1 Knowledge dissemination

Approach to knowledge dissemination for mothers is similar to that adopted for Pregnant beneficiaries, through a mix of art paintings and regularizing VHNDs.

5.6.2 Impact assessment approach

As part of the field research, c. 141 mothers / LWs were interviewed to gauge their knowledge of select IYCF practices. The attributes have been listed in Table 3

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Ideal Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation of breast feeding</td>
<td>Within an hour of birth</td>
</tr>
<tr>
<td>Initiation of complementary feeding</td>
<td>After 6 months</td>
</tr>
<tr>
<td>Continuation of breastfeeding</td>
<td>Up to 2 years</td>
</tr>
<tr>
<td>Breastfeeding before complementary food</td>
<td>Yes</td>
</tr>
<tr>
<td>Breastfeeding during illness</td>
<td>Yes</td>
</tr>
<tr>
<td>Form of food (for infant)</td>
<td>Mashed/Liquid food</td>
</tr>
<tr>
<td>Duration for which IFA tablets taken</td>
<td>3 months</td>
</tr>
</tbody>
</table>

Table 3: IYCF attributes – Mothers knowledge assessment

Different attributes have been assigned specific scores and cumulative score computed for each respondent based on the number of best/recommended practices recollected. The maximum score that can be achieved by a mother is 19, break-up of which is indicated in figure below:

5.6.3 Insights – knowledge levels of mothers on IYCF

Knowledge levels of beneficiaries of Transformed AWCs is marginally better (c. 7%) than those of Non-transformed AWCs. However, VHNDs have a significant impact on knowledge levels of IYCF practices, with regular attendees scoring c. 25% better than beneficiaries not attending them.
Further, beneficiaries of Transformed AWCs display better knowledge on breastfeeding and complementary feeding practices. The knowledge levels of mothers also improves with their education level.

Going further it is required that:

- **Capacity building** is continued with focus on attributes related with breastfeeding during illness and importance of IFA tablets

- **Training of AWWs** as there has been a limited impact on awareness creation through medium of art paintings (only 7% improvement as indicated in Figure 5-31). On the other hand, mothers interacting with AWWs trained by VCF have scored higher than those interacting with AWWs without any trainings.
5.7 Knowledge regarding hygiene

5.7.1 Knowledge dissemination

Knowledge dissemination around hygiene is being done through a mix of art paintings, workshops and demonstrations. Glimpses of activities are indicated in figure below.

5.7.2 Impact assessment approach

Knowledge levels of PLWs and children have been tested through interactions with the beneficiaries of Transformed and Non-transformed AWCs during field research.

- PLWs – were interviewed on their knowledge regarding instances of handwashing while dealing with children and handwashing technique
- Children – were interviewed with regard to their behavior on use of toilets vs Open Defecation and handwashing technique

5.7.3 Field observations

Access to hygiene-related infrastructure – toilets and handwashing facility is better in Transformed AWCs. However, despite being relatively better, the access is yet to reach 100%. Lack of access has led to promotion of alternate but not necessarily hygienic approaches (e.g.: single bucket-filled with water is shared by all children for washing hands at the AWC)

<table>
<thead>
<tr>
<th>Transformed centres: 29</th>
<th>Non-transformed centres: 21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside</td>
<td>Outside</td>
</tr>
<tr>
<td>48%</td>
<td>14%</td>
</tr>
<tr>
<td>14%</td>
<td>33%</td>
</tr>
</tbody>
</table>

Handwashing demonstration at Narsapuram OC
Gollamudi 2 AWC
Good habits through pictures, Rajeevnagar AWC
Chandralapadu 3 AWC

Figure 5-36: Access to toilets (% of AWCs visited)

Figure 5-37: Access to handwashing facility (% of AWCs visited)
### Non-Transformed AWCs

| Figure 5-38: Open defecation at Ambarupeta 2 AWC |
| Figure 5-39: Handwashing training at Narasapuram OC AWC |

### Transformed AWCs

| Figure 5-40: Gollamudi AWC |
| Figure 5-41: Naraspuram SC AWC |
5.7.4 Insights – knowledge levels of PLWs on hygiene

75% of the beneficiaries associated with Transformed AWCs are able to recall at least two activities, before/after which handwashing is required, while dealing with children as compared to only 62% for Non-transformed AWCs.

![Graph](image)

**Most recollected activities**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Non-Transformed</th>
<th>Transformed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Before feeding the child</td>
<td>5%</td>
<td>11%</td>
</tr>
<tr>
<td>2. After feeding the child</td>
<td>33%</td>
<td>37%</td>
</tr>
<tr>
<td>3. After disposing child faeces</td>
<td>25%</td>
<td>32%</td>
</tr>
</tbody>
</table>

![Graph](image)

**Figure 5-42:** Handwashing instances while dealing with children recollected by respondents (% of respondents)

**Figure 5-43:** Handwashing practises as highlighted by respondents (% of respondents)

5.7.5 Insights – knowledge levels of children on hygiene

Knowledge levels of children regarding hygiene practices are comparatively better with 78% of children indicating use of soap as against 57% in case of PLWs. The performance of children of Transformed AWCs is also better vs those attending Non-transformed AWCs.

SC students perform poorly across usage of toilets (only c. 48%) and using soap after hand wash (only c. 68%)

![Graph](image)

**Figure 5-44:** Children using toilets (% of children)

**Figure 5-45:** Children using soap for handwashing (% of children)

Access to infrastructure is a key pre-requisite for inculcating behavioural change with respect to hygiene practices. Thus, it is imperative to:

- Ensure 100% access to hygiene-related infrastructure
- Promote use of infrastructure and discourage practices such as handwashing using a common bucket filled with water
- Ensure maintenance and prevent misuse, as observed in one instance (Kotha Repudi AWC), wherein the toilet was being used as store room
**Perception of the Transformation Program**

**Increased access and improved health**

During my first pregnancy which was a couple years back, I used to visit the AWC once a week or so only to collect eggs and milk. The AWC then did not have good infrastructure and the food served was of sub-standard quality. It was also very difficult to access the center during the rains. But now, things at the AWC have improved a lot. **I come here every day, have lunch and milk.** Two months back, I weighed less than I should under normal conditions and the teacher urged that I eat well. I started eating lunch here daily and my health has improved quite a bit.

-Respondent, Gollamudi 2 AWC

**Improved hygiene and better learning outcomes**

My elder son couldn’t attend the AWC due to dust allergy and breathing problems. The AWC prior to transformation had mud flooring and was poorly maintained. Hence, I chose to send him to a private school.

Now that the AWC is refurbished, I don’t fear sending my younger son to the AWC. In fact, **he enjoys going to the AWC every day.** The teacher takes great care of my child, looks after his studies, teaches him about good practices and serves him nutritional food every day.

-Respondent, Chandralapadu 3 AWC

**Increased awareness on IYCF practices**

Since the transformation of the AWC, especially with the pictures and guidelines for breastfeeding around the eating premises, **literate women are able to read and learn the best practices by themselves.**

This enables a good conversation where women talk among themselves and with me about best practices when they come to eat”

-Respondent, Cheemalapadu Main AWC

**Training and capacity building**

“Though we regularly receive training from our supervisors, we have received additional help from Tata Trusts. We underwent training on care and diet during pregnancy which is very useful when interacting with pregnant and lactating women. We also try to motivate their families to take specific care”

-AWW, Kamaturu
5.8 Perception of the transformation program

The field research also captured the respondents’ perception of the AWCs and AWWs, post the implementation of the program. The respondents have been classified into two broad categories – those satisfied with the AWCs and AWWs performance and those who are not.

More than 90% respondents associated with Transformed AWCs indicate that they are satisfied with the AWC building and cleanliness levels. In non-transformed AWCs only 64% were satisfied with AWC building and 76% were satisfied with AWC cleanliness.

![Figure 5-46: Satisfaction with AWC building (% of respondents)](image)
![Figure 5-47: Satisfaction with AWC cleanliness (% of respondents)](image)

Majority of the respondents also indicated that the performance of AWWs of Transformed AWCs has improved, post implementation of the Transformation program.

![Figure 5-48: Household perception of AWW knowledge (%)](image)
![Figure 5-49: Household perception of AWW attitude (%)](image)
![Figure 5-50: Household perception of AWW practices (%)](image)

A beneficiary’s view - Impact of transformation program

“The teacher is able to address our doubts more clearly and timely tells us about the best practises to follow both during pregnancy and post birth”

Respondent, Ganaparavam 1

“The teacher is now more involved with the beneficiaries post the transformation. She visits our houses regularly and encourages us to keep attending the AWC regularly”

Respondent, Bandipalem 2

“Post the transformation, we have noticed that the teacher is more diligent about filling the registers and gives more information to mothers during the Immunisation camps”

Respondent, Chandralapadu 3
Enrolment and Attendance
Among children and PLWs
5.9 Enrolment and attendance of beneficiaries

One of the key outcomes of the Transformation program is to improve enrolment and attendance of beneficiaries at AWCs. Albeit early in the project (refurbishment efforts were initiated only a year ago), an attempt has been made to identify any early signs of positive impact on attendance and enrolment.

5.9.1 Impact assessment approach

In order to assess the impact, enrolment and attendance data on beneficiaries has been collected across a period of three months (Months of June, July and August) for three years including 2017, 2018 and 2019. The data has been collected from physical registers (formal and/or informal) available at the AWC and filled by the AWW.

<table>
<thead>
<tr>
<th>#</th>
<th>Data collected</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Enrolment at AWC</td>
<td>Self-reported statistics by AWWs, captured in registers available at AWC</td>
</tr>
<tr>
<td>2</td>
<td>Eligible beneficiaries in village</td>
<td>Not available; assumed that all eligible beneficiaries have been enrolled</td>
</tr>
<tr>
<td>3</td>
<td>Attendance at AWC</td>
<td>Self-reported statistics by AWWs, captured in registers available at AWC</td>
</tr>
</tbody>
</table>

5.9.2 Field observations

- Enrolment and attendance registers are not available and/or properly filled (e.g.: data collected in note books/diaries, data uploaded on web portal)
- Across multiple AWCs, the registers had multiple data gaps
- Attendance data in registers did not match with actual attendance observed on the day of visit in more than one instance
- Irregular frequency of updating statistics in a few AWCs with children attendance updated daily, however PLW statistics updated only at the end of the month

Figure 5-51: Well-maintained date register (updated statistics)  
Figure 5-52: Poorly-maintained register (missing statistics)
5.9.3 Insights - enrolment of beneficiaries

Enrolment at the AWC is a function of the physical condition, operational sufficiency and motivation of AWWs

- In this context, the program has been able to transform an AWC and project it as a community-space (e.g.: in some cases frequented by the elders of the community), and thus positively impacting enrolment
- Transformed AWCs have witnessed a marginal increase (c. 10%) in the enrolment of pregnant women between 2017 to 2019 and a similar increase (c. 10%) in the enrolment of lactating mothers
- On the other hand, average enrolment at Non-transformed AWCs has declined by c. 8% for pregnant women and c. 12% for lactating mothers during the same period

![Figure 5-53: Average enrolment - PLWs](image)

![Figure 5-54: Average enrolment – Children](image)

- However, motivated and trained AWWs are key to getting beneficiaries enrolled – especially children in the age-group of (4-6 years); as parents are increasingly opting for enrolment in private schools
- They perceive that the learning outcomes in private schools are better compared to AWCs; Private schools were also perceived to have better teachers, better infrastructure, better hygiene and English as the medium of instruction

5.9.4 Insights - attendance of beneficiaries

Ease of access, availability and quality of food and the activities conducted (for children and beneficiaries) impact attendance levels at AWCs

- Transformed AWCs indicate a marginal increase (c. 11%) in the attendance of pregnant women between 2017 to 2019 and a similar increase (c. 8%) in the attendance of lactating mothers between 2017 to 2019
- Attendance levels at Non-transformed AWCs have declined by 1% for pregnant women and 7% for lactating mothers during the same period
- Children’s attendance also indicates a declining trend, expect for AWCs transformed prior to June 2018 which have shown an increase of c. 8%

![Figure 5-55: Reasons for opting for private school](image)
The attendance and enrolment data analysis indicate the following key insights:

- **Capacity building** is required for AWWs to ensure that attendance and enrolment data is collected and stored in an organized manner. On the part of VCF, there needs to be dedicated effort to sensitize administration to regularly monitor and authenticate data being collected.

- **Attendance does not necessarily imply a center visit by the beneficiary** (i.e. attendance also counts for cases where a family member visits the centre to collect food on behalf of the beneficiary) Thus, to achieve maximum awareness among beneficiaries, VCF should work closely with the WCD team to promote visits by the beneficiaries themselves. In addition, there must be an effort to monitor visits beneficiaries by beneficiaries themselves to the AWC as a part of the booking keeping and data capture training sessions.

- **Involvement of AWWs can play a key role in improving attendance** by engaging with beneficiaries - PLWs and children on a one-to-one basis and if required, also with families of beneficiaries. Spearheading community initiatives to attract beneficiaries (e.g. Celebrating 'baby-showers'). Capacity building of AWWs, to equip them with various tools to increase engagement with the community, are key to increasing the effectiveness of AWCs.

- **AWCs are competing with private schools in attracting pre-schoolers.** Parents compare facilities and learning outcomes of AWCs with private schools. Few children attend private schools for education and only attend AWCs on weekends/holidays to have meals. Transformation has helped marginally bridge this gap (refer Figure 5-57) and efforts need to continue through capacity building of AWWs in pre-school education, defining time tables and improving supply of educational kits to AWCs.
Learning Outcomes of Children
5.10 Learning Outcomes of Children

5.10.1 Intervention

The Transformation program has touched upon two areas with respect to children:

**Learning levels** – improving ability of children to identify and/or pronounce alphabets, numbers, animals, fruits, flowers and birds through provision of various visual aids

**Behavioural aspects** – inculcating good habits via visual aids

5.10.2 Impact assessment approach

Given the lack of a direct intervention, learning levels of children across transformed and non-transformed AWCs were gauged using age appropriate tools. This was also supplemented by HH perception:

- **Perception of HHs on growth of children**
  - This has been gauged through interactions with parents of children attending AWCs to qualitatively identify impact across learning outcomes and behaviour of their child
  - Parents were asked to rate the impact of attending AWC on the child on either of the following parameters - No change, Slight improvement or Remarkable improvement

- **Interaction with children**
  - Few children were interviewed during visits to the AWCs to gauge their knowledge levels on aspects including identification & pronunciation of fruits and animals, identification of body parts and counting skills
  - Each correct answer has been scored with one point, with the maximum score potential of 21 for each child

5.10.3 Field observations

- AWCs are required to define and maintain a timetable for pre-school education activities
- However, during field research it was observed that regular timetables were seldom followed in both Transformed and Non-transformed (67-68%) AWCs.
- Different activities reported by AWWs include:

![Figure 5-58: Availability of time table (% of AWCs) | Page 51](attachment://Figure5-58AvailabilityofTimeTable%20:%20%28%20of%20AWCs%20%29.png)
Impact Assessment: Integrated Nutrition Program, AP

- **Conversation**: Children are encouraged to talk about their family, house and daily lives to enable children to express themselves in front of others.
- **Games**: Children play games in groups within AWC premises.
- **Stories**: AWWs recite stories to children. During the survey it was found that, as a part of the curriculum teachers were given 1-2 stories to be covered in a particular month.
- **Art/Craft**: Drawing standard images of daily object in books and/or completing images through connecting dots.
- **Reading/Writing**: Children read books and practice writing alphabets.
- **Scientific Knowledge**: Children are introduced to scientific principles/facts in their environment.
- **Cultural Activities**: Children are taught good lifestyle and behavioural habits.

- In absence of any defined timetable or documented activities, interactions with AWWs have been relied upon to develop an understanding of the frequency with which these activities are conducted. The results indicate significant variation in time devoted to each activity across different AWCs.

![Figure 5-59: Self-reported (AWW) frequency of pre-school education activities](image)

### 5.10.4 Insights – perception of HHs on growth of children

AWCs – both Transformed and Non-transformed are perceived to have a positive impact on children.

Mothers of children (of both groups of AWCs) indicate a slight-to-remarkable improvement in learning levels (c. 90% of cases) and behaviour (c. 85% of cases).

Areas where improvements have been noticed include:

- **Learning levels** – ability to children to recite poems and alphabets, study better and identify objects.
- **Behaviour** – good habits inculcated such as washing hands before meals, communicating more and respecting elders.
5.10.5 Insights – interaction with children

Our field research did not find any significant difference in the learning levels of children attending Transformed or Non-transformed AWCs. A linear regression analysis of learning levels indicates that the frequency of pre-school education activities (especially art & craft and readiness) had a strong impact on learning outcomes of children.

![Graph showing children learning score – Transformed vs non-transformed centres](image)

Thus, it is imperative that going forward:

- **Structuring delivery of pre-school education** by defining time tables to remove ambiguity on time spent on different activities
- **Provision of educational kits** including flash cards for storytelling, colouring kits, books, etc. These would be critical for AWWs to constructively engage the children.

**Teachers perspective on the transformation program**

"Usually I have a high number of students because I tell the parents I teach the children in English. Since the transformation of the center, it has become easier to teach a larger group of kids without the hassles of holding charts and posters”

Baby Rani, Ambarupeta 2

“As a teacher with over 32 years of experience, I have convinced many parents to send their children to the AWC by explaining to them the benefits of early childhood education. The games and activities that we conduct here help the overall development of a child, from learning the right hygiene practises to learning community values like respecting each other and sharing.

Post the intervention by Tata Trusts, children are able to learn and apply lessons taught more easily. Children have gone from rote learning to a more interactive learning where children can learn and later identify fruits/animals in their homes, surroundings”

K V Narshima, Ithavaram 2

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9 P-value of 0.05 and lower indicates a strong correlation
6 ANNEXURE

6.1 Transformed AWCs visited and beneficiaries interviewed

<table>
<thead>
<tr>
<th>Mandal</th>
<th>Transformed AWC</th>
<th>PW</th>
<th>LW</th>
<th>Mother</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibrahimpatnam</td>
<td>Rajiv Nagar</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Ferry Center</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Kothuru</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Kethana Konda</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Tiruvuru</td>
<td>Vavlala</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Rajugudem Main Center 2</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Chitella</td>
<td>3</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Reddygudem</td>
<td>Maddulaparava</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>A. Konduru</td>
<td>Cheemalapadu Main</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Cheemalapadu Peda Thanda</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Krishnaraopalem Main</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Kotha Repudi</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Kanchikacherla</td>
<td>Nakkalampeta</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Veerulapadu</td>
<td>Alluru 4</td>
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## 6.2 Non-transformed AWCs visited and beneficiaries interviewed

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