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End-line Household Survey Report

Southern Nations, Nationalities, and People's Region

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Virus
ANC	Antenatal Care
ARI	Acute Respiratory Infection
BCC	Behavioral Change Communication
CBRH	Community-based Reproductive Health
CBRHA	Community-based Reproductive Health Agents
CHP	Community Health Promoter (later Volunteer Community Health Worker)
CHPI	Community Health Promotion Initiative
CPR	Contraceptive Prevalence Rate
DHS	Demographic and Health Survey
ENA	Essential Nutrition Action
EOS	Enhanced Outreach Site
EPI	Expanded Program of Immunization
ESHE	Essential Services for Health in Ethiopia
FHC	Family Health Card
FMoH	Federal Ministry of Health
FP	Family Planning
HCF	Health Care Financing
HEP	Health Extension Program
HEW	Health Extension Worker
HF	Health Facility
HIV	Human Immunity Virus
HSDP	Health Sector Development Program
HW	Health Worker
ID	Immunization Diploma
IEC	Information Education Communication
IMCI	Integrated Management of Childhood Illnesses
IMNCI	Integrated Management of Newborn and Childhood Illnesses
IRT	Integrated Refresher Training
ITN	Insecticide-Treated Net
IYCF	Infant and Young Child Feeding
M&E	Monitoring and Evaluation
MAD	Minimum Adequate Diet
NGO	Non-Governmental Organization
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PA	Peasant Association
PNC	Postnatal Care
PPS	Probability Proportional to Size
RHB	Regional Health Bureau
STI	Sexually-Transmitted Infections
TT	Tetanus Toxoid
TTBA	Trained Traditional Birth Attendants
TTBA	Trained Traditional Birth Attendant
USAID	United States Agency for International Development
VAD	Vitamin A Deficiency
VCHW	Volunteer Community Health Worker (formerly Community Health Provider)
WHO	World Health Organization

EXECUTIVE SUMMARY

This report presents findings from child survival interventions of the Essential Services for Health in Ethiopia Project (ESHE) in Southern Nations, Nationalities, and People's Region (SNNPR) during 2003-2008, with primary emphasis on immunization, Essential Nutrition Actions (ENA), and household behaviors regarding childhood illnesses. There are findings on other indicators relevant to child health: Trends in insecticide-treated bed nets (ITN) coverage, household pit latrine possession, maternal health care, and family planning (FP) services utilization.

ESHE II is the USAID/Ethiopia five-year bilateral initiative for child health and health sector reform with the Ethiopian Government. ESHE contributes to achieving USAID/Ethiopia's Strategic Objective 14: "Human Capacity and Social Resilience Increased by increasing the effective use of high-impact child health, family planning, and nutrition services, products and practices." ESHE II, launched in 2003, built on ESHE I SNNPR experience. Since 2003, more than 6 million people (40% of SNNPR's population) benefited from ESHE II interventions in 24 woredas.

In the quasi-experimental design used, coverage indicators regarding key child survival interventions were compared between 2003 Baseline and 2008 End-line Household Surveys (HHS) for the entire region and ESHE intervention and non-ESHE intervention areas separately. Data were from 3 respondent groups: 1) Women aged 15-49 years, 2) Women with children aged 0-11 months, and 3) Women with children aged 12-23 months. Surveys divide SNNPR into 2 sampling domains: ESHE focus woredas and non-ESHE focus woredas. Both contain *kebeles* (smallest administrative unit) or clusters. From each area, 30 *kebeles* were selected using probability proportional to size (PPS), resulting in 60 *kebeles*. A woman could respond to 1 or more questionnaires depending whether she had a child under 2 years of age. The 1,455 women interviewed resulted in 1,800 case interviews. Community/Kebele-level information was collected at End-line. Community questionnaire include questions about key community informants, mostly Health Extension Workers (HEWs) or kebele chairpersons, availability of community health workers (HWs), their types and numbers, and types and numbers of health facilities (HFs) in the kebele, and whether or not the kebele is in a malarial area.

Since an equal number of *kebeles* were used in both domains irrespective of their population size, sample weights reflecting the total population in each were used to obtain regional estimates.

Baseline and End-line HHS comparisons testify to notable progress and positive momentum in child survival and other key health interventions. Although several factors may account for results, positive changes are heavily attributable to recently-improved population access to primary healthcare services (health post expansion) and health promotion and information, education, communication (IEC) and behavioral change communication (BCC) activities through the Health Extension Program (HEP). Synergy between HEP and several thousand Volunteer Community Health Workers (VCHWs, formerly Community Health Promoters) in ESHE intervention areas effected significant acceleration and added value to many child survival outcome indicators.

Salient findings are summarized below. The main text provides greater detail.

Immunization

Key Findings

- Expanded Program on Immunization (EPI) access to DPT1 and continuation through DPT3 improved significantly. DPT1 increased from 62% to 74% ($p<0.0001$) and DPT3 from 41% to 62% ($p<0.0001$).
- At End-line, 44.2% of children aged 12-23 months were fully immunized, a significant improvement ($p<0.05$) from 34% at Baseline.
- Positive immunization coverage changes occurred in ESHE intervention focus over non-ESHE areas. At Baseline, DPT1 coverage was comparable for both, 66% and 64%, respectively. End-line revealed more pronounced DPT1 coverage in ESHE over non-ESHE areas, 84% versus 71%, respectively.
- Although DPT3 increased significantly in both areas, it was more pronounced in ESHE areas, 46% to 70%, $p<0.0001$. It increased from 38% to 57%, $p<0.001$ in non-ESHE areas.
- DPT1 to DPT3 dropout rate declined significantly from Baseline, 34% to 21%, $p<0.001$. There was no significant differences between ESHE and non-ESHE areas.

Recommendations

- Continue to empower HEWs and VCHWs to provide caretakers information about immunization and encourage caretakers to follow the schedule through full immunization.
- Encourage HEWs and other health workers (HWs) to use volunteers for defaulters, tracing and minimizing dropouts.
- Strengthen the logistics management system that includes vaccines, supplies, and cold chain management and maintenance.

Essential Nutrition Actions

Key Findings

- ENA improvements have been recorded. Most are related to improvements in ESHE areas.
- Early initiation of breastfeeding (within 1 hour after birth) increased significantly from Baseline, 64% to 72% ($p<0.001$) and exclusive breastfeeding (0-5 months) from 54% to 64% ($p<0.001$).
- Timely introduction of complementary feeding (6-9 months) increased significantly, from 56% to 69% ($p<0.0001$). For children aged 6-23 months, continuation of breastfeeding remained high at 92%. Adequate frequency of feeding was relatively high at 81%. Dietary diversity remained low; 33 % of children ate 3-4 different types of food.
- Iron folate supplementation to pregnant women attending antenatal care (ANC) significantly increased, from 28% to 39% ($p<0.05$).
- Breastfeeding during diarrhea increased from 4% to 36%, ($p<0.0001$). Improvements were in both ESHE and non-ESHE areas.

- Vitamin A coverage for children aged 6-23 months reached 61% from 24% at Baseline ($p<0.0001$). Both ESHE and non-ESHE areas had significant increases due to high enhanced outreach service (EOS) coverage,
- In ESHE areas, significant improvements were noted since Baseline in a number of ENA indicators. Early initiation of breastfeeding within 1 hour increased from 60% to 85% ($p<0.0001$) and exclusive breastfeeding increased 58% to 76% ($p<0.0001$). Complementary feeding (6-9 months) in ESHE areas increased from 61% to 83%, $p<0.0001$. Dietary diversity for children aged 6-23 months eating 3-4 types of foods improved from 28% to 39%.
- Vitamin A postpartum supplementation significantly increased, from 5% to 30% ($p<0.001$).
- Iron folate supplementation to pregnant women attending ANC is particularly apparent for women in ESHE areas, from 27% to 57%, $p<0.0001$. Women who ate more because they were pregnant rose to 50% from 8% at Baseline ($p<0.001$).

Recommendations

- Continue to support the SNNP RHB and partners to expand ENA approach to the entire region, replicating optimal breastfeeding practice successes.
- Expand beyond breastfeeding and Vitamin A supplementation successes to ensure adequate complementary feeding practices (including feeding during and after illness) and adequate nutritional care for pregnant and lactating women. Programmatic efforts that support advocacy, training, promotion, and counseling (using negotiation skills) will help achieve success.
- Conduct formative infant and young child feeding (IYCF) research to assess how: 1) Current messages are delivered, 2) Parents perceived them and define facilitators and obstacles (including food access and utilization), and 3) To strengthen the program to replicate success.

Child Morbidity, Treatment, and Awareness

Key Findings

- The reported previous 2-week incidence of illness declined significantly: Fever from 30% to 17%, $p<0.0001$, diarrhea from 25% to 16%, $p<0.0001$, cough from 23% to 13%, $p<0.001$, and difficult breathing from 13% to 6%, $p<0.0001$.
- Of mothers with sick children, 54.5% had taken their children to a HF for treatment, not significantly different from 48% at Baseline.
- Oral Rehydration Salts (ORS) was given to 34.3% of children suffering from diarrhea in the preceding 2 weeks. At Baseline, 18% of such children received ORS. The increase is statically significant ($p<0.001$). ORS to children with diarrhea significantly increased in ESHE areas, from 21% to 36%, $p<0.0001$ and non-ESHE areas, from 16% to 33%, $p<0.0001$.
- Sick children with diarrhea who received ORS and/or any recommended homemade fluids were considered having received Oral Rehydration Therapy (ORT). At End-line, 50% and 57% in ESHE and non-ESHE areas, respectively, were given ORT. In SNNPR as a whole, 52% were given ORT.
- Breastfeeding sick children increased from 4 to 36%, $p<0.0001$ and increased provision of fluids rose from 4% to 33%, $p<0.0001$. Continued breastfeeding to sick children during

illness was significantly higher in EHSE versus non-ESHE areas, 47% versus 30%, $p<0.05$. Significantly better provision of increased fluid to sick children with diarrhea in ESHE versus non-ESHE areas was 40 % versus 28%, $p<0.05$.

Recommendations

- Strengthen caretaker awareness about danger signs of illnesses that need immediate action from a trained health care provider or HF.
- Improve caretaker appropriate home management practices for sick children through HEW and VCHW training and support.
- Improve access to treatment for sick children by strengthening HFs with skilled personnel, essential drugs, and supplies.
- Scale up integrated management of newborn and childhood illnesses (IMNCI) training and follow up for HWs and HEWs to improve case management and referral skills.
- Strengthen preventive, promotive services and practices such as immunization, appropriate IYCF, ITN use, latrine use, safe water, and hand washing to reduce most childhood illnesses.

Insecticide Treated Net Coverage

Key Findings

- Overall, 73.2% of households in malarial areas owned at least 1 ITN, a dramatic increase from less than 1% at Baseline. End-line revealed 68.7% of households owned long-lasting treated nets, meaning of all ITNs, 94% were long-lasting and 6% were pre-treated or unidentified.
- About 55% of children aged 0-23 months in malarial areas slept under an ITN the night before the interview versus less than 1% at Baseline.
- Correct ITN usage for under-5-year-old children in households possessing ITNs was 81% in ESHE areas versus 70% in non-ESHE areas.

Recommendation

- Continue to increase awareness of ITN use by pregnant women and children under 5 years old.

Water and Sanitation

Key Findings

- Access to safe drinking water improved remarkably, from 36% to 58% ($p<0.001$).
- Household ownership of pit latrines reached 82%, more than double the 35% at Baseline ($p<0.0001$).

Recommendations

- Promote safe water handling and hand washing practices.
- Encourage HEWs and VCHWs to urge toilet or pit latrine use, despite improved pit latrine coverage reported.

- Increase pit latrines coverage while ensuring functionality of already-constructed ones; this should be a priority focus intervention.

Maternal Health

Key Findings

- ANC for pregnant women reached 65% for the whole region, significantly higher than 47% at Baseline ($p<0.001$). This was also true in both ESHE and non-ESHE areas. Nevertheless, temporal change was more pronounced in ESHE areas, from 48% to 74%, $p<0.0001$. In non-ESHE areas, it increased from 46% to 59%, $p<0.05$.
- Based on the definition for life long protection against neonatal tetanus, 63.3% of SNNPR's women were considered protected, a significant improvement from Baseline at 46%, $p<0.0001$.
- Home delivery is nearly universal in SNNPR. About 95% of children aged 0-11 were born at home, not different from 96% at Baseline. Only about 6% of deliveries were assisted by health professionals in HFs or at home. At 5%, Baseline was about the same. Only 4% of the women were attended by HEWs during delivery of their most recent child aged 0-11 months. Trained Traditional Birth Attendants (TTBAs) assisted 18% of the women during delivery, a significant improvement from 10% at Baseline ($p<0.05$).
- Of women with children aged 0-11 months, 11% were examined by trained health professionals within 45 days after delivery (postnatal care), not significantly different from 9% at Baseline.

Recommendations

- Promote focused ANC/birth preparedness at all levels.
- Promote TT and iron folate provision by strengthening HW skills and knowledge and improving the logistics management system.
- Support and facilitate development of a strategy to address the very low-skilled delivery care coverage.
- Provide in-service training and mentor HEWs to strengthen midwifery skills, including administration of misoprostol, implement principles of infection prevention, and provide essential care for mother and baby.
- Accelerate expansion of health centers with emergency obstetric care services.

Family Planning

Key Findings

- Contraceptive prevalence rate (CPR) among women aged 15-49 years was 30%, nearly double the 16% at Baseline. Temporal CPR trend rate was statistically significant ($p<0.0001$).
- End-line confirmed the dominant emphasis of injectables, also responsible for the apparent and significant temporal trend in contraceptive use. Its prevalence increased from 9% to 26%.

- Pills use declined from 5% to 2%. Combined long term-methods was 1% at End-line. Long-term methods virtually non-existent; only 0.5% and 0.4% of women used Norplant and female sterilization, respectively.
- At 63.1%, health posts were the predominant source of current contraceptives, followed by health center at 25.4%. The remaining 11.5% was attributed to other sources. Baseline showed the health post was the source for only 4% of the then-contraceptive users.

Recommendations

- Develop and harmonize family planning messages and train HEWs and VCHWs to facilitate at scale dissemination of appropriate information to households at scale.
- Promote healthy timing and spacing of pregnancies through household BCC and youth clubs.
- Strengthen health post capacity to provide short-acting contraceptive methods and refer eligible clients for long-acting methods.
- Strengthen health center capacity to provide comprehensive services, including long acting methods.

HIV/AIDS Awareness

Key Findings

- HIV/AIDS awareness is nearly universal in SNNPR, with 96% of women aged 15-49 years having heard of it. Despite this, women are yet to be sufficiently aware of the programmatically important ways (ABC) of avoiding HIV/AIDS. Only 31%, 66.3% and 8.6%, respectively, identified abstinence, faithfulness to one's partner, and condom use as the most important ways of avoiding HIV.
- There was nearly comparable level of awareness of women concerning ABC since Baseline. Faithfulness increased from 54% to 66% ($p < 0.05$).

Recommendations

- Include HIV prevention and control messages in VCHW training and develop BCC tools for community promotion.
- Strengthen integrated community conversation activities that include HIV/AIDS issues.
- Harmonize messages and coordinate HIV/AIDS prevention and control activities among partners.

I. INTRODUCTION

This study presents findings of Essential Services for Health in Ethiopia (ESHE) Project child survival interventions in Southern Nations, Nationalities, and People's Region (SNNPR).

ESHE II Project was USAID/Ethiopia's 5-year bilateral initiative for child health and health sector reform with the Ethiopian Government. ESHE contributed to achieving USAID/Ethiopia's Strategic Objective 14: "Human Capacity and Social Resilience Increased by increasing the effective use of high-impact child health, family planning, and nutrition services, products and practices." ESHE II, launched in 2003, built on ESHE I SNNPR experience and expanded to Amhara and Oromia Regions in 2004. In these three target regions, ESHE supported child health activities in 101 selected woredas, serving 15 million people. More than 6 million, or 40%, of SNNPR's population benefited from ESHE interventions in 24 woredas (districts) since 2003.

The Government of Ethiopia's health development strategy was laid out in the Health Sector Development Program (HSDP), currently in its third 5-year cycle, HSDP III. HSDP III focuses on primary health care and preventive services, reaching out to villages and households to achieve universal primary health care coverage. HSDP III aims to reduce mortality of children under-5 years of age from 140 to 85 per 1,000 and infant mortality from 97 to 45 per 1,000. A critical HSDP III element is the Health Services Extension Program (HSEP), which deploys health extension workers (HEWs) to rural health posts, serving an average of 5,000.

I.1. Socio-demographic Information

SNNPR's land area is 118,000 square kilometers. Its estimated population is 15.3 million. SNNPR encompasses one-tenth of Ethiopia's land area and about one-fifth of its population. At 95 persons per square kilometer, it has Ethiopia's highest population density. It is also characterized by high infant, child, and maternal mortality and high fertility level. An extremely ethnically diverse region, it is inhabited by more than 45 ethnic groups, most of which are indigenous and distinguished by different languages, cultures, and socioeconomic organizations.

I.2. The Three Pillars of ESHE Intervention

ESHE child survival intervention strategic framework rests on 3 pillars: 1) Strengthen Health Worker (HW) Skills, 2) Improve Community Household Practices, and 3) Improve Health Systems.

Pillar I: Strengthen Health Worker Skills

ESHE built HW skills and capacity in integrated management of childhood illnesses (IMCI), essential nutrition actions (ENA), and expanded program of immunization (EPI). Consultations with the Federal Ministry of Health (FMoH) and health partners led to development of training courses and materials utilized at regional, zonal, woreda, HF, and community levels throughout ESHE and non-ESHE focus areas

To sustain performance post-training, ESHE implemented supportive supervision and HMIS monitoring. At the national level, ESHE provided valuable input to information, education, communication (IEC) and monitoring and evaluation (M&E) development components of HEP's Integrated Refresher Training (IRT).

Pillar II: Improve Community Household Practices

Ethiopia recognizes that facility-based services improvements alone cannot contribute significantly to child mortality reduction. Access to qualified health providers or HFs is limited and many children die at home due to delays or lack of knowledge in seeking appropriate care. Pillar II aims to “strengthen positive health behaviors at household and community levels.”

Activities focus on changing behaviors through a variety of outlets. Through community mobilization, individuals are nominated to become Volunteer Community Health Workers (VCHWs, formerly Community Health Providers). VCHWs are empowered by HEWs to adopt healthy behaviors and serve as models for neighbors. These efforts are supported by messages shared through mass media and print, mainly the Family Health Card (FHC) and Immunization Diploma (ID).

Pillar III: Improve Health Systems

Despite recent improvement, Ethiopia’s health expenditures have historically been low. Recognizing chronic health care under-funding, the Ministry of Health (MoH), through HSDP III, focused on increasing health sector resources, improving resource allocation and utilization efficiency, ensuring financing sustainability, and improving delivery of quality, equitable health care. Over the past 10 years, the Government underwent decentralization reforms, devolving responsibility to woreda (district) levels. Thus, the Federal Ministry of Health (FMoH) and RHBs are largely responsible for steering policy while woreda health offices (WorHOs) are pivotal in managing and coordinating primary care services. ESHE has provided MoH technical assistance by conducting studies and developing concept papers towards developing a legal framework to support nationwide health care financing (HCF) strategy.

Skills in data use for decision making and supportive supervision were strengthened at all levels in ESHE areas. Management and service delivery standards were developed and utilized for quality improvement. Regular review of performance at regional, zonal and woreda levels were encouraged and supported technically and financially.

1.3. Community Health Promoters Initiative

Community Health Promoters Initiative (CHPI) builds communities’ capacity to improve child and family health through small, doable actions. The main CHPI engines are CHPs, who received short trainings on key health issues. Trainings emphasized action-based messages that induced positive changes in health behaviors, especially women’s. CHPs were encouraged to take action in their own home first, then promote messages to friends and neighbors. CHPI encourages using everyday opportunities such as coffee ceremonies, neighborly visits, or social events at the well, spring, or markets.

CHPI Support to the Health Extension Program

CHPs added impetus to existing HEP services. With 1 CHP to 50 households, CHPs greatly enhanced HEWs’ community outreach, as each HEW is responsible for 500 households. CHPI received positive reception from communities, frontline HWs, and health managers. Several woredas undertook CHPI expansion using their own resources. All CHPI gains were built into ESHE focus woredas’ HEP. The more generic label of voluntary community health workers

(VCHWs) was adopted as part of the HSDP. The FMOH and RHBs strongly insist on fully engaging communities as part of HEP implementation.

ESHE strengthened HEW capacity to train and support CHPs (and later, VCHWs), enriching HEWs' routine activities. HEWs are ideally placed to provide regular mentoring and encouragement to CHPs and VCHWs. Through monthly experience sharing, HEWs and VCHWs learn from each other and identify common problems and solutions as a group. A handbook was developed to help HEWs conduct short trainings with small groups of CHPs (and later, VCHWs) in their own village. This approach built strong collaboration between HEWs and CHPs in communities.

Behavioral Change Communication Tools

CHPI relies on 2 behavior change communication (BCC) tools, FHC and ID. Less widely available is the Complementary Feeding counseling card used by HWs and HEWs.

FHC illustrations and messages help caretakers follow a child's growth and development from birth to 2 years of age, focusing on mothers and pregnant women. CHPs give them to families as they negotiate doable health actions and encourage seeking HF services when needed. Thanks to RHBs and other partners, FHCs are distributed beyond ESHE focus areas.

A motivational tool, the ID encourages parents to get children fully immunized by the child's first birthday. HWs award the ID to parents whose children appropriately completed the full vaccine series. Proud parents, posting the ID in their home to show neighbors, relatives, and friends, become immunization role models and promoters. ESHE distributed more than 237,000 IDs to focus woredas. Thanks to RHBs and other partners, more than 1.3 million were printed and distributed to non-ESHE zones in the three regions.

2. METHODOLOGY

2.1. Design

In the quasi-experimental design used, Baseline and End-line coverage indicators for key child survival interventions were compared. ESHE and non-ESHE areas were compared separately. Indicators emerged from interviews with women:

- In reproductive ages (15-49 years)
- With children aged 0-11 months
- With children aged 12-23 months

End-line community questionnaire collected kebele (smallest administrative unit) profile information, such as community HW availability, HF availability, whether area is endemic to malaria, and others. Respondents were HEWs or kebele chairpersons (1 interview per kebele, totaling 60 interviewees). This information was not collected at Baseline.

2.2. Sample Area

End-line divides SNNPR into 2 study areas or sampling frames (domains): ESHE and non-ESHE woredas. From each, 30 clusters were selected using probability proportional to size (PPS),

resulting in 60 clusters for SNNPR. Each kebele's population was obtained from the 1994 SNNPR Census. All kebeles were included in their respective domain. Equal numbers were selected from ESHE and non-ESHE areas irrespective of population size. Sample weights were introduced to reflect the total population in each domain to obtain the regional estimate.

Baseline divides SNNPR into 3 sampling domains. For purposes of this study, Baseline sample clusters were reconstructed into ESHE and non-ESHE sampling domains to allow comparison between Baseline and End-line indicators. Baseline methodology and sampling details are reported elsewhere.

2.3. Sample Size

End-line sample size for each target group is 10 respondents per cluster. For SNNPR, there are 600 respondent women aged 15-49 years; 600 with children aged 0-11 months; and 600 with children aged 12-23 months. Table 1 presents number of interviewees achieved, number of women respondents, children whose lengths and weights were measured, and number of community-level respondents.

Table 1. Number of Interviewees, Respondents, and Children Sampled, Household Survey, SNNPR, April 2008

Category	ESHE Areas	Non-ESHE Areas	SNNPR (Weighted)
<u>Interviewees</u>	900	900	1,800
• Number using questionnaire for women aged 15-49	300	300	600
• Number using questionnaire for women with children aged 0-11 months	300	300	600
• Number using questionnaire for women with children aged 12-23 months	300	300	600
<u>Women Respondents</u>	724	731	1,455
• Number using questionnaire for women aged 15-49 but not using other questionnaires	131	124	255
• Number using at least 2 of 3 questionnaires	180	203	383
• Number using questionnaire targeting either children aged 0-11 or 12-23 but not questionnaire for women aged 15-49 years	413	404	817
<u>Children Sampled</u>			
Aged 0-23 months	600	600	1,200
0-5	151	143	294
6-11	149	157	306
12-23	300	300	600
Sex			
Male	298	291	589
Female	302	309	611
Weight & length measurements used in analysis (aged 6-23 months)	430	450	880
<u>Community Respondents</u>			
HEWs/kebele chairpersons, using community questionnaire	30	30	60

2.4. Questionnaires

Three household-level and 1 community- or cluster-level questionnaires were used, depending on respondent characteristics. Baseline and End-line Household Surveys (HHS) questionnaires were almost similar. End-line included more information on program intervention exposure, including additional newborn care questions.

1) Questionnaire for Reproductive-Aged Women (15-49 Years)

Asked about household and demographic characteristics; utilization of health services; bed nets; exposure to radio, family planning, HIV/AIDS, condoms, etc.

2) Questionnaire for Women with Children Aged 0-11 Months

Asked about utilization of maternal health care services, childhood morbidity and treatment pattern, bed nets use, breastfeeding, complementary feeding, essential actions, nutritional status of children, etc. Questions captured respondents' exposure to key messages and ownership of BCC materials, especially FHC.

3) Questionnaire for Women with Children Aged 12-23 Months

Asks about child immunization, childhood morbidity and treatment pattern, use of bed nets, breastfeeding, complementary feeding, Vitamin A supplementation, nutritional status of children, etc. Included questions about exposure to key messages and ownership of BCC materials, including FHC and ID.

4) Community Questionnaire

Asked key community informants, mostly HEWs or kebele chairpersons, about availability of community HWs, their types and numbers, types and numbers of kebele HF, whether kebele is endemic to malaria, etc.

Largely pre-coded with fixed response categories, questionnaires were translated into Amharic, Ethiopia's and SNNPR's official language.

2.5. Anthropometry

Children aged 6-23 months were weighed and had length measured. Weight was measured using a Salter scale, a hanging spring balance. Length was measured while the child lay on an adjustable measuring board.

2.6. Recruitment, Training, and Fieldwork

Of 6 survey teams, 5 included 1 field supervisor and 4 interviewers and 1 a supervisor and 2 interviewers. Intensive, detailed 5-day training consisted of itemized review of questionnaires, practice weighing and measuring children, role-playing, and field practice. Trained supervisors and ESHE regional staff closely monitored data collection, which occurred April 10 –April 30.

Although each team was provided with a 4-wheel-drive vehicle, teams usually had to walk 2-5 hours to reach target kebeles. Of 60 originally selected, 4 were replaced for varying reasons. Following scientific procedures, replacement was done at Central level.

2.7. Data Processing and Analysis

Field data were simultaneously entered at ESHE Addis Ababa offices. Two highly-experienced data entry clerks computerized data using EPI-INFO 6.04, after brief training on questionnaires, variables, and database organization. Using STATA 7.0, analysis was performed, comparing:

- Baseline and End-line weighted indicators for the entire region.
- Baseline and End-line indicators for ESHE and non-ESHE areas, separately.
- End-line and post-test only indicators between ESHE and non-ESHE areas.

Analyses were limited to Univariate level. Chi-square Test for Trend was used to estimate significance of differences between Baseline and End-line dichotomous outcome indicators using the 95% level of significance. Post-test only comparison of indicators between ESHE and non-ESHE areas used Chi-square Test for Independence.

2.8. Limitations

Since Baseline's 3 sampling domains deviate from End-line's 2, Baseline clusters were reconstructed to create 2 sampling domains, allowing comparison. Weighting was introduced at woreda level. However, reconstructing Baseline sample domains into ESHE and non-ESHE areas to compensate for unequal selection probability of clusters falling into the 3 domains, Baseline to End-line comparison of indicators using statistical tests, such as the Chi-Square Test, may not completely satisfy underlying assumptions to apply such statistical tests.

ESHE and non-ESHE areas cannot be considered mutually exclusive in terms of exposure to ESHE's community-based interventions. ESHE intervention had a spillover effect, beyond target areas to other parts of SNNPR. This intentional spillover leveraged ESHE's technical resources to large, expanded regional impact, beyond focus woredas. Among indications for this are CHP deployment and FHC distribution to families in non-ESHE areas. Providing technical support and capacity building beyond focus woredas resulted in maximum possible ESHE intervention effect, which may not be documented by this study.

3. INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS

3.1. Socio-demographic

A total of 1,455 women were interviewed using 1 or more of the 3 questionnaires. Overall mean age of 27 years was comparable between the 2 areas, 26.7 for ESHE and 27.5 for non-ESHE areas (Table 2). About 30% could read or write. The slightly higher literate proportion of ESHE over non-ESHE areas (34.3% versus 26.7%) is not statistically significant. Most (90.4%) women were currently married. Marriage pattern in the 2 areas was comparable.

3.2. Household Sanitation and Safe Water Supply

Household ownership of pit latrines reached 81.6%, more than double the 35% at Baseline. This apparent temporal trend is highly significant ($p < 0.0001$). Findings show significantly higher pit latrine coverage in ESHE over non-ESHE areas, 89.3% versus 76.3%, $p < 0.0001$.

Access to safe drinking water increased significantly, from 36% to 58.3%, $p<0.001$. Safe water access appears significantly higher in ESHE over non-ESHE areas, 72.3% versus 48.7%, $p<0.0001$.

3.3. Access to Health Facility

Health services access, measured by proportion residing within less than a 2-hour walk or within 10 km of nearest HF, revealed significant improvement, from 66% to 94.1%, $p<0.0001$. This reflects Ethiopia's recent expansion of health posts. This survey confirmed 58 (97%) of the 60 kebeles has a health post.

Table 2. Individual and Household Characteristics of Sampled Respondents, Household Health Survey, SNNP, April 2008.

Category	ESHE Areas	Non-ESHE Areas	SNNPR (Weighted)
<u>Women</u>	n=724	n=731	n=1,455
Mean age	26.7	27.5	27.1
% literate (can read or write)	34.3	26.7	29.9
% currently married	93.3	88.3	90.4
<u>Household</u>	n=300	n=300	n=600
% with pit latrine	89.3***	76.3	81.6
% with safe water supply ¹	72.3***	48.7	58.3
% within 2-hour walk from a health facility ²	99.0	90.7	94.1

*** $p<0.0001$ (ESHE versus non-ESHE areas)

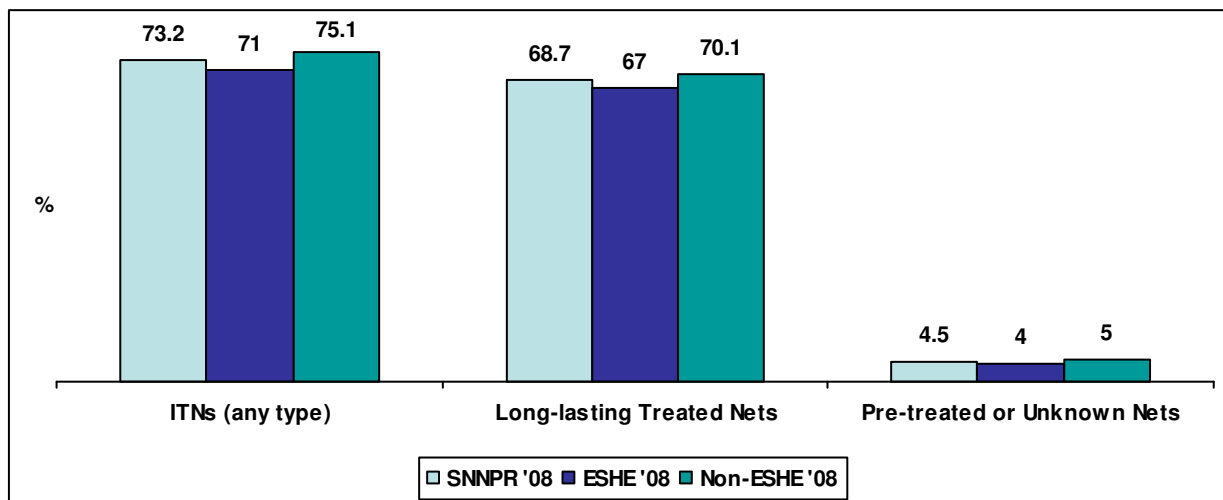
¹ Piped water or protected/covered well or spring

² Health post included

3.4. Possession of Insecticide-Treated Bed Nets

Community questionnaire findings indicated about 27% of kebeles are completely malarial, 48% partially, and 25% not at all (data not shown). Thus, ITN coverage data is restricted to areas completely or partially malarial. Overall, 73.2% of households in malarial areas owned at least 1 ITN, 71% in ESHE and 75% in non-ESHE areas (Figure 1). Baseline coverage was 1%. End-line revealed 68.7% owned long-lasting ITNs, meaning 94% used long-lasting ITNs and 6% either pre-treated or unidentified nets.

Figure 1. Household Possession of ITN (in malarious areas $n=1,075$), Household Survey, SNNPR, April 2008



4. PROGRAM REACH

4.1. Community Health Promoters

CHPs are key to ESHE BCC intervention. CHP coverage was 100% in ESHE focus kebeles, averaging 21 per kebele, ranging between 10-47 (Table 3). ESHE's CHPI initiative was expanded beyond ESHE areas. CHPs served 66% of non-ESHE kebeles. An average of 10, varying between 1-35, CHPs per kebele operated in non-ESHE areas. Nearly 80% of kebeles were served by a good number of CHPs (mean: 17 per kebele).

In ESHE areas, CHP training began in 2003. CHP service averaged 28 months (range: 2-48 months). In non-ESHE areas, duration averaged 24 months (range: <1 -48 months).

Nearly half the kebeles reported their CHPs were trained solely via CHPI. Less than 10% had CHPs solely trained by HEWs. However, 30% of ESHE kebeles reported CHPs trained via both CHPI and HEWs on different occasions, contrasting with 3.3% trained by CHPI and HEWs in non-ESHE kebeles.

Table 3. Community Health Promoters in the Sampled Kebeles, Household Health Survey, SNNP, April 2008.

Category	ESHE Areas N=30	Non-ESHE Areas N=30	SNNPR (Weighted) N=60
<u>CHP Coverage</u>			
% kebeles with CHPs	100.0	66.0	80.0
CHPs per kebele: Median (range)	20.5 (10-47)	10 (1-35)	17 (1-47)
CHP months in service: Median (range)	28 (2-48)	24 (<1-48)	24 (<1-48)
<u>CHP Training</u>			
% trained by CHPI only	53.3	43.3	48.3
% trained by HEWs only	6.7	10.0	8.3
% trained by CHPI and HEWs	30.0	3.3	16.7

4.2. Health Extension Workers and Other Community Health Workers

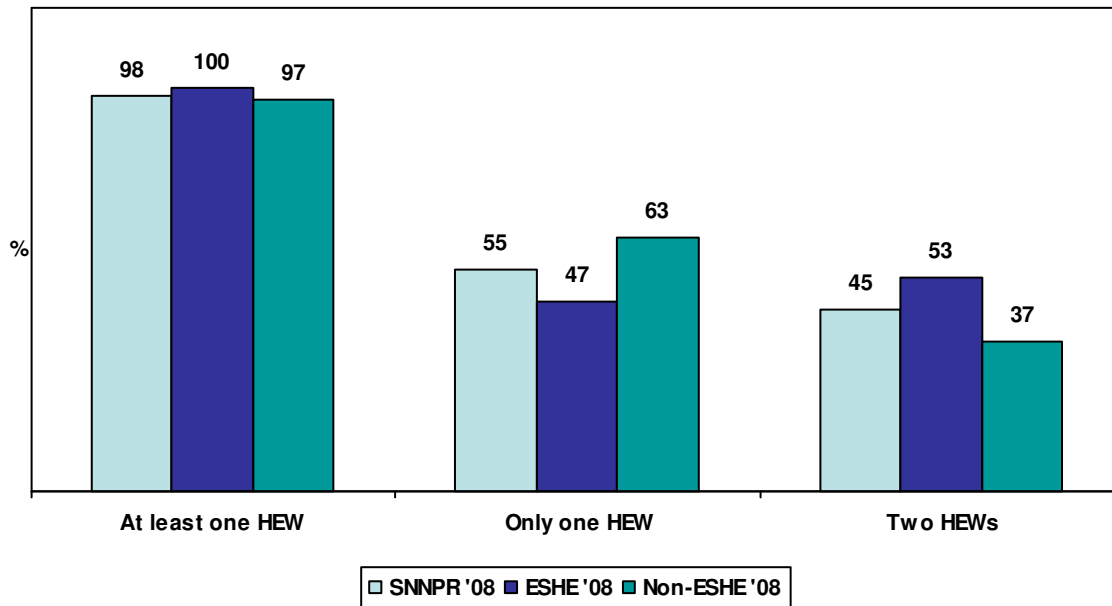
Figure 2 shows 98% HEW coverage in kebeles. Of kebeles, 45% had 2 HEWs, the remaining 1. Kebeles with 2 HEWs was 53% and 37% ($p<0.001$) in ESHE and non-ESHE kebeles, respectively.

Nearly three-fourths, 73%, had at least 1 Community-based Reproductive Health Agent¹ (CBRHA), averaging 2 per kebele (range: 1-7). Kebeles with CBRHAs appear much higher in ESHE than non-ESHE areas, 87% and 60%, respectively.

Anecdotal reports indicate some community volunteers have dual roles in a kebele, serving as CHP and CBRHA. There is no data to verify this phenomenon.

¹ CBRHAs are community volunteers primarily in charge of family planning promotion, provision of pills and condoms, and referring clients in need of clinical methods. They provide house-to-house visits and promote other reproductive health information.

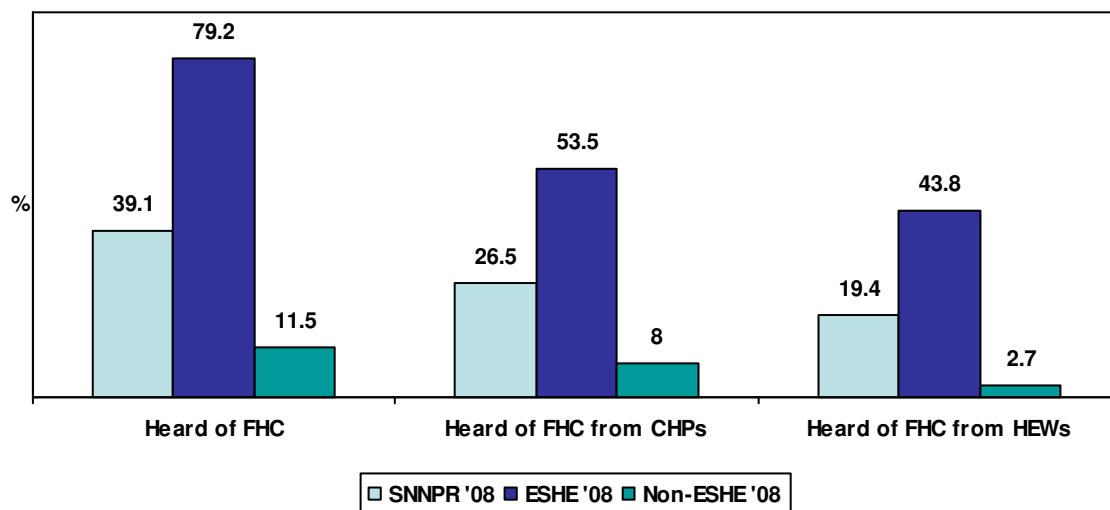
Figure 2. Kebeles Covered with Health Extension Workers, Household Survey, SNNPR, April 2008



4.3. Family Health Card Awareness

Figure 3 shows 39.1% of women with children aged 0-23 months had heard of the FHC. Awareness is significantly higher ($p < 0.0001$) among women in ESHE versus non-ESHE areas, 79.2% and 11.5%, respectively. Women in ESHE and non-ESHE areas, 53.5% and 43.8%, respectively, learned of FHC from HEWs and CHPs. Corresponding figures for the entire region were 26.5% and 19.4%, respectively.

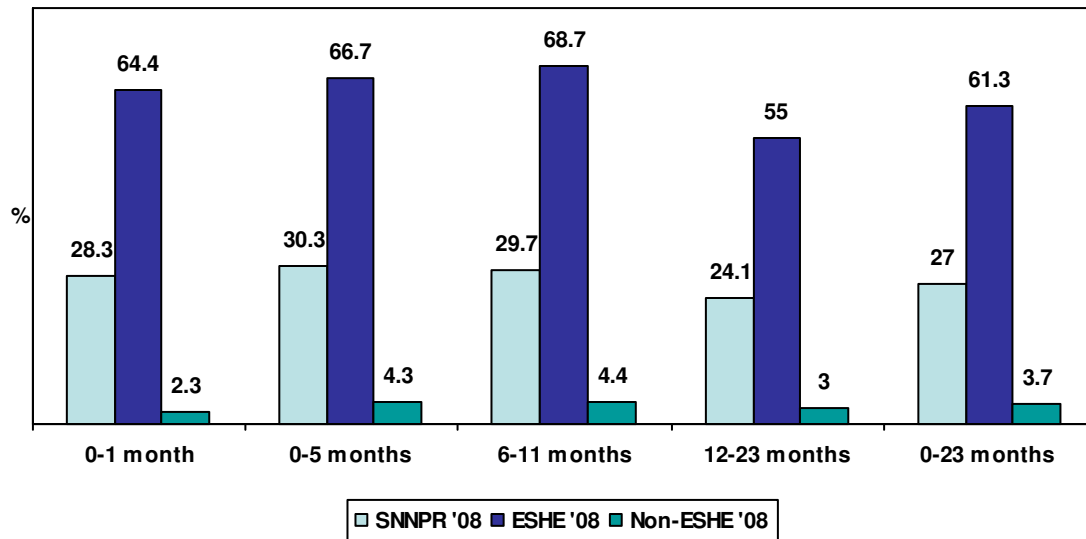
Figure 3. Proportion of Women Heard of the Family Health Card, by Source of Information, Household Survey, SNNPR, April 2008



4.4. Family Health Card Possession

FHC possession was assessed by asking women if they owned an FHC for the target children. A woman responding affirmatively was asked to show it. A child was considered an FHC owner only if the FHC was seen and confirmed by the interviewer. Of children aged 0-23 months in ESHE areas, 68.7% owned an FHC, significantly higher ($p < 0.0001$) than the 3.7% in non-ESHE areas. On the whole, 27% of children aged 0-23 owned an FHC (Figure 4). Newborns (0-1 months) owning an FHC was nearly two-thirds, 64.4%, in ESHE areas, suggesting mothers there were contacted by CHPs or HEWs immediately after delivery or during pregnancy. Age of ownership indicated a nearly stable trend, although it declined modestly for children aged 12-23 months. This may signal a recent improvement in provision or that some mothers with older children (aged 12-23 months) lost FHCs acquired about a year ago.

Figure 4. Possession the Family Health Card Possession, According to Child's Age, Household Survey, SNNPR, April 2008



Conclusion

Although expansion of HEW coverage progressed well (98%), coverage with 2 HEWs was around 45%. Access to important new community-level initiatives, including CHP and FHC use, were encouraging. Expansion to non-ESHE areas also progressed.

Recommendations

- Continue supporting introduction of new initiatives, CHP and FHC use, through in-service trainings to HEWs.
- Encourage use of volunteers to provide FHCs to all eligible families.

5. IMMUNIZATION

5.1. Vaccination Coverage and Trend

SNNP Region

Table 4 shows vaccinated children aged 12-23 months. Vaccination cards were seen by the interviewers for only 37%, not significantly different from 33% at Baseline.

A combination of information from cards and reported by mothers shows 44.2% of children were fully vaccinated, a significant ($p<0.05$) improvement from 34% at Baseline. End-line revealed 35.5% of children aged 12-23 months were considered fully immunized by their first birthday.

Coverage rates of individual vaccines showed notable, significant improvement. DPT1, which often serves as an indicator of access to immunization, reached 76.4%, a significant ($p<0.001$) improvement from 62% at Baseline. Proportion who received DPT3 significantly ($p<0.001$) increased, from 41% to 62% (Figure 5).

Dropout from DPT1 to DPT3 at 21.5%, although still high, declined significantly from Baseline at 34% ($p<0.001$). There was no difference in DPT dropout between ESHE and non-ESHE areas.

Table 4. Immunization Coverage of Children 12-23 Months by Antigen, Household Health Survey, SNNP, April 2008.

Category	ESHE Areas N=300	Non-ESHE Areas N=300	SNNPR (Weighted) N=600
% with vaccination card	46.3**	31.0	37.0
BCG	87.3**	74.7	79.8
POLIO0	13.8	9.0	10.9
POLIO1	92.3**	83.3	86.9
POLIO2	84.6*	77.3	80.3
POLIO3	72.8*	62.7	66.8
DPT1	84.2**	71.0	76.4
DPT2	79.2**	66.7	71.7
DPT3	70.1**	57.0	62.3
Measles	69.1*	57.3	62.1
Fully immunized ¹	46.9	42.3	44.2
Fully immunized before 1st birthday ²	37.7	34.0	35.5
Dropout rate: DPT1 to DPT3	20.2	22.5	21.5

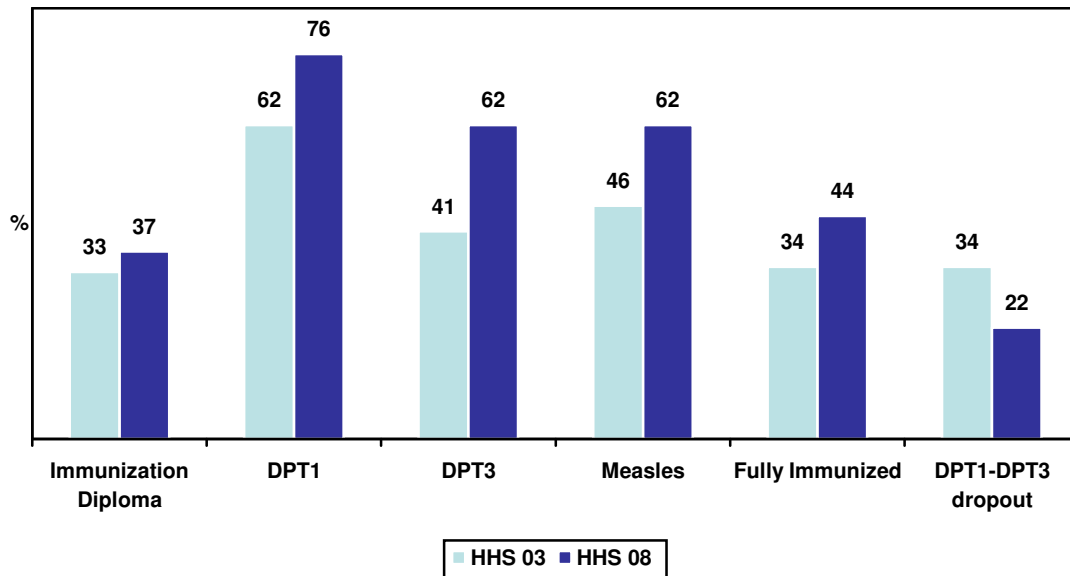
¹ Fully-vaccinated children received BCG, measles, and 3 doses of DPT and polio vaccines (excluding polio vaccine given at birth).

* $p<0.05$

** $p<0.001$ (ESHE versus non-ESHE areas)

²For children whose information was based on mother's report, proportion of vaccinations given during the first year was assumed to be the same as for children with a written record of vaccinations.

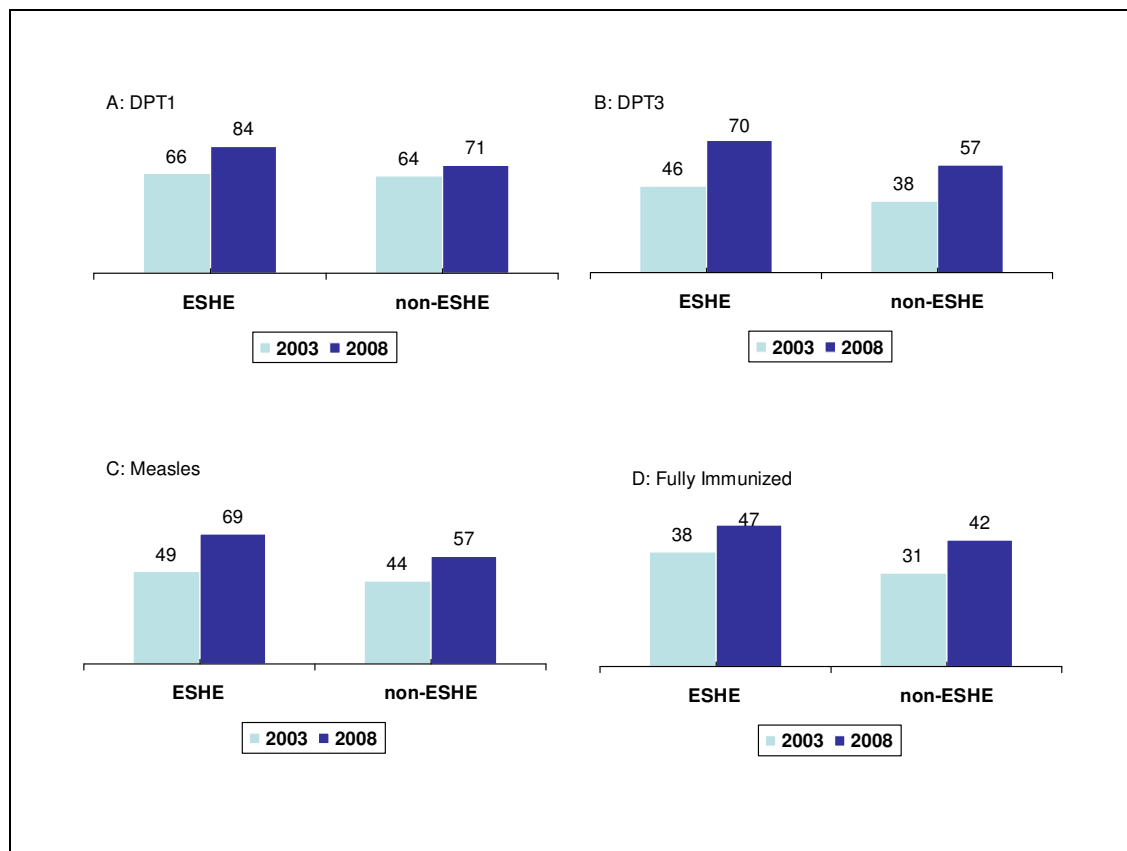
Figure 5. Trend in Coverage (%) of BCG, DPT3, Fully-Immunized Possession of Immunization Diploma, Stratified by Sample Area Household Survey, SNNPR, 2003 and 2008



ESHE versus Non-ESHE Areas

At End-line, vaccine-specific coverage was significantly higher in ESHE versus non-ESHE areas. The proportion fully-immunized did not vary significantly, 47% and 42%, respectively. In both, coverage increased significantly since Baseline for all antigens, including those fully immunized (Figure 6). Temporal trend was more pronounced in ESHE versus non-ESHE areas, especially for DPT1 and measles. Baseline DPT1 coverage was comparable between the areas, 66% and 64%, respectively. End-line revealed more pronounced DPT1 coverage in ESHE than non-ESHE areas, 84% and 71%. This signals better access to immunization information and services in ESHE areas. DPT3 increased significantly in both, but more pronounced in ESHE areas, 46% to 70%, $p < 0.0001$. In non-ESHE areas, DPT3 coverage increased from 38% to 57%, $p < 0.001$.

Figure 6. Trend in Coverage (%) of DPT1, DPT3, Measles, Fully-Immunized, and Possession of Immunization Diploma, Stratified by Sample Area, Household Survey, SNNPR, 2003 and 2008



5.2. Sources of Immunization Information

Women with children aged 0-23 months were asked whether they had heard of or received information regarding immunization from HWs or CHPs in the 3 months preceding the survey (Figure 7). Overall, 60% reported having heard from community HWs in the last 3 months. Further scrutiny revealed 52% and 38%, respectively, received information from HEWs and CHPs. Receipt from any community HWs increased significantly since Baseline, from 21% to 60% (Figure 8).

Women in ESHE areas had better access to immunization information via community HWs than those in non-ESHE areas, 72% versus 60%, respectively, $p < 0.05$. Women in ESHE areas received information from HEWs and CHPs, 64% and 62.5%, respectively. Corresponding proportions for women in non-ESHE areas were 43.8% and 21.3%, respectively. Higher CHP contact for women in ESHE areas was expected, as CHP coverage is much higher in ESHE areas.

Higher HEW contact in ESHE areas was expected, given higher coverage of 2 HEWs per kebele in ESHE versus non-ESHE areas.

Figure 7. Source of Information on Immunization Diploma from Community Health Promoters and Health Extension Workers in the Three Months Preceding the Survey, Household Survey, SNNPR, April 2008

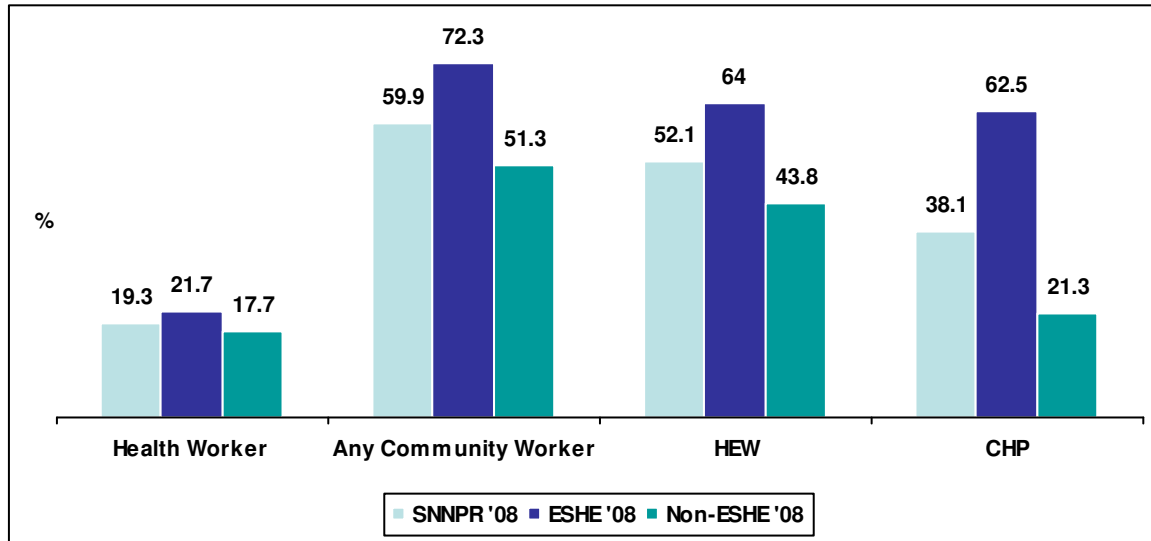
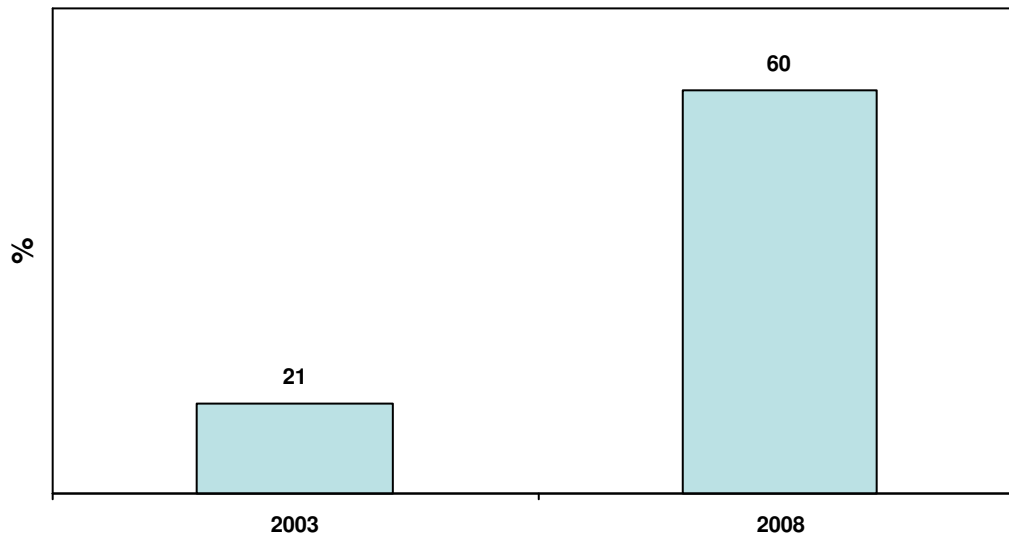


Figure 8. Trend in the Proportion of Women Who Received Immunization Information from Community Workers in the Three Months Preceding the Survey, Household Survey, SNNPR, 2003-2008

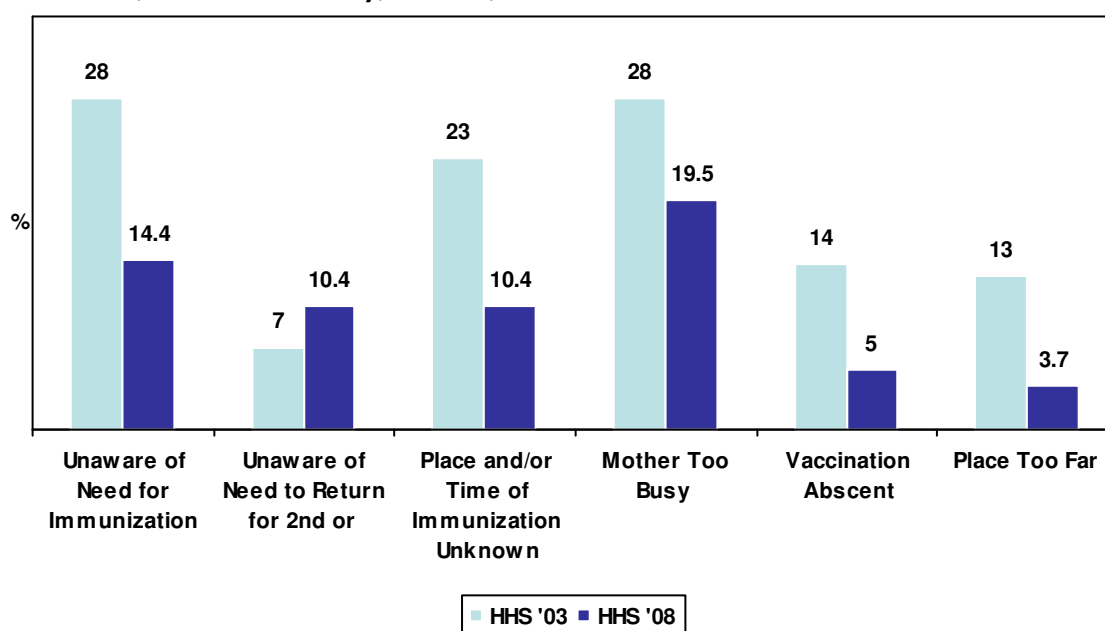


5.3. Reasons for Never Being Vaccinated or Completing Vaccinations

Mothers whose children received no immunization or failed to complete vaccination series were asked why (Figure 9). Most common were mother too busy (19.5%), unaware of need for immunization (14.4%), unaware of need to return for second and third rounds (10.4%), and immunization place and time unknown (10.4%).

Since Baseline, the magnitude of reasons changed. Those who reported unaware of need as the main reason declined by almost half. Lack of time remained the primary reason, although it declined notably since Baseline. Some reasons at Baseline, such as too far or absence of vaccination, diminished significantly.

Figure 9. Most Commonly Cited Reasons for Incompletely or Never Having Children Vaccinated, Household Survey, SNNPR, 2003 and 2008



5.4. Summary and Discussion

Vaccine-preventable diseases account for approximately 10% of the global burden of mortality in children under-5 years of age and correspond to 1.1 million child deaths each year³. To ensure children are fully immunized in a timely, safe, effective way, services must be accessible, of high quality, and utilized.

Of children aged 12-23 months, 44% were fully immunized. Although short of the universal target of 80%, improvement was 10 percentage points compared with 34% at Baseline. Most remarkable was increase in individual antigens, including BCG, DPT3, and measles. Measles immunization, an indicator for MDG-4 to track child survival progress, improved significantly, from 46% to 62%.

³ WHO (2002). *State of the world's vaccines and immunization*. Geneva, WHO (WHO/V&B/02.21).

Key factors accounting for these results were recent improvement of women's access to immunization information through HEWs and CHPs and recent universal coverage of health posts in kebeles. Both brought immunization services closer. In the 3 months preceding the interview, about 60% of women at End-line versus 20% at Baseline had been contacted by a community HW who discussed immunization.

More than half were contacted by HEWs and 38% by CHPs, and women's awareness of child immunization improved notably. Lack of information was a main reason at Baseline for never or incompletely having children vaccinated. This was reduced by half, signaling HEW and CHP effectiveness. Women's immunization information from HWs based in health centers had not improved.

Comparing immunization coverage between ESHE and non-ESHE areas was problematic. First, nearly 27% of non-ESHE woredas were targeted by ESHE's 1999-2003 EPI strengthening program, that demonstrated remarkable improvement in immunization coverage at the time. In contrast, 25% of currently-designated ESHE areas were not targeted. Second, there is clear spillover of some key interventions into non-ESHE areas, most important of which was CHP deployment in non-ESHE woredas. CHPs served 60% in non-ESHE areas. Third, recent initiation and expansion of the government's HEP, that reached nearly 100% coverage in the entire region, contributed to noted improvement in both areas. Other factors might also have offset possible immunization coverage differences that could have arisen in the 2 areas.

This study illuminated changes not seen or need improvement. Although dropout rate from DPT1 to DPT3 declined significantly from 34% to 21%, it remains higher than the universal target, below 10%. Although DPT1 coverage reached 76%, those who continue to finish decline to about 62% by the third dose and only 44% are fully immunized. Despite notable improvements, a number of reasons were cited for this failing. In order of priority, women reported lack of time, were unaware of need for immunization, were unaware of need to return for second or third round, and were unaware of vaccination locations. These important gaps must be targeted via community mobilization and BCC interventions.

Because the nearly 100% coverage of kebeles by 1-2 HEWs is recent, some children aged 12-23 months may have been born before HEWs arrived at their kebeles. If vaccines are provided regularly to these kebeles now staffed with HEWs, immunization access should reach nearly 100%. Utilization can be expected to increase if immunization information is provided and demand increases. Regular provision of vaccines and sustained mobilization via HEWs, CHPs, and VCHWs are needed to increase and sustain high coverage. Effort by all to complete the full series by the child's first year is a must for maximum protection, before children are exposed to vaccine-preventable diseases.

Recommendations

- Continue to empower HEWs and VCHWs to provide caretakers information about the importance of immunization and encourage individual caretakers to follow schedule through full immunization.
- Encourage HEWs and other HWs to use volunteers for defaulter tracing and to minimize dropouts.
- Strengthen the logistics management system, which includes vaccines and supplies and ensures cold chain management and maintenance.

6. ESSENTIAL NUTRITION ACTIONS

6.1. Breastfeeding Children Aged 0-5 Months

Optimal Breastfeeding Practices

Early, exclusive breastfeeding practice is recognized by international health experts as a key child survival intervention. With near to universal coverage, global estimates show optimal breastfeeding could avert 13-15% of all deaths of children under 5 years old. It was also identified as a key intervention to save newborn lives.

Table 5: Breastfeeding of Children, SNNP End-line Household Survey, April 2008.

Category	ESHE Areas (%)	Non-ESHE Areas (%)	SNNPR '08 (Weighted) (%)
Children aged 0-11 months who initiated breastfeeding within 1 hour after birth	85** (n=300)	63 (n=300)	72 (n=600)
Children aged 0-5 months exclusively breastfed	76*** (n=151)	55 (n=141)	64 (n=292)
Women with children aged 0-11 months who gave first colostrums	82*** (n=300)	45 (n=300)	60 (n=600)

*p<0.05

**p<0.001

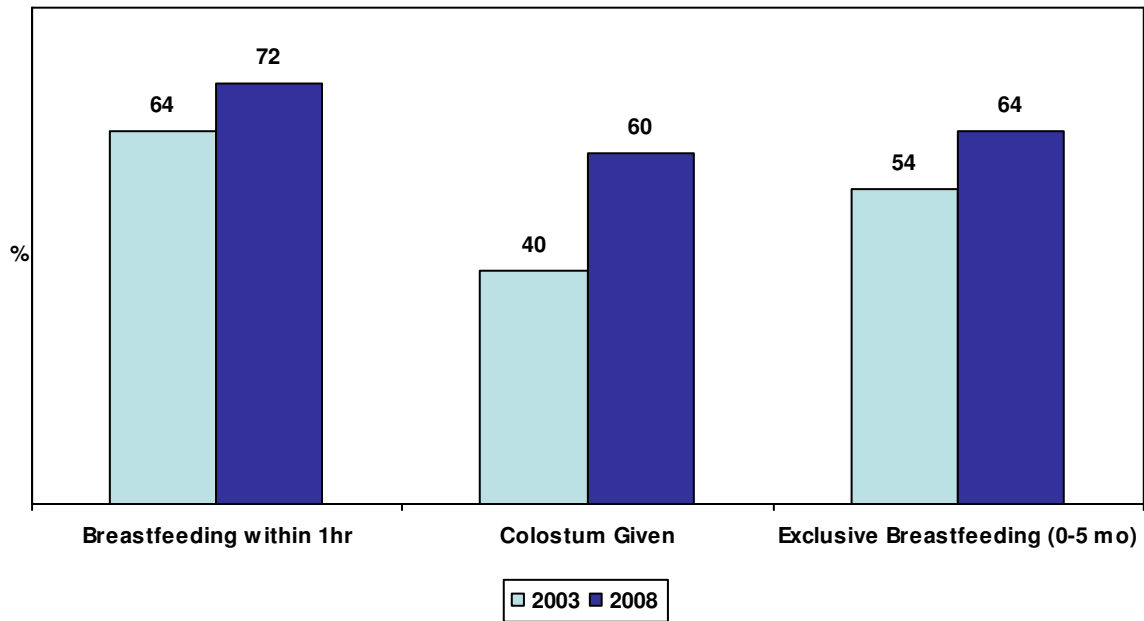
***p<0.0001 (ESHE versus non-ESHE areas)

In SNNP, all 3 breastfeeding practice indicators were significantly higher than at Baseline.

Of women with children aged 0-11 months, 72% had put their child to the breast within 1 hour after birth, significantly higher than the 64% at Baseline (p<0.05). At End-line, 60% of the women fed colostrums, a significant increase from 40% at Baseline (p<0.001).

For children aged 0-5 months currently being breastfed, mothers were asked if the child had been given other liquids or solid foods at any time during the preceding 24 hours. Children who received only breast milk were defined as exclusively breastfed. End-line data revealed significant improvement in exclusive breastfeeding (Figure 10), from 54% 64% (p<0,001).

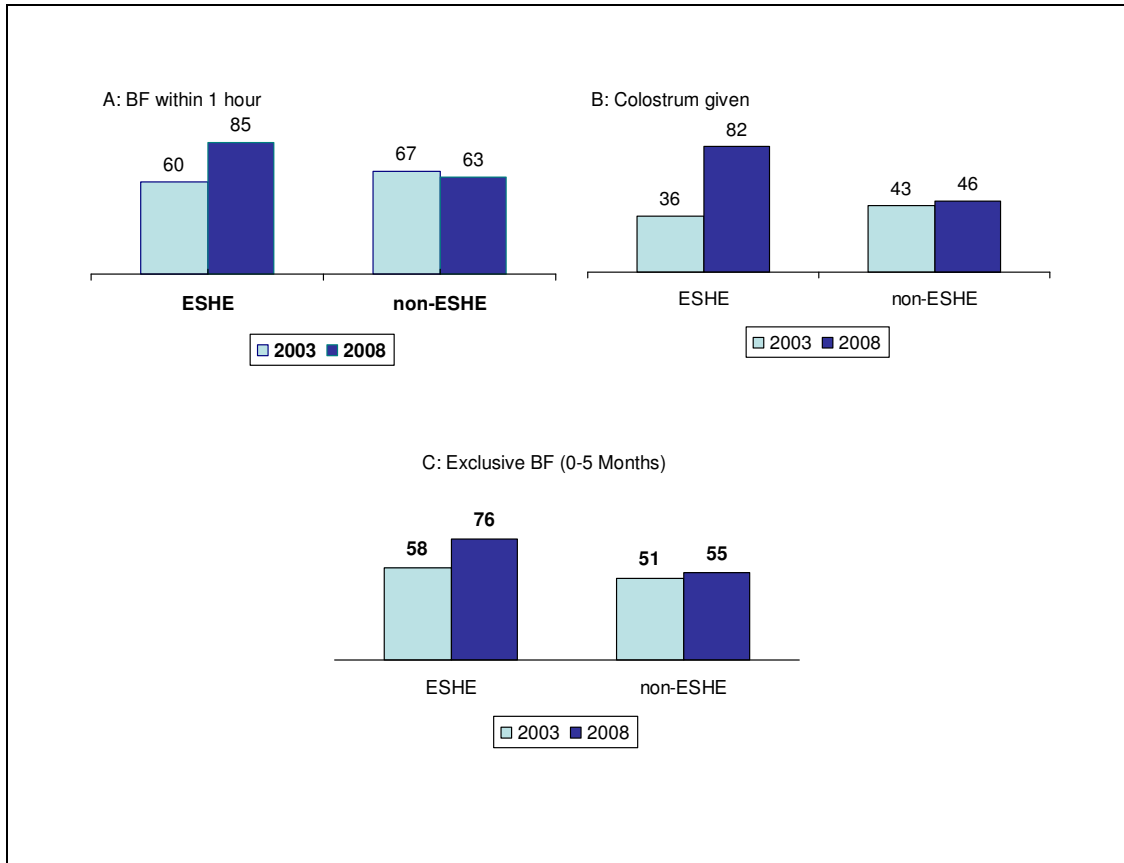
Figure 10. Breastfeeding-Related Practices of Children Aged 0-11 Months, Household Survey, SNNPR, 2003 and 2008



At End-line, all 3 indicators were significantly higher in ESHE versus non-ESHE areas: early initiation of breastfeeding (85% versus 63%), colostrums (82% versus 45%), and exclusive breastfeeding (76% versus 55%).

All indicators significantly improved only in ESHE areas (Figure 11). Those who reported initiating breastfeeding within 1 hour of birth increased from 60% to 85% ($p<0.0001$), colostrums feeding from 36% to 82% ($p<0.0001$), exclusive breastfeeding from 58% to 76% ($p<0.0001$).

Figure 11. Breastfeeding-Related Practices of Children Aged 0-11 Months, Stratified by Sample Area, Household Survey, SNNPR, 2003 and 2008



Frequency of Breastfeeding

Frequency of at least 8 times was 63%, 63%, 64% in ESHE and non-ESHE areas, respectively. This is similar to 64% at Baseline and considerably higher than 45% in ESHE areas at Baseline.

Bottle Feeding (Children Aged 0-5 Months)

Use of bottles to feed babies less than 6 months old decreased from 15% at Baseline to 8%. At End line, bottle-feeding was 3% in ESHE areas versus 12% in non-ESHE ($p < 0.01$).

6.2. Complementary Feeding with Breastfeeding (Children Aged 6-23 Months)

Timely Complementary Feeding Rate

Recommendation is complementary foods be introduced at 6 months of age, when nutrients from breast milk are not sufficient to support healthy growth. “Timely complementary feeding rate” is the percentage of children aged 6–9 months who were fed solid or semi-solid complementary foods in addition to breast milk in the preceding 24 hours.

About 71% of these children had semi-solid food, a significant ($p < 0.0001$) increase from 56% at Baseline (Figure 12).

Table 6. Complementary Feeding at Age 6-9 Months, Household Survey, SNNPR, April 2008

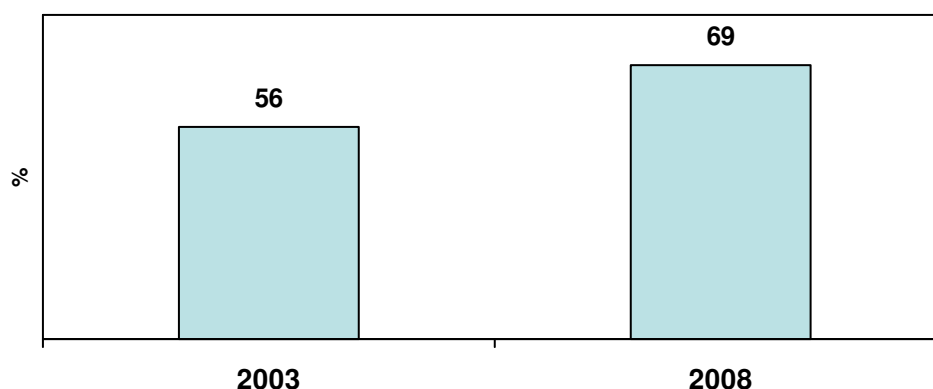
Category	ESHE Areas (%)	Non-ESHE Areas (%)	SNNPR (Weighted) (%)
Children aged 6-9 months who received semi-solid food	83** (n=106)	60 (n=110)	69 (n=216)

*p<0.05

**p<0.001

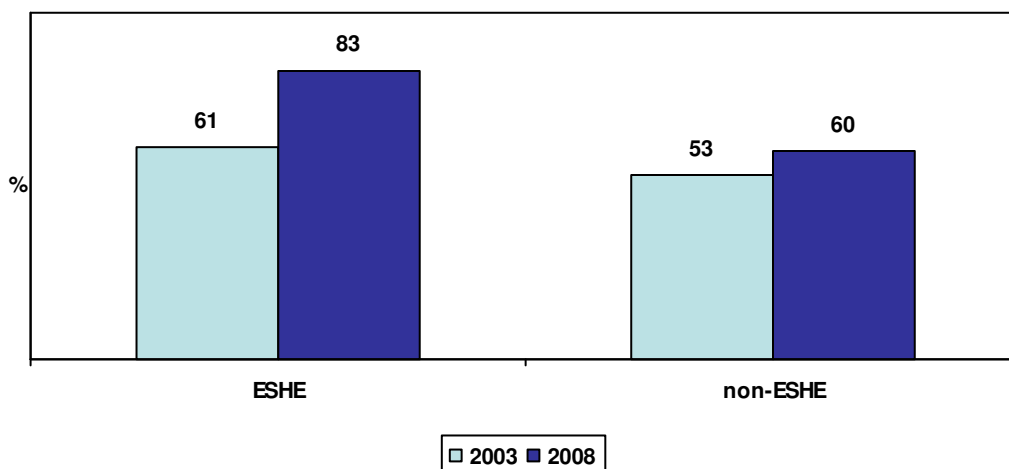
***p<0.0001 (ESHE versus non-ESHE areas)

Figure 12. Complementary Feeding (6-9 Months), Stratified by Sample Area, Household Survey, SNNPR, 2003 and 2008



End-line data revealed children in ESHE areas were more likely than those in non-ESHE areas to receive complementary feeding at the recommended age (83% versus 60%, $p<0.001$). There is a significant trend in timely introduction of complementary feeding in ESHE areas, from 61% to 83%, $p<0.0001$. There is no significant change from Baseline in non-ESHE areas (Figure 13).

Figure 13. Complementary Feeding (Age 6-9 Months), Stratified by Sample Area, Household Survey, SNNPR, 2003 and 2008



Continuation of Breastfeeding

Recommendation is to continue breastfeeding until the child is two years old, as breast milk remains an important source of nutrients and vitamins.

In SNNPR, continuation of breastfeeding is high. For the critical 18-23-month age group, when breastfeeding stops, the 82% rate was similar to 78% at Baseline (Table 7).

Table 7. Continuation of Breastfeeding at 6-23 Months, SNNP Household Health Survey, April 2008.

Category	ESHE Areas (%)	Non-ESHE Areas (%)	SNNPR (Weighted) (%)
6-11 months	100 (n=149)	99 (n=157)	100 (n=306)
12-17 months	95 (n=150)	92 (n=146)	94 (n=296)
18-23 months	87 (n=150)	78 (n=152)	82 (n=302)
6-23 months	94 (n=449)	90 (n=455)	92 (n=904)

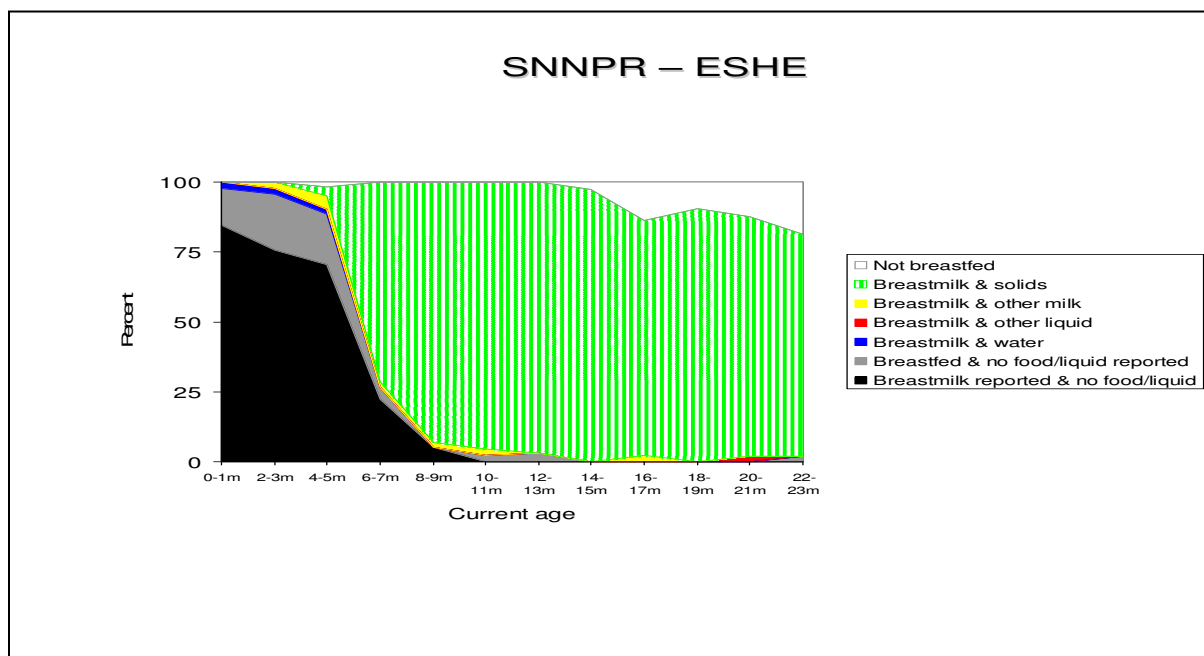
*p<0.05

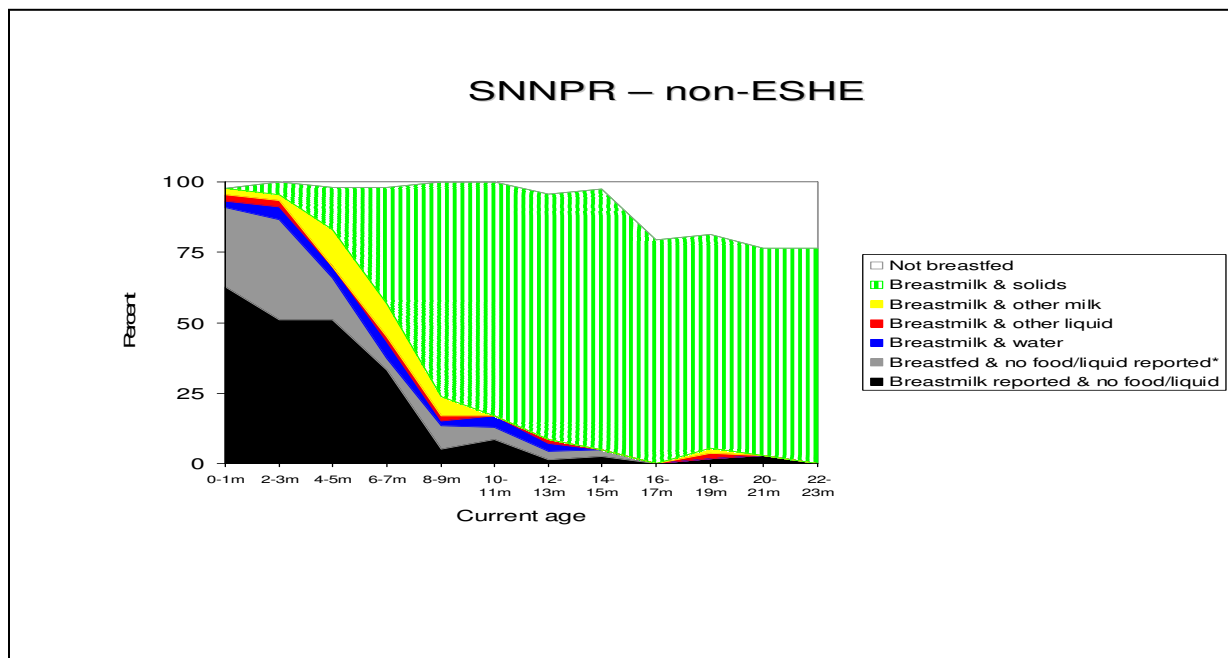
**p<0.001

***p<0.0001 (ESHE versus non-ESHE)

Continuation of breastfeeding remains high in both ESHE and non-ESHE areas, with no significant difference at all age ranges.

Figure 14. Feeding Pattern for Children Aged 0-23 Months in the Preceding 24 Hours (Breast Milk, Liquids, Food) in ESHE and Non-ESHE Areas, Household Survey, SNNPR, April 2008





Feeding Frequency of Complementary Foods

In Ethiopia, as in many other countries, it is problematic to determine feeding frequency, especially in terms of what constitutes a “meal” and what constitutes a “snack.” In addition, the way meals and snacks data were collected at Baseline is different from the current recommended questions on soft, semi-solid, and solid foods. Thus, in analyzing Baseline, only frequency of meals, not snacks, was used.

In the region, frequency of feeding (minimum 2 times) was 72% for children aged 6-11 months, 85% for 12-23 months (minimum 3 times), and 81% for 6-23 months.

Table 8. Frequency of Feeding at 6-23 Months, Household Health Survey, SNNP, April 2008.

Category	ESHE Areas (%)	Non-ESHE Areas (%)	SNNPR (Weighted) (%)
6-11 months (Minimum 2 times)	81** (n=149)	66 (n=157)	72 (n=306)
12-23 months (Minimum 3 times)	89* (n=300)	82 (n=298)	85 (n=598)
6-23 months	86*** (n=449)	76 (n=455)	81 (n=904)

*p<0.05

**p<0.001

***p<0.0001 (ESHE versus non-ESHE areas)

Frequency of feeding is significantly higher in ESHE areas. Children aged 6-11 months was 81% versus 66%, 12-23 months 89% versus 82%, and 6-23 months 87% versus 76%. Figures were higher compared with Baseline at 74% for children aged 6-11 months and similar to Baseline at 86% for children aged 12-23 months (Table 8).

Dietary Diversity

ENA dietary diversity messages recommend that in addition to the baby's staple porridge, eating at least 2-3 additional food groups. A young child should eat 3-4 different types of foods daily. At Baseline, 24-hour recall data collected focused on 7 major food categories:

- Grains, roots and tubers
- Animal milk (primarily cow milk)
- Vitamin A-rich foods (fruit and vegetable sources)
- Other fruits and vegetables
- Meat, poultry, fish, eggs, cheese, and yoghurt
- Legumes or nuts
- Oil, fat, and butter

For children aged 6-23 months, dietary diversity in the 24-hour recall was defined as “low” for those who only ate from 0-2 food groups, “medium” for those who ate from 3-4 groups, and “high” for those who ate from 5 or more groups. Minimum recommended diet diversity was set at more than 3 different types of food per day.

Table 9. Food Diversity for Children Aged 6-23 Months, Household Survey, SNNPR, April 2008

Of 7 Food Groups	ESHE Areas (n=449)	Non-ESHE Areas (n=455)	SNNP (Weighted) (n=904)
0-2 food groups	47***	66	59
3-4 food groups	39***	28	33
5 or more food groups	14***	5	9

*p<0.05

**p<0.001

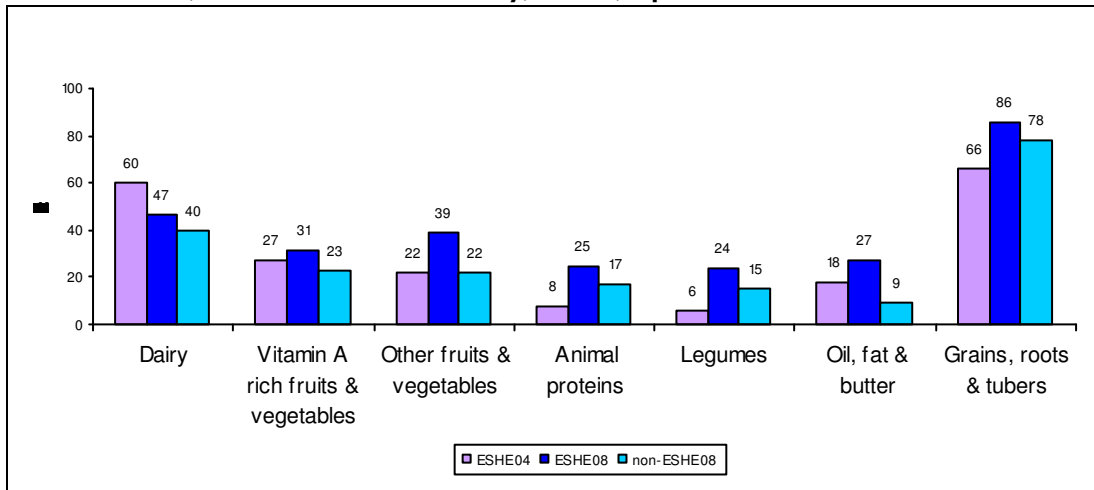
***p<0.0001 (ESHE versus non-ESHE areas)

SNNPR dietary diversity from Baseline is not available. However, compared with Baseline, dietary diversity, of a total maximum value of 7 food groups for children aged 6-23 months, showed major improvements. There was a reduction to 47% versus 67% at Baseline of children with low diversity; an increase to 39% of children with medium diversity versus 28% at Baseline; and an increase to 14% of children with high diversity versus 5% at Baseline.

Table 10. Dietary Diversity per Types of Food for Children 6-23 Months, Household Health Survey, SNNP, April 2008.

Dietary Diversity by Types of Food	ESHE Areas (%) (n=449)	Non-ESHE Areas (%) (n=455)	ESHE + Non-ESHE Areas (%) (n=904)
Foods from grains, roots, or tubers	86***	78	81
Milk other than breast milk, formula	47***	40	43
Vitamin A-rich vegetables or fruits	31***	23	26
Other fruits and vegetables	39***	22	29
Meat, fish, eggs, yoghurt, cheese	25***	17	20
Foods from legumes and nuts	24***	15	18
Food with oil, fat, butter	27***	9	16

Figure 15. Dietary Diversity per Types of Food for Children 6-23 Months, Compared to ESHE Baseline, Household Health Survey, SNNP, April 2008.



At Baseline, there was higher consumption of animal products (meat, poultry, eggs, cheese, yogurt) and legumes and less of dairy (mainly milk). Grains, roots, and tubers were eaten by most.

At End-line, dietary diversity in all food groups was statistically higher in ESHE versus non-ESHE areas. However, most children do not receive adequate diversity. Existing data does not indicate relative importance of possible contributing factors, such as cultural food habits leading to food aversions, lack of awareness of importance of a diverse diet, or limited family access to different food groups due to high cost or lack of availability. Field experience does suggest a mixture of all. In addition, the current food crisis further jeopardizes diversity.

Bottle Feeding (Children Aged 6-23 Months)

Use of bottles to feed young children aged 6-23 months decreased from 18% at Baseline to 5% ($p < 0.001$). It was 5% in ESHE and non-ESHE areas.

Hand Washing

Hand washing is recommended as a means to improve nutrition of young children through effecting decreased illness, particularly diarrhea.

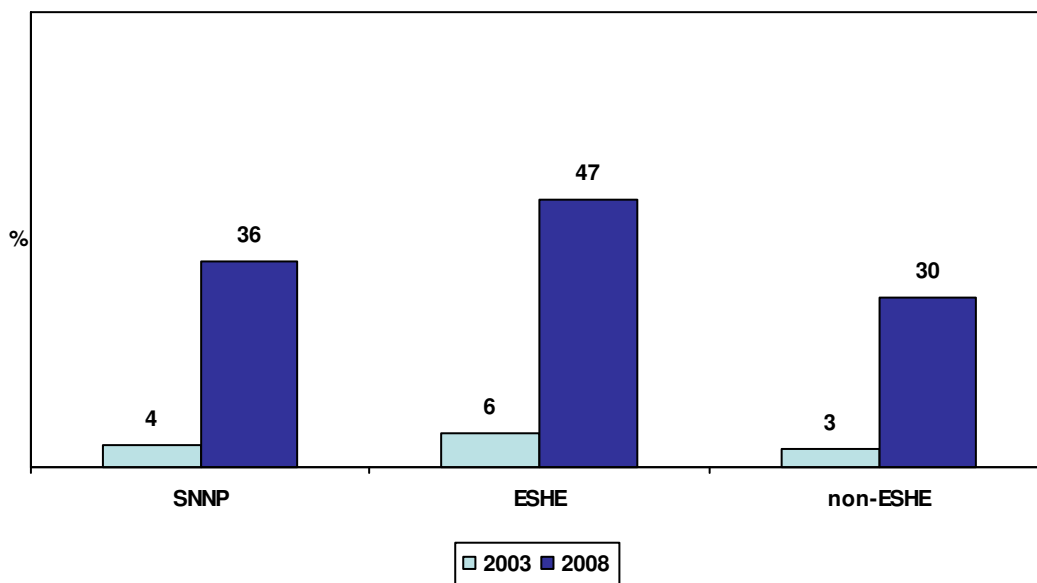
Proportion of women who reported hand washing before feeding children aged 6-23 months was 88%, 92%, and 85%, similar to Baseline at 86%.

In ESHE versus non-ESHE areas, there was no significant difference.

6.3. Nutritional Care of the Sick Child

It is recommended mothers be encouraged to increase frequency of breastfeeding during each illness. At Baseline, mothers were asked if their children experienced any illness in the prior 2 weeks, then about changes in their feeding practices.

Figure 16: Percent Distribution of Children Sick in the Two Weeks Preceding the Survey, by Amount of Breastfeeding Offered, Household Health Survey, SNNP, 2003 and 2008.



Breastfeeding during child illness increased significantly, from 4% to 36%, $p < 0.0001$, as did increasing fluids during diarrhea, from 4% to 33%, $p < 0.0001$.

Breastfeeding of children during illness increased more significantly in ESHE versus non-ESHE areas, 47% versus 30%, $p < 0.05$.

6.4. Control of Vitamin A Deficiency

Vitamin A Deficiency (VAD) is widespread in Ethiopia. It is recommended children receive adequate amounts in their diet or through supplementation.

Consumption of Vitamin A-Rich Foods

Vitamin A-rich foods (e.g., pumpkins, carrots, red sweet potatoes, green leafy vegetables, mangos, papaya, liver) in the diet is promoted to improve children's diet. There was no change from Baseline. Only 1 out of 3 children aged 6-23 months consumed such foods in the preceding 24 hours.

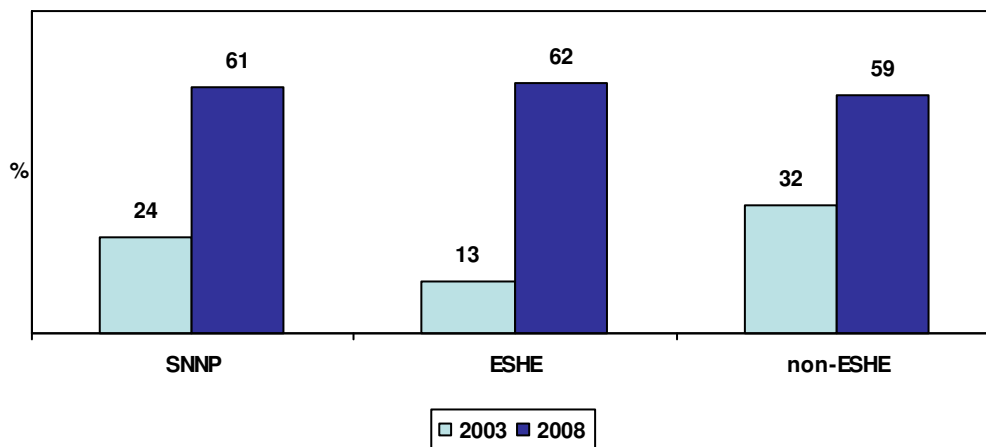
Post Partum Vitamin A Supplementation for Women

Vitamin A supplementation within 45 days after delivery is recommended to increase Vitamin A through breast milk intake. Progress was made from Baseline, when only 5% received Vitamin A post-partum (ESHE areas and region), increased to 19% at End-line. Achievements are higher in ESHE areas, 30% versus 12% in non-ESHE areas ($p < 0.0001$).

Vitamin A Supplementation for Children Aged 6 Months and Older

Vitamin A coverage for children aged 6-23 months reached 61%. Both ESHE and non-ESHE areas significantly increased in Vitamin A supplementation for children aged 6-23 months. The increase in the region reflects success of the EOS strategy to increase access to delivery of such service.

Figure 17. Children Age 6-23 Months Who Received Vitamin A in the Previous 6 Months, Household Health Survey, SNNP, 2003 and 2008.



6.5. Control of Anemia

Antenatal Care: Supplementation of Iron/Folic Acid During Pregnancy

During antenatal consultations (ANC), pregnant women need iron/folic acid supplementation to prevent anemia. Women with children aged 0-11 months were asked if they received these services during ANC visits.

ANC attendance increased from 47% to 65% (see Chapter 8). Less than half (39%) received iron/folic acid supplementation, an increase compared with 28% at Baseline.

However, only 25% received iron/folic acid. Although significantly higher than 13% at Baseline ($p<0.001$), it is still very low.

Table 11. Percentage of Women with Children Age 0-11 Months Having Received Iron/Folic Acid Supplementation, Household Health Survey, SNNP, April 2008.

Category	ESHE Areas (%)	Non-ESHE Areas (%)	SNNPR (Weighted)(%)
Received ANC in health facility	74.** (n=300)	59 (n=300)	65 (n=600)
Received iron tablet (antenatal care users)	57*** (n=222)	24 (n=177)	39 (n=390)
Received iron tablet (among total number of women)	42*** (n=300)	14 (n=300)	25 (n=600)

* $p<0.05$

** $p<0.001$

*** $p<0.0001$ (ESHE versus non-ESHE areas)

Iron/folic acid supplementation significantly increased from Baseline only in ESHE areas, from 14% to 57% ($p>0.001$). At End-line, significantly higher levels of ANC attendance ($p>0.001$) and women receiving iron/folic acid ($p>0.0001$) were noted in ESHE versus non-ESHE areas, 57% versus 24%. In ESHE areas, 42% received iron/folic acid supplementation during their last pregnancy versus 14% in non-ESHE areas.

Children Aged 0-23 Months Sleeping Under ITN

Sleeping under an ITN is a strategy to prevent malaria and anemia in children and pregnant and lactating women.

Half of households owned an ITN at Baseline, improved at End-line. Approximately 6 of 10 children under-5 years of age sleep under an ITN in the region, ESHE areas, and non-ESHE areas, 55%, 57%, 53%, respectively. Numbers for women were similar.

6.6. Women's Nutrition

Improving women's nutrition is a key intervention for medium- and long-term improvements for children's and women's health. However, this program focused on women's nutritional needs during pregnancy or lactation.

Table 12. Women Who Ate More During Pregnancy and Lactation, Household Survey, SNNPR, April 2008

Category	ESHE Areas (%)	Non-ESHE Areas (%)	SNNP (Weighted) (%)
Ate more during pregnancy (children aged 0-11 months)	50*** (n=300)	15 (n=300)	30 (n=600)
Ate more during lactation (children aged 0-23 months)	54 (n=144)	49 (n=171)	51 (n=336)

* $p<0.05$

** $p<0.001$

***p<0.0001 (ESHE versus non-ESHE areas)

A third of the women ate more because they were pregnant. Significantly, more women reported eating more in ESHE versus non-ESHE areas. At Baseline, only 8% ate more during pregnancy.

Half ate more because they were breastfeeding. Findings were similar in the region, ESHE, and non-ESHE areas, and also similar to Baseline.

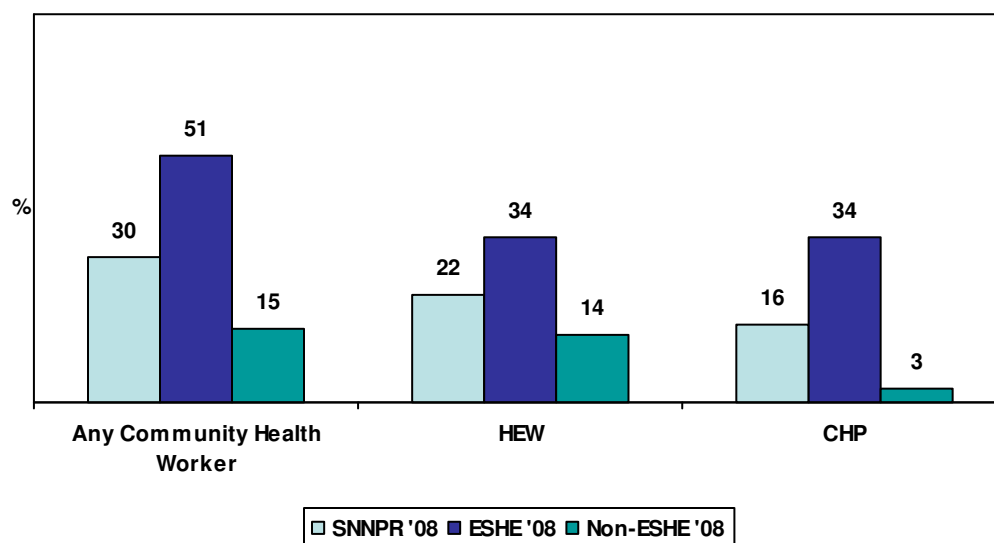
6.7. Source of Nutrition-Related Information

Source of Information Regarding Feeding Practices

Women were asked whether community HWs contacted them in the preceding 12 months to discuss feeding their children aged 0-23 months. About 30% were contacted, with 22% by an HEW and 16% a CHP.

More than half (51%) in ESHE versus 15% from non-ESHE areas had been contacted by any community HW (p<0.0001). In focus areas, about a third had been contacted by HEWs, and the same by CHPs. Despite universal HEW coverage in ESHE and non-ESHE areas, women in ESHE areas were 2 times more likely to have been visited by an HEW.

Figure 18. Women Reported Being Contacted by Community Health Promoters Who Talked About the Feeding of Their Children Age 0-23 Months in the 12 Months Preceding the Survey, Household Health Survey, SNNP, April 2008.



Women were asked to spontaneously cite messages heard or remembered from community HWs. Women in ESHE areas were significantly more likely than those from non-ESHE areas to spontaneously recall most messages.

Table 13. Messages Recalled by Women Who Received Advice on Feeding Practices, Household Survey, SNNPR, April 2008

Message	ESHE Areas N= 328	Non-ESHE Areas N=94	SNNPR (Weighted) N=422
Eat extra amount of food	66	63	65
Exclusively breastfeed (to 6 months)	51	40	48
Frequency of breastfeeding	26*	15	23
Complete feeding at 1 breast before switching to other	16*	7.5	13
Continue breastfeeding until child is 2 years and beyond	34	12	28
Begin complementary feeding at 6 months	48.*	34	44
Frequency of feeding	46.5***	22	39
Use different foods to enrich porridge	55***	30	47

*p<0.05

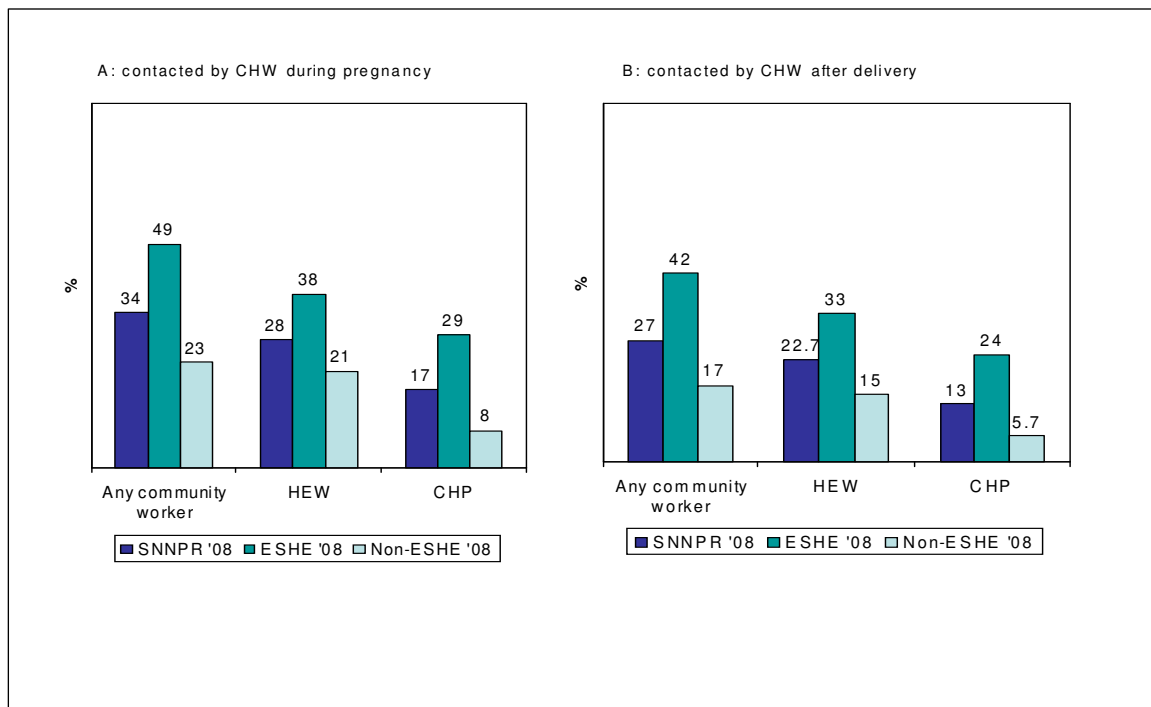
**p<0.001

***p<0.0001 (ESHE versus non-ESHE areas)

Information to Women During Pregnancy and After Delivery

Women with children aged 0-11 months were asked if they were contacted by community HWs who discussed their or their children's nutrition during pregnancy or immediately after delivery.

Figure 19. Proportion of Women Contacted by Community Health Promoters During Pregnancy and Immediately After Delivery, Household Health Survey, SNNP, April 2008.



Of mothers, 34% were contacted by community HWs during pregnancy, 28% by HEWs and 17% by CHPs. Similar regional numbers were found for contacts after delivery.

Type of community HW contact during pregnancy was significantly different: 38% and 21% ($p<0.001$) of women from ESHE and non-ESHE areas reported HEWs and 29% and 8% ($p<0.0001$) reported CHPs, respectively.

Information from community HWs was significantly higher in ESHE versus non-ESHE areas, 49% versus 23%, respectively, $p<0.001$. At Baseline, 28% of pregnant women received information on maternal nutrition during ANC visits and 16% on breastfeeding.

At End-line, women were asked to spontaneously cite messages heard or were told by community HWs during pregnancy. The following nutrition-related information was recalled:

- Get extra amounts of food (43%)
- Give colostrums to the newborn (25%)
- Put the baby to breast immediately after delivery (25%)
- Take iron/folic acid (20%)
- Sleep under a bed net (14%)

ESHE-area women were significantly more likely than others to spontaneously report various key messages from community HWs during pregnancy (Data not shown). Of women in ESHE areas, 59% and 30% were advised to seek ANC and get iron/ folic acid versus 37% and 6%, respectively, in non-ESHE areas.

Of mothers, 27% were contacted by community HWs within a few days or weeks after delivery, 23% by HEWs, and 13% by CHPs. More ESHE versus non-ESHE area women received information from community HWs, 42% and 17%, respectively ($p<0.001$).

Nutrition messages women received immediately after delivery regarded:

- Exclusive breastfeeding to 6 months (72%)
- Eating extra amounts of food (57%)
- Frequency of breastfeeding (42%)
- Completing feeding at 1 breast before switching to the other (31%)
- Positioning and attachment in relation to breastfeeding (28%)

Overall, women in ESHE areas had better recall compared with those in non-ESHE areas:

- 87% versus 49% for exclusive breastfeeding
- 56% versus 19% for frequency of feeding
- 45% versus 8% for completing feeding at 1 breast before switching to the other
- 41% versus 8% for position and attachment

6.8. Child Anthropometry

Analyzed and validated anthropometric data will be the subject of a separate report.

6.9. Summary and Discussion

In Ethiopia, malnutrition begins early and increases progressively through 2 years of age. Much stems from inappropriate infant feeding practices during the first year, combined with infections such as diarrhea effected by unhygienic food handling. Improving infant and young child feeding

practices (IYCF) from 0-23 months of age and women's nutrition are essential to reduce high child malnutrition. Control of micronutrient deficiencies has shown to impact children's and women's mortality and morbidity. The Government, therefore, adopted the Essential Nutrition Actions (ENA) approach to achieve mortality and malnutrition Millennium Development Goal (MDG) reduction.

Optimal breastfeeding and complementary feeding were promoted by ESHE and supported through training of HWs, HEWs, and CHPs and by providing counseling guides for health providers and reminder materials for target audiences. Similar activities were conducted outside ESHE areas, mainly by HWs and HEWs. The FHC was more widely available in ESHE versus non-ESHE areas.

Optimal breastfeeding practices for children aged 0-6 months, introduction of complementary food, and control of Vitamin A deficiency were carried out from ESHE's 2003 start, Phase I in SNNP. Other nutrition practices were introduced in all ESHE regions in late 2006. ESHE strengthened community and HF interventions to address inadequate feeding practices of children aged 6-23 months, reported at Baseline. Counseling tools on complementary feeding were developed for community HWs in 2005. From 2006, as requested by the RHB, community HWs' (HEWs, CHPs) training was increased.

Newly-accepted IYCF indicators, particularly "Minimum Adequate Diet (MAD)," were calculated using End-line data, annexed in this report. Indicators reveal more precisely diet of children aged 6-23 months.

During ESHE implementation, the government began to implement bi-annual mass campaigns providing Vitamin A to children aged 6-59 months, de-worming for children aged 24-59 months, and, more recently, ITNs for pregnant women and children under-5 years of age.

Baseline and End-line were compared to determine whether ENA improvements were achieved.

In ESHE areas, improved feeding practices of advocacy, training, promotion, and counseling (through negotiation skills) were conducted since ESHE implementation, in Phase I (2003-2006). They were parts of 2 of the 3 pillars (Training and supervision of HWs and strengthening CHPs and HEWs). The FHC, promoting ENA small, doable action-oriented messages, was widely used by community HWs to encourage family members and caregivers to adopt adequate improved feeding practices.

In non-ESHE areas, similar interventions, with less intensity (less training, fewer kebeles with CHPs, fewer FHCs distributed), were implemented.

IYCF practices, early and exclusive breastfeeding, and introduction of complementary foods significantly improved. Compared with Baseline, all achievements are significantly higher in ESHE versus non-ESHE areas and contributed to overall regional improvement.

Post-partum Vitamin A supplementation to improve Vitamin A content in breast milk remains low, but significantly improved in ESHE areas.

Vitamin A supplementation for children aged 6-23 months improved in the region, reflecting EOS success, which increased access to such service. Achievements were still below the national

80% target, but CHP presence or absence does not seem to affect coverage; there is no difference between ESHE and non-ESHE areas.

In Phase II (2006) of ESHE implementation, promotion of feeding practices such as frequency of feeding and dietary diversity were introduced. Both were significantly higher in ESHE versus non-ESHE areas. Comparable regional Baseline data were not available. SNNP RHB strategy to train all HEWs and CHPs in improving complementary feeding practices could have contributed to achievements. Food diversity in ESHE areas improved from Baseline, but remains low, as almost half of children are fed only 2 different types of food daily. Similarly, breastfeeding practices during illness improved only in ESHE areas. There was no improvement in consumption of Vitamin A-rich foods.

Continuation of breastfeeding to 24 months and beyond and hand washing before feeding the child, high at Baseline, remain high.

The End-line HHS was an opportunity to assess feeding practices using newly-developed MAD indicator, which reveals more precisely the diet of children aged 6-23 months.

ANC attendance increased. Iron/folic acid supplementation during pregnancy increased significantly only in ESHE areas, where slightly more than half received supplementation.

Women in ESHE areas were contacted more frequently by community HWs, including HEWs and CHPs, to discuss IYCF practices during their pregnancy and just after delivery. Messages recalled often reflect improved feeding practices.

Many targeted ENA showed improvements. Some resulted from intensive training and strong BCC (early and exclusive breastfeeding, introduction of complementary food) and others from improved delivery systems such as EOS. Breastfeeding and Vitamin A supplementation lead nutrition interventions to decrease mortality of children under-5 years old. Selected practices such as food frequency and diversity changed only in ESHE areas and need further improvement to reach public health impact.

Similarly, other selected practices, mostly related to maternal nutritional status such as receipt of Vitamin A post partum, iron/folic acid supplementation during pregnancy, and increased diet during pregnancy improved only in ESHE areas. They are still modest.

Findings related to stunting, wasting, and underweight were omitted from this report. Analysis to date indicates unexpected findings that must be validated and further understood to interpret properly. These will be presented in another report.

Findings of this study are bases for recommendations:

- Continue to support SNNP RHB and partners to expand ENA to the entire region, replicating optimal breastfeeding practices successes.
- Expand beyond breastfeeding and vitamin A supplementation successes to ensure adequate complementary feeding practices (including feeding during and after illness) and adequate nutritional care for pregnant and lactating women. Programmatic efforts that support advocacy, training, promotion, and counseling (using negotiation skills) will help achieve success.

- Conduct formative IYCF research to assess how: 1) Current messages are delivered, 2) Parents perceived messages and defined facilitators and obstacles (including access and utilization of food), and 3) To strengthen the program to replicate success.

7. CHILD MORBIDITY, TREATMENT, AND AWARENESS

7.1. Child Morbidity Incidence and Trend

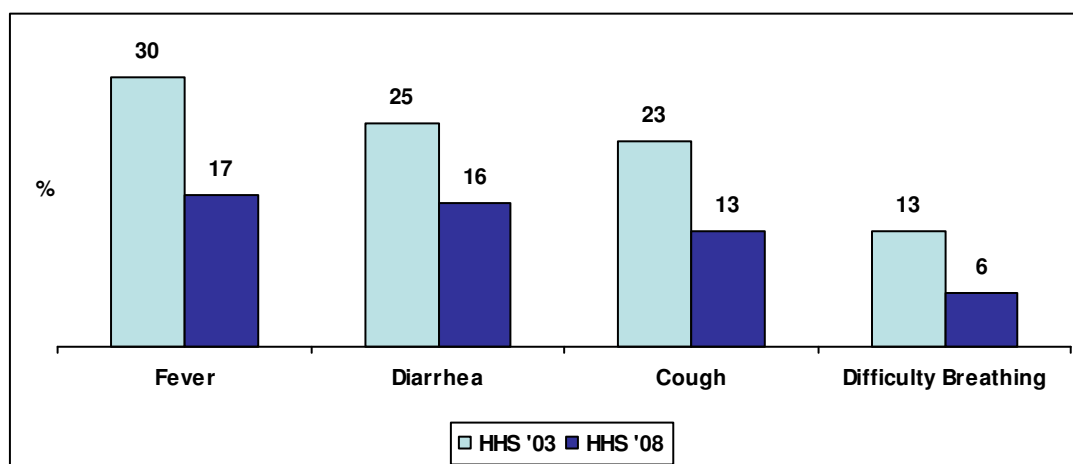
Child (aged 0-23 months) morbidity information was collected by asking mothers about children's incidences of fever, diarrhea, cough, and difficult breathing in the preceding 2 weeks. Reported were 16.6%, 15.7%, 12.9% and 6.4%, respectively (Table 14).

Comparing trends in childhood illnesses between 2 HHSs may be confounded by seasonal diversity, the time surveys were fielded. However, interesting patterns emerged when comparing Baseline and End-line. Figure 20 shows previous 2-week incidence of illness declined significantly since Baseline: Fever from 30% to 17%, $p<0.0001$, diarrhea 25% to 16%, $p<0.0001$, cough 23% to 13%, $p<0.001$, and difficult breathing 13% to 6%, $p<0.0001$.

Table 14. Percentage of Children Aged 0-23 Months Ill with Fever, Diarrhea, Cough, and Difficult Breathing in Preceding 2 Weeks, Household Survey, SNNPR, April 2008

Category	ESHE Areas (%)	Non-ESHE Areas (%)	SNNPR (Weighted) (%)
Fever	15.7	17.8	16.6
Diarrhea	15.3	16.0	15.7
Cough	10.7	14.5*	12.9
Difficult breathing	9.8**	4.0	6.4

Figure 20. Trend in the Two-week Incidence of Fever, Diarrhea, Cough, and Difficulty Breathing, Household Health Survey, SNNP, 2003 and 2008.

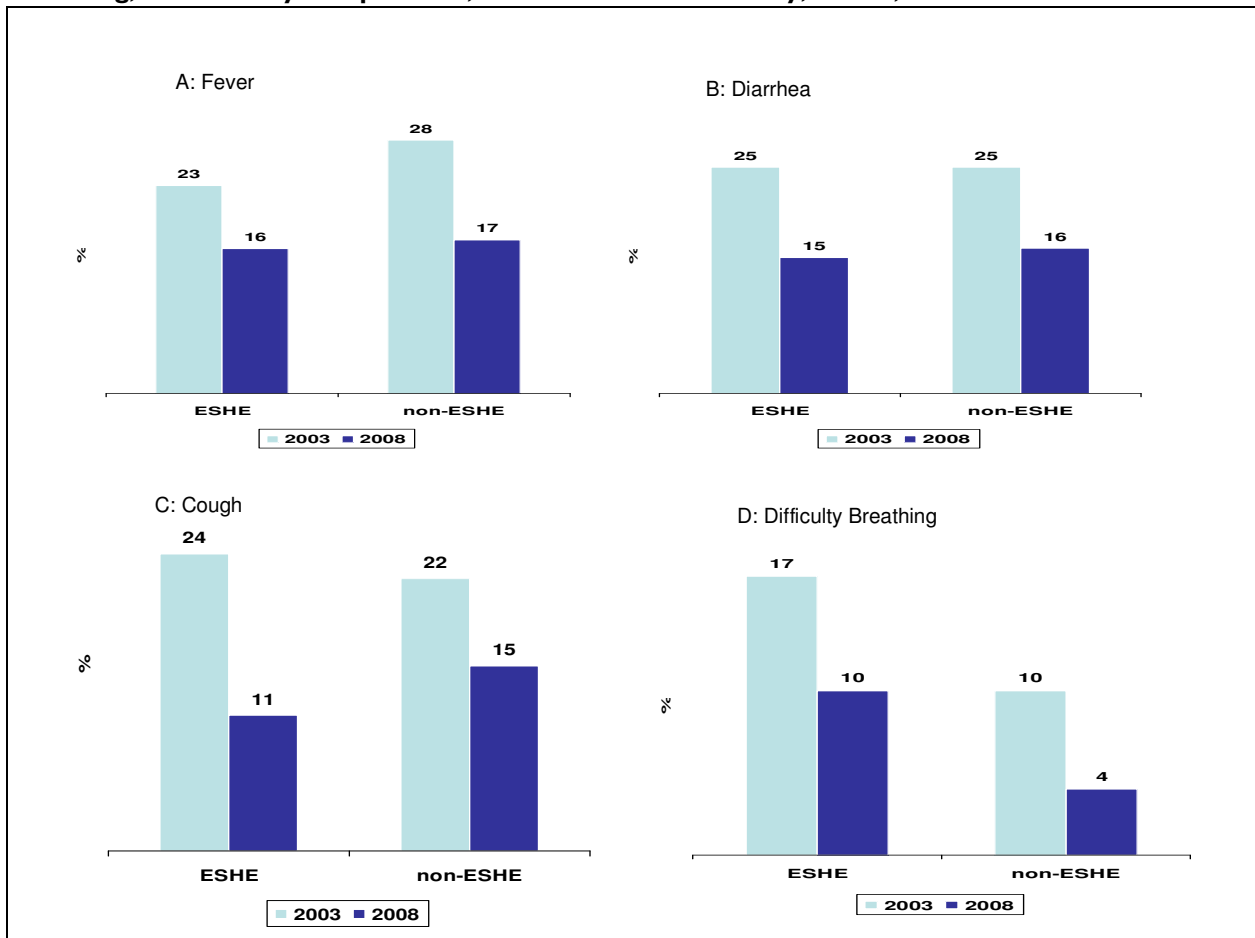


ESHE Areas versus Non-ESHE Areas

Taken together, 2-week incidence of illness among children aged 0-23 appeared comparable in the 2 areas. Exceptions are significantly higher incidence of cough in non-ESHE than ESHE areas, 14.5% versus 10.7%, $p<0.05$ and higher ($p<0.001$) incidence of children with difficult breathing in ESHE than non-ESHE areas, 9.8% versus 4%, respectively.

Comparisons confirmed the pattern for the whole region and both areas, the preceding 2-week incidence declined significantly since Baseline (Figures 21a-21d). Temporal decline was more pronounced in ESHE versus non-ESHE areas for fever and cough.

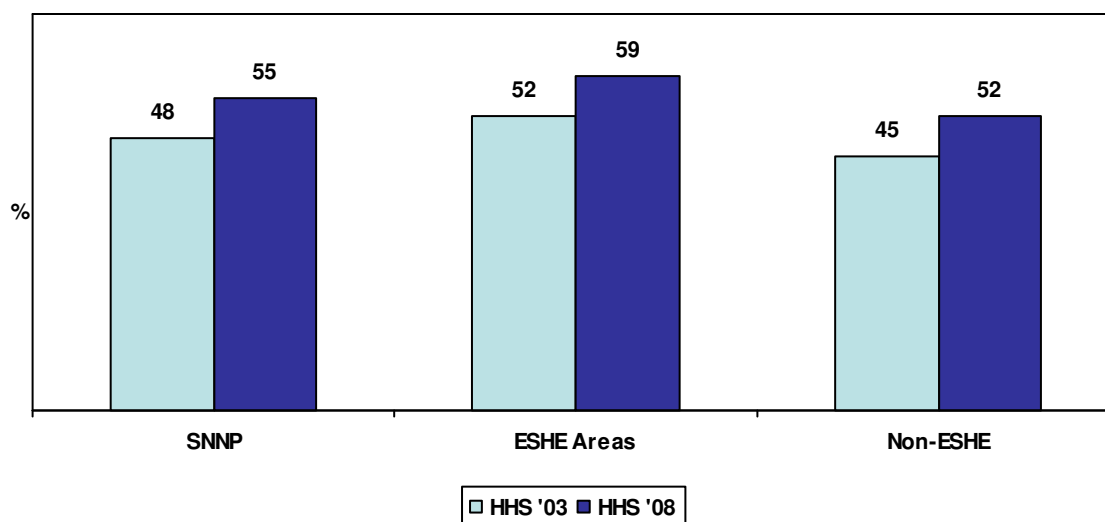
Figure 21. Trend in the Two-week Incidence of Fever, Diarrhea, Cough, and Difficulty Breathing, Stratified by Sample Area, Household Health Survey, SNNP, 2003 and 2008.



7.2. Seeking Treatment in Health Facilities for Sick Child

Of mothers with sick children, 54.5% took their children to a HF for treatment, not significantly different from 48% at Baseline. Sick children taken for treatment increased slightly, from 52% to 59% and from 45% to 52% in ESHE and non-ESHE areas, respectively (Figure 22).

Figure 22. Proportion of Sick Children (previous two weeks) Taken to Health Facility for Treatment, Household Health Survey, SNNP, 2003 and 2008.



7.3. Awareness of Childhood Illness Danger Signs

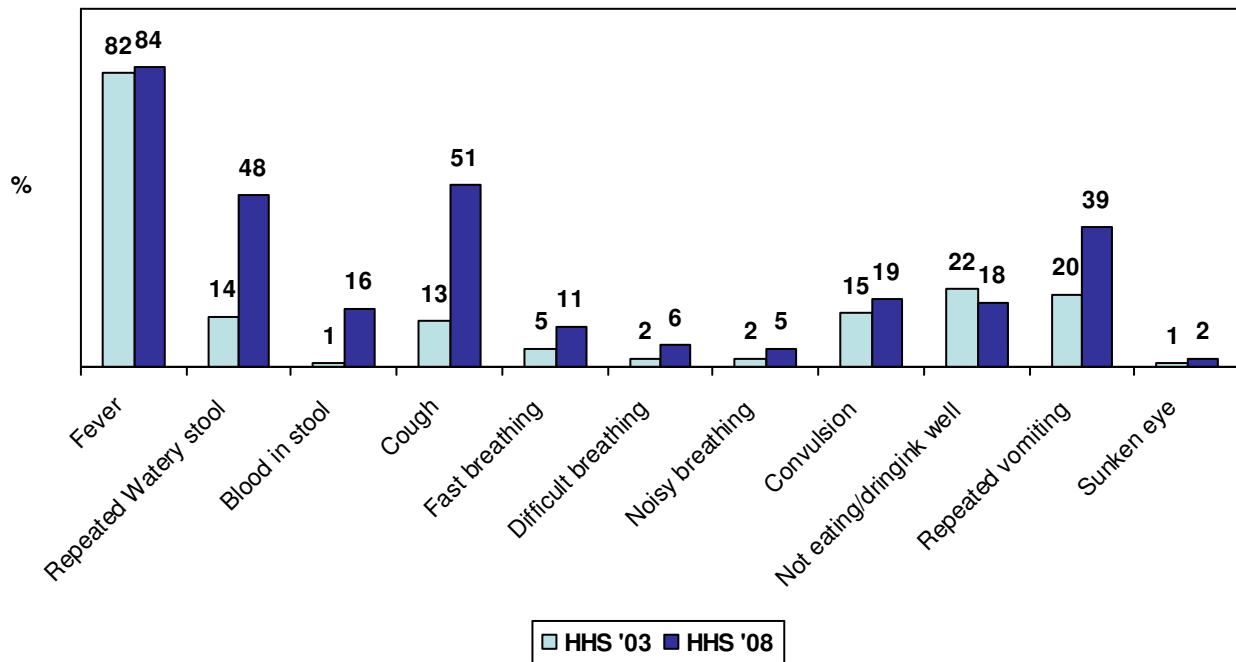
Women with children aged 0-23 months were asked to spontaneously cite danger signs indicating a child under 5 years of age should be taken to a HF (Table 15). Reported were fever 84%, cough 50.8%, repeated watery stool 48.4%, repeated vomiting 38.6%, not eating/drinking well 18.1%, blood in stool 16.1%, among others. Compared with Baseline, there was significant improvement (Figure 23). Those who spontaneously reported repeated watery stool increased from 14% to 48.4% ($p < 0.0001$); cough 13% to 50.8% ($p < 0.0001$), blood in stool 1% to 16.1% ($p < 0.0001$), and repeated vomiting 20% to 38.6% ($p < 0.001$). Those who reported fever remained high in both surveys, 82% at Baseline and 84% at End-line.

Despite noted improvements, women were yet to be fully aware of the need to seek treatment for some critical danger signs, including difficult breathing, fast breathing, and sunken eye. End-line indicated significantly better awareness of danger signs by women in ESHE versus non-ESHE areas.

Table 15. Frequently Cited Correct Warning Signs That Indicate Needed Treatment for Children Under 5 Years of Age, Household Survey, SNNPR, April 2008

Category	ESHE Areas (%)	Non-ESHE Areas (%)	SNNPR (Weighted) (%)
Fever	86.5	82.5	84.1
Repeated watery stool	55.7***	43.3	48.4
Blood in stool	17.2	15.3	16.1
Sunken eye	1.8	3.0	2.5
Cough	49.8	51.5	50.8
Fast breathing	16.8***	7.0	11.0
Difficult breathing	9.8**	4.0	6.4
Fast breathing	16.8***	7.0	11.0
Noisy breathing	9.3***	2.2	5.1
Convulsion	26.5***	14.2	19.2
Not eating/drinking well	26.0***	12.7	18.1
Repeated vomiting	45.2**	34.0	38.6

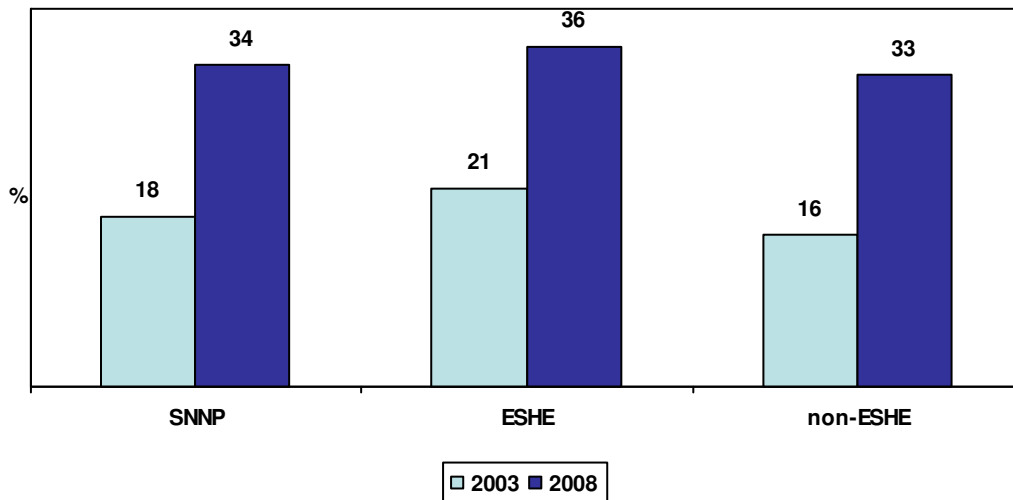
Figure 23. Trend in Women's Awareness of Warning Signs That Indicate That a Child <5 Years Should Be Taken to a Health Facility for Treatment, Household Health Survey, SNNP, 2003 and 2008.



7.4. Oral Rehydration Salts and Recommended Fluids to Children with Diarrhea

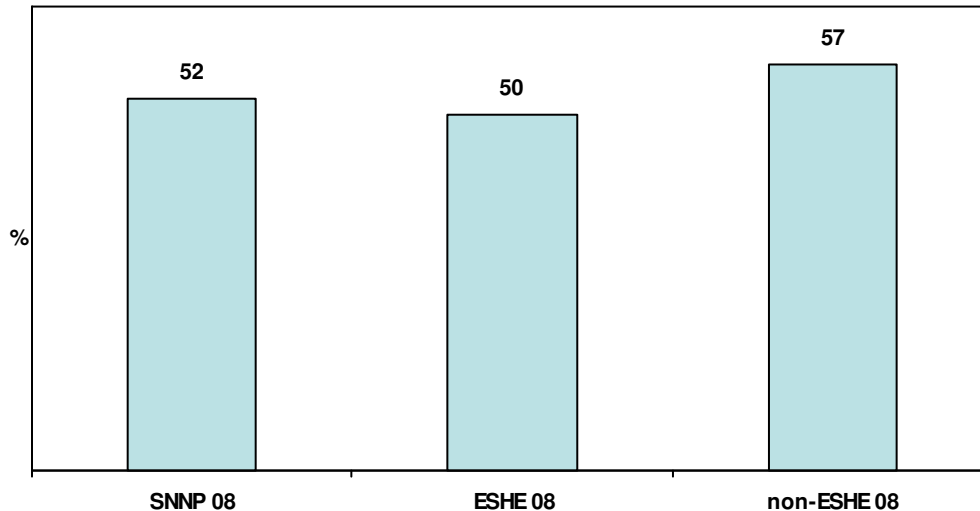
ORS is highly recommended for children with diarrhea. At End-line, ORS was given to 34.3% of the children suffering from diarrhea in the preceding 2 weeks. At Baseline, 18% received ORS (Figure 24)[**Figure #s are off**]. The increase is statistically significant ($p < 0.001$). ORS to children with diarrhea significantly increased in ESHE areas, from 21% to 36%, $p < 0.0001$ and in non-ESHE areas, from 16% to 33%, $p < 0.0001$.

Figure 24. Proportion of Sick Children with Diarrhea in the Two Weeks Preceding the Interview That Received ORS, Household Health Survey, SNNP, 2003 and 2008.



Sick children with diarrhea who received ORS and/or any recommended homemade fluids are considered having had Oral Rehydration Therapy (ORT). End-line revealed 50% and 57% in ESHE and non-ESHE areas, respectively, were given ORT. In SNNPR as a whole, 52% were given ORT (Figure 25).

Figure 25. Proportion of Sick Children with Diarrhea in the Two Weeks Preceding the Interview That Received ORT, Household Health Survey, SNNP, 2008.



7.5. Breastfeeding and Fluid Intake During Illness

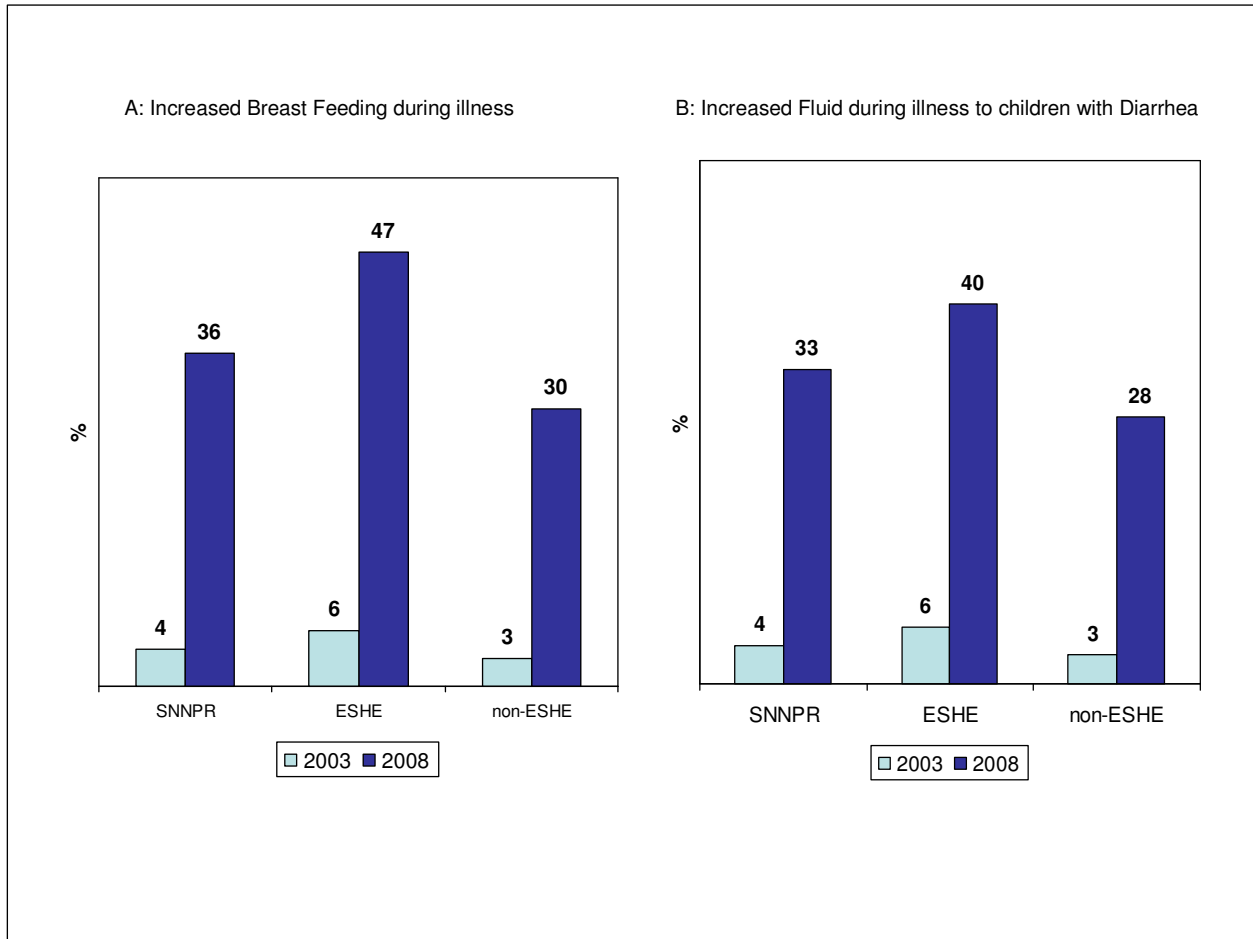
Continuing breastfeeding and increasing fluids to children during illness are recommended. Mothers were asked about changes in feeding practices for children ill during the preceding 2 weeks. Figure 26[**CHECK #**] presents feeding practices during illness of children under 2 years of age, with breastfeeding and fluid intake emphasis.

Of the children, 36.3% breastfed more often than usual. Frequency remained the same or declined in about 55%. Those who stopped breastfeeding even before they were sick was 9%. About one-third of children with diarrhea were offered more fluids than usual. Another third were offered less than usual. About 13% did not start weaning at all.

There was significant improvement of increased breastfeeding to sick children, from 4% to 36%, $p < 0.0001$, and increased fluids, from 4% to 33%, $p < 0.0001$.

Continued breastfeeding to sick children during illness was significantly higher in ESHE versus non-ESHE areas, 47% versus 30%, $p < 0.05$. Fluids in ESHE versus non-ESHE areas increased 40 % versus 28%, $p < 0.05$. There was significant improvement irrespective of sample areas, although apparent temporal trend was more pronounced in ESHE versus non-ESHE areas.

Figure 26. Percent Distribution of Children Sick in the Two Weeks Preceding the Survey, by Amount of Breastfeeding and Amount of Fluid Offered Compared with Normal Practice, Household Health Survey, SNNP, 2003 and 2008.

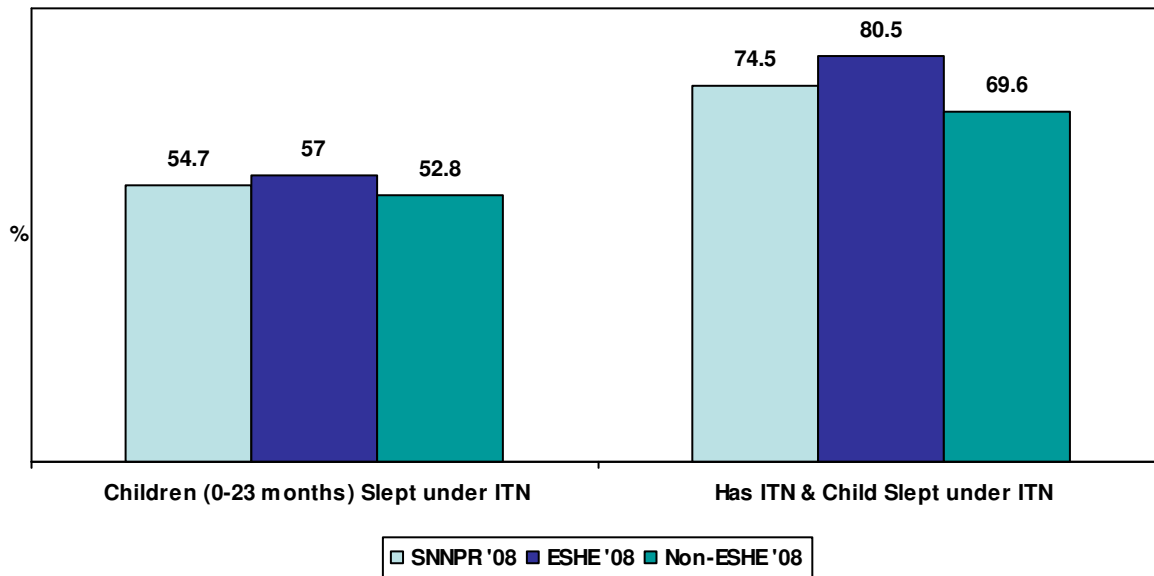


7.6. ITN Use By Children

In malarial areas, mothers of children aged 0-23 months were asked if targeted children slept under an ITN the night before. Overall, 54.7% did (Figure 27). Compared with less than 1% at Baseline, this was remarkable improvement.

It is important to note that, the night preceding, not all families owning ITNs had their under-2-year-old children sleep under ITNs. About 25% did not do so. When analysis is restricted to households with ITNs, findings showed higher use by children in ESHE versus non-ESHE areas, 80.5% versus 69.6%, $p < 0.001$.

Figure 27. Insecticide Treated Net Use among Children Age 0-23 Months (previous night of the interview), Household Health Survey, SNNP, April 2008.



7.7. Summary and Discussion

Incidence of childhood illnesses declined significantly. The preceding 2-week incidence of fever declined by more than 40% and diarrhea by more than a third. Although factors such as seasonal differences between the 2 surveys could confound comparison, some changes can be explained. For instance, noted decline in fever concurs with the decrease in malarial incidences in most parts of the country. This was primarily realized through dramatic increase in availability and widespread use of ITNs. Of children aged 0-23 months residing in malarial areas, 54.7% slept under ITNs the night before, a dramatic increase from virtually none at Baseline.

Decline in childhood illnesses could be partly associated with documented improved exclusive breastfeeding, timely introduction of complementary feeding, rise in Vitamin A supplementation, and increased childhood immunization. Recent advances in household access to safe drinking water, from 36% to 58%, and pit latrines, from 35% to 82%, also were key. These important hypotheses deserve further investigation.

Although home management of childhood illnesses improved remarkably, this was not true for treatment seeking for sick children. ORS to sick children with diarrhea increased significantly, from 18% at Baseline to 34% at End-line. Breastfeeding to sick children increased from 4% to 36%, and fluids for sick children with diarrhea from 4% to 33%. In contrast, despite women's improved awareness of childhood illnesses' danger signs, only a little over half with sick children sought treatment from HFs, from 48% to 55% at End-line. Deterrents to women's care seeking included, but were not limited to, lack of easy access to HFs, lack of time, limited awareness of HF services available, and unbearable indirect costs.

Findings confirmed significant temporal trends in home management of childhood illnesses in ESHE and non-ESHE areas. Apparent changes were more pronounced in ESHE versus non-ESHE areas. This was the expected direction, given higher exposure of women in ESHE areas to community-based interventions aimed at improving their awareness. For instance, the FHC, a key BCC tool and a proxy to interpersonal communication, provides detailed, illustrative steps

on how to manage childhood illnesses. The FHC is owned by 69% of children in ESHE versus 3.7% in non-ESHE areas.

Findings show need to strengthen ESHE's BCC campaign to improve women's awareness of home management of childhood illnesses and its application within the home. Encouraging community treatment-seeking behavior for children with known danger signs should be a priority. HFs need to be equipped with necessary facilities and human resources to properly manage and treat childhood illnesses.

Recommendations

- Strengthen caretaker awareness of danger signs of illnesses that need immediate action from a trained health care provider or HF.
- Improve caretaker appropriate home management practices for sick children through HEW and VCHW training and support.
- Improve access to treatment for sick children by strengthening HFs with skilled personnel, essential drugs, and supplies.
- Scale up IMNCI training and follow up with HWs and HEWs to improve their case management and referral skills.
- Strengthen preventive and promotive services and practices, such as immunization, appropriate IYCF, ITN use, latrine use, safe water, and hand washing, to reduce most of the burden of childhood illnesses.

8. MATERNAL HEALTH

8.1. Antenatal Care Coverage and Trend

Women with children aged 0-11 months were asked whether they had gone for ANC check-up to a health institution during pregnancy (Table 16). ANC reached 65.1% for the whole region, significantly higher than 47% at Baseline ($p<0.001$).

ANC content is vital to evaluating its value. Among those who received ANC, 71.3% had their weight measured, 74.1% blood pressure measured, 56.4% height measured, 39.2% received iron tablets, and 16.4% gave blood samples. Together, ANC content improved only slightly (Figure 28). Significant temporal trends were noted for iron folate provision to pregnant women, from 28% to 39%, $p<0.05$, and taking of height measurements, from 42% to 56%, $p<0.001$. Provision of blood samples during pregnancy also improved significantly.

Table 16. Women with Children Aged 0-11 Months by Antenatal Care Services Received, Household Survey, SNNPR, April 2008

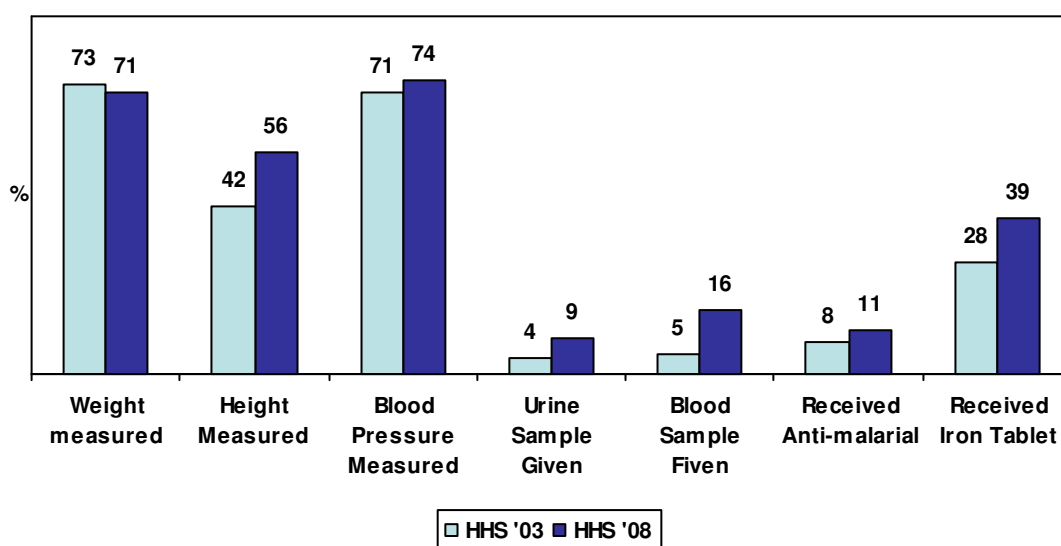
Category	ESHE Areas (%)	Non-ESHE Areas (%)	SNNPR (Weighted) (%)
Received ANC in health facility	74.2**	58.9	65.1
ANC contents (among ANC users)			
Weight measured	75.5	67.0	71.3
Height measured	57.1	55.7	56.4
Blood pressure measured	75.0	73.3	74.1
Urine sample taken	10.3	8.5	9.3
Blood sample taken	15.6	17.1	16.4
Anti-malarial received	14.3	7.9	10.9
Iron tablet received	56.7***	23.9	39.2

*p<0.05

**p<0.001

***p<0.0001 (ESHE versus non-ESHE areas)

Figure 28. Contents of Antenatal Care, as Reported by Women Attending ANC, Household Health Survey, SNNP, 2003 and 2008.

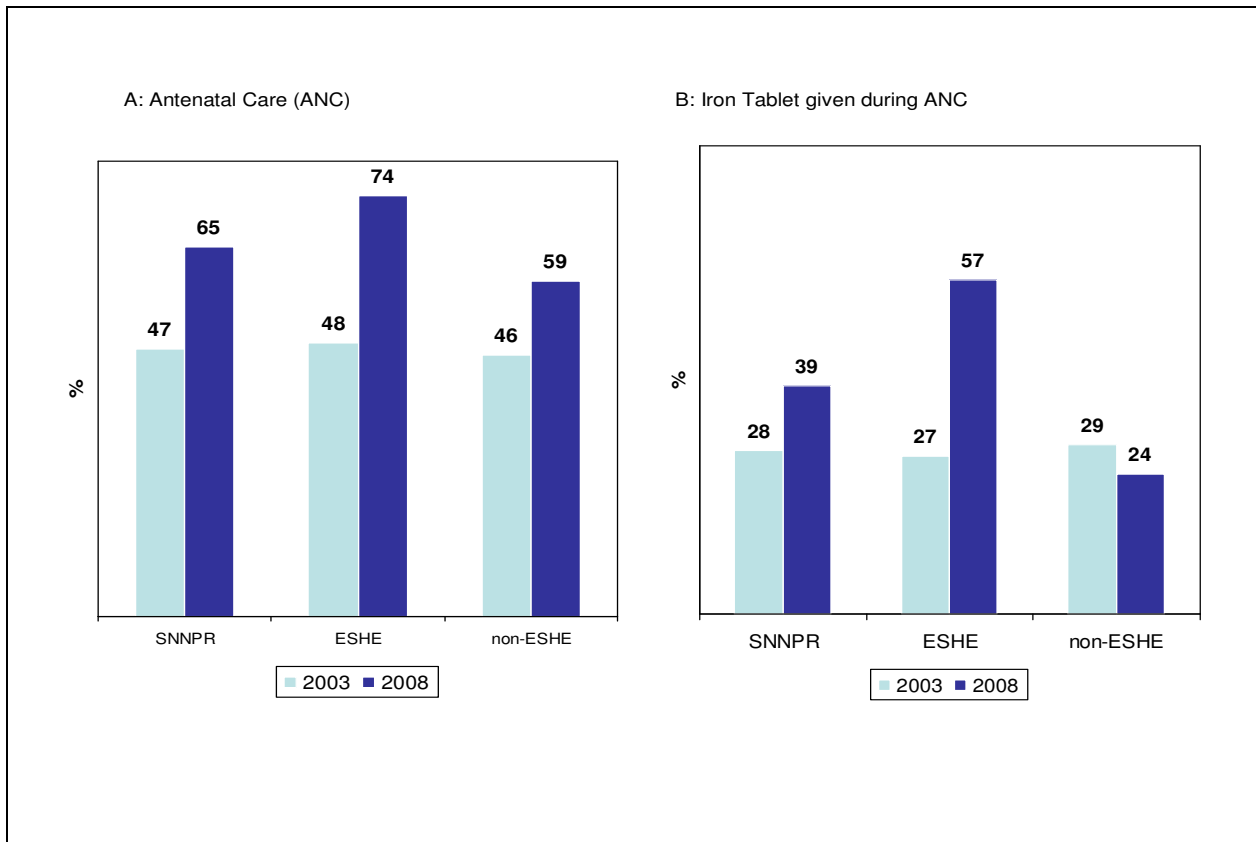


ESHE Areas Versus Non-ESHE Areas

At End-line, nearly three-fourths of women in ESHE areas received ANC, significantly higher than 58.9% in non-ESHE areas ($p<0.001$).

There was significant improvement in ANC uptake in both areas (Figure 29). Nevertheless, the temporal change was more pronounced in ESHE versus non-ESHE areas, from 48% to 74%, $p<0.0001$. Corresponding trend in non-ESHE areas was 46% to 59%, $p<0.001$. ENA identified iron supplementation to pregnant women a key intervention and, in fact, promoted it as part of ESHE intervention in the study area. Unlike most ANC contents, iron folate provision increased significantly in ESHE areas, from 27% to 57%, $p<0.0001$. It was 27% and 24%, respectively, in non-ESHE areas.

Figure 29. Trend in Antenatal Care Coverage and Iron Folate Provision to Pregnant Women, Household Health Survey, SNNP, 2003 and 2008.



8.2. Tetanus Toxoid Injection

Pregnant women current on tetanus toxoid (TT) during pregnancy are nearly 100% protected against tetanus for their newborn and themselves. Two doses during a first pregnancy offer full protection. A woman vaccinated during a previous pregnancy may only need a booster for full protection. Five doses at appropriate intervals provide lifetime protection. A mother who received at least 2 TT injections during her lifetime, the last of which occurred less than 3 years previously; OR if she received at least 3 TT injections during her lifetime, the last of which occurred in the last 10 years; OR if she received at least 5 TT injections during her lifetime, she is protected against tetanus for herself (maternal tetanus) and her newborn (neonatal tetanus).

Women with children aged 0-11 months were asked if they received TT during their most recent pregnancy or any time during previous pregnancies. If so, they were asked for the number of injections and the occurrence. Overall, 52% received at least 2 TTI during pregnancy of children aged 0-11 months (Table 17) versus 31% at Baseline (Data not shown). The difference between Baseline and End-line TT2 coverage is statistically significant ($p < 0.001$). Based on the definition for lifelong protection against neonatal tetanus, 63.3% of the women were protected against tetanus, a significant improvement from 46% at Baseline ($p < 0.0001$).

ESHE Areas Versus Non-ESHE Areas

At least 2 TTI doses were received by 64.9% of women in ESHE versus 42.8% in non-ESHE areas, a highly significant difference ($p<0.001$). Those protected varies significantly ($p<0.0001$) between the 2 areas, 75.8% in ESHE versus 54.8% in non-ESHE areas.

Significant temporal trend in proportion protected against neonatal tetanus was noted in both areas (Figure 30), 54% to 76% ($p<0.0001$) in ESHE and 40% to 55% ($p<0.001$) in non-ESHE areas. The trend was more apparent in ESHE areas.

Table 17. Percentage Distribution of Women According to Receipt of TTI and Those Protected Against Neonatal Tetanus at Birth, Household Survey, SNNPR, April 2008

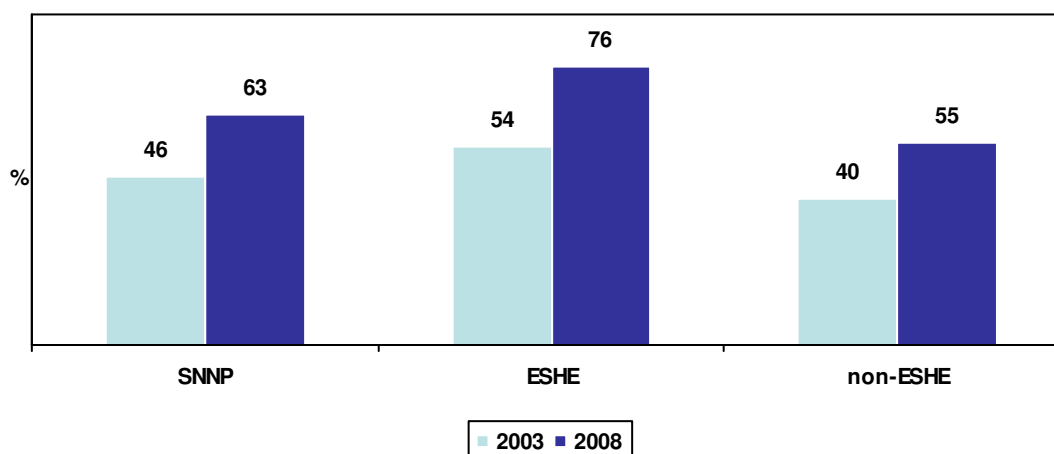
Category	ESHE Areas (%)	Non-ESHE Areas (%)	SNNPR (Weighted) (%)
TTI during the pregnancy of most recent live birth during previous year			
0	19.7	43.0***	33.5
1	15.4	14.2	14.7
2+	64.9**	42.8	51.8
Protection against neonatal tetanus			
Received 2+ doses last within 3 years	70.2***	47.3	56.6
Received 3+ doses last within 10 years	3.3	6.0*	4.9
Received 5+ doses during lifetime	2.3	1.5	1.8
Protected against Neonatal TT	75.8***	54.8	63.3

* $p<0.05$

** $p<0.001$

*** $p<0.0001$ (ESHE versus non-ESHE areas)

Figure 30. Trend in Protected Against Neonatal Tetanus, Stratified by ESHE Project Area and Non-project Area, Household Health Survey, SNNP, 2003 and 2008.



8.3. Delivery Care

Home delivery is nearly universal in the region, with about 95% of children aged 0-11 months born at home (Table 18). It was 96% at Baseline. Only 5.8% of deliveries were assisted by health professionals in a HF or at home, almost the same as Baseline at 5% (Data not shown). Only

4.4% of women were attended by HEWs during delivery of their most recent child aged 0-11 months. Trained Traditional Birth Attendants (TTBAs) assisted 18% of deliveries, up from 10% at Baseline ($p<0.05$) (Data not shown).

There is no significant difference in professionally-assisted delivery and HEW assistance during delivery between women in either area. TTBA-assisted deliveries improved in both areas, but not professionally-assisted deliveries.

8.4. Postnatal Care

Of women with children aged 0-11 months, 10.6% were examined by a trained health professional within 45 days after delivery (postnatal care), not significantly different from 9% at Baseline (Data not shown).

PNC receipt is significantly higher in ESHE versus non-ESHE areas, 14.2% versus 8%, $p<0.05$. At Baseline, PNC coverage varied significantly ($p<0.05$) between the 2 areas, 13% in ESHE and 6% in non-ESHE areas. There was no temporal trend in PNC coverage in either area (Baseline data not shown).

Table 18. Percentage Distribution of Women with Children Aged 0-11 Months According to Place of Delivery, Assistance During Delivery, and Receipt of Postnatal Care, Household Survey, SNNPR, April 2008

Category	ESHE Areas (%)	Non-ESHE Areas (%)	SNNPR (Weighted) (%)
Home Delivery	95.7	94.0	94.7
Assistance during delivery by:			
Health professional	3.6	7.4*	5.8
Health Extension Worker	6.0	3.3	4.4
Trained traditional birth attendant	16.6	19.7	18.4
Untrained traditional birth attendant	15.9*	7.4	10.9
Postnatal Care			
Examined by trained health professional within 45 days after delivery	14.2*	8.0	10.6

8.5. Information to Women During Pregnancy and After Delivery

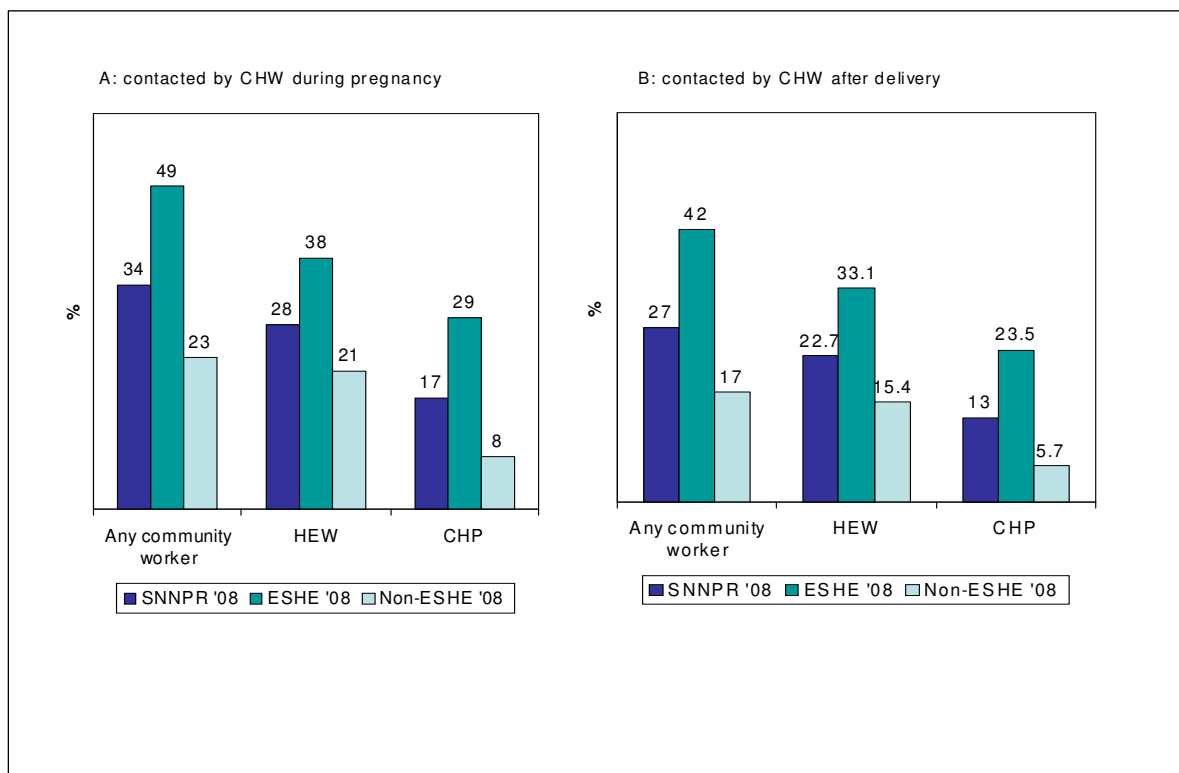
Women with children aged 0-11 months were asked if they were contacted by community HWs who discussed their and their child's health during pregnancy or immediately after delivery. Figure 31 shows 34% were contacted by community HWs during pregnancy, 28% by HEWs and 17% by CHPs. Similarly, 27% were contacted by community HWs within a few days or weeks after delivery, 22.7% by HEWs and 13% by CHPs.

Information from community HW by women during pregnancy or few days after delivery was significantly higher in ESHE versus non-ESHE areas, 49% versus 23%, $p<0.001$. Of these women, 38% and 21% ($p<0.001$) were contacted by HEWs. Women contacted by CHPs was 29% and 8% ($p<0.0001$), respectively. Of women in ESHE and non-ESHE areas, 42% and 17% ($p<0.001$),

respectively, received information from community HWs within 45 days or immediately after delivery.

Women were asked to spontaneously cite messages heard from or told by community HWs during pregnancy. Among those contacted during pregnancy last year, about half were told to get checked during pregnancy, 44% to get TT vaccination, 43% to eat extra food, 25% to give colostrums to the newborn, 25% to put baby to breast immediately after delivery, 20% to take iron folate, 16% to seek care if there is a health problem, 14% to sleep under an ITN, 13% to rest, and 12% to avoid heavy work. Women in ESHE areas were significantly more likely to cite key messages (Data not shown). Of these women, 59% were told to seek ANC and 30% to get iron folate during pregnancy. Non-ESHE area percentages were 36.6% and 5.6%, respectively.

Figure 31. Proportion of Women Contacted by Community Health Promoters During Pregnancy and Immediately After Delivery, Household Health Survey, SNNP, April 2008.



Messages received immediately after delivery mainly revolved around ENA, child immunization, and management of childhood illness. Of those contacted, 72.4% were told about exclusive breastfeeding to 6 months, 57.3% to eat extra food, 53.4% to have their children immunized, 42% about frequency of breastfeeding, 30.8% to complete feeding at 1 breast before switching to another, 28.3% about breastfeeding position and attachment, 14.3% to have their children sleep under ITN, and 9.5% to seek care for their child if they notice any danger signs.

Women in ESHE areas had better information access via HEWs or CHPs. Those told key messages immediately after delivery was significantly higher in ESHE versus non-ESHE areas, 87% versus 49% for exclusive breastfeeding, 56% versus 19% for frequency of breastfeeding, 45% versus 8% for completing feeding at 1 breast before switching to another, 41% versus 8% for breastfeeding position and attachment, and 61% versus 40% for child immunization.

8.6. Summary and Discussion

ANC coverage improved significantly, from 47% at Baseline to 65% at End-line. TT2 coverage increased from 31% to 52%. Significant temporal trend was noted for iron folate provision, from 28% to 39%. All contributed to improved mothers' and children's health. Increased ANC coverage was a momentous safe motherhood advance.

ANC data from 2000 and 2005 DHS revealed low, stable coverage at 30%. Reasons for changes are lucid. With rapid HEP expansion in the past 2-3 years, almost all SNNPR kebeles were served by HEWs, with promotion of safe motherhood a key intervention. Also deployed were 20,000 CHPs, who partnered with HEWs. HEWs and CHPs actively promoted safe motherhood during the past few years. Data also showed a third of pregnant women were contacted last year by HEWs or CHPs, who advised them on critical health and related practices during pregnancy. Messages ranged from need for checkup during pregnancy, TT vaccination, and iron folate to increased food intake during pregnancy and sleeping under ITN.

Access to ANC services improved dramatically as a result of recent health post expansion. A health post was the ANC source for more than 40% of users versus 4% at Baseline. Unprecedented access to key health messages by pregnant women via HEWs and CHPs coupled with better ANC access at health posts aided improvements.

Irrespective of areas, ANC, TTI, and iron folate increased significantly. However, a closer look suggests a more pronounced temporal trend in ESHE versus non-ESHE areas, pointing to possible value added to intervention. Better access to ANC information and key messages via community HWs by were 49% versus 23% in ESHE versus non-ESHE areas. Better FHC access in ESHE areas was another plus. A key BCC tool, the FHC advises and encourages women and families to receive ANC, TTI, and iron folate during pregnancy. Higher exposure to ESHE

Frequently-Cited Key Messages from HEWs or CHPs to Pregnant Women

To get checked during pregnancy.....	49.7
To get TT vaccination	44.3
To eat extra food.....	43.3
To give colostrums.....	25.0
To put baby to breast immediately after delivery.....	24.9
To take iron folate.....	19.8
To seek care if there is a health problem.....	16.3
To sleep under an ITN.....	14.1
To rest	12.8
To avoid heavy work	12.2

Frequently-Cited Key Messages from HEWs or CHPs to Mothers Immediately after Delivery

To exclusively breastfeed to 6 months.....	72.4
To eat extra food.....	57.3
To immunize child.....	53.4
Frequency of breastfeeding.....	41.9
To complete feeding at 1 breast before switching to another.....	30.8
Breastfeeding Position and attachment	28.3
To have child sleep under ITN.....	14.3
To seek care if there are danger signs.....	9.5

interventions were associated positively with the more pronounced temporal trend in maternity care services in ESHE areas. As a cautionary note, the study design did not allow testing of these hypotheses.

Illuminated were area changes not seen or yet to be improved. Professionally-assisted delivery and PNC remained low at 5% and 14%, respectively. Such low coverage, an MDG-5 maternal health target, is concerning because it has often been attributed to unpredictability of labor and difficulty in travel, particularly over long distances during labor and delivery. Lack of easy HF access and relatively high delivery care costs are often blamed. Improved TTBA attendance, from 10% to 18%, hinted at an untapped community potential to improve safe delivery. Although HEWs assisted in only 4% of previous-year deliveries in the entire region, they hold great potential in any effort to improve delivery and newborn care.

The first 2 days are the most important for mothers' first post-partum visit. HEWs may need to see any women regarding newborn with a danger sign immediately after delivery. CHPs can help check all post-partum women and newborns and signal HEWs of any danger signs. In this way, VCHWs and HEWs can coordinate efforts to improve mothers' and newborns' health.

Recommendations

- Promote focused ANC/birth preparedness at all levels.
- Promote TT and iron folate provision by strengthening HW skills and knowledge and improving the logistics management system.
- Support the region and facilitate development of a strategy to address the very low skilled delivery care coverage.
- Provide in-service training and mentor HEWs to strengthen midwifery skills, including administration of misoprostol, implement infection prevention, and provide essential care for mother and baby.
- Accelerate expansion of health centers with emergency obstetric care services.

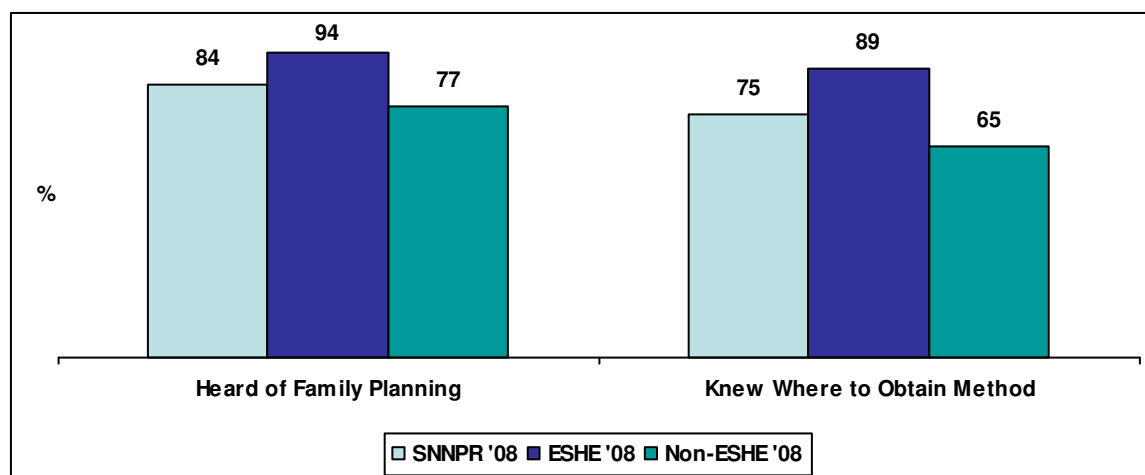
9. FAMILY PLANNING

9.1. Awareness of Family Planning Methods

About 84% of the women aged 15-49 years heard of family planning (FP). About 75% knew where to obtain methods (Figure 32). Awareness of FP locations improved significantly since Baseline, from 51% (Data not shown) to 65%. This trend is statistically significant ($p < 0.001$).

FP methods awareness was 94% in ESHE versus 77% in non-ESHE areas ($p < 0.0001$). Knowing where to obtain FP methods were 89% and 65% ($p < 0.0001$), respectively. Data revealed significant temporal trend in both areas regarding women's awareness of FP methods and where to get them (Data not shown).

Figure 32. Percentage of Women in the Reproductive Age Who Know of Any Contraceptive Method, and Places Where to Obtain Method, Stratified by Sample Area, Household Health Survey, SNNP, 2003 and 2008.



9.2. Contraceptive Use Level and Trend

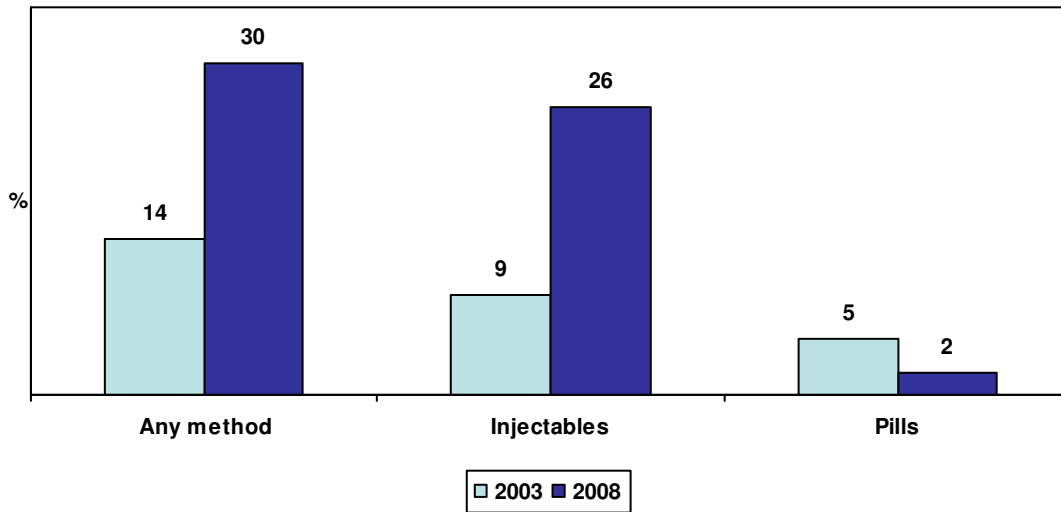
Contraceptive prevalence rate (CPR) among women aged 15-49 years was 30.4%, more than double 14% at Baseline (Table 19). Temporal CPR trend was statistically significant ($p < 0.0001$). End-line confirmed dominant emphasis of injectables noted in the DHS 2005 and other surveys. At 25.7%, injectables were the predominant method reported by women, meaning they accounted for about 85% of CPR. They were responsible for the significant temporal trend in contraceptive use, with CPR increasing from 9% to 26% (Figure 33). Pills prevalence was about 2% and that of long term-methods combined, only 1%. Pills declined from 5% to 2%. Long-term methods use was 0.5% and 0.4% of women reporting Norplant and female sterilization, respectively.

Women were asked where they received the FP method they were practicing. At 63.1%, health posts were the predominant source, followed by health centers at 25.4%. The remaining 11.5% was other sources. Baseline showed health posts as the source for only 4% of the then-contraceptive users (Data not Shown).

Table 19. Percentage of Women in the Reproductive Age Who Are Currently Using a Family Planning Method, by Type of Method and Source, Household Survey, SNNPR, April 2008

Category	ESHE Areas (%)	Non-ESHE Areas (%)	SNNPR (Weighted)(%)
<u>Current use of any family planning</u>	35.5*	26.9	30.4
<u>Current Method</u>			
Injectables	29.7*	23.0	25.7
Pills	3.0	1.3	2.0
Norplant	1.3*	0.0	0.5
Condoms	0.3	0.0	0.1
Female sterilization	0.0	0.8	0.4
Traditional	1.2	1.8	1.7
<u>Source (for modern methods, n=178)</u>	64.0	62.1	63.1
Health post	28.0	23.0	25.4
Health center	8.0	14.9	11.5
Other			

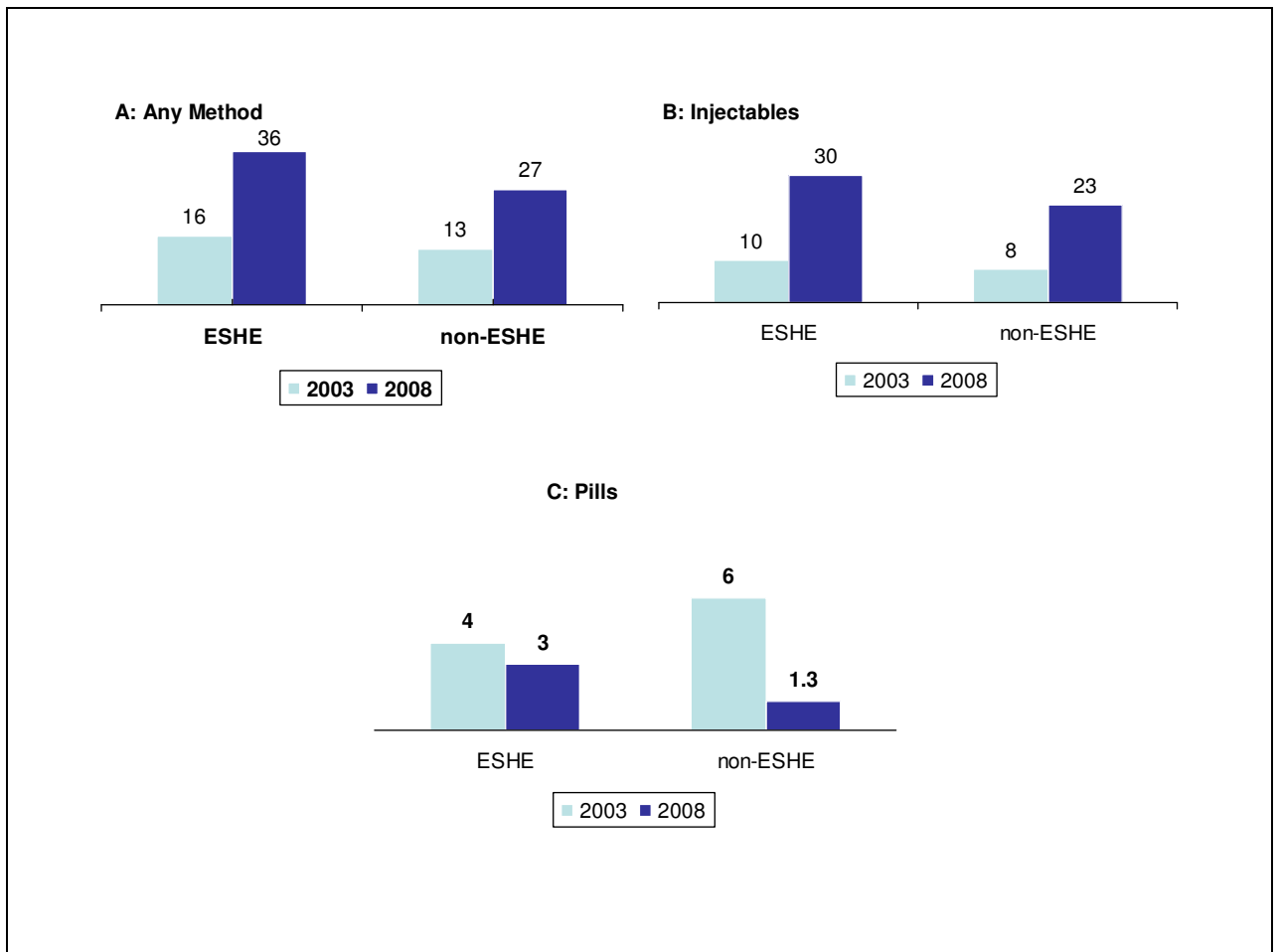
Figure 33. Trend in Contraceptive Use, Household Health Survey, SNNP, 2003 and 2008.



ESHE Areas Versus Non-ESHE Areas

Figure 33 shows CPR significantly increased in both ESHE and non-ESHE areas, from 16% to 36%, $p < 0.0001$ and 13% to 27%, $p < 0.0001$, respectively. The apparent temporal trend was more pronounced in ESHE areas. In the regional trend, injectables was responsible for overall increase of contraceptive use in both areas.

Figure 34. Contraceptive Use Stratified by Sample Area, Household Survey, SNNPR, 2003 and 2008

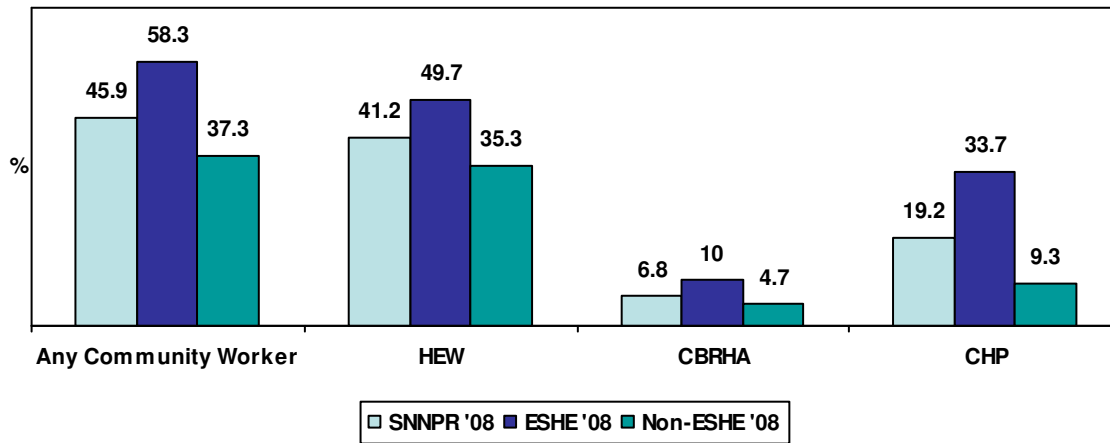


9.3. Family Planning Information Sources

About 46% of women were visited in the preceding 12 months by at least 1 community HW who discussed FP (Figure 34). HEWs topped the list at 41%, then CHPs at 19.2%, and CBRHAs at 6.8%.

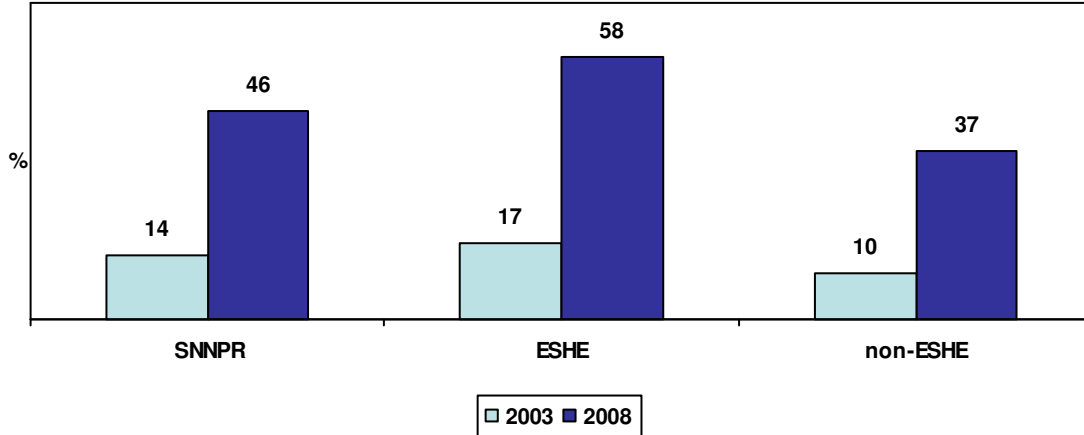
For other indicators, women in ESHE areas were significantly more likely than those in non-ESHE areas to have been contacted by community HWs regarding FP information, 58.3% versus 37.3%, $p < 0.0001$, respectively. Significantly more women were contacted by HEWs in ESHE areas, 49.7%, versus non-ESHE areas at 35.3%, $p < 0.001$. Of the women, 33.7% and 9.3% ($p < 0.0001$), respectively, had been contacted by CHPs.

Figure 35. Source of Family Planning Information in Preceding Year, Household Survey, SNNPR, April 2008



Compared with Baseline, women contacted by any community HW who discussed FP in the year preceding the survey rose significantly ($p < 0.0001$) from 14% at Baseline to 46% at End-line (Figure 35). Both areas increased significantly, but it was more pronounced in ESHE areas.

Figure 36. Women Who Reported Contact by Any Community Health Worker/Field Worker, Household Survey, SNNPR, 2003 and 2008



9.4. Summary and Discussion

CPR rose from 16% to 30%, an unprecedented mean increase of 3% per annum. The National Population Policy endorsed in 1993 envisaged reaching 44% CPR by 2015 in order to achieve total fertility rate of 4 children per woman⁴. If current CPR impetus is maintained, it is likely that SNNPR will attain the Policy target.

⁴ National Office of Population [NOP]. National program for the implementation of the National Population Policy of Ethiopia. 1997. Addis Ababa, Ethiopia: NOP

Increased contraceptive use evolved along a parallel track with recently-improved access to FP information and services through the HEP and active involvement of community volunteers such as CBRHAs and CHPs. Recently, women's access to primary health care services, including FP, improved remarkably, mainly through current expansion of health posts bringing services closer.

Access to FP information and services improved notably since Baseline. Women contacted by any community HW who discussed FP increased from 14% to 46%. HEWs were at the forefront of FP information provision. Virtual universal, 58 of 60, access to kebele health posts was confirmed. Health posts became the major FP source for current users, especially injectables. Women who obtained their current FP method from a health post increased from 4% at Baseline to 63% at End-line.

End-line established the widely-noted pattern of use of a limited number of FP methods as well as dominant injectables. This contributes disproportionately to the temporal contraceptive use trend, which increased from 9% to 26%, with relative contribution about 85%. In contrast, long-term methods are rarely practiced by SNNPR women, as elsewhere in the country. There are a number of deterrents to long-term methods. For instance, an assessment of reasons for low intra-uterine device (IUD) use in Ethiopia concluded that inadequate IUD information, lack of access, and unfounded rumors about its side effects were its most important barriers⁵.

While maintaining current FP coverage impetus is a priority, addressing high unmet FP needs and improving access to long-term methods are needed.

Recommendations

- Develop and harmonize FP messages and train HEWs and VCHWs to disseminate at scale appropriate information to households.
- Promote healthy timing and spacing of pregnancies through household BCC and youth clubs.
- Strengthen health post capacity to provide short-acting contraceptive methods and refer eligible clients to long-acting methods.
- Strengthen health center capacity to provide comprehensive services that include long-acting methods.

10. HIV/AIDS AND CONDOMS

10.1. HIV/AIDS Awareness

HIV/AIDS awareness is nearly universal in the region, with 96% of women aged 15-49 years having heard of it. Despite this, women are yet to be sufficiently aware of the programmatically important ways—abstinence, be faithful, and condoms (ABC)—of avoidance. Only 31%, 66.3%, and 8.6%, respectively, identified abstinence, faithfulness to one's partner, and condom use as the most important ways. Trend data revealed nearly comparable ABC awareness among women since Baseline (Figure 36). Faithfulness showed modest but significant increase, from 54% to 66% ($p < 0.05$).

⁵ Pathfinder International/Ethiopia [PIE]. 2003. Assessment of the causes for low utilization of IUCDs as family planning method in Ethiopia. Addis Ababa. Pathfinder

Women in ESHE areas were significantly more knowledgeable about avoiding HIV than those in non-ESHE areas. Abstinence was 72% versus 62.3% ($p<0.05$), respectively, and faithfulness 72% versus 62.3%, ($p<0.05$). In ESHE areas, there was a significant temporal trend in those reporting abstinence, from 23% to 37.7%, $p<0.001$ and faithfulness, from 51% to 72%, $p<0.0001$ (Data Not Shown).

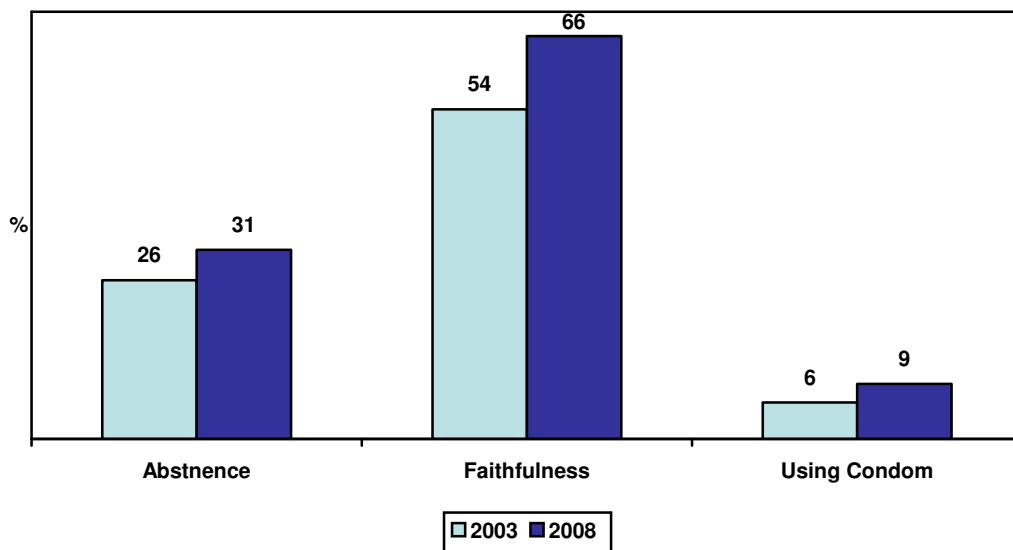
10.2. Condoms Awareness

About 70% of women aged 15-49 years heard of condoms and 45% knew where to get them (Table 20). Those who heard increased from 44% to 70% ($p<0.0001$). Awareness of places to obtain condoms increased from 26% to 45% ($p<0.0001$). Women in ESHE areas knew significantly more than those in non-ESHE areas, 77.3% versus 64.7%, $p<0.001$, and where to obtain them, 56.7% versus 37%, $p<0.0001$. This was not exhibited among women from non-ESHE areas.

Table 20. Women's Awareness of HIV/AIDS, Ways of Avoiding HIV, and Knowledge of Places Where to Get Condoms, Household Survey, SNNPR, April 2008

Category	ESHE Areas (%)	Non-ESHE Areas (%)	SNNPR (Weighted) (%)
<u>Heard of HIV/AIDS</u>	97.7	95.0	96.1
<u>Knew ways to avoid HIV</u>			
Abstinence	37.7*	26.3	31.0
Faithfulness	72.0*	62.3	66.3
Using Condoms	10.0	7.7	8.6
<u>Heard of condoms</u>	77.3**	64.7	69.8
Knew where to obtain condoms	56.7***	37.0	45.0

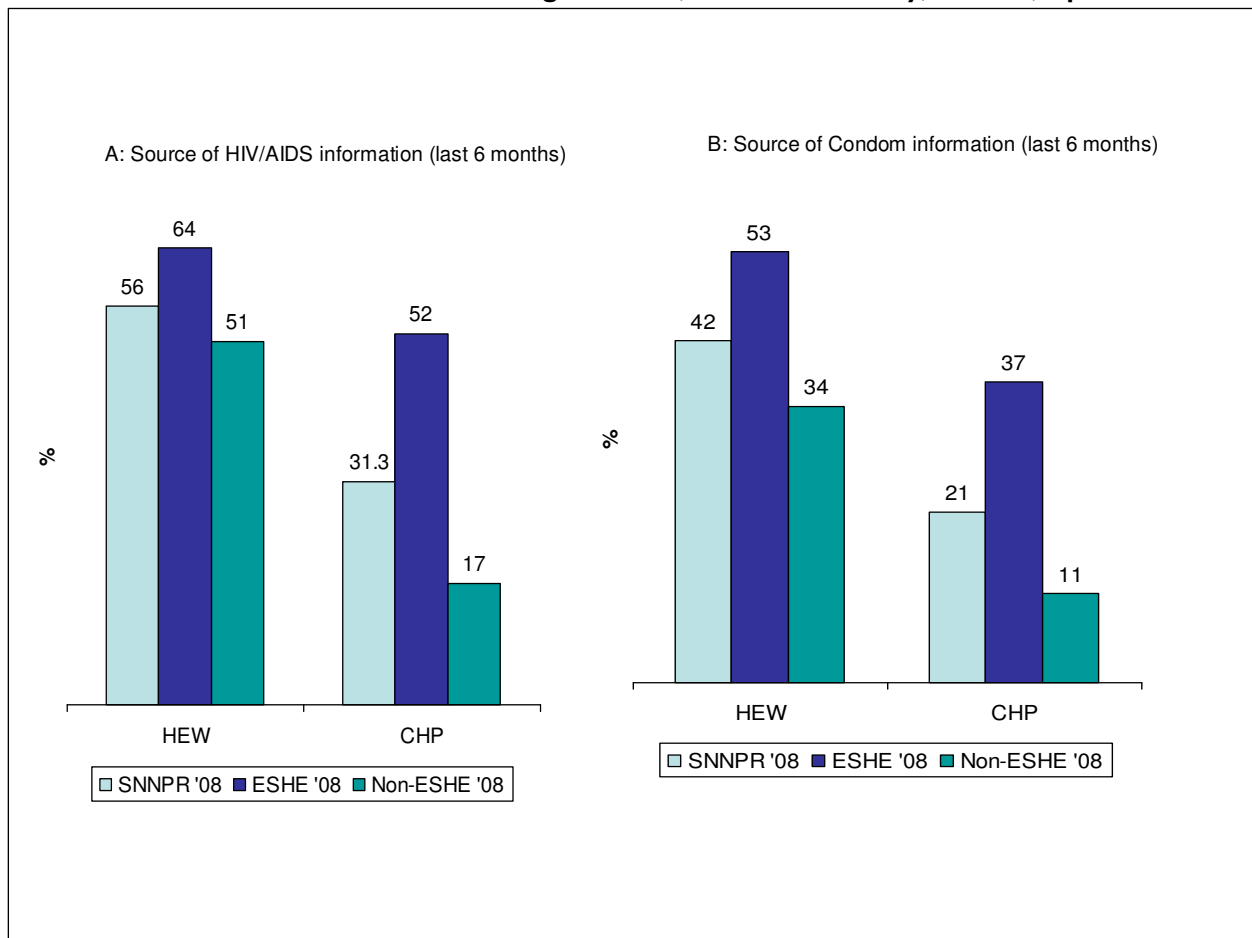
Figure 37. Proportion Reporting Abstinence, Faithfulness, Condom Use to Avoid HIV, Household Survey, SNNPR, April 2008



10.3. HIV/AIDS and Condoms Information

Women reported 56% HEWs and 31.3% CHPs contacted them in the previous 6 months to provide HIV/AIDS information (Figure 37). Women also received condoms information, 42% from HEWs and 21% from CHPs. This study did not ask about issues discussed or HIV/AIDS or condoms-related messages. ESHE-area women had significantly better access to information from HEWs or CHPs than those in non-ESHE areas.

Figure 38. Women Who Reported Contact by Community Health Workers Who Discussed HIV/AIDS and Condoms in the Preceding 6 Months, Household Survey, SNNPR, April 2008



10.4. Summary and Discussion

The predominant mode of HIV transmission in Ethiopia, as elsewhere in sub-Saharan Africa, is sexual contact. Abstinence from sex, limiting number of partners, and using condoms were identified as programmatically important to avoid spread of HIV/AIDS. Over the past two decades, following the advent of HIV, Ethiopia made considerable efforts to use various channels to increase public awareness.

This study suggests most rural SNNPR women lack comprehensive knowledge about programmatically important ways of avoiding HIV infection, but encouraging progress was noted. One was notable improvement in women's condom awareness. There were modest but positive changes in their awareness of key preventive behaviors. With the advent of HEP, there was also

improved access to HIV/AIDS and condoms information for the vast majority of the rural population. Findings hint at prospective roles of HEWs and other VCHWs in the fight against HIV/AIDS by reaching the vast majority of rural women with key messages.

Recommendations

- Include HIV prevention and control messages in VCHW training and develop BCC tools for community promotion.
- Strengthen integrated community conversation activities that include HIV/AIDS issues.
- Harmonize messages and coordinate HIV/AIDS prevention and control activities among partners to create synergy.

ANNEX I: TABLE OF INDICATORS

Annex I.1. Key Household Survey Indicators, 2003-2008

Household Characteristics	Indicators	ESHE Areas (%)		Non-ESHE Areas (%)		Regional (Weighted) (%)	
		2003	2008	2003	2008	2003	2008
Safe Water Supply	Households with access (covered well/spring or piped water)	39	72	24	49	30	58
Sanitation	Households with latrines	35	89	35	76	35	82
Insecticide-Treated Nets	Households with ITNs	<1	73	<1	71	<1	75
Access to Health Services	Households less than 2-hour walk to nearest health facility	68	99	65	91	66	94
Immunization	Children aged 12-23 months possessing Immunization Diploma	32	46	34	31	33	37
	Children aged 12-23 months who received BCG vaccination	66	87	64	75	65	80
	Children aged 12-23 months who received DPT1 vaccination	65	84	60	71	62	76
	Children aged 12-23 months who received DPT3 vaccination	46	70	38	57	41	62
	Children aged 12-23 months who received Polio3 vaccination	57	73	47	63	51	69
	Children aged 12-23 months who received measles vaccination	49	69	44	57	46	62
	Dropout rate (DPT1 - DPT3)	29	47	37	42	34	44
	Children aged 12-23 months fully immunized	38	46	31	43	34	45
Breastfeeding	Children aged 0-11 months who initiated breastfeeding within 1 hour after birth	60	85	67	63	64	72
	Women with children aged 0-11 months who gave colostrums	36	82	43	46	40	60
	Children aged 0-5 months who were exclusively breastfed	58	76	51	55	54	66
Complementary Feeding	Infants aged 6-9 months who received complementary foods in addition to breast milk (complementary feeding rate)	61	83	53	60	56	71
Vitamin A Supplementation	Children aged 6-23 months who received Vitamin A supplementation in preceding 6 months	13	62	32	59	24	61
Treatment of Sick Children	Children aged 0-23 months sick in preceding 2 weeks						

Household Characteristics	Indicators	ESHE Areas (%)		Non-ESHE Areas (%)		Regional (Weighted) (%)	
		2003	2008	2003	2008	2003	2008
	Fever	33	16		18	30	17
	Diarrhea	25	15		16	25	16
	Cough	24	16		15	23	13
	Rapid Breathing	17	10		4	13	6
	Women with sick child who sought treatment	52	59	45	52	48	55
	Women who offered increased fluids to a child suffering from diarrhea	6	40	3	28	4	33
	Women with child sick in preceding 2 weeks who breastfed more after illness	6	47	3	30	4	36
Family Planning	Women of childbearing age currently using any family planning method	16	36	13	27	14	30
	Injections	16	30	13	23	9	26
	Pills	10	3.0	6	1	5	2.0
Antenatal, Delivery, and Postnatal Care	Women with children aged 0-11 months who attended antenatal care services during their last pregnancy	48	74	48	59	47	65
HIV/AIDS	Women aged 15-49 years aware of HIV/AIDS	93	98	94	95	92	96
	Women aged 15-49 years aware of HIV/AIDS avoidance methods						
	Faithfulness to partner	51	72	56	62	54	66
	Abstinence	23	38	28	26	26	31
	Condoms	5	10	7	8	6	9
	Women aged 15-49 years who heard about condoms	42	77	45	65	44	70
	Women aged 15-49 years who knew where to obtain condoms	26	57	26	37	26	45

Annex 1.2. Revised Infant and Young Child Feeding Practices Indicators

In 2008, the WHO proposed revised IYCF indicators to better describe infant and young child feeding practices. Breastfeeding indicators remain the same, with minor changes in sampling.

Early initiation of breastfeeding: Proportion of children aged 0-23 months who are put to the breast within 1 hour of birth.

Exclusive breastfeeding under 6 months: Proportion of infants aged 0-5 months exclusively fed breast milk.

Indicators related to complementary feeding were expanded to 6:

Introduction of solid, semi-solid, or soft foods: Proportion of infants aged 6-8 months who receive solid, semi-solid, or soft foods (breastfeeds not included).

Continued breastfeeding at 1 year: Proportion of children aged 12–15 months who are fed breast milk.

Continued breastfeeding at 2 years: Proportion of children aged 20–23 months who are fed breast milk.

Minimum meal frequency: Proportion of breastfed and non-breastfed children aged 6-23 months who receive solid, semi-solid, or soft foods (including milk feeds for non-breastfed children) the minimum number of times or more: 6-8 months=minimum 2 times; 9-23 months=minimum 3 times; non-breastfed=minimum 4 times.

Minimum dietary diversity: Proportion of children aged 6-23 months who receive foods from 4 or more of 7 food groups:

Grains, roots and tubers

Dairy: animal milk, cheese and yoghurt

Vitamin A-rich foods (fruit and vegetable sources)

Other fruits and vegetables

Meat, poultry, fish

Eggs

Legumes or nuts

Minimum adequate diet (MAD); Proportion of children aged 6-23 months who receive a minimum acceptable diet calculated as having the following 3 indicators:

- 1) Breast milk or other type of milk (formula/other milk)
- 2) At least the minimum number of meals—2 for breastfed children aged 6-8 months, 3 for breastfed children aged 9-23 months, and 4 for non-breastfed children aged 6-23 months (for non-breastfed children who received milk or formula, this counted as 1 meal).
- 3) Minimum 4 or more food groups from 7 above.

Using indicators, current IYCF practices were estimated for Amhara Region, ESHE areas and non-ESHE areas. Except for exclusive breastfeeding and continuation of breastfeeding, other IYCF indicators, especially food diversity, were sub-optimal. Estimated MAD was only 1%, mainly because dietary diversity was also 1%.

It is critical IYCF programs address low food diversity. Contributing factors such as cultural food habits leading to food aversions, lack of awareness of the importance of feeding a diverse diet, or limited family access to different types of foods due high cost

or availability can contribute to poor diet diversity and MAD results. It is also clear this complex behavior, given the multitude of factors affecting adherence, requires effective counseling tools and trained health providers to address and reinforce desired behaviors.

Revised IYCF Practice Indicators, 2008

Indicators	ESHE Areas (%)	Non-ESHE Areas (%)	SNNPR (Weighted) (%)
Timely initiation of breastfeeding within 1 hour after birth	85	63	72
Exclusive breastfeeding for children aged 0-5,9 months	76	55	65
Introduction of soft, solid, and semi-solid foods at 6-8 months	80	55	70
Continuation of breastfeeding to 24 months			
--12-15 months	99	96	98
--20-23 months	84	77	80
Breastfeeding or for non-breastfed, formula/other milk	96	93	94
Minimum food frequency for 6-23 months	85	75	79
Minimum dietary diversity, 4 of 7 groups, for 6-23 months	24	12	17
--Grains, roots & tubers	86	78	81
--Dairy, animal milk, cheese, yoghurt	48	40	44
--Vitamin A-rich foods (fruits & vegetables)	31	23	26
--Other fruits & vegetables	39	22	29
--Eggs	18	14	16
--Meats, poultry, fish	7	3	4
--Legumes or nuts	24	15	18
Minimum adequate diet	21	11	15

ANNEX 2: SAMPLE CLUSTERS

Annex 2.1. ESHE Clusters

ZONE -1994	WOREDA-1994	PA/KEBELE-1994
Hadiya	Badawacho	Koto
	Limo	Damele Belbula
	Shashego	Jewe
	Soro	Selfe Gaserie
	Soro	Wageteta
Kembata Alabana Tembaro	Alaba	Menezo Fetene
	Alaba	2nd Mekala
	Demboye	Funto
	Demboye	Giyota Gerba
Konso Special	Konso Special	Doha
Senen Omo	Arba Minch Zuria	Dega Chonge
	Boloso Sore	Fura Wecha
	Boloso Sore	Zaba
	Bonke	Bola Zamie
	Merab Abaya	Kolla-Molato
	Damot Gale	Warete Beleka
	Damot Weyde	Fango Ofa
	Kindo Koysha	Odu Chama
	Kucha	Kasekia Zulio
	Sodo Zuria	Sore Wamura
Sidama	Aleta Wendo	Habeja
	Aleta Wendo	Rufo Waieno
	Aleta Wendo	Meredicha
	Awasa Zuria (Wondogenet)	Baja Fabrica
	Awasa Zuria (Wondogenet)	Baja Gemcho
	Dale	Menafesha
	Dale	Waninata
	Shebedino	Galuko Haro
	Shebedino	Gemeso Aeno
	Shebedino	Dila Afarara

ANNEX 2.2. Non-ESHE Clusters

ZONE-1994	WOREDA-1994	PA/KEBELE-1994
Amaro Special	Amaro Special	Ayikurie
Bench Maji	Bench	Zemika
	Meinit	Gabi
Debub Omo	Bako Gazer	Gongodad
Dirashe Special	Dirashe Special	Gewae
Gedeo	Yirgachefe	Dako
	Yirgachefe	Konga
Gurage	Enemorna Eaner	Araticho
	Enemorna Eaner	Kanase
	Gumer	Abekie
	Gumer	Shemo
	Meskanena Mareko	Meserete Wegeram
	Meskanena Mareko	Wrib
	Selti	Decha Gsela
	Sodo	Firshina Arona
Hadiya	Konteb	Bukuro Saleta
	Konteb	Tetema
Keficho Shekicho	Gesha	Shupa-Waho
	Telo	Chucha
	Yeki	Keremeche(Ermich)
Kembata Alabana Tembaro	Omo Sheleko	Gaecha
Senen Omo	Ela	Agare
	Humbo	Fango Gelcheche
	Loma Bosa	Kaegerara
	Loma Bosa	Tulema Kahi
	Offa	Bosa Beretu
	Offa	Offa Zemo
Sidama	Bensa	Guyo Hiresha
	Bensa	Sedea Warea
Yem Special	Yem Special	Zemida

ANNEX 3: Survey Team

NAME	RESPONSIBILITY
Dr. Peter Eerens	ESHE/JSI Project Director
Dr. Tesfaye Bulto	ESHE/JSI Deputy Project Director
Frank White	ESHE/JSI Deputy Project Director, Finance & Administration
Dr. Mary Carnell	JSI Child Survival Advisor
Dr. Hailemariam	SNNP ESHE/JSI Regional Office Head
Essete Solomon	ESHE/JSI M&E Officer
Dr. Yared Mekonnen	Consultant
Dr. Agnes Guyon	Nutrition Advisor
Tesfaye	SNNP Regional HHS Coordinator
Mulu Gebremedhin	SNNP Regional HHS Coordinator
Birhanu	Data Entry Clerk
Shewangizaw	Data Entry Clerk