SCIP Nampula
Endline Survey Report

July 2015

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Abbreviations

ANC	Antenatal care
BCG	Tuberculosis vaccine
CHW	Community health worker
CLUSA	Cooperative League of the United States of America
CT	Counseling and testing
DHS	Demographic and Health Survey
DPT	Diphtheria pertussis and tetanus
EA	Enumeration area
GOM	Government of Mozambique
HIV	Human immunodeficiency virus
INE	Instituto Nacional de Estatísticas (National institute of statistics)
ITN	Insecticide treated nets
IUD	Intrauterine device
LAM	Lactational amenorrhea method
M&E	Monitoring and evaluation
MICS	Multiple Indicator Cluster Survey
OVC	Orphans and vulnerable children
PSI	Population Services International
PSU	Primary sampling unit
SANA	*Segurança Alimentar Através de Nutrição e Agricultura*
SBA	Skilled birth attendant
SCIP	Strengthening Communities through Integrated Programming
USAID	US Agency for International Development
USG	United States Government
WASH	Water, sanitation and hygiene
WHO	World Health Organization

Executive Summary

The SCIP Project conducted representative surveys of 2,314 women aged 15-49 at baseline (2010) and 2,795 women aged 15–49 at endline (2014) in the 14 districts of Nampula Province where the project works. The surveys were designed to produce separate estimates for SCIP's Complementary and Specialized intervention packages[1] for key reproductive and child health indicators, as well as provide information on exposure to project interventions. Data were collected on women's characteristics; reproductive history; use of antenatal, delivery and postpartum care; knowledge and use of contraceptive methods; marriage and sexual activity; fertility preferences; knowledge and perceptions of HIV/AIDS; and exposure to project interventions. The surveys were conducted by Pathfinder International in collaboration with the National Statistics Institute (INE) and were approved by the Bioethics Committee of the Ministry of Health. Financial support for the surveys was provided by the U.S. Agency for International Development (USAID/Mozambique) through the SCIP Project. This report presents the key findings from the baseline and endline surveys. The SCIP Project will produce a more extensive end-of-project report that interprets these survey findings in the context of performance monitoring data and qualitative data.

The survey findings indicate that SCIP's interventions have successfully contributed to increasing use of contraception among women in project areas. The proportion of women aged 15-49 who are using a modern contraceptive method increased from 7.2% at baseline to 17.6% at endline, and the proportion using any method of contraception increased from 9.6% at baseline to 18.8% at endline. The prevalence of implant use (1.0%) at endline is notable, as implants were only recently introduced in Mozambique (mid-2012), and stock outs had been reported. The findings also indicate an unmet need for family planning of 23.5% at endline, which is lower than the 2011 DHS estimate of 30.0% in Nampula Province overall. The endline survey findings show that 44% of the total demand for family planning is being met, compared to only 16.8% for Nampula Province in the 2011 DHS.

The maternal health findings are also promising. While attendance at four ANC visits remained similar from baseline (54.0%) to endline (53.2%) as did receipt of a complete package of ANC services (22.2% at baseline, 22.5% at endline), the percent of deliveries with a skilled birth attendant increased significantly from 63.4% at baseline to 75.0% at endline. The percent of women who received a postpartum visit also increased significantly from 53.4% at baseline to 69.2% at endline. The findings for child health were somewhat mixed; the proportion of children aged 0-5 months who were exclusively breastfed increased from 51.3% at baseline to 58.8% at endline, but the percent of children aged 12-23 months who are fully immunized declined from 33.5% at baseline to 21.1% at endline.

[1] The Complementary intervention package is implemented in 9 districts where Title II nutrition programs were ongoing until March 2013; five of these districts were also receiving water, sanitation and hygeien interventions. The Specialized intervention package is implemented in 4 districts and 2 areas of Nampula City that do not have Title II activities.

Improvements were also seen in terms of HIV prevention. The proportion of women who had been tested for HIV increased significantly from 25.5% at baseline to 58.3% at endline, with slightly higher testing rates in the Specialized than Complementary areas. Among women who reported that they had sex with a partner who was not their husband or a live-in partner, the proportion who used a condom at last sex with that partner increased significantly from 10.9% at baseline to 23.4% at endline (with similar rates in Specialized and Complementary areas at endline).

Ownership and use of insecticide treated bednets (ITNs) is a key strategy for reducing incidence of malaria among pregnant women and children. The survey findings showed that the percent of households with a pregnant woman and/or child less than age 5 that own at least one ITN increased significantly from 70.3% at baseline to 77.1% at endline, with similar increases in both the Specialized and Complementary areas. Use of ITNs also increased significantly, with the percent of pregnant women who slept under an ITN the night before increasing from 30.7% at baseline to 55.0% at endline, and the percent of children who slept under an ITN the night before increasing from 20.7% at baseline to 52.4% at endline.

The survey findings indicate that SCIP's key interventions in water, sanitation and hygiene (WASH) contributed to improving specific outcomes among the target population. The percent of households with access to an improved drinking water supply increased significantly from 32.7% at baseline to 61.4% at endline, with especially notable increases in the Complementary area. Use of water treatment technologies was low at baseline (5.4%) and remained low at endline (5.8%). The percent of households using improved sanitation facilities also increased significantly from 16.7% at baseline to 27.1% at endline, primarily driven by increases in the Complementary areas (particularly the areas receiving WASH interventions). In terms of hygiene, the percent of caregivers of children under age 3 who demonstrated proper personal hygiene behaviors increased from baseline (1.5%) to endline (5.5%) but remained low overall. The percent of caregivers demonstrating proper food hygiene behaviors was 28.3% at endline.

A key intervention for SCIP is delivery of health messages and commodities by community health workers (CHW), particularly in the Specialized areas. The survey findings show that the percent of women who were visited by a CHW in the past month increased from 12.7% at baseline to 37.2% at endline, with similar increases in both the Specialized and Complementary areas. At endline, the majority (71.5%) of women received a visit from a CHW in the past 12 months to discuss health-related topics, with the most popular being family planning, malaria, diarrhea management, and HIV/AIDS. In addition, 54.3% of women at endline reported that they or a family member attended a mobile brigade in the past 6 months (an event where health providers offer community-based services including family planning). Attendance at mobile brigades was higher in the Specialized areas (73.0%) than the Complementary areas (48.0%).

Key SCIP Indicators	Baseline survey 2010 %	Endline survey 2014 %	P value*
Contraception and unmet need			
Percent of women aged 15-49 who have ever used a modern contraceptive method	Total: 26.3 Specialized: 37.4 Complementary: 18.6	Total: 33.0 Specialized: 52.8 Complementary: 26.4	<0.0001
Percent of women of reproductive age (15-49) in target districts who are currently using a modern contraceptive method	Total: 7.2 Specialized: 12.0 Complementary: 3.9	Total: 17.6 Specialized: 28.0 Complementary: 14.0	<0.0001
Percent of women in union aged 15–49 with an unmet need for family planning	*Not reported at baseline*	Total: 23.5 Specialized: 17.7 Complementary: 25.5	N/A (no baseline value)
Antenatal, Delivery and Postpartum Care			
Percent of women aged 15-49 with a birth in the last 3 years who had 4 or more ANC visits	Total: 54.0 Specialized: 55.3 Complementary: 53.1	Total: 53.2 Specialized: 52.5 Complementary: 53.8	0.6765
Percent of pregnant women receiving complete package of ANC services (to include PMTCT, IPT, post partum FP, nutritional support etc.)	Total 22.2 Specialized 20.9 Complementary 23.1	Total: 22.5 Specialized: 21.7 Complementary: 23.2	0.8515
Percent of deliveries with a skilled birth attendant (SBA) in USG-assisted programs	Total: 63.4 Specialized: 65.4 Complementary: 62.0	Total: 75.0 Specialized: 77.4 Complementary: 73.3	<0.0001
Percent of women aged 15–49 with a birth in the past 3 years who had a postpartum visit	Total: 53.4 Specialized: 49.2 Complementary: 56.3	Total: 69.2 Specialized: 67.6 Complementary: 70.1	<0.0001
Percent of women who have received vitamin A at least once within 6 weeks postpartum	Total: 72.0 Specialized: 71.3 Complementary: 72.5	Total: 78.2 Specialized: 74.1 Complementary: 81.5	0.0002
Child Health			
Percent of children 0-5 months old in target districts who are exclusively breastfed	Total: 51.3 Specialized: 53.2 Complementary: 50.0	Total: 58.8 Specialized: 49.2 Complementary: 65.0	0.0671
Percent of children 12-23 months old in target districts who are fully immunized	Total:33.5 Specialized: 35.6 Complementary:31.5	Total: 21.1 Specialized: 16.5 Complementary: 24.7	<0.0001
HIV Prevention			
Reported condom use at last sex with non-regular partner (Percent of women age 15-49 with a non-regular (non-marital, non-cohabiting) partner who used a condom at last sex with that partner	Total: 10.9 Specialized: 24.4 Complementary: 0.6	Total: 23.4 Specialized: 27.3 Complementary: 20.4	0.0001

in the past 12 months)			
Percent of women aged 15-49 who have ever been tested for HIV	Total: 25.5 Specialized: 32.4 Complementary :20.7	Total: 58.3 Specialized: 60.3 Complementary: 56.6	<0.0001
Malaria			
Percent of households with a pregnant woman and/or child less than five years of age with at least one insecticide treated net (ITN)	Total: 70.3 Specialized: 73.5 Complementary: 68.3	Total: 77.1 Specialized: 81.0 Complementary: 73.9	<0.0001
Percent of pregnant women and children who slept under ITN night before	Pregnant women Total: 30.7 Specialized: 35.0 Complementary: 28.1 Children <5 years Total: 20.7 Specialized: 22.2 Complementary: 19.7	Pregnant women Total: 55.0 Specialized: 52.6 Complementary: 57.2 Children <5 years Total: 52.4 Specialized: 50.9 Complementary: 53.5	<0.0001 <0.0001
Water, sanitation and hygiene (WASH)			
Percent of households in target areas with access to improved drinking water supply as a result of USG assistance	Total: 32.7 Specialized: 40.1 Complementary: 42.2 (WASH) Complementary: 21.9 (non-WASH)	Total: 61.4 Specialized: 53.7 Complementary: 65.7 (WASH) Complementary: 68.9 (non-WASH)	<0.0001
Percent of households using improved sanitation facilities	Total: 16.7 Specialized: 29.0 Complementary: 23.2 (WASH) Complementary: 3.2 (non-WASH)	Total: 27.1 Specialized: 25.9 Complementary: 40.4 (WASH) Complementary: 21.7 (non-WASH)	<0.0001
Percent of households practicing sustained use of water treatment technologies	Total: 5.4 Specialized: 8.8 Complementary: 3.2 (WASH) Complementary: 3.6 (non-WASH)	Total: 6.8 Specialized: 9.4 Complementary: 6.8 (WASH) Complementary: 3.8 (non-WASH)	0.1124
Percent of caregivers demonstrating proper personal hygiene behaviors	Total: 1.5 Specialized: 1.8 Complementary: 4.2 (WASH) Complementary: 0.0	Total: 5.5 Specialized: 4.0 Complementary: 3.9 (WASH) Complementary: 8.1	<0.0001

	(non-WASH)	(non-WASH)	
Percent of caregivers demonstrating proper food hygiene behaviors	*Not reported at baseline*	Total: 28.3 Specialized: 28.6 Complementary: 20.1 (WASH) Complementary: 31.8 (non-WASH)	N/A (no baseline value)

*p values are from test of differences of two proportions (baseline and endline) for overall project area

Section 1: Background

Mozambique is a low-income country located in south east Africa. The country is ranked 185th of 187 countries on the human development index (UNDP, 2013) and has experienced rapid population growth in recent years, with the total population increasing from 16.1 million in 1997 to an estimated 25.0 million in 2014 (INE, 2014). Though Mozambique has greatly improved some health indicators in recent years, reproductive health indicators remain low. From 2003 to 2011, the total fertility rate increased from 5.5 to 5.9 births per woman, the modern contraceptive prevalence rate (CPR) among women in union decreased from 11.7% to 11.3%, and unmet need for family planning (FP) increased from 18% to 29% (INE 2012). While antenatal care during pregnancy is high (91% of women attend at least one visit), only 55% of women deliver in a health facility (INE 2012). Nampula Province in Northern Mozambique is the most densely populated area of the country outside Maputo and has poor health indicators, with a modern CPR of only 5.0% among women in union (INE 2012) and an HIV prevalence of 4.6% (INSIDA 2010). Only one third (38.5%) of the population in Nampula has access to safe drinking water and less than half (47.9%) have access to a latrine (INE 2012).

The Strengthening Communities through Integrated Programming (SCIP) project is a five-year project (2009-2015) funded by the United States Agency for International Development that addresses health, water and sanitation and youth farmer's development in 14 districts of Nampula Province. The SCIP project is implemented by Pathfinder International along with a consortium of partners (Population Services International, World Relief, Care, and Cooperative League of the United States of America (CLUSA)). SCIP supports Mozambican government efforts to achieve the following results: improvement in access and availability of quality health goods and services; adoption of appropriate health practices and health-seeking behavior; increase in accountability of community and district health structures to the people they serve; community social infrastructure sustained through a range of allies and networks of support they can draw upon to solve health problems; increase in availability and use of clean, multi-use water; and improvement of sanitation facilities and hygiene practices in target communities. SCIP implements targeted packages of interventions designed to respond to prevailing conditions and leverage other resources to have the greatest impact. The *Complementary Package* of interventions is implemented in nine districts with a population of approximately 2.6 million where Title II[1] programs (SANA project) were ongoing until March 2013. Five of these districts are also benefiting from water, sanitation and hygiene (WASH) interventions. The *Specialized Package* (more intensive CHW interventions) is implemented in four districts and two areas of Nampula City that do not have Title II activities, with a population of approximately 1.09 million. In all 14 districts, SCIP is implementing a *Foundation Package* that involves working with community health workers to promote health and hygiene behaviors, implementing an HIV prevention program, and operationalizing an OVC program.

[1] Title II is the US government-funded Food for Peace Multi-Year Assistance Program (MYAP).

Survey Objectives

The baseline and endline surveys conducted by SCIP in October –December 2010 and July-August 2014, respectively, will enable the project to understand whether health-related outcomes have improved among the target population, and in concert with monitoring data, will facilitate an understanding of the role of the program in changes that occur. The specific objective of the endline survey was to assess changes in key indicators among the target population including reproductive health (modern contraceptive prevalence rate; ANC coverage; skilled birth attendance; postpartum care; condom use); child health (immunization; exclusive breastfeeding); malaria (bednet ownership and use); and WASH (improved drinking water supply; improved sanitation facilities; caregiver hygiene).

Survey Methodology

Sample design

The baseline and endline surveys used multi-stage stratified samples selected from the *III Recenseamento Geral de População e Habitação* database by the Instituto Nacional de Estatísticas (INE) (August 2007). The survey covered the project localities in which SCIP works, not the entire province of Nampula, in order to provide more precise estimates of program effects and streamline data collection costs. The baseline and endline samples were stratified into the complementary and specialized packages described above, with each one considered as a domain of analysis. Within each stratum, the sample was proportionally distributed in urban and rural areas in the selected enumeration areas. Following the sampling strategy described in Annex 2, baseline and endline samples of households and women of reproductive age (15 to 49 years) who live in those households were selected.

Survey instruments

Three questionnaires were used for data collection: 1) household; 2) women aged 15-49 years; and 3) caretakers of children less than 3 years old. The questionnaires were developed based on standard international questionnaires (DHS, AIS, MICS), as well as USAID's Environmental Health Project (EHP 2004) and the joint WHO/UNICEF document *Core questions on drinking-water and sanitation for household surveys* (WHO/UNICEF 2006). Paper questionnaires were used at baseline, and a CommCare ODK mobile application on Samsung Galaxy smartphones was used at endline. The household questionnaire included basic demographic information on each household member and information about the household's dwelling, ownership of durable goods and use of insecticide-treated bed nets. The woman's questionnaire collected information from all women aged 15–49 in the selected households about background characteristics; reproductive history; antenatal, delivery and postpartum care; knowledge and use of contraceptive methods; marriage and sexual activity; fertility preferences; knowledge and perceptions on HIV/AIDS; and exposure to project interventions (endline only). The caretakers' questionnaire collected information on knowledge and behaviors related to hygiene, sanitation practices and food preparation.

Interviewer Training and Fieldwork

Interviewer trainings were conducted in Nampula by SCIP staff and experienced trainers from Eduardo Mondlane University and INE, with 45 participants in the baseline training (Sept 27-October 8, 2010) and 45 participants in the endline training (June 16-28, 2014). Interviewers were identified by the head of the Statistical Department of the regional National Statistics Institute in Nampula based on past survey experience and fluency in the local language (Macua). The trainings included lectures, presentations, practical demonstrations, sessions on use of smartphones and the CommCare ODK application (endline only), practice interviewing in small groups, and field practice (pretest in one area of Nampula where SCIP is not working). The final interviewers were selected based on an assessment on the last day of training and observations during the training, particularly the field practice. Supervisors and field editors were also selected and received an additional 2 days of training.

The baseline survey fieldwork was conducted in October-December 2010, and the endline survey fieldwork in July-August 2014, by five teams of 4 interviewers, a supervisor and a driver. Before field work began in any area, the local authorities were contacted. Permission was obtained from the National Bioethics Committee, Minister of Health, Vice-President of the National Statistics Institute, Provincial Health Directorate and the administrations of each district. At endline, data stored in smartphones were synchronized with an online CommCare server when interviewers were in range of a mobile network. Data on the CommCare server were reviewed each day and any problems identified were discussed with the field editors and supervisors. The SCIP team maintained close contact with the field teams through daily phone calls with supervisors to assess progress and discuss any challenges.

Data Processing and Analysis

At baseline, data processing was overseen by INE staff, with data double-entered in version 4.0 of CsPRO and inconsistencies reviewed/corrected. At endline, CommCare datasets were exported into Excel in order to organize variables for reading by statistical software packages. Analyses were conducted in Stata V 11.0 (StataCorp, 2009) using the survey commands to take into account stratification and clustering. Data were weighted using the inverse of the probability of selection. Certain analyses are not possible using the survey commands in Stata; thus, some estimates (e.g., median age at first sex) were produced using unweighted data and do not take into account the clustered nature of the data. Tests of differences of two proportions were conducted to assess statistically significant differences between baseline and endline estimates for the overall project area. Analyses of the specialized package were initially conducted including vs. excluding Nampula City due to its differing sociodemographic characteristics and availability of services, but results were very similar so the report presents results for the specialized package as a whole. For indicators of water, sanitation and hygiene, results for the complementary package are disaggregated because relevant activities are only being implemented in 5 districts (referred to as 'WASH'). At endline, analyses of contraceptive use, fertility intentions, and exposure to SCIP interventions were conducted using data from a separate rapid survey (see 'Sources of error' below). Tables that contain data from the rapid survey are labeled as such.

Sources of error

The survey questionnaires were printed in Portuguese because Macua is not a written language. Although translation into Macua was addressed during the training, it was not possible to ensure the consistency of the translations which may have led to some bias if particular interviewers used translations that were markedly different. Household listings were not available for the enumeration areas, so the listings were done by the study teams. Interviewers were trained to include all households in the listing, regardless of how distant they were and of their socioeconomic status. However, it is possible that some households were excluded from the listing because interview teams were not comfortable accessing them. In order to avoid selection bias in the field, a list of replacement households was provided to supervisors to be used in case one of the original sample households could not be interviewed. The supervisor first made a strong effort to complete the interview for the original sampled household before deciding to replace it. At endline, issues with vaccination card dates and missing data on polio vaccine doses affected the immunization analysis (see footnotes in Table 2.14). In addition, it was discovered that a programming error in the CommCare application resulted in missing data on contraceptive use and fertility intentions. Consequently, a rapid re-survey was conducted in SCIP project areas in February 2015 to collect data on these indicators as well as exposure to SCIP interventions. Details of the rapid survey background and methodology are available in Annex 2.

Response rates

Table 1.1 shows the household and individual response rates for the SCIP baseline and endline surveys. At baseline, 99.4% of sampled households, 98.5% of eligible women aged 15-49, and 99.8% of caretakers of children under 3 completed the survey. At endline, 99.9% of sampled households, 99.9% of eligible women aged 15-49, and 99.9% of caretakers of children under 3 completed the survey. For the endline rapid survey, a total of 1,214 women aged 15-49 were interviewed (data not shown).

Table 1.1 Response rates for households, women and caregivers by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	All households	Specialized	Complementary	All households
Household interviews						
Households selected	1,326	1,304	2,630	1,445	1,410	2,855
Households interviewed	1,315	1,298	2,613	1,445	1,408	2,853
Household response rate	99.2%	99.5%	99.4%	100%	99.9%	99.9%
Women aged 15-49						
Eligible women	1,218	1,132	2,350	1,408	1,391	2,797
Eligible women interviewed	1,185	1,129	2,314	1,408	1,389	2,795
Eligible woman response rate	97.3%	99.7%	98.5%	100%	99.9%	99.9%
Caretakers of children under 3						
Eligible caretakers	633	589	1,222	1,001	984	1,985
Eligible caretakers interviewed	631	589	1,220	1,001	983	1,984
Eligible caretaker response rate	99.7%	100.0%	99.8%	100%	99.9%	99.9%

Section 2: Results

Household population and characteristics

Table 2.1 shows the composition of the households that were included in the survey at baseline and endline, by intervention area. In both surveys, the majority of households were headed by males (81.0% at baseline, 84.6% at endline), the average household had just under five members, and over 30% of households had six or more members.

Table 2.1 Percent distribution of household heads and number of usual residents by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Special-ized	Comple-mentary	All households	Special-ized	Comple-mentary	All households
Sex of household head						
Male	80.6	81.2	81.0	82.8	86.4	84.6
Female	19.4	18.8	19.0	17.2	13.6	15.4
Mean # of usual household members						
1	5.0	6.1	5.7	1.4	1.0	1.2
2	11.8	15.3	14.0	8.8	8.2	8.5
3	18.0	17.7	17.8	18.9	19.3	19.1
4	16.3	16.4	16.4	15.4	18.9	17.3
5	15.9	17.1	16.6	17.6	19.4	18.6
6+	33.0	27.5	29.6	37.9	33.3	35.4
Mean size of households	4.7	4.3	4.4	5.0	4.8	4.9
Number of households	1,315	1,298	2,613	1,445	1,408	2,853

Table 2.2 provides information on characteristics of the households in which study participants lived. A higher proportion of households in the endline sample had electricity (16.2% vs. 7.9% at baseline), with variation between the Specialized and Complementary areas. The majority of households at baseline and endline lived in dwellings with natural flooring and roofs, though a greater proportion of endline households had natural walls. Housing was crowded, with an average of 2.6 people per room for sleeping at endline.

Table 2.2 Housing characteristics, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	All households	Specialized	Complementary	All households
Electricity						
Yes	16.3	2.9	7.9	29.0	13.1	16.2
No	83.5	97.1	92.0	80.0	86.9	83.8
Missing	0.3	0.1	0.1	0.0	0.0	0.0
Floor						
Natural	83.7	96.1	91.5	86.7	86.5	86.6
Other	16.3	3.9	8.5	13.3	13.6	13.5
Roof						
Natural	84.4	95.5	91.4	80.8	85.5	83.4
Other	15.6	4.5	8.7	19.3	14.5	16.7

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	All households	Specialized	Complementary	All households
Walls						
Natural	19.4	21.9	21.0	31.8	31.8	31.8
Rudimentary	55.2	60.4	58.5	49.5	48.0	48.6
Finished	25.1	17.5	20.4	18.5	20.1	19.4
Other	0.3	0.2	0.2	0.3	0.0	0.02
Mean number of rooms for sleeping	2.3	2.1	2.2	1.9	2.1	2.0
Mean number of people per room for sleeping	2.3	2.1	2.2	2.9	2.5	2.6
Number of households	1,315	1,297	2,612	1,445	1,408	2,853

As shown in Table 2.3, there was higher ownership of certain household goods among households in the endline sample, particularly radios (38.0% at baseline vs. 47.4% at endline), mobile phones (11.8% at baseline vs. 54.2% at endline), and stove (82.1% at baseline vs. 95.0% at endline). Households in the Specialized areas were generally more likely to own each of the items queried.

Table 2.3 Ownership of household goods, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	All households	Specialized	Complementary	All households
Radio	46.6	33.0	38.0	53.4	42.4	47.4
Television	14.3	2.3	6.7	17.8	10.3	13.7
Mobile phone	20.1	6.8	11.8	53.9	54.5	54.2
Refrigerator	6.7	0.5	2.8	8.5	2.9	5.4
Stove	86.6	79.4	82.1	94.3	95.7	95.0
Blanket	61.8	27.1	40.0	85.9	73.6	79.2
Candles/lantern	68.9	65.7	66.9	75.9	80.8	78.6
Watch	34.0	22.5	26.8	22.1	22.5	22.3
Bicycle	43.2	43.6	43.5	46.6	42.8	44.6
Motorcycle/scooter	9.8	5.2	6.9	18.0	13.9	15.8
Number of households	1,315	1,297	2,612	1,445	1,408	2,853

Characteristics of respondents

Table 2.4 indicates that the demographic characteristics of female respondents were similar at baseline and endline.[2] The majority of endline respondents were from rural areas (63.8%) and married (32.5%) or living together (45.2%). The predominant religion was Catholic (50.7%) with a considerable percentage of Muslims (33.8%). The level of education was low: 33.7% of respondents had no education and 52.8% had only primary education. A higher proportion of endline

[2] Demographic characteristics of the endline rapid survey respondents (shown in the rapid survey report) indicate higher rates of living together and of secondary education.

respondents had secondary education compared to baseline, particularly in the Complementary areas. Women living in Specialized areas were more likely to have never married and have higher levels of education than women in Complementary areas. The religious makeup of the two areas also differed, with more than half the respondents in Specialized areas being Catholic vs. similar proportions of Catholic and Muslim respondents in Complementary areas.

Table 2.4 Percent distribution of women aged 15-49 by background characteristics and intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	All Households	Specialized	Complementary	All Households
Background characteristics						
Age						
15-19	18.9	15.5	16.9	23.3	17.9	20.4
20-24	21.1	15.9	18.0	18.9	22.5	20.9
25-29	16.0	16.2	16.1	15.8	20.0	18.0
30-34	15.5	16.2	15.9	12.8	13.7	13.3
35-39	14.0	16.7	15.6	11.2	10.0	10.5
40-44	8.2	11.1	9.9	9.3	9.0	9.2
45-49	6.1	8.5	7.5	8.8	6.8	7.7
Missing	0.2	0.0	0.1	0.0	0.0	0.0
Marital status						
Never married	9.2	4.5	6.4	13.6	6.9	10.0
Married	44.3	35.2	38.9	30.6	34.2	32.5
Living together	34.6	48.6	42.9	42.8	47.3	45.2
Divorced/Separated	9.3	9.2	9.2	9.9	9.8	9.8
Widowed	2.6	2.6	2.6	3.2	1.9	2.5
Residence						
Urban	34.3	28.8	31.1	34.6	37.6	36.2
Rural	65.7	71.2	68.9	65.4	62.4	63.8
Religion						
Catholic	52.7	41.3	46.0	54.0	47.9	50.7
Protestant	12.9	5.7	8.7	18.9	5.0	11.4
Muslim	25.6	48.6	39.2	22.2	43.7	33.8
Other/None/Missing	8.9	4.4	6.1	4.9	3.4	4.1
Education Level						
No education	26.5	49.3	40.0	26.8	39.5	33.7
Primary	57.1	47.3	51.3	56.3	49.8	52.8
Secondary or higher	15.6	3.1	8.2	16.5	10.3	13.2
Other	0.04	0.0	0.01	0.4	0.4	0.4
Missing	0.8	0.4	0.5	0.0	0.0	0.0
Number of women 15-49	1,185	1,129	2,314	1,406	1,390	2,796

Contraception

Table 2.5 shows that knowledge of contraception was high at both baseline and endline: more than 90% of women had heard of at least one modern method of contraception. Pills, injectables and male condoms were the methods most women knew about. Knowledge of most individual contraceptive methods was slightly lower at endline than at baseline.

Table 2.5 Knowledge of contraception among all women age 15-49, by intervention package

	BASELINE	ENDLINE
	Intervention Package	Intervention Package

	Specialized	Complementary	All women	Specia-lized	Complementary	All women
Knowledge of contraception						
Any method	90.8	95.9	93.8	90.6	92.5	91.6
Any modern method	90.0	95.4	93.2	88.6	90.5	89.6
Female sterilization	33.7	51.0	43.9	20.5	23.4	22.1
Male sterilization	15.5	34.4	26.7	12.3	13.7	13.0
Pill	82.0	89.0	86.1	76.5	81.3	79.1
IUD	43.2	47.2	45.6	33.9	34.8	34.4
Injectables	76.8	84.7	81.4	73.9	73.8	73.8
Implants	---	---	---	40.7	34.7	37.5
Male condom	75.9	81.3	79.1	68.2	76.1	72.5
Female condom	36.9	42.5	40.2	36.7	37.6	37.2
LAM	20.5	25.6	23.5	14.4	12.6	13.4
Emergency contraception	12.6	15.2	14.2	11.9	12.0	12.0
Any traditional method	41.0	57.9	51.0	39.7	37.1	38.3
Periodic abstinence	---	---	---	26.2	27.7	27.0
Withdrawal	29.9	47.9	40.5	16.9	18.8	17.9
Number of women 15-49	1,185	1,129	2,314	1,406	1,390	2,796

As shown in Table 2.6, approximately one third of women (33.2% at baseline, 34.5% at endline) reported ever having used a contraceptive method, with higher rates of ever use among women in the Specialized areas than the Complementary areas. Ever use of a modern contraceptive method increased from 26.3% at baseline to 33.0% at endline. Injectables were the most commonly ever used method at endline (20.4%) followed by pills (13.8%) and male condoms (2.6%).

Table 2.6 Ever use of contraception among women age 15-49, by intervention package

	BASELINE Intervention Package			ENDLINE (RAPID SURVEY) Intervention Package		
	Specialized	Complementary	All women	Specialized	Complementary	All women
Ever use of contraception*						
Any method	43.9	25.8	33.2	53.4	28.1	34.5
Any modern method	37.4	18.6	26.3	52.8	26.4	33.0
Female sterilization	1.1	0.3	0.6	0.0	0.1	0.1
Male sterilization	0.2	0.2	0.2	0.0	0.0	0.0
Pill	19.9	8.9	13.4	25.1	9.9	13.8
IUD	2.6	0.6	1.4	0.3	0.1	0.2
Injectables	14.6	9.0	11.3	27.0	18.2	20.4
Implants	---	---	---	0.7	1.2	1.1
Male condom	13.7	4.6	8.3	5.9	1.5	2.6
Female condom	2.0	0.5	1.1	0.0	0.1	0.1
LAM	2.2	0.9	1.4	0.0	1.3	1.0
Emergency contraception	1.1	0.6	0.8	---	---	---
Any traditional method	14.4	10.9	12.4	2.6	3.9	3.5
Periodic abstinence	---	---	---	2.0	3.3	3.0
Withdrawal	7.8	7.7	7.8	0.3	0.1	0.2
Other	---	---	---	0.3	0.4	0.4
Number of women 15-49	1,185	1,129	2,314	307	907	1,214

* At baseline, all women who had heard of a specific method were asked if they had ever used that method. At endline, all women were asked whether they had ever used any contraceptive method, and if so, which one(s).

All women who reported ever using a contraceptive method were asked whether they were currently using a method. Current use of contraception increased from 9.6% at baseline to 18.8% at endline, largely driven by an increase in use of modern contraception from 7.2% to 17.6% (Table 2.7). Current use of injectables increased from 2.2% to 11.5%, and pills from 2.6% to 4.4%. An encouraging finding is the 1.0% prevalence of implant use at endline, since implants were only recently introduced in Mozambique (mid-2012). IUD use remained negligible at endline. Condom use as a contraceptive method decreased from 1.5% at baseline to 0.4% at endline. Current contraceptive use is similar among women currently in union (married or living together), with an increase in modern contraceptive method use from 9.3% at baseline to 17.3% at endline. The largest difference is seen in condom use, which is lower among married women than among all women.

Table 2.7 Current use of contraception among women age 15-49 (all women and women in union), by intervention package

	BASELINE Intervention Package			ENDLINE (RAPID SURVEY) Intervention Package		
	Specialized	Complementary	All women	Specialized	Complementary	All women
Current use of contraception among all women aged 15-49						
Any method	14.0	6.6	9.6	29.6	15.1	18.8
Any modern method	12.0	3.9	7.2	28.0	14.0	17.6
Female sterilization	0.9	0.2	0.5	0.0	0.1	0.1
Male sterilization	0.0	0.0	0.0	0.0	0.0	0.0
Pill	4.1	1.5	2.6	8.1	3.1	4.4
IUD	0.0	0.1	0.03	0.0	0.0	0.0
Injectables	3.4	1.4	2.2	18.2	9.3	11.5
Implants	---	---	---	0.7	1.1	1.0
Condoms	3.4	0.2	1.5	1.0	0.2	0.4
LAM	0.3	0.5	0.4	0.0	0.2	0.2
Any traditional method	1.5	2.2	1.9	1.6	1.1	1.2
Periodic abstinence	---	---	---	1.6	0.9	1.1
Withdrawal	---	---	---	0.0	0.0	0.0
Other	0.5	0.5	0.5	0.0	0.2	0.2
Number of women 15-49	1,185	1,129	2,314	307	907	1,214
Current use of contraception among women in union aged 15-49						
Any method	12.5	7.3	9.3	29.4	15.0	18.5
Any modern method	10.1	4.1	6.5	28.2	13.7	17.3
Female sterilization	1.1	0.2	0.5	0.0	0.1	0.1
Pill	3.9	1.6	2.5	8.6	2.8	4.2
IUD	0.0	0.1	0.04	0.0	0.0	0.0
Injectables	3.6	1.5	2.3	19.2	9.5	11.9
Implants	---	---	---	0.4	0.9	0.8
Condoms	1.2	0.2	0.6	0.0	0.1	0.1
LAM	0.3	0.6	0.5	0.0	0.3	0.2
Any traditional method	1.8	2.7	2.3	1.2	1.3	1.3
Periodic abstinence	---	---	---	1.2	1.0	1.1
Withdrawal	---	---	---	0.0	0.0	0.0
Other	0.6	0.5	0.6	0.0	0.3	0.2
Number of women in union 15-49	745	1,143	1,888	255	782	1,037

Fertility preferences

As shown in Table 2.8, at endline over 40% of women wanted another child within 2 years (compared to over 60% at baseline), nearly 20% wanted to delay the birth of their next child for 2 or more years (compared to less than 3% at baseline); and 21.4% of women wanted no more children (compared to 23.3% at baseline; this increased with number of living children as expected). At endline, over 10% of women reported that they are not able to have any more children because they are infecund.

Table 2.8 Desire for children among women in union age 15-49 according to number of living children, by intervention package

	BASELINE					ENDLINE (RAPID SURVEY)				
	Number of living children					Number of living children				
	0	1	2	3+	Total	0	1	2	3+	Total
Specialized area										
Want another soon*	70.5	76.8	73.0	50.4	61.2	52.4	53.3	48.7	29.2	42.8
Want another later**	5.4	6.2	2.0	2.0	3.1	28.6	28.3	28.2	31.3	29.4
Undecided***	10.8	6.3	8.9	7.7	7.8	4.8	3.3	6.4	0.0	3.1
Want no more	3.3	4.8	9.5	34.1	21.4	4.8	8.3	7.7	26.0	14.5
Sterilized/declared infecund	10.0	6.0	6.6	5.9	6.6	9.5	6.7	9.0	13.5	10.2
Missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Number of women in union 15-49	86	157	166	531	940	21	60	78	96	255
Complementary area										
Want another soon*	73.7	79.3	72.4	52.0	62.3	55.8	49.0	43.9	30.5	40.9
Want another later**	4.3	1.1	3.2	1.1	1.8	12.8	19.2	17.9	12.6	15.5
Undecided***	13.9	11.4	8.6	5.7	7.4	15.1	8.6	9.3	8.0	9.2
Want no more	4.3	3.0	12.0	39.2	24.8	2.3	10.1	20.8	39.1	23.7
Sterilized/declared infecund	3.0	5.1	3.8	1.8	3.6	14.0	13.1	8.1	9.2	10.5
Missing	0.8	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Number of women in union 15-49	104	165	149	530	948	86	198	173	325	782
Total										
Want another soon*	71.1	78.3	71.1	51.4	61.2	55.1	50.0	45.4	30.2	41.4
Want another later**	4.2	2.8	3.2	1.4	2.4	15.9	21.3	21.1	16.9	18.9
Undecided***	12.1	11.2	9.8	6.5	8.7	13.1	7.4	8.4	6.2	7.7
Want no more	3.7	4.0	11.8	37.2	23.3	2.8	9.7	16.7	36.1	21.4
Sterilized/declared infecund	8.4	3.7	4.2	3.4	4.3	13.1	11.6	8.4	10.2	10.4
Missing	0.5	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Number of women in union 15-49	190	322	315	1,061	**1,888**	107	258	251	421	**1,037**

* Wants next birth within 2 years

** Wants to delay next birth for 2 or more years

*** Undecided/don't know about timing of next birth or whether they want more children

Need for family planning

Unmet need for family planning was calculated for women in union, including women who were not pregnant (based on their current contraceptive use and future fertility intentions); pregnant women (based on whether they wanted their current pregnancy later or not at all); and postpartum amenorrheic women (based on whether their last birth was wanted later or not at all). As shown in Table 2.9, among women aged 15–49 in union, 23.5% had an unmet need for family planning. The unmet need for spacing births (14.3%) is higher than the unmet need for limiting births (9.3%), and a greater proportion of women are using contraception to space (11.5%) than to limit (7.0%) births. Overall, 44% of the total demand for family planning is being met in project areas.

Table 2.9 Need for family planning among women in union age 15–49, by intervention package

	ENDLINE (RAPID SURVEY)										
	Unmet need for family planning			Met need for family planning			Demand for family planning				
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total	% of demand satisfied	Number of women in union
Specialized	13.7	3.9	17.7	20.8	8.6	29.4	34.5	12.6	47.1	62.5	255
Complementary	14.5	11.0	25.5	8.4	6.5	15.0	22.9	17.5	40.4	37.0	782
Total	14.3	9.3	23.5	11.5	7.0	18.5	25.8	16.3	42.0	44.0	1,037

Reproductive health

Antenatal care

Table 2.10 shows that the proportion of women with births in the past 3 years who received any antenatal care increased slightly from 94.8% at baseline to 97.3% at endline, and the proportion who received four or more ANC visits remained about the same (54.0% at baseline, 53.2% at endline). The proportion of women whose first ANC visit occurred in the first 3 months of pregnancy increased from 12.8% at baseline to 21.0% at endline. The findings were similar in Specialized and Complementary areas at both baseline and endline.

Table 2.10 Antenatal care use by women with a pregnancy in the past 3 years, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
# ANC consultations						
None	7.8	3.4	5.2	3.5	1.5	2.4
1	3.3	3.5	3.5	4.4	4.1	4.2
2 – 3	33.6	39.0	36.8	39.3	40.4	39.9
4+	55.3	53.1	54.0	52.5	53.8	53.2
Don't know/didn't respond	0.0	1.0	0.57	0.4	0.2	0.3
# of months pregnant at time of first ANC visit						
No ANC	7.8	3.4	5.2	3.5	1.5	2.4
Less than 4 months	11.9	13.4	12.8	21.5	20.6	21.0
4 – 5 months	44.1	48.2	46.5	44.2	44.9	44.6
6 – 7 months	29.5	27.6	27.8	24.9	24.2	24.5
8+ months	6.8	4.5	6.3	5.8	8.8	7.5
Don't know/didn't respond	0.0	0.0	1.0	0.1	0.0	0.0
Number of women with a birth in the past 3 years	627	576	1,202	745	803	1,548

In terms of the content of ANC visits (Table 2.11), the proportion of women who received family planning counseling during their last pregnancy increased from 67.4% at baseline to 86.5% at endline; the proportion who received HIV counseling increased from 43.9% at baseline to 84.0% at endline. Rates of iron supplementation increased from 72.0% at baseline to and 83.4% at endline, and vaccination with tetanus toxoid increased from 79.5% at baseline to 86.6% at endline. Fansidar provision decreased from 56.5% at baseline to 45.1% at endline (note that in 2012 there was a shortage of Fansidar). Overall, the proportion of women who received all recommended

components of the ANC package[3] during their last pregnancy remained similar from baseline (22.2%) to endline (22.5%) in both the Specialized and Complementary areas.

Table 2.11 Antenatal care received during last pregnancy in the past 3 years, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
Received iron supplements during last pregnancy						
Yes	71.3	72.5	72.0	85.3	81.9	83.4
No	27.7	25.9	26.6	14.2	16.8	15.7
Don't know	1.0	0.1	01.1	0.4	1.2	0.9
Missing	0.0	00.4	00.2	0.1	0.0	0.0
Protected from tetanus toxoid during pregnancy[4]						
Yes	59.4	69.3	65.3	52.6	66.0	60.1
No	33.9	25.8	29.1	39.8	28.5	33.5
Don't know	1.9	1.6	1.7	3.2	2.0	2.5
Missing	4.7	3.2	3.8	4.4	3.5	3.9
Vaccinated with tetanus toxoid during last pregnancy						
Yes	72.2	84.5	79.5	83.1	88.8	86.6
No	27.2	15.4	20.2	15.4	10.1	12.4
Don't know	0.6	0.1	0.3	0.9	1.1	1.0
Number of times injected with tetanus toxoid during last pregnancy						
None	35.1	23.6	28.3	15.7	10.5	12.7
Once	14.7	20.0	17.8	29.5	23.3	26.0
Twice	14.0	22.6	19.1	34.6	38.1	36.6
More than twice	15.8	17.7	16.9	19.0	27.0	23.5
Don't know	9.9	6.6	7.9	0.2	0.0	0.1
Missing	10.6	9.6	10.0	1.0	1.1	1.0
Received any fansidar during last pregnancy						
Yes	53.4	58.6	56.5	47.6	43.2	45.1
No	45.8	40.1	42.4	48.8	50.6	49.8
Don't know	0.6	1.3	1.0	0.0	0.0	0.0
Missing	0.2	0.0	0.1	3.6	6.2	5.1
Counseled on family planning during last pregnancy						
Yes	71.1	64.8	67.4	85.3	87.5	86.5
No	27.6	32.3	30.4	12.2	10.3	11.1
Don't know	1.4	2.9	2.3	2.4	2.2	2.3
Counseled about HIV testing during last pregnancy						
Yes	49.1	40.3	43.9	82.6	85.1	84.0
No	48.7	56.9	53.6	13.1	12.5	12.8
Missing	2.20	2.8	2.6	0.1	0.0	0.0
Received complete package of ANC	20.9	23.1	22.2	21.7	23.2	22.5
Number of women with a birth in past 3 years	626	576	1,202	745	803	1,548

[3] The complete package of ANC services is: tetanus toxoid, fansidar, iron supplements, PMTCT (counseled and offered HIV testing), and family planning counseling.

[4] Protected from tetanus toxoid during pregnancy is defined as receiving at least 2 TT injections during last pregnancy, OR at least 2 TT injections of which the last was within 3 years of last live birth, OR at least 3 TT injections of which the last was within 5 years of last birth.

Delivery

Among women with a birth in the past 3 years, the proportion whose last delivery was attended by a skilled provider increased from 63.4% at baseline to 75.0% at endline (Table 2.12), with slightly higher rates at endline in the Specialized areas (77.4%) compared to the Complementary areas (73.3%). Most of these were women who had delivered in a facility (Figure 2.1), but some delivered at home. Auxiliary midwives were the most common birth attendant reported at endline (43.4%) followed by nurse/midwife (30.3%).

Table 2.12 Delivery location of last birth in the past 3 years, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
Delivery performed in a health facility						
Yes	65.7	60.5	62.6	74.9	70.2	72.3
No	34.3	38.9	37.1	24.3	29.3	27.1
Missing	0.0	0.6	0.3	0.9	0.5	0.6
Birth attendant at last delivery						
Doctor	1.9	0.1	0.8	2.3	0.6	1.3
Nurse/ Midwife	12.0	14.4	13.4	33.0	28.2	30.3
Auxiliary Midwife	51.5	47.4	49.1	42.1	44.5	43.4
Traditional midwife	6.3	13.3	10.5	8.6	11.5	10.2
Friends/ Family	22.5	23.4	23.0	12.2	12.9	12.6
Other	3.0	0.4	1.4	0.5	1.5	1.1
No one	2.8	0.8	1.6	0.9	0.7	0.8
DK/Missing	0.0	0.2	0.1	0.5	0.1	0.3
Delivered by skilled provider	65.4	62.0	63.4	77.4	73.3	75.0
Number of women with a birth in the past 3 years	626	576	1,202	745	803	1,548

Postpartum care

Table 2.13 shows details of postpartum care received by women who gave birth within the past 3 years. The proportion of women who had a postpartum visit by a provider increased from 53.4% at baseline to 69.2% at endline. Among women who received a postpartum visit, the proportion visited within 1 week of birth (either the day of birth, day after birth or the week of birth) decreased from 66.0% at baseline to 37.4% at endline. Most women (72.0% at baseline, 78.2% at endline) received vitamin A within 2 months postpartum, with higher rates in the Complementary area than the Specialized area at endline.

Table 2.13 Postpartum care after last birth in the past 3 years, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
Had a postpartum visit by a provider						
Yes	49.2	56.3	53.4	67.6	70.1	69.2
No	50.8	43.7	46.6	32.4	29.9	30.8
Received vitamin-A within 2 months postpartum						
Yes	71.3	72.5	72.0	74.1	81.5	78.2
No	28.7	27.5	28.0	25.9	18.5	21.8

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
Number of women with a birth in the past 3 years	626	576	1,202	745	803	1,548
Timing of First PP Visit						
Day of birth	1.0	1.7	1.5	4.5	2.6	3.4
Day after birth	7.8	8.5	8.3	4.6	5.0	4.8
Week of birth	62.8	52.2	56.2	26.2	31.5	29.2
Week after birth	15.7	20.9	19.0	48.2	45.2	46.5
2+ weeks after birth	11.4	15.5	13.9	15.0	15.0	15.0
Don't know	0.1	0.3	0.2	1.0	0.7	0.9
Missing	1.2	0.9	1.0	0.5	0.0	0.2
Number of women with a birth in the past 3 years who had a postpartum visit	298	340	638	502	551	1,053

Child health

Vaccination coverage

The SCIP baseline and endline surveys collected information on vaccination coverage for all living children born in the 5 years preceding the survey. The standard WHO definition of full vaccination was used, namely that the child *has received vaccination against tuberculosis (BCG), three doses each of Diptheria, pertussis and tetanus (DPT) and polio vaccines, and a measles vaccination by the age of 12 months.* Because Pentavalent vaccine, which includes DPT, hepatitis B and *Haemophilus influenza* is given in Mozambique, this was used in place of DPT in the calculations. Information was collected using both vaccination cards (when available) and mother's verbal reports as is done for the MICS and the DHS. If there was no vaccination card, the card was not seen, or if a vaccine had not been recorded, the respondent was asked to recall the vaccines given to her child. Table 2.14 shows the percentage of children 12-23 months who received the various vaccinations by source of information.

At endline, card retention was high with 60.5% of children in the specialized area and 69.7% of children in the complementary area having a vaccination card that was seen by the interviewer. The proportion of children aged 12-23 months who had been fully vaccinated by the time of the interview decreased from 73.0% at baseline to 44.5% at endline. The proportion of children aged 12-23 months who were fully vaccinated by 12 months of age also decreased from 33.5% at baseline to 21.1% at endline. This is due in part to a drop-off in vaccination with second and third doses of Pentavalent of polio vaccines, as well as lower rates of measles vaccine.

Vaccination coverage was higher among children with cards than children without cards. For example, while 61.6% of children aged 12-23 months with a card had received BCG, only 24.6% of the children aged 12-23 months without a card had received it (data not shown), resulting in 86.3% of children aged 12-23 months having been vaccinated against BCG at some time before the survey.

Table 2.14 Immunization rates among children aged 12-23 months, by intervention package

	BASEINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total

	BASEINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
Immunization Card						
Yes, seen	76.1	64.0	68.4	59.9	69.5	65.4
Yes, not seen	9.0	9.2	9.1	24.7	11.7	17.3
No	14.9	26.8	22.5	12.2	16.2	14.5
Missing	0.0	0.0	0.0	3.2	2.6	2.8
Immunizations received among children (with cards[1] + without cards)						
BCG	91.3	86.9	89.0	84.0	88.0	86.3
Polio Dose 0	81.1	72.9	76.8	74.7	79.0	77.2
Polio Dose 1[2]	89.3	87.5	88.6	63.4	70.8	67.6
Polio Dose 2 [2]	84.3	82.8	84.1	47.8	53.1	50.8
Polio Dose 3[2]	78.3	72.6	75.8	41.0	48.3	45.2
Pentavalent (DPT + HepB) Dose 1	91.0	86.3	88.4	77.2	79.8	78.7
Pentavalent (DPT + HepB) Dose 2	86.3	82.1	84.2	63.7	66.9	65.5
Pentavalent (DPT + HepB) Dose 3	82.3	76.8	79.6	51.0	58.1	55.0
Measles Dose 1	89.1	85.7	87.5	67.1	73.5	70.8
Fully Immunized [3]	75.0	70.2	73.0	40.3	47.7	44.5
Number of children 12 -23 months of age	207	190	397	272	269	541
Immunizations received by 12 months of age[4]						
BCG	82.0	78.9	80.4	51.3	57.7	55.1
Polio Dose 0	72.8	66.1	69.4	70.2	70.7	70.3
Polio Dose 1[5]	73.7	78.6	76.9	58.2	63.7	61.3
Polio Dose 2[5]	71.7	68.6	70.4	45.7	52.7	49.7
Polio Dose 3[5]	60.1	52.0	55.9	31.5	41.2	37.0
Pentavalent (DPT + HepB) Dose 1	75.4	72.6	73.9	67.0	71.8	69.8
Pentavalent (DPT + HepB) Dose 2	68.5	61.6	64.7	59.6	59.5	59.4
Pentavalent (DPT + HepB) Dose 3	60.1	50.9	54.9	50.4	52.0	51.2
Measles Dose 1	56.9	53.5	55.1	62.1	64.0	63.0
Fully Immunized	35.6	31.5	33.5	16.5	24.7	21.1
Number of children 12 -23 months of age	207	190	397	272	269	541

[1] At endline, approximately 30% of children with vaccination cards had at least one vaccination date recorded before their birth date. As there was a date (albeit a nonsensical one) on their vaccination card, these children were assumed to have received the relevant vaccine dose before the survey.

[2] At endline, overall rates for polio1, polio2 and polio3 are underestimated due to missing data on number of polio doses received among children whose vaccination data were based on mother's report. This is because children whose vaccination data were based on mother's report had data on receipt of any polio dose and whether the first dose was at birth or later, but were missing data on the number of polio doses received due to a programming issue in the survey mobile application. Consequently, rates of polio1 for this group are underestimated as they only include children whose first dose of polio vaccine was not the newborn dose, and rates for polio2 and polio3 are assumed to be zero for this group.

[3] At endline, the percent fully immunized uses the standard WHO definition for children with vaccination cards, but the percent fully immunized among children whose vaccination data were based on mother's report was calculated as follows because of missing data on polio doses: percent immunized with BCG + Penta3 + measles + at least one dose of polio (those who answered 'yes' to the question of whether their child ever received polio vaccine). Consequently, this measure is not directly comparable with the baseline estimate of % fully immunized which used the standard WHO definition.

[4] For children whose information was based on the mother's report, the proportion of vaccinations given during the first year of life was assumed to be the same as for children with a written vaccination record. At endline, children with nonsensical vaccination dates on their cards (vaccination date before birth date) were not counted as having received the vaccine by 12 months, as it could not be determined when they received the antigen dose.

[5] At endline, proportion for polio doses 1, 2 and 3 excludes children whose vaccination data is from mother's report, due to missing data.

Breastfeeding practices

Table 2.15 shows the breastfeeding status and timing of initiation of breastfeeding among women with a birth in the 3 years preceding the survey. Almost all women reported breastfeeding their child at some time. Of those who ever breastfed, the vast majority (94.2% at baseline, 92.7% at endline)

breastfed their child in the first day of life, though immediate initiation of breastfeeding within one hour of birth decreased from 72.5% at baseline to 51.0% at endline. Immediate breastfeeding was more common in the Complementary areas than the Specialized areas, with a more pronounced difference at endline (59.3% vs 40.3%, respectively). The median duration of breastfeeding at endline was 13 months.

Table 2.15 Breastfeeding initiation and duration among women with a birth in the past 3 years, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
Ever breastfed						
Yes	97.9	98.9	98.5	99.5	99.5	99.5
No	2.2	1.1	1.5	0.5	0.5	0.5
Number of women	626	576	1,202	745	803	1,548
Among women who breastfed						
Timing of first breastfeeding						
Immediate	67.3	76.0	72.5	40.3	59.3	51.0
Later on day of birth	28.8	16.8	21.7	52.5	33.3	41.7
After day of birth	3.7	4.1	3.9	7.2	7.3	7.3
Missing	0.1	3.1	1.9	0.8	0.7	0.7
Pre-lacteal feeds						
Yes	4.6	5.5	5.1	7.5	2.4	4.7
No	95.3	94.4	94.8	92.5	97.6	95.3
Missing	1.3	0.1	0.1	0.0	0.0	0.0
Median duration of breastfeeding (months)	12 (11, 12)	12 (12, 14)	12 (12, 12)	13 (12, 14)	12 (12, 13)	13 (12, 13)
Number of women with a birth in the past 3 years who ever breastfed	611	570	1,181	745	803	1,548

Table 2.16 shows the breastfeeding practices reported by mothers of children aged 0-5 months; it is recommended that all children in this age group be exclusively breastfed. The proportion of mothers who exclusively breastfed their children increased from 51.3% at baseline to 58.8% at endline, with a more pronounced difference in exclusive breastfeeding rates by intervention area at endline (49.2% in Specialized areas vs. 65.0% in Complementary areas). The proportion of mothers who fed their children complementary foods in addition to breastfeeding remained similar at baseline and endline.

Table 2.16 Breastfeeding practices among women with children 0-5 months of age, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
Never breastfed	2.8	0.5	1.4	2.5	1.9	2.1
Exclusively breast fed	53.2	50.0	51.3	49.2	65.0	58.8
Breastfeeding and:						
Plain water only	21.9	18.2	19.7	8.0	7.5	7.7
Non-milk liquids/juice	2.9	4.7	4.0	1.8	4.0	2.3
Other milk	1.9	0.0	0.7	3.0	0.0	1.2
Complementary foods	16.9	25.2	21.9	28.6	16.1	21.0
Missing	0.5	1.4	1.0	6.9	5.5	6.0
Number of women with children aged 0-5 months	135	127	262	141	195	336

Malaria

All households in the survey were asked if they owned mosquito nets and if so, how many. They were also asked to show the bednet to the interviewer so that s/he could identify and record the brand name. The proportion of households that had at least one bed net increased from 64.4% at baseline to 82.0% at endline, and the proportion that had at least one ITN increased from 60.7% at baseline to 73.9% at endline (Table 2.17). The rate of bednet ownership was higher among households with children under 5, a group that is targeted for ITN distribution. The proportion of children under 5 who slept under a bednet the night before the survey increased from 20.7% at baseline to 52.4% at endline; and the proportion of pregnant women who slept under a bednet increased from 30.7% at baseline to 55.0% at endline.

Table 2.17 Household ownership of bednets, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
All households						
Percent of households with at least one bed net	69.2	61.6	64.4	80.6	83.2	82.0
Percent of households with at least one ITN	65.2	58.0	60.7	77.0	71.4	73.9
Number of households	1,315	1,298	2,613	1,445	1,408	2,853
Households with at least 1 child < 5 years of age						
Percent of households with at least one bed net	78.0	72.4	74.5	84.2	84.8	84.5
Percent of households with at least 1 ITN	73.5	68.3	70.3	81.0	73.9	77.1
Number of households	748	695	1,443	1,057	1,056	2,113
Children less than 5 years of age						
Percent who slept under a bed net the prior night	22.2	19.7	20.7	50.9	53.5	52.4
Number of children < 5 years	1,132	1,035	2,167	1,607	1,679	3,286
Pregnant women						
Percent who slept under a bed net the prior night	35.0	28.1	30.7	52.6	57.2	55.0
Number of pregnant women	146	137	283	190	165	355

Just under half of all women with a pregnancy in the three years before the survey reported that they had received Fansidar during pregnancy, a treatment recommended for all pregnant women in malaria endemic areas (Table 2.11).

HIV/AIDS and Sexual Behavior

HIV Counseling and testing

At both baseline and endline, the vast majority of the respondents (more than 95%) had heard of HIV (Table 2.18) and approximately two-thirds (65.1% at baseline, 66.8% at endline) knew where people can go for counseling and testing. The proportion of women who had been tested for HIV increased from 25.5% at baseline to 58.3% at endline, with slightly higher testing rates in the

Specialized than Complementary areas. Among women who had been tested for HIV, the proportion who had done so in the past year decreased slightly from 50.3% at baseline to 44.7% at endline.

Table 2.18 HIV testing knowledge and behavior among women age 15-49, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
Heard of HIV	96.9	99.7	98.5	95.2	95.0	95.1
Knows where people can go to get tested	69.7	61.8	65.1	70.5	63.9	66.8
Has been tested for HIV	32.4	20.7	25.5	60.3	56.6	58.3
Number of women 15-49	1,185	1,129	2,314	1,406	1,390	2,796
Timing of last test						
Less than 1 year ago	55.8	44.3	50.3	44.9	44.5	44.7
12-23 months ago	27.6	33.6	30.5	23.2	32.1	27.9
2 or more years ago	16.7	22.1	19.3	31.9	23.4	27.5
Number of women who have ever tested	331	236	567	858	795	1,653

Sexual behavior

The median age at first sex was similar at baseline and endline (14.3 vs 14.4 years) (Table 2.19). Among women who reported that they had sex with a partner who was not their husband or a live-in partner, the proportion who used a condom at last sex with that partner increased from 10.9% at baseline to 23.4% at endline (with similar rates in Specialized and Complementary areas at endline).

Table 2.19 Sexual practices among women age 15-49, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
Median age at first sex	14.8	13.9	14.3	14.5	14.2	14.4
Had a non-regular partner (higher risk intercourse)						
Yes	10.5	9.5	9.9	17.4	20.0	18.8
No	89.5	90.5	90.1	82.6	80.0	81.2
Number of women 15-49	1,185	1,129	2,314	1,406	1,390	2,796
Used a condom at last sex with a non-regular partner in past 12 months						
Yes	24.4	0.6	10.9	27.3	20.4	23.4
No	75.6	99.4	89.1	72.7	79.6	76.6
Number of women 15-49 who had a non-regular partner	121	101	222	220	233	453

Water and Sanitation

Table 2.20 shows the percent of households using an improved water source. Overall, the proportion of households using an improved drinking water source increased from 32.7% at baseline to 61.4% at endline. This varied by intervention area (Specialized with and without Nampula City, Complementary WASH and non-WASH areas). Households in the Complementary areas were most likely to be using an improved water source at endline. The most common type of improved water source was a public tap or standpipe which increased from 10.2% at baseline to 31.2% at endline,

and most notably from 2.1% to 39.9% in the Complementary WASH areas. Correspondingly, the proportion of households relying on an unprotected dug well decreased substantially from 52.0% at baseline to 25.9% at endline.

Water can be contaminated at multiple points, even if it is taken from an improved source. However, the proportion of households that did not treat their water was high at both baseline (90.9%) and endline (88.5%). The most common treatment method used in all areas was bleach or chlorine.

Table 2.20 Household drinking water source and treatment, by intervention package

	BASELINE					ENDLINE				
	Intervention Package					Intervention Package				
	Specialized		Complementary			Specialized		Complementary		
	w/ N City	w/o N City	WASH	Non-WASH	Total	w/ N City	w/o N City	WASH	Non-WASH	Total
Drinking water source										
Improved source										
Piped water into dwelling/yard/plot	4.2	0.2	0.2	1.3	2.2	9.2	0.6	1.2	2.3	5.2
Public tap/standpipe	18.9	10.3	2.1	6.4	10.2	18.9	41.4	39.9	42.2	31.2
Tubewell/borehole	11.9	14.9	23.5	12.8	14.6	15.9	14.3	18.3	12.2	15.0
Protected dug well	4.6	4.2	13.6	1.2	4.9	8.8	10.0	6.2	12.1	9.5
Protected spring	0.5	0.7	2.9	0.2	0.8	0.9	0.2	0.1	0.2	0.5
Non-improved source										
Unprotected dug well	32.4	34.1	49.2	70.2	52.0	28.4	23.9	22.8	24.4	25.9
Unprotected spring	4.1	5.3	4.2	4.1	4.1	6.7	1.5	2.1	1.2	3.9
Surface water	23.5	30.5	4.5	3.7	11.2	11.3	6.4	8.4	5.4	8.6
Using an improved source	40.1	30.2	42.2	21.9	32.7	53.7	45.5	65.7	68.9	61.4
Number of households	1,315	1,074	419	879	2,612	1445	1410	484	924	2853
Water treatment prior to drinking										
Treatment method										
Boiled	1.6	1.3	1.4	0.0	0.9	2.9	2.6	1.4	1.6	2.1
Bleach/chlorine added	6.4	4.0	1.4	3.0	3.9	6.3	3.3	5.3	2.1	4.5
Strained through cloth	0.2	0.2	0.4	0.6	0.4	0.1	0.1	0.0	0.1	0.1
Ceramic, sand, other filter	0.6	0.7	0.0	0.0	0.2	0.0	0.0	0.2	00	0.0
Solar disinfection	0.1	0.1	0.0	0.0	0.03	0.0	0.7	0.0	0.0	0.0
Other	4.2	3.3	0.5	3.1	3.0	1.5	1.2	6.5	5.5	3.9
No treatment	86.4	89.6	94.4	93.0	90.9	88.0	91.7	86.3	90.2	88.5
Missing	0.6	0.8	1.9	0.3	0.8	0.0	0.0	0.0	0.0	0.0
Using an appropriate water treatment method	8.8	6.4	3.2	3.6	5.4	9.4	6.0	6.8	3.8	6.8
Number of households*	631	522	200	389	1,220	1,001	816	330	653	1,984

*The number of households is smaller than the total sample of households because this question was asked for caretakers of children less than 3 years old.

Table 2.21 shows that the proportion of households with access to an improved sanitation facility increased from 16.7% at baseline to 27.1% at endline, driven largely by improvements in the Complementary WASH areas (from 23.2% to 40.4%) and non-WASH areas (from 3.2% to 21.7%). Most of the improved sanitation facilities are pit latrines with slabs, which increased from 12.3% at baseline to 18.6% at endline. The proportion of households with no sanitation facility at all decreased from 54.1% at 27.4% at endline.

Table 2.21 Household sanitation facilities, by intervention package

	BASELINE					ENDLINE				
	Intervention Package					Intervention Package				
	Specialized		Complementary			Specialized		Complementary		
	w/ N City	w/o N City	WASH	Non-WASH	Total	w/ N City	w/o N City	WASH	Non-WASH	Total
Type of toilet/latrine facility										
Improved facility										
Flush/pour flush to piped sewer system	0.3	0.0	0.3	0.0	0.2	0.7	0.0	0.0	0.4	0.5
Flush/pour flush to septic tank	1.5	0.2	0.0	0.0	0.5	3.5	0.1	0.9	0.7	2.0
Flush/pour flush to a pit latrine	0.4	0.3	0.0	0.0	0.2	0.5	0.6	0.7	3.3	1.6
Ventilated improved pit (VIP) latrine	4.9	1.3	6.6	0.9	3.5	5.9	2.4	4.2	2.7	4.4
Pit latrine with a slab	21.7	21.3	16.3	2.2	12.3	15.2	14.9	34.5	14.5	18.6
Composting toilet	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0
Non-improved facility										
Any facility shared with other households	8.6	7.8	8.4	5.2	7.1	12.6	11.3	15.3	12.2	13.0
Flush/pour flush to other than sewer/septic/pit latrine	0.1	0.1	0.0	0.0	0.04	0.4	0.4	0.5	0.4	0.4
Pit latrine without slab/open pit	20.6	21.5	21.7	19.7	20.4	33.3	38.3	23.5	33.6	31.7
Hanging toilet/hanging latrine	1.0	0.3	0.4	0.6	0.7	0.6	0.6	0.3	0.2	0.4
No facility/bush/field	39.2	45.9	46.3	70.5	54.1	26.8	31.3	20.2	31.9	27.4
Don't know	1.6	1.2	0.0	0.8	0.9	0.0	0.0	0.0	0.0	0.0
Access to an improved sanitation facility	29.0	23.2	23.2	3.2	16.7	25.9	18.1	40.4	21.7	27.1
Number of households	1,315	1,074	419	879	2,613	1,445	1,410	484	924	2,853

As shown in Table 2.22, the proportion of children under 3 years whose last stool was disposed of safely increased from 26.5% at baseline to 76.5% at endline. Putting the stool into a toilet/latrine was the most common method of disposal in all areas.

Table 2.22 Manner of disposal of children's stool, by intervention package

	BASELINE					ENDLINE				
	Intervention Package					Intervention Package				
	Specialized		Complementary			Specialized		Complementary		
	w/ N City	w/o N City	WASH	Non-WASH	Total	w/ N City	w/o N City	WASH	Non-WASH	Total
Manner of disposal										
Used toilet/Latrine	8.7	7.8	15.6	5.0	8.4	21.6	20.5	21.9	16.8	19.8
Put into toilet/latrine	15.3	12.2	15.0	6.2	11.2	31.5	30.6	32.9	28.7	30.7
Buried	6.7	7.0	5.0	7.9	6.9	21.3	23.7	25.4	24.6	23.3
Put into ditch	0.6	0.5	0.0	1.0	0.7	3.3	0.6	1.2	2.9	2.8
Open	64.6	67.3	64.5	76.4	69.7	18.0	19.9	12.7	20.4	18.0
Missing	04.1	5.1	0.3	3.5	3.1	1.5	1.7	1.1	1.3	1.3
Disposed of safely	30.7	27.1	35.2	19.0	26.5	77.7	75.4	81.4	73.0	76.5
Number of children under 3 years	698	581	196	431	1,325	745	623	259	544	1,548

Among caretakers of children under 3, the proportion who reported recommended hand washing behaviors increased from 4.1% at baseline to 17.4% at endline (Table 2.23). However, only 5.5% of

caretakers at endline demonstrated appropriate hand washing techniques and mentioning appropriate times for hand washing.

Table 2.23 Caretaker personal hygiene behaviors, by intervention package

	BASELINE					ENDLINE				
	Intervention Package					Intervention Package				
	Specialized		Complementary			Specialized		Complementary		
	w/ N City	w/o N City	WASH	Non-WASH	Total	w/ N City	w/o N City	WASH	Non-WASH	Total
Personal hygiene behavior										
Report having used soap for hand washing at least at two critical times during past 24 hours	7.2	6.6	5.7	0.7	4.1	12.9	9.5	21.1	20.9	17.4
Washing hands properly with soap and at appropriate times	1.8	1.7	4.2	0.0	1.5	4.0	3.3	3.9	8.1	5.5
Number of caretakers of children under 3	631	522	200	389	1,220	1,001	816	330	653	1,984

As shown in Table 2.24, specific food handling practices among caretakers were high at endline such as washing hands before preparing food (81.3%), washing utensils and containers (83.4%), and washing food (78.9%). Overall, 28.3% of caretakers of children under 3 reported handling food safely (adhering to all food handling practices listed below). This indicator was not reported on at baseline.

Table 2.24 Caretaker food handling practices, by intervention package

	ENDLINE				
	Intervention Package				
	Specialized		Complementary		
	w/ N City	w/o N City	WASH	Non-WASH	Total
Food handling practices					
Washes hands before preparing food	85.6	85.5	82.9	75.6	81.3
Washes utensils and containers	82.6	84.5	76.9	87.6	83.4
Washes food	74.5	76.6	71.9	85.6	78.9
Cooks food thoroughly	57.8	59.2	53.0	73.2	62.7
Consumes all food prepared or minimal leftovers	77.4	76.5	81.9	75.2	77.4
Covers food containers	18.1	18.8	16.3	22.9	19.6
Keeps water containers above ground to limit access by children	12.3	11.4	10.4	12.5	12.0
Keeps food behind closed or screened doors	7.9	7.7	3.7	6.8	6.7
Uses clean utensil to transfer food from container	17.1	17.3	16.3	21.0	18.4
Handles food safely	28.6	29.3	20.1	31.8	28.3
Number of caretakers of children under 3	1,001	816	330	653	1,984

Exposure to SCIP interventions

A key intervention for SCIP is delivery of health messages and commodities by community health workers (CHW), particularly in the Specialized areas. The proportion of women who reported being visited by a CHW in the past month increased from 12.7% at baseline to 37.2% at endline, with similar increases in both the Specialized and Complementary areas (Table 2.25). The proportion of

women who participated in a meeting run by a CHW increased from 13.6% at baseline (meeting in the past 2 weeks) to 39.8% at endline (meeting in the past month), with higher rates in the Specialized areas.

Table 2.25 Contact with a CHW among women age 15-49, by intervention package

	BASELINE			ENDLINE (RAPID SURVEY)		
	Intervention Package			Intervention Package		
	Specialized	Complementary	All women	Specialized	Complementary	All women
Visited by a CHW in the past month	12.7	12.8	12.7	39.7	36.3	37.2
Participated in a meeting in the past 2 weeks (baseline) or month (endline)	12.9	14.0	13.6	46.3	37.6	39.8
Number of women 15-49	1,185	1,129	2,314	307	907	1,214

Table 2.26 shows that in the past 12 months, the majority (71.5%) of women at endline received a visit from a CHW to discuss health-related topics. Visits were higher in the Specialized areas (83.1%) than the Complementary areas (67.6%), which was expected as the Specialized areas benefited from more intensive CHW interventions. The most popular topics discussed were family planning, malaria, diarrhea management, and HIV/AIDS.

Table 2.26 Discussion of health topics with CHWs among women age 15-49, by intervention package

	ENDLINE (RAPID SURVEY)		
	Intervention Package		
	Specialized	Complementary	All women
Visited by CHW in the past 12 months who discussed health and/or water and sanitation topics	83.1	67.6	71.5
Family planning	69.4	46.3	52.1
HIV/AIDS	65.8	32.5	40.9
Malaria	75.9	47.7	54.9
Diarrhea management	77.2	40.4	49.7
Vaccination	50.8	24.5	31.1
Nutrition	38.4	14.7	20.7
Other	0.7	4.4	3.5
Number of women 15-49	307	907	1,214

As shown in Table 2.27, 54.3% of women reported that they or a family member attended a mobile brigade in the past 6 months (an event where health providers offer community-based services including family planning). Attendance at mobile brigades was higher in the Specialized areas (73.0%) than the Complementary areas (48.0%).

Table 2.27 Mobile brigade attendance in past 6 months among women age 15-49, by intervention package

	ENDLINE (RAPID SURVEY)		
	Intervention Package		
	Specialized	Complementary	All women
Attended mobile brigade in past 6 months	73.0	48.0	54.3
Number of women 15-49	307	907	1,214

Section 3: Conclusion

The survey findings indicate that SCIP's interventions have successfully contributed to increasing use of contraception among women in project areas. The proportion of women aged 15-49 who are using a modern contraceptive method increased from 7.2% at baseline to 17.6% at endline, and the proportion using any method of contraception increased from 9.6% at baseline to 18.8% at endline. The prevalence of implant use (1.0%) at endline is notable, as implants were only recently introduced in Mozambique (mid-2012), and stock outs had been reported. The findings also indicate an unmet need for family planning of 23.5% at endline, which is lower than the 2011 DHS estimate of 30.0% in Nampula Province overall. The endline survey findings show that 44% of the total demand for family planning is being met, compared to only 16.8% for Nampula Province in the 2011 DHS.

The maternal health findings are also promising. While attendance at four ANC visits remained similar from baseline (54.0%) to endline (53.2%) as did receipt of a complete package of ANC services (22.2% at baseline, 22.5% at endline), the percent of deliveries with a skilled birth attendant increased significantly from 63.4% at baseline to 75.0% at endline. The percent of women who received a postpartum visit also increased significantly from 53.4% at baseline to 69.2% at endline. The findings for child health were somewhat mixed; the proportion of children aged 0-5 months who were exclusively breastfed increased from 51.3% at baseline to 58.8% at endline, but the percent of children aged 12-23 months who are fully immunized declined from 33.5% at baseline to 21.1% at endline.

Improvements were also seen in terms of HIV prevention. The proportion of women who had been tested for HIV increased significantly from 25.5% at baseline to 58.3% at endline, with slightly higher testing rates in the Specialized than Complementary areas. Among women who reported that they had sex with a partner who was not their husband or a live-in partner, the proportion who used a condom at last sex with that partner increased significantly from 10.9% at baseline to 23.4% at endline (with similar rates in Specialized and Complementary areas at endline).

Ownership and use of insecticide treated bednets (ITNs) is a key strategy for reducing incidence of malaria among pregnant women and children. The survey findings showed that the percent of households with a pregnant woman and/or child less than age 5 that own at least one ITN increased significantly from 70.3% at baseline to 77.1% at endline, with similar increases in both the Specialized and Complementary areas. Use of ITNs also increased significantly, with the percent of pregnant women who slept under an ITN the night before increasing from 30.7% at baseline to 55.0% at endline, and the percent of children who slept under an ITN the night before increasing from 20.7% at baseline to 52.4% at endline.

The survey findings indicate that SCIP's key interventions in water, sanitation and hygiene (WASH) contributed to improving specific outcomes among the target population. The percent of households with access to an improved drinking water supply increased significantly from 32.7% at baseline to 61.4% at endline, with especially notable increases in the Complementary area. Use of water treatment technologies was low at baseline (5.4%) and remained low at endline (5.8%). The percent of households using improved sanitation facilities also increased significantly from 16.7% at baseline

to 27.1% at endline, primarily driven by increases in the Complementary areas (particularly the areas receiving WASH interventions). In terms of hygiene, the percent of caregivers of children under age 3 who demonstrated proper personal hygiene behaviors improved, with the percent having used soap for hand washing at least at two critical times during past 24 hours increasing from 4.1% at baseline to 17.4% at endline. The percent of caregivers demonstrating proper food hygiene behaviors was 28.3% at endline.

A key intervention for SCIP is delivery of health messages and commodities by community health workers (CHW), particularly in the Specialized areas. The survey findings show that the percent of women who were visited by a CHW in the past month increased from 12.7% at baseline to 37.2% at endline, with similar increases in both the Specialized and Complementary areas. At endline, the majority (71.5%) of women received a visit from a CHW in the past 12 months to discuss health-related topics, with the most popular being family planning, malaria, diarrhea management, and HIV/AIDS. In addition, 54.3% of women at endline reported that they or a family member attended a mobile brigade in the past 6 months (an event where health providers offer community-based services including family planning). Attendance at mobile brigades was higher in the Specialized areas (73.0%) than the Complementary areas (48.0%).

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Annexes

Annex 1: Endline Survey staff

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Annex 2: Sampling strategy

The baseline and endline household survey samples were calculated to be able to detect a baseline-endline change of 10% in key indicators described in the Methodology section (modern contraceptive prevalence rate, etc.), using the standard sample size calculation formula to detect the difference in two proportions:

$n = D [(Z\alpha + Z\beta)^2 * (P1 (1 - P1) + P2 (1 - P2)) / (P2 - P1)^2]$

We assumed alpha = 0.05, Beta = 0.8 and a design effect of 2. We assumed a refusal rate of 10%, and used 2007 census data to estimate the proportion of the population represented by women of reproductive age as well as average household size. Estimates for key indicators were taken from the 2008 MICS and other sources available at the time of the sample calculations.

The baseline and endline surveys used multi-stage stratified samples selected from the database developed by the Instituto Nacional de Estatísticas (INE) for the Third General Census of Population and Housing which was conducted in August 2007. The baseline and endline samples were stratified into the complementary and specialized packages, with each one considered as a domain of analysis and an independent sample selected in each one. Within each stratum, the census enumeration areas (EAs) were stratified as urban or rural according to the official classification from INE. Within each type of area (rural and urban), implicit geographic stratification was applied by ordering the sampling frame by district, administrative post, locality, village, control area and enumeration area. This ordered frame provided proportional representation of the sample by area of residence within each stratum. The sample was selected in three stages, including selection of a representative sample of Primary Sampling Units from the 2010 Master Sample of Mozambique (based on the data from the Third Census of Population and Housing in 2007), followed by selection of households and women.

- Stage 1: within each stratum (Complementary and Specialized), primary sampling units (PSUs, which are the same as the census enumeration areas) were randomly selected within each sub-stratum (urban and rural) systematically with probability proportional to size (PPS) from the ordered list of PSU in the sampling frame. The measure of size for each PSU was based on the number of households in the sampling frame based on the final data from the 2007 Census.
- Stage 2: an exhaustive list of households was compiled in each sample PSU (enumeration area) prior to selection of households. Within each sample PSU, 22 households were randomly sampled with equal probability of selection. In order to maintain the effective sample size and the interviewer workload in each sample PSU, a sample of three potential replacement households was selected for each PSU.
- Stage 3: within each sampled household, an exhaustive sample was taken, that is, all women aged 15-49 in the household and all caretakers of children less than 3 years old were interviewed.

The initial endline survey sample comprised 2,855 households in 129 PSU.

Annex 3: Endline rapid survey background and methodology

BACKGROUND/RATIONALE FOR RAPID SURVEY

Pathfinder International conducted the SCIP Project endline survey in Nampula Province of Mozambique in July-August 2014, in collaboration with consultants from INE (the national statistics institute in Mozambique) and a local mHealth consultant. The survey was implemented using a CommCare application on mobile phones. When initially exploring the survey dataset to prepare for analysis, an issue was observed with the variables for current contraceptive use and fertility intentions (used to calculate unmet need for family planning) – the sample sizes were unusually small. Out of the endline sample of 2,816 women, a total of 1,196 non-sterilized non-pregnant women who had ever used contraception should have been asked about current contraceptive use, but we only had data for 273 women. Similarly, a total of 2,736 women should have been asked about their fertility intentions, but we only had data for 610 women.

Pathfinder worked with the local mHealth consultant to investigate the issue and came to the preliminary conclusion that errors in skip logic programming of the CommCare application led to incorrect skipping of these questions for some women. An MPH student from BUSPH (who works with Pathfinder on other mHealth projects) reviewed the CommCare application and survey dataset and confirmed that the data on contraceptive use and fertility intentions were missing due to an error in skip logic programming in the CommCare app. He also confirmed that the 273 women for whom we had data on contraceptive use had different demographic characteristics (they were more highly educated and had higher rates of urban residence) than the sample as a whole as well as the subset of women who were missing data on contraceptive use. This meant that the rate of current contraceptive use among this small group of 273 women most likely would not reflect the rate of contraceptive use among the larger sample. It was also determined that the 610 women with data on fertility intentions were more highly educated than the sample as a whole.

Subsequently, the team conducted further analyses to confirm the extent of the problem and determine next steps. Analysis of other key indicators in the endline women's dataset (ANC, skilled birth attendance, postpartum care, infant feeding practices, immunization, condom use), household dataset (drinking water source, sanitation facilities) and caregiver dataset (personal and food hygiene practices, water treatment) did not indicate any other abnormalities or missing data, aside from expected data quality issues that we believed were non-differential and should not significantly affect results. We also did a basic comparison of key indicators with baseline values which did not reveal any unexpected or odd trends. Consequently, we determined that the skip logic programming error was an isolated event only affecting the variables on current contraceptive use and fertility intentions.

Preliminary discussions were held about options to address the situation in order to enable Pathfinder to accurately and confidently report the quantitative achievements of SCIP in regard to contraceptive use and unmet need. It was determined that the best option would be to conduct a rapid survey with a

new sample to measure contraceptive use and fertility intentions, as this could be done relatively quickly using a short questionnaire and would provide an endline estimate of contraceptive prevalence which is a key indicator for the project.

METHODOLOGY

Sample design

The SCIP rapid survey was a cross-sectional survey conducted in February-March 2015 in 14 districts of Nampula Province where the SCIP project works. Sample size calculations for the rapid survey indicated that to detect a 5-percentage point increase in total contraceptive prevalence rate (CPR) from the baseline value of 9.6%, we needed a sample of approximately 1100 women from 1300 households. We used the standard sample size calculation formula to detect the difference in two proportions:

$$n = D\,[(Z\alpha + Z\beta)^2 * (P1\,(1 - P1) + P2\,(1 - P2)) / (P2 - P1)^2]$$

We assumed alpha = 0.05, Beta = 0.8 and a design effect of 2. We assumed a refusal rate of 10%, and used 2007 census data to estimate the proportion of the population represented by women of reproductive age as well as average household size. It was determined that this sample of women would provide a sufficiently precise estimate of total CPR and modern CPR for the overall SCIP project areas, although the sample will not be large enough to provide separate precise estimates for the Complementary and Specialized areas.

To select enumeration areas (primary sampling units) for the rapid survey, we used the list of 130 EAs originally selected for the SCIP endline (64 Complementary, 66 Specialized) as a sampling frame. This approach was used because we already had household listings for these EAs, therefore expediting the fieldwork by eliminating the need to list households in each EA (which would have been necessary if using the full sampling frame originally used by INE). The sample of rapid survey EAs was allocated proportionally across the two intervention packages based on their respective population sizes (75% Complementary, 25% Specialized) in order to ensure that the survey sample would be representative of the overall SCIP project areas. We used a multi-stage sampling approach:

- Stage 1: within each intervention package, the sampling frame of EAs was ordered by population size (as measured by number of households) and by rural/urban residence in order to apply implicit geographic stratification. Sample EAs were selected within each intervention package systematically with probability proportional to size from the ordered list of EAs in the sampling frame. A total of 46 EAs (35 in Complementary, 11 in Specialized) were sampled.
- Stage 2: In each sampled EA, we used systematic random sampling to select 28 households (cluster) from the existing list of households.
- Stage 3: In each sampled household, one woman aged 15-49 was selected for interview. After listing all women aged 15-49 in the household, if more than one eligible woman lived in the household, one was randomly selected for interview using a KISH table.

Survey instrument

A short questionnaire was developed for the rapid survey including content from the original SCIP endline women's questionnaire as well as an added module on exposure to SCIP interventions. The questionnaire collected information on women's demographic characteristics, reproductive history, ever and current use of contraception, marital status/history, fertility intentions, and exposure to specific SCIP interventions. The questionnaire was programmed into a mobile application using the CommCare ODK platform in order to enable mobile data collection in the field. As part of the interviewer training, a field test of the mobile application was conducted to check that the application was functioning correctly on the phones and confirm that the resulting data reflected correct skip logic. Following the field test, minor revisions to the application programming were made accordingly.

Training and Fieldwork

The interviewer training for the rapid survey was conducted from February 9-11, 2015. 20 interviewers and 5 supervisors were trained. The training included lectures, presentations, practical demonstrations, sessions on use and handling of smartphones and use of the CommCare ODK application, practice interviewing in small groups, and field practice (including field test of the mobile application).

The survey fieldwork was conducted from February 12-26, 2015 by four teams of 5 interviewers + supervisor. Data were collected through the CommCare ODK mobile application using Samsung Galaxy smartphones with Android operating system. Data stored in the smartphones were synchronized with an online CommCare server when the interviewers were in range of a mobile network. Data on the CommCare server were reviewed each day by the Pathfinder mHealth Officer and any problems were discussed with the supervisors. Supervision was coordinated from the SCIP office in Nampula. The SCIP team maintained close contact with the field teams through daily phone calls with supervisors to assess progress and discuss any challenges faced. During fieldwork, it was discovered that one EA in Namapa-Erati district was inaccessible due to rainy conditions, so another EA in the same district was substituted.

Data analysis

Data analyses were conducted in Stata V 11.0 (StataCorp, 2009). Frequency distributions were generated for key variables and tables were produced with estimates for Specialized, Complementary, and overall SCIP areas. The use of PPS sampling resulted in a self-weighting sample, eliminating the need for use of weighting factors in the analysis.

Ethical approval

We submitted an amendment to the original SCIP endline survey application to the Bioethics Committee in Mozambique and obtained their approval for the fieldwork.

CHARACTERISTICS OF RESPONDENTS

Table 1 summarizes the demographic characteristics of the survey respondents. The majority of respondents were married (27.9%) or living together (57.5%). The predominant religions were Catholic (47.4%) and Muslim (43.4%). The level of education was low; 27.8% of respondents had no education

and 60.9% had only primary education. Women living in the specialized area were more likely to be living together and have secondary education.

Table 3.1 Percent distribution of women age 15-49 by selected background characteristics and intervention package

	ENDLINE (RAPID SURVEY)		
	Intervention Package		
	Specialized	Complementary	All women
Background characteristics			
Age			
15-19	13.68	15.77	15.24
20-24	21.82	22.60	22.41
25-29	23.78	18.85	20.10
30-34	13.03	16.21	15.40
35-39	13.68	11.69	12.19
40-44	8.14	9.26	8.98
45-49	5.86	5.62	5.68
Marital status			
Never married	4.89	3.64	3.95
Married	19.22	30.87	27.92
Living together	63.84	55.35	57.50
Divorced/Separated	8.47	7.50	7.74
Widowed	3.58	2.65	2.88
Residence			
Urban	44.95	30.54	34.18
Rural	54.40	69.13	65.40
Religion			
Catholic	50.81	46.20	47.36
Protestant	10.42	3.31	5.11
Muslim	35.50	46.09	43.41
Other/None/Missing	3.26	4.41	4.12
Education Level			
No education	13.68	32.64	27.84
Primary	62.54	60.31	60.87
Secondary or higher	23.78	7.06	11.29
Number of women 15-49	307	907	1,214

Annex 4: Supplemental tables

Childhood illness

Table 4.1 shows the prevalence of diarrhea, fever and ARI among children under 5 years of age in the 2 weeks preceding the survey. At endline, approximately 12% of children were reported to have had diarrhea, 16% to have had fever and 7% to have had cough in the 2 weeks prior to the survey. Advice was sought for the majority of these children and most were taken to a health provider (74.7% of those with diarrhea and 76.2% of those with a fever). Among children with diarrhea, 67.4% were treated with oral rehydration therapy (ORT), primarily in the form of commercially prepared oral rehydration solution (ORS). Just over 20% of children with diarrhea received antibiotics. Among children with a fever, 43.2% received artemisinin-based combination therapies and 20.6% received antibiotics.

Table 4.1 Childhood illness and treatment among children age <5 years, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
Illness in the last 2 weeks						
Diarrhea in the last 2 weeks	20.8	20.2	20.4	12.5	11.3	11.8
Fever in the last 2 weeks	27.2	22.6	24.4	13.4	17.7	15.8
Cough or difficulty breathing in the last 2 weeks	14.3	11.0	12.2	6.8	7.7	7.3
Fast or shallow breathing in the last 2 weeks	9.7	7.5	8.3	4.9	3.2	4.0
Number of children aged <5 years	1,092	967	2,059	1,252	1,325	2,577
Diarrhea in the last 2 weeks						
Sought advice or treatment	77.8	65.5	70.2	76.7	75.2	75.9
Taken to a health provider	74.7	63.1	67.6	76.6	73.0	74.7
Received ORT						
ORS packets/solution	65.0	53.3	57.8	67.1	54.5	60.3
Home solution	11.9	9.5	10.4	12.4	11.6	12.0
Either packets or home solution	67.9	59.1	62.5	73.6	62.2	67.4
Increased fluids	9.7	15.2	13.1	9.8	9.9	9.9
Increased fluids or ORT	71.8	63.2	66.5	73.6	64.7	68.8
Antibiotics	19.2	18.0	18.5	28.7	23.0	25.6
Number of children aged <5 years with diarrhea in last 2 weeks	225	188	413	164	146	310
Fever in the last 2 weeks						
Sought advice or treatment	76.0	72.7	74.1	74.6	75.2	75.0
Taken to a health provider	74.0	71.2	72.4	75.4	76.7	76.2
Received antimalarial						
SP/Fansidar	11.4	2.5	6.3	2.2	1.2	1.6
Chloroquine	2.8	0.7	1.6	0	0	0
Amodiquine	1.4	1.1	1.2	2.1	0	0.8
Quinine	1.7	1.7	1.7	1.0	0.2	0.5
ACT	42.0	40.6	41.2	46.8	41.1	43.2
Antibiotics	18.1	14.9	16.3	14.9	23.9	20.6
Number of children aged <5 years with fever in last 2 weeks	290	206	496	174	214	388

Micronutrient intake

The proportion of children between 6 and 59 months who had received a dose of vitamin A in the past 6 months increased from 4.7% at baseline to 23.5% at endline (Table 4.2). This proportion likely underestimates vitamin A coverage, as data were only available for children with vaccination cards.

Table 4.2 Percent of children 6-59 months who received Vitamin A by time of last dose, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
Timing of last dose of Vitamin A						
Never*	70.2	78.1	73.9	60.1	60.9	60.5
In past 6 months	5.1	4.2	4.7	24.3	22.8	23.5
More than 6 months ago	16.7	16.5	16.6	15.7	16.2	16.0
Missing	8.0	1.2	3.9	0.0	0.0	0.0
Number of children 6-59 months	941	819	1,760	1,102	1,122	2,224

*This includes children with vaccination cards who did not have a dose of vitamin A recorded, as well as all children without vaccination cards.

HIV knowledge

Knowledge of HIV prevention was high at both baseline and endline. Approximately eighty percent of respondents agreed that limiting sex to one uninfected partner can reduce the risk of getting HIV, and nearly three-quarters agreed that using a condom can reduce the risk (Table 4.3). There was little difference between intervention areas.

Table 4.3 Percentage of women age 15-49 who say HIV can be prevented by effective approaches, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
Using condoms	76.8	72.5	74.2	71.5	73.7	72.7
Limiting sexual intercourse to one uninfected partner	82.0	80.0	80.8	80.3	84.1	82.4
Using condoms and limiting intercourse to one uninfected partner	68.5	59.8	63.4	64.8	70.2	67.7
Abstaining from sexual intercourse	71.4	60.6	65.0	59.8	55.3	57.4
Number of women 15-49	1,185	1,129	2,314	1,406	1,390	2,796

The respondents also rejected common misconceptions about how HIV can spread (Table 4.4), with similar rates at baseline and endline. Approximately 70% knew that a healthy looking person can have HIV and that it cannot be transmitted through mosquito bites, supernatural means or sharing food.

Table 4.4 Percentage of women age 15-49 who reject misconceptions (have accurate knowledge about HIV), by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
A healthy looking person can have the AIDS virus	69.5	67.6	68.4	73.4	65.9	69.4
The AIDS virus cannot be transmitted by mosquito bites	71.4	68.6	69.8	70.1	65.0	67.3
The AIDS virus cannot be transmitted by supernatural means	78.7	70.2	73.7	75.4	69.2	72.1
The AIDS virus cannot be transmitted by sharing food with an infected person	73.4	70.3	71.5	76.4	71.4	73.7
Number of women 15-49	1,185	1,129	2,314	1,406	1,390	2,796

Accepting attitudes towards people living with HIV

With regard to attitudes towards people living with HIV, there was greater variation in responses (Table 4.5). Although over 80% of endline respondents said they would be willing to care for a family member with HIV in her own home and 77.3% felt that a teacher with HIV who was not sick should be allowed to keep teaching (an increase from 70.9% at baseline), only 51.2% said they would be willing to buy fresh vegetables from someone with HIV (a decrease from 50.7% at baseline). Most notably, just 20.6% said that they would not want to keep it a secret if a family member was infected.

Table 4.5 Percentage of women age 15-49 with accepting attitudes towards people living with HIV, by intervention package

	BASELINE			ENDLINE		
	Intervention Package			Intervention Package		
	Specialized	Complementary	Total	Specialized	Complementary	Total
Willing to care for a family member with the AIDS virus in her home	83.9	82.2	82.9	83.5	82.2	82.8
Would buy fresh vegetables from a shopkeeper who has the AIDS virus	62.0	59.8	60.7	52.2	50.4	51.2
Says that a female teacher with the AIDS virus and is not sick should be allowed to continue teaching	71.5	70.4	70.9	78.4	76.4	77.3
Wound not want to keep secret that a family member got infected with the AIDS virus	15.9	20.6	18.7	19.5	21.6	20.6
Number of women 15-49	1,185	1,129	2,314	1,406	1,390	2,796

Other

Table 4.6 indicates that the majority of women reported their partner approved of ANC and exclusive breastfeeding at endline, but partner approval of family planning was low at only 4.9%. This was not reported at baseline.

Table 4.6: Partner approval of reproductive health practices

	ENDLINE				
	Intervention Package				
	Specialized		Complementary		
	w/ N City	w/o N City	WASH	Non-WASH	Total
Partner approves of ANC	54.3	55.4	62.0	61.5	58.3
Partner approves of FP	5.7	5.3	3.7	4.4	4.9
Partner approves of exclusive breastfeeding	62.0	63.4	69.5	68.5	65.7
Number of women 15-49	1,406	1,141	1,390	2,796	1,406

Women were asked what modes of transport are commonly used in their community to take a seriously ill person or a pregnant woman in labor to the hospital. As shown in Table 4.7, the most common modes of transport cited were walking (73.4%) or using a household bicycle or motorbike (48.9%). The 'other' category including renting a bicycle, motorbike or car, or taking a taxi (motor or bicycle).

Table 4.7: Modes of emergency transport in communities, by intervention package

	ENDLINE (RAPID SURVEY)		
	Intervention Package		
	Specialized	Complementary	All women
Modes of transport			
Household or neighbor car	18.2	5.1	8.4
Semicolectivo	8.8	10.7	10.2
Bicycle ambulance	1.0	3.2	2.6
Hospital ambulance	2.6	3.2	3.1
Household bicycle or motorbike	36.5	53.0	48.9
Walking	63.2	76.9	73.4
Other	7.8	7.4	7.5
Number of women 15-49	307	907	1,214

As shown in Table 4.8, 67.3% of women reported having a water hole outside their house/CLC that is less than 10 minutes walking distance on foot, and 58.7% reported that their community has a water management committee.

Table 4.8: Water access and management, by intervention package

	ENDLINE (RAPID SURVEY)		
	Intervention Package		
	Specialized	Complementary	All women
Has water hole less than 10 minutes walking distance	70.4	66.3	67.3
Has water management committee	50.5	61.4	58.7
Number of women 15-49	307	907	1,214