[NUTRITION]
[MIYCN KAP Survey Report]
[KENYA] [June, 2017]

Knowledge, Attitudes, Beliefs, Practices and Communication for Development (C4D) Survey Assessment

West Pokot County, Kenya

Samwel Mbugua – MIYCN Consultant

Funded by:

ACKNOWLEDGEMENT

This survey captured the Knowledge attitudes and practices of Maternal Infant and Young Child feeding ad WASH practices in West Pokot County. The survey was made possible through the financial support from European Union (EU) to Action Against Hunger (ACF) International; Kenya Mission.

The West Pokot County Government (WPCG) was in the forefront of the survey. The survey would not have been possible without the front line assistance of Ms. Leah Chelobei West Pokot County Nutrition officer, and her team from the County Council for Research Science and Technology led by Dr Nobert Abuya - the County Director of Health. As well as Thomas Chikichik - the County Nursing Officer who acted as supervisor for the survey teams.

The following ACF staff played a key role in the planning and implementation of the survey; James Njiru - MIYCN Program Manager, Assa Lelei - Nutrition Program Manager and Scholastica Mwongela Nutrition Project Officer. We cannot forget Elizabeth Cherop, the Nutrition Support Officer, UNICEF for technical support during the whole process.

Lastly and most importantly we thank the residents of West Pokot, and especially the households that participated in survey.

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

ACRONYMS

ACF	Action Against Hunger | ACF International
ANC	Ante natal care
ASAL	Arid-and Semi Arid Lands
CHVs	Community Health Volunteers
C4D	Communication for Development
EBF	Exclusive breastfeeding
ENA	Emergency Nutrition Assessment
FGD	Focus Group Discussions
GAM	Global Acute Malnutrition
HiNi	High Impact Nutrition Interventions
IPC	Integrated phase classification
KAP	Knowledge Attitudes and Practices
KII	Key Informant Interviews
MOH	Ministry of Health
MtMSGs	Mother to Mother Support Groups
MIYCN	Maternal Infant and Young Child Nutrition
PNC	Post natal care
SPSS	Statistical Package for Social Sciences
TBAs	Traditional Birth Attendants
WASH	Water Sanitation and Hygiene
WHO	World Health Organization
WPCG	West Pokot County Government

Introduction
West Pokot has the highest stunting levels (46%) in Kenya according to the most recent Kenya Demographic and Health (KDHS) Survey (KNBS 2014), GAM rates were at 15.3% (12.3-18.9 95% CI) from the SMART Survey of June 2016, and food security at Critical situation (phase 4) with pockets likely to be very critical (IPC Feb 2017). In 2014 EBF was 37.9% (2014 KAP survey), Timely initiation – 89.5%, Dietary diversity –breastfed-16.4; non-breastfed 10.5%, Meal freq (2times for 6-8mo, 3times 9-23mo) 24.5%, Minimum acceptable diet 12.6%.

Survey objectives;
1. To assess knowledge, attitudes and practice of appropriate Maternal, Infant and Young Child Nutrition (MIYCN) and hygiene among mothers and caregivers;
2. To determine adequacy of dietary intake through 24 Hr Recall for dietary intake for children 6-23 months old
3. To determine factors that influence MIYCN practices;
4. To determine inhibitors, enhancers and pre-disposers to appropriate MIYCN practices.
5. To identify existing and other possible Communication for Development (C4D) channels to support and sustain social and behaviour change towards optimal MIYCN.

Methodology
✓ The survey applied two stage stratified cluster sampling with the clusters being selected using the probability proportional to population size (PPS).
✓ KNBS population projection data for the County was used
✓ A total sample size of 900 caregivers, and 904 children aged 0-23months were accessed.
✓ 17 FGDs were conducted with; women, CHVs, men, and community leaders, as a well as KII with C4D strategy development team.

Results
The Key findings are summarized below;

Household Characteristics	%	N	2014 KAP N=672 (select variables)
Sex of head of the household		900	
Male	95.4		99.3
Female	4.6		0.7
Respondent ever been to school	55.2	900	59.8
Highest level of education completed		497	
Primary incomplete	61.0		
Primary Complete	15.9		
Secondary incomplete	7.0		
Secondary complete	8.9		
Tertiary	7.2		
Religion		900	
Christian	92.4		95.4
Muslim	0.7		0.9
Traditional	4.7		1.2
Other	2.2		
Source of livelihood		900	
Informal business	25.4		
Formal business	1.9		

Rural agriculture	55.6		
Urban agriculture	0.6		
Remittances	0.3		
Jua kali employment	0.6		
Formal employment	2.9		
Pastoralism	9.3		
Other (student, mining)	3.4		
Current occupation of respondent		900	
Unemployed housewife	90.3		
Employed formal	3.3		
Student	3.1		
Informal employment	3.3		
Social capital		900	
Member of MtMSG	7.4		
Merry-go-round	41.2		
Community self help group	7.6		
Church group member	19.6		
Marital status		900	
Currently married	93.1		75.0
Currently living together	1.1		20.3
Separated divorced	0.4		0.8
Widowed	0.6		0.3
Single/never married	4.8		3.6
Respondent relationship to child		904	
Mother	97.3		
Father	0.1		
Grandmother	2.4		
Other (house help)	0.1		
Preferred communication channel		900	
Radio (kalya)	58.4		
Community baraza	42.8		
Health facility IEC	10.3		
Community outreach	6.1		
TV	4.2		
Community road shows	2.7		
Posters/billboards	1.8		
Child Health			
Child age verification		904	
Health card	69.2		
Birth certificate	0.3		
Baptism card	0.1		
Seasonal calendar	2.8		
Mother recall	27.5		
Sex of index child		904	
Male	52.0		54.1
Female	48.0		45.9
Age of children in completed months		904	
0-5	25.9		33.4
6-23	72.8		66.6
6-11	28.3		
12-17	25.1		
18-23	19.5		
12-15	17.9		
6-8	16.1		
9-23	56.7		
20-23	13.8		
Place of birth		904	
Hospital	36.8		
Health centre	3.0		
Doctors office/private clinic	0.2		
Dispensary	4.9		

In the home	47.5		
Mid-wife home	6.4		
Other	1.2		
Signs of illness that indicate child needs to seek treatment		904	
Looks unwell/not playing normally	45.4		
Not eating or drinking	46.5		
High fever	92.7		
Fast or difficult breathing	20.1		
Vomits everything	22.7		
Convulsions	1.5		
Diarrhoea	30.3		
Others (cough, persistent crying, not sleeping well)	14.0		
Don't know	0.6		
Child has had illness in the last 2 week	29.1	904	
Type of illness		261	
Diarrhoea	42.5		
Blood in stool	2.3		
Cold/cough difficult breathing	48.3		
Fever	45.6		
Convulsions	1.1		
Others (skin rash, wounds, malaria, vomiting)	7.7		
How diarrhoea was treated		111	
Fluid from ORS packet	25.2		
Salt and sugar solution	26.1		
Zinc supplement	26.1		
Pill or syrup	35.1		
Injection	16.2		
IV infusion	0.0		
Home remedies	12.6		
Others (malaria tabs, over counter drugs)	13.5		
Breastfeeding practices during diarrhoea illness		110	
Less	62.7		
Same	20.9		
More	8.2		
Child not breastfed	7.3		
Don't know	0.9		
Source of advice when child first had diarrhoea		260	
Health facility	68.8		
CHV	0.4		
Traditional practitioner	7.3		
Relative	3.8		
Pharmacy	12.7		
other	6.9		
Hygiene Indicators			
Hand washing times		900	
After toilet	31.4		
Before cooking	63.2		
Before eating	92.3		
After changing the baby	16.2		
Practices hand washing at all 4 critical times	**7.6**		
Hand washing practice		891	
Only water	41.2		
Soap and water	55.8		
Soap when I can afford	10.5		
Maternal Health			
Physiological status		900	
Pregnant	**5.2**		
Lactating	**85.7**		
Pregnant and lactating	**1.0**		

Not pregnant-not lactating	**8.1**		
Number of children		**865**	
1-4	**61.8**		
5-9	**36.9**		
10-12	**1.3**		
ANC for current pregnancy			
Attended ANC during current pregnancy	50.0	56	
Duration of current pregnancy during 1st ANC visit		28	
1st trimester	21.5		
2nd trimester	71.4		
3rd trimester	7.1		
Number of ANC visits for current pregnancy		28	
1	53.6		
2	17.9		
3	21.4		
4	7.1		
ANC services received for current pregnancy		28	
Height measured	57.1		
Weight taken	96.4		
BP	85.7		
IFAS	67.9		
Anti-malarials	17.9		
Urine sample taken	2.1		
Blood sample taken	82.1		
Tetanus vaccine	67.9		
Deworming	42.9		
HIV test	85.7		
Mosquito net given	2.7		
MUAC measured	50.0		
Ultra-sound done	21.4		
Information given during ANC vsit current pregnancy		28	
Place of delivery	71.4		
Tests during pregnancy	2.0		
Own health	71.4		
Own nutrition	75.0		
HIV/AIDS	78.6		
Breast feeding	1.8		
Infant feeding	35.7		
IFAS	64.3		
Growth monitoring	50.0		
Source of the information		28	
Doctor	3.6		
Nurse	2.7		
Mid-wife	0.0		
TBA	3.6		
Relative	0.0		
CHV	14.3		
NGO/CBO	0.2		
Given IFAS during ANC visit	30.4	56	
Currently taking nutrition commodities	12.5	56	
ANC during pregnancy with index child			
Attended ANC	90.9	838	88.2
Reasons for not attending ANC; Not aware of importance of ANC, distance to health facility, unfriendly healthworkers, TBA services adequate, cultural practices, forgot, insecure to travel, fear injections, sickness.			
Duration of pregnancy during 1st ANC visit		762	
1st trimester	8.8		
2nd trimester	68.2		

3rd trimester	23.0		
ANC services received Height measured		762	
Weight taken	96.5		
BP	82.4		
IFAS	85.4		
Anti-malarials	38.9		
Urine sample taken	64.1		
Blood sample taken	71.6		
Tetanus vaccine	86.7		
Deworming	61.0		
HIV test	88.1		
Mosquito net given	86.0		
MUAC measured	33.9		
Ultra-sound done	40.7		
Information given during ANC visit		762	
Place of delivery	81.8		
Tests during pregnancy	81.1		
Own health	77.2		
Own nutrition	62.6		
HIV/AIDS	83.6		
Breast feeding	75.9		
Infant feeding	59.8		
IFAS	53.8		
Growth monitoring	56.7		
Total No. of ANC visits at full pregnancy		762	
0	17.2		
1	7.0		
2	17.2		
3	28.6		
4+	30.1		
Post-natal care practices			
Time it took to take child to clinic for first the time		505	
Immediately (within 24hrs)	7.7		
Within first 2 weeks	23.8		
Between 2 weeks and 1 month	17.6		
After 1 month	37.4		
Child not taken	12.5		
Don't intend to	1.0		
Seen by health worker after delivery	85.4	838	
Time it took to be seen by health worker		716	
Within 48hrs	32.0		
1-2 weeks	34.8		
4-6 weeks	36.5		
Supplementation and delivery			
During pregnancy issued with iron and folate supplementation	93.5	**651**	
Total given		900	
0	33.9		
1-30	28.2		
31-60	17.1		
61-90	9.1		
91-240	11.3		
Took supplements from total given		608	
0	0.7		
1-30	58.0		
31-60	20.8		
61-90	8.8		
91-240	11.4		

Shown or heard information on IFAS	65.9	838	
Source of information Health facility CHV Media other	 96.2 2.3 0.5 1.0	552	
Took any nutrition commodities Nutritional supplements CSB RUSF Herbal supplements Soil/mineral stones	 18.7 8.2 4.9 34.1 53.1	835	
Consumes fortified/fortifiable foods Packaged maize flour Wheat flour Margarine Cooking oil Salt Other (CBS, bread, milk powder)	 4.4 21.0 4.6 90.7 97.4 1.4	504	
Drinks tea during or imediately after a meal	26.4	900	
Frequency of tea intake Rarely Occasanally Often	 40.8 27.7 31.5	238	
Maternal nutrition knowledge			
A baby should be put to the breast immediately they are born	91.7	**896**	92.0
A baby should be given other liquids within first 3 days	14.8	896	
Breastfeeding practice			
Ever breastfed	94.4	896	98.6
Pre-lacteal feeds given	18.3	**896**	19.4
Early Initiation of breastfeeding (0-23months)	95.5	**846**	89.5
Exclusive breastfeeding under 6 months (0-5months)	39.9	233	37.9
Continued breastfeeding at 1 yr (12-15months)	83.0	165	85.2
Continued breastfeeding at 2 yrs (20-23months)	52.8	**127**	65.7
Use of bottle feeding and other drinking utensils (0-23months) Bottle with nipple and teat Cup with nipple and teat Cup with holes Cup with bowl no cover and with spoon Feeding with palm Guard/mkomoning	26.3 15.5 20.5 17.5 0.3 19.8	896	26.1
Complementary feeding practices			
Introduction of solid, semi-solid or soft foods (6-8 months)	89.8	**147**	**70.8**
Minimum dietary diversity (=<4) 6-11 months 12-17 months 18-23 months 6-23 months	 25.0 45.0 43.6 36.9	 260 231 179 670	 11.2 20.8 21.8 17.5
Minimum meal frequency 6-8 months (2 times) 9-23 months (3 times)breastfed 9-23 months (4 times) non-breastfed 6-23 months (combined) breastfed	 75.7 60.3 29.3 58.7	 148 522 522 652	 97.4 94.7
Minimum acceptable diet 6-8 months	 17.6	 148	 8.8

9-23 months breastfed	29.5	522	15.4
9-23months non-breastfed	16.3	522	
6-23months breasted combined	25.0	522	
Child dietary diversity		666	
Grains roots and tubers	74.0		
Legumes and nuts	7.5		
Dairy	6.9		
Meats	34.8		
Eggs	35.7		
Vitamin A rich fruits and vegetables	80.9		
Other fruits and vegetables	70.0		
24Hr recall dietary % fulfilment		102	
Energy	32.77		
Protein	37.0		
Fat	24.25		
Carbohydrates	37.1		
Vitamin A	335.3		
Iron	74.7		
Zinc	74.2		
Calcium	87.8		
Vitamin C	280.6		
Responsive feeding yesterday			
Child ate all food he/she should	64.4	666	
Did something to encourage child to eat;		429	
Offered another food/liquid	86.0		
Encouraged verbally	4.2		
Modelled food	5.6		
Ordered strongly	3.0	463	
Another person helped feed child	10.7		
Another form of encouragement	0.0		
Don't know	69.6		
Said something to encourage child to eat			
Ordered child to eat	21.8		
Praised child	68.5		
Asked child questions	4.1		
Talked about food	29.4		
Threatened the child	3.5		
Told child that she liked food	3.2		
Rewarded the child	11.4		
Talked about other things	8.2		
Don't know	0.4		
Child self-fed yesterday at any time	41.6	666	
Breastfeeding practices last time child was sick		645	
Less because child did not like	88.8		
Less because mother's decision	2.0		
More	0.6		
Same	3.7		
Never	4.3		
Don't know	0.5		
Non-breast milks and other liquids in sickness		645	
Less because mother's decision	72.6		
More	2.6		
Same	7.0		
Never	12.1		
Don't know	5.8		
Amount of food during illness		645	
Less because mother's decision	8.1		
More	2.2		
Same	57.4		
Never	31.3		
Don't know	1.1		

Feeding after illness		666	
Less because mother's decision	15.9		
More	12.3		
Same	62.8		
Never	9.0		
How often food remains on the plate		666	
Often/several times	2.0		
Few times	16.4		
Never	79.7		
Don't know	2.0		
Food that remains on the plate;		666	
Put in the refrigerator	8.7		
Put in the cupboard	2.6		
Put elsewhere	10.8		
Thrown away	77.9		
Child received Vitamin A last 6 month	19.8	666	
Child received de-worming tablets last 6 month	1.2	666	
Maternal dietary diversity			
Food groups		900	
Starches	97.0		98.7
Dark green leafy vegetables	79.9		72.2
Other Vitamin A rich fruits and vegetables	10.1		1.8
Other fruits and vegetables	61.1		4.0
Organ meats	5.8		1.5
Meats and fish	14.8		0.6
Eggs	7.8		3.3
Legumes, nuts and seeds	26.2		22.5
Milk and milk products	63.3		58.7
Maternal dietary diversity categories		900	
Poor dietary diversity (below 5 food groups)	77.8		
Optimal dietary diversity (5 and above food groups)	22.2		
Maternal MUAC (at 21cm cut-off)		900	
Pregnant and lactating Acute malnutrition	1.4	827	
Women not pregnant not lactating	0.0	73	
Maternal MUAC (at 23cm cut-off)		900	
Pregnant and lactating Acute malnutrition	16.2	827	
Women not pregnant not lactating	5.5	73	

CONCLUSIONS

1. Low literacy rates among primary caregivers, hence a major challenge to uptake of key optimal practices
2. Radio and community barazas are among the most popular communication channels
3. Home deliveries are still high, but there is significant reduction since 2014
4. Diarrhea and URTI among the major childhood illness, hence need to invest in WASH
5. Optimal ANC attendance still remains low and has not changed significantly since 2015, with most visits happening in 2nd trimester
6. Only 32% of women access PNC within the first 48hrs
7. Although 93.5% reported being given IFAS, uptake was only high among those that received dosages of less than 2 months, with high PICA rates at 53.1%
8. Nutrition knowledge is high among caregivers but EBF has significantly remained the same, but complementary feeding practices have improved since 2014, but still low
9. Maternal diet quality and nutritional status is poor
10. C4D strategy document requires completion and roll out taking into consideration behavioral barriers and boosters identified from the survey.

LESSONS LEARNT AND RECOMMENDATIONS

1. Child feeding practices (breastfeeding and complementary feeding) require behavioral interventions that target socio-cultural barriers and boosters suing innovative communication channels and messaging

2. Integration of maternal health components of ANC and PNC is needed so as to tackle underlying causes of child malnutrition

3. Structural challenges such as distance to health facilities, poverty, hunger remain key basic challenges, there is need for advocacy to focus on resource allocation to tackle this barriers

4. Health facility and practices cited as barriers to health seeking practices need to be addressed through consultative meetings among health care managers

5. IFAS uptake faces many socio-cultural myths and negative attitudes from caregivers, there is need to address these through C4D BCC interventions

6. WASH interventions to tackle behavioral causes of diarrhea which is a major childhood illness is needed especially when it comes to water access as well as hand washing an hygiene practices

7. Maternal nutrition interventions targeting behavioral as well as access to diverse diets are needed to improve maternal diet quality

INTRODUCTION

West Pokot County is one of the Arid and Semi-Arid Lands in Kenya. It is situated in the north rift along Kenya's Western boundary with Uganda border. It borders Turkana County to the North and North East, Trans Nzoia County to the South, Elgeyo Marakwet County and Baringo County to the South East and east respectively. The County covers an area of approximately 9,169.4 km2 stretching a distance of 132 km from North to South with population estimated at 631,231 persons as per 2013 projections. This population consists of 313,746 males and 317,484 females giving sex ratio of 100:101. The county inter-censal growth rate is 5.2% which is higher as compared with the national average of 3.0%. The county has four constituencies namely: Kapenguria, Kacheliba, Sigor and Pokot South and a total of twenty county wards. In addition, West Pokot county has four main sub counties namely West, Central, South and North Pokot with three major livelihood zones: pastoralism (dominant in Pokot North), agro-pastoralism (dominant in Pokot Central), and mixed farming (practiced in West Pokot and parts of South Pokot).

West Pokot County has 75 health facilities in the county currently implementing high impact nutrition interventions out of 105 health facilities and 20 integrated health and nutrition outreach sites. The vastness and harsh terrain pose challenges to delivery and access of nutrition and health services.

Action Against Hunger has been implementing MIYCN and HiNI initiatives to reduce morbidity and mortality among under five year old children in West Pokot as the ultimate outcome. To achieve this outcome, immediate and intermediate outcomes need to be monitored to inform the design of the projects. This will ensure necessary corrective measures are undertaken to keep the project on course for achieving the intended impacts. Therefore KABP/C4D assessment was aimed at providing real time qualitative and quantitative information on the status of the MIYCN practices that can be attributed to impact on maternal nutrition and child survival and development.

Data from the Kenya Demographic and Health Survey of 2008-09, 35% of children under the age of five years are stunted, with 16% underweight and 7% wasted. The median duration for Exclusive Breast Feeding (EBF) has remained at 21months over the last three DHS surveys (1998, 2003, 2008-09). There was however, a reported improvement in EBF of children less than six months of age at 32% in 2008-09 compared to 11% in 2003. According to the Kenya Nutrition Action Plan (NNAP) report for 2012-2017 child malnutrition remains a major challenge. The immediate causes of malnutrition are

inadequate food intake and disease while the underlying causes include poor maternal/child care practices, household food insecurity, inadequate health services (WHO, 2010).

Objectives of the KABP/C4D assessment:

1. To assess knowledge, attitudes and practice of appropriate Maternal, Infant and Young Child Nutrition and hygiene among mothers and caregivers;

2. To determine the actual food intake by children aged 6-23 months through 24 Hr Dietary Recall.

3. To determine factors (boosters and barriers) that influence MIYCN practices and suggest how these can be overcome;

4. To establish existing and other possible Communication for Development (C4D) channels to support and sustain social and behaviour change towards optimal MIYCN.

5. To explore opportunities for integration and linkages of nutrition and health interventions to improve uptake of MIYCN messages and behavior change.

Evaluation design

The survey employed both quantitative and qualitative approaches to establish the prevalence of core MIYCN practices as has been agreed upon in the nutrition sector, focusing on the knowledge, attitude, Beliefs and practices relating to maternal nutrition, infant and young child feeding, Water Sanitation and Hygiene (WASH) promotion interventions. The survey further explored the Communication for Development (C4D) approach to drive social and behaviour change towards adopting optimal MIYCN practices. A sub-sample of 20% of households was drawn from total KABP sample where the caretaker/mother who usually prepares the complementary food and feeds, the baby was interviewed to determine the actual food intake by the child 24 hours preceding the survey. If the mother had more than one eligible child 6-23months, the youngest child was preferred for 24Hr Recall. This was conducted in a participatory manner involving MOH, ACF, UN agencies and beneficiaries. The methodology was presented at relevant committees and working groups at national and county level for approval and validation. The planning and implementation of the assessment was done in consultation with West Pokot nutrition team. The MIYCN quantitative questionnaire developed and approved by the MIYCN working group as containing questions for the minimum MIYCN indicators was used as the primary questionnaire.

Sample Size Determination

The sample size for collection of data on IYCN indicators was calculated by stratified proportionate sampling methodology (using the Care International Sampling Spread Excel Sheet) so as to cater for the sample sizes required for the various indicators of IYCN practices, which are disaggregated by age. Four main IYCN indicators (WHO, 2010) [1] were used to calculate the sample size. The prospected prevalence rates of the four indicators: Exclusive Breastfeeding Rate; Timely Initiation of Breastfeeding; Minimum Dietary Diversity and Minimum Meal Frequency (Table 1) were used to determine the sample size. The rates used for the sample size calculation were those from the findings of the last IYCF KAP survey conducted in West Pokot County in February 2014. Desired precision for MIYCN as recommended by the NITWG of between 6-8 depending on resources available for sampling. For each of the four IYCN indicators precision of 8.0 was

---

[1] WHO 2010, Indicators for Assessing Infant and Young Child Feeding Practices

used. The design effect to account for the cluster methodology (Table 1) was set at 1.5. The resulting sample sizes for the four IYCN indicators are shown in the Table below:

Table 1 Estimated sample size for KAP 2017

Indicator	Estimated prevalence (%)	± desired precision	Design effect	Sample size
Exclusive breastfeeding	37.9	8.0	1.5	231
Timely initiation of breastfeeding	89.5	8.0	1.5	92
Minimum dietary diversity	16.4	8.0	1.5	134
Minimum meal frequency	93.7	8.0	1.5	58

The indicator with the highest sample size is multiplied by 4 to account for the age categories within 0-23 months of age, thereby giving Based on the IYCF sample size protocol the highest sample size obtained was then us a final calculated sample size of **924 children aged 0-23 months**. It was anticipated that with that sample size analysis of the various variables of concern shall lie within the minimum calculated sample size above.

The number of clusters to be sampled was calculated by dividing the number of children (based on the indicator with the largest number of households) by the number of households (one child per household) each team can collect data from per day and also depending on the distances and the heterogeneity of the County. In this case, it was projected that a team could collect data from **18 households** per day and therefore the number of clusters was: 924÷18 = **52 Clusters**.

Sampling procedure

A two-stage sampling methodology was used to select the study participants (mothers/care givers) of children 0-23 months old.

Sampling Stage 1

The first stage of sampling involved selection of villages which constituted the sampling unit. The village was the smallest geographical unit for which population statistics were available. All the villages in each of the sub-locations in all the divisions in West Pokot County constituted the sampling frame. The population statistics were from the National Census (2009) projections. Emergency Nutrition Assessment (ENA) for Standardized Monitoring and Assessment of Relief and Transitions (SMART) version November 2013 was used to randomly select the villages/clusters.

Each of the villages was listed together with its total population. The cumulative population was then calculated and used in the computation of a population proportional to size (PPS) sampling design to identify the specific villages to be covered by the survey. After computing the cumulative population, the sampling interval was determined by dividing the total cumulative population by the 52 clusters required. A random number (equal to or less than the sampling interval) was then selected from a Table of Random Numbers and the village where the random number fell was the first cluster to be selected for the survey. Subsequent villages were selected by adding the sampling interval to the number first selected. Through this process, the locations of the sampled villages/clusters were identified.

Sampling Stage 2

The second stage involved selection of 16 households per cluster. A list of all existing households per cluster with children 0-23months was identified in consultation with the village elder in the cluster. The required 16 households were thereafter selected through simple random sampling. Once a house was selected, the survey team visited the household and verified if the target child aged 0-23 months of age was present. If the target population was found and respondent was willing to participate in the survey, then the relevant data was collected from the respondent. The same procedure was used in each of the selected 16 sampled households.

24hr recall sub-ample

10% of the total sample was targeted for quantitative data intake assessment using the 24hr recall multi-pass protocol. Selection was based on a target of 2 children aged 6-23months per village/cluster.

The steps as used in the KMNS protocol and R. Gibson manual involved the following steps;

1. Multiple pass data collection involving collection of all foods consumed and their respective ingredients
2. Collection of information on total meal yield and amounts of each ingredient used
3. Collection of quantities consumed using weighed model bags of known rice amount
4. Calculation of ingredient proportions based on total yield produced (step 2)
5. Preparation of sample recipes as well as purchase of single foods and weighing to determine weight

6. Calculation of volume for mixed dishes prepared in the food lab (step 5) by immersion method

7. Calculation of ingredient volumes for mixed dishes by multiplying proportion from step4 with total volume from step 6

8. Calculation of mass in grams of each ingredient by multiplying ingredient volume with specific gravity figures from FAOs specific gravity tables

9. Entering ingredient mass/volume/standard measure into Nutrisurvey based on FAO/WHO nutrient requirements and adjusting for age of the child to generate percent nutrient fulfillment.

Data collection tools

Both quantitative and qualitative data was collected. Structured questionnaires were used to collect quantitative data. The IYCN indicators captured in the questionnaire were:

1. Timely initiation of BF (0-23 months)
2. EBF under 6 months (0-5 months)
3. Continued BF at 1 yr (12-15 months)
4. Bottle feeding (0-23 months)
5. Timely complementary feeding (6-9 months)
6. Introduction of solid/semi-solid/soft foods (6-8 months)
7. Minimum dietary diversity (6-23 months)
8. Minimum meal frequency (6-23 months)
9. Minimum acceptable diet (6-23 months)
10. Dietary intake
11. Consumption of Iron rich foods (6-23 months)
12. Water and sanitation for the household.

The qualitative component comprised of Key Informant Interviews (KII) with health facility staff and Focus Group Discussions (FGDs) with fathers, grandmothers/mothers in law, CHVs, men, pregnant and lactating women, separately to establish the community's perceptions on IYCN practices as well as the cultural, socio-economic, and other factors influencing these practices. Also it explored the Communication for Development (C4D) approaches to drive social and behaviour change towards adopting optimal MIYCN practices.

Implementation of the Survey

Survey Team

The survey was coordinated and supervised by the external consultant. The consultant was assisted by the MIYCN Programme Manager, West Pokot County Nutritionist, and the West Pokot Nutrition Program Manager ACF. The survey was conducted using 6 teams; each team comprising 4 members, inclusive of a team leader/. The team leader and one enumerator conducted the FGDs and KIIs whereas the other two enumerators administered the questionnaires and recorded the responses.

The team leaders were drawn from the West Pokot County Ministry of Health staff and ACF program officers who were highly experienced. The other data collection team members were largely drawn from community members with post-secondary school level of Education (KCSE) and with prior experience in surveys. The team leader was in charge of the data quality control in the team.

Each team was assisted by a village elder (recruited at the village level) to guide the survey team in locating the boundaries of the village and also with the population statistics for the households in the village.
The field data collection took place between 1st – 10th May 2017.

Training of team members

Five-days of training on data collection were conducted before the commencement of the survey by the consultant in collaboration with ACF. The training focused on the objectives of the survey, methodology, interviewing techniques, accurate recording of responses, data collection tools and use of ODK. 24hr recall multiple pass method. Role-plays on how to administer the questionnaire and record responses were also conducted for both quantitative and qualitative methods.
Two pilots of the tools were done on the fourth and the fifth day of training. This was done in a nearby village from the training area, and in a village had not been selected as a survey cluster for inclusion in the survey. Thorough debriefing after each field activity was conducted and feedback shared.

Field pre-test of the survey tools

During the two field pilot exercises the consultant, ACF staff and MoH representative

accompanied and observed the teams during the pre-testing in order to identify the weaknesses and strengths of the teams. The survey teams also piloted the survey procedures; sampling, interviewing techniques using ODK, and the duration taken to sample and interview one household noted. All the filled in questionnaires were checked by the consultant.

Data Quality Control during collection and data entry

The quality of data was controlled as follows:

- Five day training of teams to ensure standardized the interviews and other data collection procedures;
- Field level cross checking of the questionnaires done for dietary intake and ODK use by the team leaders before leaving the households to ensure that they were filled correctly and completely;
- Spot checks by supervision team during data collection and making necessary corrections where necessary;
- Daily debrief meetings helped manage the teams, maintain team work and resolve any challenges resulting from group dynamics.

In the end, the data collection was considered highly satisfactory.

Figure 1 ODK Mapping of clusters visited and distribution in KAP survey

Data management and analysis

Quantitative data

Data was collected from the households with children aged 0-23months. Use of ODK made it possible to have data skip patterns were automated leading to no missing data. Data was entered into the Statistical Software for Social Sciences (SPSS) version 20 and analyzed by the consultant. All the infant and young child feeding indicators were analyzed based on the WHO (2010) protocols.

Descriptive statistics were analyzed based on SPSS.

Qualitative data

The data from both focus group discussions and key informant in-depth interviews were captured using pre-prepared note-takers sheets and tape recordings. Content analysis involved the detailed exploration for common themes and assigning of labels to variable categories. The categories or themes were identified in advance, in line with the objectives and scope of the assessment. The themes were clustered into a patterned order so as to identify variables that predicted general concepts and isolation of repetitions done. Inferences were made from particular data under each theme and conclusions drawn from the findings. The qualitative data was used for triangulation of the findings; and to complement the quantitative data obtained from reported interview information. The qualitative data was also used to report findings on community's knowledge, attitudes and practices of MIYCN and C4D assessment of communication channels and behaviour assessment for C4D strategy development and integration. Analysis was based on the AED (2003) FGD participatory analysis protocol. A total of 17 FGDs comprising 146 respondents participated in the FGDs. The breakdown for different stakeholder groups was as follows; women FGDS – 7, men FGDs – 5, CHV FGDs – 2, and Leaders FGDs-3.

Household profile

Results show the area is predominantly of poor socioeconomic status. Rural agriculture (55.6%) is the major source of livelihood for households. Other important occupations for household heads include informal business employment (25.4%) and formal/monthly employment (2.9%). The prominence of farming as the major livelihoods earner in West Pokot underlie the importance of agriculture, and by extension, weather patterns since farmers depend on rain fed agriculture.

Table 2 Household characteristics

Household Characteristics	%	N
Respondent ever been to school	55.2	900
Highest level of education completed		497
Primary incomplete	61.0	
Primary Complete	15.9	
Secondary incomplete	7.0	
Secondary complete	8.9	
Tertiary	7.2	
Religion		900
Christian	92.4	
Muslim	0.7	
Traditional	4.7	
Other	2.2	
Source of livelihood		900
Informal business	25.4	
Formal business	1.9	
Rural agriculture	55.6	
Urban agriculture	0.6	
Remittances	0.3	
Jua kali employment	0.6	
Formal employment	2.9	
Pastoralism	9.3	
Other (student, mining)	3.4	
Current occupation of respondent		900
Unemployed housewife	90.3	
Employed formal	3.3	
Student	3.1	
Informal employment	3.3	
Social capital		900
Member of MtMSG	7.4	
Merry-go-round	41.2	
Community self help group	7.6	
Church group member	19.6	
Marital status		900
Currently married	93.1	
Currently living together	1.1	
Separated divorced	0.4	
Widowed	0.6	
Single/never married	4.8	
Respondent relationship to child		904
Mother	97.3	
Father	0.1	
Grandmother	2.4	
Other (house help)	0.1	
Preferred communication channel		900

Radio (kalya)	58.4	
Community baraza	42.8	
Health facility IEC	10.3	
Community outreach	6.1	
TV	4.2	
Community road shows	2.7	
Posters/billboards	1.8	

Majority of the respondents were in a form of union (94.2%) with very few either divorced, widowed or single (5.8%). This is close to what was recorded during the 2014 KAP survey with 95.3% of the respondents in a form of union. In the survey, the highest education level for the majority of household heads is primary school (61.0%) and only 7.2% have tertiary education while 8.9% have a secondary school complete education. This indicates high levels of illiteracy considering the national average is 11.7% based on the 2014 KDHS report, this has a negative implication on health behaviors and attitudes. Christianity is the predominant religion (92.4%), close to the 2014 KAP of 95.4%. Most of the respondents (90.3%) were unemployed housewives.
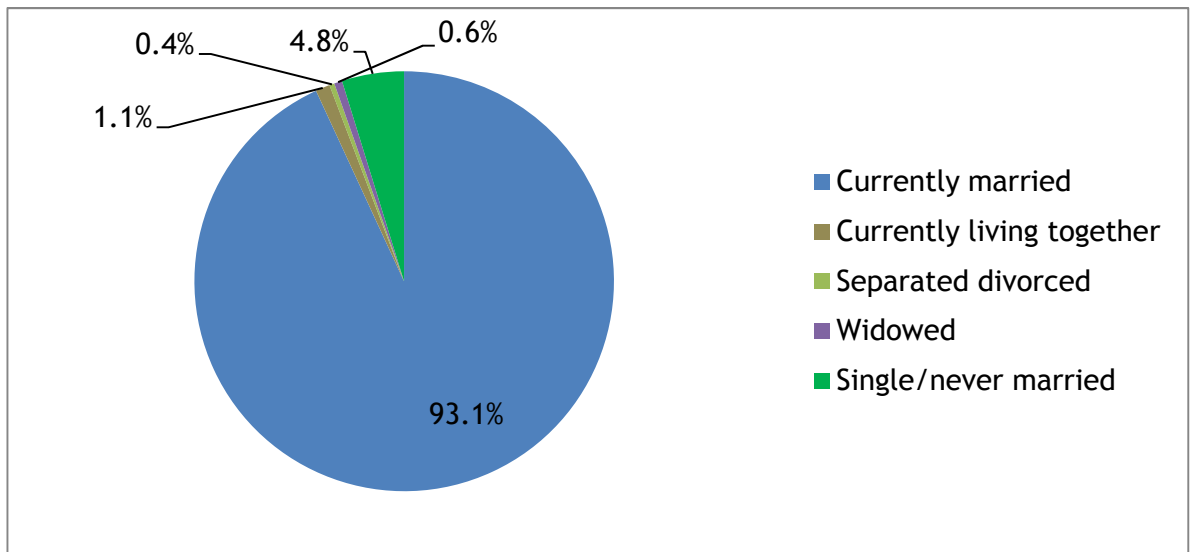

Figure 2 Marital status

Radio (Kalya FM), Community baraza's and Health facility IEC materials were the most preferred channels of communication by the respondents. This provides an insight into most preferred C4D channels for general community wide messaging.
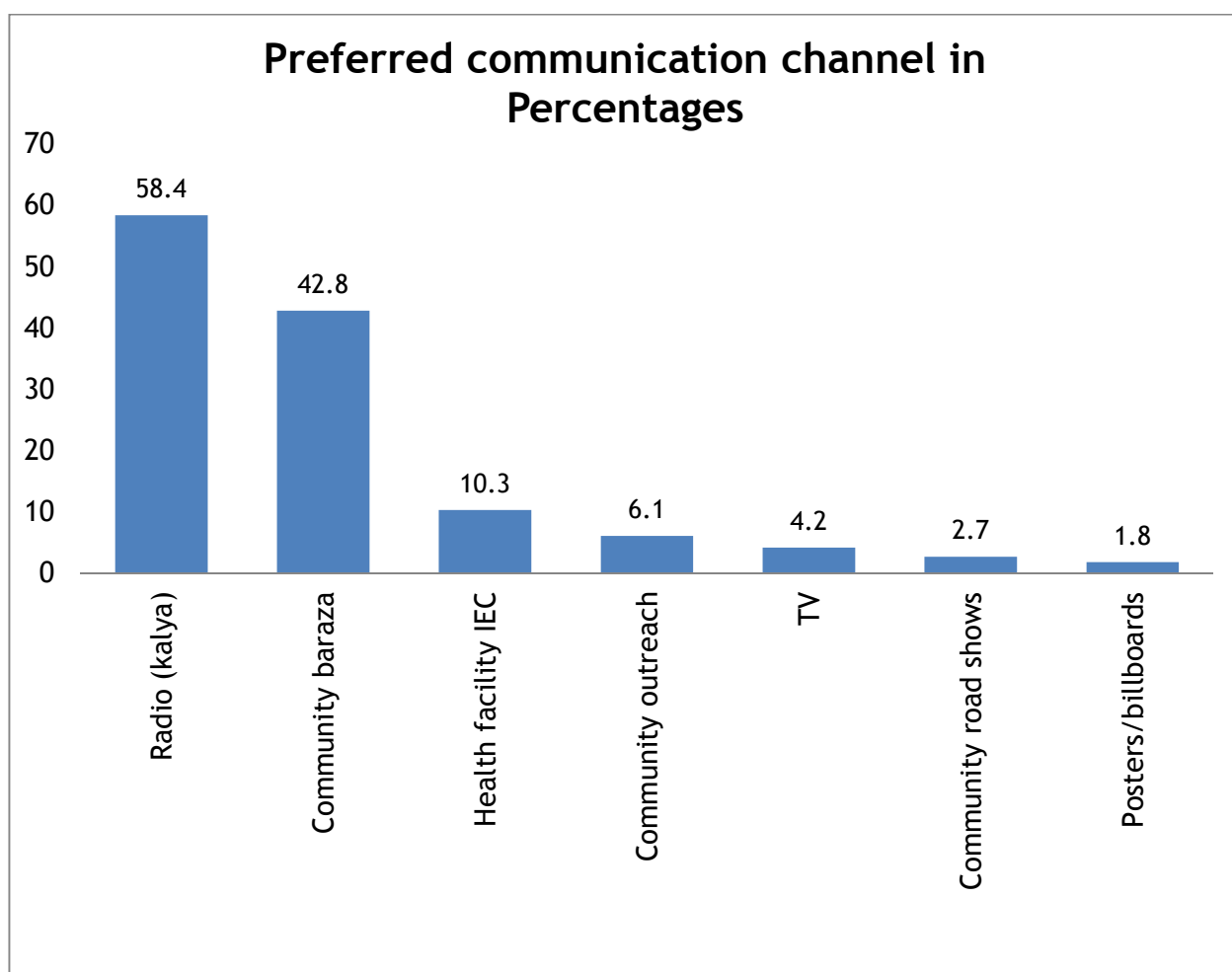
Preferred communication channel in Percentages

Channel	Percentage
Radio (kalya)	58.4
Community baraza	42.8
Health facility IEC	10.3
Community outreach	6.1
TV	4.2
Community road shows	2.7
Posters/billboards	1.8

Figure 3 Preferred communication channels

Child Health

Majority of the children (69.6%) had their age verified through documented proof; this contributes to validity of age reporting of the children while the rest were either seasonal calendar or the mothers recall. Most of the children, 47.5%, were delivered at home and 36.8% in a health facility. This is a major distress, especially given that evidence shows that skilled birth attendants contributes to lower maternal and child mortality.

During the FGDs the following reasons were cited for high home delivery:

- Shortage of doctors in maternity,
- harshness by nurses,
- long distance to health facility,
- first time mothers fear HIV test,
- cost is high for some women,
- health workers absenteeism from work,
- they are not allowed to kneel during delivery,

- health workers negative attitudes towards circumcised women,

- language barrier,

- fear of sanitation and hygiene in some of the public facilities and

- lack of food support while admitted at maternity or hospital

Table 3 Signs of illness indicating child needs to seek treatment

Child Health	%	N
Child age verification		904
Health card	69.2	
Birth certificate	0.3	
Baptism card	0.1	
Seasonal calendar	2.8	
Mother recall	27.5	
Age of children in completed months		904
0-5	25.9	
6-23	72.8	
6-11	28.3	
12-17	25.1	
18-23	19.5	
12-15	17.9	
6-8	16.1	
9-23	56.7	
20-23	13.8	
Place of birth		904
Hospital	36.8	
Health centre	3.0	
Doctors office/private clinic	0.2	
Dispensary	4.9	
In the home	47.5	
Mid-wife home	6.4	
Other	1.2	
Signs of illness that indicate child needs to seek treatment		904
Looks unwell/not playing normally	45.4	
Not eating or drinking	46.5	
High fever	92.7	
Fast or difficult breathing	20.1	
Vomits everything	22.7	
Convulsions	1.5	
Diarrhea	30.3	
Others (cough, persistent crying, not sleeping well)	14.0	
Don't know	0.6	
Child has had illness in the last 2 week	29.1	904
Type of illness		261
Diarrhoea	42.5	
Blood in stool	2.3	
Cold/cough difficult breathing	48.3	
Fever	45.6	
Convulsions	1.1	
Others (skin rash, wounds, malaria, vomiting)	7.7	
How diarrhoea was treated		111
Fluid from ORS packet	25.2	
Salt and sugar solution	26.1	
Zinc supplement	26.1	
Pill or syrup	35.1	
Injection	16.2	

IV infusion	0.0	
Home remedies	12.6	
Others (malaria tabs, over counter drugs)	13.5	
Breastfeeding practices during diarrhoea illness		110
Less	62.7	
Same	20.9	
More	8.2	
Child not breastfed	7.3	
Don't know	0.9	
Source of advice when child first had diarrhoea		260
Health facility	68.8	
CHV	0.4	
Traditional practitioner	7.3	
Relative	3.8	
Pharmacy	12.7	
other	6.9	

Advice when child first had diarrhoea was majorly sort from the health facilities (68.8%) and followed by advice from the local pharmacy (12.7%). During diarrhoeal illnesses breastfeeding practices was less (62.7%) and most children who had diarrhoeal incidences were either given a pill or syrup (35.1%) as treatment.
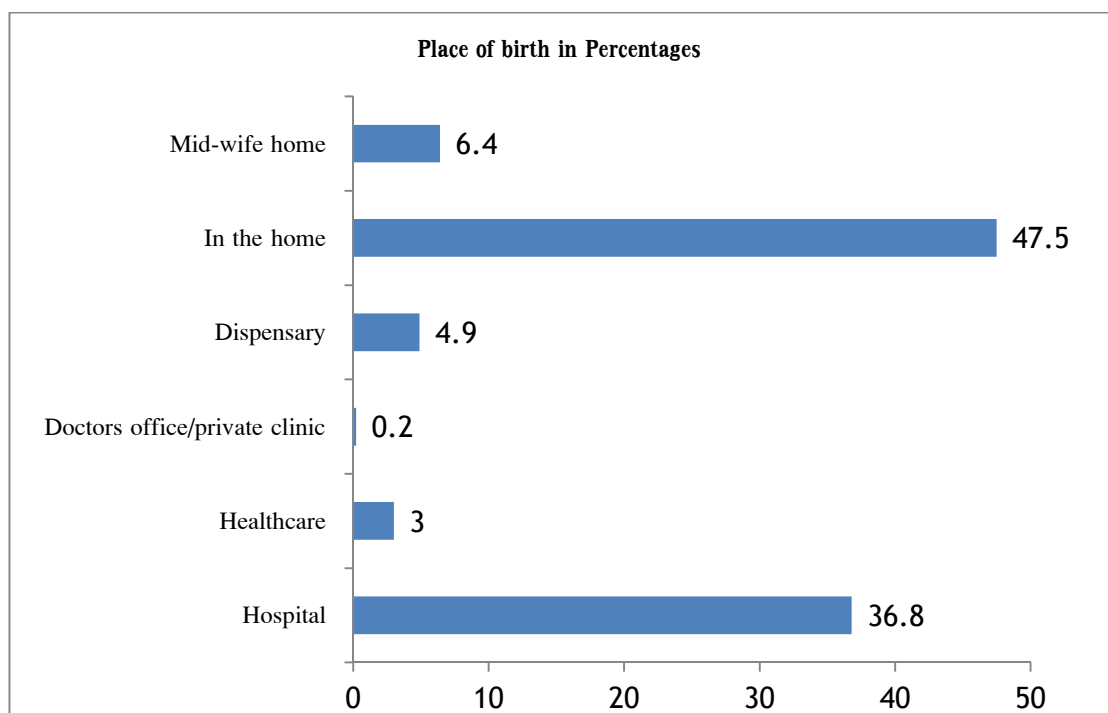
Figure 4 Place of birth for the children in West Pokot

The rate of hospital delivery is still very low. In order to minimize maternal and child mortality especially at the time of birth there is need for increased facility delivery, as well as skilled birth attendance. The trend in terms of home deliveries when compared to 2014 KAP survey indicates a statistically significant drop in home deliveries from 60.3% to
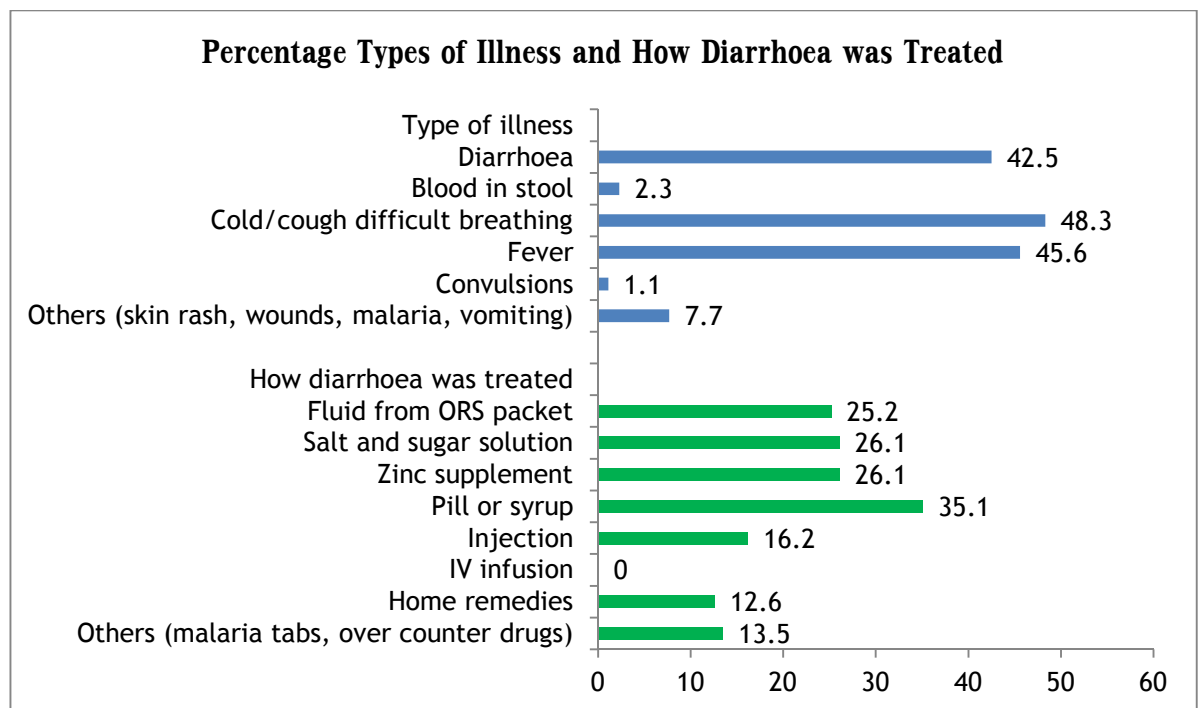
47.5% (CI 7.9;17.7 +-4.9)

Figure 5 Child illness and diarrhea treatment over the past 2 weeks

Close to half of the children suffered a form of illness over the two weeks preceding the survey. Diarrhea and URTI were the predominant childhood illness.

During FGD's health facility barriers that inhibit health seeking among women were discussed and the following barriers came up;

- Male health care workers
- Shortage of doctors in maternity
- Harshness by nurses
- Lack of money
- If distance is far
- First time mothers fear HIV test
- Fear cesarean section
- Cost is high for some women
- Waiting time too long
- Lack of drugs in some facilities
- Not allowed to kneel during delivery
- Health workers negative attitudes towards circumcised women
- Language barrier
- Fear of sanitation and hygiene in some of the public facilities
- No blood transfusion services
- Lack of food support while admitted at maternity or hospital

While socio-cultural barriers to health seeking were reported as including;

- When baby keeps crying they think it is hunger and not getting enough from Breast milk
- IFAS perceived to be FP purposes
- Single mothers who fear stigma from community
- Discouraging to women who do not know the father of the child.
- Community values many children hence do not accept FP
- Fear of cesarean sections
- Many people found in hospitals have an 'evil eye'.
- Health facility is seen as a home for the sick and where people die, hence no need to go if you are not sick. Hence discourage ANC and PNC visits.
- MtMSG forbidden as pregnant women are not allowed to visit populated places
- At health facility women will be given FP services like tubal ligation.

Hygiene Indicators

Both water and soap were available hand washing practice in 55.8% among respondents. WHO recommends that where there is no system, running water can be organized by using a water butt with a tap, if there is a shortage of water, using soap with a small quantity of water in a bowl is adequate. Washing of hands should be particularly be done; before food preparation, before eating, before serving food, during food preparation to avoid cross contamination, before and after handling raw meat, poultry and fish products, after changing diapers, after blowing nose/sneezing, after using the toilet, not just after defecation, since the pathogens can also be picked up from previous users of toilets via door handles, taps and drying towels and after handling unsanitary objects such as waste/garbage containers. In this survey 92.3% had knowledge on hand washing; before eating, 63.2% before cooking, 31.4% after toilet and 16.2% after changing the baby. However only 7.6% of the respondents reported practiced hand washing during all the four critical moments.

Table 4 Hand washing times and practices

Hygiene Indicators		
Hand washing times		900
After toilet	31.4	
Before cooking	63.2	
Before eating	92.3	
After changing the baby	16.2	
Practices hand washing at all 4 critical times	**7.6**	
Hand washing practice		891
Only water	41.2	
Soap and water	55.8	
Soap when I can afford	10.5	

Maternal Health

In 2010, United Nations reported that the maternal and child health status are essential indicators for the overall economic health and well-being of a country. Among the respondents 85.7% of the women were lactating mothers with most having between 1 to 4 children (61.8%). Table below shows that 50.0% of women under the current pregnancy attended antenatal clinics. In KDHS 2014 it is reported that Antenatal care (ANC) from a skilled provider is important to monitor pregnancy and reduce the risk of morbidity for mother and baby during pregnancy and delivery. The quality of antenatal care can be monitored through the content of services received and the kind of information mothers are given during their visit.

The 2001 WHO model of full antenatal care recommends, a minimum of four antenatal visits. The WHO guidelines are also specific as regards the timing and content of antenatal care visits according to gestational age. ANC data was collected by maternal recall. 90.9% of the respondents reported attending ANC during pregnancy (N=838), the 2014 KDHS had a national average was 95.5%. Those whom didn't attend cited they were not aware of importance of ANC, long distance to health facility, unfriendly healthworkers, TBA services were adequate, cultural practices, some forgot, it is insecure to travel, fear of the injections and sickness. Majority of those who went to ANC (68.2%) attended during the second trimester, with most (58.7%) attending ANC 3 to 4 times (N=762). A comparison between the current survey and 2014 KAP survey, there was no significant change in ANC attendance overall and four or more ANC attendance respectively (CI - -0.4;5.8 +-3.1 and -4.9;4.9 +-4.9 respectively). Among the most common services offer in the ANC being measurement of the weight and height; blood pressure and HIV testing. Thus highlighting out the need to integrate maternal nutrition with IYCN.

Table 5 Maternal health characteristics and practices

Maternal Health		
Physiological status		900
Pregnant	**5.2**	
Lactating	**85.7**	
Pregnant and lactating	**1.0**	
Not pregnant-not lactating	**8.1**	
Number of children		865
1-4	**61.8**	
5-9	**36.9**	
10-12	**1.3**	
ANC for current pregnancy		
Attended ANC during current pregnancy	50.0	56
Duration of current pregnancy during 1st ANC visit		28
1st trimester	21.5	

2nd trimester	71.4	
3rd trimester	7.1	
Number of ANC visits for current pregnancy		28
1	53.6	
2	17.9	
3	21.4	
4	7.1	
ANC services received fro current pregnancy		28
Height measured	57.1	
Weight taken	96.4	
BP	85.7	
IFAS	67.9	
Anti-malarials	17.9	
Urine sample taken	2.1	
Blood sample taken	82.1	
Tetanus vaccine	67.9	
Deworming	42.9	
HIV test	85.7	
Mosquito net given	2.7	
MUAC measured	50.0	
Ultra-sound done	21.4	
Information given during ANC vsit current pregnancy		28
Place of delivery	71.4	
Tests during pregnancy	2.0	
Own health	71.4	
Own nutrition	75.0	
HIV/AIDS	78.6	
Breast feeding	1.8	
Infant feeding	35.7	
IFAS	64.3	
Growth monitoring	50.0	
Source of the information		28
Doctor	3.6	
Nurse	2.7	
Mid-wife	0.0	
TBA	3.6	
Relative	0.0	
CHV	14.3	
NGO/CBO	0.2	
Given IFAS during ANC visit	30.4	56
Currently taking nutrition commodities	12.5	56
ANC during pregnancy with index child		
Attended ANC	90.9	838

Reasons for not attending ANC; Not aware of importance of ANC, distance to health facility, unfriendly healthworkers, TBA services adequate, cultural practices, forgot, insecure to travel, fear injections, sickness.

Duration of pregnancy during 1st ANC visit		762
1st trimester	8.8	
2nd trimester	68.2	
3rd trimester	23.0	
ANC services received Height measured		762
Weight taken	96.5	
BP	82.4	
IFAS	85.4	

Anti-malarials	38.9	
Urine sample taken	64.1	
Blood sample taken	71.6	
Tetanus vaccine	86.7	
Deworming	61.0	
HIV test	88.1	
Mosquito net given	86.0	
MUAC measured	33.9	
Ultra-sound done	40.7	
Information given during ANC visit		762
Place of delivery	81.8	
Tests during pregnancy	81.1	
Own health	77.2	
Own nutrition	62.6	
HIV/AIDS	83.6	
Breast feeding	75.9	
Infant feeding	59.8	
IFAS	53.8	
Growth monitoring	56.7	
Total No. of ANC visits at full pregnancy		762
0	17.2	
1	7.0	
2	17.2	
3	28.6	
4+	30.1	
Post-natal care practices		
Time it took to take child to clinic for first the time		505
Imediately (within 24hrs)	7.7	
Within first 2 weeks	23.8	
Between 2 weeks and 1 month	17.6	
After 1 month	37.4	
Child not taken	12.5	
Don't intend to	1.0	
Seen by health worker after delivery	85.4	838
Time it took to be seen by health worker		716
Within 48hrs	32.0	
1-2 weeks	34.8	
4-6 weeks	36.5	

Supplementation and delivery

It is estimated that more than 40% of pregnant women worldwide are anaemic. At least half of this anaemia burden is assumed to be due to iron deficiency (WHO, 2012). Pregnant women require additional iron and folic acid to meet their own nutritional needs as well as those of the developing foetus. Deficiencies in iron and folic acid during pregnancy can potentially negatively impact the health of the mother, her pregnancy, as well as foetal development. Evidence has shown that the use of iron and folic acid supplements is associated with a reduced risk of iron deficiency and anaemia in pregnant women (Rahman et. al., 2016).

Most respondents (93.5%) reported receiving iron and folate supplements (N=651). The

total amount of iron and folate supplementation reported were given in the range of 0, 1-30,31-60, 61-90, 91-240 and reported at 33.9%, 28.2%, 17.1%, 9.1% and 11.3% respectively. A higher number (58.0%) of supplements were taken among those given between 1 – 30 days. However 65.9% of the respondents had been shown or heard information on IFAS with their main source of information being the Health facility (96.2%).

The nutrition commodities are important in the health of people by supplementing their diets. In the surveys a number of them were reported included; nutritional supplements, CSB, RUSF, herbal supplements, soil/mineral stones. Among these items it was report most of the respondents took soil/mineral stones (53.1%) and 4.9% took RUSF. It is reported that from the survey that Cooking oil (90.7%) and salt (97.4%) were the most consumed fortified/fortifiable foods. Only 26.4% of women believed drinking tea during or imediately after a meal.

The community perception around negative social myths and perceptions concerning IFAS was discussed during FGDs. The following beliefs concerning IFAS came up;

- Have other intentions like family planning
- Distance to HF discourage
- Some do not like the taste
- Some women report nausea and vomiting
- Limited information on importance of IFAS
- IFAS prolongs labor
- Lack of sensitization of men on importance of IFAS
- Too strong when taken on an empty stomach, and yet these is a dry place people take few meals, will lead to vomiting, hence taken when food is available

Table 6 Maternal micronutrient supplements intake characteristics and practices

Supplementation and delivery		
During pregnancy issued with iron and folate supplementation	93.5	**651**
Total given 0 1-30 31-60 61-90 91-240	 33.9 28.2 17.1 9.1 11.3	900
Took supplements from total given 0 1-30 31-60 61-90 91-240	 0.7 58.0 20.8 8.8 11.4	608
Shown or heard information on IFAS	65.9	838
Source of information		552

Health facility	96.2	
CHV	2.3	
Media	0.5	
other	1.0	
Took any nutrition commodities		835
Nutritional supplements	18.7	
CSB	8.2	
RUSF	4.9	
Herbal supplements	34.1	
Soil/mineral stones	53.1	
Consumes fortified/fortifiable foods		504
Packaged maize flour	4.4	
Wheat flour	21.0	
Margarine	4.6	
Cooking oil	90.7	
Salt	97.4	
Other (CBS, bread, milk powder)	1.4	
Drinks tea during or imediately after a meal	26.4	900
Frequency of tea intake		238
Rarely	40.8	
Occasonally	27.7	
Often	31.5	

Maternal nutrition knowledge

Most women believed a child should be put to the breast immediately after birth (91.7%) and should be given other liquids within first 3 days (14.8%). These findings indicated a high level of knowledge and attitudes towards initiation of breastfeeding practices.

Breastfeeding practice

In the survey the respondent reported that most of the children were ever breastfed (94.4%). There was a slight drop in use of prelacteal feeds, 18.3% of the children were reported to have been given prelacteal feeds compared to 19.4% in 2014 KAP survey, this was however not statistically significant change (-2.8;5.0 +-5.1). This is mostly practiced due to cultural practices as reported in the FGD, *"Herbs during the first day after birth" "Honey given before initiating breastfeeding so that the mouth of the baby does not close" "When a child is born we give the baby warm water before breast feeding to clean the child's throat and the stomach"*. The percentage of children who were put to the breast within one hour of birth was higher at 95.5%, compared to the 2014 KAP findings of 89.5%. Children that were exclusively breastfed to 6 months stood at 39.9% based on the 24-hr recall method this is slightly higher than the 37.9% in the 2014 KAP survey, but not statistically different (CI -6.9;10.9 +-8.9). Continued breastfeeding at 1 year (83.0%) and 2 years (52.8%) showed a declining trend as age progresses. The rates were significantly lower compared to the 2014 KAP figures of 85.2% and 65.7% respectively. 26.3% of the respondents reported

practicing bottle feeding among use of other drinking utensils.

Table 7 Maternal nutrition knowledge and breastfeeding characteristics

Maternal nutrition knowledge		
A baby should be put to the breast immediately they are born	91.7	**896**
A baby should be given other liquids within first 3 days	14.8	896
Breastfeeding practice		
Ever breastfed	94.4	896
Pre-lacteal feeds given	18.3	**896**
Early Initiation of breastfeeding (0-23 months)	95.5	**846**
Exclusive breastfeeding under 6 months (0-5 months)	39.9	233
Continued breastfeeding at 1 yr (12-15 months)	83.0	165
Continued breastfeeding at 2 yrs (20-23 months)	52.8	**127**
Use of bottle feeding and other drinking utensils (0-23 months)		896
Bottle with nipple and teat	26.3	
Cup with nipple and teat	15.5	
Cup with holes	20.5	
Cup with bowl no cover and with spoon	17.5	
Feeding with palm	0.3	
Guard/mkomoning	19.8	
Prelacteals given		167
Plain water	34.7	
Non-breast milk	15.0	
Gripe water	7.2	
Sugar/salt solution	4.2	
Formula	6.6	
Honey	0.6	
Traditional herbs	7.8	
	56.3	

Complementary feeding practices

The proportion of children aged 6-8months that received solid, semi-solid or soft foods was higher at 89.8% compared to the 2014 KAP survey at 70.8%, this could be indicative of children receiving either breast milk or animal milk with certain solid foods in their diets. The proportion of children with minimum dietary diversity (food from four or more food groups), shows poor dietary diversity between the two age categories listed by WHO, namely; 6-11 (25.0%) months and ages above 23 months (36.9%). This is despite the minimum meal frequency of at least 2 meals for 6-8months and 3 meals for 9-23 months old being high at 75.7% and 60.3% among breastfed children respectively. The poor dietary diversity scores contribute to the poor minimum acceptable diet proportions computed at 17.6%, 29.5% and 16.3% for the ages 6-8 months, 9-23 months breastfed and 9-23months non-breastfed respectively, perhaps this explains the very high stunting rates (44.9%) recorded in the West Pokot SMART Survey Report. More efforts need to be put in place, the good news is that there was a statistically significant increment in minimal acceptable diet and child dietary diversity in 2017 compared to 2014 KAP survey respectively

(minimum acceptable diet 6-8 months; 0.6;17.0+-8.2, 9-23 months; 8.7;19.5+-5.4 and child dietary diversity 14.3;24.5 +-5.1). However, the minimum meal frequency for 6-8months and 9-23months old children significantly dropped compared to 2014 KAP survey (6-8months; 13.9;29.5+-7.8 and 9-23months; 29.3;39.5+-5.1).

Table 8 Complementary feeding characteristics

Complementary feeding practices			
	2014	**2017**	**N**
Introduction of solid, semi-solid or soft foods (6-8 months)	70.8	89.8	**147**
Minimum dietary diversity (=<4)			
6-11 months	9.8	25.0	260
12-17 months	19.9	45.0	231
18-23 months	21.6	43.6	179
6-23 months	16.4	36.9	670
Minimum meal frequency			
6-8 months (2 times)	97.4	75.7	148
9-23 months (3 times)breastfed	94.7	60.3	522
9-23 months (4 times) non-breastfed	-	29.3	522
6-23 months (combined) breastfed	93.7	58.7	652
Minimum acceptable diet			
6-8 months	8.8	17.6	148
9-23 months breastfed	15.4	29.5	522
9-23months non-breastfed	-	16.3	522
6-23 months combined breastfed	12.6	25.0	522
Child dietary diversity			**666**
Grains roots and tubers		74.0	
Legumes and nuts		7.5	
Dairy		6.9	
Meats		34.8	
Eggs		35.7	
Vitamin A rich fruits and vegetables		80.9	
Other fruits and vegetables		70.0	
24Hr recall dietary % fulfilment			**102**
Energy		32.77	
Protein		37.0	
Fat		24.25	
Carbohydrates		37.1	
Vitamin A		335.3	
Iron		74.7	
Zinc		74.2	
Calcium		87.8	
Vitamin C		280.6	

Dietary intake data shows that the mean energy contribution from diet is at 32.77%, while proteins is 37.0%, carbohydrate intake was consistent with energy intake indicating it was

the predominant source of energy, considering that for breastfeeding children energy contribution from diet should range from 50%-75% this findings indicate that the children are not getting sufficient macronutrient intake from diet to complement breast milk intake. Micronutrient profiles indicate a range between 74.2% to 280.6% , it is expected these will complement breast milk contribution. This findings show that the children are not getting sufficient macronutrients intake, this could explain the high stunting rates recorded from previous surveys.

Responsive feeding

Responsive breastfeeding involves a mother responding to her baby's cues, as well as her own desire to feed her baby. Crucially, feeding responsively recognises that feeds are not just for nutrition, but also for love, comfort and reassurance between baby and mother. Research shows Active feeding behaviour compensates for low interest in food and positive effect on child growth (PAHO/WHO, 2001). In the survey, the most predominant action being offering another food/ liquid to encourage the child (86.0%). The findings indicate a need to educate and encourage the caregivers on responsive feeding activities.

Table 9 Responsive feeding of children

Responsive feeding yesterday		
Child ate all food he/she should	64.4	666
Did something to encourage child to eat;		429
Offered another food/liquid	86.0	
Encouraged verbally	4.2	
Modelled food	5.6	
Ordered strongly	3.0	463
Another person helped feed child	10.7	
Another form of encouragement	0.0	
Don't know	69.6	
Said something to encourage child to eat		
Ordered child to eat	21.8	
Praised child	68.5	
Asked child questions	4.1	
Talked about food	29.4	
Threatened the child	3.5	
Told child that she liked food	3.2	
Rewarded the child	11.4	
Talked about other things	8.2	
Don't know	0.4	
Child self-fed yesterday at any time	41.6	666
Breastfeeding practices last time child was sick		645
Less because child did not like	88.8	
Less because mother's decision	2.0	
More	0.6	
Same	3.7	
Never	4.3	
Don't know	0.5	
Non-breast milks and other liquids in sickness		645
Less because mother's decision	72.6	
More	2.6	

Same	7.0	
Never	12.1	
Don't know	5.8	
Amount of food during illness		645
Less because mother's decision	8.1	
More	2.2	
Same	57.4	
Never	31.3	
Don't know	1.1	
Feeding after illness		666
Less because mother's decision	15.9	
More	12.3	
Same	62.8	
Never	9.0	
How often food remains on the plate		666
Often/several times	2.0	
Few times	16.4	
Never	79.7	
Don't know	2.0	
Food that remains on the plate;		666
Put in the refrigerator	8.7	
Put in the cupboard	2.6	
Put elsewhere	10.8	
Thrown away	77.9	
Child received Vitamin A last 6 month	19.8	666
Child received de-worming tablets last 6 month	1.2	666

Maternal dietary diversity

Nutritious foods and diverse diets in sufficient quality and quantity are essential for maternal and child to meet their nutrient needs and support growth. This is especially important during the first 1000 days of the child's life, a critical window for the promotion of optimal child growth, health and development (Nguyen et al., 2013). Dietary diversity (DD), defined as the sum of food groups consumed over a period of 24 hours, has been documented as a valid and reliable indicator of dietary adequacy of nutrients (Nti, 2011). Development of the nine food groups was developed based on the FAO (2011) guidelines. Starches (97.0%) and Dark green leafy vegetables (79.9%) were the major diets from the maternal dietary diversity; this was almost similar to the values in the KAP 2014 survey. Animal Source Foods (ASF) being was the least consumed at organ meats (5.8%), meats and fish (14.8%) and eggs (7.8%). Milk and milk products provide good amounts of calcium and high value protein sources reported 63.3% (N=900).

Table 10 Maternal dietary diversity and MUAC status

Maternal dietary diversity		
Food groups		**900**
Starches	97.0	
Dark green leafy vegetables	79.9	
Other Vitamin A rich fruits and vegetables	10.1	
Other fruits and vegetables	61.1	
Organ meats	5.8	
Meats and fish	14.8	
Eggs	7.8	

Legumes, nuts and seeds	26.2	
Milk and milk products	63.3	
Maternal dietary diversity categories		**900**
Poor dietary diversity (below 5 food groups)	77.8	
Optimal dietary diversity (5 and above food groups)	22.2	
Maternal MUAC (at 21cm cut-off)		**900**
Pregnant and lactating Acute malnutrition	1.4	**827**
Women not pregnant not lactating	0.0	**73**
Maternal MUAC (at 23cm cut-off)		**900**
Pregnant and lactating Acute malnutrition	16.2	**827**
Women not pregnant not lactating	5.5	**73**

Maternal MUAC analysis using a MUAC cut-off of 21cm for both pregnant/lactating and non-pregnant/lactating women reveals acute malnutrition at 1.4% and 0% respectively, while when the MUAC cut-off is set at 23cm reveals maternal acute malnutrition at 16.2 and 5.5% respectively. According to Antierens et al (2013), a cut-off of 23cm is a better predictor of birth outcomes in humanitarian context. The findings therefore indicate a high level of acute malnutrition among pregnant and lactating women.

During FGDs the following the following factors were cited as influencing feeding of pregnant and lactating women in the County;
- Low food variety
- Poor road infrastructure hence moving commodities costly
- Low food availability
- Diseases like malaria and typhoid
- Harsh environment
- Domestic violence
- Maternal workload
- Limited sources of income
- Long distances to fetch water
- Feeding patterns, encourage one meal a day

Communication for Development (C4D)
Upon recommendations of the 2014 C4D assessment, a draft C4D strategy document has been written. The document was produced through a multi-sectoral team comprising; nutrition, Communication strategy, Health communication, public health and nursing departments.

Messaging has already been done, and is focused on three behavior targets; breastfeeding practices, complementary feeding, and hygiene.

Eleven key messages have already been developed, and pre-tested in the community. Health workers have also been sensitized on the C4D concept. Among the piloted messaging channels have been; MtMSG's, IEC materials for child nutrition, incorporation of nutrition talks in local FM radio (Kalya).

Socio-cultural issues around maternal feeding practices were also discussed at the FGDs and the following issues emerged; for behavioral issues C4D could target changing

community perceptions;

Table 11 Socio-cultural barriers around maternal food choices

- Beans not recommended - Eggs may lead to a big baby - Green vegetables - avocado - Meat from cow bitten by a snake - Locusts not allowed - Milk from a one eyed cow - Underground honey (kosomion) - Alcohol - Tobacco - Prohibited drugs - No water for one month - Meat from an animal killed by hyena - Meat from a dead animal - Eat in moderation so child does not grow big in womb - When there is 'ptolok' no eating of vegetables - Maize eaten by wild pigs - Milk from season of army worms - Milk from Merino sheep - Drinking milk when there is army worm invasion	- Some foods will make baby get to big hence complications during delivery - Child will shiver and produce regurgitation (army worms) - Too fatty will make kid big (avocado) - Childs head will be affected as 'ntolok' (green veges) - Child will have twisted mouth and drool (hyena meat) - Child will be too soft, no bones (snake bitten) - Because of wounds/mochoon (army worm) - Child will get swollen then die (dead animal meat) - Lots of wounds on the baby (hyena killed animal). - Child will vomit greenish (army worm)

It was however noted that there is need to have clear C4D M&E plan of messaging and dissemination.

During FGD's respondents proposed the following ideas in regards to health and nutrition communication on MIYCN;

- Education on practical feeding of a child and food preparation
- Men go to church to be taught
- Encourage men to accompany women to clinic
- Empower men with info to take charge and inform women to attend clinic
- Integrate health communication with water and farming, sanitation, schools interventions
- Seminars for all including men, women
- Target seasons when delivery is high conduct education then
- Training seminars for both men and women
- Utilize public barazas to sensitize community
- Reach men in their 'kokwo' places
- Promote IPC – Inter personal communication
- Use Kalya FM.
- Establishment of father to father support groups on MIYCN and family nutrition

Key quotes were selected from the FGD's that highlight perceptions and attitudes that require targeting during C4D to tackle barriers while enhancing boosters to MIYCN;

- *'Education concerning nutrition should be given to mothers mostly'* – Male leaders FGD.
- *'all women should follow what their men say'*- women FGD.
- *'After delivery that particular house should not be swept for one month until traditional ceremony is done'*- Male leaders FGD.
- *'Women have accepted but they need their men to be involved'*-Women FGD
- *'Men have not been reached by IYCN information as they have given responsibility of childcare to women'*-Men FGD.
- *'When you educate a woman you educate the whole community'*-women
- *'a woman who has delivered should not drink water for 3 months'*-women FGD
- *'Health facility is seen as a home for the sick and where people die, hence no need to go if you are not sick. Hence discourage ANC and PNC visits'*- Men FGD.
- *'The men in this community were not informed about iron or IFAS'*-Men FGD.
- *'The life of a mother is saved if se delivers in a health facility'*- Men FGD.
- *'IFAS are too strong when taken on an empty stomach, and yet these is a dry place people take few meals'*-Men FGD.

CONCLUSIONS

Based on the above findings we can draw the following conclusions;

Household characteristics indicate that majority of the caregivers had incomplete primary education (61%), in terms of preferred channel of communication majority of the respondents indicated their top three preferred channels as; Local radio (Kalya FM), Community baraza's, and Health facility IEC materials.

Home deliveries still high at 47.5% this still poses greater challenge in terms of maternal and child mortality. It is however worth noting that this was significantly lower than the proportion reported in 2014. This indicates that on-going interventions to encourage facility delivery are bearing fruits.

Diarrhea and URTI were the major childhood illness reported for the two weeks preceding the survey. In terms of diarrhea management, the practices are still sub-optimal, further hygiene practices such as hand washing, are low especially when it comes to practicing hand washing during all the four critical times.

ANC attendance indicates even though overall 90.9% of women ever attended ANC, a third (30.1%) attended four or more times which is the ideal recommended practice. Majority of those attending ANC did so during the second trimester, thereby missing out on some of the benefits such as folic supplementation for optimal foetal growth. Comparing to 2014 KAP survey there was significant change in those proportions.

Post-natal care for women is one of the key pillars in securing maternal health. Only 32% were seen by a health service provider within 48hrs of delivery. Yet, the first 48hrs post delivery report the highest rates of maternal mortality when not attended to by a skilled birth attendant. It requires therefore that the 85.4% of respondents who were seen by a health worker after delivery be seen within the first 48hrs.

Iron folic acid supplementation is critical in maternal nutrition enhancement. Even though 93.5% of respondents received IFAS during pregnancy, majority (45.3%) only received between 1-60 tablets, with less than half taking up all the supplements given. It is worth noting that 53.1% reported pica practice, this poses a public health challenge to pregnant women.

Nutrition knowledge is high among the respondents; however socio-cultural practices seem to hinder translation of these high positive knowledge in to optimal practices.

Exclusive breastfeeding was only practiced by 39.9%, there still room to do more. Compared to 2014, the trend is for an increase in EBF rates, but not a significant change. In spite of high nutrition knowledge, responsive feeding practice and feeding a child during illness is still low.

Complementary feeding practices recorded a significant increase in child minimum acceptable diet, and dietary diversity compared to 2014, but a decrease in minimum meal frequency compared to the previous AP survey. The proportions are however, still below par and hence need for concerted efforts to increase the proportions of children accessing optimal diets so as to improve child nutrition.

Child dietary intake indicates children are not getting sufficient macronutrients from diet to complement breast milk.

Only 22.2% of the women had an optimal diet based on five or more food group's consumption. Overall, 16.2% of the pregnant and lactating women were acutely malnourished.

A C4D strategy draft document is ready, and requires completion and rolling out. The document could benefit from some of the findings of this survey especially countering the negative attitudes and perceptions highlighted as key barriers to various MIYCN indicators.

(LESSONS LEARNED &) RECOMMENDATIONS

1. Child feeding practices (breastfeeding and complementary feeding) require behavioral interventions that target socio-cultural barriers and boosters suing innovative communication channels and messaging
2. Integration of maternal health components of ANC and PNC is needed so as to tackle underlying causes of child malnutrition
3. Structural challenges such as distance to health facilities, poverty, hunger remain key basic challenges, there is need for advocacy to focus on resource allocation to tackle this barriers
4. Health facility and practices cited as barriers to health seeking practices need to be addressed through consultative meetings among health care managers
5. IFAS uptake faces many socio-cultural myths and negative attitudes from caregivers, there is need to address these through C4D BCC interventions
6. WASH interventions to tackle behavioral causes of diarrhea which is a major childhood illness is needed especially when it comes to water access as well as hand washing an hygiene practices
7. Maternal nutrition interventions targeting behavioral as well as access to diverse diets are needed to improve maternal diet quality, this could include Agriculture department linkages with nutrition.
8. C4D messaging to incorporate the barriers identified in the survey to form the basis of engagement with the different levels of stakeholders in order to change negative behaviors.

References
1. AED (2003) Making sense of focus group findings: A systematic participatory analysis approach. Washington DC.

2. Antierens V.M., Sackl A., Staderini N., Captier V. (2013) Which anthropometric indicators identify a pregnant woman as acutely malnourished and predict adverse birth outcomes in the humanitarian context? PLOS Current Disasters, 2013 June 7. Edition 1. Doi:10.1371/currents.dis.54a8b61c1bc031ea140e3f2934599c8.

3. CARE (2010) Infant and young child feeding practices. Collecting and using data: A step by step guide. Cooperative for assistance and relief everywhere Inc. Boston.

4. FAO (2011) Guidelines for measuring household and individual dietary diversity. Rome.

5. FAO, 2011. Guidelines for measuring household and individual dietary diversity www.fao.org/fileadmin/user_upload/wa.../FAO-guidelines-dietary-diversity2011.pdf

6. Integrated Smart Survey West Pokot County Kenya .July 2015

7. Nguyen, V.K., Zarowsky, C., Haddad, S., 2013. Beyond "vulnerable groups": contexts and dynamics of vulnerability. Global Health Promotion. 20(S1l), 3–9.

8. Nti, C. A., 2011. Dietary Diversity is Associated with Nutrient Intakes and Nutritional Status of Children in Ghana. *Asian Journal of Medical Sciences. Vol 2, No 2*

9. PAHO/WHO, 2001. PAHO/WHO Guiding principles for Complementary Feeding of the Breastfed Child

10. Rahman, A., Leppard, M., Rashid, S., Nauruj, J. and Hashima, E. N., 2016. Community perceptions of behaviour change communication interventions of the maternal neonatal and child health programme in rural Bangladesh: an exploratory study. *BMC Health Services Research DOI: 10.1186/s12913-016-1632*

11. WHO (2001) Antenatal Care Randomized Trial: Manual for the Implementation of the New Model. WHO/RHR/01.30. Geneva: World Health Organization; 2001.

12. WHO (2010) Indicators for assessing infant and young child feeding practices: Part 2 – Measurement. Geneva.

ANNEX 1: SURVEY QUESTIONNAIRE

										MINIST
				MATERNAL, INFANT AND YOUNG CHILD NUTRITI						
									KAPS (	

(double click in the box to open tool)
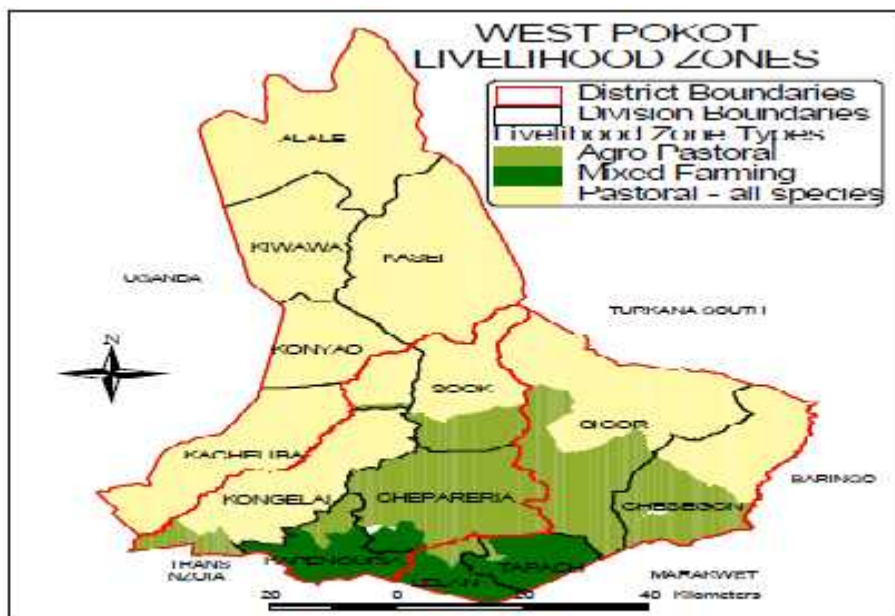
ANNEX 2: MAP OF WEST POKOT COUNTY

Figure 1: West Pokot County Map

COMMUNICATION FOR DEVELOPMENT (C4D) FGD AND KII DATA COLLECTION TOOLS

CONSENT FORM

The West Pokot County Health Department and ACF are conducting a Knowledge Attitude and Practice (KAP) and C4D exercise to determine factors (boosters and barriers) that influence Maternal Infant and Young Child Nutrition (MIYCN) practices in West Pokot County. The information generated would inform the implementation of Social Behaviour Change Communication interventions and messages to influence positive behavioural outcomes. Kindly provide as much information as possible. The information you provide will be treated with confidentiality. With your consent, I will appreciate your participation in the FGD/KII. Thank you.

I am going to ask you some questions about MIYCN programme, please let me know if you need me to clarify any of my questions. Feel free to ask any questions you may have.
Can I start now?

Ground rules

1. This session will take 1 – 1 ½ hours. This session will be tape recorded and we will take some notes
2. Speak clearly one at a time.
3. All persons will be required to participate.
4. There are no right or wrong answers
5. Assurance of anonymity and confidentiality. You can introduce yourself with whichever name you want not necessarily your real name.
6. Participation is voluntary

FGD GUIDE TO BE ADMINISTERED SEPERATELY TO THE FOLLOWING GROUPS AS SCHEDULED

a) **WOMEN**

b) **MEN**

c) **COMMUNITY LEADERS**

d) **CHVs**

1. **How do pregnant and lactating mothers normally feed in this community (any special foods, or food taboos)?**

   Probe:
   o What factors influence these feeding practises?

- o Which foods are recommended for pregnant women in this community? Why?

- o Which foods are **NOT** recommended for pregnant women in this community? Why?

- o Which foods do breastfeeding mothers in this community eat to enhance breast-milk production? Why?

2. **What challenges do families in this community face in ensuring that pregnant and lactating women are properly fed?**

   Probe:
   - For pregnant women
   - o For lactating women

3. What is the community perception about Iron and folate supplementation? What are the issues they are concerned with when it comes to IFAS intake?

4. Please tell us about the communities attitudes, perception and practices as regards each of the following (discus each individually and probe for as many responses);

   a. Exclusive breastfeeding & complementary feeding practices,

   b. ANC attendance

   c. PNC attendance,

   d. linkage to mother support groups,

   e. facility delivery,

5. In your opinion, are there health facility related factors in West Pokot that you think;

   a) Encourage/motivate women to seek health services?

   b) Discourage women from seeking health services?

6. If YES for each (encourages/ discourages), discuss in detail those factors (in relation to;

   a. breastfeeding & complementary feeding practices,

   b. Iron and folate supplementation,

   c. ANC & PNC attendance,

   d. linkage to mother support groups,

   e. facility delivery,

7. In your opinion, are there community and cultural related factors in West Pokot that you think discourage or encourage women to seek health services as recommended by health care workers? YES or NO.

8. If YES in 7 above, discuss in detail those factors (motivators/barriers) under the following topics;

   a. breastfeeding & complementary feeding practices,

   b. Iron and folate supplementation,

   c. ANC & PNC attendance,

   d. linkage to mother support groups,

   e. facility delivery,

9. On a scale of 1 to 3 (1= poor, 2=fair, = 3=Good), how would you rate the reach/access of health and nutrition communication in the community generally?

10. In detail discuss practical suggestions on how health and nutrition communication can be strengthened and improved to target the;

   a. Men

   b. Women

   c. Community in general