



Helen Keller
INTERNATIONAL

POST EVENT COVERAGE SURVEY OF VITAMIN A SUPPLEMENTATION AND DEWORMING IN TANZANIA

July 2015 Survey Findings



Foreign Affairs, Trade and
Development Canada

Affaires étrangères, Commerce
et Développement Canada



**TANZANIA FOOD AND
NUTRITION CENTRE**

EXECUTIVE SUMMARY

The Post Event Coverage Survey of Vitamin A Supplementation and Deworming in Tanzania July 2015 was done to validate VASD administrative coverage data and identify factors associated with the participation of caretakers in the VASD distribution event. This cross-sectional cluster survey randomly identified 900 households and 900 children, 15.6% of which were between 6-11months and 84.4% of which were children between 12-59 months at the time of VAS distribution. Coverage for children between 6-59months during the June 2015 distribution event in Dar es Salaam was 53.4%. Deworming coverage increased by 38% among children 12-59 months (32.1% to 47.3%). But 22% of children aged 6-11months received deworming tablets which are contrary to WHO protocol. 50.7% of caretakers responded that they were aware of the event, and of those who missed VASD distribution, 77% of caretakers reported not being aware that the event was happening. Only 24.4% of caretakers reported having received messages regarding the events.

Despite low coverage, PECS findings reveal that there is a 50% increase for VAS and a 38% increase for deworming from the previous event. Conducting the event in Dar es Salaam in June in-line with national communication campaign and mobile clinics contributed to this increase. Efforts were made to involve street leaders to conduct social mobilization by providing them with training and advocacy materials; however data shows that this strategy was not effective. The major challenge for increasing coverage of VASD continues to be a lack of awareness among caretakers with 72% reporting that their children missed VASD because they were not aware of events happening in their areas.

In order to increase coverage in Dar es Salaam region, there is a need to improve the information flow to caregivers, providing them with information about what is happening and when. For future campaigns, we propose using SMS technology to send push messages to caregivers to directly provide them with information, as well as increasing use of radio. Finally, mobile clinics are an excellent way to reach hard to reach populations, and should be a normalized feature in future events.

HKI should advocate with TFNC to follow up with council health management teams (CHMTs) to ensure there is proper planning for implementation of VASD events, supportive supervision and reporting. HKI should also follow up with Ministry of Health and Social Welfare (MOHSW) and TFNC to ensure all councils conduct a regular orientation to VASD service providers on proper administration of Vitamin A capsules and deworming tablets, determining correct age and dosage for children, and correct completion of tally sheets.

Acronyms Guide

CHMT	Council Health Management Team
DED	District Executive Director
DIVO	District Immunization and Vaccine Officer
DNuO	District Nutrition Officer
DRCHCO	District Reproductive and Child Health Coordinator
EPI	Expanded Program on Immunization
HKI	Helen Keller International
PECS	Post Event Coverage Survey
PPS	Probability Proportional to Size
RBP	Retinol Binding Protein
TDHS	Tanzania Demographic and Health Survey
TFNC	Tanzania Food and Nutrition Center
UNICEF	United Nations Children's Fund
VAD	Vitamin A Deficiency
VAS	Vitamin A Supplementation
VASD	Vitamin A Supplementation & Deworming
WHO	World Health Organization

1. Introduction

1.1 Background

Vitamin A Deficiency (VAD) is the leading cause of preventable blindness in children. An estimated 250,000 to 500,000 Vitamin A-deficient children become blind every year, half of them dying within a year of losing their sight. VAD in children can also cause severe visual impairment and night blindness, and significantly increases the risk of severe illness and death from childhood illnesses such as diarrhea and measles¹.

Bi-annual Vitamin A Supplementation (VAS) has been proven to reduce child mortality by 23-24% for children aged 6-59 months in areas where VAD is prevalent. In Sub-Saharan Africa, it is estimated that 42% of children under 5 years of age are at risk of VAD. Therefore, adequately controlling this deficiency could potentially avert over 645,000 child deaths per year in the region.

In Tanzania, The National Vitamin A Survey in 1997) measured the prevalence of VAD in children under 5 years at 24% via serum retinol levels, and in 2010 via Retinol Binding Protein (RBP) the VAD in children under 5 years was measured at 33%, indicating that VAD has increased. When measured among lactating women, about 69% had breast milk retinol levels below 30 µg/dl in the 1997 study, and the prevalence among women of reproductive age in 2010 was measured at 37% using RBP. These statistics suggest that in spite of the method of measurement, the proportion of children and lactating women with VAD are higher than the WHO minimum levels for public health significance (>20%).

The long-term objective of the Vitamin A Supplementation program in Tanzania is to reduce VAD and its consequences to levels where they are no longer of public health significance. Beginning in 1997, VAS was integrated into the Expanded Program on Immunization (EPI) program targeting children under 2 years and postpartum women. In 1999 & 2000 during the measles vaccine campaign, children aged 6-59 months in 36 and 52 selected districts, respectively, in Tanzania mainland were also given Vitamin A supplements. Coverage in these pilot campaigns was shown to be 94% and 99% in 1999

¹ WHO 2015

and 2000, respectively. These results led to the beginning of the national biannual VAS to children aged 6-59 months in 2001. VAS distribution was initially done through campaigns on 16th June during the commemoration of the Day of African Child and on 1st December during World Aids Day. Currently, the distribution is extended through the whole month of June and December (Child Health Days) allowing districts more flexibility to plan their days of implementation. VAS is distributed both in all reproductive and child health clinics (RCH) and at temporary posts such as schools, village offices or open spaces which are easily accessible by the general population of that area. The coverage which is based on administrative data collected during the implementation days using tally sheets has been consistently high, almost always reporting over 80% coverage.

In February 2014, Helen Keller International (HKI) and Tanzania Food and Nutrition Centre (TFNC) conducted a Post Event Coverage survey (PECS) following the January 2014 distribution event in Dar es Salaam. The purpose was to validate administrative coverage data collected through the tally sheet as well as other related objectives around sources of knowledge about campaigns and uptake. The survey revealed results which varied widely from the tally sheets for the same area. According to the PECS, in Dar es Salaam only 36% of the target population received VAS and only 32% received deworming. 90% of the children who missed VASD did so due to lack of awareness among caretakers. As a result of the survey, a number of strategies were launched to increase coverage, including advocacy meetings with Dar es Salaam community leaders to orient them about VAS and encourage their involvement in conducting social mobilization activities around VAS events; Holding an official press release and launch of the VAS campaign involving journalists from multiple print and media houses; and launching a mobile clinic to distribute VAS directly to communities in areas with high populations that were most likely to miss regular VAS activities. Efforts were aimed at raising that 36% coverage measured in the 2014 PECS², the impacts of which would be measured by another round of PECS following June 2015 distribution. HKI and TFNC conducted a second round of PECS in the months of July and August 2015 in Dar es Salaam same region to measure the contribution of above-

² Post Event Coverage Survey of vitamin a supplementation and deworming in Tanzania-final report on March 2014 survey findings

mentioned innovations in increasing coverage.

1.2 Statement of the Problem & Rationale for Survey

VAS coverage figures are based on administrative data collected during the implementation days using tally sheets. Reporting of administrative data from regions often takes up to four months to reach the national level for official coverage estimates, putting the accuracy of the data into question. Recent validation surveys have reported coverage that is lower than the administrative data suggests. For example, a 2010 VAS PECS conducted by HKI and TFNC showed that district level coverage for children 6-59 months of age during June 2010 VAS distribution round was 65%, in contrast to the 95% tally sheet coverage reported by the same district. Results from the Tanzania Demographic and Health Survey (TDHS) in 2010 further supported the inaccuracy in data generated from the district level tally sheets, reporting national coverage for VAS at 61% but varying from 50 to 80 percent when broken down by region.

PECS measures coverage and looks at causal factors relating to uptake or lack of it. The 2010 PECS showed that 53% of respondents reported that their children missed VAS because of their caretakers' lack of awareness about the events. To address the gap in communication, HKI and TFNC implemented a national mass media communication campaign through television and radio during the June 2012 VAS distribution events. Additionally, a social mobilization toolkit was developed by HKI to assist districts in conducting social mobilization events. Results from 2012 PECS showed that national VAS coverage had increased from 65% (in 2010) to 82% (in 2012) marking a 17 percentage point increase in coverage following the mass media communication campaign. This impressive increase in coverage demonstrates that increasing VAS awareness among caretakers is an important aspect of the national VAS program.

In 2014, we opted to target the PECS data collection to areas which had historically performed poorly with VASD. Dar es Salaam, the country's business capital and largest city has a history of low VAS coverage, and 2014 proved to be no exception. After the December distribution, a PECS survey showed coverage in Dar es Salaam was as low as 36%, again with respondents reporting a lack of knowledge of when and where events were taking

place, and lacking understanding of the value of the intervention. The HKI team, in collaboration with TFNC, launched a multi-faceted strategy designed to raise awareness around VASD and appreciation of its importance in the lead up to the June campaign. Activities included engaging community street leaders as mobilizers for the event where advocacy meetings with them in each district Kinondoni, Ilala, and Temeke were conducted to orient them on the importance of Vitamin A supplementation and deworming to children, eligible age of children, when and where the service is provided as well as their role on informing caretakers to take their children for VASD. Working with media houses to raise awareness where about 45 print and media houses were invited and oriented on VASD and their role to create awareness and correct any misconception about VAS in the community, and launching VASD mobile clinics in areas with high populations which were the least likely to have easy access to services. Three vehicles from each district branded with VASD logo, equipped with loudspeakers, VASD and a team of 5 service providers were deployed to raise a buzz, distribute VAS and Deworming to children under five, and to ensure maximum participation of target groups in the campaign. In July, the HKI team launched another PECS in Dar es Salaam.

1.3 Objectives of the Survey

1.3.1 General objective

- To validate VASD administrative coverage data and identify factors associated with participation of caretakers in the VASD distribution event

1.3.2 Specific Objectives

1. To assess contribution made by the involvement of Dar es Salaam community leaders in conducting social mobilization activities in increasing VAS coverage in Dar es Salaam
2. To assess implementation of twice-yearly VASD events in Dar es Salaam

2. Methodology

2.1 General Design

The study was conducted as a cross-sectional sample survey, where households were

randomly selected to obtain a representative sample of the larger population, in this case, the 3-district area of Dar es Salaam. In order to establish a representative sample of households, 30 random clusters from within the three districts were selected using probability proportional to size (PPS) sampling across wards (the smallest unit for which there is population data). As well 30 households in each cluster were visited to make the final sample of 900 households (30clusters X 30hh)

Quadrant methodology was used to determine which households would be surveyed. At the center of a cluster, a pen was spun to determine walking direction. Selection of the starting household was done by enumerators and supervisors walking in the direction of the tip of the pen assigning each household passed a number in numerical order until reaching the 10th house and randomly selecting a starting household. Once the starting household was visited, enumerators proceeded in the direction that the tip of the pen was pointing towards, surveying every house in that directions until 30 households were reached. In the cases where the boundary of the cluster was reached before completing the target number of questionnaires, enumerators turned to the right and continued until completion.

Households were screened for eligibility in the survey based on having a child 6-59 months of age at the time of the June 2015 round of supplementation. Within each eligible household, only one eligible child was selected at random (names picked from a hat). Ages were verified by health cards, and those with unknown age had their age estimated using life event calendars. Where a household was found to have not received VAS during the national round, a referral slip was given to the caretaker upon completion of the survey. Referral slips inform the healthcare provider that the child has missed the VASD round and, therefore, requires a dose.

Four types of informants were surveyed, 1) caretaker/households; 2) health workers; 3) district VAS coordinators and 4) community leaders. Data from caretakers was collected using the ONA mobile phone data collection system while paper surveys were used to collect data from health workers, district VAS coordinators and community leaders.

2.2 Data Management and Reporting

PECS Data collection in the field was done using Android-based tablets. These were installed with free and open-source set-off tool know as Open Data Kit (ODK collect) which provided a solution in creating a data collection survey form in XLS format, and data collection on a mobile device (tablets).

2.3 Statistical Analysis

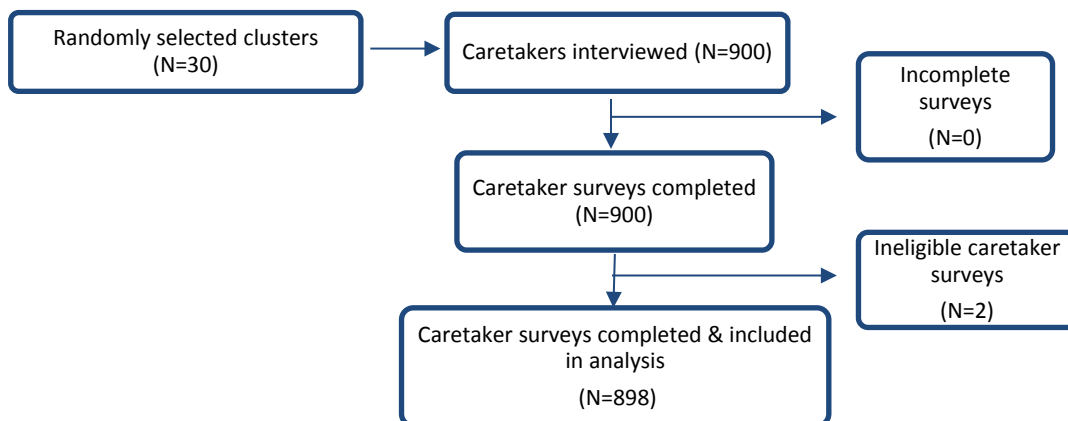
The collected data was sent to the ONA-Beta server and extracted to Excel and IBM SPSS version 22 for further cleaning and analysis. A p-value of < 0.05 was considered significant. In order to test for associations, Chi-square and Fischer's Exact tests were conducted for categorical variables. A logistic regression was performed with variables showing significant associations to determine predictors of VAS.

3 Study Findings

3.1 Enrollment and Final Sample

The final sample of eligible interviews totaled 898 caretakers representing 898 children between 6-59 months at the time of VASD distribution; as well as 23 health workers and 14 community leaders. Two surveys were not included in the final analysis because the respondents did not fit the selection criteria (children were below 6 months at the time of distribution). Figure 1 shows a detailed flow chart of the final participants.

Figure 1. Flow of participants in final analytical sample



3.2 Description of the Sample

Table 1 below provides an overview of the characteristics of the final sample included in the analysis. Of the final sample, 15.6% were children between 6-11 months and 84.4% were children between 12-59 months at the time of VAS distribution. Ages were verified by Child Health Cards for 86% of children in the sample.

Table 1. Descriptive statistics of children			
Topic	Variable	(N=898)	%
Age in months	6-11 months	140	15.6
	12-59 months	758	84.4
Gender	Female	430	47.9
	Male	468	52.1
Child birth certificate/Health Cards available	Yes	772	86.0
	No	126	14.0

Table 2 describes characteristics of children's caretakers who were interviewed during the survey. 91.5% were biological mothers which are associated with a higher level of accuracy in child related data. 3.8% of caretakers were grandmothers who were responsible for their children's children. More than half (66%) of primary caretakers completed primary level of education, 21.3% reached secondary education and just 3.5% acquired university education. 6.1% did not attend any formal education.

Table 2. Descriptive statistics of children's caretakers			
Topic	Variable	(N=898)	%
Relationship with Child	Mother	822	91.5
	Father	8	.9
	Grandmother/Grandfather	34	3.8
	Other	34	3.8
Level of education completed by caregiver	None	55	6.1
	Some Primary	23	2.6
	Completed Primary	598	66.6
	Secondary	191	21.3
	University	31	3.5

Table 3 describes household level statistics. The main source of income was determined by the employment of the secondary caregiver. 50% of respondents reported their major source of income was business, followed by formal employment (25%), and informal employment 21.5%. 2.7% of respondents reported their main source of income as farming, and 8 respondents reported being unemployed. Results for the source of drinking water were not surprising given the urban classification of the selected communities. 76% of

Table 3. Descriptive statistics of the households			
Topic	Variable	(N=898)	%
Main source of income for the household (N=898)	Business	447	49.8
	Formal employment	226	25.2
	Informal employment	193	21.5
	Farming	24	2.7
	Unemployed	8	.9
Source of Drinking Water	Public Tap	336	37.4
	Private Tap	278	31.1
	Purchased	196	21.8
	Covered Well	69	7.7
	Uncovered Well	19	2.1
Type of Toilet	Pit Latrine	516	57.5
	Modern	376	41.9
Main Cooking Fuel Source	Charcoal	471	52.4
	Kerosene	265	29.5
	Gas	115	12.8
	Firewood	28	3.1
	Electricity	19	2.1
Electricity in House	Yes	620	69.0
	No	278	31.0
Number of Rooms used for sleeping	1	483	53.8
	2	209	23.3
	3	133	14.8
	4	51	5.7
	>4	22	2.4
Wealth Quintile	First (lowest)	192	21.4
	Second	395	44.0
	Third	272	30.3
	Fourth	35	3.9
	Fifth	4	.4

respondents get their water from improved sources, including public water taps(36%), private taps (31%), and covered wells (8%). 22% of respondents purchase their household water, but it is not clear if the water purchased is from a professionally bottled water vendor, or an informal/unimproved water source. Only 2% of the population reported

relying on an unimproved water source for their household water. The primary type of toilet among respondents was a pit latrine (58%), and only 6 respondents reporting no access to their own toilet. The main cooking fuel source was charcoal, followed by kerosene (52%, 30%), with only 2% of the population surveyed reporting using electricity in spite of the fact that 69% reported having electricity in their homes. 54% of households had only one room which was used for sleeping, a figure which did not change as the number of children in the home increased.

Wealth quintiles were established through a series of proxy indicators around ownership of goods. Respondents were asked to identify whether or not they had one or more of a list of nine items which were weighted to be relatively equal in value. Respondents who had one or less fell into the first category, 2 to 3 went into the second, and so on. The majority of respondents fell into the second or third quintile of wealth. More than 92% of households surveyed reported living in structures with cement brick walls, corrugated metal roofs, and cement or tile floors.

3.3 VAS Coverage among Children 6-59 Months of Age during Supplementation Event

Coverage for VAS among children between 6-59 months during the June 2015 distribution event in Dar es Salaam was 53.4%. While this was nearly a 50% increase from the previous PECS (36%), coverage is still far below the target of 80%. Administrative data collected through tally sheets from the same round of distribution reported coverage at 85.2% for Dar es Salaam region, revealing a persistent gap between data provided through tally sheets, and that provided by the PECS. Table 4 provides a snapshot of coverage over the June 2015 event. When dissected by key demographic features, only age seems to be a factor influencing exposure to the VASD intervention. Children aged 6-11 months were more likely to receive VASD compared to children aged 12-59 months. This is likely because mothers of children under 12 months are visiting health facilities more frequently, and so are more aware of upcoming campaigns, or happen to be at the clinic during a campaign. Very little difference

Key Finding:
The coverage of VAS for children between 6-59 months was 51.7% in the June 2015 distribution round in Dar es Salaam region, a 35% increase from previous PECS in Dar es Salaam, but well below the 80% coverage target.

was seen between gender or wealth quintiles, although some variation was seen with the first quintile being least likely to attend VASD events (55% did not receive), and the fourth and fifth quintiles being the most likely (59% and 53% received respectively).

3.4 Coverage of De-worming

Key finding:

There is an increase in deworming coverage by 15.3% from previous PECS, however; 22.8% of children 6-11 months received deworming in spite of the fact they are considered by WHO as too young for treatment.

The result shows 38% more children between 12-59 months received deworming tablets (32.1% to 47.3%), compared to previous PECS results, however, coverage is still well below the target of 80%, More concerning, respondents reported that 22.8% of children aged 6-11 months received deworming treatment. This is a clear violation of both national and WHO protocols for distribution of deworming tablets as the key drugs used in campaigns (mebendazole/albendazole) have not been proved to be safe and effective in children under 1-year-old. This clearly highlights an immediate need for additional training of health care workers and staff engaged in supplementation campaigns on proper administration of drugs.

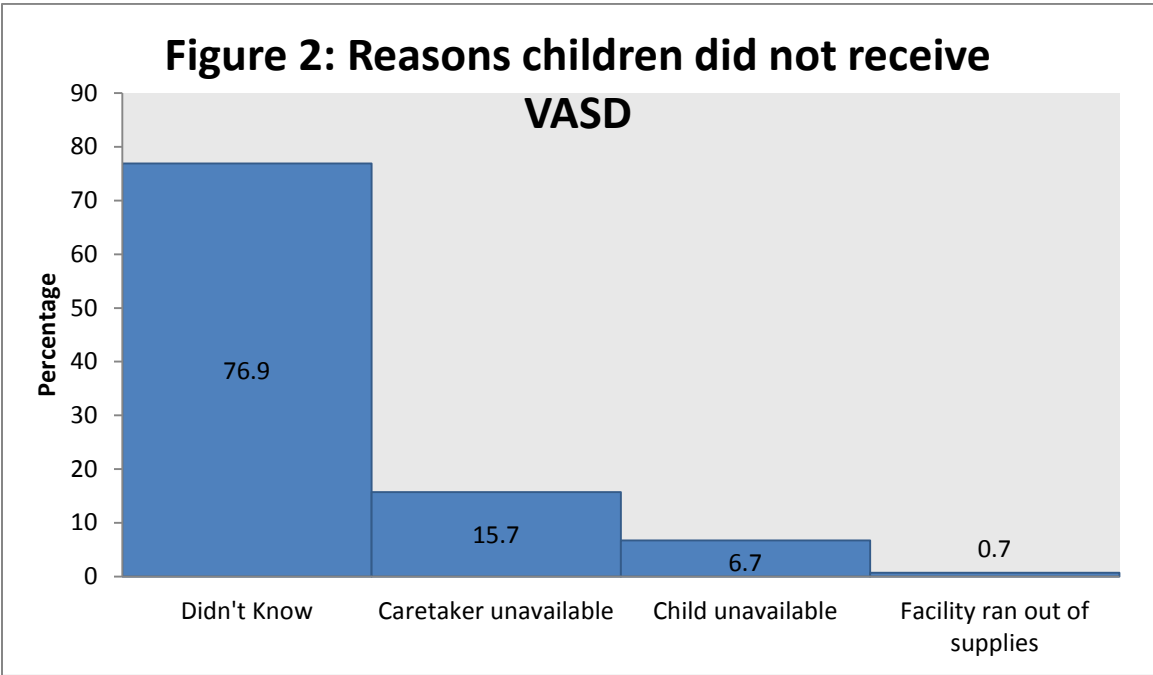
Table 4. Associations between Vitamin A supplementation status and characteristics of children 6-59 months

Topic	Variable	Received VAS	Dewormed	Significance
By Age	6-11 months (N=140)	62.8% (N=88)	22.8% (N=32)	VAS (p=.047) Deworm (p=.00)
	12-59 months (N=758)	51.7% (N=392)	47.3% (N=359)	
By Sex	Female (N=430)	55.3% (N=238)	45.5% (N=196)	VAS (p=0.547) Deworm (p=.491)
	Male (N=468)	51.9% (N=242)	41.6% (N=195)	
By Wealth Quintile	First (lowest) (N=192)	53.1%	39.5%	VAS (p=0.461) Deworm (p=.220)
	Second(N=395)	51.1%	41.5%	
	Third (N=272)	57.3%	48.1%	
	Fourth (N=35)	45.7%	45.7%	
	Fifth (Highest) (N=4)	100%	100%	

3.5 Awareness of caretakers about VAS event

Caretakers were asked whether they had been aware of the VASD event happening in their areas. 50.7% responded they were aware of the event, 49.3% were unaware. Figure 2 provides information and insights into the reasons children missed the most recent

supplementation event. The result shows that among the children who missed VAS in Dar es Salaam, an overwhelming majority (77%) of caretakers interviewed said that they weren't aware that the event was happening. Therefore, lack of awareness remains a major factor for children to miss VAS. Other reasons included parents are not being available to take the children to events, and children are not being in the area during the campaign (16% and 7% respectively). Less than one percent reported problems at the event itself as reason children did not receive VASD. Even, after all, efforts to conduct advocacy meetings with community leaders for their involvement in mobilizing the community especially caretakers to take their children for VASD service, only 24.4% of caretakers reported to have received a message from them against 75.6% of respondents who didn't receive any information. Major reasons for this can be explained as community leaders wanted to be paid again during actual social mobilization exercise. Although this matter was clarified to them District Executive Directors (DED) where they report to as it was one of their responsibilities, it is likely that community leaders gave little or no attention to conduct mobilization in their respective areas because of such reason but also much attention was given to campaigning for interests of their political parties as the country was going towards general election. Their accountability where has been no direct benefit to them has been a major concern



3.6 Caretakers' Knowledge about benefits of VAS

Table 5 details caretakers reported knowledge about the benefits of VAS. More than half of caretakers 62% could not correctly name one benefit of VAS. This lack of appreciation for the benefits of the service reflects an important barrier to increasing coverage because the caretakers don't see value in the event, and, therefore, don't prioritize it for their children. For those that could name benefits, the most common was protection against disease (32%).

Table 5. Knowledge of caretakers on benefits of Vitamin A		
What are the benefits of vitamin A? (N=898)	N	Percentage
Don't know	552	61.5
Protects against disease	284	31.6
Improves child health	27	3.0
Helps with growth	5	0.6
Reduces risk of death	6	0.7
Prevents blindness/helps vision	24	2.7

The findings show that only 10% of caretakers interviewed could not recall the correct age of children who are eligible for VAS service (Table 6). 46% knew children between 6 months and five years of age are the target group for VAS while 39% said all children are eligible. About 10% of caretakers did not know the age of children eligible for VAS services.

Table 6. Knowledge of caretakers on recommended age for children to receive vitamin A		
Who should receive VAS? (N=898)	N	Percentage
Children between 6-59 months	413	46
All children	351	39.1
I don't know	93	10.4
Everyone	39	4.3
Women of reproductive age	2	0.2

One of the strategies used by the VAS team to increase coverage in Dar es Salaam for the June 2015 events was rallying community leaders, providing them with information and

materials, and requesting they reach out to each household to ensure all families knew dates and locations for events. The data shows this strategy was not effective. Only 14% of respondents reported having received information from a community leader. When asked directly whether they had received any information about VAS from community leaders, 23% responded yes, however, this is still far below expectations. More reliable sources of information on VASD events as reported by caretakers include health facility workers (36%), other mothers (16%), and posters (10%). A major reason for the ineffectiveness of the strategy could be explained by some of community leaders did not do what they were expected to do because there were no payments for conducting social mobilization but also political interests among them since there has been on-going tension between the ruling and opposition parties over political issues. It should be noted that some of the clusters within each district were under the control of ruling party and some under opposition parties and yet it has been experienced lack of cooperation between the parties hence led to failure in implementation of social mobilization in some areas. This was also evidenced during PECS as one of the community leaders was hesitating to take a team of enumerators arguing the areas were mostly occupied by members of a certain political party

Table 7. Caretakers source of knowledge on VASD		
From where or whom have you heard about VAS benefits?	N=(482)	Percentage
Health worker	171	35.5
Radio	24	5.0
Town announcer / Roaming Vehicles with loudspeakers	33	6.8
Other mothers/ Friends/family/ word of mouth	78	16.2
Religious Leaders/church/mosque	1	0.2
Don't remember	2	0.4
Community Leaders	66	13.7
Poster	47	9.8
Television	11	2.3
Did you get any information about VASD event from community leader		Percentage
Yes	204	22.7
No	679	75.6
Don't remember	15	1.7

3.7 Communications Heard during the Campaign

Additional methods employed to increase awareness in the community about VASD events included digital radio spots and orientation meetings with journalists to ensure correct information was provided about times and locations and benefits of VASD in the media. Due to budget limits, the campaign could only take advantage of the free radio spots which occurred once daily on various stations, limiting reach. PECS showed while coverage was limited, radio had a large impact on listeners who did hear the message. Only 20% of respondents reported hearing VASD radio spots (Table 8), but of those who heard the spots, **71% remembered the information provided by radio**. This indicates for future campaigns, radio is a valuable tool for reaching the community with targeted messages.

Key finding:
71% of caretakers who heard messages about VASD on the radio remembered the message.

Table 9. Caretakers heard radio spots about VAS		
In June this year, did you hear any announcement on radio regarding VASD event	N =(898)	Percentage
Yes	177	19.7
No	721	80.3
Don't remember	0	0.0
Caretakers who correctly named key messages from the radio		Percentage
Yes	125	70.7
Don't Remember	52	29.4

Risk factors for missing VASD events (Table 10) did not correlate with traditional characteristics. Some association was seen related to the age of the child. Children 6-11 months were more likely to have attended VASD events, probably because they spend more time at health centers, and either heard about the campaign or happened to be there when it was happening. Children whose households' the main source of income was farming were less likely to receive VASD, but this finding was not statistically significant.

3.8 Risk Factors for Missing the Vitamin A Supplementation Campaign

Table 10. Risk factors for not receiving VAS			
	N= (898)	Percentage who didn't receive VAS	p-value
Age (months) of child			.047
6-11 (n=140)	140	37%	

12-59 (n=758)	758	48%	
Gender			.54
Female (n=430)	430	44%	
Male (n=468)	468	48%	
Maternal Education Completed			.45
None	55	40%	
Primary Education	621	47%	
Secondary education	191	45%	
Post-secondary training	31	45%	
Main source of income for the household			.52
Farming	23	61%	
Business	361	45%	
Formal Employment	120	39%	
Informal Employment	114	49%	
Unemployed/stay at home	280	49%	
Wealth quintile			.46
First (lowest)	192	47%	
Second	395	49%	
Third	272	42%	
Fourth	35	54%	
Fifth (highest)	4	0%	

*denotes statistical significance at p<0.05; ** denotes statistical significance at p<0.01

3.9 Health Workers and Community Leaders' Knowledge about VAS

The PEC survey included interviews with health workers at health facilities offering VASD services, and with street leaders from selected clusters. The purpose was to gauge whether they were equipped with correct knowledge about VAS and to determine their roles in creating awareness within the community to participate in the campaigns. It should be noted that HKI held meetings with all community leaders prior to the June VASD events to provide them with education, information, and materials to encourage them to fulfill their role as community mobilizers.

Key finding:
Out of health workers interviewed 13% responded children should start receiving Vitamin A supplement at the age of 9months, and 13% responded children should start receiving deworming tablet at the age of 9months.

3.9.1 Knowledge of Health Workers about VAS

24 respondents were included in the final sample of health workers, 70% of whom had worked in health services for five years or more. 39% were Nurses or medical attendants,

30% were MCH Aids, and 13% were Certificate level Nurses. 87% correctly identified the age children should begin receiving VAS, and 83% correctly identified the correct age for children to begin deworming treatment.

14 respondents were included in the final sample of community leaders who attended meetings in May to advocate for their involvement in conducting social mobilization activities their areas. Of those interviewed 57.1% could recall the benefits of VAS to children, but almost half (50%) could not correctly identify the correct age of children to receive VASD service. More than half were able to mention benefits of VAS to children. Although their contribution in creating awareness to caretakers about June VASD distribution event was not significant, 85.7% reported to have conducted social mobilization activities in their areas and door to door approach was the major one (50%). The number of community leaders interviewed was less because most of them were not available in their offices as they were busy with supervision during national voters' registration process for general election that was going on at the time PEC survey was conducted

Table 11 shows knowledge and information sources reported by health workers and community leaders. 97% of health workers knew that VASD events happen twice a year in June and December, and 100% of health workers were able to name at least one benefit of Vitamin A supplementation.

Table 11. Knowledge and sources of information about VAS among health workers, community health workers, and community leaders		
	Health Workers (n=) and %	Community Leaders (n=) and %
Title/Position	(N=23)	(N=14)
Nurse auxiliary/medical attendant	39.1	N/A
MCH Aid	30.4	N/A
Nurse Grade B	8.7	N/A
Nurse Grade A	4.3	N/A
Nurse midwife	8.7	N/A
Other	4.3	N/A
How many years how you been in this position?	(N=23)	(N=14)

Average years of service (range)	years (X to X)	years (X to X)
More than 5 years	69.6	
1-2 years	30.4	
At what age should children receive a vitamin A	(N=23)	(N=14)
Six months	87.0	N/A
At what age should children receive a de- worming	(N=23)	(N=14)
Six months	4.3	N/A
Nine months	13.1	N/A
Twelve months	82.6	N/A
How often should children 6-59 months of age receive	(N=23)	(N=14)
Twice year/June and December	95.7	57.1
Once a year	4.3	35.7
What are the benefits of Vitamin A?	(N=23)	(N=14)
Prevent blindness/helps vision	87.0	0.0
Protects against diseases	21.0	42.9
Improves child health	43.5	0.0
Helps with growth	26.1	14.3
Other	4.3	28.6
Have seen booklet	(N=23)	(N=)
No	69.6	N/A
Yes	30.4	N/A
Source of information about VAS	(N=23)	(N=14)
District/regional health officers/MoHSW/TFNC	56.5	14.3
Health workers booklets on Vitamin A	4.3	N/A
Radio	8.7	7.1
Posters	34.8	21.4
VAS implementation guideline	4.3	N/A
Vitamin A workshop/seminar	26.1	N/A
Formal professional training	8.7	N/A
Advocacy meeting with community leaders	N/A	57.1
Conducted Social mobilization		(N=14)
No	30.4	14.3
Yes	69.6	85.7
Problem with Vitamin A supplies in the last round		(N=)
No problem	47.0	N/A
Late delivery to health facility	4.3	N/A
Late delivery to outreach site	4.3	N/A
Shortage of 100,000IU capsules	43.5	N/A
Targeted groups repeatedly left out of VAS events	(N=23)	(N=)
No	78.9	N/A
Yes	21.1	N/A
Methods used for social mobilization	(N=)	(N=14)
Poster	N/A	21.4
Door to Door	N/A	50.0
Loudspeaker	N/A	35.7

Who is the target of VASD	(N=)	(N=14)
Children under 5years	N/A	21.4
All children	N/A	7.1
Children aged 6-59months	N/A	50.0

Health workers reported that their primary source of information about VASD is regional or district health officers (57%), followed by posters (35%), and workshops (26%). Only 30% had seen the HKI VASD information booklet. 70% of health workers reported having participated in or launched a social mobilization campaign, but only 21% of those campaigns targeted groups traditionally left out of VAS events. The only challenge reported by health workers for the June event was the low stock of 100,000 –I.U capsules.

3.10 Key Informant Interviews

The first round of PECS conducted in February 2015 in Dar es Salaam following the December distribution revealed 36% coverage for VAS and 32% coverage for deworming. These results were a shock to district VAS implementers who in response, came up with a number of strategies to increase coverage in their area. PECS data showed clearly that one of the risk factors for children to miss VAS events was a lack of awareness among caretakers. To address this, implementers decided to engage community leaders to conduct door to door social mobilization activities. In addition, Dar Es Salaam agreed to change the distribution schedule from July/January to June/December to sync with the rest of Tanzania mainland regions and the national radio campaign. HKI also mobilized VASD distribution through mobile clinics in the areas where distribution posts are far from the majority of the population and where children were likely to miss this service based on results from the PECS analysis. In the July PECS, we decided to hold in-depth interviews with district VASD Coordinators from all three districts in Dar es Salaam (Kinondoni, Ilala, and Temeke) to discuss the rollout of the June VASD event. Key topics included coordination and district engagement in efforts to increase coverage in their areas in response to the low coverage.

3.10.1 Coordination of VAS distribution events

VASD services were mainly coordinated by the District Immunization and Vaccine Officers (DIVOs) who were responsible for planning and implementation of all VASD activities including; planning of meetings with all Council Health Management Team (CHMT) members; distribution of supplies to health facilities; ensuring availability of adequate supplies for targeted children and distribution; identification of health posts; implementation of social mobilization at the district level; conducting supportive supervision of activities; and compilation of coverage data reports.

Normally, VASD events are conducted for a week from Monday to Sunday with the weekend days considered peak days, during which additional temporary posts provide VASD services. The number of distribution posts for each district is determined by a number of available funds. However during June 2015 distribution event all districts did not manage to establish temporary posts due to limited funds disbursed. Districts have made efforts to address the challenge of delayed disbursements of VASD funds from the government by using their other sources of funding as alternative solutions should any delay occur.

3.10.2 Planning of VASD Events and Training

Planning for VASD events has not been considered a big priority at the district level now that events have become routine. In addition, insufficient funds allocated for VASD activities pose an obstacle to conducting planning meetings and to adequate implementation and coverage of VASD.

3.10.3 Logistics and Supply

DIVOs were actively involved in following up for supplies at the Medical store department to ensure enough supplies were available on time and distributed to health facilities. However during the June distribution event, all districts reported not having received 100,000IU capsules as they were not available at MSD. However, each district reported receiving sufficient 200,000IU capsules to cover the target population.

3.10.4 Social Mobilization

The social mobilization for VASD event was mainly conducted by community leaders at the ward and street level, who received an orientation about VASD during advocacy meetings conducted in each district, and health workers at clinics as instructed by the DIVO and DMO. Both cadres were instructed to mobilize and sensitize community members about VASD events, through materials such as posters and flyers, door to door visits, talking with patients when they were at the clinic, and through a megaphone on the days of the events. Unfortunately, limited funds this round meant mobilization efforts were limited to word of mouth only. As we see from table 7, this methodology was met with limited success, especially for community leaders.

Key observation:
Supervision by district teams focused on the peak week of the event which meant correction of issues such as shortages of supplies and incorrect data reporting on tally sheets were only implemented for part of the event.

3.10.5 Supportive Supervision

Supportive supervision was conducted by District Immunization and Vaccine Officers (DIVOs) routinely for the first five days of the week from the start of the event and joined by a team of about 10 other supervisors from Council Health Management Teams (CHMTs) on the peak day of the distribution event for wider coverage. Supervisors visited all RCHs clinics where VASD service was being provided to observe availability of supplies, administration of VASD, and data collection using tally sheets. Supportive supervision intended to identify the gaps and challenges during Vitamin A supplementation and take deliberate immediate actions to address them whenever possible. But currently, this intention is not fulfilled since supportive supervision is mainly conducted on the last day of the event leaving no time make any correction whenever things go wrong. A good example is 22% of children aged 6-11months who were reported to have received deworming tablets. Therefore, there is need for district teams to conduct supervision at least twice in the distribution month i.e. on the first and last week to give opportunity to make immediate necessary correction

3.10.6 Data Management and Reporting

National data is collected through tally sheets provided by the Tanzania Food and Nutrition Centre (TFNC) from each distribution post during the event. The person in charge at health facilities or the Reproductive and Child Health Coordinator (RCHCO) is responsible for collecting completed tally sheets and compiling this data, which is then collected by supervisors. Supervisors submit the data from their assigned posts to the DIVO, who then sends the compiled summary to the Regional Immunization and Vaccine Officer (RIVO). From there it is submitted to the national health authorities. Data compilations at districts usually take 1 to 2 weeks to reach the regional level where it is aggregated and sent to the national level for cleaning and entry into national VASD database for sharing with key partners. However; there has been a delay in submission of coverage reports to the national level and observed incorrect tallying of supplemented children. This happened in such a way that in some distribution posts where there were high targeted children leading to a high flow of children coming for service especially when the event falls on child clinic days, service providers tend to administer VASD to many children in a row and tallying were done when then number reduced. This has partly contributed to reporting higher coverage than the actual supplemented and dewormed children

3.10.7 Mobile Clinics

All three districts conducted distribution of VASD through mobile clinics during two peak event days. Districts contributed vehicles and staff, and HKI coordinated activities. Vehicles labeled with VASD campaign posters and equipped with loudspeakers drove to parts of town identified through the previous PECS to have low coverage but also high populated areas. Marketplaces and gathering spots likely to have a congregation of women and children were targeted. Health facility workers distributed VASD to children from the vehicle. Children who received VASD also received a small rubber bracelet that said they had received Vitamin A. The bracelets were a popular gift which pulled many more children to the event. "People came like rain to receive Vitamin A.," said one health worker involved in the event. While numbers in this PECS are low, the mobile clinics were a very successful method of reaching hard to reach populations as they were able to reach 9693 children aged 6-59months in two days (children 6-11months were 1,352 and 12-

59months were 8341) and hence should be considered in future events.

3.10.8 Major Challenges

- Low level of commitment for VASD from District Coordinators and community leaders who fail to see the value of the intervention.
- Shortage of staff for administration of VASD was one of the challenges reported by all three districts.
- Unavailability of 100,000IU capsules at the national level for children between 6-11 months. Health service providers were instructed to use half of the 200,000 IU capsules instead. The shortage of capsules resulted from a dispute between MOH and MSD over growing debts to MSD who no longer has the operating capital to fulfill their role in VASD events, or in fact in drug distribution nationally. UNICEF eventually
- Inaccurate targets (NBS denominator) were used to calculate the number of children aged 6- 59 months so projections and forecasting were off.
- Inadequate funds dispersed from the central government for VASD implementation resulted in fewer distribution posts and less emphasis on community mobilization.
- This being a year of country general election, there has been competition between the ward and streets that are ruled by leaders from ruling party and opposition parties in mobilizing caretakers to take their children for the service to prove each other wrong when they fail to accomplish for the purpose of showing the weakness on one another with the focus to consume power in during general election. Some political leaders such as WEOs and street leaders did not conduct social mobilization activities in their areas as agreed and even persuaded some people not to use VASD services because of their political parties' interests

4. Discussion and Recommendations

Despite low coverage, PECS findings reveal that there is a 50% increase in for both VAS

and deworming from the previous event. Conducting the event in Dar es Salaam in June in-line with national communication campaign and mobile clinics contributed to this increase. Efforts were made to involve street leaders to conducted social mobilization by providing them with training and advocacy materials; however data shows that this strategy was not effective. The major challenge for increasing coverage of VASD continues to be a lack of awareness among caretakers with 72% reporting that their children missed VASD because they were not aware of events happening in their areas.

In order to increase coverage in Dar es Salaam region, there is a need to improve the information flow to caregivers, providing them with information about what is happening and when. For future campaigns, we propose using an SMS technology to send push messages to caregivers to provide them with information directly about services. Posting information on other social media services such as Whatsapp is also a good option. We also propose to make greater use of radio. Data shows that those who heard radio messaging remembered what they heard. Greater resources should be put into increasing radio coverage to improve caretakers' awareness of events. Finally, mobile clinics are an excellent way to reach hard to reach populations, and should be a normalized feature in future events.

HKI need to follow up with Ministry of Health and Social Welfare (MOHSW) and TFNC needs to direct and ensure all councils conduct regular orientation to VASD service providers on proper administration of Vitamin A capsules and deworming tablets, determining correct age and dosage for children, tallying as well as passing of correct information to caretakers about the content and importance of VAS to their children to avoid cases of improper administration of VASD services such as 22% of children aged 6-11months who received deworming tablets which is violation of WHO protocol

HKI should advocate TFNC to make follow up with councils health management teams (CHMTs) to ensure there is proper planning for implementation of VASD events, supportive supervision and reporting. This involves sending a regular official reminder to VASD focal persons one month prior June and December.