



MINISTRY OF HEALTH AND SANITATION SIERRA LEONE

**MEASLES IMMUNIZATION
AND
VITAMIN A SUPPLEMENTATION
POST EVENT COVERAGE SURVEY REPORT**



*IN COLLABORATION WITH THE WORLD HEALTH ORGANIZATION
&
HELEN KELLER INTERNATIONAL
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1. BACKGROUND

Sierra Leone conducted a nationwide integrated campaign for measles immunization and Vitamin A supplementation (VAS) in June 2012 as part of the country's child survival strategies. The campaign was integrated with other interventions including de-worming with albendazole, defaulter tracing and elimination of mother to child transmission (eMTCT) of HIV for pregnant women. The campaign took place in all 14 districts in the country targeting a total population of 1,155,401 for measles immunization (age 9–59 months) and 1,234,000 for VAS (age 6–59 months). The campaign employed a combination of static, outreach and mobile teams to reach the target population. Coverage was estimated based on tallies of vaccine administered and Vitamin A capsules utilized and the adjusted target population projections from the National Census Population of 2004 and recent VAS campaigns^{1, 2}.

Measles supplemental immunization activities (SIA) have been conducted every three years in Sierra Leone since 2003 to increase the immunity of children to measles. From 2008-2010, the African region experienced large-scale measles outbreaks, from which Sierra Leone was not exempt. Two weeks before the measles SIA in November 2009, the largest measles outbreak in a decade started in Sierra Leone³. This outbreak continued in 2010 with confirmed cases reported in all 14 health districts⁴. Despite the high administrative coverage of 97% recorded in 2010, an Expanded Program on Immunization (EPI) cluster survey conducted in the same year showed a measles coverage of 57% by card only, 78% by card and verbal history and 31% for valid coverage by 52 weeks of age (Card)⁵.

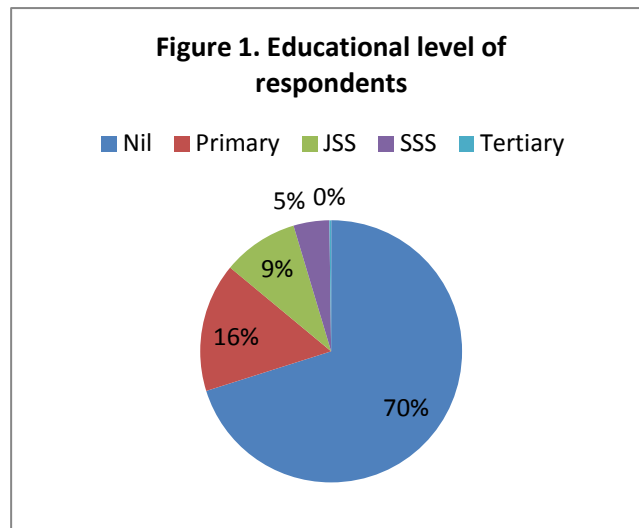
In areas where Vitamin A Deficiency (VAD) exists, one of the most cost effective child survival strategies is VAS. There is strong evidence to show that in settings where VAD is prevalent, twice yearly VAS to at least 80% of the target population (6-59 months of age) reduces risk of child mortality from measles by an average 50%, from diarrhea by an average 40%, and all causes of mortality in children 6-59 months by an average 23%⁶.

Following the recent mass measles immunization and VAS, a post event coverage survey (PECS) was conducted from 15–22 June 2012 in collaboration with the Ministry of Health and Sanitation (MoHS) World Health Organization (WHO) and Helen Keller International (HKI). The survey collected data on quality and coverage of interventions as well as estimated the proportion of missed children and adverse events following immunization (AEFI) among the vaccinated children.

2. METHODOLOGY

2.1 Sampling, Sample Size, Survey sites, Selection of child and Health facility

A cluster sampling method stratified by district was used for this survey. The primary sample unit or clusters were the enumeration Areas (EAs): collections of households grouped within defined administrative boundaries⁷. Each district had 30 randomly selected clusters, from which 14 households were randomly selected and one randomly selected care-giver of a child per household was interviewed, giving a desired precision value of $\pm 3\%$ at 95% confidence interval (CI). In each district a total 420 care givers of children 6-59 months were interviewed. This constitutes a sample population of 5,880 caregivers. The sample size was adapted from the WHO EPI cluster sampling methodology^{8, 9}.



The selection of the cluster used the 2004 census list of EAs for each district, proportional to the size of each EA. Every household in the cluster had an equal chance of selection as the starting household. If the compound or building selected contained more than one household (e.g. a building occupied by several families), surveyors numbered them and selected one household to survey by simple random ballot.

Eligibility of care-givers to be interviewed within each household was determined by asking if the child slept at the chosen household the night before, had been resident in the selected cluster during the campaign: 25-30 May, 2012 and that the child was within the eligible ages during the campaign dates (6-59 months for VAS and 9-59 months for measles). All these criteria had to be met. If there were more than one child in the household, surveyors wrote the names of all eligible children and randomly selected one of them by simple ballot. The care-giver of the selected child was selected for the interview. A health worker (HW) at the nearest health facility for each cluster was also selected and interviewed.

2.2 Training, development of tools, data collection and analysis:

Following review and selection of samples, two days training was conducted for 57 surveyors of which 53 were selected after a post test. As in previous PECS, surveyors were trained to use the EpiSurveyor application on Nokia mobile phones to collect, store and send their data. Data collection took place between 18–21 June 2012 in the 14 health districts using both phones and hard copies of questionnaire to act as double entry. Thirteen (13) supervisors were trained on the methodology to support the surveyors for quality assurance.

A child was considered vaccinated or supplemented for Vitamin A if the caregiver presented the measles/VAS card from the campaign. Surveyors also recorded verbal affirmation of immunization/VAS if a care-giver could not present the child card. Data entered into EpiSurveyor was transmitted by phone to the account administrator at HKI then exported into Excel. Data was cleaned, double checked against the hard copies then analyzed using SPSS. Statistical significance was tested by Anova and chi tests at $p < 0.05$ significance.

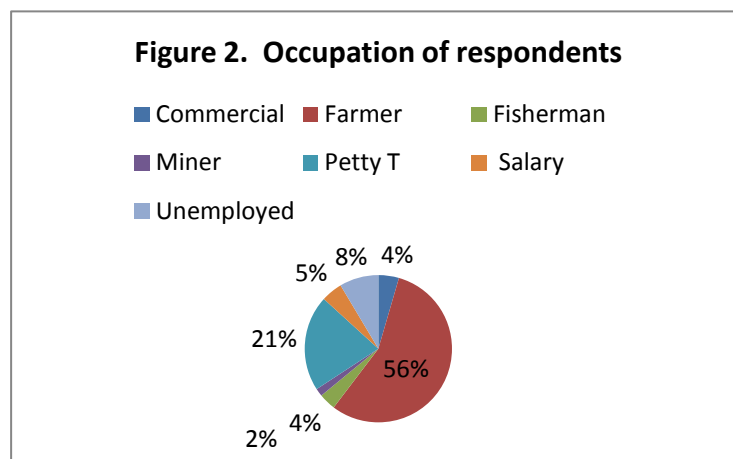
3. RESULTS

3.1 Sample characteristics of care-givers and children:

A total of 5,621 care-givers and 317 HWs were interviewed. Of the 5,621 children selected there was statistically more males: 2,678 (47.6%) than females: 2,943 (52.4%) ($p < 0.01$). Of the 5,621 care-givers interviewed 4,137 (73.6%) were residing in rural areas and 1,484 (26.4%) in urban areas. Of all care-givers interviewed, 4,307 (76.5%) were mothers, 543 (9.7%) were grandmothers, 499 (8.9%) were fathers, 126 (2.2%) were siblings, and the remaining 151 (2.7%) were other relatives or friends of the family.

3.2 Education, occupation, and religion of care-givers:

Of the 5,621 care-givers interviewed 3,861 (68.7%) had no formal education, 876 (15.6%) had completed primary school, 515 (9.2%) had completed junior secondary school, 243 (4.3%) had completed senior secondary school, and 126 (2.2%) had completed tertiary education (Figure 1). Of the 5,621 care-givers interviewed 3,138 (55.8%) were farmers, 1,180 (21.0%) were petty traders, 481 (8.6%) were unemployed, 263 (4.7%) were workers on salary, 254 (4.5%) were commercial traders, 209 (3.7%) were fishermen, and 96 (1.7%) were miners (Figure 2). Of the 5,621 care-givers interviewed, 4,115 (73.2%) identified themselves as Muslim, 1476 (26.3%) identified as Christian, and the remaining 30 (0.5%) preferred not to state their religion.

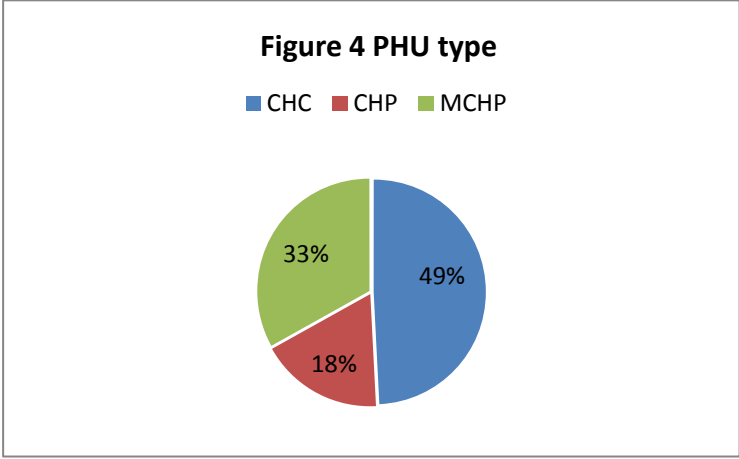
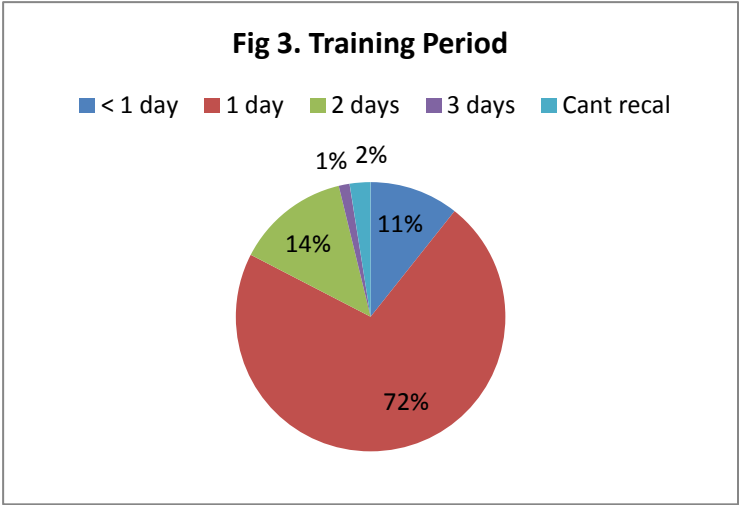


Age of sampled children: Of the 5,621 care-givers interviewed, 1,158 (20.6%) of their children's dates of birth could not be confirmed and had their ages were estimated by the surveyors. Of the children who received measles immunization, 5,330 (94.8%) were 9 and 59 months of age, and 198 (3.5%) were between 6 and 8 months of age. Of the children who received VAS, 4,370 (77.7%) were between 6-59 months of age, 13 (0.2%) were younger than 6 months and 80 (1.4%) were 60 months or older.

3.3 Health Facility Survey

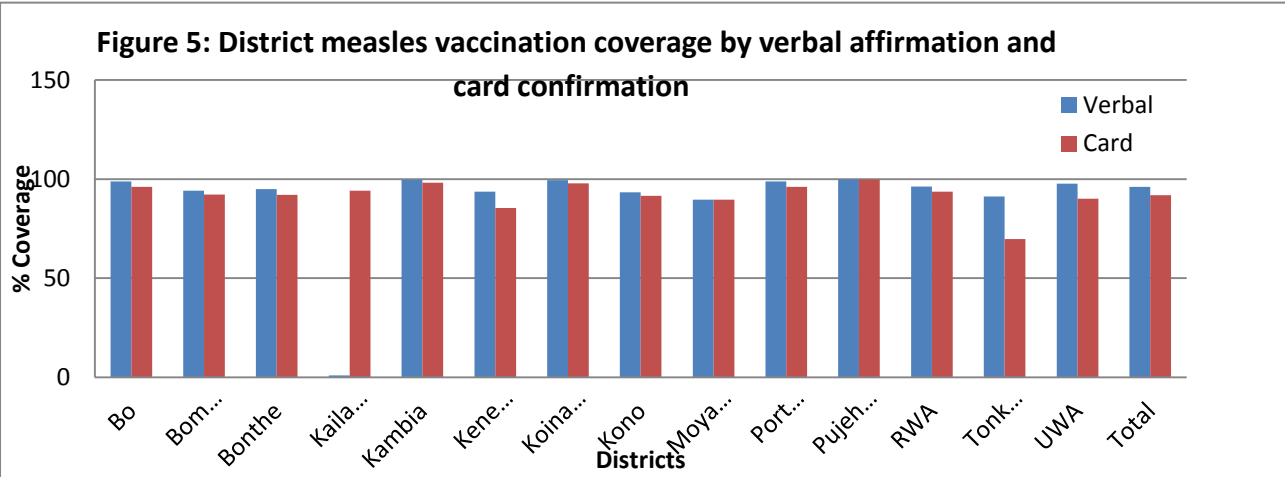
A total of 317 HWs from the nearest peripheral health unit (PHU) were interviewed. Of these 228 (71.9%) received one day of training on the strategies and tools that should be used,, 43 (13.6%) received two days, 34 (10.7%) received a half-day, 4 (1.3%) had 3 days, and the remaining 8 (2.6%) HWs could not recall the length of their training as (Figure 3). The 317 HWs had disposed of the medical waste from the campaign in a variety of ways; 167 (52.7%) by burning it in a pit, 86 (27.1%) used an incinerator, and 45 (14.2%) burned and buried their

waste. Only 4 HWs (1.3%) either had not disposed of the waste or still had the waste in their PHU, and 1 HW reported disposing waste in the bush or river. The remaining 14 (4.4%) HWs buried their waste, or had it collected by the district or a chiefdom supervisor.



3.4 Measles immunization coverage by affirmation and card confirmation:

Overall coverage for measles immunization was 96.1% (5,220/5,433) by verbal affirmation and 91.9% (4,991/5,433) by card confirmation. Measles verbal coverage ranged from 89.7% (CI: 1.07-1.13) coverage in Moyamba, to 99.8% (CI: 0.99-1.01) in Pujehun. When assessed by card confirmation, Tonkolili had the lowest coverage at 69.8% (CI: 1.26-1.35), and Pujehun



remained the highest, at 99.8% (CI: 0.99-1.01). Card confirmation, in Tonkolili was significantly lower than all other districts (p<.0001) (Figure 5).

Of the 5,220 care-givers who verbally affirmed their child had received a measles vaccination, 3,076 (58.9%) had received it at the PHU, 1,156 (22.2%) received it from a mobile team that travelled to strategic points in each community, and 939 (18.0%) from a team that went house to house and 49 (0.9%) respondents could not remember. A higher proportion of children: 1,279 (1,279 (24.5%) were vaccinated on day 2 of the campaign than on any other day and 10 children were vaccinated a day after the campaign period.

3.5 VAS coverage by verbal affirmation and card confirmation:

Overall coverage for VAS by verbal affirmation was 96.4% (5,417/5,621) and by card confirmation was 91.9% (5,167/5,621) as shown in Figure 6. Coverage confirmed by card varied significantly between children aged 6-11 months: 89.9% and 12-59 months: 93.6% (p<0.01). Of the 5,417 that verbally affirmed receiving VAS, 3,201 (59.1%) received VAS at a PHU, 1,198 (22.1%) from a mobile team, 962 (17.8%) from a team going house to house and 56 (1.0%) could not recall. By district, VAS coverage by verbal affirmation ranged from 91.1% in Tonkolili, to 100.0% in Kambia. Coverage assessed VAS card ranged from 69.4% in Tonkolili, to 99.8% in Pujehun.

Table 1: Measles immunisation by age groups and mean age (95% CI)		
Age in months	Total	Coverage
9-11	458	59.2 (54.7-63.7)
12-59	3925	93.1(92.3-93.9)
Total	4383	89.6 (88.7-90.5)
Vaccinated	Total	Age in months
Not Vaccinated	154	29.3 (27.2-31.4)
Vaccinated	4143	32.7 (32.2-33.1)

3.6 Reasons for not receiving measles immunization or VAS:

Of the 5,621 caregivers interviewed 213 (3.8%) reported their child had not received measles immunisation and 204 had not received VAS for various reasons (Table 2): they did not know about the campaign, didn't know why they did not receive or did not respond to the question, children who were out of the area, 23 (10.8%) said the journey to the campaign site was too far their child was ill, too much work at home, 5 (2.4%) refused the PHU ran out of vaccines, and 4 (1.9%) said the line for treatment was too long.

When asked why VAS was important, 2,829 (46.1%) caregivers responded that it prevents sickness, 496 (8.1%) prevents blindness, 445 (7.2%) improves growth, 251 (4.1%) improves recovery from measles, and 131 (2.1%) said it reduces the risk of death (Figure 6). When asked the age at which VAS should first be taken. 1,427 (25.4%) caregivers correctly stated 6 months and 2,024 (36.0%) correctly identified that VAS should be taken every 6 months or during MCHWs.

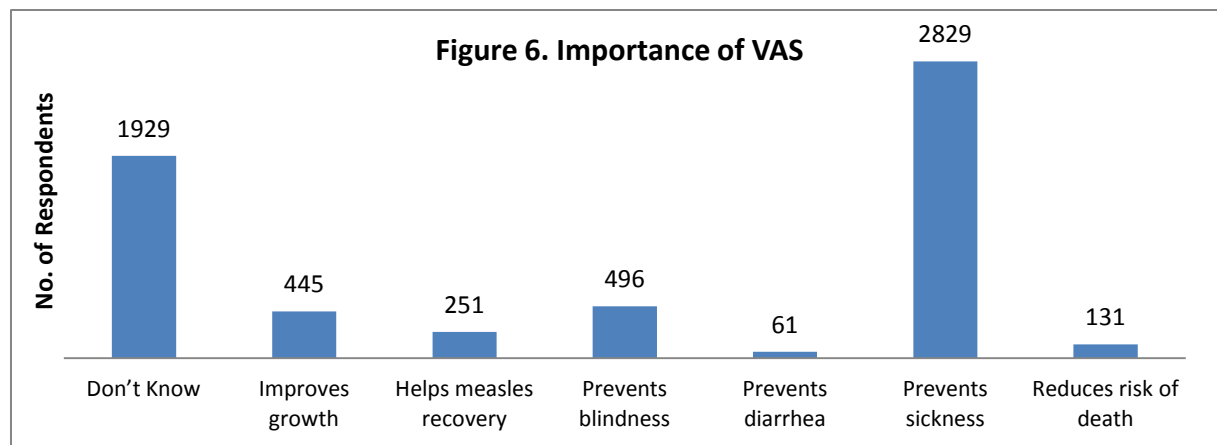


Table 2: Reasons for non vaccination

Reason	Measles	VAS
	No. (%)	No. (%)
Didn't know about the campaign	55 (25.8)	54 (26.5)
Child was out of area	41 (19.3)	45 (21.1)
Unknown	42 (19.7)	29 (14.2)
Journey was too far	23 (10.8)	24 (11.8)
Child was ill	20 (9.4)	24 (11.8)
Too much work at home	16 (7.5)	14 (6.9)
Refusal	5 (2.4)	7 (3.4)
The line was too long	4 (1.9)	3 (1.5)
Health facility ran out of vaccine	5 (2.4)	3 (1.5)
Total	213 (100)	204 (100)

3.7. PECS-Awareness of campaign among caretakers:

Of those 6,694 caregivers who had heard about the MCHW, 2,634 (39.3%) heard from community health workers (CHW), 2,095 (31.3%) from town criers, 978 (14.6%) from radio, 569 (8.5%) from friends and family, 230 (3.4%) from posters, 105 (1.6%) from leaflets, and 83 (1.2%) from TV.

3.8 Adverse Effects Following Immunization:

A total of 1,523 AEFI's were reported by care-givers: 1,292 (24.7%) were fevers after immunization, 126 (2.4%) were rashes, 76 (1.5%) swellings, 15 (0.3%) abscesses, 11 (0.2%) redness, and 3 (0.1%) reported collapsing or fainting. AEFIs were tracked at each PHU as well. 66 PHUs (20.8%) had individuals who experienced fevers, 26 (8.2%) pain at the sight of injection, 13 (4.1%) experienced convulsions, 9 (2.8%) rashes at the site of injection, 7 (2.2%) swelling at the site of injection, 3 (1.0%) had boils or abscesses at the injection site, and 2 (0.6%) PHUs had patients who experienced restlessness. There was one HW in Pujehun district who reported a child had a high fever and subsequently died 3 days after measles immunization, but it was unclear whether or not this was a coincidental event.

Table 4: Distribution of AEFI

Type	# of cases	Percentage
Abscess	15	0.3
Collapse/Faint	3	0.1
Fever	1292	24.7
Rash	126	2.4
Redness	11	0.2
Swelling	76	1.5
Total	1,523	

Table 5: Comparison between AEFI cases notified by survey and administrative data per district						
DISTRICTS	Administrative			Survey		
	N	%	Vaccinated	N	%	Vaccinated
Bo	4	4.3	93.413	36	8.9	403
Bombali	8	10.5	76.452	188	51.2	367
Bonthe	7	29.2	23.978	196	60.3	325
Kailahun	5	7.6	65.884	26	8.4	311
Kambia	4	8.4	47.755	135	34.8	388
Kenema	7	7.6	92.638	77	20.6	373
Koinadugu	5	8.9	56.468	65	17.2	379
Kono	6	7.7	77.554	158	50.5	313
Moyamba	6	11.8	50.87	134	40.7	329
Port Loko	10	11.7	85.531	41	10.1	406
Pujehun	18	37.7	47.72	131	31.3	418
Tonkolili	2	2.7	73.865	147	38.9	378
WAU	8	3.1	254.097	99	23.7	418
WAR	3	2.2	133.38	77	18.7	412
Total	93	7.9	1179.605	1,510	28.9	5,220

4. DISCUSSION

4.1 Measles immunization and VAS coverage:

Overall, coverage for both was high (>90%) whether evaluating by verbal affirmation or by card confirmation. Coverage by district was also high, though the significant decrease in the coverage in Tonkolili district from 91.3% to 69.8% for measles and from 91.1% by verbal affirmation to 69.4% by card confirmation for VAS should be investigated further. This could indicate either that an inordinate amount of those in Tonkolili are losing their cards, that they received treatment but were not given cards by the HWs, or that they are falsely reporting having received treatment. The overall VAS coverage improved significantly from 92.4% last year to 96.4% ($p < 0.0001$).

4.2 Campaign awareness among caretakers:

Improved coverage may also be the result of successful social mobilization. Nearly 31.3% of respondents heard about the campaign from town criers. This is a significant increase from last year VAS, when town criers played a smaller role (0.1%) in social mobilization ($p < 0.0001$), and when far more people heard about the campaign from radio ($p < 0.0001$). Family and friends (4.4%) also played a much larger role in this year's social mobilization ($p < 0.01$). This could be because people remember the campaign from previous years or because other social mobilization sources are spreading information of the campaign to these people. Refusals were low: only 7 (0.13%) carers refused VAS which was not statistically different from last year and 5 (0.09%) refused measles vaccination.

The Lot Quality Assessment Sampling (LQAS) survey may have also played a role in improving VAS coverage. There were six districts rejected for both VAS and measles: WA, Bombali, Moyamba, Kenema, Tonkolili and Bo after which the MoHS instituted a one day mop up of campaign activities to reach missed areas.

4.3 VAS Knowledge among caretakers:

VAS knowledge among care-givers is low but has improved in terms of knowledge of VAS dose interval 15.6% to 30.0% ($p < 0.0001$) since the previous campaign and PECS in November 2011. Prior to the roll out of a 6-month contact point in the EPI schedule in 2011, VAS was administered at 9 months, but HKI and UNICEF have actively advocated for this change. This has led to new child health cards being pilot tested¹⁰.

In the short and medium term, scaling up the integration of VAS into the routine EPI at 6 months of age and the new child health card has already been shown to double routine VAS coverage at 6 months of age. Ongoing customized messages through a variety of channels are still needed to improve awareness and uptake of MCHW including scaling up radio broadcasting and traditional methods such as message dissemination through councilors, community based organizations, religious and traditional leaders, CHWs and family and friends;¹¹

4.4 AEFI and measles immunization:

All the cases were mild AEFIs. AEFIs notified during the survey (28.9%) were higher than the administrative data (7.9%). This situation can be the result of 2 factors:

- The low rate of notification by the PHU staff to the national surveillance teams
- Not all AEFIs are reported to the PHUs by care-givers

Table 3: Ministry of Health reported coverage for VAS and measles immunization by districts versus PECS' card confirmation:

DISTRICTS	Measles				VAS			
	Pop. 9-59 months	Pop 9-59 months immunized	MoHS % coverage	Measles PECS coverage (%)	Pop. 6-59 months	Pop 6-59 VAS	MoHS coverage VAS (%)	VAS PECS coverage (%)
Bo	91,859	93,413	101.7	96.1	98,108	99,628	101.5	95.2
Bombali	74,417	76,452	102.7	92.3	79,479	79,605	100.2	92.9
Bonthe	23,595	23,978	101.6	92.1	25,200	25,488	101.1	92.8
Kailahun	65,987	65,884	99.8	94.1	70,475	70,382	99.9	93.5
Kambia	47,677	47,755	100.2	98.2	50,921	50,958	100.1	98.6
Kenema	92,329	92,638	100.3	85.4	98,610	98,806	100.2	84.2
Koinadugu	56,313	56,468	100.3	97.9	60,144	60,250	100.2	98.0
Kono	77,007	77,554	100.7	91.6	82,245	82,746	100.6	91.7
Moyamba	49,927	50,870	101.9	89.6	53,323	54,279	101.8	91.6
Port Loko	85,409	85,531	100.1	96.1	91,219	91,308	100.1	96.2
Pujehun	47,205	47,720	101.1	99.8	50,417	50,912	101.0	99.8
Tonkolili	72,981	73,865	101.2	69.8	77,946	78,825	101.1	69.4
WAU	234,191	254,097	108.5	93.7	250,122	257,373	102.9	93.6
WAR	136,504	133,380	97.7	90.2	145,790	135,052	92.6	90.6
Overall	1,155,401	1,179,605	102.1	91.9	1,234,000	1,235,612	100.1	91.9.

5 CONCLUSIONS

- The PECS results show that measles immunization and VAS in the May 2012 MCHW reached 92% of children age 9-59 months and 6-59 months respectively;
- The MoHS reported coverage of over 102% for measles and 101% for VAS;
- The PECS survey found a significantly lower coverage for both measles and VAS in Tonkolili district by card confirmation versus verbal affirmation;
- The PECS found 24.7% of children had an AEFI compared 7.9% reported by the administrative results;
- Of care-givers of children missed for measles or VAS, 25.8% and 26.5% were unaware of the MCHW respectively;
- Disposal of medical waste by 4.4% of PHUs was unsatisfactory.

6 RECCOMENDATIONS

- DHMT-Tonkolili should investigate the disparity by affirmation versus confirmation;
- Improve community mobilization efforts on the importance receiving the interventions as well as keeping the campaign cards for confirmation during PECS;
- To minimize stock outs and missed children, supply calculations should be based on previous utilization and adjusted target populations, not 2004 population projections;
- Reporting of AEFIs by HWs report should be emphasized during the MCHW training;
- More effort is needed in social mobilization activities MCHW to create awareness;
- Sustained efforts need to be devoted by government and partners to support strong MCHWs that maximize coverage to support child mortality reduction in Sierra Leone;
- Follow-up of HW who reported disposing medical waste 'in the bush or river' was not performed but should be prioritized in future.

ANNEX A: Distribution of respondents by area and district

District	Rural	% Rural	Urban	% Urban	Total
Bo	280	66.7	140	33.3	420
Bombali	308	75.9	98	24.1	406
Bonthe	309	84.7	56	15.3	365
Kailahun	308	91.7	28	8.3	336
Kambia	350	83.3	70	16.7	420
Kenema	280	69.0	126	31.0	406
Koinadugu	364	92.9	28	7.1	392
Kono	306	87.9	42	12.1	348
Moyamba	350	89.3	42	10.7	392
Port Loko	350	83.3	70	16.7	420
Pujehun	378	90.0	42	10.0	420
RWA	196	45.2	238	54.8	434
Tonkolili	358	83.6	70	16.4	428
UWA		0.0	434	100.0	434
Total	4137	73.6	1484	26.4	5621

ANNEX B: Sex distribution of respondents by district

District	Female	% Female	Male	% Male	Total
Bo	193	46.0	227	54.0	420
Bombali	197	48.5	209	51.5	406
Bonthe	182	49.9	183	50.1%	365
Kailahun	171	50.9	165	49.1	336
Kambia	178	42.4	242	57.6	420
Kenema	184	45.3	222	54.7	406
Koinadugu	184	46.9	208	53.1	392
Kono	160	46.0	188	54.0	348
Moyamba	204	52.0	188	48.0	392
Port Loko	219	52.1	201	47.9	420
Pujehun	192	45.7	228	54.3	420
RWA	201	46.3	233	53.7%	434
Tonkolili	202	47.2	226	52.8%	428
UWA	211	48.6	223	51.4	434
Total	2678	47.6	2943	52.4	5621

ANNEX C: Distribution of respondents by awareness of the campaign

District	Not Aware	% Not Aware	Aware	% Aware	Total
Bo	2	0.5	418	99.5	420
Bombali	3	0.7	403	99.3	406
Bonthe	3	0.8	362	99.2	365
Kailahun	3	0.9	333	99.1	336
Kambia	0	0.0	420	100.0	420
Kenema	28	6.9	378	93.1	406
Koinadugu	2	0.5	390	99.5	392
Kono	10	2.9	338	97.1	348
Moyamba	34	8.7	358	91.3	392
Port Loko	4	1.0	416	99.0	420
Pujehun	1	0.2	419	99.8	420
RWA	3	0.7	431	99.3	434
Tonkolili	30	7.0	398	93.0	428
UWA	2	0.5	418	99.5	420
Total	125	2.2	5482	97.8	5607



**ANNEX D: Ministry of Health and Sanitation-Post Event Coverage Survey (PECS)
MEASLES AND VITAMIN A SUPPLEMENTATION (VAS) QUESTIONNAIRE FOR CARETAKERS
MAY 2012**

District _____ Surveyor: _____
Enumeration Area Code (EA): _____ Village/Neighbourhood: _____

Note: Only interview the care-taker/mother responsible for the child selected **aged 6-59** months.

Q1: ID No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Q2: No. of eligible children															
Q3: Sex	Male=1; Female=2														
Q4: Do you have a CHILD HEALTH card for this child? (under fives card)	Yes=1; No=2														
Q5: Date of birth if known:	DD/MM/YR														
Q6: Estimated age of child if date of birth not known	Under 1 year=1; 1-5 years =2														
Q7: What is your relation to child?	Mother=1; Father=2; Grandmother=3 Sibling=4; Other relative/friend=5														
Q8: Educational status of mother/caretaker	Nil=0; Completed Primary school=1 Completed JSS=2; Completed SSS=3 Tertiary=4														
Q9: Profession of head of household	Farmer=1; Petty Trader=2; Mining=3														

	Commercial trader=4; Fisherman=5 Worker on salary=6; Unemployed=7																		
Q10: Did this child receive VAS during this campaign? (Show the capsule and request to see VAS card)	Yes=1 No=2																		
Q11: Vitamin A card seen?	Yes=1; No=2																		
Q12: Did this child receive measles vaccine during this campaign? (request to see measles card)	Yes=1 No=2																		
Q13: Measles card seen?	Yes=1; No=2																		
Q14: Was this the first time this child receive measles vaccination?	Yes=1; No=2																		
Q15: Where did this child receive Vitamin A?	Health Center=1; Mobile Team=2 Mobile team-House to House=3 Don't remember=4																		
Q16: Where did this child receive measles?	Health Center=1; Mobile Team=2 Mobile team-House to House=3 Don't remember=4																		

<p>Q17: If the child did not receive Vitamin A/measles, Why not?</p>	<p>Did not know about campaign=1 Journey was too far=2 Too much work at home=3 Health facility ran out of capsules =4 Health facility ran out of vaccine=5 Child was ill=6; Child was out of the area=7 Refusal=8; The line was too long=9 Don't know=10</p>													
<p>Q18: Did this child have any reaction after the measles vaccination?</p>	<p>Fever=1; Redness=2; Swelling=3; Abscess=4 Collapse/Faint=5; Rash=6</p>													
<p>Q19: Where have you heard information about the campaign for measles and VAS? (Record all that apply)</p>	<p>Poster=1; TV=2; Radio=3; Leaflet=4 Community Health Worker=5 Family and Friends=7; Town criers=8</p>													

<p>Q20: Why is Vitamin A important?</p>	<p>Prevents sickness=1; Prevents blindness=2 Improves growth=3; Reduces risk of death=4 Improves recovery from measles=5 Prevents diarrhea=6; Don't Know=7</p>													
<p>Q21: At what age should children receive Vitamin A for the first time?</p>	<p>Six months=1; Nine months=2; Don't Know=3</p>													
<p>Q22: How often should children receive VAS time?</p>	<p>During the campaign=1; Every 6 months=2 Every day=3; Don't Know=4</p>													
<p>Q23: What is your religion?</p>	<p>Muslim=1; Christian=2 ; Prefer not to say=3</p>													

ANNEX E: EVALUATION OF MEASLES AND VITAMIN A SUPPLEMENTATION CAMPAIGN IN SIERRA LEONE JUNE 2012

HEALTH FACILITY LEVEL QUESTIONNAIRE ON CAMPAIGN IMPLEMENTATION

Name of Health Facility: _____ Date of Interview: _____ In cluster No: _____

1. Title of person interviewed (Dr. CHO, Nurse, Dispenser, EDCU, Vaccinator etc

2. Which documents were used to plan for or implement the May 2012 campaign?

Used = 1; Not used = 0; Don't know or can't recall = 99

Do not leave any lines blank.

a. A map of the catchment area for planning fixed and outreach vaccination sites	
b. Daily route maps for vaccination teams	
c. Vaccination tally sheets	
d. Vaccination tally summary sheets	
e. Reporting forms for adverse events following immunization (AEFI)	
f. Community population available	
g. VAS/measles vaccine inventory sheets	
h. Vaccination cards specific to the May 2012 VAS/measles vaccination campaign	
i. Supervisory checklists	
j. Temperature monitoring sheets on the freezers and refrigerators	
k. Other, please specify: _____	
l. vaccine/logistics distribution plan for team:	

3. What was the number of persons per vaccination team? _____

Write the number in the blank. Write "99", if the person can't recall or does not know

4. Where you trained with regard to your role in the May 2012 VAS/measles vaccination campaign?

Yes = 1; No = 0; don't know = 99

5. If "No" to question 4 write "99" on each line below. If "Yes" to question 4,

How long did the training last? Write "1" on the line that corresponds to the answer given. Write "99" on all other lines.

a. Less than 1 day	
b. 1 day	
c. 2 days	
d. 3 days	

e. Can't recall	
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6. If "No" to question 4 write "99" in each line in the list below, and go to question 7. If "Yes" to question 4, ask the person which of the following topics were addressed during training for the May 2012 VAS/measles vaccination campaign? Ask the person about each topic in the list.

Topic was addressed = 1; topic not addressed = 0; can't recall = 99. Do not leave any lines blank

a. Sensitization of the population and social mobilization for the VAS/measles campaign	
b. The target age for VAS/measles vaccination during the campaign	
c. Contraindications for VAS/measles vaccination	
d. Injection safety	
e. Surveillance for and management of adverse events following immunization (AEFI)	
f. Transmission of campaign data to the next level	
g. Use of safety boxes for used needles and syringes	
h. Maintaining the cold chain	
i. Management of vaccines remaining at the end of the May 2012 campaign	
j. The use of autodisable syringes	
k. waste disposal	

7. What were the social mobilization strategies implemented from this health facility for the May 2012 VAS/measles vaccination campaign? Check using codes below the strategies used.

Strategy was implemented = 1; not implemented = 0; Do not leave any lines blank

a. Advocacy with any religious, traditional, political, or administrative leaders	
b. Partnerships with any schools or associations (such as the Red Cross)	
c. Sensitization through community meetings	
d. Sensitization by town criers	
e. Sensitization by telephone	
f. Sensitization by health workers	
g. Sensitization by announcers with megaphones	
h. Sensitization using banners, posters, or flyers	

8. What resources were available at the district/coordination level for the May 2012 VAS/measles campaign the day before the campaign? Ask the person about each item in the list.

Available = 1; not available = 0; don't know or can't recall = 99. Do not leave any lines blank.

"Sufficient" means in enough quantity to vaccinate the health facility's target population during the campaign. A guide for "sufficient" quantities of the items in the list is provided next to each.

a. Sufficient vaccine carriers (at least 2 per health facility/at least 1 for each team)	
b. Sufficient ice packs (at least 6 per health facility) (4 per team per PHU if 1 GEO and 1 KP)	
c. Sufficient measles vaccines (according to target population)	
d. Sufficient diluents for measles vaccine (according to number of vaccine vials)	
e. Sufficient Vitamin A (according to target population)	
f. Sufficient dilution syringes (according to number of vaccine vials)	
g. Sufficient auto-disable syringes (according to doses of vaccine)	
h. Functional refrigerator (Temperature within + 2- + 8 degree Celsius)	
i. Sufficient safety boxes for sharps disposal (according to 75 used syringes/box)	
j. Fuel for motorcycles/vehicles	
k. Functional incinerators/Pit burning for waste disposal	
l. Funds for social mobilization	
m. Sufficient staff to carry out exercise	
n. Funds available for operation cost	
o. Vaccination tally forms	
p. Vaccination summary forms	
q. vaccination card specific to May 2012 campaign	
r. medicines available for the management of AEFIs	
s. district doctor designated as focal point for AEFI reporting/case management	
t. AEFI reporting forms	

9. At any time, during the May 2012 VAS/measles campaign, were there stock-outs or malfunctions of the following at the district level? Ask the person about each item in the list.

Stock out/malfunction = 1; no stock out/malfunction = 0; does not know or can't recall = 99.

Do not leave any lines blank.

	Stock out	Action taken
a. Vaccine carriers		
b. Ice packs		
c. Measles vaccines		
d. Diluent for Measles vaccine		
e. Vitamin A		
f. Dilution syringes		
g. Auto-disable syringes		
h. Functional refrigerator		
i. Functional freezer		
j. Safety boxes for sharps waste disposal		
k. Fuel for motorcycles/vehicles		
l. Vehicles for delivery of materials and supervision		
n. Functional incinerators for waste disposal		

10. What has been done with the leftover (unused) VAS/measles vaccines from the May 2012 campaign? Ask the person to explain what the district/coordination level did with any vaccines/VAS remaining after the end of the May 2012 VAS/measles vaccination campaign.

Do not read the list to the person. Write "1" next to the response below that best represents the response given by the person. There **should only be one "1" response**. Write "99" in all others.

a. Collected and sent back to the district	
b. Remaining at this facility	
c. Destroyed at this facility	
d. There were no VAS/measles vaccines remaining after the May 2012 campaign at this facility	
e. Vaccines have been kept at this facility to continue vaccination after the campaign	
f. The person does not know what has been done with the vaccines that remained after the campaign	
g. The person can't recall what has been done with the vaccines that remained after the campaign	
h. VVM of left over measles vaccine within acceptable range (stage 1-2)	

11. What were the AEFIs reported to this health facility during and after the May 2012 campaign? **Reported = 1; not reported = 0; don't know or can't recall = 99**

a. Pain at the site of injection	
b. Abscess or boil at the site of injection	
c. Swelling at the site of injection	
d. Rash (e.g cutaneous eruption) at the site of injection	
e. Fever	
f. Shock (i.e faint)	
g. Brain disorder	
h. Restlessness	
i. Convulsions (fit), with or without fever	
j. Deaths	

12. How did you dispose of the waste during the campaign? **Method used = 1; method not used = 0;**

Do not leave any line blank. Not more than one method please.

a. Incinerator	
b. Burning pit	
c. District collected the waste	
d. Dispose in the bush/river	
e. Chiefdom supervisor collected the waste	
f. Burn and buried	
g. Buried	
h. Still in health facility	
i. Other, please specify	
j. Not disposed	

13. Were you supervised at least once a day in the field? **Yes = 1; No = 0; don't know = 99**

14. If yes to 12 above - Did the team supervisor signed on all the tally sheets?

Yes = 1; No = 0; don't know = 99

15. Did the team supervisor collect completed tally sheets daily? **Yes = 1; No = 0; don't know = 99**

16. Were data cleaning conducted at this level before submission to district?

Yes = 1; No = 0; don't know = 99

17. Were there other problems encountered at this facility during the May 2012 VAS/measles campaign that have not been mentioned?

18. What are your suggestions for improvements in mass campaigns for VAS/measles?

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