INTEGRATED POST MDA COVERAGE SURVEY REPORT

(ZAMFARA STATE MDA PROJECT)

DFID- UNITED

October 2014

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1. ACKNOWLEDGEMENT

The team is grateful to the DFID-UNITED consortium for the control of Neglected Tropical Diseases (NTD), Sight savers and the Zamfara State Ministry of Health for the provision of logistics and other support. The team is also indebted to the Local Government NTD staff and community members visited as well as the drivers that ensured a smooth journey to the various locations.

2. EXECUTIVE SUMMARY

Zamfara State is located in the North-Western part of Nigeria and has a total population of 3.5 million persons (2006 National Census projections) with more than 80% of the population residing in the rural areas. The State has a total 14 LGAs out of which 6 are endemic for Onchocerciasis. Onchocerciasis and Lymphatic filariasis are co-endemic in the 6 LGAs.

The State CDTI project in 2013 started the process of mass drug administration (MDA) of Mectizan with the addition of Albendazole – for Lymphatic Filariasis elimination, Praziquantel and Zithromax for control of Schistosomiasis and Trachoma respectively. The drug supplies were received in April 2014 and actual distribution of the drugs commenced in July 2014 in a staggered manner to avoid cross reaction between drugs. The last set of drugs that was distributed was in September; with Zithromax. Two weeks after the distribution of the last set of drugs, the Sightsavers International-lead partner of the UNITED consortium in collaboration with Zamfara State Ministry of Health initiated conducted a post MDA coverage survey principally to validate the reported coverage. This activity which took place from 15th to 30th October 2014 was sponsored by the UNITED consortium.

Two LGAs where MDA is being implemented were purposively sampled and in each LGA 16 clusters were selected according to probability proportional to size (PPS). In each of the selected communities a minimum of 14 households were sampled using compact segment method and surveyed.

A total of 2, 975 persons were surveyed in 496 households in the 32 cluster/communities that were sampled. Of this 62.4% reported actually ingesting the drugs Mectizan and Albendazole. Shinkafi LGA (76.4%) performed better than Bungudu LGA (52.5%). A total of 673 persons were not treated for various reasons. The commonest reason for non-up take of Mectizan and Albendazole was that the "drug is not distributed in the community". However, this was as a result of the selective treatment of households within communities by CDDs. So, households that were excluded were not aware the drugs had been distributed. Treatment/therapeutic voverage for praziquantel was low for both LGAs: Bungudu (46.0%) and Shinkafi (54.0%). This was not surprising because distribution of the drug was done during vacation and also 12.7% of the school aged children attended qu'ranic were not captured in the treatment exercise. However, the proactive State team on noticing the low treatment coverage had devised strategies of reaching out to children in qu'ranic school during the present coverage survey. Mop up exercises was also going on in some areas. Zithromax was only distributed in Shinkafi LGA because trachoma is not an endemic disease in Bungudu. The treatment coverage for the drug was as high as 77%.

A comparison of the Oncho/LF surveyed data with reported coverage showed that reported coverage was higher. The same trend was observed with reported and surveyed coverages for Zithromax. The surveyed data for Praziquantel could not be compared health system records because treatment was still on-going in most communities and the records for the health system were not complete.

Key recommendations to improve the current teething challenges in project implementation are as follows:

- Community mobilization and sensitization should be intensified to promote
  i) support to CDDs
  ii) monitoring of CDDs performance
- Treatment data by community should be checked and cleaned, and report for 2014 MDA for the State updated and shared with relevant partners by November 2014.
- Standardized supervisory checklist be developed and used for close supervision of implementers at all levels.
- School aged children in formal and informal schools be targeted and treated for schistosomiasis in all endemic areas.

The United consortium should assist in:

- Organisation of Community leaders' forum to discuss community roles and responsibilities with emphasis on resolving the issue of CDD incentives.
- Training on record keeping at all levels of implementation (State and Local Government NTD offices and CDDs).
- Strengthening the drug chain system.

3. INTRODUCTION

3.1 Background

Zamfara State is located in the North western part of Nigeria covering an area of approximately 36,418 square kilometres, making it the seventh largest State in the country in terms of land mass. It is bordered in the North by Niger republic, to the South by Kaduna State, Katsina is by the east. Sokoto and Niger States are at the western border. The State has an estimated population of 4.1 million (2014 projected population)[1] and is made up of 14 Local Government Areas. The major ethnic groups include Hausa and Fulani with some members of Gwari, Kamuku, Kambari, Dukawa, Bussawa and Zabarma ethnic groups. The major language spoken is Hausa.

Integrated mass administration of drugs is currently the strategy for containment of at Neglected Tropical Diseases (NTDs). Previously Onchocerciasis, Lymphatic filariasis, schistosomiasis and Trachoma were managed through vertical health programmes. The success CDTI in the annual treatment of endemic communities in terms of coverage (geographical and therapeutic) and the cost effectiveness of the strategy has been an attractive catalyst for the control of other common health problems in out of reach communities in Africa.

Building upon the 16 years' experience of Zamfara State in the mass administration of Mectizan for the control of onchocerciasis through the CDTI strategy; the DIFID-UNITED consortium in 2013 commenced a demonstration of mass drug administration for the control of the seven priority NTDs in Zamfara. The overall goal of the programme is to strengthen the health system to deliver annual Mass Drug Administration (MDA) for the control of NTDs.

With provision of effective drug treatments in safe and culturally acceptable methods, it is assumed that MDA can control and treat the seven priority NTDs. During the just concluded MDA, there were three staggered interventions (Table 1) involving the distribution of Mectizan and Albendazole, Praziquantel, and Zithromax or tetracycline. For Mectizan, dosage was determined by height and depending on the height, individuals received either 1, 2, 3 or 4 tablets or a tablet of Albendazole. Trachoma, on the other hand was treated using Zithromax tablets or paediatric oral suspension or tetracycline ointment. Determination of dosage for Zithromax tablets was also based on height for people aged 5 years and above. The suspension was given to children between 6 months and 4 years old with each child receiving 10mls of the suspension. Additionally, two tubes of tetracycline were given to pregnant women and children less than 6 months. Praziquantel was distributed to school age children (5-15 years) in the schools using a measuring tape to determine

the height and subsequently dosage. The dose given ranged from 1 to 5 tablets of the drug. The distribution of Mectizan, Albendazole, Zithromax and tetracycline was community based and house to house. Treatment (dosage) with all the drugs is expected to be captured in treatment registers.

The pilot phase of the programme described above has just ended in Zamfara and the current independent coverage survey is aimed at assessing the programme performance with respect to treatment coverage during the last rounds of MDA. The survey which is population based was conducted in order to determine the proportion of individuals who reportedly took the drug(s) during the most recent rounds of MDA and compare with reported MDA records. Although the mode of drug delivery varies per drug (Onchocerciasis, LF and Trachoma follow a community distribution compared to Schistosomiasis and Soil transmitted helminths (STH) which are delivered through schools), the integrated treatment coverage survey, was conducted at the community level. The approach allowed for an estimation of the percentage of school age children that are not enrolled in schools and are currently missed by the current drug distribution strategy for Schistosomiasis and STH (through schools). This report is the first integrated treatment coverage survey conducted under the UNITED project. The three partners making up the UNITED consortium are:

Sight Savers

Crown Agent

Health Partners International

4. AIM OF THE SURVEY

The broad aim of the survey was to validate the reported coverage of recent MDA campaigns (2014) for Onchocerciasis, Lymphatic Filariasis (LF), Schistosomiasis, Soil-transmitted Helminths (STH) and Trachoma in Zamfara State.

Objectives

Specific objectives include:

1. To verify the coverage of recent MDA campaigns by drug (named above), disaggregated by sex, age and school enrolment (the latter for Schistosomiasis and STH only)
2. To investigate areas with data quality concerns and identify areas where there is a significant difference in the coverage as recorded by health system records/tally sheets, drug store records and the survey data.
3. To identify areas where there was lower MDA coverage or areas which were missed by the recent campaign, in order for relevant action to be taken if required.
4. To determine factors for non-uptake in the recent MDA campaign and to determine if there was any difference as to participation by drug distributed, sex, age and geographic location.

5. To provide lessons learnt as to how to conduct an integrated treatment coverage survey.
6. To provide confidence for all stakeholders in the effectiveness of the campaigns.

5. METHODOLOGY

5.1 Meeting

A meeting of team supervisors and the UNITED programme staff was held prior to team training to finalise team composition, field guide, review tools and field logistics. An agenda for training was agreed upon and roles assigned to team members. The local Government and communities to be surveyed were also agreed upon at the meeting. UNITED programme staff present at the meeting was requested to send advance message to the selected LGAs to await the team's visit and to provide local guides. At the end of the meeting, the team composition was finalized, the field guideline and the data collection tool were also presented and discussed. The work plan and the data collection tools are attached as annex 1 and 2 respectively.

5.2 Training

The survey commenced 15th October 2014, with the training of enumerators at the Women and Children Hospital in Gusau. Training was focused on explaining the rationale of the coverage survey, the methodology, review of the questionnaire, and appropriate administration of the questionnaire, quality control of the survey and guidelines of conducting the survey. Enumerators who did not perform well in administration of the questionnaires during the pilot test were replaced.

5.3 Study Area

The survey was conducted in Bungudu and Shinkafi Local Government areas (LGAs). These LGAs were purposefully selected because the available post MDA records showed all the MDA drugs (Mectizan, Albendazole, Praziquantel and Zithromax) are distributed in Shinkafi LGAs while Bungudu LGA which is endemic for onchocerciasis, lymphatic filariasis and schistosomiasis had Mectizan, Albendazole, and Praziquantel drug distributions. The last MDA campaign in the LGA was conducted between July and September 2014 (Annex 1). Shinkafi LGA is not endemic for Onchocerciasis but rather Lymphatic Filariasis, Schistosomiasis and Trachoma. The drugs for MDA in the LGA were combination of Mectizan and Albendazole, Praziquantel and Zithromax (Annex 1).

5.4 Sampling

5.4.1 Sample size determination

Assuming an estimated coverage of 80%, 95% confidence limit, a design effect (1) of 4, non-response of 12% and presuming that an average household size of eligible school afe children of

5 (for Schistosomiasis distribution), a minimum sample size of 246 households was required to be sampled per LGA, but taking into account the design effect and the non-response a total of 1,101 individuals had to be sampled to get the required sample size. This way a minimum of 16 clusters, 14 households per cluster were surveyed in each LGA (Table 1).

5.4.2 Selecting the clusters and households

The survey followed a two-stage cluster sampling method, with the primary cluster (primary sampling unit), the village and the secondary cluster, the household.

Table 1: Sampled Clusters in the Selected Local Government Areas

LGA	PSU
Bungundu	Asako
	Birnin Mallam
	Danguro
	Dongo Daji
	Gada
	Homawa
	Karkai
	Ka Ida
	Kotorkoshe
	Kurah Mota
	Madidi
	Nahuce
	Rawuyya
	Runji
	Tazame
	Yar Labe
Shinkafi	Ajiyawa
	Kanwari Kurya
	Kursasa
	Kayaye
	Kware
	M/S/Makera
	Shiyar Shanawa
	Sabon Gari
	Shiyar Ajiya
	Shiyar Dangaladima
	Shiyar Mazai
	Saulawa
	Tungar Guraguri
	Tabbani
	Tungar Kado
	Zagi/Tungar Gobirawa

Selecting the primary sampling unit (PSU)

The sampling frame for the survey was all communities in the LGA, therefore all the communities in the LGA were listed in no particular order. Selection was according to probability proportional to size (PPS), as outlined in Annex 2. It is to state that 2 communities had to be replaced due to insecurity.

Selecting the secondary sampling unit (SSU)

The secondary sampling unit was the household and the compact segment method was used in the selection of households for administration of questionnaires. Once in the selected community

sketched a map of the community taking note of internal paths, central point or market with the assistance of a community guide. The guides were either NTD coordinators or members of the local Government MDA team.

The households were approximately marked on the sketch and then divided into four segments. Each segment was given a number and two segments randomly picked through balloting. Balloting was done by the community leader order to explain the basis of selection of households to avoid misinterpretation of the team's selective approach in administration of the questionnaires. In each of the selected segment, seven households were randomly visited using the 'Spin the bottle method 'and surveyed; giving a total of 14 households per cluster.

5.5 Survey

Once in a household, the purpose and procedure of the survey explained and the household head was requested to provide verbal consent for his household to take part in the survey. Once consent was given, the names of all individuals who are permanently resident in the household were written down in the questionnaire (Annex 3) and the enumerator proceeded with collecting information as outlined in Annex 3.

Where possible the eligible individuals were asked if they swallowed the drug and the person was not available, another household member or caregiver gave information on their behalf. Primary caregivers responded on behalf of children aged 1-10 years old, except where drugs were given in a school based distribution. In this case the children themselves were asked if they received the drugs at school. Samples of the drugs and the packages used during the recent MDA were shown to respondents to assist recall.

The MDA schedule given in Annex 1 outlines the different times of the various drug distributions to avoid potential drug interactions. Therefore, the period between the survey and the distribution of the first set of drugs (for Onchocerciasis and Lymphatic Filariasis) was about

3 months, which was significantly longer than for Trachoma. The implications this might have on recall was an important consideration and so, in order to reduce errors introduced through recall bias, the survey team ensured drug samples (and the packaging of the drugs were given in packages) of the different drugs distributed were shown to each respondent during discussions. All individuals listed in the household were asked about each drug in question. If they are not eligible this was recorded on the questionnaire sheet either as not eligible or in cases where the intervention was not applicable (e.g Praziquantel was only administered to school) to the individual it was recorded as not applicable.

<u>State and Local Government levels</u>

In order to achieve objective 2 the team also collected data on drug disbursements from both the LG and State levels. Informal conversations were also held with members of the State NTD team.

6. RESEARCH TEAM

The study teams were selected from individuals who were not involved in the MDA campaign. Each team was made up of a supervisor, two enumerators who worked closely with a local guide.

TEAM A – **Mr. M. Igbe**	**TEAM B –Dr. Auta Ishaya**	**TEAM C- Dr E. Fayankinnu**	**TEAM D-Dr Murtala Mohammed Umar**
Lydia Auta Umar	Mary Samuel	Mijinyawa Mustafa	Abdullahi Garba
Kabiru Mohammed	Hilalu Yakubu	Shaihidu Ibrahim	Helen Umar
LG local guide	LG local guide	LG local guide	LG local guide
3 Data entry clerks			

6.1 Team Supervision

For quality control purposes, there was a consultant designated as survey co-ordinator, with overall responsibility for the conduct of the survey and team supervisors. Each team had a supervisor who stayed with the interviewers all through the survey in the communities to ensure the quality of the data being collected.

7. DATA ENTRY AND ANALYSIS

One questionnaire form was completed for each household selected and as soon as data were collected in the field, they were vetted by team supervisors. Enumerators did not code responses but rather wrote responses in full to avoid errors. Team supervisors subsequently coded data for entry into a predesigned database in SPSS version 16. Data entry was done by three data clerks. Analysis was conducted to determine the coverage (programme and geographical) of the MDA campaign from the survey and to compare this to reported from health system records.

In specifics, geographical coverage, therapeutic coverage, in relation to LGA, community, sex, status of school enrolment and the reasons for not taking the drug were determined. As much as possible analysis to determine the significance of proportions of the population that were missed or refused treatment according to disease targeted was performed.

8. ETHICAL APPROVAL AND CONSENT

Permission for the survey was obtained from the relevant authorities. The team paid an advocacy visit to the Permanent Secretary of the State Ministry of Health. A general consent was obtained from community leaders and thereafter verbal consent was obtained from individuals at household level.

9. FINDINGS AND DISCUSSION

9.1 Survey Study Population

A total of 2975 persons were enrolled from 479 households across 32 communities for the coverage survey. The summary of demographic characteristics of the sampled population shows a composition of 1523 (51.2%) males and 1,452 (48.8%) females whose ages ranged between 0 and 80 years (Table 2). Comparatively, more than half of respondents in both Bungudu (55.2%) and Shinkafi (50.5%) are above 15 years old; 35% are between 5 and 15 years in both LGAs while those between 0 and 4 years in Bungudu and Shinkafi constitute 9.4% and 15.2% respectively (Table 2). The majority (Bungudu: 99% and Shinkafi: 95.3%) of the respondents in both LGAs have been living in their communities for more than three months (Table 2); an indication that the selected samples are likely beneficiaries of the MDA exercise. The profile for children of school age revealed that 43.1% of the children are enrolled in primary school, 16.9% in secondary school and 27.0% attend qur'anic school, while 13% were not enrolled in schools.

9.2 Geographic Coverage

Table 3 summarises the geographical coverage for Mectizan and Albendazole distribution. Shinkafi had a better performance (100%) in geographical spread of MDA. The very low geographic and therapeutic coverage in Kortokoshi was due to the withdrawal of the drugs by the state NTD coordinator during the campaign for reasons associated with alleged report of drug divertion. The geographical coverage for praziquantel was 100% in both LGAs (Table 3). Zithromax also recorded a 100% geographical coverage in Shinkafi LGA. The drug was not distributed in Bungudu LGA since trachoma is not an endemic disease in the area.

9.3 Therapeutic Coverage

9.3.1 Mectizan and Albendazole

Data was collected from each of the 16 clusters surveyed per Local Government Area, giving a total of 32 clusters for the entire exercise (Table 3). Household surveys involving 2603 sample of eligible population showed that 71.3% received treatment, 6.9 % were absent and 1.4% refused treatment out of fear of side effects. When specific patterns between Bungudu and Shinkafi LGAs was taken into consideration, a higher proportion (90.2%) of the eligible population in Shinkafi LGA swallowed the drugs. Out of the 16 clusters visited in the LGA, 9 clusters (Kware, Kayaye, Kuursasa, Sabon Gari,

Shiyar Dangaladima, Shiyar Mazai, Saulawa, Tabbani and Tungar Kado) recorded therapeutic coverages ranging from 75.6% to 95.8% (Figure 1); therefore attaining the minimum APOC minimum threshold of 75%. In Bungudu LGA where only 58.7% had received treatment as against WHO/APOC threshold standard of 75%, treatment coverage ranged from as low as 1.8% in Yar

Labe to 98.6% in Hommawa community (Figure 2). This LGA was marred with partial treatments within

Table 2: Demographic Characteristics of the Respondents

Variable		Local Government		Total
		Bungudu	Shinkafi	
Age	<5 years	164(9.4)	187(15.2)	351 (11.8)
	5 – 15 years	618 (35.4)	422 (34.3)	1040 (35.0)
	>15 years	962 (55.2)	622 (50.5)	1584 (53.2)
	Total	1744 (100)	1231 (100)	2975 (100)
Sex	Male	887 (50.9)	636 (57.7)	1523 (51.2)
	Female	857 (49.1)	595 (48.3)	1452 (48.8)
	Total	1744 (100)	1231 (100)	2975 (100)
Length of stay in the community	Less than 3 months	18 (1.0)	58 (4.7)	76 (2.6)
	More than 3 months	1726 (99.0)	1173 (95.3)	2899 (97.4)
	Total	1744 (100)	1231 (100)	2975 (100)
Children of schooling age in school	Primary	338 (41.9)	261 (44.7)	599(43.1)
	Secondary	161 (20.0)	74 (12.7)	235(16.9)
	Qur'anic School	220 (27.3)	156 (26.7)	376(27.0)
	Unenrolled	88 (10.9)	93 (15.9)	1814(13.0)
	Total	807 (100)	584 (100)	1391(100)

communities and this accounts for the low coverages (Figure 2) recorded in Yar Labe (1.8%), Kortokoshi (2.2%), Birnin Mallam (16.2%), Gada (31.6%), Nahuce (44.5%) and Ka Ida (48.1%). The most common reason for non-treatment in this LGA was that "the CDD did not come" (63.0%), however this was mainly from communities such as Yar Labe, and Kotorkoshi (Annex 2). In Kotorkoshi community the drugs were withdrawn for reasons associated with alleged reports of drug divertion and the community members were not even aware that the drugs had been supplied to their community. In Birnin Mallam, the CDDs had treated only a section of the community and while ignoring the other sections. Even though they claimed that treatment was on going, further probing revealed that he had closed the distribution exercise and submitted treatment summary for the community. Members of the community associated the incomplete treatment of their community to hoarding and politicking of the exercise by the drug distributors. While drug distributors alluded the incomplete treatment of households to inadequate drug supply, but the examination of drug inventory records both at the local Government and State level revealed a

complete disconnect between drug distributors report of drug inadequacy and retrieval records. Evidence at the central store showed that there was adequate supply of drugs in both Bungudu and Shinakfi LGAs (Table 5).

Bungudu LGA alone received 677680 and 242850 tablets of Mectizan and Albendazole respectively (Table 5).

9.3.2 Gender Uptake of Mectizan and Albendazole

In Bungundu LGA, the uptake of the drugs amongst males was significantly higher than females ($P<0.05$). 56% of the males in the LGA had received treatment as against only 48.9% females who swallowed Mectizan and Albendazole (Table 6). However, when data from Shinkafi LGA was subjected to chi-square analysis, there was no significant difference in the uptake of drugs between sexes ($P>0.05$). Informal conversations further confirms the lack of statistical difference in gender drug uptake because once the household head (who was most often the oldest male) consent to treatment, female members of the household were most likely to receive treatment.

9.3.3 *Reasons for Non-Uptake of Mectizan and Albendazole*

The reasons given by community members for non-uptake of the drugs are as presented in table 7. Majority of the people who did not receive treatment attributed it to the inability of the CDDs to visit their households for drug distribution. Closer investigation revealed that these discordant voices came from communities where drug distributors operated "selective treatment of households" Political affiliation could be the major undertone in this practice. For instance in Birnin Mallam one of the segments selected for the survey was completely ignored by the drug distributor. There were no cases of on-going treatment in Shinkafi, however 23.8% of the respondents also claimed the drug distributor did not give them the drug (Table 6).

Table 3: Geographical Coverage for the NTD Drugs in Zamfara State

LGA	Clusters/Communities	Treated (Mectizan and Albendazole)	Treated (Praziquantel)	Treated (Zithromax)
*Bungudu	Asako	Yes	Yes	
	B/ Mallam	Yes	Yes	
	Danguro	Yes	Yes	
	Homawa	Yes	Yes	
	Dongo daji	Yes	Yes	
	Gada	Yes	Yes	
	Karkai	Yes	Yes	
	Kalda	Yes	Yes	
	Kortorkoshe	No	Yes	
	Kurar mota	Yes	Yes	
	Madidi	Yes	Yes	
	Nahuce	Yes	Yes	
	Rawuyya	Yes	Yes	
	Runji	Yes	Yes	
	Tazame	Yes	Yes	
	Yarlabe	Yes	Yes	
LGA Summary	**16**	**93.8%**	**100%**	**Not applicable (LG not endemic for Trachoma**
Shinkafi	M/S/Makera	Yes	Yes	Yes
	S/Shanawa	Yes	Yes	Yes
	Sabon Gari	Yes	Yes	Yes
	Shiyar Ajiya	Yes	Yes	Yes
	Z//T/Gobirawa	Yes	Yes	Yes
	S/Dangaladima	Yes	Yes	Yes
	Tungar Kado	Yes	Yes	Yes
	S/Mazai	Yes	Yes	Yes
	Tabbani	Yes	Yes	Yes
	K/Kurya	Yes	Yes	Yes
	T/Guraguri	Yes	Yes	Yes
	Ajiyawa	Yes	Yes	Yes
	Kware	Yes	Yes	Yes
	Saulawa	Yes	Yes	Yes
	Kursasa	Yes	Yes	Yes

	Kayaye	Yes	Yes	Yes
LGA Summary	**16**	**100%**	**100%**	**100%**
State Summary	**32**	**96.9**	**100%**	**100%**

Table 4: Onchocerciasis/LF Survey Coverage by LGA

Name of PSU	No. of clusters surveyed	No. of SSU surveyed	Pop. in the surveyed households		Pop.* that ingested the drugs	Survey coverage (%)	
			Total pop.	Eligible pop.		Total pop.	Eligible pop.
Bungudu	16	252	1744	1560	916	52.5	58.7
Shinkafi	16	224	1231	1043	941	76.4	90.2
Total	***32***	***476***	***2975***	***2603***	***1857***	***62.4***	***71.3***

Table 5: Quantity of Drugs Received by the LGAs

LGA	Eligible Pop	Mectizan Given	Average/ Person	Albendazole Given	Average /Person	Eligible Pop	Praziquantel Given	Average /Person
Bungudu	242738	677680	2.79	242850	1.00	350052	99465	2.8
Shinkafi	106058	315517	2.97	109333	1.03	38508	59550	1.5
Total	**348796**	**993197**	**2.8**	**352183**	**1.0**	**353860**	**159015**	**0.45**
Zithromax	**Total Pop**	**Tablets given**	**POS given**	**Ointment**				
Shinkafi	242738	2870209	195952	4548				

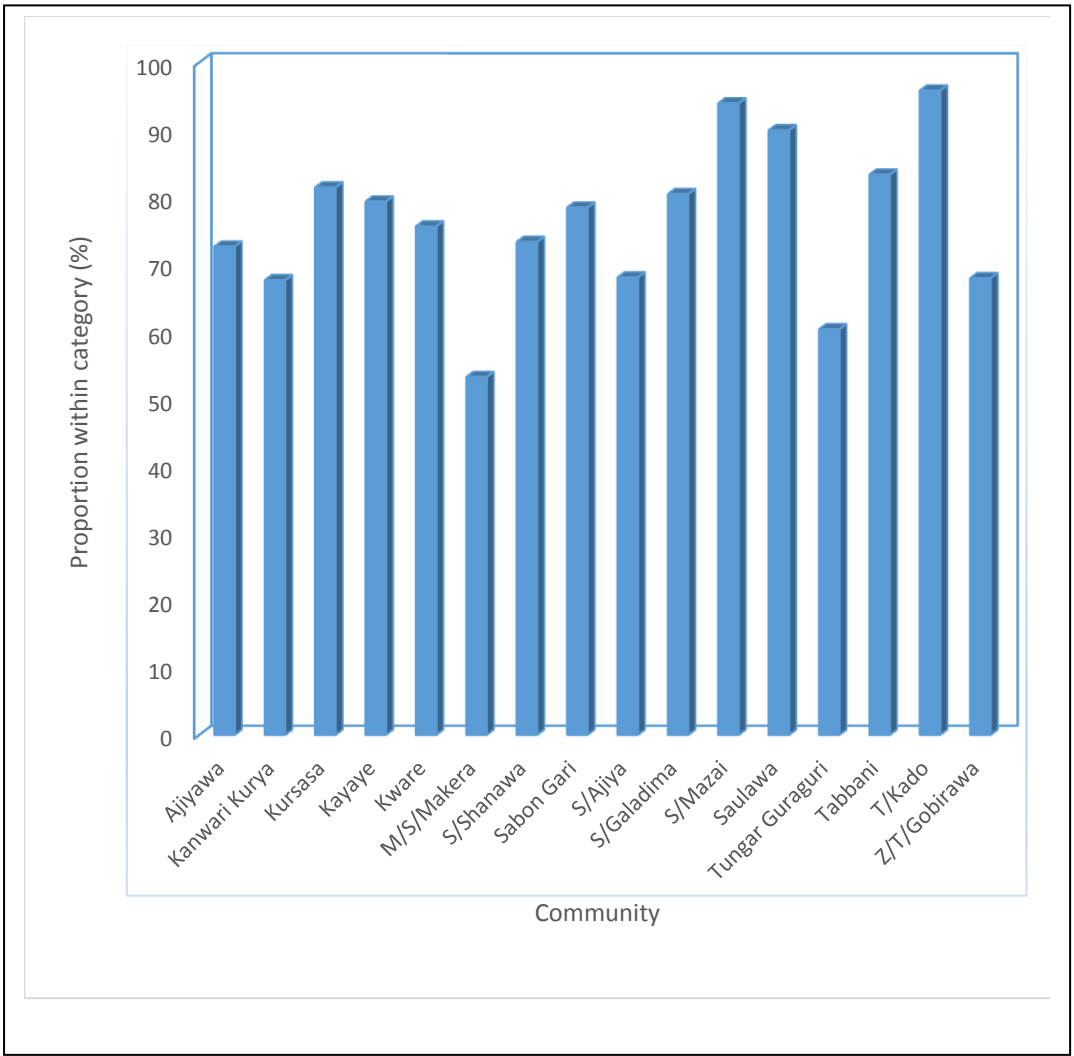


Figure 1: Surveyed Community MDA Coverage in Shinkafi Local Government Area

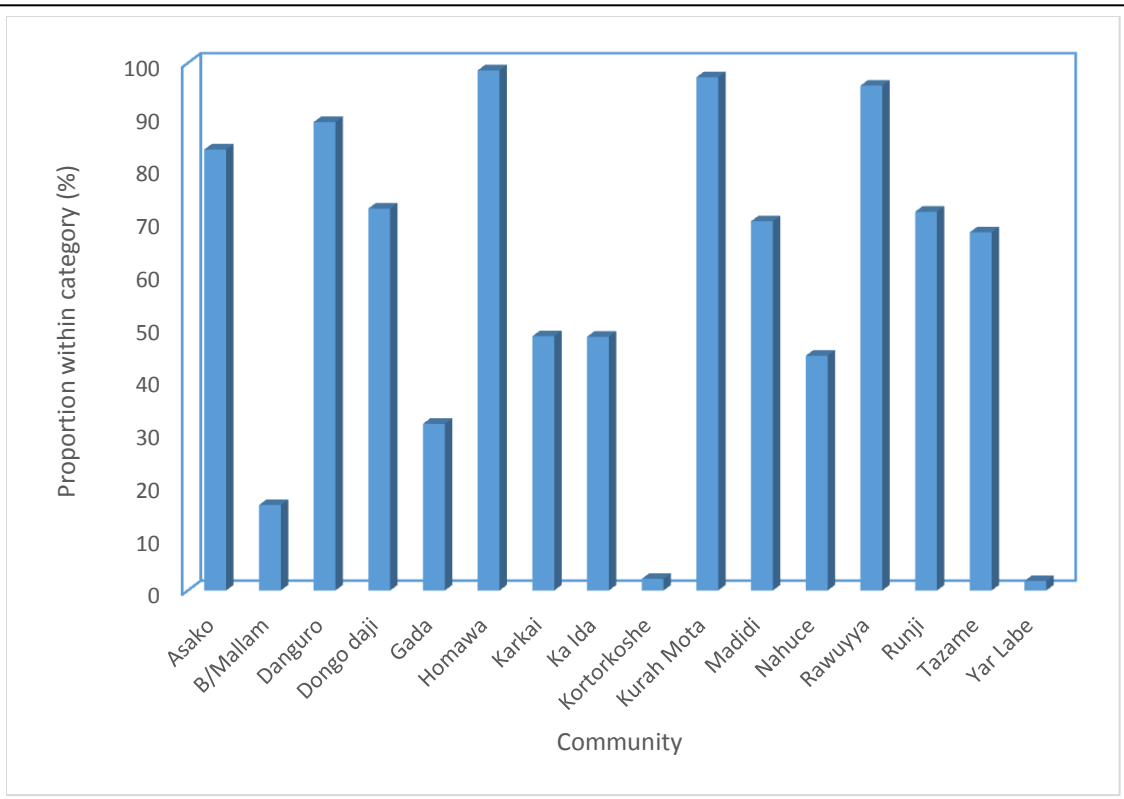


Figure 2: Surveyed

Table 6: Gender Uptake of Mectizan and Albendazole in Bungudu and Shinkafi Local Government Areas.

	Drug In-take (%)						**Reasons for not receiving treatment (%)**							
	Male		**Total**	**Female**		**Total**								**Total**
	Yes	**No**		**Yes**	**No**		**Absent**	**CDD did not come**	**Fear**	**Unware**	**Under age**	**Pregnant/ Lactating**	**Treatment Ongoing**	
Bugundu	56.0	44.0	887	48.9	51.1	857	5.0	61.5	0.9	0.5	19.0	2.3	5.8	828
Shinkafi	76.6	23.4	636	76.3	23.6	595	6.9	23.8	3.4	0.7	56.5	0.7	0	290
Total	**984 (64.6)**	**539 (35.4)**	**1523**	**873 (60.1)**	**579 (39.9)**	**1452**	**61 (5.5)**	**578 (51.7)**	**18 (1.6)**	**6 (0.5)**	**351 (31.4)**	**22 (2.0)**	**82 (7.5)**	**1118**

9.3.3. Praziquantel

One thousand three hundred and ninety one children were sampled for coverage survey, one thousand and forty were eligible (5-15 years old) for praziquantel treatment. Basically, the distribution of praziquantel was channelled through schools (formal) specifically in primary and junior secondary schools. From table 7, it is observed that the overall treatment coverage was 68.4% of the children eligible for treatment (ie ages 5-15years) were treated. When data was analysed by LGA, Shinkafi and Bungudu LGAs recorded 88.4% and 54.7% respectively (Table 7). Again, Shinkafi LGA performed better. Reasons provided for not using the drugs in both LGAs included absence of during when the drug was distributed in school (2.8%), present but was not given the drug by the drug distributor (42.9%), underage 45.6%) and the distribution of drugs was still on-going (1.2%) in a few communities like Birnin Mallam in Bungudu LGA. The headteacher of the school within the community was distributing praziquantel to children while the coverage was going on in the community.

The high proportion of children who claimed that the drug was not distributed in school is not surprising, as 27% of the eligible population children attended qu'ranic schools. These schools were not initially captured in the MDA programme. The team had suggested that the NTD team target qu'ranic schools in its MDA and efforts were being made by the state coordinator to reach out to children who attend qu'ranic schools during the coverage survey.

Table 7: Proportion of Respondents treated with Praziquantel and Reasons for Non Uptake of Drug in Surveyed LGAs.

LGA	Total Population	Eligible Population	No. Treated	Coverage	No. Not Treated	Reasons for Non uptake of drug				
						Absent	Underage	Refused	*Distributor did not come	Treatment ongoing
Bungudu	782	618	338	54.7	444	21 (35.0)	156 (50.3)	6 (60.0)	253 (86.6)	8 (100)
Shinkafi	609	422	373	88.4	236	39 (65.0)	154 (49.7)	4(40.0)	39(13.4)	0
	1391	**1040**	**711**	**68.4**	**680**	**60(8.8)**	**310(45.6)**	**10(6.8)**	**292(42.9)**	**8(1.2)**

***** This refers to absence of the drug in the schools.

Additional finding indicated that school type associated significantly with drug intake by the children in schools. For example, the survey revealed that pupils in Qu' ranic School rarely got treated because the programme targeted only formal schools. In fact, informal conversations with the respondents showed that few pupils in Qu'ranic School, who reportedly swallowed the drugs, collected the drugs from public primary schools.

9.3.4 Zithromax/Tetracyline Ointment/Pediatric Oral Suspension

Zithromax in its varied forms was only distributed in Shinkafi through MDA because trachoma as earlier mentioned is not an endemic disease in Bungudu LGA. 77% of the respondents in Shinkafi reported that they swallowed the drugs (Table 9).

Table 9: Proportion of Respondents treated with Zithromax and Reasons for Non Uptake of the Drug in Shinkafi LGA.

Treatment	**Local Government Area**
	Shinkafi
Yes	948 (77)
No	187 (20.2)
Don't Know	34 (2.8)
Total	1231 (100)
Reasons for non-uptake	
Drug distributor did not come	93 (49.7)
Absent	72 (38.5)
Refused	11 (5.9)
Unaware of drug efficacy	11 (5.9)
Total	187

9.4 Comparison of Therapeutic (Treatment) Coverages

A comparison of the surveyed Oncho/LF data with reported coverage in Bugundu LGA shows that Asako, Danguro and Dogon daji had reported treatment coverages that were very close to the surveyed coverages obtained (Annex 3). This shows that a good reporting system is in place in these communities and the drug distributors should be commended. However, in Birnin Mallam, Kaikai, Ka Ida, Nahuce, Tazame, Yar Labe and Gada communities, reported coverages were higher than surveyed coverages. Incidentally Nahuce, Kotorkoshe, Birnin mallam and Yar Labe were

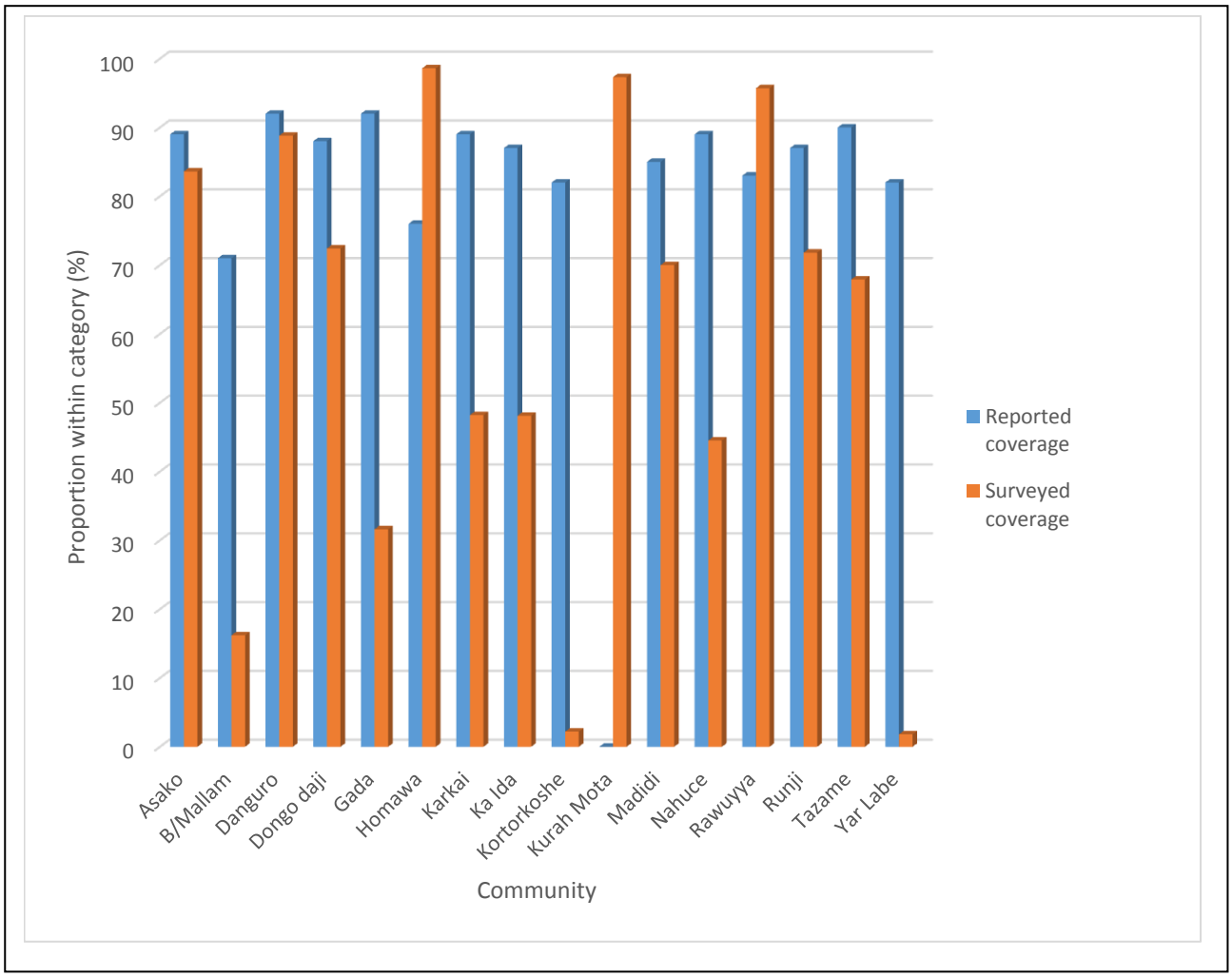


Figure 3: Comparison of Reported Oncho/LF Coverage with Surveyed Coverage in Bungudu LGA

communities that were recommended by the survey for mop up treatment exercises because of the findings from household visits. Kotorkoshe where a large segment of the population was not treated, reported a treatment coverage of 82%. There was no evidence of census data in the affected

communities; the usual trend was to record only the names of the people treated and with no demographic information them as seen in Runji community (Plate 1). Very few records of ineligibles were captured in the treatment registers. In Nahuce, the drug distributor only made entries of the 616 people he treated. The treatment register at Ka Ida did not indicate the doses of tablets administered to individuals (See Plate 2). These are not acceptable because it is an indication of inaccurate reporting of drug ingestion by drug distributors. The team had also observed incomplete treatment in the communities mentioned above (Birnin mallam, Kortokoshe, Gada) and had requested the NTD coordinator to immediately commence a mop up exercise. The reverse was the case in Hommawa where the reported coverage was 76% as against 98% from surveyed coverage (Figure 3). Despite the high treatment coverage recorded in the survey, there were still concerns of accurate population data (census) in the treatment register. The high treatment coverages reported by the health system is because the drug distributors do not keep proper records and they are the primary source of data for the health system.

Reported and surveyed coverage figures from Shinkafi LGA were not markedly different from each other (Figure 4). This is an indication of a good reporting system in the LGA. Except for Shiyar Guraguri, Shiyar Ajiyawa, Shiyar Ajiwa and Kanwuri Kurya where reported coverage were much higher than surveyed coverage, the other communities such as Kware, Kayaye, Kursasa, Shiyar Dangaladima, Sabon Gari and Marina/s/Makera performed very well both in terms of proper record keeping and treatment threshold. Tungar Gobirawa also had a good recording keeping system even though the community did not meet the treatment threshold of 75%. Reported coverage for this community was 63% as against 67.9% recorded from the coverage survey.

Reported coverage for Zithromax was consistently much higher that obtained from survey in all communities. A survey coverage of 46.4% was obtained at Tungar Gobirawa, yet coverage from health system records indicated a 97% coverage. Again, this calls for close supervision of drug distributors as it also indicates poor recording keeping skills.

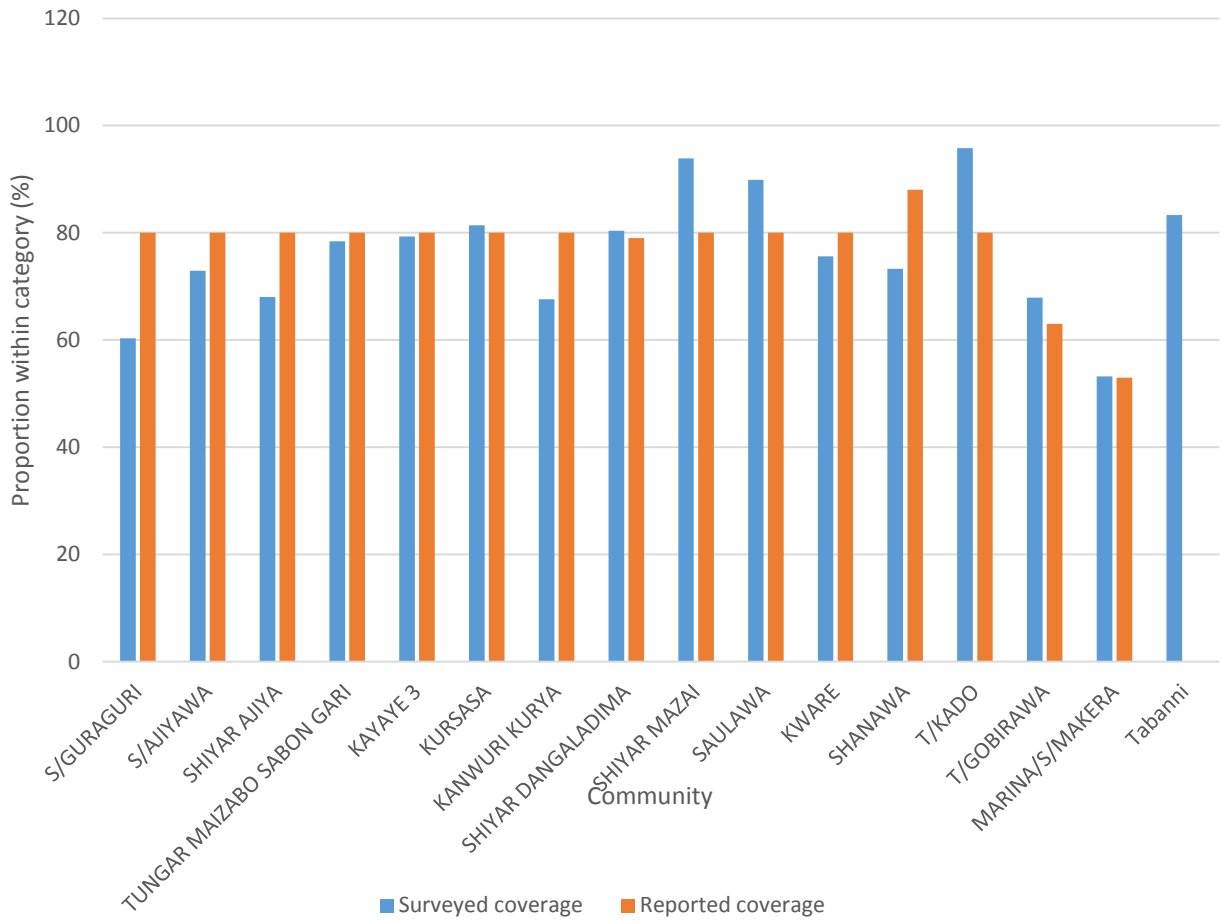


Figure 4: Comparison of Oncho/LF Reported Coverage with Surveyed Coverage in Shinkafi LGA

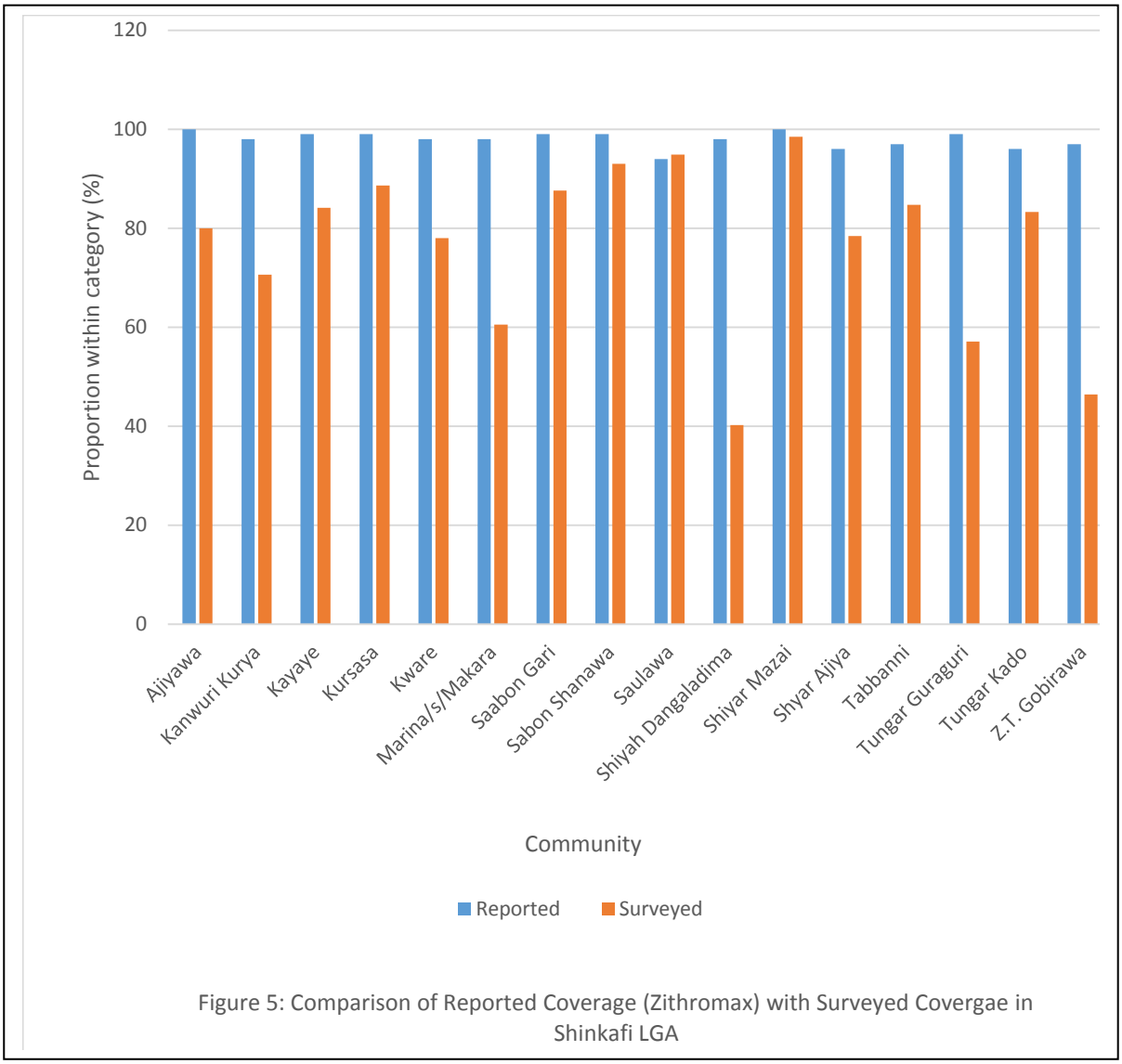


Figure 5: Comparison of Reported Coverage (Zithromax) with Surveyed Covergae in Shinkafi LGA

10. OTHER FINDINGS

10.1 *Implementation of MDA at Community Level*

- Census update was not done in most communities accurate treatment entries were not captures in the treatment registers. (Plate 1)
- Treatment registers could not be accessed in some communities in both Bungundu and Shinkafi LGAs despite the fact that the NTD coordinator at the LG office had sent advance messages to the drug distributors. For instance the distributors at Runji travelled to Gusau even after been requested to await the team's visit and locked up the registers in his apartment.

  There were indications of drug hoarding by distributors because drug inventory showed that adequate drugs were supplied to communities where selective treatment where carried out. It is not clear what would have prompted the behaviour among distributors especially since drug supply was adequate. Community members believe the CDDs hoarded the drugs and since animal husbandry is a major economic activity in Zamfara State, the distributors could most likely be marketing the drugs to cattle farmers. The lack of incentive for these distributors by communities could promote the commercialisation of the drugs especially Mectizan.

- Though there was no tool to quantify the extent of community contributions towards CDD incentive, drug distributors expressed dissatisfaction over none remuneration by the government. This calls for an intensive mobilisation exercise at community level, since communities are expected to provide incentive for drug distributors and not the Government. The State and Local NTD teams would need to inform community leaders and emphasise the responsibilities of communities during supervisory visits.

10.2 Programme Issues

- The timing of distribution of drugs conflicted with the Ramadan fast and the closure of schools a result of the Ebola scare, accounting for the low treatment coverage for Praziquantel. Treatment (with Praziquantel) was still on-going in some schools during the coverage survey and so the treatment records for most communities is incomplete. In Dogo Daji, for instance, the head teacher of the primary school started distributing drugs to school children who had missed treatment on receiving information that the team were within the community.

- The survey revealed that 27 % of school aged children attended Qur'anic schools. These schools are out of the population targeted by the MDA for praziquantel and so the low coverage reported in the survey could be alluded to this. However, the State has a very proactive NTD team who had observed the skewed pattern in treatment of children with praziquantel and had devised strategy of identifying the quaranic schools for mop up treatment.
- A list of the communities like Kotorkorshe, Nahuce, Birnin mallam, Yar Labe where either treatment was not given or where selective treatment of households was conducted were made available to the State team by the post MDA survey team for re-visitation and mop up exercise. Mop up exercises had commenced in the affected communities before the team left the field.
- There was evidence of poor record keeping at all levels of programme implementation. It was most serious at the community level; and this unfortunately is the primary source of data for information collated at both LGA and State levels. Treatment records kept at community level were not properly entered neither was there evidence of census been carried out by the drug distributors. In Nahuce community only the 616 individuals treated were recorded in the treatment register and in Yar Labe the drug distributor could not make available the community treatment register for vetting. He claimed he had none. This community recorded 1.2% in the survey coverage, yet Local Government records should a high coverage of about 80%. Again in Runji, sex and age of registered household members were not indicated (Plate 1). Only four children aged below five years old were registered in the treatment records and surprisingly they were all treated with Mectizan. In Shinkafi LGA, precisely Saulawa community, underage were not treated with Mectizan but the received Albendazole and there were very few records of Zithromax treatment in the register. Only 57 children received the tablets while 5 children received the POS, yet this community had 72 children who were eligible to receive the treatment. In addition children less than 5 years old who were supposed to have received POS were treated with tablets. The same trend was observed in Shiyar DanGaladima. In Kware, the number of Zithromax tablets of Zithromax issued to individuals was not indicated in the treatment register besides only one household received the drug. So, aside record keeping the drug distributors need to be re-trained before the next round of MDA.

11. CONSTRAINTS

The major challenges observed by the team include;

- Poor record keeping at the community level, hence the State office had to return some treatment summary forms to Local Government office for rectification of figures. There were cases of double entry for praziquantel within and outside school based treatment. This resulted delay in collation of reports at the State level.
- Uncoordinated drug retrieval system.

12. LESSONS LEARNT AND RECOMMENDATIONS

- The timing of the MDA exercise must be convenient and suitable for communities. Programme timeline should not be the overruling factor, because between July and September, the country witnessed an Ebola scare and this resulted in the closure of schools. The programme could have been flexible enough to revert back to community based treatment for praziquantel. The distribution of the drug could only commence when schools resumed late September and this led to a rush to finish up treatment and submit reports.
- The affected communities where MDA did not take place were reported to the State NTD team commenced mop up exercise before the end of the coverage survey. Strict monitoring and supervision would have forestalled partial treatment of communities by drug distributors as observed in the survey.
- The lack of incentives for the CDD's is a major issue which needs some serious attention for it could undermine the success of the programme.
- Need to properly train the CDD's on what is expected of them when it comes to census and record keeping. Community leaders should also be sensitised on the role of the Community in relation to monitoring of drug distribution and CDD incentives.

13.ANNEXES

Annex 1: Dates of the 2014 MDA by Local Government Authority (LGA) and diseases

LGA	Onchocerciasis	LF	SCH/STH	Trachoma
ANKA	02/07 - 15/08 2014	02/07 - 15/08 2014	12/08/2014	
BAKURA		20/04 - 10/08 2014	12/08/2014	
BIRNIN MAGAJI		x tbc	11/08/2014	28/09/2014
BUKKUYUM	09/07 - 14/08 2014	09/07 - 14/08 2014	10/08/2014	
BUNGUDU	29/07 - 22/08 2014	29/07 - 22/08 2014	26/08/2014	
GUMMI		29/06 - 20/08 2014	10/08/2014	
GUSAU		05/07 - 08/08 2014	24/08/2014	
KAURA NAMODA		03/07 - 15/08 2014	14/08/2014	x (NA)
MARADUN		30/06 - 27/08 2014	13/08/2014	
MARU	23/07 - 22/08 2014	23/07 - 22/08 2014	23/08/2014	
SHINKAFI		04/08 - 25/08 2014	11/08/2014	27/09/2014
T/MAFARA		03/07- 25/08 2014	13/08/2014	
TSAFE	04/07 - 29/08 2014	04/07 - 29/08 2014	14/08/2014	x (NA)
ZURMI	28/06 - 20/08 2014	28/06 - 20/08 2014	25/08/2014	26/09/2014

Annex 2: Selection of PSUs using Probability Proportional to Size sampling

STEP 1: All PSUs ie communities were listed from the least to the most populated.

STEP 2: In a column next to each village name, the population of each community was listed using the 2006 census data

STEP 3: In the third column, list the cumulative population of all communities were listed, as below.

Bungudu LGA

	Sum of PopTotal	Cumulative Population	Cumulative Population Range		
G/DAN INNA	4741	4741	1 - 4741		
ASAKO	3743	8484	4742 - 8484	1	24385
AUKI	4537	13021	8485 - 13021		
BINGI	5877	18898	13021 - 18898		
BIRNIN MALLAM	6947	25845	18899 - 25845	2	41880
BIRNIN YANRUWA	3562	29407	25846 - 29407		
BURAI	5671	35078	29408 - 35078		
DAN MARKE	3743	38821	35079 - 38821		
DANGURO	9346	48167	38822 - 48167	3	59375
Danmagori	8634	56801	48168 - 56801		
DASHI	3841	60642	56802 - 60642	4	76870
FANTARU	4083	64725	60643 - 64725		
FURFURI	11343	76068	64726 - 76068		
GADA	6579	82647	76069 - 82647	5	94365
GIDAN DANGWARI	2337	84984	82648 - 84984		
GIDAN SARA	4764	89748	84985 - 89748		
GIDAN ZALA	3403	93151	89749 - 93151		
GOGON DAJI	8280	101431	93152 - 101431	6	111860
GULUBBA	7383	108814	101432 - 108814		
HOMAWA	1906	110720	108815 - 110720		
5558	116278	110721 - 116278	7	129355	
KA IDA	3970	120248	116279 - 120248		
KADAN DANA	3978	124226	120249 - 124226		
KANGON SABUWA	3743	127969	124227 - 127969		
KARAKAI	8847	136816	127970 - 136816	8	146850
KEKUN WAJE	4991	141807	136817 - 141807		
KOFI	3902	145709	141808 - 145709		
KOTORKOSHE	10845	156554	145710 - 156554	9	164345
KUNGURMI	7488	164042	156555 - 164042		
Kurar Mota	7572	171614	164043 - 171614	10	181840
KURHI	4537	176151	171615 - 176151		
KURRAH	1832	177983	176152 - 177983		
LANDAI	2589	180572	177984 - 180572		
MADIDI	4537	185109	180573 - 185109	11	199335
MAKWA	2903	188012	185109 - 188012		
MARKE	3630	191642	188013 - 191642		
NAHUCE	18534	210176	191643 - 210176	12	216830

ORPHAN AND LESS	2998	213174	210177 - 213174		
RAWUYYA	5501	218675	213175 - 218675	13	234325
RERE	7259	225934	218676 - 225934		
Ribe	7259	233193	225935 - 233193		
RUNJI	6806	239999	233194 - 239999	14	251820
S/F GABBAS	1035	241034	240000 - 241034		
SANKALAWA	2514	243548	241035 - 243548		
SAYE	5178	248726	243549 - 248726		
TASHA RAWUYYA	2269	250995	248727 - 250995		
Tazame	1737	252732	250996 - 252732	15	269315
TOFA	6163	258895	252733 - 258895		
WCWC	8042	266937	258896 - 266937		
Y/WUTSIYA	2849	269786	266938 - 269786	16	
YAR LABE	3346	273132	269787 - 273132		
YARKATSINA	4991	278123	273133 - 278123		
ZAMANRUWA	1800	279923	278124 - 279923		
Grand Total	**279923**				
		17495.1875	sampling interval		

STEP 4: The sampling interval was calculated by taking the total cumulative population and dividing by the number of PSUs/communities required.

STEP 5: Randomly a number between 1 and the sampling interval was selected a computer random number generator.

STEP 6: The first community selected corresponded to the community with the cumulative population that included the random number generated

STEP 7: To select the second village the sampling interval was added to the random number generated and the community with cumulative population that corresponded to it was selected.
The process was repeated till the required number of communities /clusters was attained.

Annex 3: Integrated post MDA coverage survey questionnaire

LGA name: LGA ID no: Interviewer name: Sheet no _ _ / _ _

Village name: Village ID no: Date of interview: _ _ / _ _ /_ _ _ _

Name of Household Head: Household no: Please circle as relevant for household:

Included / Absent / Refused

Line no	Name (Block capitals)	Age (Years)	Sex (1=M, 2=F)	How long have you been living in this community? 1= < 3 months 2= > 3 months	If of school age are they attending school? 1= Primary school 2= Secondary school 3= Qur'anic school 4= School age but not attending	If woman of chil bearing age are t pregnant or brea at present? 1= Pregnant 2= Breast-feedin 3= None of the a 4= Not Applicab

Village ID no: Household ID no:

Sheet no: _ _/ _ _

Line no	Did you **swallow** the drugs for Onchocerciasis /LF (show tablets separately) given to you in the recent MDA round in 2014? 1=Yes 2= No(Go to next column) 3=Don't know 4= Not eligible	If eligible, why did you not take the drugs for Onchocerciasis? (use codes as below)	When was the last time you took the drug before this present campaign? 1 = 2012 or earlier 2= 2013 3= NA	Did you **swallow** the drugs for Schistosomiasis (show tablets) given to you at school in the recent MDA round in 2014? 1=Yes 2= No 3=Don't know 4= Not eligible	If eligible, why did you not take the drugs for Schistosomiasis? (use codes as below)	When was the last time you took the drug before this present campaign? 1 = 2012 or earlier 2= 2013 3= NA	Did you **swallow (or use)** the drugs for Trachoma (show tablets or ointment) given to you in the recent MDA round in 2014? 1=Yes, Azithromycin/Zithromax 2= Yes, Tetracycline ointment 3=No 4= Don't know 5= Not eligible

*__REASON FOR NOT TAKING DRUG__ 1= Absent 2=Did not hear about campaign 3=Drug distributor did not come 4=Pregnant 5=Breast-feeding 6=Unc
9=Medicine does not work 10= Tired of taking drugs or using ointment 11= Was not at school on day or do not attend school 12=Other (please spec

Annex 4: Reported and Surveyed Treatment Coverage for the different Interventions

1. Mectizan and Albendazole

Bungudu LGA

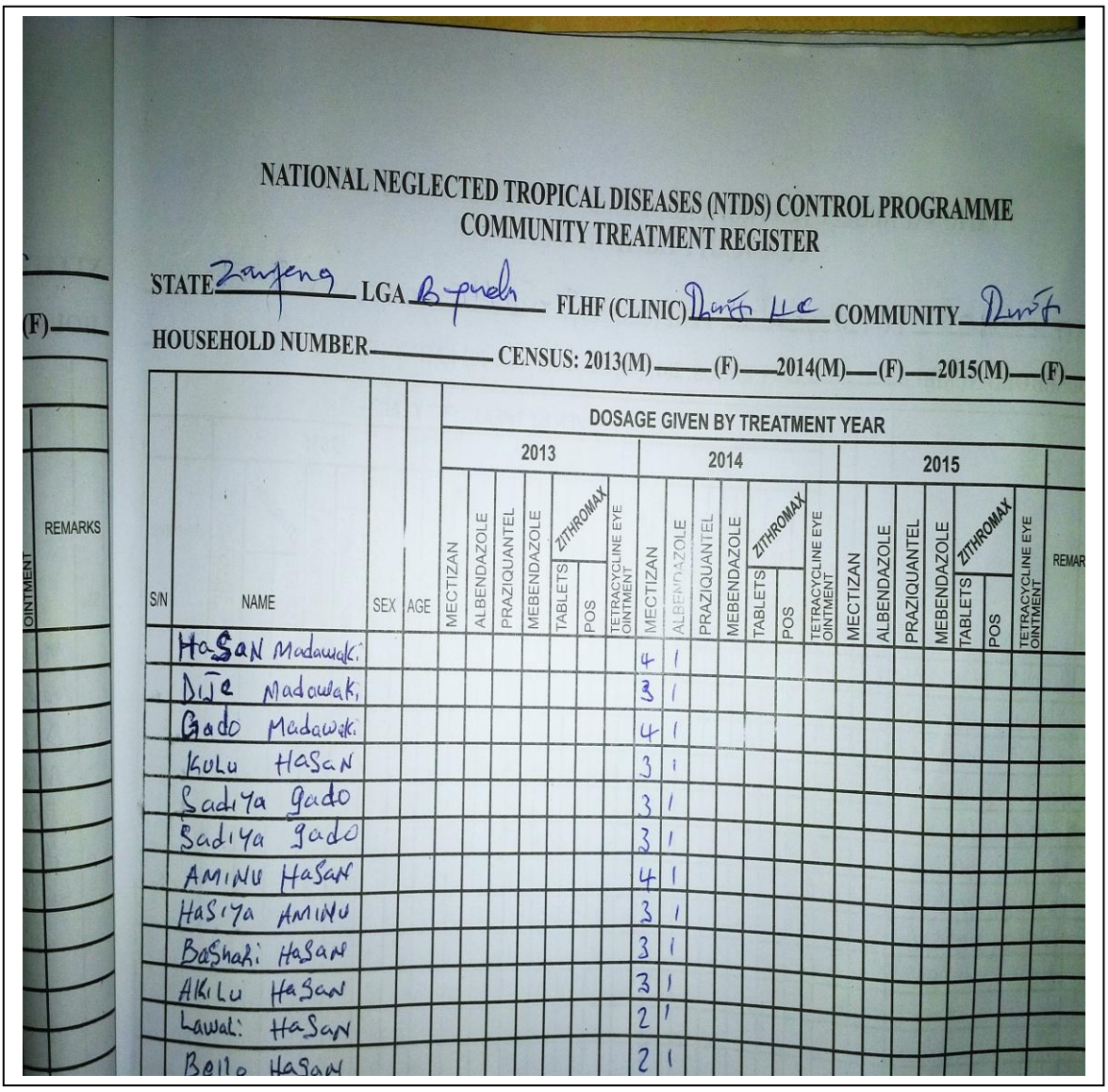
Community	Reported coverage	Surveyed coverage
Asako	89	83.6
B/Mallam	71	16.2
Danguro	92	88.8
Dongo daji	88	72.4
Gada	92	31.6
Homawa	76	98.6
Karkai	89	48.2
Ka Ida	87	48.1
Kortorkoshe	82	2.2
Kurah Mota	Not available	97.3
Madidi	85	70
Nahuce	89	44.5
Rawuyya	83	95.7
Runji	87	71.8
Tazame	90	67.9
Yar Labe	82	1.8

Shinkafi

	Surveyed	**Reported**
Marina/s/Makara	53.2	53
Sabon Shanawa	73.3	88
Saabon Gari	78.4	80
Shyar Ajiya	68	80
Z.T. Gobirawa	67.9	63
Shiyah Dangaladima	80.4	79
Tungar Kado	95.8	80
Shiyar Massai	93.9	80
Tabbanni	83.3	
Kanwari Kurya	67.6	80
Tungar Guraguri	60.3	80
Ajiyawa	72.9	80
Kware	75.6	80
Saulawa	89.9	80
Kursasa	81.4	80
Kayaye	79.3	80

Zithromax Reported and Surveyed coverage

SHINKAFI	Reported	Surveyed
Ajiyawa	100	80
Kanwuri Kurya	98	70.6
Kayaye	99	84.1
Kursasa	99	88.6
Kware	98	78
Marina/s/Makara	98	60.5
Saabon Gari	99	87.6
Sabon Shanawa	99	93
Saulawa	94	94.9
Shiyah Dangaladima	98	40.2
Shiyar Mazai	100	98.5
Shyar Ajiya	96	78.4
Tabbanni	97	84.7
Tungar Guraguri	99	57.1
Tungar Kado	96	83.3
Z.T. Gobirawa	97	46.4



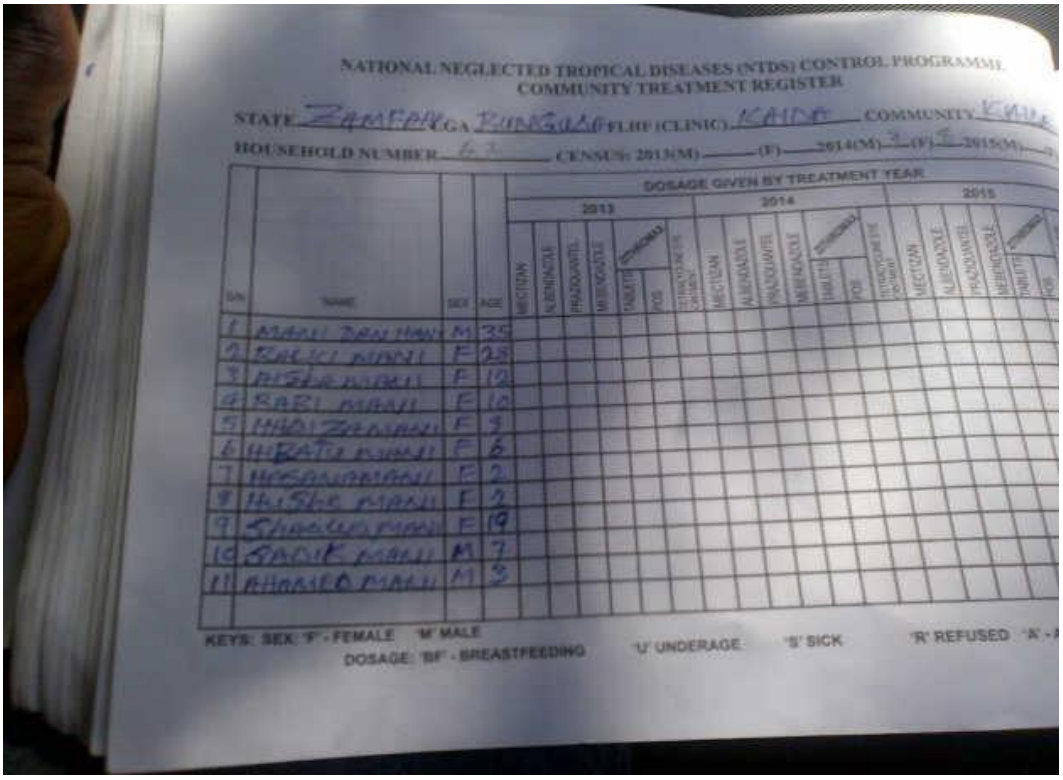
NATIONAL NEGLECTED TROPICAL DISEASES (NTDS) CONTROL PROGRAMME
COMMUNITY TREATMENT REGISTER

STATE Zamfara LGA Bungudu FLHF (CLINIC) Runji HC COMMUNITY Runji

HOUSEHOLD NUMBER _____ CENSUS: 2013(M) ____ (F) ____ 2014(M) ____ (F) ____ 2015(M) ____ (F) ____

S/N	NAME	SEX	AGE	DOSAGE GIVEN BY TREATMENT YEAR																				REMARKS
				2013							2014						2015							
				MECTIZAN	ALBENDAZOLE	PRAZIQUANTEL	MEBENDAZOLE	ZITHROMAX TABLETS	ZITHROMAX POS	TETRACYCLINE EYE OINTMENT	MECTIZAN	ALBENDAZOLE	PRAZIQUANTEL	MEBENDAZOLE	ZITHROMAX TABLETS	ZITHROMAX POS	TETRACYCLINE EYE OINTMENT	MECTIZAN	ALBENDAZOLE	PRAZIQUANTEL	MEBENDAZOLE	ZITHROMAX TABLETS	ZITHROMAX POS	TETRACYCLINE EYE OINTMENT	
	Hasan Madawaki										4	1												
	Dije Madawaki										3	1												
	Gado Madawaki										4	1												
	Kulu Hasan										3	1												
	Sadiya Gado										3	1												
	Sadiya Gado										3	1												
	Aminu Hasan										4	1												
	Hasiya Aminu										3	1												
	Bashari Hasan										3	1												
	Akilu Hasan										3	1												
	Lawali Hasan										2	1												
	Bello Hasan										2	1												

Plate 1: Treatment register from Runji community, Bungudu LGA.



NATIONAL NEGLECTED TROPICAL DISEASES (NTDS) CONTROL PROGRAMME
COMMUNITY TREATMENT REGISTER

STATE ZAMFARA LGA BUNGUDU FLHF (CLINIC) KAIDA COMMUNITY KAIDA

HOUSEHOLD NUMBER 63 CENSUS: 2013(M) — (F) — 2014(M) 3 (F) 5 2015(M) —

S/N	NAME	SEX	AGE	DOSAGE GIVEN BY TREATMENT YEAR																			
				2013						2014						2015							
				MEBTUM	ALBENDAZOLE	PRAZIQUANTEL	MEBENDAZOLE	ZITHROMAX	POS	ZITHROMAX SYRUP	MEBTUM	ALBENDAZOLE	PRAZIQUANTEL	MEBENDAZOLE	ZITHROMAX	POS	ZITHROMAX SYRUP	MEBTUM	ALBENDAZOLE	PRAZIQUANTEL	MEBENDAZOLE	ZITHROMAX	POS	ZITHROMAX SYRUP
1	MALI DAUDA	M	35																				
2	BALKI MANU	F	28																				
3	HISEINI MALI	F	12																				
4	BARI MALI	F	10																				
5	HADIZA MALI	F	9																				
6	HARATU MALI	F	6																				
7	HASSANA MALI	F	2																				
8	HUSHE MALI	F	2																				
9	SHAKUR MALI	F	19																				
10	BADIE MALI	M	7																				
11	ABDULLA MALI	M	3																				

KEYS: SEX: 'F' - FEMALE 'M' MALE
DOSAGE: 'BF' - BREASTFEEDING 'U' UNDERAGE 'S' SICK 'R' REFUSED 'A' -

Plate 2: Treatment register from Ka Ida community, Bungudu LGA

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Integrated post MDA coverage survey protocol

UNITED

October 2014

Version 1.0

Contents

1. Background

The DFID Supported UNITED NTDs Control Programme in Northern Nigeria is made up of a consortium of partners led by Sightsavers. The overall goal of the programme is to strengthen the health system to deliver annual Mass Drug Administration (MDA) for the control of NTDs. One of the key activities for the UNITED programme is to undertake MDA for the seven priority NTDs in Nigeria. The programme aims to deliver 112 million treatments over four years in three states in northern Nigeria namely, Kano, Katsina and Zamfara.

The pilot phase of the programme has just ended in Zamfara and an independent coverage survey is planned to assess the programme performance during the last rounds of MDA

The provision of effective drug treatments in safe and culturally acceptable methods, MDA can control and treat the seven priority NTDs. During the just concluded MDA, there were three staggered interventions involving the distribution of Mectizan and Albendazole to people aged 5 years and above for the treatment of Oncho and Lymphatic Filariasis. Mectizan was issued to the people using a dosing pole. Each person received 1, 2, 3 or 4 tablets depending on height. Each person received a tablet of Albendazole. Trachoma was treated using Zithromax tablets and paediatric oral suspension as well as tetracycline. The tablets were issued to people aged 5 years and above based on height determined with a dosing pole. The doses were 1, 2, 3 or 4 tablets depending on height. The suspension was given to children between 6 months and 5 years old. Each child was given 10mls of the suspension. Additionally, two tubes of tetracycline were given to pregnant women and children less than 6 months. The distribution of Mectizan, Albendazole, Zithromax and tetracycline was community based and house to house.

Praziquantel was distributed to school age children (5-15 years) in the schools using a measuring tape to determine the height. The dose given ranged from 1 to 5 tablets of the drug. Treatment with all the drugs was captured in treatment registers.

Table 1: Dates of the 2014 MDA by Local Government Authority (LGA) and diseases

LGA	Onchocerciasis	LF	SCH/STH	Trachoma
ANKA	02/07 - 15/08 2014	02/07 - 15/08 2014	12/08/2014	
BAKURA		20/04 - 10/08 2014	12/08/2014	
BIRNIN MAGAJI		x tbc	11/08/2014	28/09/2014
BUKKUYUM	09/07 - 14/08 2014	09/07 - 14/08 2014	10/08/2014	
BUNGUDU	29/07 - 22/08 2014	29/07 - 22/08 2014	26/08/2014	
GUMMI		29/06 - 20/08 2014	10/08/2014	
GUSAU		05/07 - 08/08 2014	24/08/2014	
KAURA NAMODA		03/07 - 15/08 2014	14/08/2014	x (NA)
MARADUN		30/06 - 27/08 2014	13/08/2014	
MARU	23/07 - 22/08 2014	23/07 - 22/08 2014	23/08/2014	
SHINKAFI		04/08 - 25/08 2014	11/08/2014	27/09/2014
T/MAFARA		03/07- 25/08 2014	13/08/2014	

TSAFE	04/07 - 29/08 2014	04/07 - 29/08 2014	14/08/2014	x (NA)
ZURMI	28/06 - 20/08 2014	28/06 - 20/08 2014	25/08/2014	26/09/2014

The dosage and quantity of drugs given is recorded on the register or tally sheet. This data is then used to calculate the population coverage of MDA, however there is often issues with the data including poor census data and inaccuracies in recording the data. It is therefore recommended that treatment coverage surveys are implemented in order to validate the coverage reported using the tally sheets/registers. It will also provide an opportunity to identify reasons for areas of poor coverage and recommendations to improve coverage in future rounds.

This will be the first integrated treatment coverage survey conducted under the UNITED project.

2. Aims and objectives of survey

Aim

To validate the reported coverage of recent MDA campaigns (2014) distributing drugs for Onchocerciasis, Lymphatic Filariasis (LF), Schistosomiasis, Soil-transmitted Helminths (STH) and Trachoma in Zamfara State.

Objectives

- To verify the coverage of recent MDA campaigns by drug (named above), disaggregated by sex, age and school enrolment (the latter for Schistosomiasis and STH only)
- To investigate areas with data quality concerns and identify areas where there is a significant difference in the coverage as recorded by health system records/tally sheets, drug store records and the survey data.
- To identify areas where there was lower MDA coverage or areas which were missed by the recent campaign, in order for relevant action to be taken if required.
- To determine factors for non-uptake in the recent MDA campaign and to determine if there was any difference as to participation by drug distributed, sex, age and geographic location.
- To provide lessons learnt as to how to conduct an integrated treatment coverage survey.
- To provide confidence for all stakeholders in the effectiveness of the campaigns.

3. Methodology

3.1 Timing of survey

The survey is planned to begin the week of the 13th October 2014, starting with the training of the data collectors and immediately moving to data collection.

The MDA schedule is given in Table 1 and outlines the differing times of the various drug distributions. Due to potential drug interactions, not all of the drugs were distributed to the community at the same time. Therefore, the period of time between the survey and the first drugs distributed (for Onchocerciasis and Lymphatic Filariasis) is significantly longer than for the most recent drug distributions (for Trachoma). The implications this will have on recall bias is an important consideration. In order to try and reduce on any errors introduced through recall bias, the survey team will ensure the following:

- Drug samples (and the packaging of the drugs were given in packages) of the different drugs distributed will be shown to each participant when discussing.

- Significant events in the communities history will be used to discuss the time frames of when the drugs were distributed e.g. if there was a significant event in the community, for example a wedding that occurred after the distribution of drugs for LF but before drugs were given for Trachoma, this can help the community members to differentiate which drug is being discussed.

- The mode of distribution will be discussed e.g. for Schistosomiasis the drugs are delivered through the school compared to Onchocerciasis, LF and Trachoma drugs which are delivered through the community approach.

3.2 Study area

It will not be possible to conduct the survey in all LGAs where MDA has been distributed, due to time and financial constraints.

The survey will be conducted in Shinkafi and Bungudu LGAs. These LGAs were selected for one or more of the following reasons:

- The post MDA records show particularly low or high coverage attained at the LGA level, or a large range of coverage attained at the community level - with for example a concerning number of communities with notably low coverage.
- There are suspected issues with the MDA records or census data that need to be verified e.g. poor population data or large population movements around the time of the MDA, discrepancies between the drug store records/logs and the community records or large variations in doses given year to year.
- Representation of the different combinations of drugs administered

3.3 Survey methodology

A population based survey will be conducted in order to determine the proportion of individuals reported taking the drug(s) during the most recent rounds of MDA. Although the mode of drug delivery varies per drug (Onchocerciasis, LF and Trachoma follow a community distribution compared to Schistosomiasis and STH which are delivered through schools), in order to implement an integrated treatment coverage survey, this will be conducted at the community level. An added advantage is that it will also allow for an estimation of the percentage of school age children that are not enrolled in schools and are currently missed by the current drug distribution strategy for Schistosomiasis and STH (through schools).

The survey will follow a two-stage cluster sampling methodology, with the primary cluster (primary sampling unit), the community (village) or Enumeration Area (EA) and the secondary cluster, the household. The head of every household randomly selected will be explained the purpose and procedure of the survey and if they wish to proceed they will provide consent for his/her household to take part in the survey. A questionnaire (Available in Annex 1) will be administered to everyone in the household (permanently resident), asking their age, sex, status of school enrolment (for children), whether they participated in the various MDAs, if they swallowed the drugs (or for trachoma this may also include as to whether they used the tetracycline eye ointment) and if not the reason why not.

Where possible the eligible individual will be asked directly if they participated in the MDA campaign and if they swallowed the drug. When that person is not available, another household member or caregiver can answer on their behalf but this will be recorded on the questionnaire form as this can potentially introduce errors due to recall and response bias. Primary caregivers will respond on behalf of children aged 1-10 years old, except where drugs were given in a school based distribution. In this case the children themselves will be asked if they received the drugs at school. A picture of all the drugs and the packages used during the recent MDA will be shown to the household member to assist their recall.

All individuals listed in the household will be asked about each drug in question. If they are not eligible this will be recorded on the questionnaire sheet (do not leave blank).

3.4 Sampling

3.4.1 Sample size

The survey will be powered to determine coverage at the LGA level.

The following assumptions were used:

- Estimated coverage of 80% or p=0.8 [p]
- Precision of +/- 5% (this level of precision or lower is recommended) [d]
- 95% confidence level or z score of 1.96 [Z]
- Design effect[1] of 4
- Non-response of 12% (or 0.12)

The sample size (SS) is determined by the following formula:

$$SS = \frac{Z^2 \times (p \times (1-p))}{d^2}$$ which for the above example is $$SS = \frac{1.96^2 \times (0.8 \times 0.2)}{0.05^2}$$

This gives a sample size of **246**.

Taking into account the design effect and the non-response, we need to sample a total of **1,101** individuals

For LGAs where Praziquantel (Schistosomiasis) or Albendazole (STH) targeting school-age children was given

Presuming an average household size of 5 (eligible school-age children per household for Schistosomiasis distribution[2]), a total of 220 households need to be sampled per LGA. Taking a minimum of 16 clusters[3], this would mean sampling a total of 14 households per cluster.

3.4.2 Selecting the clusters and households

Selecting the primary sampling unit (PSU)

The sampling frame for the survey will be all communities in the LGA. If the community is taken as the PSU, then the total population in each will be recorded and communities selected according to probability proportional to size (PPS), an example of how to do this is outlined in Annex 2

Selecting the secondary sampling unit (SSU)

The secondary sampling unit will be the household. Different methodologies for household selection may be employed depending on the context and administrative structures in the survey area (household listing, modified random walk or compact segment sampling). However, for the purpose of this survey, the compact segment sampling method will be adopted and used to select households.

[1] The design effect takes into account sampling variance introduced by using a cluster sampling methodology rather than a simple random sampling method. It adjusts the sample size based on the correlations within clusters (ie similarities found between households in the village/EA)

[2] We have taken the lowest eligible number of individuals per household per drug. It is estimated there are 5 school-age children per household in Nigeria, who are eligible for Praziquantel and Albendazole. This is based on large household sizes in Nigeria, of approximately 20 persons.

[3] A minimum of 16 clusters is suggested as this would indicate a design effect of 4 based on a conservative intra-cluster correlation of 0.2. It will also provide a representative distribution of communities and the coverage attained, whilst not being prohibitively expensive (as the main costs of a survey are often related to the cost to reach a cluster for sampling).

The following procedure can be followed to undertake the segment sampling:

- The survey team need to do a sketch map of the community (village). It is easiest to walk around the community and get an understanding of the area. A community informant can help the survey team to sketch the community. First ask how many households are in the community and approximately mark each household on the map. The survey team also need to sketch in some key landmarks in the community e.g. water points, internal paths, shops, schools etc.
- Circle groups of neighbouring households; the number of households circled depends on how many households are required for selection. If we want to select 14 households per PSU/community then we would be best to select from two different areas of the community (to avoid similarities between households in the same part of the community). Therefore we will look to select two groups of 7 households to be surveyed in the community. Therefore we need to divide households in the community into groups of 7.
- Number each group of households on the map (in this example there are 20 groups of households (each group 7 households), which are numbered from 1-20). Write the numbers between 1 and the total number of groups you have, on pieces of paper (one per number) and ask a community member to randomly select one. The number they randomly select will correspond to one of the household groupings.
- For this example the number 2 was selected. Walk to the area of the households selected. The first household in the cluster is the first household to be surveyed. Visit all 7 household in the cluster.
- Repeat the process to select the other group of households to be surveyed. You will now have the total number of households required to be sampled for the community (in this example 14 households).

All persons residing in the household and eligible to take part in the MDA campaign should be listed and information collected as per the form outlined in Annex 1.

<u>Household definition</u>

A household is defined as a group of individuals who reside in the same compound and eat from the same pot. They should be normally resident in the household ie resident in the household for at least the last 3 months.

<u>Survey non-respondents</u>

Every effort will be made to find any member of the household who fulfils the inclusion/residency requirements but is absent from the house. To ensure high participation rates the team will go back to the households at times convenient to them e.g. before children go to school, or after farmers return from the fields. However, if this is not possible then the individual will be recorded as absent and information obtained from other household members as to whether they participated in the MDA and swallowed the drug in question.

If the whole household is absent at the time of the survey, the interviewer should return at a later time and the household should be included in the survey. If they are still absent after multiple visits (at least two) to try and find the household at home, their absenteeism should be recorded on the survey form and the house is counted as one of the sampled households – **DO NOT replace the house with another house**.

If everyone in the household refuses to participate in the survey, try to encourage participation. If they still refuse, indicate this on the survey form. The house is counted as one of the sampled households – **DO NOT replace the house with another house**.

4.5 Research team composition and roles

The study teams will be selected from individuals who were not involved in the MDA campaign. Four (4) teams will be constituted for the study and each team should be made up of two interviewers, who should work closely with a local guide.

Supervision
For quality control purposes, there will be a designated survey co-ordinator, with overall responsibility for the conduct of the survey and team supervisors. Each team will have a supervisor. The supervisor should ensure they spend time in the communities with each team to ensure the quality of the data being collected. They will also participate in interviews and support the survey co-ordinator in writing the final report.

4.6 Data Recording

One questionnaire form will be completed for each household selected.

Paper questionnaires will be used and information for each individual will be double entered into a database with all variables recorded. Considering time constraint there should be at least 3 data clerks in the team to enter data as soon as they are collected from the field

4.7 Data Analysis

Analysis will be conducted to determine the reported coverage (programme and geographical) of the MDA campaign from the survey and to compare this to the results reported from the CHW register or health system records. Age and sex specific coverage will also be determined.

Programme coverage for the study is defined as:

$$\frac{\text{Number of individuals in the target population ingesting the drugs (by drug)}}{\text{All the eligible individuals targeted/eligible for treatment in the study sample (or tally sheets)}} \times 100\%$$

Geographic coverage is defined as:

$$\frac{\text{Number of endemic administrative units where MDA is implemented (by drug)}}{\text{Total number of endemic administrative units where MDA is required}} \times 100\%$$

The proportion of the population who did not ingest the drugs during the recent MDA campaign will be determined. Further analysis will be conducted to describe the demographics of this group e.g. sex, age, status of school enrolment, geographic location and the reasons for not taking the drug. An attempt will be made to determine if there are significant proportions of the population that were missed or refused treatment and how they differ per drug/disease targeted.

However, the data will be presumed to be self-weighted as the clusters will be selected probability proportional to size, however the final results will be adjusted taking into account the cluster sampling methodology.

A copy of the survey data (including data dictionary), the questionnaire used and a final report should be sent to the research team and kept in the country office. The outline of this guide (sections 2-6) is a good example of appropriate headings that need to be covered by any final report.

4.8 Ethical approval & consent

Permission for the survey and the need for ethical approval should be determined from the relevant authorities. However, it is not expected that ethical approval will be required as this survey is part of the routine monitoring of a programme activity and there will be no additional harm to the individual taking part in the study. Consent must be obtained from every household head before commencing the interview and consent form filled out.

All information collected will be anonymous and confidential. All paper-based data will be kept in a secured location and destroyed two years following the end of the survey. All electronic records will be protected by a password.

All procedures should comply with the principles of conducting research in Sightsavers, outlined in the organisations Research Governance Framework.

5. Training

It will be necessary to train all team members on the rationale of the coverage survey, the methodology, filling in the questionnaire, quality control of the survey and ethics and guidelines of conducting a survey in the community.

5.1 Schedule of activities

Training of team: 1 day
Duration of field data collection: 8 days
Data analysis and report writing: 8 days

Day 1: Arrival, preliminary meeting with team etc.

Meet State representative and:

- Request post MDA records for LGAs
- Request coverage figures for LGAs selected
- Send advance message to selected LGAs (this would have been done earlier)
- Logistics (production of questionnaires, Stationary: large envelopes, writing materials etc. field vehicle at least two)

Day 2: Training of team

- Leave for LGA 1

Day 3-Day 5: Data collection and entry into dummy tables in LGA 1

Day 6-Day 8: Data collection in LGA 2

Day 9- Day 13: Preliminary analysis and report writing
Day 14: Debriefing
Day 15-Day 17: Refinement and finalisation of report.

6. Dissemination and application of results

The results of the survey will be fed back to all relevant stakeholders, not just at the national but also at the district or community level. Providing feedback to the CHWs and/or health facility staff involved in the MDA

campaign will help them to improve their performances in future, provide opportunities for the community to address issues identified during the campaign and also provide motivation for those involved as it shows that their work was valued and being followed up.

7. References

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ICTC (2013) Preferred Practices for Zithromax® Mass Drug Administration, WHO, Geneva

WHO (2006) Trachoma control: a guide for program managers. WHO, Geneva

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Annex 1: Example treatment coverage questionnaire tool

Zamfara State Ministry of Health
Integrated post MDA treatment coverage survey questionnaire

LGA name: LGA ID no: ☐☐☐ Interviewer name: Sheet no _ _ / _ _

Community name: Community ID no: ☐☐ Date of interview: _ _ / _ _ /_ _ _ _

Name of Household Head: Household no: ☐☐ Please circle as relevant for household: Included / Absent / Refused

Line no	Name (Block capitals)	Age (Years)	Sex (1=M, 2=F)	How long have you been living in this community? 1= < 3 months 2= > 3 months	If of school age are they attending school? 1= Primary school 2= Secondary school 3= Qur'anic school 4= School age but not attending	If woman of child-bearing age are they pregnant or breastfeeding at present? 1= Pregnant 2= Breast-feeding 3= None of the above 4= Not Applicable	Drugs they are eligible to take (list all) 1= Mectizan (Oncho) 2 = Mectizan and Albendazole (LF) 3= Praziquantel (Schisto) 4= Zithromax (Trachoma)	Person responding? 1= Themselves 2= Someone on their behalf as absent 3= Someone on their behalf as underage 4= Not included, refused or absent (and no-one able to respond on their behalf)

Community ID no: ☐☐ Household ID no: ☐☐ Sheet no: _ _/ _ _

Line no	Did you **swallow** the drugs for Onchocerciasis /LF (show tablets separately) given to you in the recent MDA round in 2014? 1=Yes, both 2= Yes, Mectizan only 3= yes, Albendazole only 4= No(Go to next column) 5=Don't know 6= Not eligible	If eligible, why did you not take the drugs for Onchocerciasis/LF? (use codes as below)	When was the last time you took the drug before this present campaign? 1 = 2012 or earlier 2= 2013 3= NA	Did you **swallow** the drugs for Schistosomiasis (show tablets) given to you at school in the recent MDA round in 2014? 1=Yes 2= No 3=Don't know 4= Not eligible	If eligible, why did you not take the drugs for Schistosomiasis? (use codes as below)	When was the last time you took the drug before this present campaign? 1 = 2012 or earlier 2= 2013 3= NA	Did you **swallow (or use)** the drugs for Trachoma (show tablets or ointment) given to you in the recent MDA round in 2014? 1=Yes, Azithromycin/Zithromax 2= Yes, Tetracycline ointment 3=No 4= Don't know 5= Not eligible	If eligible, why did you not take the drugs/ointment for Trachoma? (use codes as below)	When was the last time you took the drug before this present campaign? 1 = 2012 or earlier 2= 2013 3= NA

***REASON FOR NOT TAKING DRUG** 1= Absent 2=Did not hear about campaign 3=Drug distributor did not come 4=Pregnant 5=Breast-feeding 6=Underage/too old 7=Fear of side effects 8 =Is healthy 9=Medicine does not work 10= Tired of taking drugs or using ointment 11= Was not at school on day or do not attend school 12=Other (please specify)

Annex 2: Example of how to select PSUs using Probability Proportional to Size sampling

Probability Proportional to Size (PPS) sampling means that Primary Sampling Units (PSUs) with a larger population have a higher chance of being selected for inclusion into the survey. For this survey, by using PPS sampling, you can assume the sample is self-weighted, and means that you do not need to adjust the analysis at a later stage to take into account sampling weights.

Below is a step by step guide as to how to select the Primary Sampling Units (PSU) using PPS sampling.

STEP 1: List all PSUs e.g villages in your district (or your area of interest e.g this could be a sub-district). This does not need to be in any particular order.

STEP 2: In a column next to each village name, list the population of each village (likely from the latest census data)

STEP 3: In the third column, list the cumulative population of all villages, as below.

PSU/village name	PSU/village population	Cumulative population	Cumulative population range
Village A	452	**452**	1 – 452
Village B	1,201	452+1201 = **1,653**	453-1,653
Village C	777	1,653+777 = **2,430**	1,654-2,430
Village D	980	2,430 + 980 = **3,410**	2,431-3,410
Village E	654	3,410 + 654 = **4,064**	3,411-4,064
Village F	558	4,064 + 558 = **4,622**	4,605-4,622
Village G	863	4,622 + 863 = **5,485**	4,623-5,485

STEP 4: Calculate the sampling interval by taking the total cumulative population (in this example this is 5,485) and dividing by the number of PSUs/villages that you want to select. For this example we will only select 4 villages, therefore the sampling interval is 5,485/4 = **1,371**.

STEP 5: Randomly select a number between 1 and the sampling interval (in this case 1,371). A random number can be generated either using a table of random numbers or a computer random number generator. For this example the random number generated was **514.**

STEP 6: You now need to determine which PSUs/Villages have been selected. The first village will correspond to the village with the cumulative population that includes the random number generated (in this example, 514). From the table below we can see that Village A is not selected as 514 is higher than 452. However village B is selected as the corresponding cumulative population ranges from 453-1,653.

STEP 7: To select the second village, add the sampling interval (in this case 1,371) to the random number generated and determine which village this corresponds to.

In this example 514+1371 = 1,885, which corresponds to Village C.

Continue adding the sampling interval until you have selected the number of PSUs/villages you require. In this example we will select 4 PSUs/villages.

1885 + 1371 = 3,256 (corresponds to Village D)
3256 + 1371 = 4,627 (corresponds to Village G)

PSU/village name	**PSU/village population**	**Cumulative population**	**Cumulative population range**	**Village selected?**
Village A	452	**452**	1 – 452	No
Village B	1,201	452+1201 = **1,653**	453-1,653	Yes
Village C	777	1,653+777 = **2,430**	1,654-2,430	Yes
Village D	980	2,430 + 980 = **3,410**	2,431-3,410	Yes
Village E	654	3,410 + 654 = **4,064**	3,411-4,064	No
Village F	558	4,064 + 558 = **4,622**	4,605-4,622	No
Village G	863	4,622 + 863 = **5,485**	4,623-5,485	Yes

Please note: It is possible for a PSU/village to be selected twice, if it has a large population that is greater than the sampling interval. In this case the village should contribute twice to the overall sample ie if your methodology is to take 12 households per PSU/village selected, then if the PSU/village is selected twice then it will contribute twice the number of households ie 44.