Sightsavers

Post MDA Coverage Survey Report

GiveWell
Ituri Nord, DRC

October 2019

Contents

1.   Background

Sightsavers' Deworming Project is being implemented in Ituri Nord, of the Democratic Republic of the Congo in partnership with the United Front Against River Blindness (UFAR) and the Ministry of Health (MoH). This projects provides support for the control of schistosomiasis (SCH) and soil (STH through yearly deworming of school-age children (SAC) aged 5- 14 years with Praziquantel and Albendazole respectively.

The project aims to lower the prevalence and intensity of SCH/STH infection by targeting at school-age children through MDA with Praziquantel for SCH and albendazole for STH. In the first quarter of 2019, despite delays in receipt of donated drugs from WHO, the second consecutive round of treatment was delivered in eligible health zones following WHO treatment cycle, which is predicated on health zone prevalence. Praziquantel was administered by measuring an individual's height against a calibrated stick with dosage ranging from one to four tablets of Praziquantel and one tablet of albendazole.

Praziquantel and albendazole was primarily provided to enrolled kids in schools and to non-enrolled school aged children at focal points in the community. Treatment with both drugs was documented in treatment records and tallied at health centers for central reporting.

Although Ituri North is also endemic to Oncho and LF, the current survey aimed to validate reported coverage for SCH MDA, with focus on two endemic health zones randomly selected during sampling. See below NTD treatments provided in Ituri Nord:

Table 1: NTD treatments delivered to health zones.

Health Zone	2018 Treatment type
Adi	OV (IVM)
Adja	OV (IVM)
Angumu	OV, LF and Schisto (IVM+ALB, PZQ)
Ariwara	LF (IVM + ALB)
Aru	SCH-No MDA in 2018
Aungba	OV,STH (IVM, ALB)
Biringi	OV ,LF and SCH (IVM + ALB, PZQ)

Kambala	OV and LF (IVM + ALB)
Laybo	OV (IVM)
Logo	SCH-No MDA in 2018
Mahagi	SCH-No MDA in 2018
Nyarambe	LF and Schisto (IVM+ALB, PZQ)
Rimba	OV (IVM)

Table 2: Reported coverage per health zone sampled.

Heath zone	Reported Coverage (%)
Biringi	80.2
Nyarambe	91.1

2. Aims and objectives of survey

Aim

To validate reported coverages of the 2018 MDA campaign held from December 2018 to February 2019 for schistosomiasis.

Objectives

- To assess the reliability of the reporting system for school-based and community-based school-age treatments for determining the target population size;
- To identify reasons for non-participation (or non-treatment) by drug distributed, sex, age, wealth status and geographic location/region;
- To determine if there were any differences in being offered drugs and swallowing by sex, age and education;
- To identify methods for awareness raising during MDA in communities and schools;
- To inform whether CDDs visited the communities surveyed.

3. Methodology

3.1 Timing of survey

The survey was conducted in June 2019 starting with a three-day training followed by field data collection. Data collection took place for 7 days.

A briefing with staff from the National and Provincial NTD Program was held in Aru from 01 to June 03, 2019. *As this survey is routine and been conducted before,*

provincial, national and partner staff were expected to be familiar with the protocol and survey methodology.

To mitigate recall bias errors related to drug distribution some time ago; the survey team ensured the following:

- Drug samples (and the packaging of the drugs) of the different drugs distributed were shown to each participant when discussing;
- Major events in the communities' history was used to discuss the time frames of when the MDA was conducted.

3.2 Study area

The survey was conducted in Biringi and Nyarambe health zones.

3.3 Survey methodology

A cross-sectional population-based survey was conducted in order to determine the proportion of individuals reporting taking Praziquantel during the most recent round of MDA and the determinants of being offered and swallowing the medication.

The survey methodology was based on WHO recommended guidelines. Within the selected regions, the survey followed a two-stage cluster sampling methodology, with the primary sampling unit (PSU), being the community/village and the secondary cluster, the household. The head of every household randomly selected was explained the purpose and procedure of the survey and, if they wanted to proceed, they provided verbal consent for their household to participate. A questionnaire was administered to everyone in the household (permanently resident), asking their age, sex, status of school enrolment (for children), whether they participated in the MDA, if they swallowed the drugs and if not, reasons were provided.

The person responding to each question was recorded. When a person was not available or very sick and could not answer questions, another household member or caregiver was able to provide answers on their behalf. Primary caregivers assisted children aged 5-10 years old to provide responses, but children were encouraged to respond directly. Sample tablets of the drugs and the packages used during the recent MDA were shown to the household member to assist their recall.

In selected households, only school-aged children were asked whether they took schistosomiasis treatment. The questionnaire was administered in either French or appropriate local language to enhance understanding.

3.4 Sampling

3.4.1 Sample size

The survey was powered to determine coverage at the health zone for the target group of 5 – 14 years. The sample size was determined using the WHO Coverage Survey Builder, version 2.5. Details regarding the sampling and selection methodology are available in the WHO manual.

The following parameters were used in the survey builder:

- 2018 inflated population based
- Estimated coverage of 60%
- Precision of +/- 5%
- 95% confidence level or z score of 1.96
- Design effect[1] of 4
- Non-response of 15%
- Average household size of 2.5 for number of 5-14 years expected

A minimum of **1736 individuals** were required per health zone. These will be divided across **30 clusters (communities)**. In each cluster, **22** households were sampled according to the disease specific sampling interval of **every 2nd household.** Households were selected after community segmentation according to a random, pre-defined list.

3.4.2 Sensitization of the Clusters

The survey coordinator was in charge of making sure that the leaders of each cluster selected for the coverage survey were aware of the survey in advance of the team's visit. During this sensitization visit (or phone call) with the local leaders, the

---

[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 (i.e. similarities found between households in the village/EA)

representative from the survey team had to share the purpose of the coverage survey and also discussed the optimal day of the week and time of day for the survey team to visit in order to find members of the survey population at home.

3.4.3 Dividing the Community into the Number of Segments

As teams arrived in the selected villages, they identified local guides who helped them draw a sketch map of the village. This included; major outer boundaries, places of interest, e.g. schools, shops and internal boundaries, e.g. paths or roads. The teams then divided the selected community into the pre-determined number of segments on the sample frame, which is 50 households each.

Each segment was numbered and each number written onto a piece of paper and someone from the village was asked to randomly pick one number. That was the segment that was surveyed. Starting with the initial household, the team enumerated households as they followed a predetermined route through the segment (ignoring any structures that are not households).

3.4.4 Selecting the households

In the selected segment, for each enumerated household that corresponded to a number on the selected list, the team stopped and interviewed all members of the survey population who were living in the household at the time of the MDA.

3.5 Survey team composition

The study team was selected from individuals who were not part of the MDA campaign. Two teams were constituted per health zone, with each having 12 surveyors working in pairs, each with one phone. Local guides were hired to assist in finding villages and work with village leaders to conduct segmentation. Two supervisors were mobilized and assigned to each health zone team.

3.6 Data Recording

A questionnaire form was completed for each household selected and administered on Android phones using the CommCare survey platform. The platform was automatically uploaded into the CommCare system. The data downloaded by Sightsavers, cleaned and analyzed.

3.7 Data Analysis

Data were cleaned and analyzed using Stata 14.0 MP (StataCorp, College Station, TX). Estimates were adjusted for the number of clusters to account for the survey methodology. No weights were provided as the sample selection was considered self-weighting. Analysis was done to determine the coverage (program and geographic) for the MDA campaign and reported results from treatment registers or health system records compared with surveyed. 95% Confidence Intervals (CI) was calculated for the treatment coverage.

3.8 Ethical approval & consent

Permission for the survey was obtained from relevant authorities. It was not expected that ethical approval was required as this survey was part of the routine monitoring of the program activity, with no harm to the individual taking part in the study. Verbal consent was obtained from every household head before commencing the interview. All information collected was anonymous and confidential. All electronic data was protected by a password.

4. Training

Team members were trained on; the rationale of the coverage survey, methodology, filling of questionnaire using mobile phones, quality control of the survey and ethics/guidelines of conducting community surveys.

5. Results

a. **Surveyed respondents**

A total of 2,771 eligible individuals aged 5-14 years were sampled from 1,247 households during the survey.

Table 3: Surveyed households and individuals

Health Zone	Total Villages Surveyed	Total Households Visited	Households with No SAC	Refused	Eligible Population (5-14 yrs)
Biringi	29	587	61	36	1,105
Nyarambe	29	660	66	24	1,666
Total	**58**	**1,247**	**127**	**60**	**2,771**

Figure 1 below presents sex distribution per health zone. Males were more likely to be surveyed in both health zones, though the difference was not statistically significant (P=0.58).
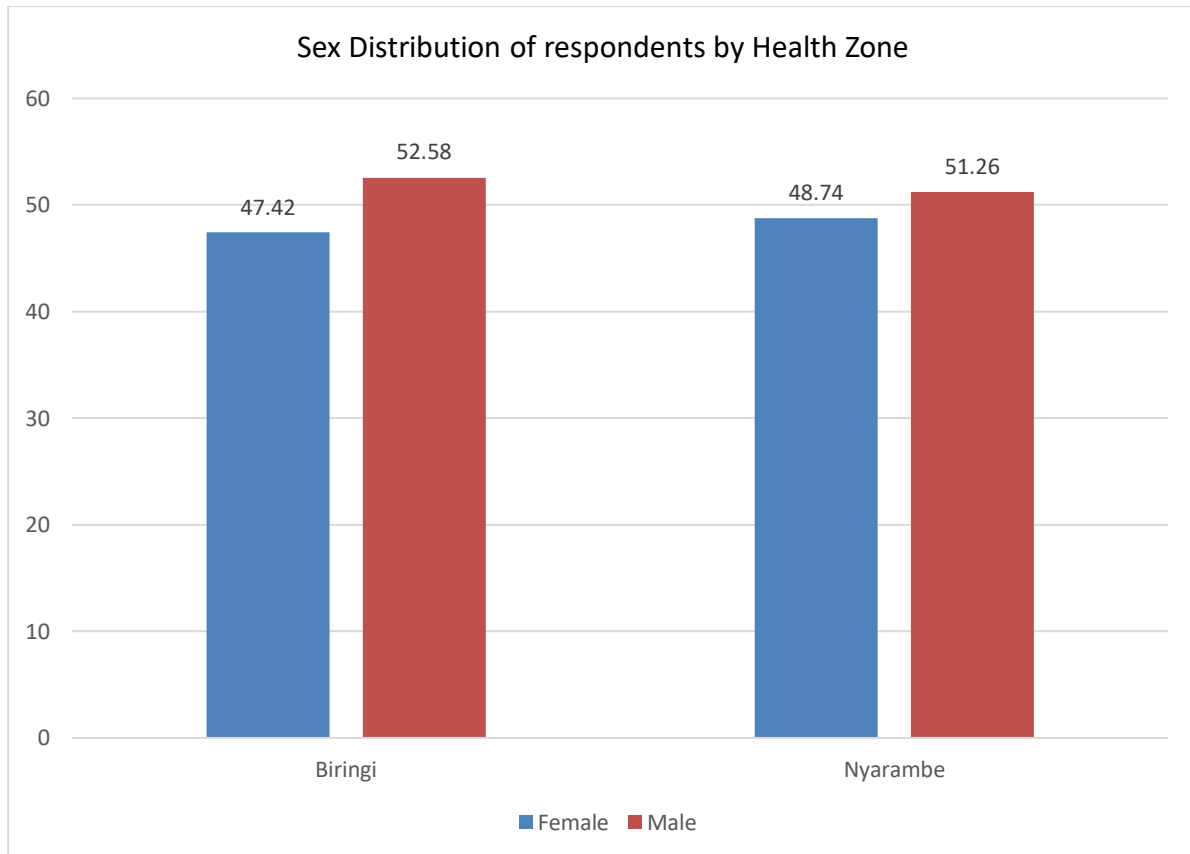

Figure 1: Sex distribution of survey respondents (Biringi: F=524, M=581, n=1,105; Nyarambe: F=812, M=854, n=1,666).

The disaggregation of survey respondents by age for both health zones is shown below (figure 2). In Nyarambe and Biringi, age was skewed younger.
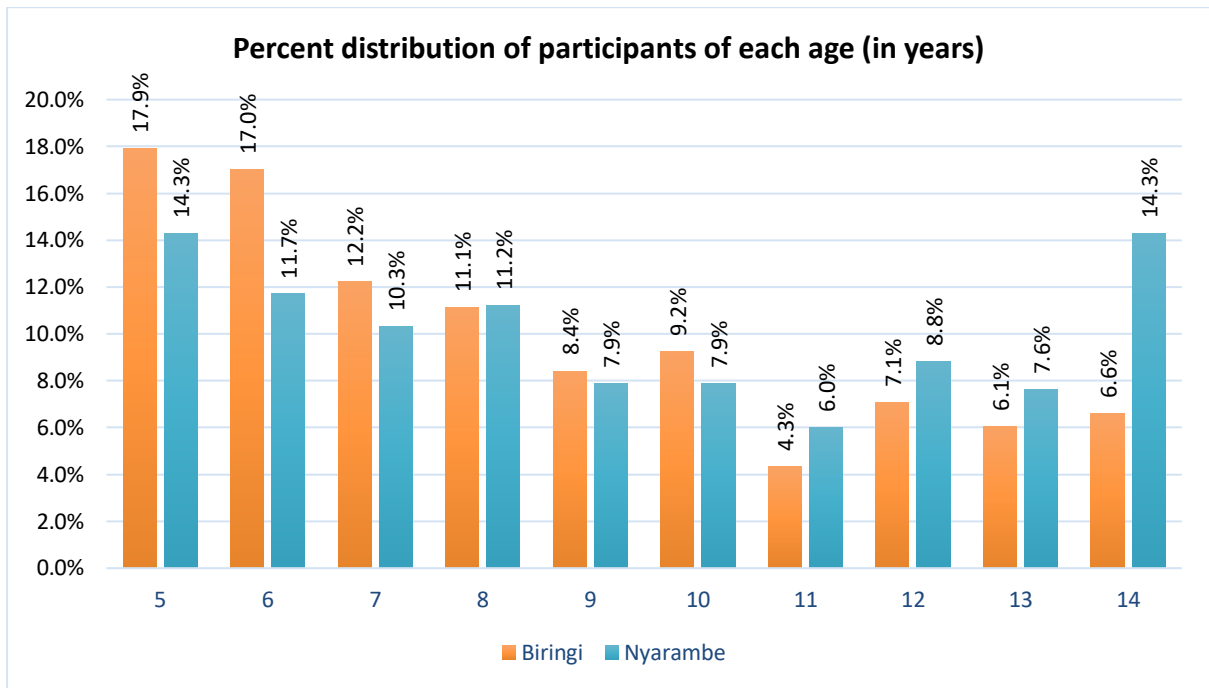
Percent distribution of participants of each age (in years)

Figure 2: Age disaggregation of Survey respondents by health zone.

Most of the survey respondents were enrolled SAC. School enrollment was higher in Biringi (55.4%) than Nyarambe (52.1%) as shown below:
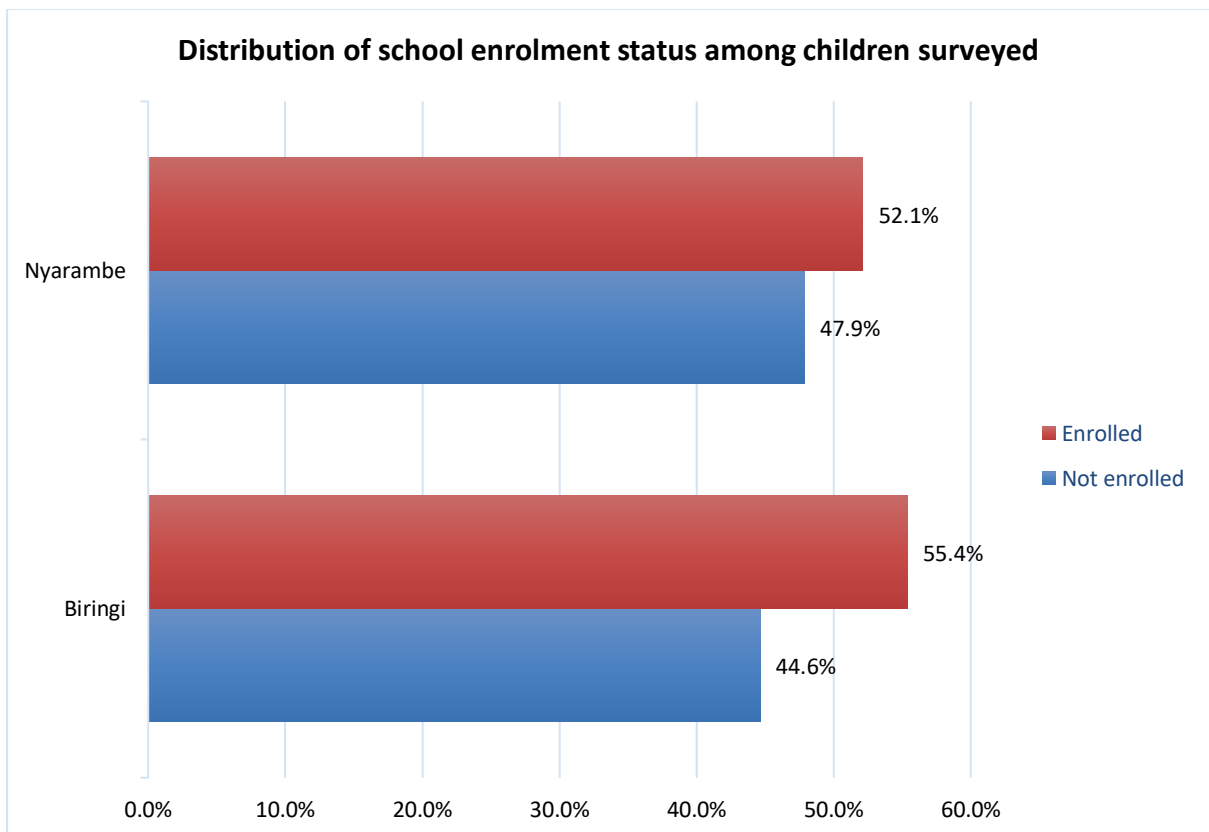
Distribution of school enrolment status among children surveyed

Figure 3: Distribution of school enrolment status by health zone.

Females were less likely to be enrolled than males in each health zone. See fig 4 below.
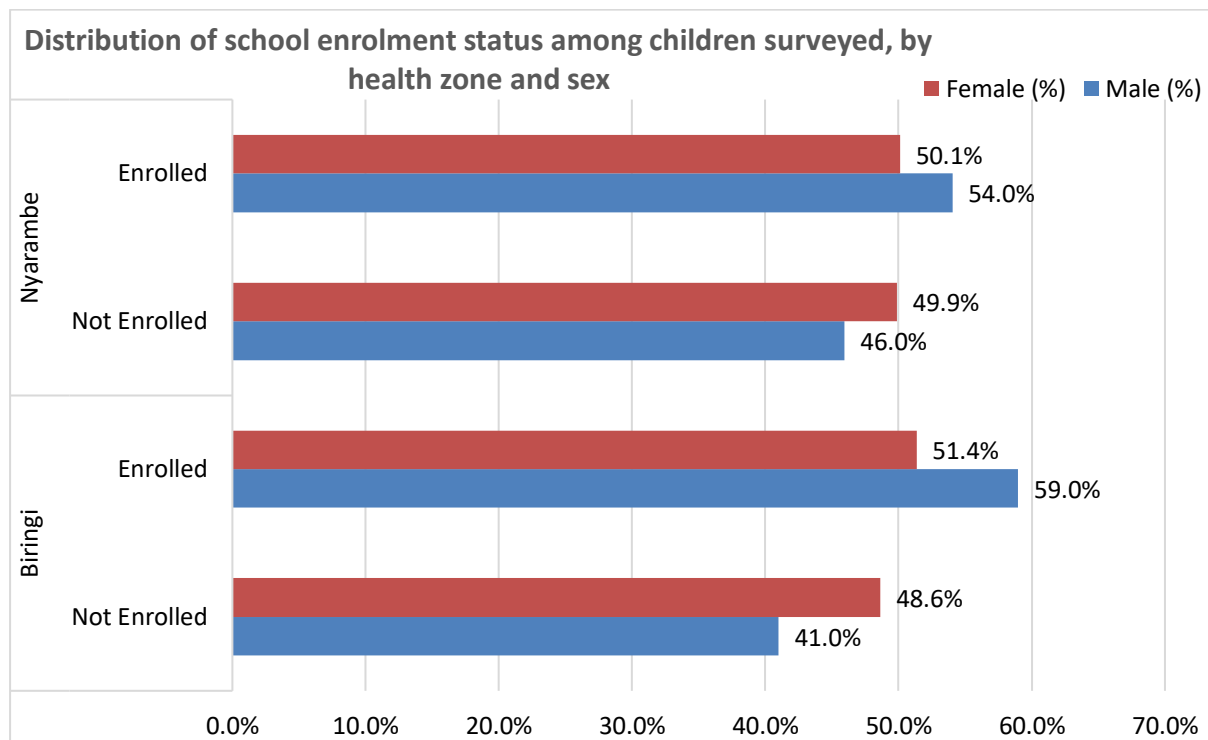
Figure 4: School enrolment by sex and health zone

More survey responses in Nyarambe (57.3%) were self-provided compared to Biringi (37.8%), though this differed by health zone. See figure 5.
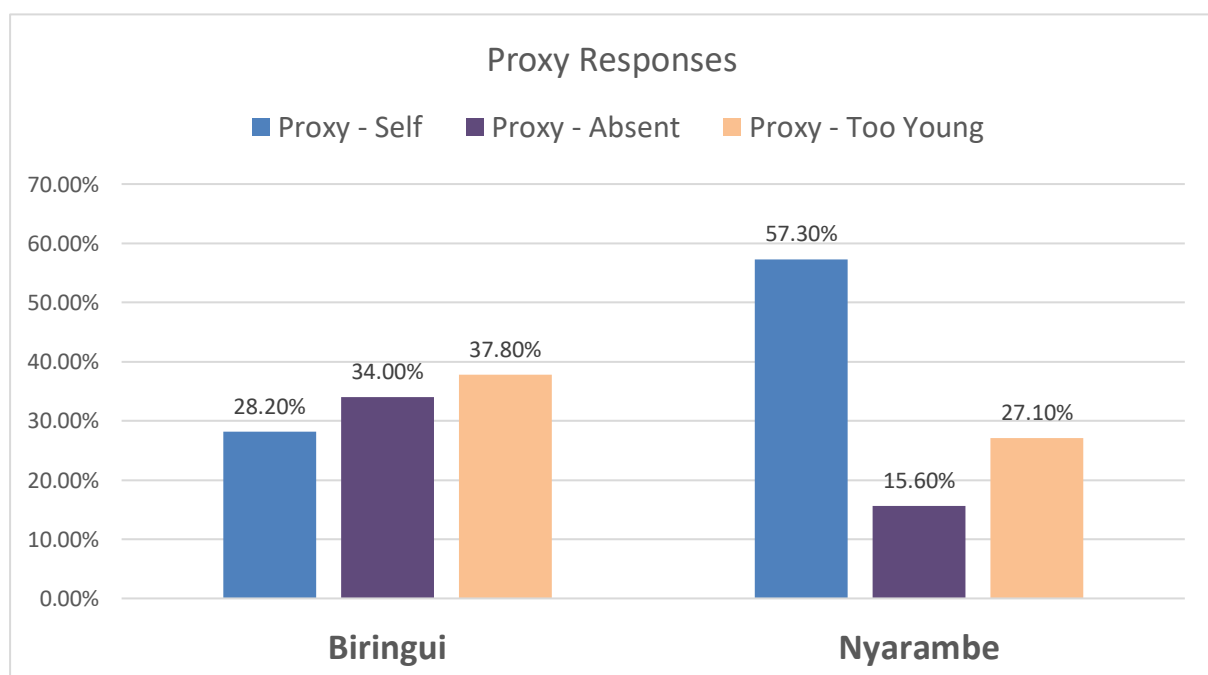

Fig 5: Proxy status of survey respondents

B) Survey Coverage

The table below shows treatment for SCH provided in both health zones. In Biringi, the proportion of SAC reported being treated with Praziquantel (PZQ) was less than 75% while in Nyarambe it was more than 75%. When considering the 95% confidence interval, Biringi and Nyarambe all have lower bounds below 75% with all upper bounds exceeding 75%.

Table 4: Surveyed coverage per health zone.

SCH	Biringi	Nyarambe
	% (95% CI)	% (95% CI)
PZQ	71.81 (57.99, 82.46)	79.58 (71.46, 81.51)
Not Treated	28.19 (17.54, 42.01)	20.42 (14.15, 28.54)
N	1089	1665

*adjusted for number of enumeration units and surveyed households

Figure 6 presents where treatment was received. Most treatments were delivered at home in Biringi (52%) and Nyarambe (53.8).
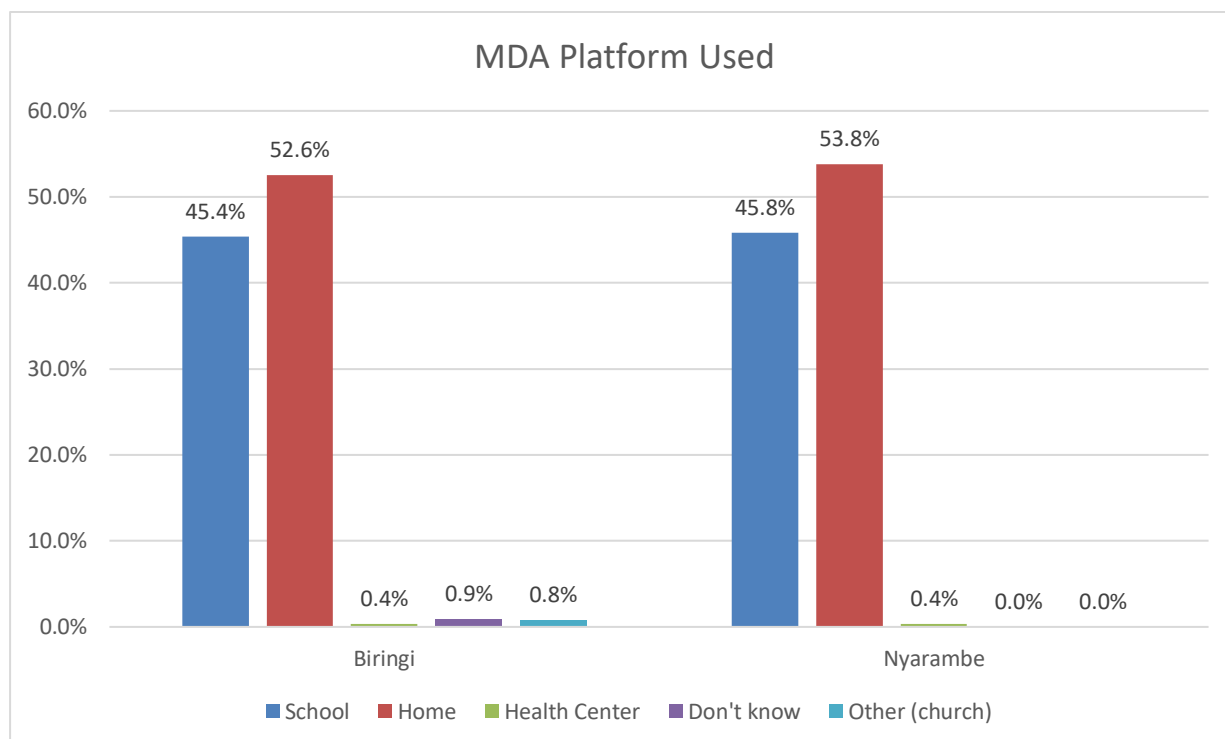

Fig 6: MDA Platform Used.

More than 60 % of treatments were delivered to enrolled kids in both health zones, though the difference was not statistically significant between enrolled versus non enrolled (P= 0.2138). Seen figure 7.
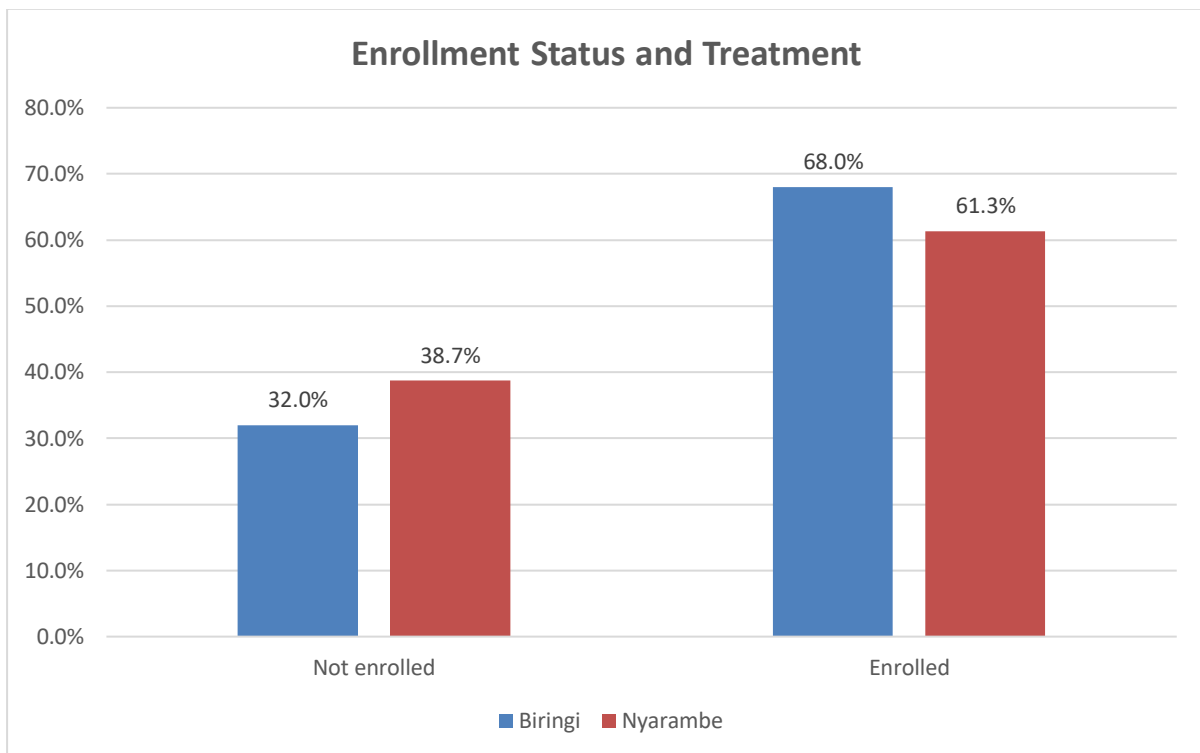

Fig 7: Enrolment status and treatment delivered by health zone

Treatment in each health zone differed by sex. Males were more likely to be treated than females, though the differences was not statistically significant (P = 0.3028).
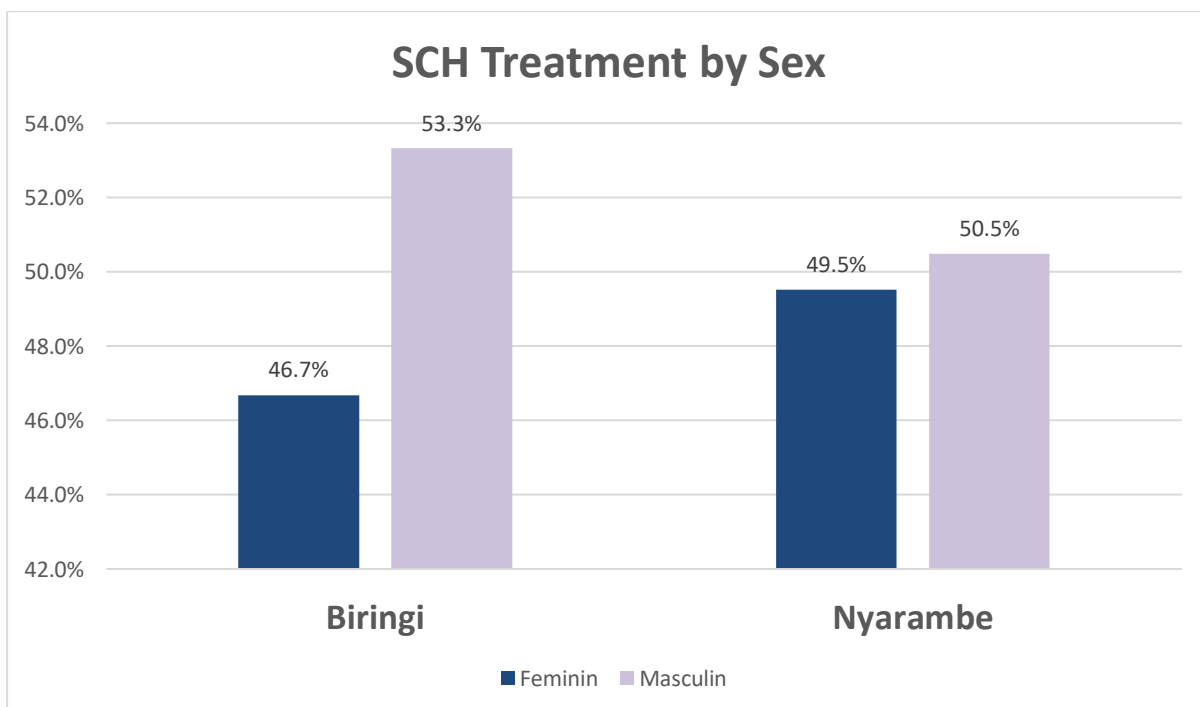

Fig 8: Praziquantel administration by sex and health zone.

Side Effect was minimal, with the most predominant being stomach ache/vomiting and headache.
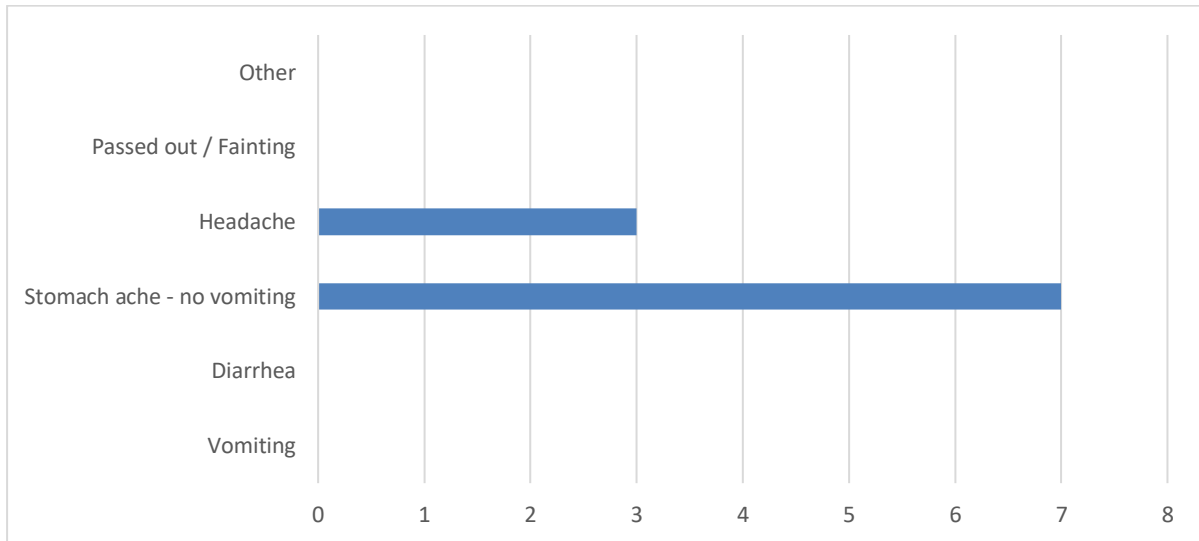

Fig 9: Side effects reported.

C) Reported versus Surveyed Coverage

Figure 8 below shows reported programme coverage versus surveyed coverage by health zone. Reported coverage was greater than point estimates in Biringi but within 95% confidence intervals (57.99% to 82.46%). In Nyarambe, reported coverage was higher than point estimates and outside the 95% confidence interval (71.46% to 81.51%).
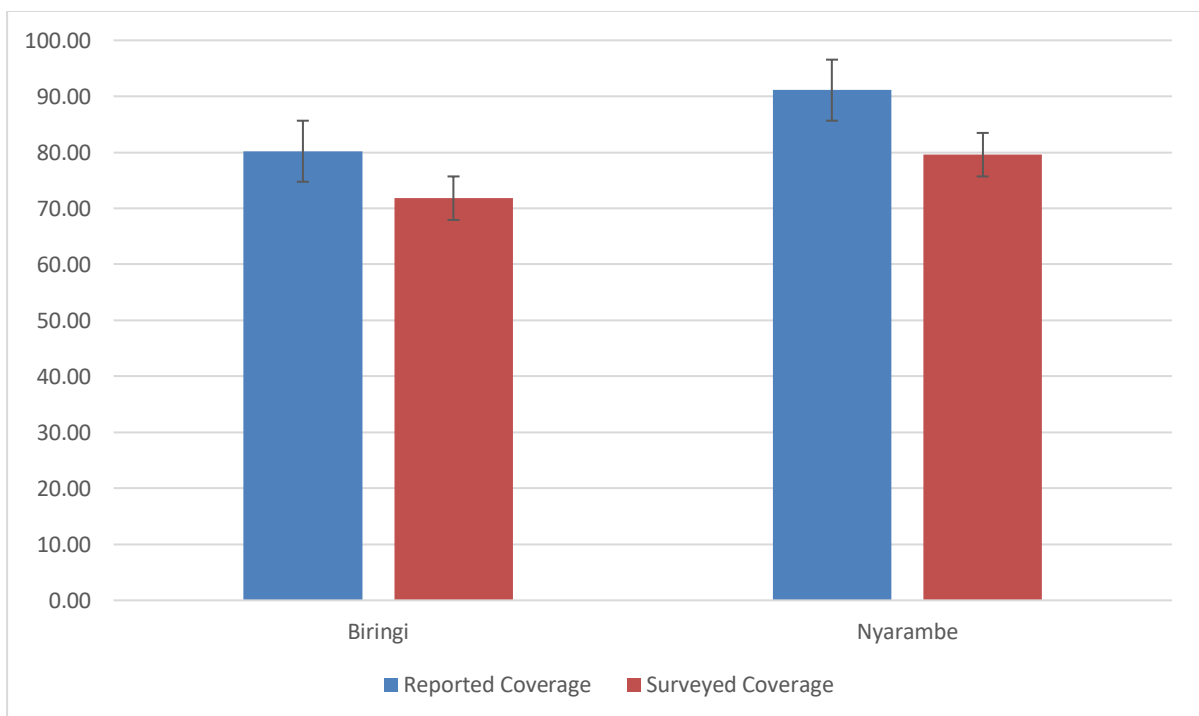

Fig 10: Reported versus surveyed coverage by health zone.

Table 5 presents a summary of the treatment validation. Reported coverage of a health zone was considered validated if within the 95% confidence interval.

Table 5: Summary of treatment validation

SCH	Biringi	Nyarambe
Reported Coverage	80.20%	91.10%
Surveyed Coverage	71.81%	79.58%
Upper and lower limit Confidence interval (95%)	(57.99% to 82.46%)	(71.46% to 81.51%)
Validation	Validated	Not validated – over reporting.
Surveyed coverage attaining WHO threshold of ≥75%	N0	Yes

D)   Reasons for not taking treatment

Most SAC who did not receive treatment stated that they were present in the community during the MDA campaign but not reached by a CDD or teacher (87.8%, n= 280). In Biringi, most of those who were not treated attested they did not hear about the campaign (3.9%), while in Nyarambe, it was because they were absent during MDA (11.4%).
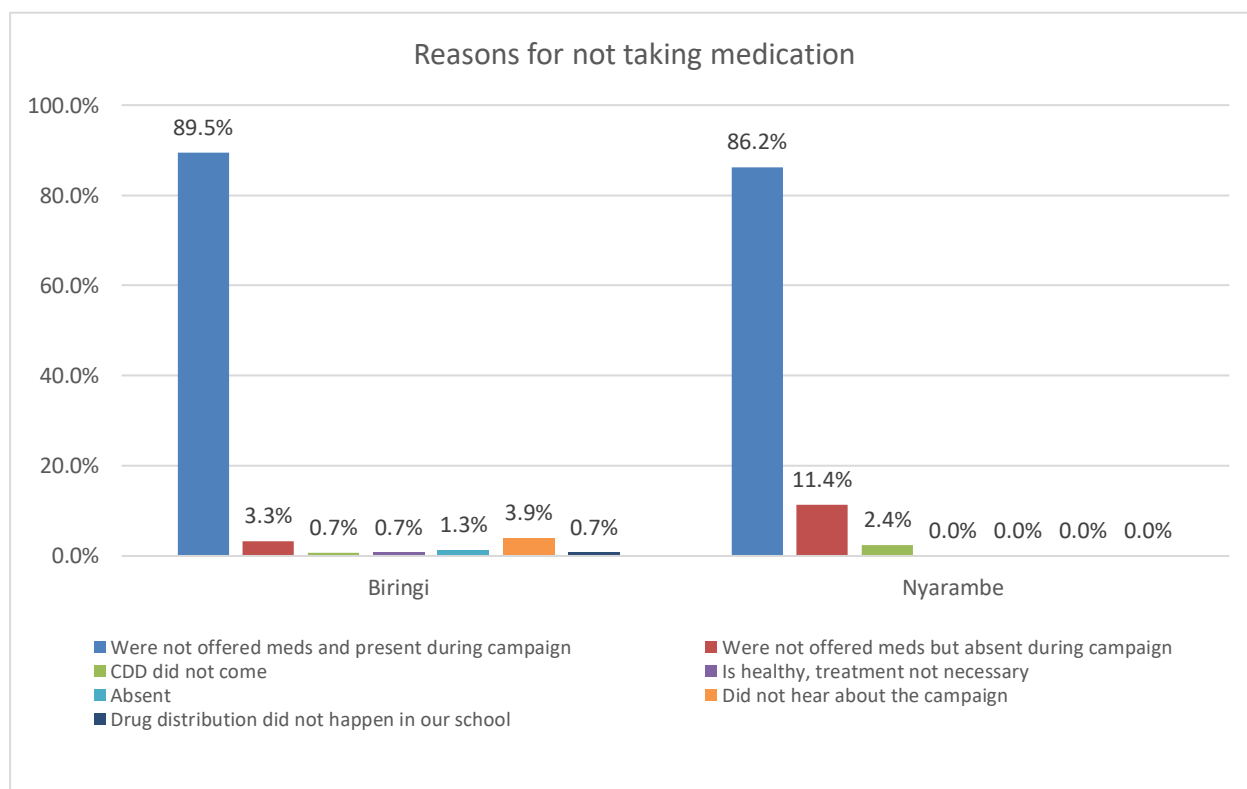

Fig 11: Reasons for not receiving medication during MDA.

E) Sensitization Methods

In both health zones, amongst the sources of information cited by the children surveyed, CDD was reported the most often (46.16%), followed by a teacher (38.18%) and thirdly by family member (13.04%). Notably, other forms of mass sensitization and use of health center were minimally reported. See figure 12 for details.
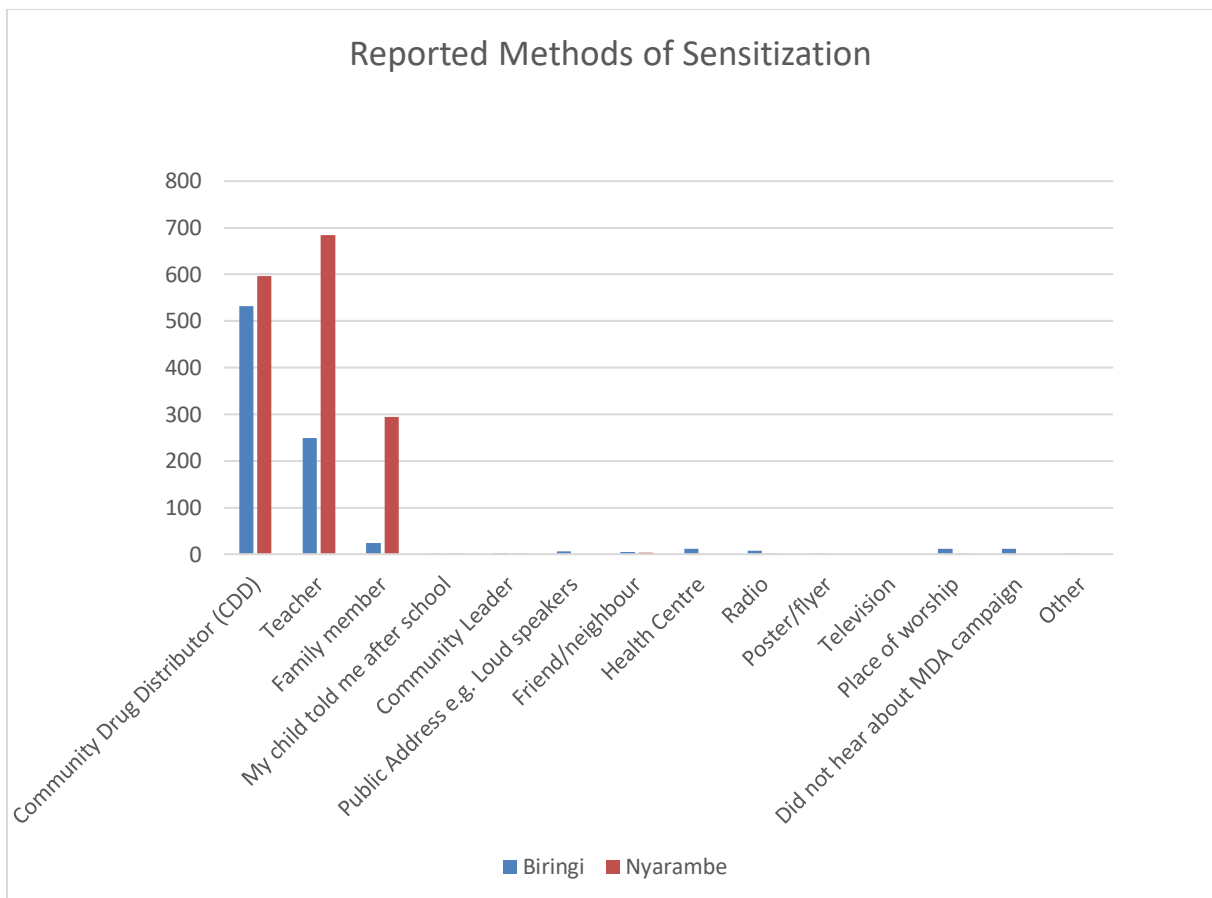

Fig 12: Sensitization methods.

6. Discussion

The results of Praziquantel distribution against schistosomiasis are presented for the two health zones randomly selected for this survey. Results were equivocal as demonstrated in Table 5. Reported coverage was validated for Biringi but not for Nyarambe. The reason for non-validation of reported coverage in Nyarambe was due to significant over reporting of up to 11.5 percentage point difference between reported and surveyed coverage. Issues of denominator could be the likely reason why this

discrepancy was observed in Nyarambe. The denominator used to estimate reported coverage was obtained from the CDD census update, which probably does not reflect the actual situation of population movement. The last national demographic census for DRC took place 1984, so it is difficult to know the actual population statistics.

The survey also confirmed that MDA for schistosomiasis in the health zones of Nyarambe (79.58%) exceeded the recommended WHO coverage threshold for SAC of ≥75%, but not so for Biringi (71.81%), thought results of the latter were validated.

In Nyarambe, the MoH reported an equal ratio of male to female treated (50:50), which was similar to the survey findings. In Biringi, more female (46.5%) than male (53.5%) were treated according to MOH records, contrary to the survey finding which revealed more male than female treated (fig 8). Reasons for this inconsistency in Biringi could be blamed on reporting or data aggregation errors along the reporting chain.

Further, the survey found additional anomalies in reported SCH data for MDA platforms used during the campaign. The channel of treatment delivery was opposite of what was reported by the MoH. The MoH reported that 0% and 75% of kids received Praziquantel in schools in Biringi and Nyarambe respectively, whereas the survey found 45.4% and 45.8% respectively. The survey equally revealed that more than 60% of kids treated were enrolled (fig 7), with a majority attained from the community platform (fig 6). From these findings, it is observed that the project operates a hybrid platform of both school and community, with programme reach optimized at community level. Given the platform (school and community) discrepancy, it is most likely that data aggregation erros might have arisen along the different levels of the MDA reporting chain.

Self-reporting was predominant in Nyarambe than in Biringi, where most of the respondents were rated too young. More than 80% of SAC who were not offered medication stated they were present in the community. It is difficult to assess from the survey why they were not treated since they were evenly distributed across villages. There is a likelihood that catch-up was not conducted in schools by teachers, nor revisits by CDDs in communities, to reach kids who were missed during MDA.

Side effect was minimally reported, with the most common being stomachache, vomiting and headache. This further puts to evidence the likelihood of declining side effects with repeated doses of Praziquantel. The primary mode of sensitization was the CDD, followed by a teacher and thirdly by family member (Fig 12). Other channels of sensitization such as; public address system, place of worship and health center were minimally reported.

7. Limitations

- The absence of an up to date national census statistics made accurate estimation of reported programme coverage challenging;
- The use of a new CommCare online dashboard enabled the teams to track progress of field survey outputs, but geographical accessibility and internet connection challenges have resurfaced. This did not allow for quick decision-making, although all villages were reached.

8. Conclusion

Based on the survey results, only Biringi MDA coverage was validated in 2018. The reported coverage of 80.2% was within the 95% confidence interval of the survey coverage of 71.81% (CI: 57.99-82.46). This concludes that, the reported coverage of Biringi was accurate and that the reporting system is effective. Although in Nyarambe the surveyed results of 79.58% exceeded the WHO recommended coverage threshold for SAC of ≥ 75%, the results were not validated, as they were outside the 95% confidence interval, largely due to significant over reporting.

9. Recommendations

- MoH, UFAR and Sightsavers should strengthen field supervision during MDA, to identify and correct potential errors related to data/reporting flow during the next campaign;
- The Ituri North NTD project should endeavour to conduct revisits in homes and mop-up in schools, to ensure treatment is delivered to missed kids in the next campaign;

- MoH should lay emphasis on multiple levels of data validation/aggregation, starting from the frontline health facility, to the health zone and project coordination level during subsequent MDA campaigns;

- MoH should ensure data tools are available and that they accurately capture treatments delivered on both school and community platforms;

- The national and Ituri North NTD project teams should strengthen the skills and competences of health zone data managers during health workers training in the subsequent MDA campaign.