


Evidence  
Action



Deworm the  
World Initiative

School-based Deworming in  
Rivers State, Nigeria

Process Monitoring and Coverage Validation  
Report



Year 4 Round 1

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## Glossary

FLHF. Frontline health facility  
FMOH. Federal Ministry of Health  
IEC. Information education communication  
LGA. Local government area  
MDA. Mass drug administration  
NTD. Neglected tropical disease  
PPE. Personal protective equipment  
PPES. Probability Proportionate to Estimated Size  
SAC. School aged children  
SAE. Severe adverse event  
STH. Soil-transmitted helminths  
WHO. World Health Organization

# 1.0 Executive Summary

In January 2021, Rivers State conducted a round of school-based deworming which targeted both enrolled and non-enrolled school-aged children (SAC), 5-14 years. Due to the COVID-19 pandemic, there were delays in planning and implementation, but the program was able to work with Rivers State to conduct one round in January 2021, which the state considers as the only round of deworming in 2020 (Y4R1). For this round of deworming, approximately **4,715** schools (public, private, primary and junior secondary) and **1,356,761** SAC (enrolled and non-enrolled) were targeted in 15 out of 21 total at-risk LGAs, all of which are endemic for STH only.<sup>1</sup> A total of **1,124,890** children received treatment, resulting in an 83% government reported coverage rate.

This was the first round of deworming in Rivers State since the start of the pandemic. Evidence Action supported the Ministry of Health to safely conduct deworming activities and limit the spread of COVID-19 through the provision of personal protective equipment (PPE) such as surgical face masks, gloves, hand hygiene, waste management materials, and sensitization materials. The team also contextualized COVID-19 protocols to be used before, during, and after the deworming exercise based on WHO and ministry guidelines. In addition to the global pandemic, the state also experienced violence, severe vandalism and loss of lives and properties caused by a nationwide End Police Brutality (#EndSARS) protest which culminated into setbacks and delays in program implementation and activity timelines.

Evidence Action monitors the key implementation processes before, during, and after each mass drug administration (MDA) to assess the effectiveness of training and supply chain, adherence to deworming protocol, and treatment coverage to inform program design and improvements. Evidence Action recruited an independent firm to collect data from a sample of 8 LGA training sessions, 28 teacher training sessions, 30 schools on deworming day, and conduct interviews at sampled schools and communities for coverage validation.

During the independent observation of the training cascade, on average, 58% of expected schools were in attendance for teacher training, which was 20 percentage points lower when compared to the last round of deworming (78%). Trainers reported that the majority of teachers that did not attend cited late invitations (63%), school/teacher unawareness (41%), they could not make it to training (33%), and late communications on change of date/venue (13%). During the observed LGA and teacher trainings, the topic of drugs and drug administration was covered the best with coverage (complete or partial) of key messages noted in at least 82% of training sessions. In post-training interviews, more than 90% of participants correctly responded to questions about this content area. Types of side effects received the lowest coverage as only abdominal pain, nausea, and vomiting were covered in more than 70% of LGA and teacher trainings. Read more on training on [page 10](#).

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<sup>1</sup> The remaining six endemic LGAs were not treated during this round due to recent LF treatment.

Directly following teacher training, 96% of training sessions distributed all key materials (drugs and reporting forms) to all participants. Ninety-six percent of the monitored teacher trainings distributed drugs to teachers to take to their respective schools for deworming day, and 100% of trainings distributed both treatment registers and school summary forms. However, direct observation at schools on deworming day and follow-up interviews with the head teachers/teachers after the process of drug administration at schools revealed that 96% of schools had received drugs prior to deworming day, and 93% of participating schools had sufficient drugs to deworm all children on deworming day.<sup>2</sup> Ninety percent of participating schools had all the key materials (drugs and reporting forms), on deworming day. Read more on distribution on [page 16](#).

Prior to deworming day, sixty-eight percent (n=56) of parents interviewed were aware of deworming day; with this proportion higher among parents of enrolled children (82%) as compared to the parents of non-enrolled children (29%). This rate among parents to non-enrolled children has a declining trend when compared to previous monitoring periods (Y2R1 - 84%, Y2R2 - 59%, Y3R1 - 47%, Y3R2 - 55%). Seventy-six percent of the parents aware of deworming day indicated that they would be sending their children for deworming, while twenty-four percent of parents said they would not send their children for deworming. The reasons cited included a lack of awareness (55%), children not being enrolled (15%), child absenteeism (10%), children had recently been dewormed (10%), child is not sick (5%), and that deworming was rescheduled for a later date in the school (5%). Read more on awareness on [page 17](#).

The rate at which schools conducted deworming was 68% of expected schools distributing tablets on deworming day (down from 91% in the last round). All (100%) teachers provided the correct mebendazole dose. However, in 27% of schools, teachers did not ask whether children were sick before administering mebendazole tablets. Deworming Day observations also indicated that non-enrolled children were dewormed in only 13% of monitored schools. Read more on drug administration on [page 18](#).

Coverage validation surveys for STH were conducted within two weeks of MDA treatment in two LGAs (Ogba-Egbema-Ndoni and Tai). Overall, 65% of the children in Ogba-Edbema-Ndoni and 66% of the children in Tai were offered the chance to swallow the drug for STH treatment (program reach) and 64% and 65% of the surveyed individuals ingested the drug respectively (surveyed coverage). When comparing surveyed coverage for STH in both LGAs to government reported coverage, reported coverage was more than 10 percentage points outside the 95% confidence interval of surveyed coverage, which suggests overreporting on treatment forms or inaccuracy of the population denominators used to calculate coverage. The surveyed coverage in both LGAs was less than the WHO therapeutic coverage threshold of 75%, which

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<sup>2</sup> All the schools that did not have sufficient drugs on Deworming Day were able to contact the LGA Coordinator or LGA Educational Secretary to procure sufficient medicine to treat all children.

suggests that the target coverage was not met in these LGAs. Read more on coverage validation on [page 20](#).

**Table 1: Key Performance Indicators**

	Percent
Target schools represented at teacher training	58%
Target schools with adequate drugs during deworming	93%
Target schools utilizing at least one awareness activity or material <sup>3</sup>	77%
Parents who report seeing or hearing about deworming through IEC deworming materials or word of mouth this round	68%
Target schools distributing tablets on deworming day	68%
Enrolled children present in school on deworming day	74%
Targeted children who report receiving unprogrammed deworming in the last six months	23%
Target population validated as swallowing albendazole tablets on deworming day based on coverage validation	64%

Overall, implementation of the deworming round in January 2021 (counted as the 2020 round of deworming) was positive, especially in the context of the COVID-19 pandemic. The program ensured that all materials were available at the training and ready for distribution, and saw an improved rate of teachers arriving on time, as seventy percent (70%) of attendees from the LGA level training were on time for the sessions. Additionally, time was allotted during the trainings to cover and practice filling out the treatment forms, as trainers completely covered information on the school summary and treatment register forms in all LGA and 96% of teacher training sessions, and practical sessions to fill both forms were held in all (100%) teacher training sessions monitored. Lastly on deworming day, adherence to MDA procedures was high, with 90% of the schools using the correct treatment form, 100% of the schools giving the correct dosage of the mebendazole tablets to children, and all teachers requested children to chew the tablet before swallowing. It is also great to see an improvement in ensuring children are washing their hands before deworming; in previous years the percentage ranged from 20%-58%, but in this round, of the 80% of schools that had handwashing facilities, 71% of them ensured that children had washed their hands before deworming.

However, there were also challenges that should be addressed ahead of the next round of MDA, such as general communication with private schools and their associations and to strengthen the communication and involvement of the Zonal Education Directors. Although the program conducts community mobilization and holds numerous stakeholder meetings about deworming day, the rate at which schools conducted deworming day was 68%. While other schools did plan to participate during mop-up, the program can work to improve school participation. Lastly, the program

<sup>3</sup> IEC deworming materials include posters

will continue to work on ensuring all eligible children are treated, as all eligible children were only treated in 13 of the 30 (43%) schools. Seventeen schools experienced various levels of refusals by parents or by children and fear of drugs which resulted in some children not being dewormed. The full summary of successes, challenges, and recommendations can be found on [page 22](#).

## 2.0 Background

Evidence Action provides technical assistance to the Rivers State government as it conducts school-based deworming through MDA for SAC in a bid to control parasitic worm infections. In January 2021, the only round of its fourth year of state-wide school-based deworming took place in 15 LGAs out of 21 LGAs in Rivers state which are endemic for STH.<sup>4</sup>

Prior to activity start, Evidence Action supported the Ministry of Health to safely conduct deworming activities and limit the spread of COVID-19 through the provision of PPE<sup>5</sup> and program specific COVID-19 protocols (adapted from WHO and national guidelines), to be observed during trainings, meetings and the deworming campaign. Evidence Action updated training materials and allotted training time to discuss COVID-19 protocols, emphasizing prevention and adherence to safety measures before, during, and after school based deworming exercise, especially at all levels of the training cascade. Special provisions of sanitizers, facemasks, and COVID-19 information education communication (IEC) materials were made available at training centers and schools.

A total of **1,356,761** enrolled and non-enrolled children aged 5-14 years were targeted to receive STH treatment in both public and private primary and junior secondary schools, with **1,124,890** receiving treatment by the end of the MDA (83% reported coverage). Approximately **6,251** teachers were trained to properly administer the safe and effective deworming drugs. Further work will be carried out to see the reasons for the low coverage and what programmatic improvements can be made before the next deworming round.

Evidence Action recruited an independent firm, Infotrak Research and Consulting, to monitor random samples of program activities to assess the quality of implementation, adherence to protocol, and supply chain effectiveness. During this round, monitors observed 8 LGA trainings, 28 teacher trainings, 30 schools on deworming day, and interviewed 83 parents in the community. Evidence Action designed data collection tools and sampling methods and cleaned and analyzed the data from the above activities. The findings are presented in this report.

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<sup>4</sup> The remaining six endemic LGAs were not treated during this round due to a recent community-based LF mass drug administration.

<sup>5</sup> PPE included surgical masks - 1000 pieces, hand sanitizers - 40 pieces, hand gloves - 2,000 pieces, disposable bags - 100 pieces

## 3.0 Methodology

### 3.1 Process Monitoring

Process monitoring was conducted in the 15 LGAs targeted for mass deworming. A random sample of 8 LGA trainings (out of 15 LGAs), and 28 teacher training sessions (out of 256 sessions). Thirty schools implementing deworming (out of 4,715 schools) were monitored on deworming day, of which 76% were primary level, 7% were junior secondary, and 16% included both levels<sup>6</sup>; 27% were public while 71% were private.<sup>7</sup> The purpose of the visit was to assess MDA procedures and interview the deworming team to assess their knowledge and capability to deliver the MDA. The sample sizes were calculated to meet a 90% confidence level and a margin of error of 15%, distributed across all LGAs based on the number of activities happening in each LGA.

At each randomly sampled teacher training sessions, trainers were interviewed and training sessions observed. Prior to the start of these sessions, four participants were targeted for pre-training interviews and four participants for post-training interviews. The participants interviewed were systematically sampled so that every third participant to arrive at the venue was interviewed pre-training and every third participant to receive training materials was selected for a post-training interview.

On deworming day, the monitors conducted interviews at sampled schools with the following individuals:

1. Head teachers, to assess their knowledge of deworming, frontline health facility (FLHF) staff engagement, deworming preparedness, mobilization, and availability of deworming materials.
2. A member of the deworming team (a teacher), to ascertain their knowledge of deworming and the activities they conducted in preparation for deworming.
3. One parent who brought their children for deworming, to understand their experience with deworming.
4. Three children (two enrolled and one non-enrolled child) to gather information on their MDA experience. This was conducted in one randomly selected class.
5. To assess the effectiveness of the community mobilization and sensitization methods, two systematically selected households with enrolled children and one household with non-enrolled children within the school area were interviewed.
6. Finally, monitors observed one class as deworming occurred to assess adherence to guidelines, such as the recording of treatment, administration of the right dosage to the correct age-group, and deworming steps. Monitors also made observations to assess school infrastructure, including WASH facilities,

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<sup>6</sup> One school could not be categorized into a primary or junior secondary level or by ownership (private/public)

<sup>7</sup> The random sample of schools for DD monitoring was not stratified by public/private school types, and the list schools participating in the deworming activity was majority private



presence and location of sensitization materials, and where deworming took place.

- At various stages of cascade implementation, monitors observed for the adherence to COVID-19 guidelines. These related to the wearing of masks, and sanitization practices.

### 3.2 Coverage Validation

Coverage evaluation surveys were conducted within two weeks of the MDA in two randomly selected LGAs (Ogba-Egbema-Ndoni and Tai), both of which treated for STH, to evaluate reported coverage within the LGAs, and identifying reasons for non-compliance. A total of 1,788 children were interviewed from the two LGAs using a two-stage probability proportional to estimated size (PPES) sampling design. Table 2 below shows the targeted and achieved sample sizes for the monitoring activities.

**Table 2: Process monitoring targeted and actual sample sizes**

Monitoring activity	Population	Target sample size	Actual sample size
<b>LGA training</b>			
Total number of LGA training sessions	15	8	8
Pre-training interviews		32	32
Post-training interviews		32	32
<b>Teacher training</b>			
Total number of teacher training sessions	256	28	28
Pre-training interviews		112	110
Post-training interviews		112	110
<b>Deworming Day</b>			
Head teachers interviewed		30	30 <sup>8</sup>
Total number of schools monitored	4,715	30	30
Parents interviewed		30	12 <sup>9</sup>
Enrolled children interviewed		60	60
Non-enrolled children interviewed		30	5 <sup>10</sup>
<b>Community Mobilization</b>			
Households surveyed - Parents of enrolled children		60	61
Households surveyed - Parents of non-enrolled children		30	22 <sup>11</sup>
<b>Coverage Validation</b>			
Number of children (in-person)		2,829	1,788 <sup>12</sup>

<sup>8</sup> Fifteen schools were replaced, six could not be located, four were not aware of the activity, two planned to deworm later, two did not have drugs, and one was not deworming. All replacements were monitored.

<sup>9</sup> On DD, monitors found parents in school during deworming in only 12 of 30 schools monitored.

<sup>10</sup> Non-enrolled children were not available on deworming day in some of the monitored schools.

<sup>11</sup> There were difficulties in locating households where all children aged 5-14 do not attend school.

<sup>12</sup> Based on the WHO CES protocol, if a monitor visits a household and finds no target children, there should be no replacements made. The sample size was not achieved due to the required sample from

## 4.0 Results

### 4.1 Review of LGA and teacher training

Prior to deworming implementation, a training cascade is initiated at the LGA level training of health and education officials, who then conduct teacher training. To share information and keep participants engaged, trainers are encouraged to use a combination of methods. The most common methods during the teacher training were discussion/participatory approach (100%), lecture-based presentations (93%), and group work (57%). Demonstrations (7%) and role plays (7%) were also employed in some training sessions.

#### 4.1.1 COVID-19 safety protocols

To limit the spread of COVID-19 infections, and ensure the safety of all trainers and participants, adherence to public health measures, including hand washing/sanitizing and mandatory wearing of masks in public places was required during trainings. However, only eighteen percent (18%) of the teacher training sessions correctly implemented both COVID-19 prevention/safety measures of handwashing/use of hand sanitizer and proper wearing of masks. Individually, participants in 43% of training centers were provided facilities for sanitizing/washing hands and all attendees and trainers in 32% of training centers wore masks.

#### 4.1.2 Attendance during trainings

SMS (68%), phone calls (57%), official letters (32%), in-person communications (18%), and WhatsApp (4%) were the most common means with which teachers reported being invited to the training. On average, 28 teachers were expected to attend each teacher training, but only an average of 17 attended, representing 58% of expected schools.<sup>13</sup> However, teacher attendance rate is 13 percentage points lower than that noted in the last round of 2019. According to trainers, the key reasons why teachers did not attend the training included late invitations (63%), school/teacher unawareness (41%), inability to make it to training (33%), late communications on change of date/venue (13%).

Seventy percent (70%) of attendees from the LGA level training were on time for the sessions, while 52% of teachers were on time for teacher training. This is 23 percentage points below the program target of 75% for timely attendance by teachers. From post-training interviews, teachers that self-reported arriving late cited going to school/class first (54%), late invitations (27%), and traveling long distance (17%). More community mobilization was planned to help with teacher training timely attendance, but due to the country-wide lockdown, some activities were not implemented. Additionally, the

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households, and we hypothesize that the enrolment rate used to calculate household interview samples was lower than the true enrolment rate, resulting in oversampling of households. The program has updated enrolment rate estimates for future rounds.

<sup>13</sup> The current LGA teacher training surveys do not capture information on the number of expected attendees. These will be included in the next round of surveys.

training took place when the schools were busy finishing up the academic year and their schedules did not allow for additional activities. The program will work on timing and ensuring more mobilization is conducted during the next deworming round.

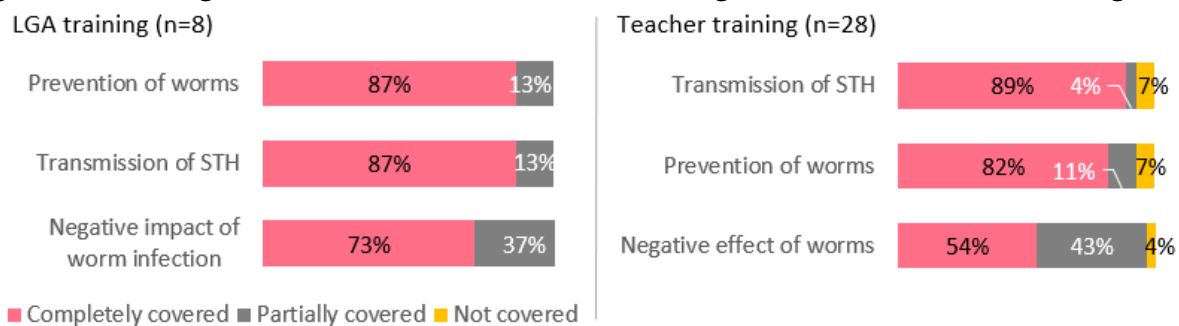
## 4.2 Topic coverage

Seven topics are required to be covered in the training sessions, which are discussed in detail below. For the purposes of this report, the seven topics are compacted into five thematic areas (information on worms and target population, drugs and drug administration, side effects, recording and reporting forms, and roles and responsibilities). Monitors assessed the coverage of key messages within these five thematic areas as well as participants’ pre- and post-training knowledge levels. During training observations, the monitors had a checklist with which to indicate if a topic was either covered completely, partially covered, not covered, or if wrong information was delivered. “Completely covered” means all the information and messages in a given topic were relayed.

### 4.2.1 Information on worms and target population

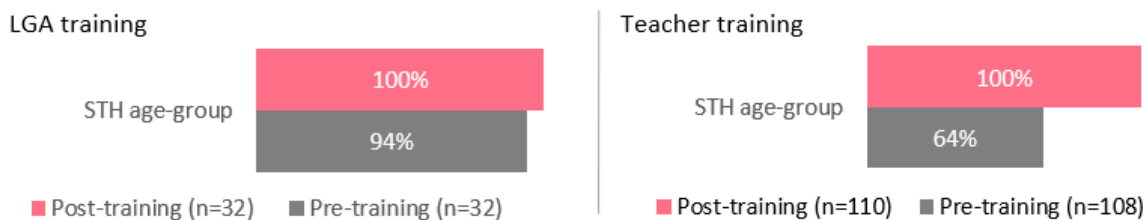
The three messages regarding worms include prevention of worms, transmission of worms (STH), and the negative impact of worms. There was at least one teacher training that did not cover one of these messages . (Figure 1).

**Figure 1: Messages covered under “worms” during LGA and teacher trainings**



Post-training interviews revealed that all participants at the teacher training could cite the type of worms being treated, up from 86% pre-training. Additionally, all respondents at teacher training could cite at least one way a child can get infected with worms, up 8 percentage points from pre-training interviews. All trainers at the LGA and 96% at the teacher training covered the target group, which consists of all enrolled and non-enrolled children aged 5-14 years. Pre- and post-training knowledge levels of attendees at both trainings are shown in Figure 2 below.

**Figure 2: Pre- and post-training knowledge of the correct age-group**



Trainers are also obligated to provide information on the exclusion criteria for treatment. This includes any sick children, children with a history of certain health conditions, and under-age children. These messages are key to minimizing the incidence of severe adverse effects (SAEs). Coverage of this criteria in both the LGA and teacher training is provided in **Table 3** below.

**Table 3: Training coverage of other non-eligibility criteria for treatment**

	LGA Training (n=1) <sup>14</sup>	Teacher Training (n=28)
Sick children during deworming day	100%	93%
Children with a history of other health conditions	-	82%
Any child under 5 years	-	71%

Post-training, while none of LGA participants said that they would deworm sick children present during the MDA, 7% of teachers said they would deworm sick children, which is a potential concern.

#### 4.2.2 Drugs and Drug Administration

Coverage of key messages about drug administration was higher at LGA training. Individual messages under this topic were covered in at least 87% of LGA training compared to at least 82% of teacher training (**Table 4**).

**Table 4: Messages on drug administration covered during the trainings**

	Percent (Completely and partially covered)	
	LGA training (n=8)	Teacher training (n=28)
<b>MDA practice</b>		
One mebendazole tablet to be given to each child	100%	100%
STH drug is mebendazole	100%	96%
Register enrolled children prior to deworming day and non-enrolled children on deworming day, prior to treatment.	100%	96%

<sup>14</sup> There appears to have been an issue with the survey or data server, as there was data on this question for only one LGA training observation. However, we hypothesize that non-eligibility criteria were well covered in LGA training given the high rates of coverage in teacher training.

Facilitate hand washing prior to treatment	-	96%
Under the program, all drugs are free, safe and effective	100%	93%
Under no circumstances should a child be forced to swallow the medicine	- <sup>15</sup>	86%
Drugs must be stored in a clean, safe, dry and cool location	87%	82%

From post-training interviews, all (100%) participants in the LGA training and 99% of teachers knew the correct drug used to treat STH. Similarly, all (100%) participants from both trainings knew the correct dosage for STH.

Apart from knowing the drug type and dosage, it is important that teachers carefully follow certain drug administration steps. However, while most drug administration steps were well covered, arrangement of the drug distribution site, organization of children, and ensuring necessary materials are available was covered in at most 68% of trainings. **Table 5** lists steps, in the correct order, as completely or partially covered during training. Three of the eleven steps were not covered in at least 11% of trainings.

**Table 5: Drug administration steps covered during teacher trainings (n=28)<sup>6</sup>**

Drug administration step	Completely covered	Partially covered	Not Covered
Step 1: Arrange the drug distribution site	50%	36%	14%
Step 2: Ensure necessary materials are available and are in place	68%	25%	7%
Step 3: Provide orientation to the children	79%	11%	11%
Step 4: Organize children accordingly	57%	25%	18%
Step 5: Let the child wash his/her hands	82%	14%	4%
Step 6: Register the child if non-enrolled	86%	11%	4%
Step 7: Administer the mebendazole drug	89%	11%	-
Step 8: Complete registration in the treatment register	93%	7%	-
Step 9: Observe the child for any side effects	89%	4%	7%

### 4.2.3 Side effects

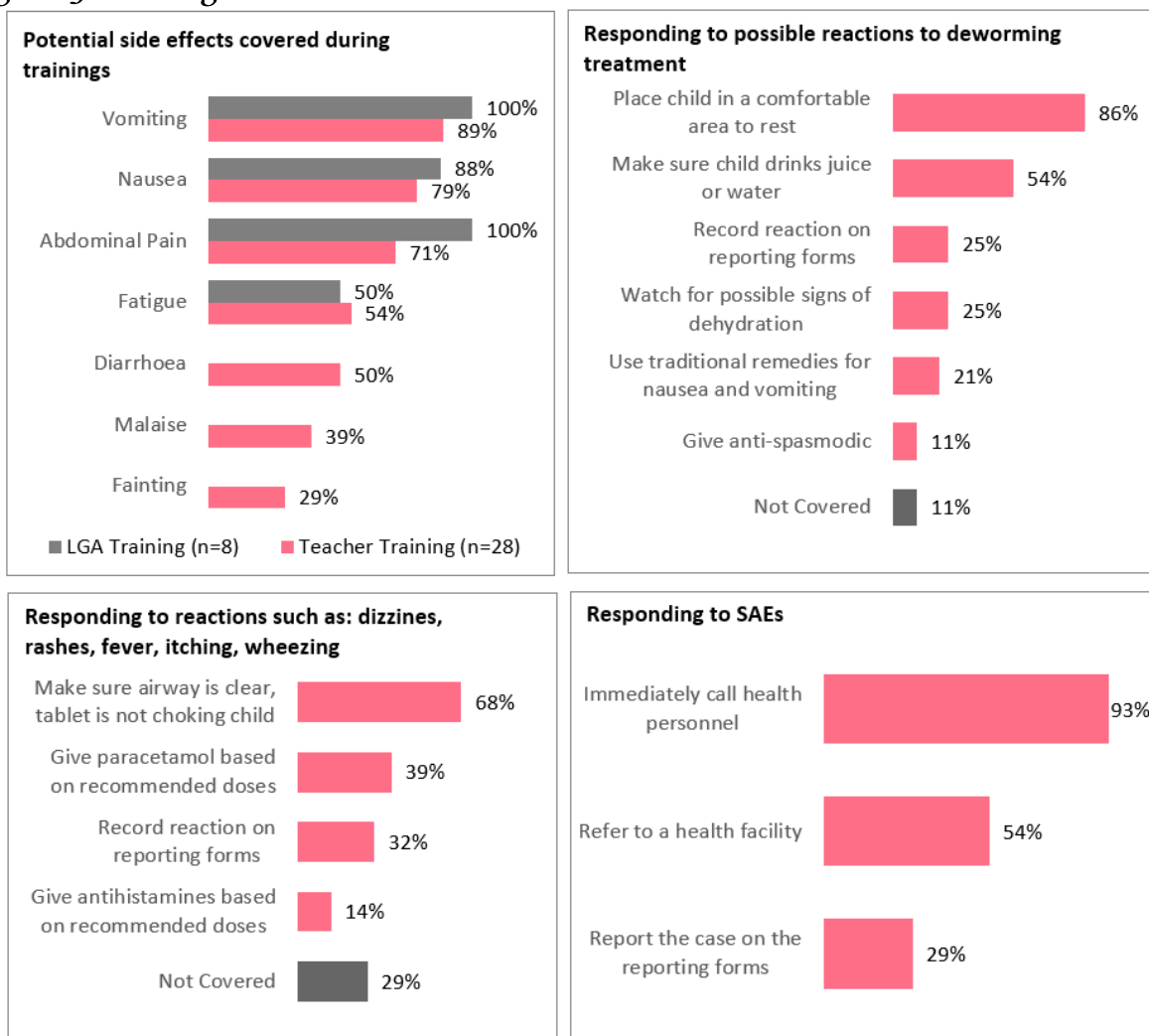
Trainers provided information on potential side effects and SAEs to prepare teachers to manage such situations. In both training types, vomiting, nausea and abdominal pain were most covered while fatigue, diarrhoea, malaise and fainting were least covered. All (100%) LGA trainings provided participants with steps to take in the event of SAEs, and this information was cascaded in 93% of teacher trainings (**Figure 3**).

<sup>15</sup> Information on these topics is part of LGA training, but observations were not collected during monitoring of LGA training in 2020 due the volume of information that is covered at the training. These will be collected during the next round of deworming training.

<sup>16</sup> Compared to 2019, four of the eleven steps in 2020 registered increases (complete or partial), with a range of increases of 1-12 percentage points.

Post-training, all (100%) of LGA attendees and 99% of teachers could mention at least one side effect, up from 97% and 85%, respectively. Further information on knowledge of the potential side effects and SAEs covered in both LGA and teacher trainings, as well as the responses covered in teacher trainings is reflected in the Figure 3 below.

Figure 3: Messages on side effects<sup>17</sup>



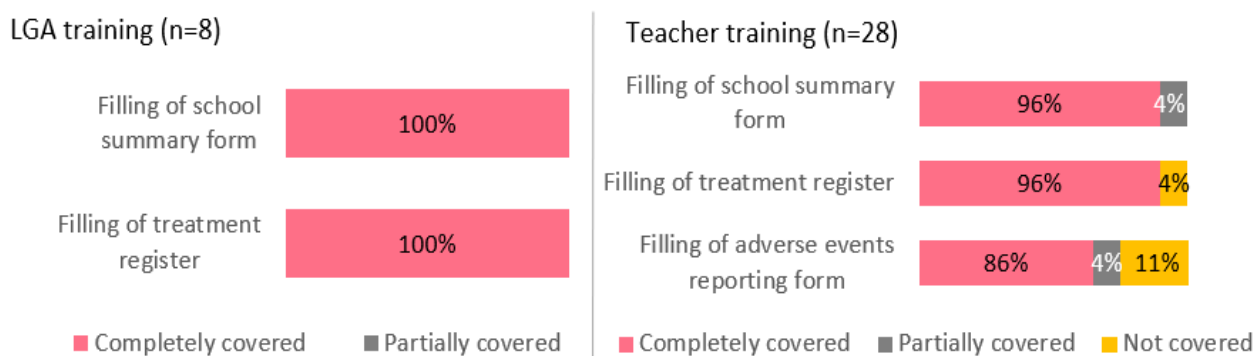
#### 4.2.4 Recording and reporting forms

Teachers record the number of children treated at class and school levels, which emphasizes the need for the trainer to comprehensively cover this aspect. Trainers completely covered information on the school summary and treatment register forms in all (100%) LGA and 96% of teacher training sessions. Practical sessions to fill both

<sup>17</sup> All messages were covered in both LGA and teacher trainings, although the observational tool for the LGA training omitted some of the highlighted messages

the treatment register and school summary form was held in all (100%) teacher training sessions monitored (Figure 4).

Figure 4: Messages covered under recording and reporting forms



From post-training interviews, 89% of teachers correctly identified the treatment register as the primary form they would use to record treatments. However, 57% of participants did not name it as the source document for the school summary form.

#### 4.2.5 Roles and Responsibilities

Overall, teacher roles and responsibilities during deworming were covered in at least 86% of teacher training sessions, apart from mobilization of non-enrolled children (64%). The coverage of the roles of frontline health facility staff (39%-75%) and NTD coordinators (25% - 61%) were not well covered, and decreased, on average, from the last round of 2019.<sup>18</sup> Table 6 below provides details.

Table 6: Key MDA roles and responsibilities of various actors covered at the trainings (n=28)

Roles and responsibilities	Percent
<b>Key teacher roles</b>	
Organizing drug administration	93%
Disseminating health education messages to children and parents	93%
Form recording and reporting	86%
Mobilization of non-enrolled children	64%
<b>Key FLHF staff roles</b>	
Managing side-effects	75%
Managing, referring and reporting any children with SAEs	57%
Participate in community awareness creation	43%
To communicate the rationale of the intervention to community leaders	39%
<b>NTD coordinator and educational secretary roles</b>	

<sup>18</sup> Range in last round in 2019: FLHF (50% - 67%) and NTD coordinator and educational secretary (44% - 56%)



Distributing appropriate quantities of drugs to teachers	61%
Receiving any unused drugs from the schools post-treatment	36%
Compiling the treatment coverage report	25%

From post-training interviews, 89% of teachers correctly identified the role of FLHF staff in the management of SAEs.

### 4.3 Distribution of drugs and materials

Trainers should receive key materials before training (drugs and reporting forms) to aid in teacher training sessions, as well as to pass on to teachers.

In most teacher training sessions (86%), drugs for STH treatment were available before the sessions began, and were distributed during 96% of training sessions. Distribution of reporting forms was also high, with both the treatment registers and school summary forms distributed in all (100%) training sessions. A teacher training handout was present and distributed in 86% of the training sessions.

On deworming day, 90% of schools had all the required drugs and reporting forms, which points to a fairly good supply chain for these key materials (Figure 5).

**Figure 5: Availability of all key materials across the implementation cascade<sup>19</sup>**



From post-deworming interviews with head teachers, 93% indicated sufficiency of the initial drugs available. All the schools that did not have sufficient drugs on deworming day were able to contact the LGA Coordinator or LGA Educational Secretary to procure sufficient medicine to treat all children. Seventy-three percent (n=30) of schools reported having drug surplus post-deworming. Of these, 73% planned for a mop-up before returning drugs to the LGA, 22% of schools returned their surplus immediately, while 5% planned to administer to non-enrolled children during mop-up deworming.

#### 4.3.1 Community sensitization materials

Before the teacher training began, all training sessions had posters available, and 96% of those had received and distributed them at the end of the session. On deworming day, 80% of schools had posters available, while 77% had the posters pinned, with head teachers reporting an average of 3 posters per school.

<sup>19</sup> All key materials include: drugs, reporting forms (treatment registers and school summary form) and tablet poles in schistosomiasis treating schools.



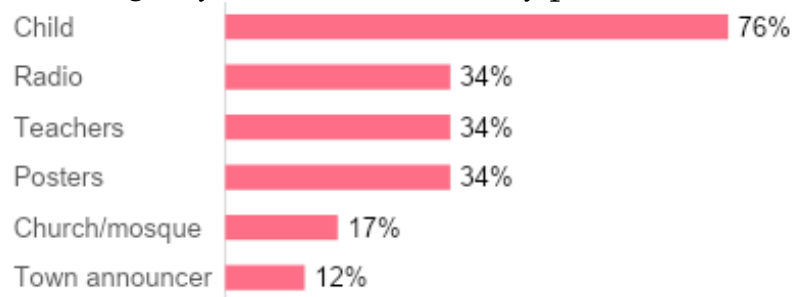
## 4.4 Community Sensitization

Community sensitization prior to deworming day is an evidence-supported factor critical for MDA success. On deworming day, monitors held interviews with 76 parents (60 of enrolled children and 16 of non-enrolled children) to gauge their awareness of MDA, as well as their sources of MDA information.

### 4.4.1 Implementation of community sensitization

Children (76%) were the most common sources of deworming day information cited by parents (Figure 6).

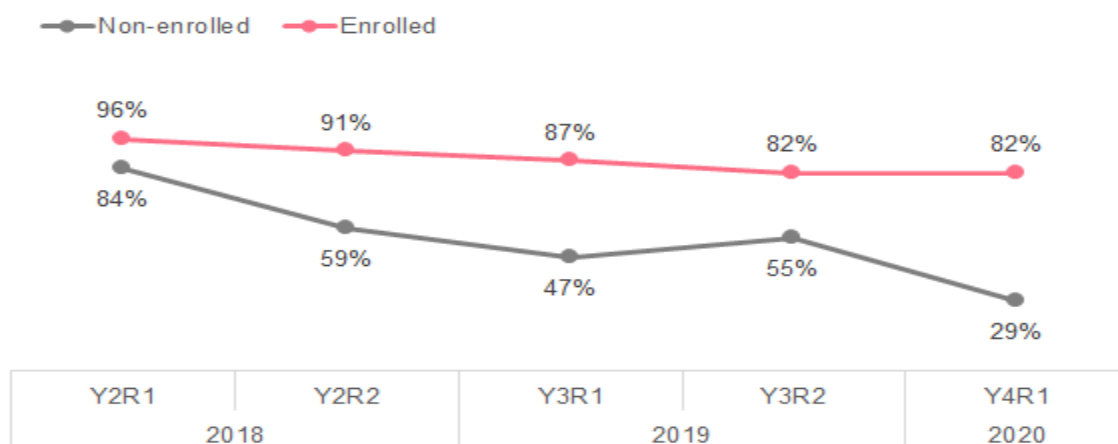
Figure 6: Sources of Deworming Day information cited by parents



### 4.4.2 Community knowledge

Prior to deworming day, 68% of all parents (down from 75% in the previous round), 82% of enrolled children and 29% of the non-enrolled children, were aware of deworming day. Generally, awareness among parents of non-enrolled children has a declining trend (Y2R1 - 84%, Y2R2 - 59%, Y3R1 - 47%, Y3R2 - 55%) - Figure 7. More parents of enrolled children had taken their children for deworming in the past, compared to those of non-enrolled children (72% vs 52%).

Figure 7: Awareness among parents of enrolled and non-enrolled children



Only 70% (2 percentage points lower than the last round of deworming) of the parents of enrolled children were aware of the target age-group for STH, compared to 52% (down from 75% in the last round of deworming) of the parents of the non-enrolled

children. Forty-eight percent of parents were not aware of the type of worms being treated, up 2 percentage points from the last round of deworming.

At the end of these interviews, 76%<sup>20</sup> (11 percentage points lower than last round of deworming) of all of the parents that were aware of deworming day indicated that they would be sending their children for deworming (84% of parents of enrolled and 52% of parents of non-enrolled). Of the 24% of parents that reported that they would not be sending their children to be dewormed that day, 55% cited a lack of awareness, 15% that children were not, 10% children absenteeism, 10% that children had recently been dewormed, 5% that the child is not unwell and 5% that deworming was rescheduled for a later date in the school.

As part of the survey, parents were asked for their preferred methods of receiving future communication on deworming. Radio (60%), SMS (52%), teachers (40%), posters (40%), and children (36%) emerged as top preferences of parents to receive deworming information, which, other than SMS, were top sources of deworming day information cited by parents (Figure 6).

All (100%) household interviews were conducted with strict adherence to [COVID-19 protocols](#) as there were no household interviews that were stopped or replaced due to safety concerns of the pandemic.

## 4.5 Deworming Day

### 4.5.1 Preparedness for Deworming Day

Ninety-one percent of head teachers interviewed at schools that were monitored had made plans to deworm, and all (100%) head teachers at schools that had made plans to deworm reported that either they or a teacher from the school had attended a training within a month of the MDA

Monitor observations of school infrastructure revealed that 20% of schools lacked hand-washing facilities and 3% of schools did not have a toilet facility.

### 4.5.2 Deworming Day Delivery

Of the 30 schools that were originally sampled for deworming day monitoring, fifteen schools were replaced due to various challenges. Six could not be located or accessed, 4 were not aware or were informed late about the deworming, two had plans to deworm later, two did not have drugs and one had no plan to deworm.

Of the originally sampled schools that were in session, could be located, and had parent consent for deworming, 15 out of 22 were conducting deworming on the designated day, for a rate of 68%, a decrease from 91% in the previous round of deworming. The fifteen schools that were not conducting deworming were replaced to bring the total number of schools monitored on deworming day to 30.

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<sup>20</sup> Program target is 90%

#### 4.5.2.1 Adherence to MDA procedures

Adherence to recording treatment procedure was generally high (for example 90% were using the correct treatment form). All (100%) schools gave the correct dosage of the mebendazole tablets to children and all (100%) teachers requested children to chew the tablet - **Table 7**. A relatively low adherence (at most 87%) was noted for pre-deworming preparations with 60% of teachers ensuring that children washed their hands prior to treatment (Previous rates: Y3R2 - 70%, Y3R1 - 70%, Y2R2 - 86%, Y2R1 - 83%, Y1R1 - 74%). Instances of children being given drugs without asking if they were under medication were noted in 27% of schools, which is up from 13% in the previous round of deworming. Spoilt drugs were also properly disposed in 50% of monitored schools (n=6), with previous rates across the years at: Y3R2 - 89% (n=9), Y3R1 - 75% (n=9), Y2R2 - 90% (n=9), Y2R1 - 69% (n=20), Y1R1 - 67% (n=12).

**Table 7: MDA procedures observed by monitors during drug administration (n=30)**

MDA practice	Percent
<b>Pre-deworming preparations</b>	
Deworming team comprised of two teachers	87%
Health education messages were given to children prior to treatment	63%
Teachers ensured children washed their hands prior to treatment	60%
<b>Drug Administration</b>	
Teachers gave the correct dosage for mebendazole (1 tablet)	100%
Teacher asked child to chew the mebendazole tablet	100%
Teacher asked if child was sick or under medication before administering medicine	73%
Spoilt tablets were properly disposed (n=6)	50%
<b>Recording treatment</b>	
The treatment register was used to record treatment	90%
All sections of the treatment register were filled out	87%
The teacher had transferred the names from the class register to treatment register prior to the deworming exercise	80%

Out of the 80% of schools that had handwashing facilities, only 71% ensured that children had washed their hands before deworming. However, compared to the rates noted in previous years (Y3R2-58%, Y3R1-20%, Y2R2-46%, Y2R1-42%, Y1R1-50%), this is a big improvement which should be sustained in future rounds.

#### 4.5.2.2 Management of side effects and referrals

In the sample of schools where Evidence Action monitors observed and collected data on deworming day, there were no instances of SAEs reported.

#### 4.5.3 School coverage of eligible and non-enrolled children

All eligible children were treated in 13 out of 30 (43%) schools. Seventeen schools experienced various levels of refusals by parents or by children and fear of drugs which resulted in some children not being dewormed (exact numbers of refusals and fear of

drugs unknown). In 3 (10%) of the schools, there were reports of children being forced to swallow medicine against their wishes (Survey question: *NOTE: a teacher should only be considered to have used coercion if a punitive measure is applied to an attempt to make a child swallow a tablet, whether the punitive measure is physical or verbal.*). Ninety-one percent of schools monitored on deworming day also took steps towards planning for absentees for treatment when they returned by recording their names on the treatment register.

While 80% of head teachers indicated that they had made plans to deworm non-enrolled children on deworming day, only 13% of the schools dewormed non-enrolled children, a statistic higher than the (10%) noted in the last deworming, the second round of 2019. Of the head teachers indicating that they did not have a plan to deworm non-enrolled children, 40% indicated non-enrolled children would not go to school, 20% cited that the school had other engagements related to examinations, 20% indicated non-enrolled will be treated during mop-up day (20%) while 20% cited drug insufficiency.

## 5.0 Coverage Validation

Coverage validation was conducted in two randomly selected LGAs within Rivers state, Ogba-Egbema-Ndoni and Tai, both treating for STH.

### 5.1 STH Results

**Table 8** shows coverage validation findings for STH. In Ogba-Egbema-Ndoni and Tai, 65% and 66% of SAC, respectively were offered deworming tablets (program reach), while 64% and 65% of SAC interviewed, respectively, indicated that they had swallowed the drug (surveyed coverage). When comparing the surveyed coverage in both LGAs to the government reported coverage rates, the reported coverage is more than 10 percentage points outside the surveyed coverage confidence intervals, which suggests overreporting on treatment forms or inaccuracy of the population denominators used to calculate coverage. Given this gap, there could be a problem with the reporting system and action may be required if resources permit. The surveyed coverage in both LGAs was also below the WHO coverage threshold of 75%, indicating that the therapeutic threshold may not have been met in either LGA.

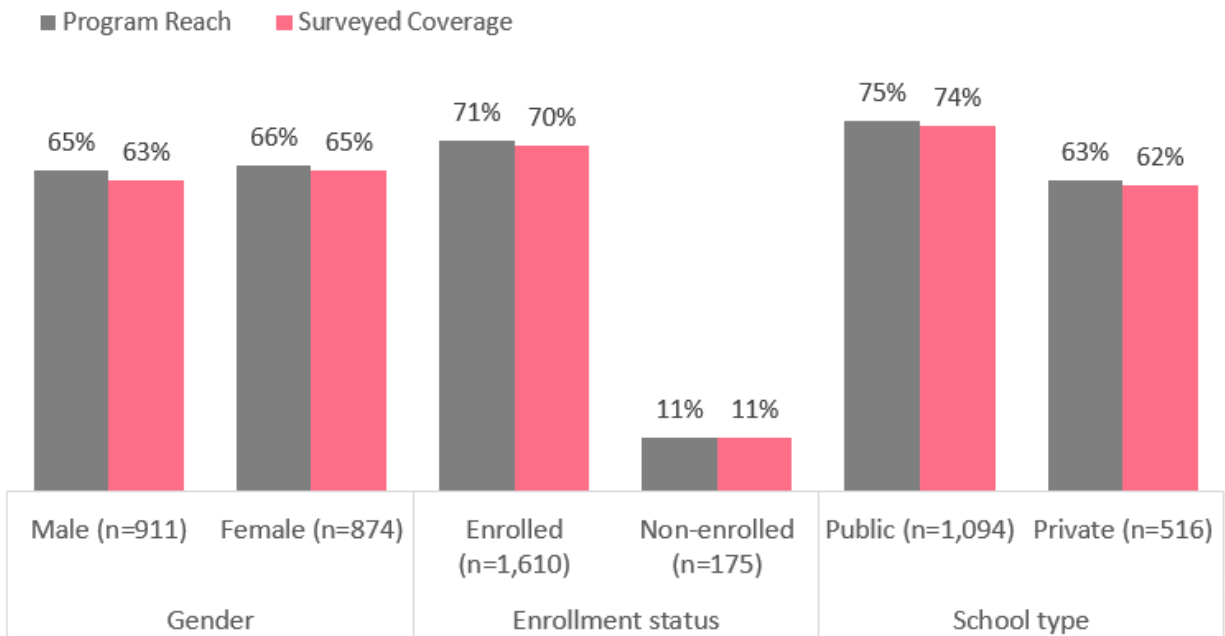
**Table 8: Coverage validation results for STH (n=59 clusters)**

		Program Reach			Surveyed Coverage			Reported Coverage	Number of children
		Mean (%)	95% CI lower bound	95% CI upper bound	Mean (%)	95% CI lower bound	95% CI upper bound		
Overall	Ogba-Egbema-Ndoni	65%	62%	68%	64%	55%	72%	87%	984

	Tai	66%	63%	69%	65%	58%	72%	84%	801
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The disaggregation by gender is consistent with overall findings for both LGAs. On the other hand, the program reached a smaller proportion of children in private schools, suggesting higher rates of refusal in private schools. In addition, the program reach and surveyed coverage were very low for non-enrolled children, though may be biased by the small sample size (Figure 8).

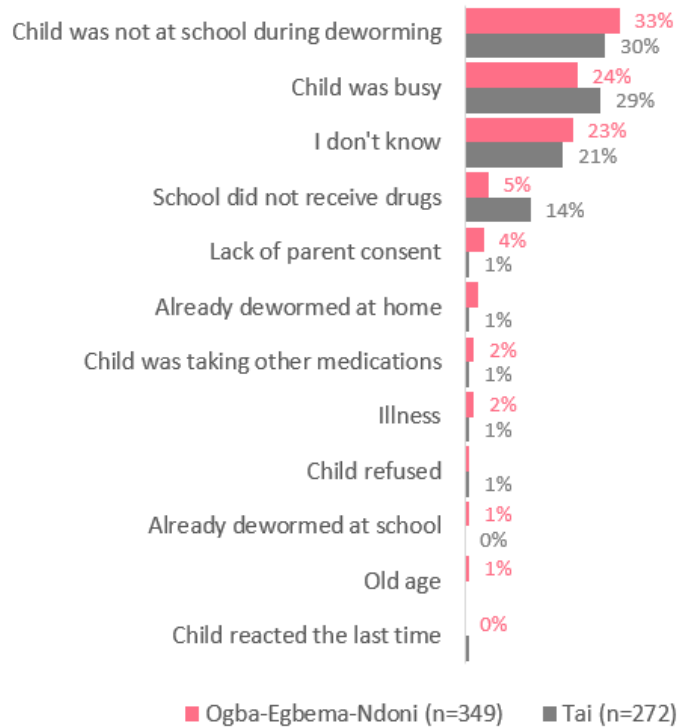
Figure 8: Disaggregation by gender, enrollment status and school type



### 5.3 Reasons drugs were not given and non-compliance

Compliance rates (proportion of children who were offered the drug that swallowed it) were high in both LGAs – 98% for Ogba-Egbema-Ndoni and 99% for Tai. Figure 9 presents the reasons drugs were not given.

Figure 9: Reasons drugs were NOT given



## 5.4 Unprogrammed deworming

Twenty-three percent of respondents (24% in Ogba-Egbema-Ndoni and 23% in Tai) reported having been dewormed outside the scope of this MDA, within six months of deworming day, a four percentage point reduction from 27% in the July 2019 round. The majority took these from home (91%), while 8% took from a chemist/health facility and 1% from the mobile health team.

## 6.0 Recommendations

The year 2020 had unprecedented challenges with the COVID-19 pandemic casting uncertainty on the implementation of the MDA. Working the Ministry of Health, Evidence Action supported the state with the provision of PPE such as surgical face masks, gloves, hand hygiene, waste management materials, and sensitization materials, as well as contextualized COVID-19 protocols. These efforts all contributed to making the MDA implementation and preceding activities a reality and should be celebrated.

### 6.1 What worked well

#### Training:

- Materials availability at the training and distribution was successful, as 96% of the monitored teacher trainings distributed drugs to teachers for deworming day and 100% of trainings distributed both treatment registers and school summary forms.

- However, emphasis still needs to be placed on ensuring all the materials from the teacher training are properly distributed at the schools, as 90% of participating schools had all the key materials (drugs and reporting forms) for deworming day, indicating there is a gap between receiving the material at teacher training and distributing to all the schools.
- In addition, school attendance at teacher training is crucial to ensure that materials are distributed to schools and available on deworming day.
- The rate of teachers arriving on time to training sessions has improved, as seventy percent (70%) of attendees from the LGA level training were on time for the sessions.
- At the LGA and teacher training level, knowledge of the correct drug to use for STH was high, at 100% of all LGA training participants and 99% of teacher training participants. Similarly, all participants from both LGA and teacher trainings knew the correct dosage for STH.
- Trainers are working to ensure trainees have time in training to fill in a form for practice, which is useful preparation for deworming day to ensure the forms are filled correctly and completely. Trainers completely covered information on the school summary and treatment register forms in all (100%) LGA and 96% of teacher training sessions and practical sessions to fill both the treatment register and school summary form was held in all (100%) teacher training sessions monitored. This likely led to the high rate of form filling (90%) observed at schools on deworming day.
- During LGA and teacher training, the topic that was best covered in both training types was drugs and drug administration, with coverage (complete or partial) of key topics noted in at least 82% of training sessions. In post-training interviews, more than 90% of participants correctly responded to questions about this content area. In addition, information on worms was covered in all LGA trainings and at least 93% of teacher trainings, and treatment reporting forms were covered in all LGA trainings and at least 96% of teacher trainings. However, the program does need to ensure that all topics are equally covered, as other topics were less well-covered (see below).

#### **Deworming Day Observations:**

- Adherence to MDA procedures was high, with 90% of the schools using the correct treatment form, 100% of the schools giving the correct dosage of the mebendazole tablets to children, and 100% of teachers requesting children to chew the tablet before swallowing.
- There is a sound knowledge base on what to do when there is a surplus of drugs after deworming day, as 73% planned for a mop-up before returning drugs to the LGA, 22% of schools returned their surplus immediately, while 5% planned to administer to non-enrolled children during mop-up.
- There has been an increase in ensuring children are washing their hands before deworming. In previous years the percentage ranged from 20% - 58% of children washing their hands before treatment, while in this round of 80% of

schools that had handwashing facilities, 71% of them ensured that children had washed their hands before deworming.

- There were no observed instances of severe adverse events during the course of deworming day monitoring activities.

## 6.2 What can improve

### Training:

- The program is emphasizing improvement of teacher training attendance, as only 58% of expected schools had a representative present for teacher training this round of deworming (28 schools were expected to attend each teacher training, but only an average of 17 attended; 20 percentage points lower than the 78% during the last round of deworming).
  - Although the state agreed on the timeline, the training was right after the holiday break and school was busy with new school year planning, which may have driven down training attendance.
  - Additionally, the program needs to work on sending out invitations on time; despite sending invitation notices from both the LGA teams (Health and Education) and the state teams (supervisors), trainers reported that the majority of teachers that did not attend cited late invitations (63%) and school/teacher unawareness (41%).
  - The program has noted the gaps in communication with private schools, and one key area of improvement is to strengthen the involvement of the Zonal Education Directors in planning.
- Full topic coverage during training should also be emphasized moving forward to ensure optimal knowledge transfer for deworming.
  - Types of side effects received the lowest coverage as only abdominal pain, nausea and vomiting were covered in more than 70% of LGA and teacher trainings.
  - The adverse events reporting form was not covered at all in 11% of teacher trainings, which should be decreased in future rounds.
  - During the roles and responsibilities topic, only 64% of trainings covered the teacher role of non-enrolled children mobilization, which should be emphasized in future rounds to ensure non-enrolled participation in deworming day.
- Only 18% of teacher training sessions correctly implemented both COVID-19 safety measures of universal mask-wearing and provision of hand washing stations or hand sanitizer. Individually, participants of 43% of trainings were provided facilities for hand sanitization, and all participants were wearing masks in only 32% of observed trainings. Due to the importance of the trainings and schools following COVID-19 protocols, the program will work on implementing both safety measures of handwashing/hand sanitizer and proper wearing of masks.



- It is important for the trainers to reiterate the importance of safety protocols and SAEs, as 7% of teachers said they would deworm sick children on deworming day, which is a potential concern.

### Deworming Day Observations:

- As mentioned above, the program still needs to work on ensuring the deworming materials are disseminated to the schools, as some schools lacked material on deworming day despite all teachers having received deworming material at the monitored teacher training sessions. This likely has to do with the low attendance rate of schools at teacher training. However, it should be noted that from post-deworming interviews with head teachers indicated they would contact the LGA Coordinator or LGA Educational Secretary to procure sufficient medicine to treat all children if materials were not available.
- Although the program conducts community mobilization and holds numerous stakeholder meetings about deworming day, the rate at which schools conducted deworming day was 68%. In particular, four schools were not aware or were informed late about the activity, and two schools planned to deworm later, suggesting that messaging and communication may not be reaching all schools. Some other schools did plan to participate during mop-up, but the program will work to improve school participation on the designated deworming day.
- Community mobilization and sensitization is key in ensuring that communities, and especially the parents, are aware of the program and key information such as the deworming dates and target age-group for deworming.
  - Only 70% (2 percentage points lower than the last round of deworming) of the parents of enrolled children were aware of the target age-group for STH, and only 52% of the parents of the non-enrolled children were aware (down from 75% in the last round of deworming).
  - Awareness of the deworming activity by parents to non-enrolled children was very low, at only 29% of those interviewed. This has followed a declining trend over the previous four rounds of deworming, from 84% awareness in the first round of 2018, and began to decline before COVID-19. The program should prioritize awareness activities that are reported as preferred by non-enrolled parents, including children, town announcers, and posters.
- Unfortunately, there were instances of children being given drugs without first asking if they were taking any other medication (noted in 27% of schools, which is up from 13% in the previous round of deworming). This is of concern and the program needs to ensure that this is sufficiently covered in teacher training and that the trained teachers ensure to cover this with the teachers they are training at the schools before deworming day.
- The program will continue to work with school and teachers to ensure all eligible children are treated and parent or child fears are averted, as all eligible children were treated in only 13 of the 30 (43%) schools. Seventeen schools had at least one refusal by parents or by children due to fear of drugs which resulted in some

children not being dewormed (exact numbers of refusals and fear of drugs unknown).

- However, while it is important for schools to treat all eligible children who come to the school on deworming day, the program should ensure that teachers are not forcing children to swallow drugs against their wishes. In three of the schools (10%), there were reports of children being forced to swallow medicine against their wishes, which is also an area that the program will emphasize for future training.

#### **Coverage Validation:**

- Reported coverage could not be validated in either LGA surveyed (Ogba-Egbema-Ndoni and Tai). The program should continue efforts to increase reporting quality to ensure that government treatment rates are accurate and there is not overreporting on treatment forms or inaccuracy of the population denominators used to calculate coverage. Given this gap, there could be a problem with the reporting system and action may be required if resources permit.
  - This is of concern because the reported coverage rates indicate that the MDA exceeded the WHO therapeutic treatment threshold of 75%, but the surveyed coverage rates from the two LGAs indicate that it did not, which has implications on the success of the MDA.
  - The program and MLE teams are planning to conduct a data quality assessment (DQA) in Rivers state in the upcoming round, which may shed more light on the challenges with the reporting system.