

NSBDP Process Monitoring and Coverage Validation (PMCV)

Narrative Report - Year 3

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Executive Summary

The Kenya National School-Based Deworming Program successfully dewormed over 6 million children in Year 3 of the program from July 2014 to June 2015. Of these, 5,972,153 children were dewormed for soil transmitted helminths (STH) and 61,901 were dewormed for both STH and schistosomiasis (SCH). The following report details the process monitoring and coverage validation (PMCV) activities conducted by the program. The aim of PMCV is to measure the successful roll-out of the program by observing and reviewing the quality and impact of sub-county training, teacher training, community health extension worker (CHEW) activities, community sensitization and deworming day procedures.

PMCV metrics for Year 3 of the program indicated consistently high performance in the distribution of materials and drug delivery, sub-county training information delivery, and deworming coverage. Most notably, drugs and other training materials were available at sub-county trainings (98%) and teacher trainings in almost all of the observed meetings (92%). Drug supplies were adequate for the majority of schools, with 98% of all schools reported having the appropriate drugs in place on Deworming Day and only 9% of sampled schools reporting an insufficient supply on Deworming Day.

Community sensitization activities resulted in the awareness of Deworming Day in 61% of interviewed parents in the communities. The majority of these parents reported their children (46%) as their primary source of information, followed by friends/relatives (24%), teachers (22%), and CHEWs (14%).

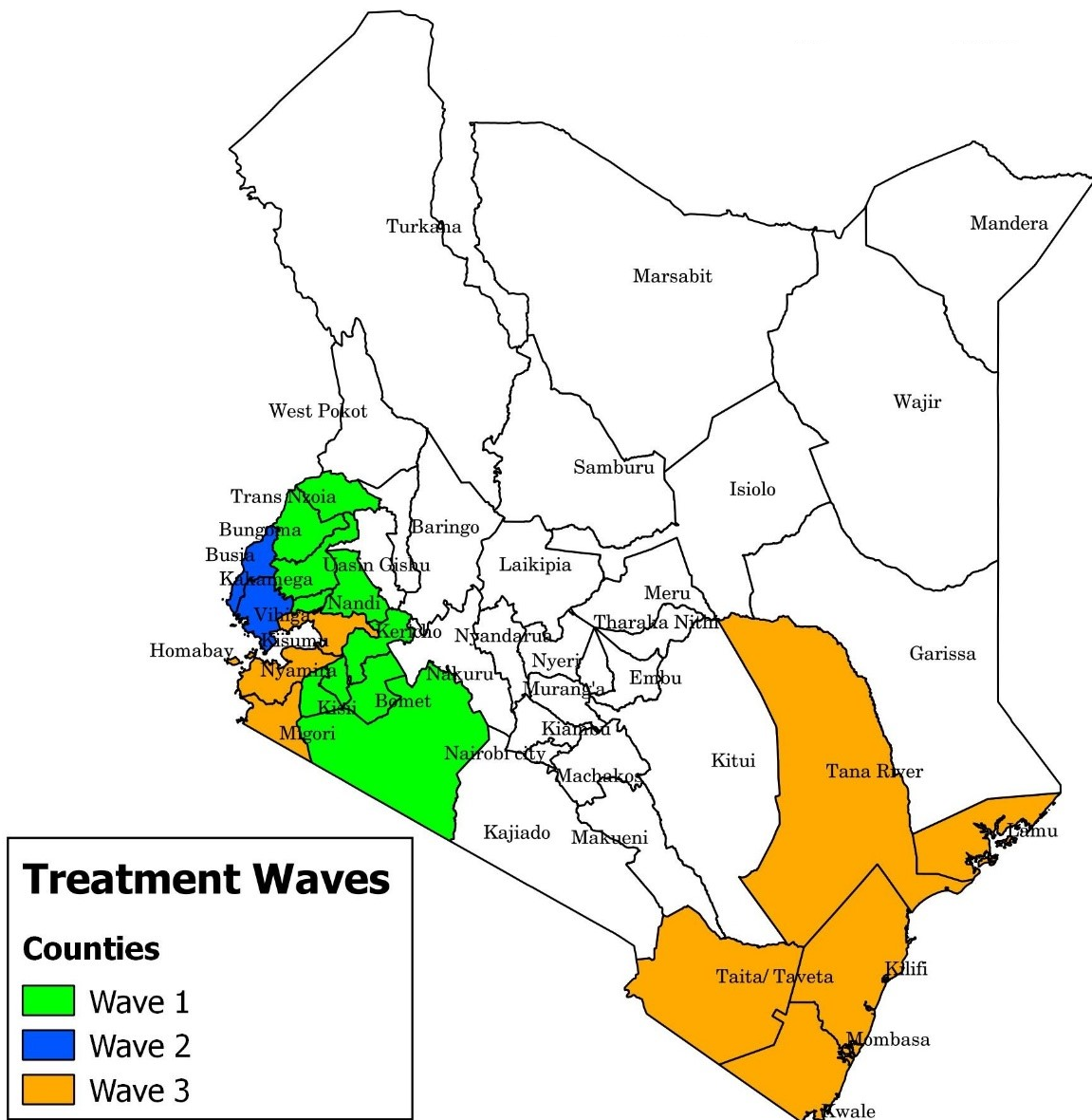
Deworming Days were considered to be systematic and efficient. ECD children showed a high level of prioritization (95% of schools prioritizing), however there is still some room for improvement in prioritizing non-enrolled children (78% of schools prioritizing).

The following PMCV analysis summarizes these results in detail beginning with a description of the process and performance of training sessions, CHEW activities, community sensitization efforts and deworming day observations.

1. Summary of PMCV Sampling Activity

Deworming scheduled for Year 3 was planned across 111 sub-counties in Kenya. Deworming for soil transmitted helminths (STH) was conducted on 24th-25th September in 2014 in Nyanza and Western Kenya. Deworming for both schistosomiasis (SCH) and STH took place on March 18th in two counties in the western part of the country (Siaya and Buisia counties). The coastal region of the country and schistosomiasis treating sub-counties in Nyanza were dewormed on 28th May 2015 and 4th June 2015. For reference please see the below map.

Figure 1. Map of deworming waves across Kenya



Process monitoring and coverage validation (PMCV) activities were carried prior to, during, and following all deworming dates.

PMCV field officers observed events according to a pre-determined sample sizes. The table below shows the Year 3 deworming activities to date. All monitoring or observed events were randomly sampled from a list of planned events.

Table 1. PMCV Activities and Sample Sizes

Activity Type	Events Y3	Events Monitored/ Observed
Sub-County Trainings (SCT)	111	38
<i>SCT for STH only</i>	77	25
<i>SCT for STH + SCH</i>	34	13
Teacher Trainings (TT)	861	76
<i>TT for STH only</i>	724	63
<i>TT for STH + SCH</i>	137	13
CHEW Trainings	111	36
<i>STH only</i>	77	27
<i>STH + SCH</i>	34	9
Pre-Deworming Community Visits	16,138	130 schools
Pre-Deworming Day School Visits	16,138	256 schools
Pre-Deworming Day ECD Visits	16,138	104 schools
Deworming Day School visits	16,138	247 schools
<i>STH schools</i>	14,862	240
<i>STH + SCH schools</i>	1,276	7

**A total of 34 Sub-Counties originally planned to deworm for SCH – however due to a shortage of drugs, only 6 actually participated in deworming.*

2. Training Activities

2.1. Sub-County Training

The intent of Sub-Country Training (SCT) sessions is to ensure that Sub-county and division-level trainers understand the purpose and procedure of deworming. The successful completion of this activity allows the division trainers to then conduct the same activity with teachers in their sub-counties.

PMCV teams attended 38 out of the total 111 SCTs conducted in the third year of the program. Field officers interview participants before and after the training and completed observations during the course of the activity.

A high-quality training is regarded to be one in which (a) participants arrive on time, (b) trainers delivers required information in full, (c) all training materials are present, and (d) where participants understand and learn the content effectively.

In 74% of the observed SCTs, all officials listed for training were present at the start of the meeting, however only 41% of participants had arrived by the scheduled start time. Lateness is a consistent trend that occurs during each deworming wave. The program has several safeguards in place to prevent this (i.e., reminders emails, messages and phone calls) and despite this prompting trainings tend not to begin on time. However, no evidence has been found to suggest that this impacts on successful implementation of the sessions and all

sub-county trainers are successfully on-boarded to the program and their roles regardless of whether they are late.

2.1.1. Information Delivery

When observing information delivery, PMCV field officers have a list of required context that is to be covered in full by those conducting the trainings. When content is only partially covered or not covered at all, it is recorded as such. The following is a breakdown of content covered *in full* across the sampled SCT sessions in Year 3.

The content area identified with the lowest coverage was forms specific to SCH monitoring. In real terms, what this means is that those conducting sessions for SCH, only partially covered the content. In addition, a tablet pole is required for distributing SCH drugs. Tablet poles were only available for demonstration in 70% of training sessions.

It is worth noting here that the sample size for training sessions covering SCH is lower as fewer schools were being dewormed for both SCH and STH. Therefore, the observations used to generate these estimates may not be as reliably representative as those for STH only.

Information delivery was considered reasonably comprehensive for all other topics.

SCT training booklets (an instructive aid) were distributed to all participants at 98% of the sub-county training events observed. This result is consistent across all deworming waves. The materials are brought to the trainings by the sub-county Education personnel who is responsible for distribution of all training materials.

Table 2. Percentage of Sub-County Meetings Where Content Was Covered In Full

Content Area	% of meetings (N = 38)
Information on Worms	87%
Drugs and Dosage	89%
Drug Administration	90%
STH Monitoring Forms	97%
SCH Monitoring Forms	72%
Reverse Cascade	84%

2.1.2. Knowledge Pre and Post-Training

Knowledge Pre-Training: 150 interviews were conducted at sub-county trainings. Of the total respondents, 89 were aware of, or had been trained on, STH previously. Twenty-eight people reported receiving training on SCH previously.

Participants were assessed pre- and post-training on their ability to identify the correct STH or SCH drugs, correct dosage, and appropriate age groups for treatment. The results of these interviews are presented in **Table 3**. Percentages represent the percent of people able to report the correct answer. According to these results, there is strong support for continuous training year-on-year, particularly with regards to SCH training.

Table 3. Participants' Knowledge of Deworming Pre and Post Sub-Country Training

Knowledge Area	STH Knowledge Pre-Training	STH Knowledge Post-Training ($N_{\text{interviewed}}$
	($N_{\text{interviewed}} = 143$)	= 150)
STH Drugs	83%	100%
STH Dosage	90%	100%
STH Age Groups	58%	98%
Overall Knowledge	77%	99%
	SCH Knowledge Pre-Training	SCH Knowledge Post-Training ($N_{\text{interviewed}}$
	($N_{\text{interviewed}} = 58$)	= 76)
SCH Drugs	22%	98%
SCH Dosage	20%	100%
SCH Age Groups	17%	92%
Overall Knowledge	19%	97%

2.2. Teacher Training

Teacher Trainings (TT) are conducted by the division trainers using a “Teacher Training Booklet” as reference material. A quality TT session is considered to be one where the necessary content is covered and retained by participants. TTs also serve the function of distribution of drugs and materials (monitoring forms, posters) to teachers. It is the aim of the program to provide all schools with their required drugs and materials at teacher training sessions. Teachers are expected to use the “Deworming Day Checklist” to conduct operations on the day. They are also expected to sensitize other teachers at their schools who did not attend the training on deworming day procedures (see the section on deworming day contained in this report).

A total of 76 TT sessions were observed by PMCV field officers in Year 3. Of those training sessions, 13 were specifically SCH trainings.

2.2.1. Preparedness and Distribution

Table 4. Percentage of TT Sessions in Which Items Were Distributed

Item Distributed	% TT sessions distributing item ($N_{\text{observed}} = 76$)
Posters	89%
Amount of Requested Drugs	92%
Monitoring Forms	98%
Teacher Training Booklets	95%
Tablet Poles	22%
	($N_{\text{observed}} = 13$)
Schools Receiving All Materials	92%

2.2.2. Information Delivery

As is the same for SCT, the completeness of information delivery in TT sessions is measured against the percentage of trainings where information on different content areas is covered *in full*. See Error! Reference source not found.5 for a list of these areas and their respective coverage.

Content delivery of information on drugs and dosage warrants particular attention. The topic of drugs and dosage was only covered fully in 60% of trainings across observed sessions in Year 3. This is in contrast to the results of observations of sub-county trainings in which drugs and dosage was covered in 89%. Indeed, a lower percentage of TT sessions cover the required content in full when compared to SCT sessions. The program has highlighted this degradation of integrity in content delivery from SCT to TT as an issue that requires further attention. In subsequent years the program will emphasize this message to tehsab-county and division officials who train teachers. The program however appreciates the tendency of messages to be diluted as it moves down the cascade but will try to work with the relevant officials to ensure this distortion is minimal.

It is important to note that even if the above content is spoken about, if each topic is not explained fully the topic will not count as ‘covered in full.’ The Deworming Day checklist was read through in 73% of TTs.

Table 5. Percentage of Teacher Training Sessions Covering Content Areas in Full

Content Area	% TTs covering content in full ($N_{observed} = 76$)
Worms	72%
Drugs and Dosage	60%
Drug Administration	84%
Monitoring Forms	66%
Reverse Cascade	70%

2.2.3. Knowledge Pre- and Post-Training

Prior to receiving training, 316 teachers were assessed on their ability to identify the correct STH drugs, correct dosage, and appropriate age groups for treatment. Of these, 93% were aware of or had been trained on STH previously. From the 13 trainings covering SCH, 93% of participants were aware of SCH or had previously been trained. The results of these interviews are presented in Error! Reference source not found. 6 and are compared with 300 interviews conducted post-training. Percentages represent the percent of people able to report the correct answer.

Although almost all participants reported having previously attended training, only 79% of participants could recall the correct answers when asked questions regarding STH and 44% for SCH topics. This is in contrast to the average scores of 99% and 82% post-training for STH and SCH respectively. The results of these analyses provide strong support for the continuation of teacher trainings year-on-year. However, participants knowledge of the correct age group for the treatment of SCH was still low following training.

Table 6. Participants’ Knowledge of Deworming Pre and Post-Teacher Training

Knowledge Area	Knowledge Pre-Training ($N_{interviewed}$)	Knowledge Post-Training
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	= 294)	(<i>N</i>_{interviewed} = 298)
STH Drugs	79%	98%
STH Dosage	95%	100%
STH Age Groups	62%	98%
Average STH Knowledge Score	79%	99%
	Knowledge Pre-Training (<i>N</i>_{interviewed}	Knowledge Post-Training (<i>N</i>_{interviewed}
	= 44)	= 53)
SCH Drugs	33%	91%
SCH Dosage	57%	89%
SCH Age Group	42%	66%
Average SCH Knowledge Score	44%	82%

3. Community Health Extension Worker (CHEW) Activities

3.1. CHEW Forum

Community Health Extension Workers aim to sensitize the community to the dates and purpose of deworming. They do this through interaction with the public and by supporting schools on Deworming Day by providing monitoring support. CHEWs also work with their counterparts – community health volunteers – both of whom conduct health interventions or education in communities and distribute health education materials like posters within their communities.

PMCV officers observed 36 CHEW Forums aimed at introducing the deworming sensitization message and materials/methods as well as assigning CHEWs to schools for monitoring. A successful community health extension worker forum is one that starts on time and where all the materials were present.

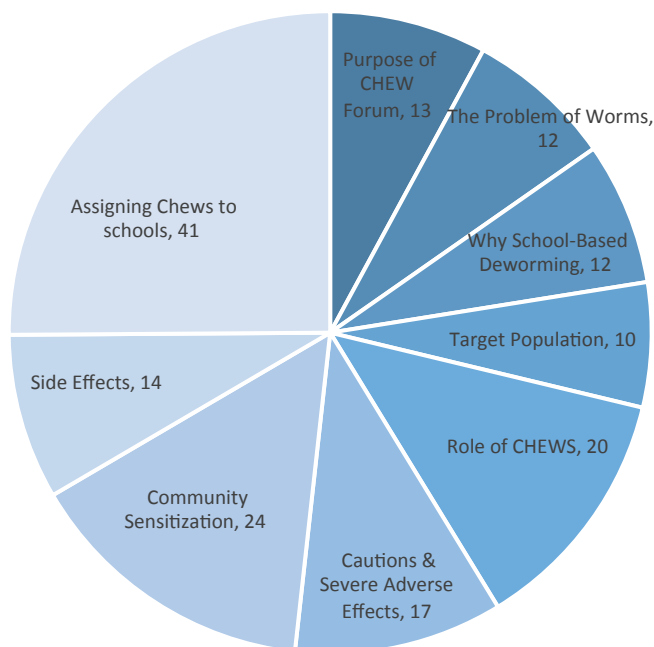
Overall, 63% of participants arrived before training, whereas 22% arrived 1hr after the forum had begun and 15% of participants arrived more than 1hr after the forum’s commencement. Lateness appears to be a commonality to all training sessions.

Materials required for CHEW training include a powerpoint printout, CHEW checklist and Severe Adverse Event (SAE; side-effects of the drugs) protocol.

- In 51% of forums, ALL of the Materials Pack was distributed at the start of the forum.
- In 13% of forums, SOME of the Materials Pack was distributed at the start of the forum.
- In 36% of forums, NONE of the Materials Pack was distributed at the start of the forum.

Detailed in **Figure 2** is the average time spent (in minutes) on activities at CHEW forums. The primary activity of the community health extension worker form is to assign extension workers to schools for sensitization activities and indeed, the most time, 41 out of 180 minutes, was spent on this activity.

Figure 2. Average Number of Minutes Spent at CHEW Forums on Topics



3.2. CHEW Pre-Deworming Day Community Interviews

In addition to observing training sessions, PMCV field officers also interviewed 59 CHEWs in the community *prior* to deworming day. A total of 93% of those interviewed were aware of deworming day and 80% had attended a session with NSBDP on deworming in the last 15 days.

The **primary sensitization activities conducted** by CHEWs **prior to deworming** include orientation of Community Health Volunteers (CHVs) on the National School-Based Deworming Programme initiative (24%), conducting health education in classes (20%), displaying posters (41%), discussing Deworming Day at barazas (51%), conducting early childhood development (ECD) outreach activities in communities (12%), and discussing Deworming Day at Health Day (31%). Only 14% of the 59 CHEWs reported conducting no community sensitization activities.

The percentage of CHEWs reporting the use of **sensitization materials** is as follows:

- 41% used the CHEW checklist
- 19% used the SAE protocol
- 66% used the Posters
- 27% used the Community Sensitization Supplement

As was previously stated, one of the main activities of the CHEW forum was to assign CHEWs to schools to support deworming day activities. The average number of schools to be monitored by a single CHEW was reported to be 22.5 schools and 83% of CHEWs interviewed stated that these schools had their contact information.

3.3. CHEW Deworming Day Interviews

Many of the same questions were posed to a different sample of CHEWs on deworming day. Because CHEWs are tasked to support schools, PMCV officers conducted 224 interviews as part of their deworming day observations. Those CHEWs that were not available in-person were contacted following deworming day or over the phone. Overall, 88% of CHEWs reported attending the CHEW Forum on deworming in the last 15 days, which is an 8% increase in the affirmative responses from the interviews conducted prior to deworming.

In order to support an easy comparison, Table 7 highlights the percent of CHEWs reporting to have conducted sensitization activities according to responses gathered in interviews *prior to* deworming and *during* deworming day. All of the responses represent either an increase in activities or a consistent reporting pattern. These figures allow the program to be reasonably confident in the self-reported nature of these results as they do not measurably differ across time periods or samples. Indeed, the percentage of CHEWs reporting the use of sensitization materials was also consistent with the above results.

Table 7. CHEW reports of community sensitization activities prior to, and during, deworming day.

Activities conducted to sensitize the community to deworming day.	% of CHEWs prior to DD (N_{interviewed} = 59)	% of CHEWs during DD (N_{interviewed} = 224)
Orient CHVs on the program	n/a	57%
Display Posters	41%	61%
Discuss Deworming day at Barazas	51%	51%
Conduct ECD outreach	12%	12%
Discuss deworming day at Health Day	31%	34%
None	14%	1%

3.3.1. Contact with Schools

A total of 64% of CHEWs reported that they had been contacted by their assigned schools regarding the following topic areas; requiring additional drugs (58%); questions about SAE management (9%); and questions regarding drug administration (18%). All CHEWs stated that they felt confident fielding any queries.

4. Community Sensitization

PMCV Field officers interviewed a total of 716 parents with children. Of these, 379 were parents of enrolled children across 130 different schools and 337 were parents of non-enrolled children. The number of parents with at *least one child* enrolled in early childhood development (ECD) was 283 of the sample population, or 65%. Just over one third or 35% of parents had no child enrolled in ECD. The average age of those children reported to be enrolled (by their parents) was 7.7 years, whereas the average age of non-enrolled children was 3.7 years.

PMCV field officers observed parents' level of awareness of Deworming Day, their intentions regarding taking children to be dewormed and documented the primary source by which parents were receiving such information.

4.1. Pre-Deworming Interviews - Parents

Overall, 61% of the total 716 interviewed parents were aware of Deworming Day.

The percentage of parents with enrolled children who were *aware* of Deworming Day was higher than those with non-enrolled children (68% compared to 53%). Forty-seven percent of parents reported hearing about deworming 'last year,' with 41% reporting hearing about it 'this year' and 8% 'two years ago'. A total of 76% had taken their children for deworming before. Half of the parents who were aware of deworming had also spoken to others about the subject.

Of those parents who reported to be *aware* of Deworming Day, 96% of parents with enrolled children planned to send or take their child to be dewormed and 93% of parents of non-enrolled planned the same. A total of 72% of adults were planning on accompanying their children for deworming.

4.1.1. Information Quality

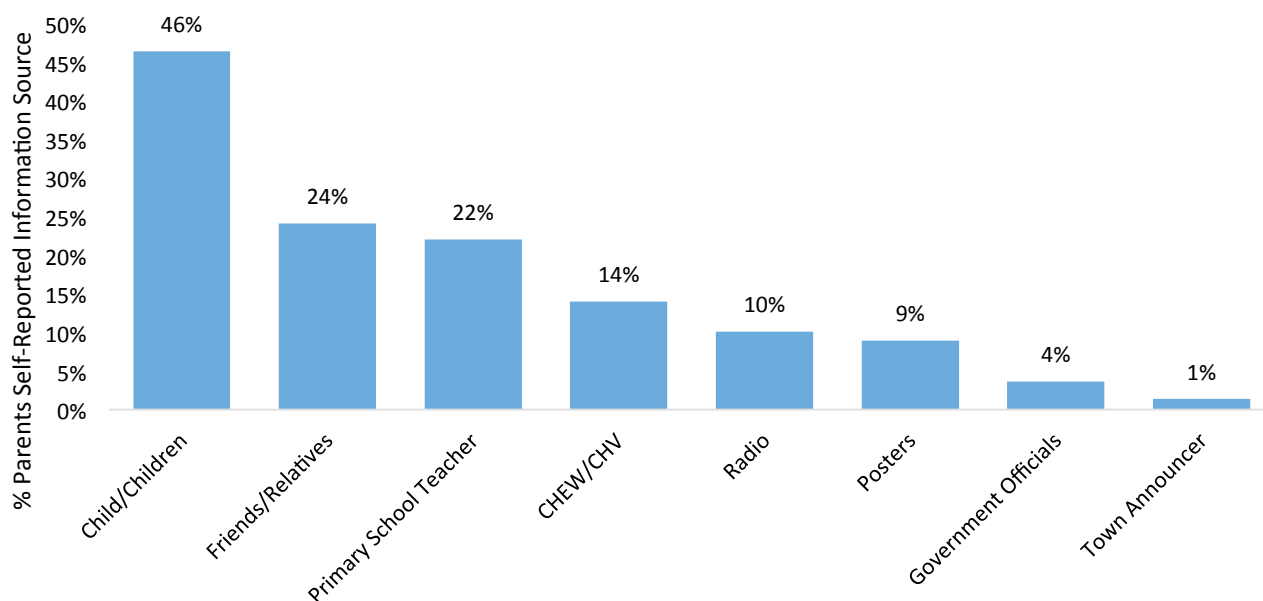
Of those parents aware of deworming, only 41% knew the correct Deworming Day date, 81% knew the correct target population, and 48% knew the correct age group. These results indicate that although parents report being aware of deworming, almost half do not have the information required to attend (date). There is the scope to find a more robust method of ensuring information retention in awareness of deworming.

4.1.2. Information Sources

A number of activities are conducted within NSBDP aimed at raising awareness of Deworming Day. To date such activities have included using CHEWs and CHVs to promote Deworming Day, use of the mass media, promotion by government officials, and school-based promotional activities. In addition to these activities, a radio campaign was also piloted in the second quarter of Year 3. The following represent the results of interviews conducted in communities *prior to Deworming Day* and with parents at schools *on Deworming Day*.

Of the parents who had heard about Deworming Day (61%) **Figure 3** illustrates the sources by which parents received their sensitization information. These sources were not prompted but suggested by interviewees. The majority of parents receive information about Deworming Day from their children (46%), followed by reports from friends and relatives (24%) and teachers (22%).

Figure 3. Information Sources Reported by Parents during Community Visits Prior to Deworming Day



In order to highlight areas for further community sensitization activities not currently used by the program, parents were also asked specifically about their primary source of information about health issues (Table 8). It is clear from this information and the previous figure, that the program sufficiently covers most avenues from which communities get their health-related information. It is worth noting that there were some sub-counties where radio could not be used because of coverage of airwaves. For these few sub-counties the program retain the town announcements. This provides a justification on town announcements still appears in our analysis with a consistent low coverage.

Table 8. Parent's Self-Reported Sources of Health-Related Information

Source of Health Information	% of Parents
Health Facilities Nearby	52%
CHVs	27%
CHEWs	11%
Children	3%
Radio	3%
Friends/Neighbours	3%
Schools	2%
Barazas/Community Meetings	3%

Prompted Questions: When prompted specifically and asked - “Has the CHEW/CHW spoken to you and/or the community about the deworming program?” - 28% of parents said yes. This percentage is double that of the un-prompted responses. When prompted about deworming posters (e.g., “Have you seen these posters in the community about the deworming program?”), 30% of parents said yes. This is almost three times the unprompted responses. In addition, of the parents who specifically recall seeing the posters, 66% could remember seeing the date of Deworming Day, 36% could remember the venue, 21% could remember

something about worms and 17%, the target population. These results should be interpreted with caution given that prompted response questions are more likely to elicit performance demand (i.e., saying 'yes' because they believe that is what is required/expected).

4.1.3. Radio Messaging Campaign

Of those parents who cited the radio as their primary information source during interviews conducted prior to deworming (10% parents), field officers were interested to measure the most salient information that could be recalled. The key messages that parents were able to recall hearing on the radio were:

- 36% could recall hearing about the effects of worms
- 41% could recall hearing that the age group for treatment was 2-14 years
- 23% could recall hearing that drugs are safe
- 64% could recall hearing that deworming is taking place at schools
- 36% could recall hearing the date of Deworming Day

The above results are comparable with the information retention reported by the entire sample. Importantly, only 36% could recall the correct date for deworming which would likely impact the likelihood that they would subsequently take their child (both enrolled and non-enrolled) to school on that day. Ninety-eight percent of parents who reported hearing about Deworming Day from the radio were planning on taking their child for deworming. A total of 73% shared the message with their community and 88% of parents thought that those they had shared the information with were subsequently planning on attending deworming.

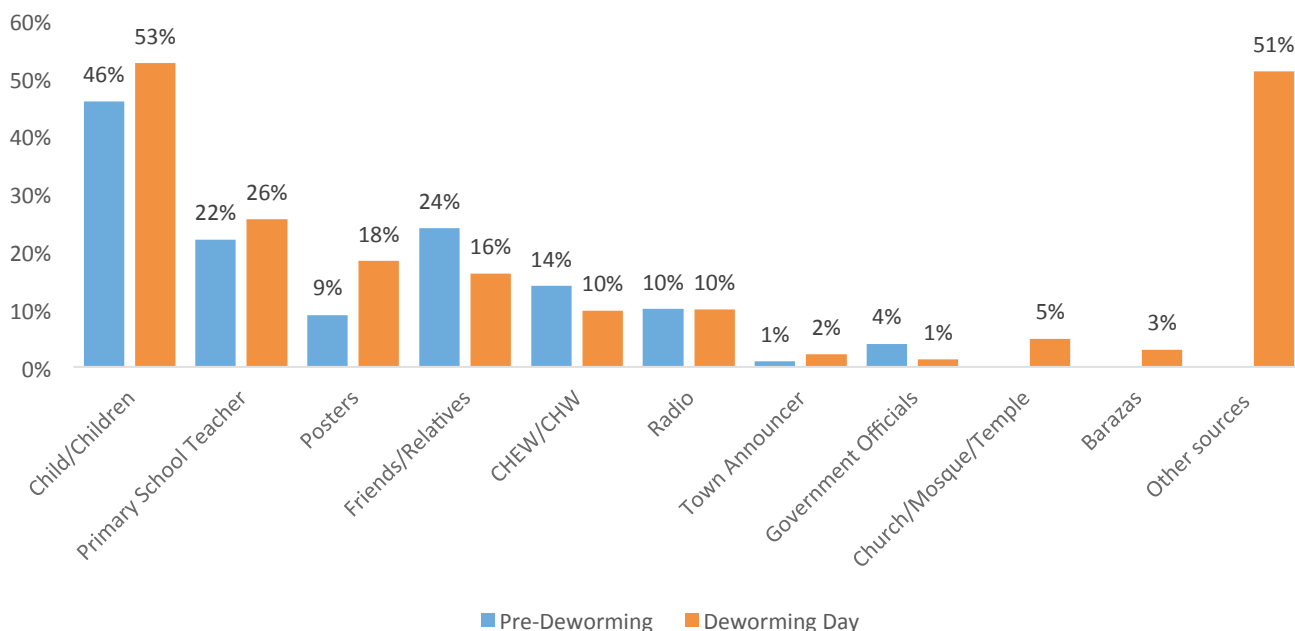
4.1.4. Attitudes towards Deworming Day

Positivity towards deworming was reported in 96% of interviewed parents. Parents reported feeling negatively about deworming in 3% of the sample population (13 people) and 1% (3 parents) reported feeling neutral. These results regarding any negativity towards deworming are statistically negligible. It is unclear from these results whether positive attitudes towards deworming translate to action, however 95% parents had previously stated that they planned to send or take their child to be dewormed. Therefore it is reasonable to suggest that positive attitudes are indicative of intent and/or vice versa.

4.2. Deworming Day Interviews - Parents

A number of parents were also interviewed at schools on Deworming Day regarding their knowledge of deworming and the source of that knowledge. The intention behind this exercise was to compare the information source to those interviewed prior to deworming as a measure of consistency. In **Figure 4**, the results of the interviews pre-deworming day are compared with those parents interviewed on deworming day. The results remain largely similar, however more parents reported getting their information from 'other' sources (51%) when interviewed on deworming day.

Figure 4. Information sources reported by parents when interviewed pre- and during- deworming.



5. Pre-Deworming School Visits

PMCV field officers visited 256 schools prior to Deworming Day in order to assess preparedness for deworming activities and to review the effect of teacher trainings. A total of 244 of the schools were planning on participating in deworming.

5.1. Training

According to interviews with head teachers, 97% of these schools had a teacher who had attended training in the past 15 days. A further 86% of trained teachers had trained or sensitized other teachers on how to administer drugs and conduct deworming day. Almost all teachers (99%) found the Teacher Training Booklet to be ‘very’ or ‘somewhat’ useful in this process and 95% reported to use it often.

Teachers were also tasked with community sensitization. This correlates with 22% of previously interviewed parents report getting their information from teachers.

When asked, “What activities have you/your school conducted for the Deworming Day to sensitize the community around the school?” teachers reported the following responses:

- 23% - Conduct Health Education in Class
- 60% - Display Posters in the School
- 23% - Discuss Deworming Day at School Management Meetings
- 9% - Conduct ECD Outreach
- 72% - Encourage Children to share Deworming Day Information with Parents
- 3% - None

As can also be seen from interviews with parents, the most difficult population to reach are the ECD or children under-5 (non-enrolled) and other non-enrolled children within the communities. . This point has also been noted by the program as an area for further expansion of the community sensitization supplement to the program.

5.2. Materials

At the time of PMCV visits, 95% of schools reported having received deworming tablets, with 97% of those schools having received them at the time of TT. This percentage is higher than those originally observed by PMCV officers with only 92% of schools reported to receive their drugs during TT.

Upon further investigation, 87% of schools considered that they had received a sufficient supply of drugs for their current enrolled and ECD populations. It is likely that these schools requested additional drugs, because 98% of schools were observed to have sufficient drugs in place on deworming day. Only 5% of schools did not have all monitoring forms present prior to deworming day. Such schools have always sought support from the sub-county offices that organize additional prints or photocopying to ensure they have the forms on deworming day.

6. Deworming Day

PMCV field officers visit schools on Deworming Day to observe procedure and interview teachers/head teachers regarding deworming.

The number of schools observed on Deworming Day *treating for STH* in Year 3 was 247. The combined population of registered children at the observed schools was 88,820 children. It is estimated that 7,485 children were directly observed being treated for STH.

Seven schools treating for *both STH and SCH* were observed. The total registered population of children in these schools was 3,198 children and 352 children were directly observed by field officers participating in Deworming Day.

A quality Deworming Day is regarded to be one where:

- Deworming occurs within 1 week before teacher training
- The school would have the correct materials (including sufficient drugs) in place before commencement
- Children of the appropriate ages are treated (ages 2-14 years)
- Non-enrolled and ECD aged children are prioritized for treatment within the schools
- The correct dosage of drugs is given to all children

6.1. Presence of Materials

Drug Supply

- **Pre-Deworming:** The percentage of target schools with the appropriate drugs (according to the number ordered and enrolment numbers) - albendazole (ALB) for treating STH and praziquantel (PZQ)

where required for treating SCH - in place on Deworming Day was 98% or 243 out of 247 sampled schools.

- **Deworming:** Only 9% percent of sampled schools were observed to run out of drugs on Deworming Day. However it was noted that only 87% of schools had enough PZQ for treating SCH in non-enrolled children.
- **Post-Deworming:** According to interviews with head teachers post-Deworming Day, 92% of schools recorded a sufficient supply of drugs. This marginal difference between pre and post-reports of sufficient drug supply may indicate the underestimation of the drugs required to treat enrolled, non-enrolled, and ECD children. Indeed, this assumption is further supported by reports by PMCV field teams regarding an insufficient supply of drugs in 9% of sampled schools.

Community Sensitization Materials: 86% of schools had Deworming Day posters visible on the day. Posters appear to be the most widely used form of sensitization by teachers, CHEWs and CHVs.

Forms: 95% of teachers had a sufficient supply of Form E, for enrolled children, and 81% had pre-entered information as they had been instructed in TT.

6.2. Prioritization of Non Enrolled and ECD Children

The total number of schools observed treating ECD children on site was 95%. This result is significantly higher than the 78% of schools observed treating non-enrolled children on campus.

To place this result in context, many schools have an Early Childhood Development (ECD) centre either attached or as a stand-alone structure some distance from a primary school within the community. Given that one of the components of the program is the prioritization of non-enrolled *and* ECD children, it would be expected that the bulk of schools treat both groups on campus.

Indeed and contrary to the preferred operating procedure of the National School-Based Deworming Programme, the percentage of schools reported to prioritize the treatment of ECD children was just over half at 59%. Similarly non-enrolled children were reported to be a priority in only 67% of observed schools.

6.3. Deworming Day Procedure

Briefly, systematic and successful deworming days are such that classes are arranged in lines, children wash their hands before deworming, teachers are clearly documenting the names of those dewormed, and there are stations for children who experience any side effects after treatment.

Deworming was reported to occur inside classes in 47% of observed schools and outside in 53% of schools. Deworming was considered to be 'systematic' in 98% of schools. The correct dosage for albendazole is one tablet per child and the correct age is 2-14 years. These procedures were observed to be followed correctly by 86% of teachers observed by field officers.

Coverage: Coverage is defined as the number of children dewormed according to the school/class register. SCH tablet (PZQ) coverage was 99% across schools treating for SCH. Also executed was the use of 'tablet poles' for the treatment of SCH in 74% of schools. STH tablet (ALB) coverage was 99% across observed schools. Teachers were reported to correctly observe children swallowing PZQ in 99% of schools and ALB in 96% of

schools. Observing children swallowing is most important when treating for SCH as the tablet does not taste pleasant and there are high chances of children spitting if not observed. .

7. Summary Narrative

The purpose of process monitoring and coverage validation is to monitor the various stages of the deworming cascade for quality control and to provide performance and impact metrics for the National School-Based Deworming Program. Deworming for Year 3 took place in Nyanza, Western, and Coastal regions of Kenya. PMCV field officers visited 38 sub-county trainings, 89 teacher trainings, 36 CHEW forums, 716 parents within the communities prior to deworming, 247 schools prior to deworming, as well as 247 schools on deworming day. Based on a series of observations and individual interviews, the following is a summary of the PMCV results.

7.1. Training

Sub-County Training: As trainings can often be a long initiative, one element of a successful sub-county training is a prompt starting time. In the present deworming wave 41% of all recorded attendees were present at the training prior to the start time and in 74% of the SCTs all the expected officials were present. Based on these results, it is suggested that participants can better advised to arrive on time. Information coverage during sub-county trainings was high with 5 of the 6 content area's being covered in full over 84% of the time. Sub-County training booklets were distributed to all participants at 98% of the sub-county trainings.

Overall, knowledge both pre and post training on STH was high for attendees. However, knowledge on SCH drugs, dosage, and correct age groups for treatment was comparatively low pre-training, for instance only 17% had knowledge of the correct age group for sub-county training treatment. Nevertheless, results found from the post-training interviews show that participants were significantly more knowledgeable after the trainings, overall STH knowledge increased from 77% to 99% while overall SCH knowledge increased from 19% to 97%. These statistics reinforce the need for year-on-year training.

Teacher Training: In 92% of the observed teacher trainings, or 70 sessions, schools received all their necessary materials required for deworming, including posters, drugs, and monitoring forms. Information coverage is also a key performance metric of a successful teacher training. In this case Information on drugs and dosage had the lowest coverage, with 60% of the trainings covering content in full, followed by monitoring forms at 66% coverage in full.

Following training, participants' post-training knowledge retention on drugs and dosage was high, with 98% and 100% of participants able to report the correct information on drugs and dosage respectively. Overall, across the three topic areas of drugs, dosage, and correct age group for treatment, the average knowledge score on STH was 79% pre-training and 99% post-training. The average knowledge scores for SCH was 44% pre-training and 82% post-training. These results highlight the continued value of year-on-year training as many of these same participants had attended trainings previously.

7.2 Community Health Extension Worker (CHEW) Activities

CHEW Forum: There are several issues surrounding the CHEW forums that need to be addressed, and that may hamper their overall effectiveness. Presence and participation are key factors in the effectiveness of any

training. Tardiness is rather high as only 63% of CHEW participants arrived before the commencement of the training. Additionally, about half (51%) of ALL of the materials were distributed at the start of the session.

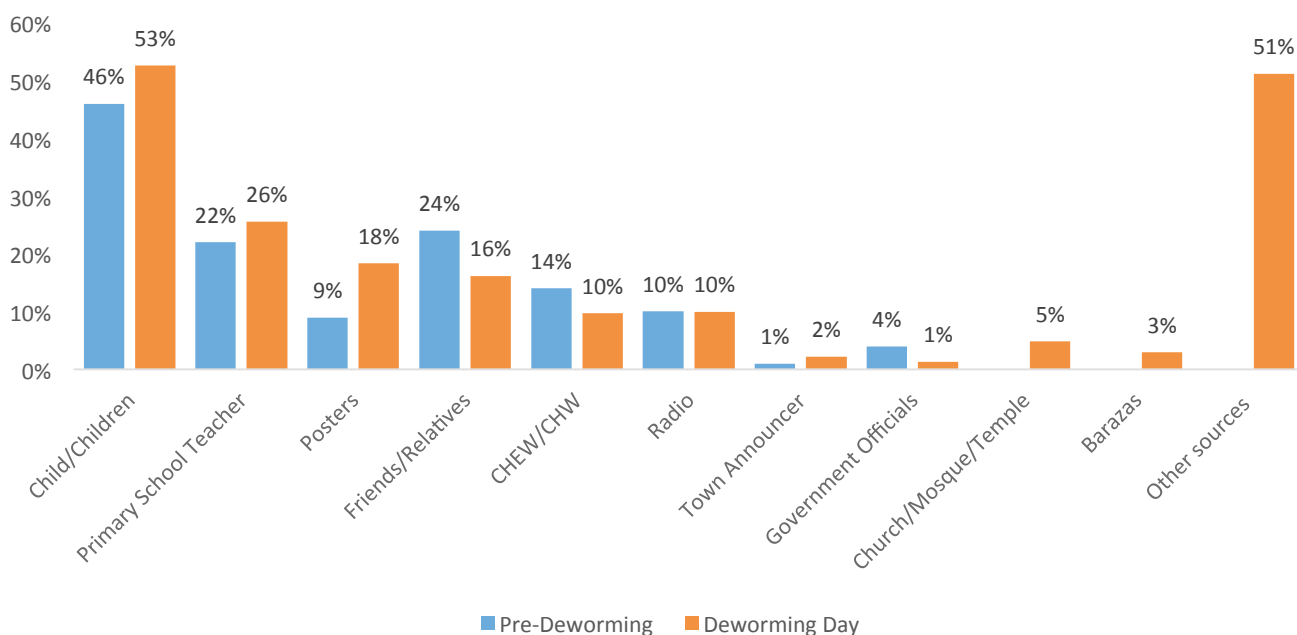
CHEW Community Sensitization: CHEWs play an important part in sensitizing the community in upcoming deworming activities. Many methods can be used to inform and educate the community about deworming activities: 66% used posters, 51% discussed Deworming Day at community meetings or barazas, 20% even conducted health education classes. Only a very small percentage of CHEWs, 14%, did not conduct any community sensitization activities.

7.3 Community Sensitization

Awareness: Field officers made visits to 130 schools ahead of Deworming Day and interviewed a total of 716 parents. Of the total, 61% of parents reported being aware of Deworming Day, 41% knew the correct date of Deworming Day, and 50% had spoken to others about Deworming Day. Of those parents who reported being *aware* of Deworming Day, 95% were planning on sending or taking their child for deworming, while 72% were planning on accompanying their children for deworming. Additionally, past efforts have proven cumulative as 76% of parents reported taking their children to Deworming Day before.

Information Source: The majority of parents receive information about Deworming Day from their children (46%), from friends and relatives (24%), and teachers (22%). Figure 4 summarizes the information sources reported by parents interviewed prior to Deworming Day and those interviewed on Deworming Day.

Figure 5. Summary of Information Sources Reported by Parents



7.4 Deworming Day

The number of schools observed on Deworming Day, for all three waves, was 247 for STH. 88,820 children were treated for STH, of which 7,485 were observed being treated. Seven schools were observed treating for

both STH and SCH. 352 children were observed being treated for STH and SCH out of the 3,198 total children treated.

Drugs: According to planned figures, the percentage of target schools with the appropriate drugs in place on Deworming Day was 98%. The number of sampled schools who were observed by PMCV teams to run out of drugs on Deworming day was 9%. According to interviews with head teachers Post-Deworming Day, the percent of schools recording a sufficient supply of drugs was 92%. This difference between pre- and post-reports of drug supply is somewhat marginal, however there is a measurable amount of underestimation of drugs required to treat enrolled, non-enrolled, and ECD children.

Treatment of Non-enrolled and ECD Children: The percentage of schools reported to prioritize the treatment of ECD children was exceedingly high, at 95%. Similarly, non-enrolled children were reported to be a priority in 78% of observed schools. The Deworming program emphasises the priority treatment of both ECD and non-enrolled children. This emphasis can be seen in the high rate with which ECD children are shown priority treatment, and to a lesser degree with non-enrolled children. However, this disparity between ECD and non-enrolled children needs to be addressed in future treatment waves.

Treatment Coverage: Correct treatment procedures were observed to be followed by 86% of teachers in observed schools. Coverage, or treatment compared to enrolment, was 99% across schools treating for STH and coverage was 99% across schools treating for both SCH and STH.

The results outlined in this section highlight both the successes of the program and the areas of the deworming cascade that require attention.

8. Conclusions

PMCV metrics for Year 3 of the National School-Based Deworming Program indicated consistently high performance in the areas of materials and drug delivery, sub-county training information delivery, and deworming coverage. Most notably, drugs and other training materials were available at sub-county trainings (98%) and teacher trainings in almost all of the observed meetings (92%). However, more attention should be paid to the timely distribution of materials and to the content delivery of teacher trainings. Keeping these two factors in mind, the goal for Teacher Trainings is to improve the delivery information regarding worms, drugs and dosage, and treatment age groups as well as the use of monitoring forms and the reverse cascade.

Community sensitization activities resulted in the awareness of Deworming Day in 61% of interviewed parents in the communities. The majority of these parents reported their children (46%) as their primary source of information, followed by friends/relatives (24%), teachers (22%), and community health extension workers (14%). However when specifically prompted, the number of people reported to have spoken to extension workers about deworming doubled (27% as opposed to 14%) and those reporting to have seen posters almost tripled (9% up from 3%). The program would be advised to interpret these numbers with caution. A specific analysis of the impact on community health extension worker forums would provide further insight into this result.

Drug supplies were adequate for the majority of school, with about 9% of sampled schools reporting an insufficient supply on Deworming Day. 98% of all schools reported having the appropriate drugs in place on

Deworming Day. It is suggested that these numbers be reconciled with treatment figures and drug return rates in the months following deworming.

Deworming Days were considered to be systematic and efficient. ECD children showed a high level of prioritization (95%), however there is still some room for improvement in prioritizing non-enrolled children (78%).