

Overview: PMCV Sampling Approach, Deworm the World, Kenya

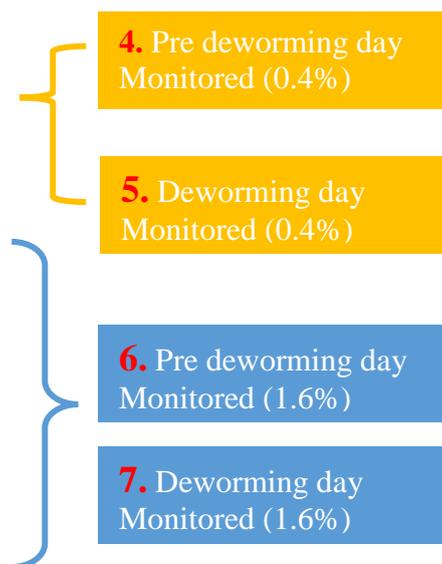
Process Monitoring & Monitoring Validation (PMCV) samples are selected through stratified two-stage cluster sampling¹. Deworming regions are stratified by county and clustering is done at sub-county Level. First, the clusters (sub-counties) that will be monitored are randomly selected from each stratum (county) and then the activities to be monitored are randomly selected from the selected sub-county.

Training of different stakeholders takes place at the different level of the cascade. For PMCV we start monitoring at the sub-county training events which happen at sub-county level. In this training, the master trainers train sub-county level staff from Ministry of Health (MoH) and Ministry of Education (MoE). We monitor 35% of sub-county training out of a total of 111 such training nationally.

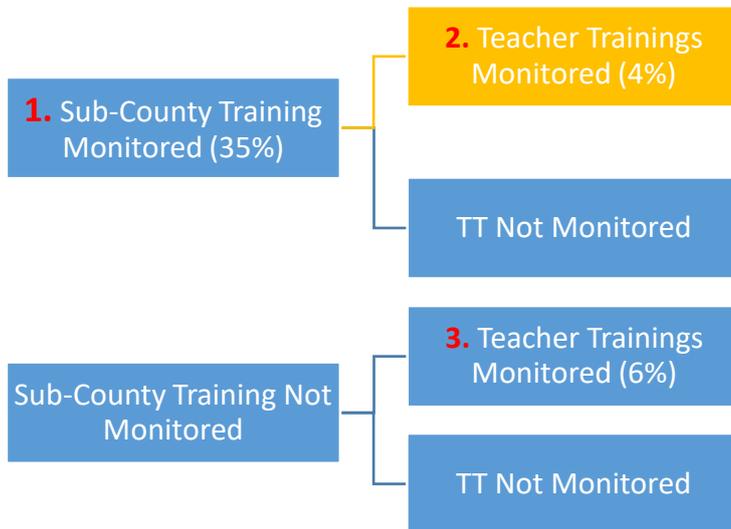
The MoH and MoE staff trained during sub-county training later train teachers from schools that the program targets for deworming. Two teachers from each school are invited to attend the Teacher's Training (TT) and a maximum of forty teachers (twenty schools) are invited per training which is done at the division level. There are approximately 860 teacher's training. We select and monitor a random sample of 10% of the teacher training events. In selecting the teacher training events that would be monitored, a random sample of 40% (from the original sample of 10% of events) is selected from sub-counties in which we monitored sub-county training, while 60% (of the original random sample of 10% of teacher training events) is selected from sub-counties in which we did not monitor sub-county training.

The activity that is in the lowest level of the cascade is school deworming, where teachers administer drugs to both enrolled pupils and non-enrolled children. Deworming is conducted in approximately 16,000 schools across the county and we monitor 2% of all schools a day before deworming (Pre-Deworming), another 2% of schools on the deworming day, and another 2% of schools a few days after deworming (Post-Deworming). When selecting schools to be monitored for pre-deworming, deworming and post-deworming, a random sample of 20% (of the original random sample of 2% of schools) is selected in sub-counties where we monitored both sub-county training and Teacher's Training, while the remaining sample of 80% (of the original random sample of 2% of schools selected)) from the full pool of schools targeted for treatment irrespective of whether they are located in areas where training events were monitored or not (but still stratified by counties).

The chart below is a visual presentation of the sampling approach.



¹ Please note that samples sizes indicated below are what are recommended in the PMCV monitoring plan for Deworm the World, Kenya. In some cases, the monitoring team does not monitor the full sample size. This is usually because of various reasons including monitoring budgetary constraints in a particular year or deworming wave, attrition of short term monitors at the last minute, changes in field logistics (closed schools/events) in a manner that does not allow for last minute replanning/replacement etc.



Are monitors assigned a randomly selected backup school to visit if their initial school is closed on Deworming Day or coverage validation day?

- When the monitor is unable to monitor the assigned school (because of closure, etc) we ask the monitor to i) to communicate the same with his supervisor and, ii) to visit the nearest school if the nearest school was not part of the randomly picked school.

Are the schools that monitors visit on Deworming Day the same as the schools that are visited pre-Deworming Day and during coverage validation?

- There is no direct sampling link between specific schools monitored on the pre-deworming day and those monitored on the deworming day. However, 20% of schools that are monitored for Pre-deworming, Deworming and Post-Deworming are randomly selected within the same sub-counties in which we monitored sub-county and teacher training events, while 80% of the schools that are monitored are randomly selected from the full pool of targeted schools, but stratified by county. Please see Annex 1 (attached) for more details on our sampling approach.

Backcheck calls:

- Do these only occur on Deworming Day?
 - We do back-checks for the pre-deworming, de-worming and post-deworming day.
- I think you said that a randomly selected 10% of the monitored schools are called - did I understand that correctly?
 - Yes, we back-check 10% of the monitored schools.
- What type of questions are asked?
 - Generally, we seek to establish that the monitor did actually visit the school assigned to him/her, interviewed at least the headteacher of the school and that there is broad consistency on some of the data they collect by the monitor and the back-checker. For instance, the back-checker also asks about the availability of forms and drugs at schools, which is also information that is asked by the monitor. We share back-checks

results with the short term monitors before we make the last payment to them. The other purpose is to improve our data collection training for the subsequent waves.

Does the monitoring team have an estimate of how many non-enrolled children the deworming program reaches?

- We get this from treatment forms that schools submit back via “the reverse cascade”. For PMCV, we monitor that teachers are aware they should be treating non-enrolled, and they are aware of age categories targeted for non-enrolled. When we do data audit on treatment forms, we also check that data for non-enrolled is entered accurately.

Can you share comparisons between the coverage collected by the county and the coverage that monitors find during coverage validation?

- Please see a [sample of analysis](#) from post-coverage validation. This is from Year 3 of Program Implementation here in Kenya. Please also see the [concept note](#) that guided this post-coverage validation for Y3. From Year 3, we did actually find out that the coverage from coverage validation process was higher (at 96%) and than coverage reported on the performance/treatment forms send to us from schools through “reverse cascade” (at 91%).

There are reasons for this: our analysis of coverage validation is only based on enrolled children present on the day of deworming and on the day of coverage validation, so the formula is roughly [*enrolled children who were treated on the day of deworming and were present on the day of coverage validation/enrolled children present at the school on the day of deworming and on the day of coverage validation*]. For coverage/performance data, the formula of calculating coverage is a function of enrolled children in the class registers, so the formula is roughly [*enrolled children who received treatment/targeted enrolled children enrolled as indicated at planning stage*]. The denominator used to calculate the coverage using treatment data is collected during planning stage and is reported by sub-county officials from Ministry of Education. From analysis of year 3 data, this figure is overstated by about 9% leading under-reporting the coverage.

We also do further analysis (that we call pipeline analysis) where we compare for instance the number of schools targeted vs those actually treated, schools that send teachers for teacher training but do not treat on the deworming day vs those do not send teachers to teacher training but actually training. Please see a sample pipeline analysis from Year 3 of the Program [here](#) and that from Year 2 [here](#).

A few other comments that I wanted to mention

We display our performance data on a management information systems (we internally refer to it as ProgMIS). This allows for the Program to have continuous access to historical and current treatment data which they use for planning and decision making.

We have been developing the capacity for government to directly collect and handle treatment data. The government already has a health management information (HMIS) system on which they collect other health related data (eg Malaria, TB etc). We have therefore been working with them to develop a module for deworming. Sub-county Health Record and Information officers (SC-HRIOs) use the module to enter treatment data at the sub-county level. Officials at the Ministry of Health can generate national, county and sub-county treatment reports once they have this data.

Some additional notes on some of the questions:

Pre-deworming day: Below are the instructions we give monitors to identify households to survey for community awareness on the day before deworming happens in the school their community.

- Ask the head teacher for the nearest homestead from where a child regularly attends school and a parent can be found at this time of the day.

- Interview a parent at the first homestead as directed by the head teacher followed by every 2nd homestead. Continue till you get:
 - a. 3 homesteads where at least one 2-14 year olds from a household regularly attends a Primary school or an attached ECD centre
 - b. 3 homesteads where all of the 2-14 year olds from a household do not attend any primary school or an attached ECD centre
 - if 3 interviews of one type are completed - ask the next homestead in the series to direct you homesteads of the other type.

On selecting the CHEW to interview, there is only one CHEW per community. A few communities do not have CHEWs at all.

A correction of a response on email:

Sampling approach: I believe I shared on the call that in our sampling for schools we stratify by sub-county. I wanted to correct this. We do stratify by county (not sub-county) for teacher training, pre-deworming and post-deworming day events. Please refer to Annex 1 (attached) for more details on our sampling approach.