Coverage Validation during COVID-19: An Innovative and Cost-Effective Approach

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Introduction

- Deworm the World Initiative (DtWI) supports the governments of Kenya, India, Nigeria, and Pakistan providing technical assistance to implement school-based deworming programs that annually reach over 260 million children.

- As part of our technical assistance, we provide monitoring and evaluation support to identify opportunities for program improvement and course correction. This includes Process Monitoring (PM) and Coverage Validation (CV).

  – **Coverage Validation** is used after <u>each round of mass drug administration</u> (MDA) to validate treatment coverage collected at schools on Deworming Day.

  – CV usually takes place <u>2-4 weeks after MDA</u> and consists of a **coverage evaluation survey (CES)** based on WHO guidelines that involves in-person interviews with a sub-sample of children at schools and in the community surrounding sampled schools to determine if they received and ingested the medicine.

  – Results from CES are compared with government treatment coverage rates collected during deworming to evaluate the reliability of these rates.

A new approach

- Due to the COVID-19 pandemic, the Kenyan Ministry of Education closed schools less than one week after the first wave of deworming for the year took place in March 2020. Because the CES includes surveying children at both schools and in the community, the school portion became impossible, and we did not want to send enumerators to households in an effort to ensure safety of communities.

- As a result, Evidence Action undertook an alternative **phone-based coverage evaluation survey** in April and May 2020 with the goals of:

  - Conducting coverage validation to evaluate reported treatment coverage.

  - Inform program learning on remote data collection opportunities during the COVID-19 pandemic.

- Approval for survey changes was received from the National School-Based Deworming Program governance.

- Kenya was an ideal geography to pilot this new strategy.

  - Almost universal penetration of mobile phones, most people are accustomed to use them in their daily lives.

  - National School-Based Deworming is a well known and trusted program implemented by the MoE and MoH.

  - DtWI has context-specific data collection experience and access to data through staff and history in Kenya.

Methodology

- Interviews were conducted with children's parents, who would ask survey questions to their children due to challenges and sensitivity of speaking directly with the children.

- Survey was adapted from the in-person household coverage evaluation survey.

  – Removed certain questions to shorten the length of the interview and keep phone calls under 30 minutes.

  – Kept key questions with indicators of interest (household demographic information, treatment type, program reach, surveyed coverage, and unprogrammed deworming).

- Survey sample Consisted of **2,250 parent interviews** from communities surrounding the most attended school in **30 randomly selected communities** (subunits) in Narok and Siaya counties (60 total).

  – Parent contact information was gathered through teachers and other parents using a non-random snowball sampling method.

  – All respondents were given airtime credits as an incentive for completing the survey, between $1 and $2.50

- Certain biases were considered with the adapted methodology, such as **recall bias**, **selection bias**, and **social desirability bias**.

- We can share the full methodology with those who are interested.

Results (1)

- Parents were receptive to the phone-based survey and response rates were positive.

    - 83% of interviews taking place on the first call to the respondent.

    - 15% of the children whose parents responded to the survey were non-enrolled, which ensured robust non-enrolled representation.

    - 95% of parents reported that all children were present at the household at the time of the interview, which was important for parents' ability to refer to their children during the call.

- The surveyed coverage for STH across the two counties surpassed the WHO threshold of 75%, suggesting that the deworming for STH exercise was successful.

    - 84% of targeted children were offered the drug (program reach) across the two counties.

    - 83% of targeted children swallowed the drug (surveyed coverage).

Table 1. Coverage evaluation results for STH and schistosomiasis treatment				
	County	Program reach	Surveyed coverage	Number of children
		Mean (%)		
STH	Narok	85%	83%	2,970
	Siaya	84%	83%	3,555

Results (2)

- **The remote coverage evaluation surveys are consistent with previous treatment coverage rates** in Narok and Siaya counties.

    - In Narok, the average coverage rate in the previous seven years was 82% (high of 89% and low of 76%); the coverage validation rate from the phone survey was 83%.

    - Similarly, the average treatment coverage rate in Siaya from 2013-2019 was 79% (high of 84% and low of 76%); the coverage validation rate from the phone survey was 83%, which falls within historical data.

    - While these comparisons with historical data are not conclusive, they do suggest reliability of these results, pending review of the 2020 treatment coverage data.

Table 2. Coverage Rate Comparisons: Y1-Y8									
	Narok				**Siaya**				
	Y8 2020	Y1-Y7 Mean	Y1-Y7 High	Y1-Y7 Low	Y8 2020	Y1-Y7 Mean	Y1-Y7 High	Y1-Y7 Low	Y6
Reported Coverage	-	82%	89%	76%	-	79%	84%	76%	-
Surveyed Coverage	**83%**	-	-	-	**83%**	-	-	-	88%

Results (3)

- This methodology was undertaken to ensure social distancing and safety while evaluating treatment coverage during COVID-19, but more importantly it presents a **very cost-effective to evaluate treatment coverage,** pending further analysis and testing.

  - Cost comparisons of in-person coverage validation compared to a phone-based survey in Kenya resulted in a large decrease in expected cost.

  - Expected cost of the phone survey was about **62%** of the in-person survey.

  - Actual cost of the phone survey was about **25%** of the in-person survey and **40%** of the expected phone survey cost.

- Travel, accommodation, and field data collection costs largely contributed to the overall reduction in costs.

  - Included in these numbers are the airtime incentives that were provided to survey respondents.

Table 3. CV Cost Comparisons			
	In-person CV	Phone CV	Proportion
Expected Cost	$13,500	$8,400	**62%**
Actual Cost	$13,500*	$3,400	**25%**

* Based on previous implementations

Conclusions (1)

- Based on the results from the comparison with historical data and the review of potential biases, the implementation of the pilot was largely successful, a positive sign for the use of remote monitoring strategies.

  - We will continue analysis of the results as government treatment data is received to further understand the estimates generated by this pilot.

- Replicating the methodology in other geographies requires certain conditions to produce a comparable degree of success:

  1. **High quality data:** the pilot used data collected over eight years of program implementation, which significantly impacted our ability to make contact with teachers and parents, and was necessary to conduct historical comparisons to analyze and interpret results.

  2. **Partner relationships:** We have established a strong relationship with the Kenyan MOE, which streamlined approval, and allowed data collectors to leverage the partnership during phone interviews.

  3. **Technology:** Kenya has achieved a significant degree of mobile phone penetration, crucial to conduct phone surveys, eased achieving target samples and reduced non-response rates.

  4. **Community trust:** Kenya's National School Based Deworming Program (NSBDP) has been implemented in Kenya for eight years and is well known and trusted by communities, which likely increased the participation of parents during the survey.

Conclusions (2)

- We believe that the results of this pilot suggest a **lower-cost and lower-barrier opportunity** for coverage validation for STH programs in other geographies.

  - This is a potential option for low-funding or low technical assistance MDA program to evaluate program reach and coverage.

  - This could also provide a venue for more government ownership of coverage validation processes, with potential for government coverage evaluation.

- DtWI is already planning on the **iteration and continued evaluation of this approach**, not only for during the COVID-19 pandemic, but also as a cost-effective coverage validation option.

  - The program is currently planning for upcoming MDAs in India, Nigeria, and Pakistan, and will be adapting this pilot for these geographies.

  - This will provide an opportunity to understand and learn from contextual differences across geographies, and to develop a more generalized framework.

Next steps: Remote PM and CV

- The DtWI and MLE teams are currently working to develop an expanded PM and CV toolbox adapted for remote monitoring during the ongoing COVID-19 pandemic.
  - Based on the implementation success of the remote coverage validation in Kenya, we are looking to adapt these practices and lessons learned for Process Monitoring of deworming training and deworming day delivery.
  - We are currently exploring if the information that we were able to gather in Kenya (contact information, teacher and school lists, etc.) will be possible in other geographies such as India, Nigeria, and Pakistan. We are also working to determine if our ability to find parents and children together at a high rate during this survey was unique to the strictness of the COVID-19 lockdown in May.
  - MDA delivery will likely look different during the pandemic from our model of school-based deworming, and we are also accounting for the particular requirements that this will entail.

- Our plan is to develop a generalized remote monitoring framework and toolbox, that can be used to effectively monitor and evaluate our deworming programs **safely and with fewer costs**.