



Independent Monitoring of
National Deworming Day in Jharkhand
February 9, 2017

REPORT
September 2017

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EXECUTIVE SUMMARY

In India, hundreds of millions of children are at risk for STH infection. In February 2015, the Government of India launched National Deworming Day (NDD). The program aims to deworm all at-risk children aged 1-19 through the supervised administration of albendazole tablets to all children in *anganwadis* (preschools) and schools, including unregistered and out-of-school children.

Jharkhand implemented its first round of NDD in August 2016 and performs biannual treatment. On February 9, 2017 Jharkhand observed the NDD round in 19 districts, followed by Mop-Up Day on February 15, 2017. Evidence Action's Deworm the World Initiative, as the technical assistance partner to the state government, engaged an independent research agency to conduct process monitoring on NDD and Mop-Up Day and to perform coverage validation post NDD. The purpose of process monitoring and coverage validation was to assess the preparedness of *anganwadis* and schools to implement the NDD program and to evaluate the accuracy of the reporting data and coverage estimates

Findings from process monitoring highlighted that over 75% of targeted *anganwadis* and nearly 75% of schools observed deworming on either NDD or Mop-Up Day. *Anganwadi* worker and school teacher training attendance improved from the previous round. Coverage validation data revealed that roughly half of *anganwadis* and schools followed correct protocols for recording the number of children dewormed. A substantial proportion of *anganwadi* workers did not have a list of unregistered and out-of-school children. While fewer than half of *anganwadis* and schools received an integrated distribution of NDD kits,¹ almost all *anganwadis* and schools received sufficient tablets. Overall, coverage among interviewed children was high. In the interviews conducted, 98% or nearly all of enrolled children interviewed reported they received an albendazole tablet.

The independent monitoring of the February round of NDD in Jharkhand highlights opportunities to strengthen and improve program quality and coverage in future rounds, while also identifying gaps in program planning and implementation. To boost coverage further, Evidence Action will continue to provide technical assistance to the Government of Jharkhand to ensure the timely communication of training dates to schools and *anganwadis*, an updated contact database of functionaries, strengthened integrated distribution of NDD kits, and enhanced engagement of ASHAs and private schools.

¹Integrated distribution of NDD kits including albendazole, banner/poster and handout-reporting forms provided to schools and AWC during the trainings at cluster or PHC level.

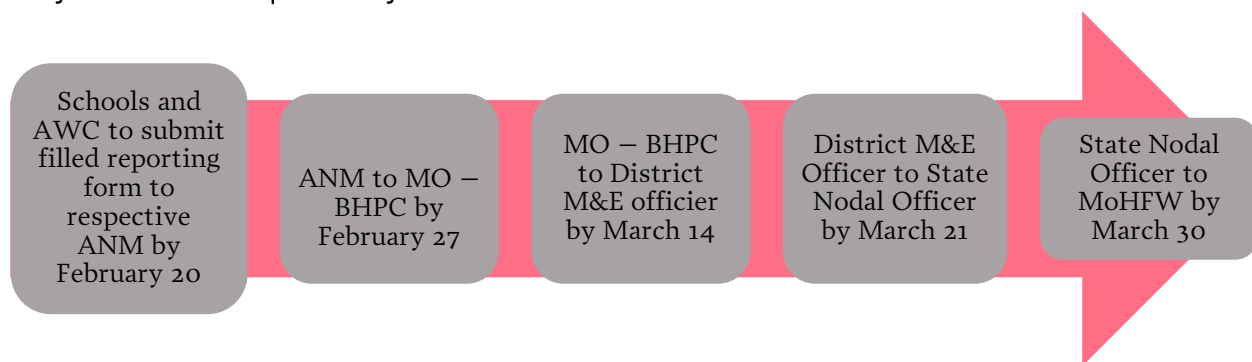
1. MONITORING AND EVALUATION

Understanding program reach and quality is a key component in determining if the NDD round was successful. Evidence Action worked intensively with the Government of Jharkhand's Departments of Health, Education, and Women and Child Development & Social Welfare to assess the quality of program planning and implementation, with the objective of identifying gaps and developing recommendations for improvements in future NDD rounds. Evidence Action conducted process monitoring to understand government implementers' preparedness for NDD and their adherence to the program's prescribed processes. After NDD, we conducted coverage validation to verify government-reported treatment figures.

1.1 Process Monitoring and Coverage Validation

Process monitoring assesses the preparedness of schools, *anganwadis*, and health systems to implement NDD and the extent to which they have followed recommended processes to ensure a high quality program. Evidence Action assessed program preparedness during the pre-NDD phase and retained independent monitors to observe processes on NDD and Mop-Up Day. Evidence Action conducted process monitoring in two ways: a) telephone monitoring and b) physical verification by visiting schools/*anganwadis* and training venues.

Figure A: Reporting Cascade and Timelines



Coverage validation is an ex-post check of the accuracy of the reporting data and coverage estimates. Coverage validation data was gathered through interviews with headmasters/*anganwadi* workers and three students (in three randomly selected classes) in each school, and by checking all registers and reporting forms in *anganwadis* and schools. Children in *anganwadis* do not take part in interviews. These activities provided a framework to validate coverage reported by schools and *anganwadis* and to calculate the level of accuracy in reported data by comparing the recounted numbers.

1.2 Recording and Reporting Process

Recording and reporting processes are an important means to assess the estimated number of program beneficiaries. With support from Evidence Action’s team, the Department of Health collected and compiled the coverage report for NDD within the reporting timelines. Coverage reporting in the state was done using paper as well as through the NDD app. The Government of India provided the state with 221 user IDs and passwords to all districts and blocks for NDD mobile/web application-based coverage reporting. The designated nodal government official at the block level then used the NDD application to approve NDD coverage data entered in the application by block level officials. The functionary trainings included sessions on reporting protocols, the reporting cascade, and reporting timelines (refer to **Figure A**), and were shared with districts through state directives. To record deworming at schools and *anganwadis*, a single tick mark (✓) was to be put next to a child’s name in the attendance register if they were dewormed on NDD, and a double-tick mark (✓✓) if dewormed on Mop-Up Day. Headmasters and *anganwadi* workers compiled the number of dewormed children from attendance registers, filled out the summary reporting format, and submitted it to the next level.

1.3 Sampling and Sample Size

Evidence Action facilitated independent monitoring in all 19 implementing districts. Through a competitive process, Evidence Action hired Karvy Insights Limited, an experienced independent research agency that provided 100 monitors. Karvy Insights also conducted independent monitoring in Jharkhand during the August 2016 NDD round. A two-stage probability sampling procedure was adopted to select schools and *anganwadis* for independent monitoring (**Table A**). A total of 200 schools and 200 *anganwadis* were covered during process monitoring on NDD and Mop-Up Day, and 500 schools and 500 *anganwadis* during coverage validation.

Table A: Target and coverage of schools and *anganwadis* during independent monitoring

Indicator	Process Monitoring		Coverage Validation	
	Target	Achieved	Target	Achieved
Total number of districts	19	19	19	19
Total number of blocks	100	100	100	100
Total number of schools	200	199	500	500
Total no. of children interviewed in schools	NA	NA	1500	1253
Total number of <i>anganwadis</i>	200	199	500	500

1.4 Independent Monitoring Formats

To ensure comprehensive coverage and triangulation of data, three formats were administered: one tool for process monitoring at schools and *anganwadis* on NDD and Mop-Up Day, and one each for schools and *anganwadis* for coverage validation. Evidence Action designed and finalized formats with approvals from Jharkhand's Department of Health. The formats were translated into the regional language, checked to ensure that the language was concise and easy to understand, and loaded onto tablet computers.

1.5 Authorization from the Government

Evidence Action conducted independent monitoring with approval from the state government. Once the state government requested participation from each school, the monitors carried a copy of the authorization letter to the schools and *anganwadis* and explained the process of monitoring and coverage validation to a school headmaster or teacher or *anganwadi* worker while requesting their participation.

1.6 Training of Trainers and Independent Monitors

A two-phase training program was organized, with Evidence Action providing a one-day comprehensive training to master trainers of Karvy Insights Limited, in Delhi on February 3, 2017, followed by the master trainers conducting a two-day training of 120 monitors (including buffer monitors) during February 5-6, 2017. The training included a brief orientation on NDD, the importance of independent monitoring, and details of the monitoring formats including computer-assisted personal interviews (CAPI) practices and practical sessions. At the end of the training, all participants were tested on their comprehension and ability to work in the field in order to qualify to participate.

1.7 Field Implementation

Each monitor was allotted a different school and *anganwadi* for process monitoring on NDD and Mop-Up Day to collect information on the availability of drugs, IEC materials, and further observations. Subsequently, they were allotted five schools and five *anganwadis* for coverage validation. Monitors were provided a tablet computer, charger, printed copy of monitoring formats, and albendazole tablets for demonstration during data collection. The details of sample schools were shared with them one day before the commencement of fieldwork to ensure that monitors did not contact the schools and *anganwadis* in advance. If a school or *anganwadi* was found to be closed or non-traceable during process monitoring, it was replaced by another nearby site. During coverage validation, if a school was closed, monitors were asked to cover the next school on their list and return to the first school at another time on a subsequent day. If the school was non-traceable or closed consistently after attempting three visits, a new school was substituted for the old one. In the absence of reporting forms, the calculation of the verification factor is restricted to the sample where the copy was found for verification.

1.8 Data Processing and Analysis

The survey agency provided data to Evidence Action in the agreed upon electronic format. Evidence Action reviewed all the data sets during pre-defined checkpoints, shared feedback to the agency for any inconsistencies observed, and once again reviewed the data sets after the survey agency addressed any inconsistencies. All the analysis was performed using Stata version 13/14 and Excel 2013.

1.9 Quality Control

Appropriate quality control measures were taken to ensure data collected was accurate and comprehensive. Evidence Action representatives from the Delhi office and state teams contacted selected schools and *anganwadis* over the phone to confirm monitors visited sampled schools and *anganwadis*. Further, Evidence Action staff also visited selected schools and *anganwadis* to cross check the monitoring processes and to verify monitoring visits. In all cases, school and *anganwadi* staff were asked to sign a participation form with an official stamp to verify that the school or *anganwadi* was visited. Further, monitors verified photographs of schools and *anganwadis* that were collected during IM data collection and built in to the CAPI for process monitoring and coverage validation to prove the interview was conducted at the appropriate location.

2. KEY FINDINGS

Key results² and comparisons with the prior round from independent monitoring are provided below, with further details shared in annexures.

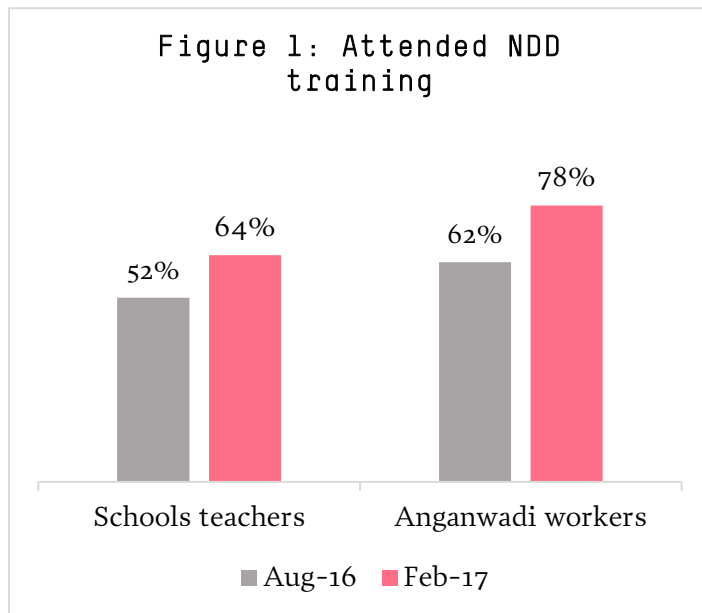
2.1 Training

For effective implementation of NDD, teachers and *anganwadi* workers are trained prior to the NDD round to account for teacher/*anganwadi* worker turnover and ensure integrated distribution of drugs and IEC (posters/banners) materials during training sessions. Data in **Figure 1** shows that the percentage of headmasters/teachers and *anganwadi* workers who attended NDD training increased from the August 2016 to the February 2017 NDD round from 52% to 62% for teachers/headmasters and from 64% to 78% for *anganwadi* workers. Only 69% of trained teachers provided training to all other teachers in their schools. To ensure improved training quality and the success of the program, trained teachers should impart further training to other teachers in their schools. While overall training attendance has increased for both schools and *anganwadis*, there is an opportunity for further improvement.

² The Process Monitoring and Coverage Validation data are based on sampled schools and *anganwadis*, sampling weight is estimated for block in each district using selection probabilities. The sampling weights are further normalized at the state-level to obtain standard state weights. All subsequent tables are based on the weighted sample except *anganwadis* Process Monitoring.

One of the reasons for low training attendance in schools during the February 2017 NDD round could be due to the lack of information about NDD training dates and locations. Amongst those who did not attend training, almost half of the teachers/headmasters and 80% of *anganwadi* workers reported lack of information about NDD training as the main reason for not attending training. Although all school teachers and *anganwadi* workers are expected to attend the training regardless of training in previous rounds, the percentage of training of *anganwadi* workers could be partly attributed to the proportion of AWWs reporting having already attended NDD training in the past (11%) as a reason for not attending the training.

Approximately 49% of schools and 39% of *anganwadi* workers reported that they received an SMS about deworming (Table PM1). While guidelines encourage updating the contact database regularly in line with mandated annual updates to the Unified District Information System for Education (U-DISE), update schedules remain unclear. This lack of an updated contact database may have impacted the overall delivery of the SMS to the teachers and *anganwadis* workers.



Additionally, NDD included private schools for the first time in the February 2017 round for Jharkhand on a pilot basis. Therefore, initial private school participation was lower than government schools. Only 42% of private schools reported receiving NDD training (Table PM6). Private schools require further engagement to ensure information on training dates and locations is accurately communicated.

2.2 Integrated Distribution of NDD Materials

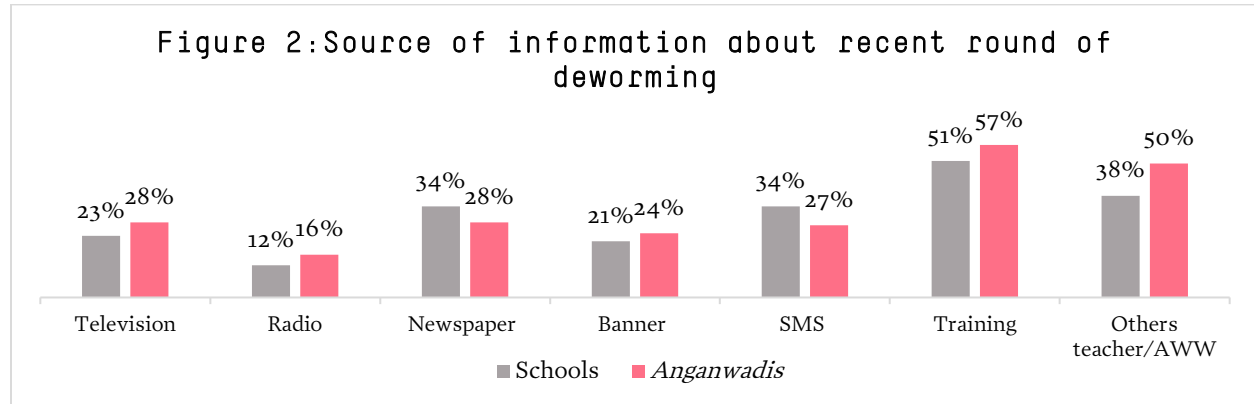
The NDD guidelines mandate integrated distribution of deworming tablets along with all IEC and training materials to schools and *anganwadi* centers at block level training in the form of a NDD kit³ to ensure the timely, cost-effective, and complete delivery of all materials. Despite the well-defined distribution plan, findings show that only 38% of schools and 45% of *anganwadis* in the state received complete NDD kits during their training. This indicates that in a large number of schools and *anganwadis*, drugs and IEC materials were distributed separately from training (Table PM3).

³National Deworming Day, Operational Guidelines 2016, Ministry of Health and Family Welfare, Government of India http://nrhm.gov.in/images/pdf/NDD-2016/Guidelines/Draft_NDD_2016_Operational_Guidelines.pdf

Around 79% of schools and 91% of *anganwadis* received tablets for deworming, while 54% of schools and 62% of *anganwadis* received posters/banners (Table PM3). Moreover, 87% of schools and 97% of *anganwadis* reported having received sufficient drugs for deworming (Table PM2). About 54% of schools and 68% of *anganwadis* received handouts/reporting forms (Table PM3). As private schools implemented NDD on a pilot basis this round, delivery of drugs and IEC materials were lower as compared to government schools and resulted in an overall lower percentage of schools reporting these indicators. Among private schools, only 27% received tablets for deworming. Of those that received tablets, 72% of private schools reported having received a sufficient quantity. Only four percent of the private schools covered during process monitoring received posters/banners and 17% percent of private schools received handouts/reporting forms for deworming. (Table PM6), indicating a need for further strengthening.

2.3 Source of Information about the Recent Round of NDD

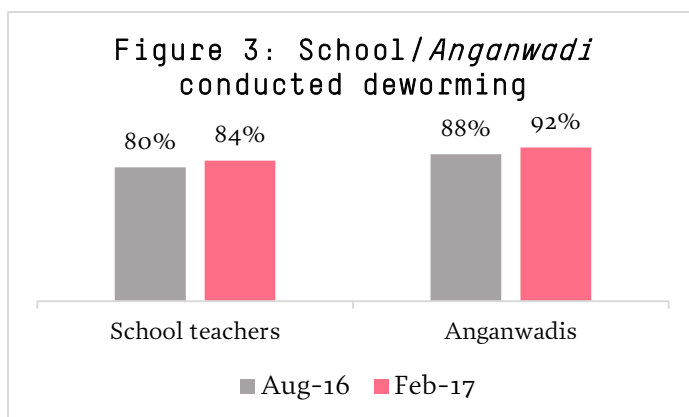
As depicted in Figure 2, 51% of schools and 56% of *anganwadis* reported receiving information on NDD via training,⁴ 38% of the schools and half of the *anganwadis* reported that other teachers/AWWs informed them about the NDD round (Figure 2). Approximately 34% of schools and 28% of *anganwadis* also reported receiving information about NDD through the newspaper. The radio was the least effective source of information about NDD for this round as only 12% of schools and 16% of *anganwadis* reported hearing about NDD in this manner.



⁴Major source of information is the maximum number of a medium reported by school teachers/headmaster and *anganwadi* workers

2.4 NDD Implementation

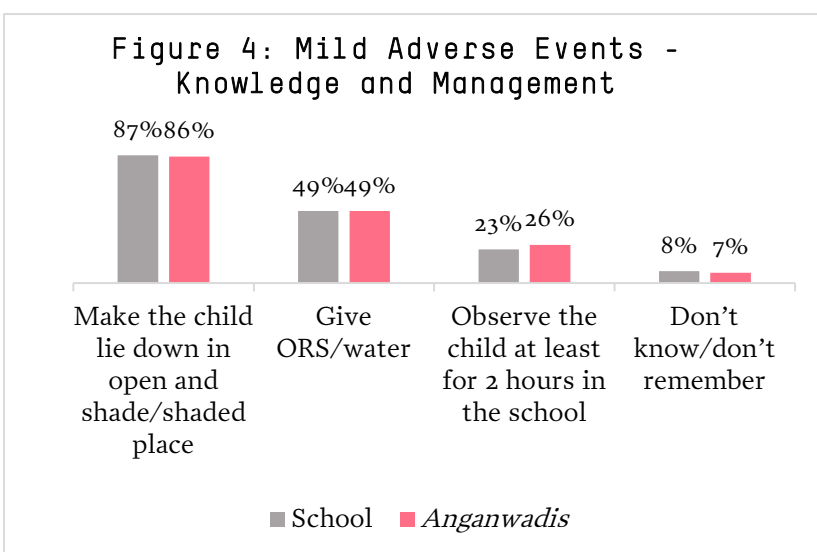
The proportion of schools and *anganwadis* that conducted deworming was high during both the August 2016 and February 2017 NDD rounds (**Figure 3**). The coverage validation data shows that around 84% of schools and 92% of *anganwadis* dewormed children during the February 2017 round of NDD (**Table CV1**). Out of 148 schools and 157 *anganwadis* that implemented NDD, monitors were able to observe deworming activities in 61% of schools and *anganwadis* respectively (**Table PM4**).



2.5 Adverse Events - Knowledge and Management

Interviews with headmasters, teachers, and AWWs revealed a high degree of awareness regarding potential adverse events due to deworming and a high level of understanding of the appropriate protocols to follow in the case of such events. Abdominal pain was listed as a symptom by 89% of principals followed by vomiting (80%), while 93% of *anganwadi* workers listed vomiting followed by abdominal pain (87%) as a symptom of an adverse event.

Around half of the school teachers and *anganwadi* workers recognized fatigue as a symptom (**Table PM5**). Further, 87% of teachers and 86% of *anganwadi* workers knew to make a child lie down in an open, shaded place in the case of any symptoms of adverse events (**Figure 4**). Around three percent of schools and *anganwadis* reported the need to call a PHC doctor if symptoms persisted (**Table PM5**).



2.6 Recording Protocol

Coverage validation data demonstrated that 49% of schools and 51% of *anganwadis* followed the correct recording protocols. For the analysis, information on recording protocols was gathered from all schools and *anganwadis* regardless of the availability of reporting forms at the site. An additional 42% of schools and 15% of *anganwadis* followed partial protocols

(marking down different symbols or making a list of dewormed children). However, 9% of schools and 34% of *anganwadis* did not follow any protocol to keep records of dewormed children (**Table CV2**).

As per NDD guidelines, Accredited Social Health Activists (ASHAs) have a critical role to play in the success of the NDD program through generating community awareness and mobilizing out-of-school children. As part of the community mobilization and awareness campaign, ASHAs conduct village meetings with parents and disseminate information through local platforms such as *gram panchayats* and village health, sanitation, and nutrition committee (VHSNC) meetings to ensure greater coverage. ASHAs inform the community about the harmful effects of worm infection, benefits of deworming, and behavior change practices required to reduce re-infection. ASHAs are also the main point of contact for mobilizing hard to reach out-of-school children.

ASHAs receive an orientation on NDD during monthly review meetings, which provides a resource toolkit that includes a handout focusing on their roles and responsibilities towards community mobilization. After NDD, *anganwadi* workers prepare a list of out-of-school preschool- and school-age children who have missed the dose due to absence or sickness and share the list with ASHAs. ASHAs then work to inform parents to have their children be present on Mop-Up Day.

Further, as per NDD guidelines, ASHAs are required to prepare a separate list of the children not attending schools and *anganwadis* and submit it to *anganwadi* workers, as recommended in the NDD guidelines. ASHAs can then claim a payment of Rs. 100 after submission. This incentive is intended to improve coverage of out-of-school children. However, findings suggest that lists were available at *anganwadis* for only 28% of out-of-school (6-19 years) children and 31% of unregistered (1-5 years) children (**Table CV1**).

2.7 Coverage Validation

Verification factors⁵ are common indicators to measure the accuracy of reported treatment values for Neglected Tropical Disease control programs.⁶ The verification factor is a comparison of the aggregated number of ticks in school/*anganwadi* registers (indicating that children were dewormed) to the coverage report submitted by schools/*anganwadis* to the state government. Thus, the verification factor was estimated on the basis of the availability of a copy of reporting forms at schools and *anganwadis*. The coverage estimates based on attendance data provides a more robust estimate as compared to the adjusted coverage based on the verification factor, as the maximum attendance is calculated from all the schools

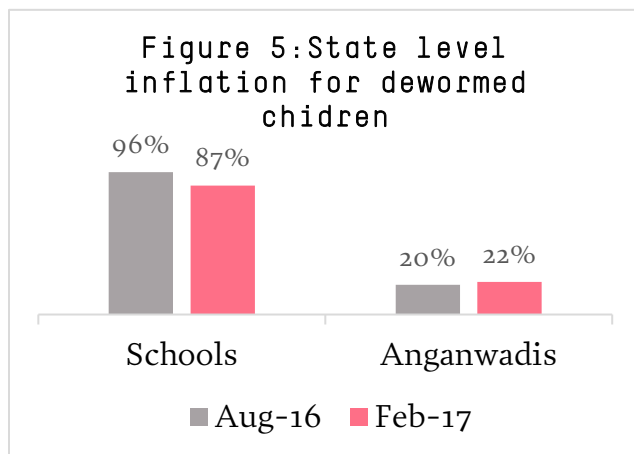
⁵ A verification factor of 1 means the schools reported the exact same figures that they recorded on deworming day. A verification factor less than 1 indicates over-reporting, while a verification factor greater than 1 indicates under-reporting.

⁶ WHO (2013), Data Quality Assessment tool for Neglected Tropical Diseases: Guidelines for Implementation December 2013.

covered during coverage validation. The state-level verification factor for school enrolled children was 0.53, indicating that on average, for every 100 dewormed children reported by the school, 53 were verified through available documents.

This corresponds to an overall 87% inflation of reporting in the schools, meaning that reported numbers are approximately 87% higher than the numbers recorded in school attendance registers. Overall state-level verification factors for children dewormed at *anganwadis* was 0.82 with an inflation of 22%. **Figure 5** presents trends in state-level inflation rates for schools and *anganwadis* during the August 2016 and February 2017 NDD rounds. The inflation rate has declined from 96% to 87% in the schools and increased in *anganwadis* by two percentage points from the August 2016 to February 2017 NDD rounds. The improvement in training attendance and adherence to recording protocols in schools may have played a role in addressing reporting inflation. The increase in the inflation rate in *anganwadis* can be partly attributed to the lack of proper documentation of children dewormed at *anganwadi* centers. However, category-wise verification factors for registered (1-5 years) and out-of-school (6-19 years) children were 0.79 and 0.73 with a corresponding inflation of 27% and 36% respectively. Moreover, a deflation of two percent (verification factor=1.02) was observed for unregistered children at *anganwadi* centers.

The state government reported 93% coverage in schools and 90% in *anganwadis*. Through coverage validation, attempts were made to understand the maximum number of children that could have been dewormed in the schools and *anganwadis*. Coverage validation findings suggest that on average, we could verify 53% of treatment figures reported by schools and 82% for *anganwadis*. Applying these verification factors to the respective government reported coverage, we estimate that 49% (53% of 93) of children could have been dewormed in the schools and 74% (82% of 90) in *anganwadis*. The calculation of verification factor is based on only those schools and *anganwadis* where a copy of the reporting form was available for verification. Therefore, adjusted coverage in schools and *anganwadis* based on verification factors needs to be interpreted with caution.



Further, we also estimated NDD treatment coverage in schools considering maximum attendance of children on NDD dates. Coverage validation data showed that 84% of schools conducted deworming on either NDD or Mop-Up Day, a maximum of 86% of children were in attendance, 98% of children reported that they received an albendazole tablet, and 95% of children reported to consume the tablet under supervision. Taking these factors into account,

67% ($0.84 \times 0.86 \times 0.98 \times 0.95$) of enrolled children could have been dewormed in the schools. This indicates that NDD coverage in the schools lies somewhere between 49-67% in the state, below the WHO threshold of 75% coverage (**Table CV2**). Further, unlike schools, as child interviews were not conducted during coverage validation in *anganwadis*, we could not employ an alternate method of estimating the coverage at *anganwadis*.

2.8. Trend of key indicators over the round

To understand the changes in selected indicators from the August 2016 NDD round to the February 2017 round, certain key indicators are presented in graphical form below. Data comparison showed improvements over time in school and *anganwadi* training attendance from the August 2016 to the February 2017 NDD round. Trends in **Figures 8 and 9** show improvements for schools and *anganwadis* for most of the indicators. A possible reason for this increase is the continued efforts of Jharkhand’s government and the initiation of technical assistance by Evidence Action. However, there are continued opportunities for improvement. Lack of information surrounding NDD training continues to be the main reason teachers/*anganwadi* workers do not attend NDD trainings (**Figure 8**). It is crucial that all block level trainings are completed at least a week in advance of the NDD date in order to leave sufficient time for teachers to train other teachers in the schools and also for *anganwadi* workers to conduct community mobilization and spread awareness about the program.

Figure 6: Comparison of training indicators for schools/*anganwadis*, August 2016 and February 2017 round

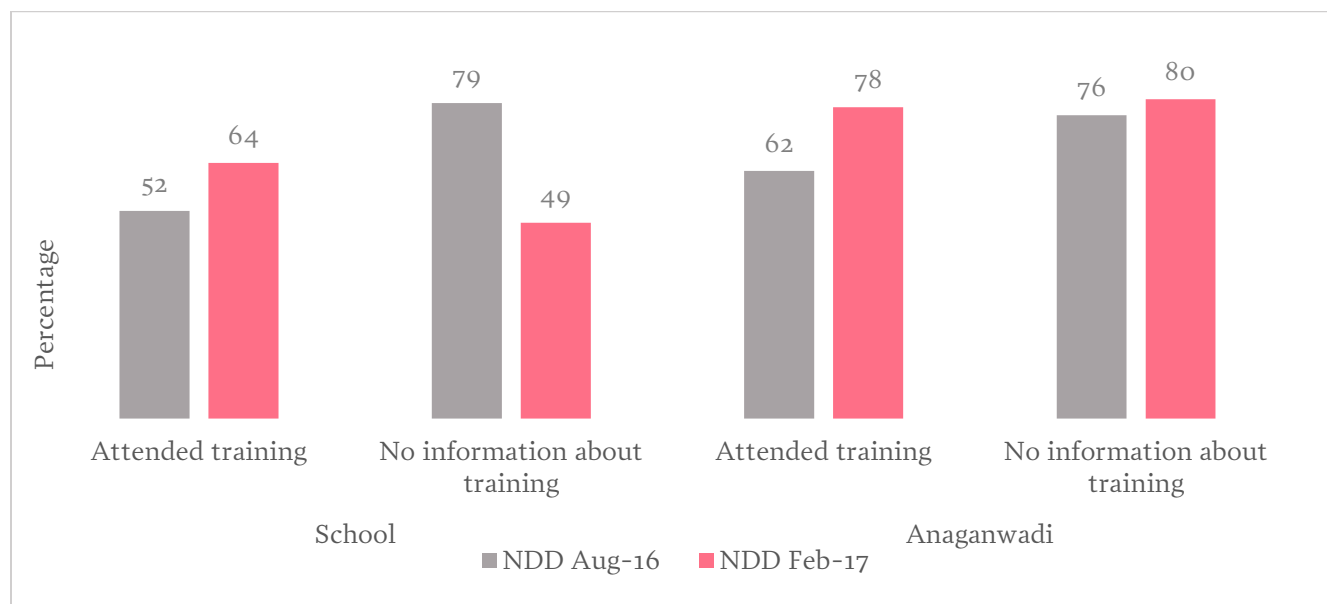


Figure 7: Comparison of key indicators in schools during August 2016 and February 2017 round

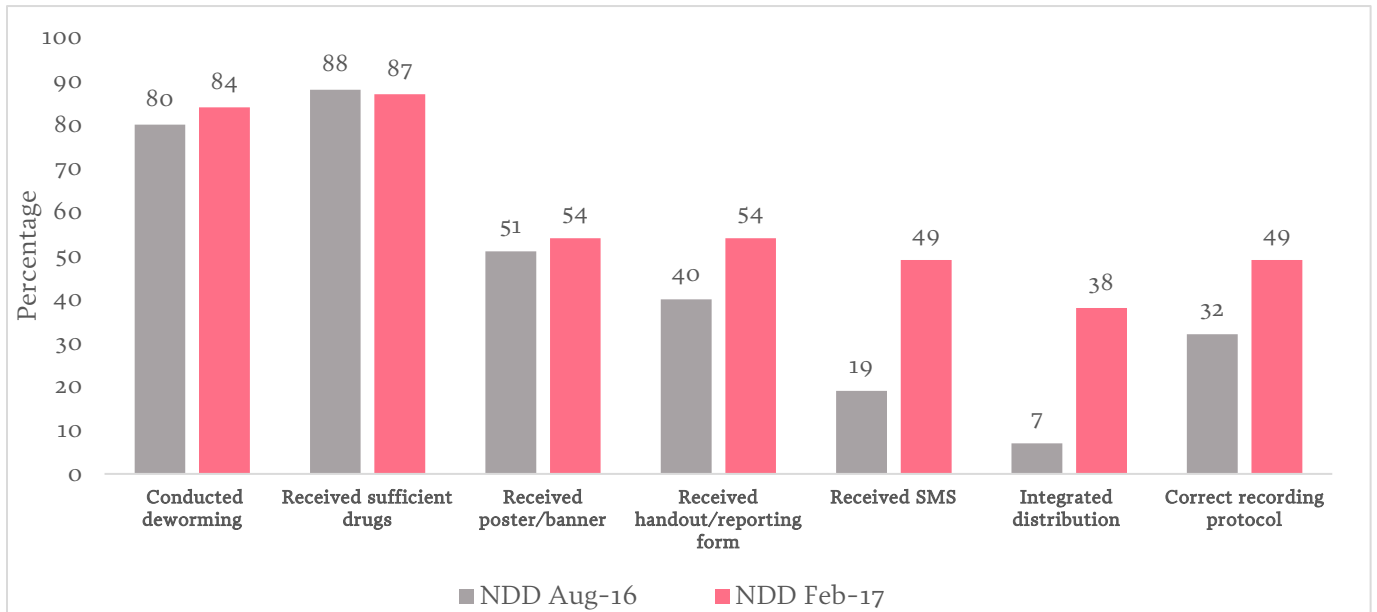
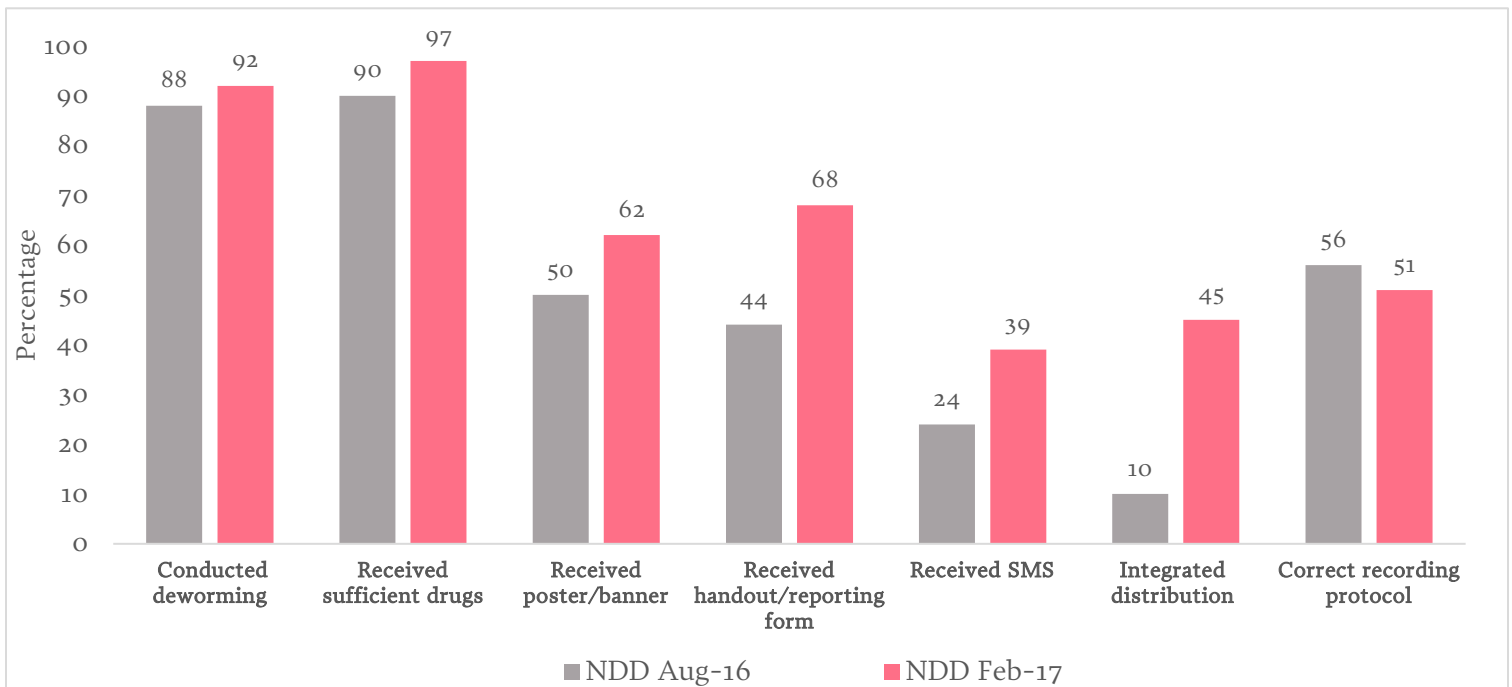


Figure 8: Trend of key indicators in *anganwadis* during August 2016 and February 2017 round



3. RECOMMENDATIONS

The independent monitoring exercise conducted during Jharkhand's NDD round in February 2017 identifies gaps and opportunities to improve and strengthen future rounds. NDD leverages a fixed-day approach, requiring intensive and coordinated efforts between stakeholders to successfully implement the program and to prevent gaps and delays. The following are the key recommendations for program improvements that emerged from the process monitoring and coverage validation exercise.

1. Training is critical for the successful implementation of a high coverage, high quality program. Focused efforts are required to continue improving training attendance by pre-planning sessions and increasing communication of training dates and venues to schools and *anganwadis*. The Education Department must impart directives to districts to ensure an increase in training participation by teachers in the upcoming rounds. Emphasis should be on improving training quality by organizing practical sessions on recording protocols for schools and *anganwadis* to facilitate correct data documentation and management. This will help to improve the accuracy of coverage data. Additionally, administering quality assurance tools such as training monitoring and sending training reinforcement SMS to promote awareness about worm infection, prevention, dose administration, and adverse events management. School teachers and headmasters who attend training must be mandated to impart training to other teachers in the school.

2. Although a significant number of school headmasters and *anganwadi* workers received deworming related SMS, efforts are required to regularly update the contact database of functionaries across all stakeholder departments. This will facilitate comprehensive, effective, and timely dissemination of information to functionaries. For future rounds, all stakeholder departments will be encouraged to update the database for the 19 districts.

3. While there were significant improvements in integrated distribution in the recent round, integrated distribution is low overall and needs to be strengthened with a focused approach. Efforts are required to align the distribution cascade and hand over NDD kits to the teachers/headmasters and *anganwadi* workers at the time of training. Procurement delays and issues around coordinating logistics for drug distribution at block level training sessions, communication on training dates, and printing of NDD materials in a timely manner influenced the program's ability to integrate distribution. Reinforcement on integrated distribution during video conferences and through SMS alerts would be helpful.

4. Greater emphasis should be placed on generating community awareness and mobilizing out-of-school children to achieve high treatment coverage. As a substantial proportion of *anganwadi* centers did not have a list of unregistered and out-of-school children, ASHAs should be further involved in mobilizing out-of-school children and spreading awareness on deworming benefits. Efforts are required to increase ASHA participation and engage ASHAs to prepare these lists in their communities. ASHA participation could be further strengthened

by highlighting the role of ASHAs in the joint directive issued by the state, encouraging ASHA participation in training sessions, and sending reminder SMS to them with information on incentives.

5. As findings demonstrate low performance of private schools on monitoring indicators, more attention should be given to encourage the participation of private schools in training, facilitating drug logistics, sharing IEC materials, and managing adverse events. The engagement of district collectors will be key to this effort and directives from the senior bureaucratic leadership will help to further facilitate these efforts.

6. Coverage validation data suggest that a greater emphasis on recording protocols during training is likely to improve the quality of coverage data in the next round. Training and reinforcement messages shared through SMS needs to increase the focus on the importance of correct reporting protocols and maintaining accurate and complete data. Practical sessions on recording protocol for teachers and *anganwadi* workers can be organized during primary health center (PHC) level trainings.

4. WAY FORWARD

Program monitoring of the February round of NDD in Jharkhand has provided useful insights on opportunities to increase coverage in future rounds, while also identifying gaps in program planning and implementation. The school-based coverage validation indicates a high surveyed coverage rate of 98%. To boost the coverage further, Evidence Action will work with the Government of Jharkhand to coordinate efficient planning for future rounds, strategies for integrated distribution and its supervision, and ways to improve recording and reporting protocol. Other opportunities include advocating for departments to update the contact database of districts, facilitating timely information dissemination on NDD, strengthening integrated distribution of NDD kits, and enhancing engagement of ASHAs and private schools.

ANNEXURE

Table PM1: Training, awareness and source of information about NDD among teachers/headmasters and *anganwadi* workers, February 2017

Indicators	School			<i>Anganwadi</i>		
	Denominator	Numerator	%	Denominator	Numerator	%
Attended training for current round of NDD	199	126	64	199	155	78
Reasons for not attending NDD training (Multiple Response)						
Location was too far away	73	7	9	44	4	9
Did not know the date/timings/venue	73	36	49	44	35	80
Busy in other official/personal work	73	5	7	44	4	9
Attended deworming training in the past	73	3	5	44	5	11
Not necessary	73	6	8	44	2	5
No incentives/no financial support	73	27	37	44	5	11
Trained teacher provided training to						
All other teachers	126	88	69	NA	NA	NA
Few teachers	126	18	14	NA	NA	NA
No (himself/herself only teacher)	126	11	8	NA	NA	NA
No, did not train other teachers	126	10	8	NA	NA	NA
Awareness about the ways a child can get worm infection	199	154	77	199	167	84
Different ways a child can get worm infection(Multiple Response)						
Not using sanitary latrine	154	64	41	167	70	42
Having unclean surroundings	154	106	69	167	108	65
Consume vegetables and fruits without washing	154	102	67	167	112	67
Having uncovered food and drinking dirty water	154	98	64	167	99	59
Having long and dirty nails	154	110	72	167	124	74
Moving in bare feet	154	107	70	167	111	66
Having food without washing hands	154	110	72	167	127	76
Not washing hands after using toilets	154	98	64	167	115	69
Awareness about all the possible ways a child can get worm infection⁷	154	20	13	167	21	13
Perception that health education should be provided to children	199	192	97	199	188	94

⁷Includes those who were aware that a child can get worm infection if she/he does not use sanitary latrine, have unclean surroundings, consume vegetable and fruits without washing, have uncovered food and drinking dirty water, have long and dirty nails, moves in bare fee, have food without washing hands and not washing hands after using toilets.

Indicators	School			<i>Anganwadi</i>		
	Denominator	Numerator	%	Denominator	Numerator	%
Knowledge about correct dose of albendazole tablet						
1-2 years of children	NA	NA	NA	199	190	95
6-19 years of children	199	196	98	199	197	99
Awareness about non-administration of albendazole tablet to sick child						
Will administer albendazole tablet to sick child	199	25	13	199	10	5
Will not administer albendazole tablet to sick child	199	174	87	199	189	95
Awareness about consuming albendazole tablet						
Chew the tablet	199	189	95	199	190	95
Swallow the tablet directly	199	10	5	199	9	5
Awareness about consuming albendazole in school/ <i>anganwadi</i>	199	195	98	199	195	98
Awareness about the last date for submitting the reporting form	199	101	51	199	111	56
Aware that completed reporting form should be submitted to ANM	199	134	67	199	155	78
Awareness about retaining a copy of the reporting form post submission	199	177	89	199	175	88
Source of information about current NDD round						
Television	199	46	23	199	56	28
Radio	199	23	12	199	31	16
Newspaper	199	68	34	199	55	28
Banner	199	42	21	199	48	24
SMS	199	67	34	199	54	27
Other school/teacher/ <i>anganwadi</i> worker	199	75	38	199	99	50
Training	199	102	51	199	114	57
Received SMS for current NDD round	199	97	49	199	77	39

Table PM 2: Deworming activity, availability of albendazole tablets, and list of unregistered out-of-school children, February 2017

Indicators	School			<i>Anganwadi</i>		
	Denominator	Numerator	%	Denominator	Numerator	%
Albendazole tablet administered on the day of visit						
Yes, ongoing	199	101	51	199	110	55
Yes, already done	199	28	14	199	33	17
Yes, after sometime	199	19	10	199	14	7
No, will not administer today	199	51	26	199	42	21
Schools/ <i>anganwadis</i> conducted deworming on either of the day⁸	199	152	76	199	171	86
Schools/ <i>anganwadis</i> conducted deworming on NDD⁹	111	83	75	102	85	83
Schools/ <i>anganwadis</i> conducted deworming on Mop-Up Day¹⁰	88	65	74	97	72	74
Attendance on NDD	15984	11007	68	NA	NA	NA
Attendance on Mop-Up Day	13679	8634	63	NA	NA	NA
Reasons for not conducting deworming						
No information	47	18	38	28	11	39
Albendazole tablet not received	47	24	52	28	11	39
Apprehension of adverse events	47	1	2	28	2	7
Others ¹¹	47	4	8	28	4	14
<i>Anganwadis</i> having list of unregistered/out-of-school children	NA	NA	NA	199	69	35
Albendazole was administered to out-of-school children	NA	NA	NA	157	92	59
Albendazole was administered to unregistered children	NA	NA	NA	157	103	66

⁸Schools/ *anganwadis* administered albendazole tablet to children either on NDD or Mop-Up Day

⁹Based on the samples visited on NDD.

¹⁰Based on the samples visited on Mop-Up Day only.

¹¹School administer the albendazole tablet to children a day before holiday, children/student absent, postponed due to festival.

Sufficient quantity of albendazole tablets ¹²	158	137	87	181	176	97
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Table 3: Integrated distribution of albendazole tablets and IEC materials, February 2017

Items	Schools				Anganwadi			
	Received (N=199)	Denominator*	Received in training	Verified	Received (N=199)	Denominator*	Received in training	Verified
Albendazole tablet	79(158)	158	95(149)	97(153)	91(181)	181	92(166)	99(179)
Poster/banner	54(107)	107	91(98)	96(103)	62(123)	123	92(113)	98(120)
Handouts/reporting form	54(108)	108	87(94)	93(100)	68(136)	136	82(112)	93(126)
Adverse event reporting form	NA	NA	NA	NA	NA	NA	NA	NA
Others	3(5)	5	78(4)	59(3)	4(8)	8	100(8)	75(6)
Received all materials	44(88)	88	87(76)	95(84)	53(106)	106	84(89)	95(101)
Integrated distribution ¹³	38(76)				45(89)			

Table 4: Implementation of deworming activity and observation of monitor's, February 2017

Indicators	Schools			Anganwadi		
	Denominator	Numerator	%	Denominator	Numerator	%
Deworming activity was taking place	148	90	61	157	95	61
Albendazole tablets were administered by						
Teacher/headmaster	101	100	99	NA	NA	NA
Anganwadi worker	NA	NA	NA	110	94	85
ASHA	NA	NA	NA	110	7	6
ANM	NA	NA	NA	110	1	1
Students	101	1	1	NA	NA	NA
Followed any recording protocol¹⁴	129	112	87	143	110	77
Protocol followed						
Putting single/double tick	112	88	78	110	85	77
Put different symbols	112	3	3	110	4	4
Prepare the separate list for dewormed	112	21	19	110	21	19
Visibility of poster/banner during visits	107	87	81	123	94	76

12 This indicator is based on the sample that received albendazole tablet.

¹³Integrated distribution of NDD kits includes albendazole tablet, banner/poster and handout-reporting forms and provided to schools and AWCs during the trainings at block or PHC level.

¹⁴Any recording protocol implies putting single tick (✓), double tick (✓✓), any other symbol or preparing separate list for all those children administered albendazole tablets on NDD or MUD.

Table 5: Knowledge of adverse events and its management, February 2017

Indicators	Schools			<i>Anganwadi</i>		
	Denominator	Numerator	%	Denominator	Numerator	%
Opinion of occurrence of an adverse event after administering albendazole tablet	199	99	50	199	95	48
Knowledge of possible adverse events (Multiple Response)						
Mild abdominal pain	99	88	89	95	83	87
Nausea	99	52	53	95	46	48
Vomiting	99	79	80	95	88	93
Diarrhea	99	41	41	95	31	33
Fatigue	99	52	53	95	47	49
All possible adverse event ¹⁵	99	10	10	95	5	3
Awareness about mild adverse event management						
Make the child lie down in open and shade/shaded place	199	173	87	199	172	86
Give ORS/water	199	97	49	199	97	49
Observe the child at least for 2 hours in the school	199	46	23	199	51	26
Don't know/don't remember	199	15	8	199	13	7
Awareness about severe adverse event management						
Call PHC or emergency number	199	149	75	199	141	71
Take the child to the hospital /call doctor to school	199	117	59	199	140	70
Don't know/don't remember	199	10	5	199	8	4
Occurrence of cases of any adverse event	129	7	6	143	6	4
Available contact numbers of the nearest ANM or MO-PHC	199	120	60	199	154	77

¹⁵Includes those who have knowledge that a mild abdominal pain and nausea and vomiting and diarrhea and fatigue can be reported by a child after taking albendazole tablet.

Table 6: Selected Indicators of Process Monitoring in Private Schools, February 2017

Indicators¹⁶ (Private schools covered =12)	%
Attended training for current round of NDD	42
Received albendazole tablets	27
Sufficient quantity of albendazole tablets	72
Received poster/banner	4
Received handouts/ reporting form	17
Received SMS for current NDD round	42
Albendazole administered to children	94
No information	97
Albendazole tablets not received	3
Already dewormed all children on deworming day ¹⁷	NA
Others ¹⁸	NA
Albendazole tablet administered to children by teacher/headmaster¹⁹	100
Perception that health education should be provided to children	100
Knowledge about correct doses of albendazole tablet	100
Awareness about non-administration of albendazole tablet to sick child	NA
Opinion of occurrence of an adverse event after taking albendazole tablet	11
Mild abdominal pain	36
Nausea	10
Vomiting	100
Diarrhea	31
Fatigue	31
Occurrence of cases of any adverse event	NA
Let the child rest in an open and shaded place	54
Provide clean water to drink/ORS	28
Contact the ANM/nearby PHC	48
Available contact numbers of the nearest ANM or MO-PHC	77
Followed correct²⁰ recording protocol	23

¹⁶These indicators are based on small samples, therefore, precautions should be taken while interpreting the results as these are not representative of all private schools in the state.

¹⁷Based on the samples that did not conduct deworming on Mop-Up Day.

¹⁸School administer the albendazole tablet to children a day before holiday, children/student absent, postponed due to festival

¹⁹This indicator is based on samples where deworming was ongoing.

²⁰Correct recording protocol implies putting single tick(✓) on NDD and double tick (✓✓) for all those children administered albendazole tablets.

Table CV1: Findings from Schools and *Anganwadis* Coverage Validation Data

Indicators	Schools			<i>Anganwadis</i>		
	Denominator	Numerator	%	Denominator	Numerator	%
Conducted deworming²¹	500	418	84	500	458	92
Day of albendazole administration (Multiple Response)						
National Deworming Day	418	391	94	458	408	89
Mop-Up day	418	330	79	458	340	74
Between NDD and Mop-Up Day	418	76	18	458	108	24
Reasons for not conducting deworming						
No information	82	55	67	42	24	57
Drugs not received	82	22	28	42	15	36
Apprehension of adverse events	82	3	3	42	3	7
Others ²²	82	2	2	42	0	0
Albendazole left after deworming	418	196	47	458	219	48
Number of albendazole left						
Less than 50 tablets	196	124	63	219	149	68
50-100 tablets	196	35	18	219	45	20
More than 100 tablets	196	37	19	219	25	11
Copy of reporting form was available for verification	418	218	52	458	200	44
Reasons for non-availability of copy of reporting form						
Did not received	200	77	39	258	83	32
Submitted to ANM	200	94	47	258	155	60
Unable to locate	200	17	8	258	14	5
Other ²³	200	12	6	258	6	3
<i>Anganwadis</i> having list of unregistered children	NA	NA	NA	458	140	31
<i>Anganwadis</i> having list of out-of-school children	NA	NA	NA	458	129	28
Indicators	Schools			<i>Anganwadis</i>		
	Denominator	Numerator	%	Denominator	Numerator	%
Conducted deworming²⁴	500	418	84	500	458	92
Day of albendazole administration (Multiple Response)						
National Deworming Day	418	391	94	458	408	89
Mop-up day	418	330	79	458	340	74
Between NDD and mop-up day	418	76	18	458	108	24
Reasons for not conducting deworming						
No information	82	55	67	42	24	57
Drugs not received	82	22	28	42	15	36
Apprehension of adverse events	82	3	3	42	3	7
Others ²⁵	82	2	2	42	0	0

²¹ Schools and *anganwadis* that conducted deworming on NDD or Mop-Up Day.

²² Other includes mainly, absence of headmaster/teacher and unavailability of drugs.

²³ Other includes mainly submitted to crp in brc and availability of blank form.

²⁴ Schools and *anganwadis* that conducted deworming on NDD or Mop-Up Day.

²⁵ Other includes mainly, absence of headmaster/teacher and unavailability of drugs.

Albendazole left after deworming	418	196	47	458	219	48
Number of albendazole left						
Less than 50 tablets	196	124	63	219	149	68
50-100 tablets	196	35	18	219	45	20
More than 100 tablets	196	37	19	219	25	11
Copy of reporting form was available for verification	418	218	52	458	200	44
Reasons for non-availability of copy of reporting form						
Did not received	200	77	39	258	83	32
Submitted to ANM	200	94	47	258	155	60
Unable to locate	200	17	8	258	14	5
Other ²⁶	200	12	6	258	6	3
<i>Anganwadis</i> having list of unregistered children	NA	NA	NA	458	140	31
<i>Anganwadis</i> having list of out-of-school children	NA	NA	NA	458	129	28

²⁶ Other includes mainly submitted to crp in brc and availability of blank form.

Table CV2: Recording protocol, verification, inflation and attendance in schools and *anganwadis*

Indicators	School			<i>Anganwadis</i>		
	Denominator	Numerator	%	Denominator	Numerator	%
Followed correct ²⁷ recording protocol	418	177	49	458	234	51
Followed partial ²⁸ recording protocol	418	36	42	458	67	15
Followed no ²⁹ recording protocol	418	205	9	458	157	34
State level verification factor ³⁰	29482	15760	0.53	17882	14600	0.82
<i>Anganwadi</i> registered children	NA	NA	NA	10184	8047	0.79
<i>Anganwadi</i> unregistered children	NA	NA	NA	3201	3252	1.02
Out-of-school children	NA	NA	NA	4497	3301	0.73
State level inflation rate ³¹	15760	13722	87	14600	3282	22
<i>Anganwadi</i> registered children	NA	NA	NA	8047	2137	27
<i>Anganwadi</i> unregistered children	NA	NA	NA	3252	-51	-2
Out-of-school children	NA	NA	NA	3301	1196	36
Attendance on previous day of NDD	75817	55901	74	NA	NA	NA
Attendance on NDD	75817	56235	74	NA	NA	NA
Attendance on Mop-Up Day	75817	55866	74	NA	NA	NA
Children who attended on both NDD and Mop-Up Day	75817	46817	62	NA	NA	NA
Maximum attendance of children on Deworming Day and Mop-Up Day ³²	75817	65284	86	NA	NA	NA
School level inflation rate for schools followed the correct recording protocol	14024	2946	21	NA	NA	NA

²⁷ Correct recording protocol includes schools where all the classes put single tick (✓) on NDD and double tick (✓✓) on Mop-Up Day to record the information of dewormed children.

²⁸ Partial recording protocol includes schools where all the classes did not follow correct protocol, put different symbols and prepared separate list to record the information of dewormed children.

²⁹ No protocol includes all those schools where none of the classes followed any protocol to record the information of dewormed children.

³⁰ Ratio of recounted value of the dewormed children to the reported value. This calculation is based on only those schools (n=218) and *anganwadis* (n=200) where deworming was conducted and copy of reporting form was available for verification.

³¹ Proportion of over reported dewormed children against total verified children in schools and *anganwadis*. For *anganwadi* unregistered children the total no of verified children is higher than the reported which imply that numbers are under-reported against verified children. Also for the same group of children inflation rate is negative, which indicates deflation due to under-reported children against verified children.

³² Maximum attendance refers to the total attendance of children who were exclusively present in school either on NDD or Mop-Up Day and children who attended school on both days.

Estimated NDD coverage based on government coverage data ³³	49	74
Estimated NDD coverage based on school attendance ³⁴	69	NA

Table CV3: Indicators based on interview of children during coverage validation in schools

Indicators	Denominator	Numerator	%
Children received Albendazole tablets	1253	1233	98
Children consumed Albendazole tablet	1233	1230	100
Children aware about the Albendazole tablets	1233	1031	84
Source of information about NDD round			
Teacher/school	1031	1015	99
Television	1031	111	11
Radio	1031	71	7
Newspaper	1031	126	12
Poster/Banner	1031	181	18
Parents/siblings	1031	218	21
Friends/neighbors	1031	154	15
Way children consumed the tablet			
Chew the tablet	1230	1186	96
Swallow tablet directly	1230	44	4
Supervised administration of tablets	1233	1176	95

³³ This was estimated by implying state level verification factor on government reported coverage for schools and AWC.

³⁴ This was estimated on the basis of NDD implementation status, attendance on NDD and Mop-Up Day, whether child received albendazole and its supervised administration. Since no child interview is conducted at *anganwadis*, this has not been estimated for *anganwadis*.