Evidence Action

Deworm the World Initiative

# Independent Monitoring

# National Deworming Day

# August 2018

# Karnataka Report

October 2018

## Independent Monitoring

During every round of National Deworming Day (NDD), Evidence Action conducts independent monitoring, which includes process monitoring on NDD and mop-up day and a coverage validation exercise post-NDD. This is conducted through an independent survey agency, to assess the planning, implementation and quality of NDD program with an objective of identifying gaps and suggesting recommendations for improvements in future NDD rounds. Process monitoring is conducted to understand the state government's preparedness for NDD and adherence to the program's prescribed processes. Coverage validation is an ex-post check of the accuracy of the reporting data and coverage estimates to verify government-reported treatment figures.

In 2018, Karnataka observed the August round of NDD on August 10, followed by the mop-up day on August 20. Fieldwork for process monitoring was conducted on August 10 and 20, while coverage validation was conducted August 21-28. This extract is a summary of the broad findings from the surveys conducted in the state of Karnataka.

## Survey Methodology

Using a two-stage probability sampling procedure, across 30 districts, Evidence Action selected a total of 239 schools (203 government schools and 36 private schools) and 237 *anganwadi*s were covered for process monitoring visits by the independent survey agency during NDD and mop-up days, and 676 schools (560 government schools and 116 private schools) and 680 *anganwadi*s for coverage validation. Evidence Action designed and finalized survey tools with approvals from Karnataka's state government. One combined tool for process monitoring was used at schools and *anganwadi*s on NDD and mop-up day, and one each for schools and *anganwadi*s for coverage validation.

## Implementation

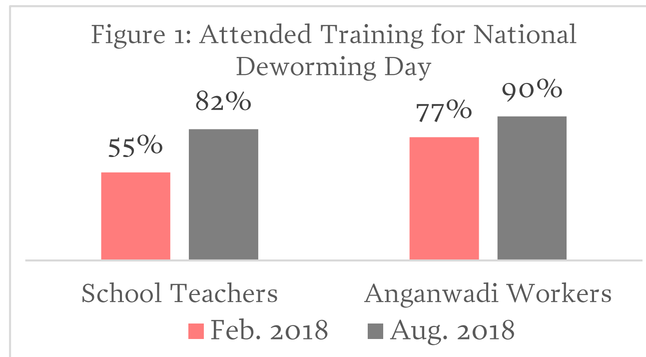
Prior to the survey, Evidence Action conducted a comprehensive training of master trainers who further conducted two two-day trainings of 125 surveyors and 25 supervisors for each process monitoring and coverage validation at Bangalore. The training included an orientation on NDD, the importance of independent monitoring, details of the monitoring formats including CAPI (Computer Assisted Personal Interview) practices, survey protocols and practical sessions. Each surveyor was allotted one school and one *anganwadi* for process monitoring on NDD and mop-up day, and subsequently five schools and five *anganwadi*s for coverage validation. Surveyors were provided with a tablet computer with the latest CAPI version downloaded, battery charger, printed copy of monitoring formats as backup, and albendazole tablets for demonstration during data collection. The details of sampled schools were shared with surveyors one day before the commencement of fieldwork to ensure that surveyors did not contact schools and *anganwadi*s in advance, as this could cause bias in the results.

Appropriate quality assurance measures were taken to ensure that the data collected was accurate, consistent and authenticated. For example, teachers and *anganwadi* workers (AWWs) were asked to sign a participation form with an official stamp to authenticate surveyor visits to schools or *anganwadis*. Further, consent based thumb impression of all survey respondents in electronic mode including headmasters, teachers, *anganwadi*

workers, ASHAs and children were collected for verification purpose. The GPS location along with time stamp and photographs of all schools and *anganwadis* visited during data collection was also collected through CAPI to authenticate the location and time of the interview. Evidence Action reviewed all data sets and shared feedback with the agency for any inconsistencies observed and ensured timely corrective actions. Analysis was done using STATA and Microsoft Excel.

## Key Findings

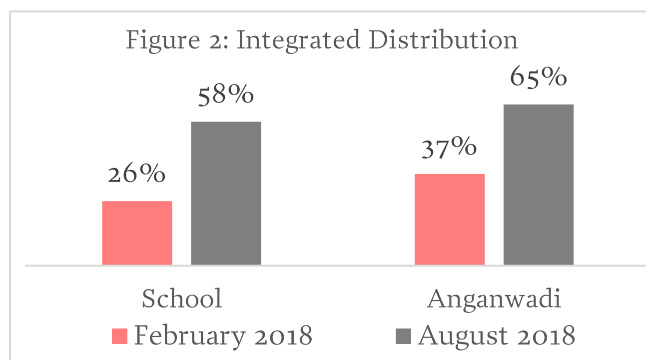
### *Training*




Prior to each NDD round, teachers and *anganwadi* workers are trained on NDD related processes and protocols to facilitate effective implementation of the program. NDD guideline mandates schools and *anganwadis* to attend training for every NDD round, irrespective of whether they attended training in earlier rounds. Eighty-two percent of teachers and 90% of AWWs attended training for the August 2018 NDD round, which is a 27 and 12 percentage point increase in training of schools and *anganwadis* as compared to the February 2018 round (Figure 1). The attendance of private schools in trainings also improved significantly from 40% in February 2018 to 63% in the August 2018 round. In this round, the state government sent reinforcement messages through their portal to key government officials across different stakeholders departments and to frontline functionaries, which could be one of the reasons for an improvement in the training attendance.

Among those who did not attend training, 29% of teachers and 26% of AWWs reported lack of information about NDD training as the main reason for not attending. Fifty-seven percent of teachers provided training to all other teachers at their school, which increased nominally from the February 2018 round (55%). Seventy-three percent of teachers and 78% of AWWs reported to receive SMS about NDD. Among private school teachers; receipt of related SMSs increased from 31% from the previous round to 61% in the August 2018.

### *Integrated Distribution of NDD Kit Including Drugs at Training*




Integrated distribution of the NDD kit doubled for schools (58%) and increased by 28 percentage points in *anganwadis* in the August 2018 round compared to the previous round (Figure 2). Ninety-five percent of schools and 93% of *anganwadis* received albendazole tablets, and 94% and 92% of them respectively reported to receive sufficient quantities of the tablet (Annex-Table PM3). Further, 79% of schools and 87% of

*anganwadis* received posters and banners; and 76% and 78% received handouts/reporting forms (Annex-Table PM4). Despite a low level of integrated distribution, tablet and IEC materials were available in the majority of schools and *anganwadis,* indicating state government commitment towards the program.

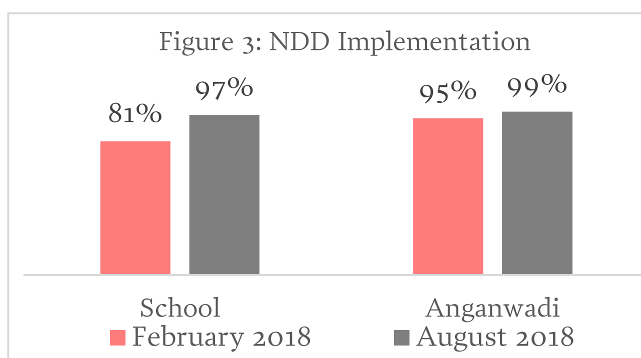
Among the sampled private schools, 85% received albendazole and all of them reported to have received it in sufficient quantity. Sixty-five percent of private schools received posters/banners and 56% reported having received handout and reporting forms (Annex-Table PM7).

### *Source of Information about the Recent Round of NDD*

Interaction with other school teachers was the major source of information about NDD for schools (69%) and training for *anganwadis* (51%). Forty-three percent of schools learned about NDD through training. Thirty-nine percent of schools and 31% of *anganwadis* reported to receive information through television. Social media also emerged as an effective source of information where (29% of school teachers and 18% of AWWs received information from government circulated reinforcement messages through WhatsApp). Information received through radio remained the least effective source of information for both schools and *anganwadis* (Annex-Table PM1).

### *NDD Implementation*

As evident from Figure-3, the proportion of schools and *anganwadis* conducting deworming remained high during the round; it increased marginally for both schools and *anganwadis* in the August round. Out of all the schools and *anganwadis* visited during process monitoring, surveyors were able to observe deworming activities in 97% of schools (Annex- Table PM5). Drug administration to unregistered (89%) and out-of-school children (82%) also improved nominally in the current round from the February 2018 round. Further, 80% of AWWs reported that ASHAs were present at the *anganwadi* centre on NDD or mop-up day.




### *Adverse Event - Knowledge Management*

Interviews with headmasters/teachers and *anganwadi* workers reveal a moderate level of awareness among them (44% in schools and 43% in *anganwadis*) regarding potential adverse events due to deworming. A majority of school teachers and AWWs (78% for each) reported mild abdominal pain as a side effect of albendzole administration followed by vomiting (73 % and 70 % respectively) and nausea (52% and 63%). A considerable knowledge gap was also observed on appropriate protocols to follow in the case of such events. For example, only 40% of school teachers and 38% of AWWs were aware to observe a child for at least two hours in school/*anganwadi* in the case of a mild adverse event(Annex- Table PM6). Findings necesitate emphasis on adverse event management protocols during training of teachers and AWWs.

### *Recording Protocol*

Seventy-seven percent of schools and 76% of *anganwadis* followed the correct (single and double ticks) recording protocol. Around seven percent of schools and eight percent of *anganwadis* carried out partial[1] recording. A small proportion of each school and *anganwadi* (16%) did not follow any protocol to record the information of dewormed children (Annex – Table CV3). Further, as per NDD guidelines, all schools and *anganwadis* are supposed to retain a copy of reporting forms. Although 94% of headmasters and 91% of *anganwadi* workers were aware to retain the reporting form, (Annex – Table PM2) during coverage validation it was observed that only 64% of schools and 56% of *anganwadis* had retained the copy of reporting forms (Annex – Table CV1).

Accredited Social Health Activists (ASHAs) are required to prepare a list of out-of-school children and children unregistered in *anganwadis* and submit it to *anganwadi* workers. However, only 45% of *anganwadis* reported to have the list of unregistered (1-5 years) children and 44% reported having the list of out-of-school children (6-19 years) (Annex – Table CV1). Nevertheless, 76% of all the ASHAs interviewed during coverage validation (who were available at the *anganwadis* at the time of surveyors visit), reported to prepare the list of unregistered and out-of-school children and 88% of them reported to shared it with AWWs. Only 32% of ASHAs reported receiving incentives for the last round of NDD i.e. February 2018 (Annex –Table CV2).

## Coverage Validation

Coverage validation provides an opportunity to assess the accuracy of reported data and verify government-reported treatment figures. Verification factors[2] are common indicators to measure the accuracy of reported treatment values for neglected tropical disease control programs[3]. It also gives us an idea about record keeping and data management at the service delivery point. The verification factor is estimated on the basis of the availability of a copy of reporting forms at schools and *anganwadis*. The state-level verification factor for school enrolled children in the August 2018 round is 0.70, indicating that on an average, for every 100 dewormed children reported by the school, 70 were verified either through single/double tick or through other available documents at the school. Similarly, the overall state-level verification factor for children dewormed at *anganwadis* is 1.10, indicating that on an average; for every 100 dewormed children reported by the *anganwadi,* 110 were verified through available documents (Annex – Table CV3).

The, category-wise verification factors for registered (1-5 years), unregistered (1-5 years) and out-of-school (6-19 years) children were 0.87, 1.34, and 1.53 respectively for

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[1] Partial recording protocol includes schools/*anganwadis* where all the classes/registers did not follow correct protocol, but put different symbols and prepared separate list to record the information of dewormed children.

[1]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.
[2]WHO (2013), Data Quality Assessment tool for Neglected Tropical Diseases: Guidelines for Implementation December 2013.

*anganwadis* (Annex CV3). The data suggests reporting and aggregation error of coverage figures in *anganwadis* and thus highlights a need for proper record keeping. Despite challenges in reporting and documentation of NDD coverage data, based on children's interviews, all of the children present at schools on NDD or mop-up day received (100%) and consumed (99%) the albendazole tablet under supervised administration (98%) on either NDD or mop-up day.

Against the state government reported 96% coverage in schools and 96% coverage for 1-5 years registered children in *anganwadis*, attempts were made to understand the maximum number of children that could have been dewormed at schools and *anganwadis* through coverage validation data. The NDD treatment coverage in schools was estimated considering the maximum attendance of children on NDD dates. Coverage validation data showed that 97% of schools conducted deworming on either NDD or mop-up day (Annex-Table CV1), a maximum of 98% of children were in attendance (Annex-Table CV3), 100% of children received an albendazole tablet, and 98% of children reported to consume the tablet under supervision (Annex-Table CV4). Considering these factors, 93%[4] (0.97*0.98*1.00*0.98) of enrolled children could have been dewormed at schools. Since interviews of children are not conducted in *anganwadis*, the verification factor of 1-5 years registered children from coverage validation data is applied to government reported coverage data for the same category. It was estimated that around 84% (0.87*0.96) of registered children (1-5 years) in *anganwadis* could have been dewormed. The calculation of verification factors is based on only those schools and *anganwadis* where a copy of the reporting form was available for verification. Therefore, adjusted coverage in *anganwadis* based on verification factor needs to be interpreted with caution.

## Recommendations

1. Training participation of teachers and AWWs improved substantially from the previous round. This needs to be sustained and additional efforts need to be made to ensure training participation from all the schools and *anganwadis* in next round. Delays/ rescheduling of trainings should be avoided by effective planning and coordination between the three key stakeholder departments. District/block level officials must ensure private school teachers' participation during trainings to further improve training attendance and subsequently to strengthen the program. Efforts should be made to sustain current performance by advance communications and follow ups through SMS and letters to concerned officials as practiced in the current round.

2. While a significant increase in integrated distribution is evident from the February 2018 to August 2018 in both schools and *anganwadis*, there is ample scope to improve in future rounds. As integrated distribution of the NDD kit is cost effective, eases logistical concerns and ensure quality services, efforts should be made to strengthen the same with timely drugs procurement and printing of IEC. Efforts are

[4] This was estimated on the basis of NDD implementation status (97%), maximum attendance on NDD and mop-up day (98%); children received albendazole (100%) and supervised drug administration (98%). In absence of children interview in *anganwadis*, the government reported coverage was adjusted by implying state level verification factor.

also required to strengthen and align distribution cascade and hand over NDD kit to the teachers/headmasters and *anganwadi* workers at the time of training.

3. Although adherence to correct recording protocols has improved from February 2018 to August 2018 in both schools and *anganwadis*, there is scope for further improvement. Training and reinforcement messages need to have an increased focus on the importance of following correct reporting protocols and maintaining correct and complete documentation. Practical sessions on recording protocols for teachers and *anganwadi* workers can be organized during sector level trainings. Further, during training teachers and AWWs should also be make aware about the importance of record management.

4. There is scope for greater involvement of ASHAs in mobilizing out-of-school children and pre-school children not registered in *anganwadis* and in spreading awareness on deworming benefits. Efforts are required to increase ASHA participation by sending reminder SMSs to them with information on incentives. As findings show, a small proportion of ASHAs received incentives for the February 2018 round; timely disbursement of ASHA incentives can be a motivating factor for their engagement in the program.

5. Coverage validation findings show a substantial increase in estimated coverage of schools. Emphasis should be given to sustain high attendance on NDD days to achieve maximum NDD coverage in schools.

## Annexure

### Findings from Process Monitoring and Coverage Validation of National Deworming Day (NDD), August 2018, Karnataka

### Table A: Sample Description including Number of Schools and *Anganwadis* Covered during Process Monitoring and Coverage validation

| Sample Details | Number |
|---|---|
| Total number of NDD districts in the state | 30 |
| Number of districts covered[5] | 30 |
| Number of trained surveyors deployed | 125 |
| Number of blocks[6] covered | 125 |
| Total number of schools covered during process monitoring | 239 |
| • Number of government schools covered[7] | 203 |
| • Number of private schools covered | 36 |
| Total number of *anganwadis* covered[8] during process monitoring | 237 |
| Total number of schools covered[9] during coverage validation | 676 |
| • Total number of government schools covered | 560 |
| • Total number of private schools covered | 116 |
| Total number of *anganwadis* covered[10] during coverage validation | 680 |

### Table PM1: Training and source of information about NDD among teachers/headmasters and anganwadi workers, August 2018

| Indicators | School | | | *Anganwadi* | | |
|---|---|---|---|---|---|---|
| | Denominator | Numerato r | % | Denominator | Numerator | % |

[5] Process Monitoring was not conducted in Kodagu district because of flood.
[6] These are sampled blocks selected from UDISE data.
[7] These are the actual schools covered during NDD and Mop-Up Day visits. Numbers given in subsequent tables (numerator and denominator) are weighted
[8] These are the actual *anganwadis* covered during NDD and Mop-Up Day visits. Numbers given in subsequent tables (numerator and denominator) are unweighted.
[9] These are the actual schools covered during Coverage Validation visits. Numbers given in subsequent tables (numerator and denominator) are weighted. The weights are used in order to generalize the findings at state level.
[10] These are the actual *anganwadis* covered during Coverage Validation visits. Numbers given in subsequent tables (numerator and denominator) are weighted. The weights are used in order to generalize the findings at state level.

| | | | | | | |
|---|---|---|---|---|---|---|
| Attended training for current round of NDD | 239 | 195 | 82 | 237 | 214 | 90 |
| Ever attended training for[11] NDD | 239 | 200 | 84 | 237 | 217 | 92 |
| Never attended training for NDD | 239 | 39 | 16 | 237 | 20 | 8 |
| Reasons for not attending current NDD round training (Multiple Response) | | | | | | |
| Location was too far away | 44 | 4 | 8 | 23 | 2 | 9 |
| Did not know the date/timings/venue | 44 | 13 | 29 | 23 | 6 | 26 |
| Busy in other official/personal work | 44 | 2 | 4 | 23 | 6 | 26 |
| Attended deworming training in the past | 44 | 5 | 12 | 23 | 3 | 13 |
| Not necessary | 44 | 3 | 7 | 23 | 3 | 13 |
| No incentives/no financial support | 44 | 1 | 2 | 23 | 1 | 4 |
| Trained teacher that provided training to other teachers in their schools | | | | | | |
| All other teachers | 195 | 112 | 57 | Not Applicable | | |
| Few teachers | 195 | 55 | 28 | Not Applicable | | |
| No (himself/herself only teacher) | 195 | 22 | 12 | Not Applicable | | |
| No, did not train other teachers | 195 | 6 | 3 | Not Applicable | | |
| Source of information about current NDD round (Multiple Response) | | | | | | |
| Television | 239 | 93 | 39 | 237 | 74 | 31 |
| Radio | 239 | 37 | 16 | 237 | 39 | 16 |
| Newspaper | 239 | 83 | 35 | 237 | 65 | 27 |
| Banner | 239 | 63 | 26 | 237 | 54 | 23 |
| SMS | 239 | 88 | 37 | 237 | 87 | 37 |

[11]Includes those school teachers and *anganwadi* workers who attended training either for NDD August 2018 or attended tanning in past.

| Others school/teacher/*angan wafdi* worker | 239 | 166 | 69 | 237 | 58 | 24 |
|---|---|---|---|---|---|---|
| WhatsApp message | 239 | 69 | 29 | 237 | 43 | 18 |
| Training | 239 | 102 | 43 | 237 | 122 | 51 |
| Others[12] | 239 | 14 | 6 | 237 | 19 | 8 |
| Received SMS for current NDD round | 239 | 173 | 73 | 237 | 185 | 78 |
| Probable reasons for not receiving SMS[13] | | | | | | |
| Changed Mobile number | 3 | 3 | 100 | 6 | 0 | 0 |
| Other family members use this number | 3 | 0 | 0 | 6 | 3 | 50 |
| Number not registered to receive such messages | 3 | 0 | 0 | 6 | 3 | 50 |
| Don't know | 3 | 0 | 0 | 6 | 0 | 0 |
| Others | 3 | 0 | 0 | 6 | 0 | 0 |

### Table PM2: Awareness about NDD among teachers/headmasters and anganwadi workers, August 2018

| Indicators | School | | | Anganwadi | | |
|---|---|---|---|---|---|---|
| | Denominator | Numerator | % | Denominator | Numerator | % |
| Awareness about the ways a child can get worm infection | 239 | 205 | 86 | 237 | 206 | 87 |
| Different ways a child can get worm infection (Multiple Response) | | | | | | |
| Not using sanitary latrine | 205 | 166 | 81 | 206 | 174 | 84 |
| Having unclean surroundings | 205 | 131 | 64 | 206 | 146 | 71 |

[12]Other includes: primary health center doctor/sister, Asha worker, supervisor

[13] 63 Schools and 46 *Anganwadis* reported that they don't know about receiving the SMS and reasons were not asked to them.

| | | | | | | |
|---|---|---|---|---|---|---|
| Consume vegetables and fruits without washing | 205 | 122 | 59 | 206 | 118 | 57 |
| Having uncovered food and drinking dirty water | 205 | 118 | 58 | 206 | 112 | 54 |
| Having long and dirty nails | 205 | 107 | 52 | 206 | 103 | 50 |
| Moving in bare feet | 205 | 129 | 63 | 206 | 115 | 56 |
| Having food without washing hands | 205 | 133 | 65 | 206 | 12 | 58 |
| Not washing hands after using toilets | 205 | 107 | 52 | 206 | 87 | 42 |
| Awareness about all the possible ways a child can get a worm infection[14] | 205 | 58 | 28 | 206 | 47 | 23 |
| Perceives that health education should be provided to children | 239 | 223 | 93 | 237 | 212 | 89 |
| Awareness about correct dose and right way of administration of albendazole tablet | | | | | | |
| 1-2 years of children (Crush the half tablet between two spoons and administer with water) | Not Applicable | | | 237 | 178 | 75 |
| 2-3 years of children (Crush one full tablet between two spoons, and administer with water) | Not Applicable | | | 237 | 106 | 45 |
| 3-5 years of children (one full tablet and child chewed the tablet properly) | Not Applicable | | | 237 | 164 | 69 |
| 6-19 years of children (one full tablet and child chewed the tablet properly) | 239 | 223 | 93 | 237 | 236 | 95 |
| Awareness about non-administration of albendazole tablet to sick child | | | | | | |

[14]Includes 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.

| | | | | | | |
|---|---|---|---|---|---|---|
| Will administer albendazole tablet to sick child | 239 | 56 | 24 | 237 | 50 | 21 |
| Will not administer albendazole tablet to sick child | 239 | 183 | 76 | 237 | 187 | 79 |
| Awareness about consuming albendazole tablet | | | | | | |
| Chew the tablet | 239 | 232 | 97 | 237 | 229 | 97 |
| Swallow the tablet directly | 239 | 7 | 3 | 237 | 8 | 3 |
| Awareness about consuming albendazole in school/*anganwadi* | 239 | 236 | 99 | 237 | 232 | 98 |
| Awareness about the last date (August 22, 2018) for submitting the reporting form | 239 | 77 | 32 | 237 | 80 | 34 |
| Awareness about the revised last date (August 24, 2018) for submitting the reporting form | 239 | 2 | 1 | 237 | 0 | 0 |
| Awareness about submission of reporting forms to ANM | 239 | 140 | 59 | 237 | 161 | 68 |
| Awareness to retain a copy of the reporting form | 239 | 225 | 94 | 237 | 215 | 91 |

**Table PM3: Deworming activity, drug availability, and list of unregistered and out-of-school children, August 2018**

| **Indicators** | **School** | | | **Anganwadi** | | |
|---|---|---|---|---|---|---|
| | **Denominator** | **Numerator** | **%** | **Denominator** | **Numerator** | **%** |
| Albendazole tablet administered on the day of visit | | | | | | |
| Yes, ongoing | 239 | 111 | 46 | 237 | 95 | 45 |
| Yes, already done | 239 | 107 | 45 | 237 | 124 | 52 |
| Yes, after sometime | 239 | 12 | 51 | 237 | 14 | 6 |
| No, will not administer today | 239 | 9 | 4 | 237 | 4 | 2 |

| Schools/*anganwadis* conducted deworming on either of the day[15] | 239 | 230 | 96 | 237 | 234 | 99 |
|---|---|---|---|---|---|---|
| Schools/*anganwadis* conducted deworming on NDD[16] | 101 | 94 | 93 | 105 | 102 | 97 |
| Schools/*anganwadis* conducted deworming on Mop-Up Day[17] | 138 | 136 | 99 | 132 | 131 | 99 |
| Reasons for not conducting deworming | | | | | | |
| No information | 9 | 6 | 61 | 4 | 0 | 0 |
| Albendazole tablet not received | 9 | 1 | 17 | 4 | 3 | 75 |
| Apprehension of adverse events | 9 | 0 | 0 | 4 | 0 | 0 |
| Already Dewormed | 9 | 0 | 0 | 4 | 1 | 25 |
| Others[18] | 9 | 2 | 22 | 4 | 0 | 0 |
| Attendance on NDD[19] | 22185 | 19356 | 87 | Not Applicable | | |
| Attendance on Mop-Up Day[20] | 21421 | 17734 | 83 | Not Applicable | | |
| *Anganwadis* having list of unregistered/out-of-school children | Not Applicable | | | 237 | 198 | 84 |
| Out-of-school children (Age 6-19 years) administered albendazole tablet | Not Applicable | | | 237 | 194 | 82 |
| Unregistered children (Age 1-5 years) administered albendazole tablet | Not Applicable | | | 237 | 210 | 89 |
| Sufficient quantity of albendazole tablets[21] | 227 | 213 | 94 | 221 | 204 | 92 |

[15]Schools/*anganwadis* administered albendazole tablet to children either on NDD or Mop-Up Day
[16]Based on the samples visited on NDD
[17]Based on the samples visited on Mop-Up Day only.
[18]Others include: cluster level sports event, all student NDD present.
[19]Based on those schools visited on NDD
[20]Based on those schools visited on Mop-Up-Day
[21]This indicator is based on the sample that received albendazole tablet

Table PM4: Integrated distribution of albendazole tablets and IEC materials, August 2018

| Indicators | Schools | | | Anganwadi | | |
|---|---|---|---|---|---|---|
| | Denominator | Numerator | % | Denominator | Numerator | % |
| Items received by school teacher and *anganwadi* worker | | | | | | |
| Albendazole tablet | 239 | 227 | 95 | 237 | 221 | 93 |
| Poster/banner | 239 | 188 | 79 | 237 | 205 | 87 |
| Handouts/ reporting form | 239 | 182 | 76 | 237 | 186 | 78 |
| Received all materials | 239 | 169 | 71 | 237 | 177 | 75 |
| | | | | | | |
| Items verified during Independent Monitoring | | | | | | |
| Albendazole tablet | 227 | 222 | 98 | 221 | 209 | 95 |
| Poster/banner | 188 | 185 | 98 | 205 | 200 | 98 |
| Handouts/ reporting form | 179 | 175 | 98 | 178 | 176 | 99 |
| Received all materials | 169 | 162 | 96 | 177 | 168 | 95 |
| | | | | | | |
| No of school teachers/*anganwadi* worker attended training and received items during training | | | | | | |
| Albendazole tablet | 188 | 171 | 91 | 203 | 186 | 92 |
| Poster/banner | 168 | 158 | 94 | 192 | 179 | 93 |
| Handouts/ reporting form | 161 | 154 | 96 | 175 | 168 | 96 |
| Received all materials | 169 | 139 | 82 | 177 | 155 | 88 |
| | | | | | | |
| Integrated Distribution of albendazole tablet, IEC and training materials[22] | **239** | **139** | **58** | **237** | **155** | **65** |

[22] Integrated distribution of NDD kits includes albendazole, banner/poster and handout/reporting forms and provided to schools and AWC during the trainings.

Table PM5: Implementation of deworming activity and observation of surveyors, August 2018

| Indicators | Schools | | | Anganwadi | | |
|---|---|---|---|---|---|---|
| | Denominator | Numerator | % | Denominator | Numerator | % |
| Deworming activity was taking place | 111 | 108 | 97 | 95 | 92 | 97 |
| Albendazole tablets were administered by | | | | | | |
| Teacher/headmaster | 108 | 98 | 91 | 92 | 12 | 13 |
| Anganwadi worker | 108 | 3 | 3 | 92 | 64 | 70 |
| ASHA | 108 | 6 | 5 | 92 | 8 | 9 |
| ANM | 108 | 1 | 1 | 92 | 8 | 9 |
| Student | 108 | 0 | 0 | 92 | 0 | 0 |
| Teacher/*Anganwadi* worker asked children to chew the tablet | 239 | 232 | 97 | 237 | 229 | 97 |
| Followed any recording protocol[23] | 218 | 209 | 96 | 219 | 206 | 94 |
| Protocol followed | | | | | | |
| Putting single/double tick | 209 | 165 | 79 | 206 | 158 | 77 |
| Put different symbols | 209 | 4 | 2 | 206 | 11 | 5 |
| Prepare the separate list for dewormed | 209 | 40 | 19 | 206 | 37 | 18 |
| Visibility of poster/banner during visits | 188 | 177 | 95 | 205 | 188 | 92 |

Table PM6: Awareness about Adverse events and Its Management, August 2018

| Indicators | Schools | | | Anganwadi | | |
|---|---|---|---|---|---|---|
| | Denominator | Numerator | % | Denominator | Numerator | % |

[23]Any 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 Mop-Up Day.

| | | | | | | |
|---|---|---|---|---|---|---|
| Opinion of occurrence of an adverse event after administering albendazole tablet | 239 | 106 | 44 | 237 | 102 | 43 |
| Awareness about possible adverse events (Multiple Response) | | | | | | |
| Mild abdominal pain | 106 | 82 | 78 | 102 | 80 | 78 |
| Nausea | 106 | 55 | 52 | 102 | 64 | 63 |
| Vomiting | 106 | 77 | 73 | 102 | 71 | 70 |
| Diarrhea | 106 | 51 | 48 | 102 | 43 | 42 |
| Fatigue | 106 | 44 | 42 | 102 | 34 | 33 |
| All possible adverse event[24] | 106 | 24 | 23 | 102 | 20 | 20 |
| Awareness about mild adverse event management | | | | | | |
| Make the child lie down in open and shade/shaded place | 239 | 167 | 70 | 237 | 174 | 73 |
| Give ORS/water | 239 | 160 | 67 | 237 | 151 | 62 |
| Observe the child at least for 2 hours in the school | 239 | 95 | 40 | 237 | 89 | 38 |
| Don't know/don't remember | 239 | 10 | 4 | 237 | 11 | 5 |
| Awareness about severe adverse event management | | | | | | |
| Call PHC or emergency number | 239 | 166 | 69 | 237 | 177 | 75 |
| Take the child to the hospital /call doctor to school | 239 | 163 | 68 | 237 | 157 | 66 |
| Don't know/don't remember | 239 | 7 | 3 | 237 | 5 | 2 |
| Available contact numbers of the | 239 | 223 | 93 | 237 | 223 | 94 |

[24]Includes those who are aware that a mild abdominal pain and nausea and vomiting and diarrhea and fatigue can be reported by a child after taking albendazole tablet.

| nearest ANM or MO-PHC | | | | | | |
|---|---|---|---|---|---|---|
| Asha present in *Anganwadi* center | Not Applicable | | | 237 | 188 | 80 |

### Table PM7: Selected Indicators of Process Monitoring in Private Schools, August 2018

| Indicators[25] | Denominator | Numerator | % |
|---|---|---|---|
| Attended training for current round of NDD | 42 | 26 | 63 |
| Received albendazole tablets | 42 | 36 | 85 |
| Sufficient quantity of albendazole tablets | 36 | 36 | 100 |
| Received poster/banner | 42 | 27 | 65 |
| Received handouts/ reporting form | 42 | 23 | 56 |
| Received SMS for current NDD round | 42 | 25 | 61 |
| Albendazole administered to children[26] | 42 | 35 | 86 |
| Reasons for not conducting deworming | | | |
| No information | 6 | 4 | 60 |
| Albendazole tablets not received | 6 | 2 | 20 |
| Apprehension of adverse events | 6 | 0 | 0 |
| Already Dewormed | 6 | 0 | 0 |
| Others | 6 | 0 | 0 |
| Albendazole tablet administered to children by teacher/headmaster | 20 | 20 | 100 |
| Perceive that health education should be provided to children | 42 | 37 | 89 |
| Awareness about correct dose and right way of albendazole administration | 42 | 38 | 91 |
| Awareness about non-administration of albendazole tablet to sick child | 42 | 31 | 74 |
| Opinion of occurrence of an adverse event after taking albendazole tablet | 42 | 15 | 37 |
| Awareness about occurrence of possible adverse events | | | |

[25]These 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.
[26]This indicator is based on samples where deworming was ongoing.

| | | | |
|---|---|---|---|
| Mild abdominal pain | 15 | 13 | 82 |
| Nausea | 15 | 10 | 64 |
| Vomiting | 15 | 11 | 74 |
| Diarrhea | 15 | 9 | 6 |
| Fatigue | 15 | 9 | 62 |
| Awareness about mild adverse event management | | | |
| Let the child rest in an open and shaded place | 42 | 28 | 66 |
| Provide clean water to drink/ORS | 42 | 25 | 61 |
| Contact the ANM/nearby PHC | 42 | 16 | 39 |
| Available contact numbers of the nearest ANM or MO-PHC | 42 | 34 | 82 |
| Followed correct recording protocol[27] | 35 | 32 | 91 |

## Findings from Coverage Validation Data – Karnataka, August 2018

## Table CV1: Findings from School and *Anganwadi* Coverage Validation Data

| Sr.No. | Indicators | Schools | | | Anganwadis | | |
|---|---|---|---|---|---|---|---|
| | | Denominator | Numerator | % | Denominator | Numerator | % |
| 1 | Percentage of schools/*anganwadis* conducted deworming[28] | 676 | 652 | 97 | 680 | 670 | 99 |
| | Percentage of conducted deworming in Government schools | 546 | 533 | 98 | Not Applicable | | |
| | Percentage of conducted deworming in Private schools | 130 | 119 | 92 | Not Applicable | | |
| 1a | Percentage of school and *anganwadis* administered albendazole on day of - **(Multiple Response)** | | | | | | |

[27]Correct recording protocol implies putting single tick (✓) on NDD and double tick (✓✓) for all those children administered albendazole tablets.
[28]Schools and *anganwadis* that conducted deworming on NDD or mop-up day.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | a. National Deworming Day | 652 | 601 | 92 | 670 | 135 | 20 |
| | b. Mop-up day | 652 | 418 | 64 | 670 | 371 | 56 |
| | c. Between NDD and mop-up day | 652 | 79 | 12 | 670 | 408 | 61 |
| | d. Both days (NDD and mop-up day) | 652 | 394 | 60 | 670 | 93 | 14 |
| 1b | Reasons for not conducting deworming | | | | | | |
| | a. No information | 24 | 12 | 51 | 10 | 9 | 92 |
| | b. Drugs not received | 24 | 8 | 32 | 10 | 0 | 0 |
| | c. Apprehension of adverse events | 24 | 1 | 4 | 10 | 0 | 0 |
| | d. Others[29] | 24 | 3 | 13 | 10 | 1 | 8 |
| 2 | Percentage of schools and *anganwadis* left over with albendazole tablet after deworming | 652 | 231 | 35 | 670 | 294 | 44 |
| 2a | Number of albendazole tablets left after deworming | | | | | | |
| | a. Less than 50 tablets | 231 | 177 | 77 | 294 | 251 | 85 |
| | b. 50-100 tablets | 231 | 30 | 13 | 294 | 42 | 14 |
| | c. More than 100 tablets | 231 | 23 | 10 | 294 | 2 | 1 |
| 3 | Copy of filled-in reporting form was available for verification | 652 | 418 | 64 | 670 | 377 | 56 |

[29]Other includes: not given, not interested parents and children, school holiday and *anganwadi* teacher is absent.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Copy of filled-in reporting form was available for verification in Government schools | 533 | 343 | 64 | Not Applicable | | |
| | Copy of filled-in reporting form was available for verification in Private schools | 119 | 75 | 63 | Not Applicable | | |
| 3a | Reasons for non-availability of copy of reporting form[30] | | | | | | |
| | a. Did not received | 231 | 45 | 20 | 286 | 42 | 15 |
| | b. Submitted to ANM | 231 | 148 | 64 | 286 | 182 | 64 |
| | c. Unable to locate | 231 | 23 | 10 | 286 | 51 | 18 |
| | d. Others[31] | 231 | 15 | 6 | 286 | 11 | 4 |
| 4 | Percentage of *Anganwadi* center where ASHA administered albendazole | Not Applicable | | | 670 | 590 | 88 |
| 5 | *Anganwadis* having list of unregistered children (aged 1-5 years) | Not Applicable | | | 670 | 300 | 45 |
| 6 | *Anganwadis* having list of out-of-school children (aged 6-19 years) | Not Applicable | | | 670 | 295 | 44 |

[30] In 4 schools and 7*anganwadis* blank reporting form was available,
[31]Other includes: not given, lock in almirah, etc.

### Table CV2: Selected indicators based on ASHA'sinterview at *Anganwadi* Centre, Coverage Validation Data

| Sr. No. | Indicators | Anganwadis | | |
|---|---|---|---|---|
| | | Denominator | Numerator | % |
| 1 | ASHA[32] conducted meetings with parents to inform about NDD | 410 | 372 | 91 |
| 2 | ASHA prepared list of unregistered and out-of-school children | 410 | 311 | 76 |
| 3 | ASHA shared the list of unregistered and out-of-school children with *angnawadis*worker[33] | 311 | 273 | 88 |
| 4 | ASHA administered albendazole to children | 410 | 371 | 90 |
| 5 | ASHA received incentive for NDD February 2018 round | 410 | 131 | 32 |

### Table CV3: Recording protocol, verification factor and school attendance

| Sr.No. | Indicators | Schools/Children | | | Anganwadis/Children | | |
|---|---|---|---|---|---|---|---|
| | | Denominator | Numerator | % | Denominator | Numerato r | % |
| 1 | Followed correct[34] recording protocol | 652 | 500 | 77 | 670 | 511 | 76 |
| 2 | Followed partial[35] recording protocol | 652 | 46 | 7 | 670 | 51 | 8 |
| 3 | Followed no[36] recording protocol | 652 | 105 | 16 | 670 | 108 | 16 |
| | Followed correct recording protocol | 533 | 410 | 77 | Not Applicable | | |

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[32]Surveyors were instructed to call ASHA at *anganwadi* centers during coverage validation and collect relevant information. Surveyors could only cover those ASHA's who were able to join for interview because it was not mandatory for ASHA's to attend.

[33] Based on sub-sample who reported to prepare the said list

[34]Correct recording protocol includes schools/*anganwadis* where all the classes/registers put single tick (✓) on NDD and double tick (✓✓) on mop-up day to record the information of dewormed children.

[35]Partial recording protocol includes schools/*anganwadis* where all the classes/registers did not follow correct protocol, put different symbols and prepared separate list to record the information of dewormed children.

[36]No protocol includes all those schools/*anganwadis* where none of the classes/registers followed any protocol to record the information of dewormed children

| | in Government schools | | | | | | |
|---|---|---|---|---|---|---|---|
| | Followed correct recording protocol in Private schools | 119 | 90 | 76 | Not Applicable | | |
| 4 | State-level verification factor[37] (children enrolled/registered) | 84246 | 58606 | 70 | 25865 | 28332 | 110 |
| | a. Children registered with *anganwadis* | Not Applicable | | | 14843 | 12868 | 87 |
| | *b.* Children unregistered with *anganwadis*( Aged 1-5) | Not Applicable | | | 7553 | 10153 | 134 |
| | c. Out-of-school children (Aged 6-19) | Not Applicable | | | 3469 | 5311 | 153 |
| 5 | Attendance on previous day of NDD (children enrolled) | 125468 | 113669 | 91 | Not Applicable | | |
| 6 | Attendance on NDD (children enrolled) | 125468 | 114353 | 91 | Not Applicable | | |
| 7 | Attendance on mop-up day (children enrolled) | 125468 | 83364 | 66 | Not Applicable | | |
| 8 | Children who attended on both NDD and mop-up day (children enrolled) | 125468 | 73530 | 59 | Not Applicable | | |
| 9 | Maximum attendance of children on NDD | 125468 | 124187 | 98 | Not Applicable | | |

[37]Ratio of recounted value of the dewormed children to the reported value. This calculation is based on only those schools (n=418) and *anganwadis* (n=377) where deworming was conducted and copy of reporting form was available for verification.

| | and mop-up day[38] (Children enrolled) | | | | |
|---|---|---|---|---|---|
| 10 | Estimated NDD coverage[39,40] | 93 | | | 84 |
| 11 | Estimated NDD coverage in Government schools | 94 | | | Not Applicable |
| 12 | Estimated NDD coverage in Private schools | 87 | | | Not Applicable |

**Table CV4: Description on children (6-19 years) interviewed in the schools (n=652) during coverage validation**

| No | Indicators | Denominator | Numerator | % |
|---|---|---|---|---|
| 1 | Children received albendazole tablets | 1956 | 1946 | 100 |
| 2 | Children aware about the albendazole tablets | 1946 | 1872 | 96 |
| | Source of information about deworming among children (Multiple response) | | | |
| 3 | a. Teacher/school | 1872 | 1802 | 96 |
| | b. Television | 1872 | 275 | 15 |
| | c. Radio | 1872 | 174 | 9 |
| | d. Newspaper | 1872 | 252 | 14 |
| | e. Poster/Banner | 1872 | 388 | 21 |
| | f. Parents/siblings | 1872 | 105 | 6 |
| | g. Friends/neighbors | 1872 | 25 | 1 |
| 4 | Children aware about the worm infection | 1946 | 1567 | 81 |
| 5 | Children awareness about different ways a child can get worm infection (Multiple response) | | | |
| | a. Not using sanitary latrine | 1567 | 1379 | 88 |
| | b. Having unclean surroundings | 1567 | 767 | 49 |

[38] 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.

[39] 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.*

[40] This was estimated by implying state-level verification factor on government reported coverage for 1-5 years registered children in AWC.

| | | | | |
|---|---|---|---|---|
| | c. Consume vegetables and fruits without washing | 1567 | 761 | 49 |
| | d. Having uncovered food and drinking dirty water | 1567 | 641 | 41 |
| | e. Having long and dirty nails | 1567 | 598 | 38 |
| | f. Moving in bare feet | 1567 | 744 | 48 |
| | g. Having food without washing hands | 1567 | 612 | 39 |
| | h. Not washing hands after using toilets | 1567 | 463 | 30 |
| 6 | Children consumed albendazole tablet | 1946 | 1927 | 99 |
| 7 | Way children consumed the tablet | | | |
| | a. Chew the tablet | 1927 | 1827 | 95 |
| | b. Swallow tablet directly | 1927 | 100 | 5 |
| 8 | Supervised administration of tablets | 1927 | 1884 | 98 |
| 9 | Reasons for not consuming albendazole tablet | | | |
| | a. Feeling sick | 19 | 13 | 71 |
| | b. Afraid of taking the tablet | 19 | 3 | 16 |
| | c. Parents told me not to have it | 19 | 1 | 4 |
| | d. Do not have worms so don’t need it | 19 | 0 | 0 |
| | e. Did not like the taste | 19 | 2 | 9 |