Utilisation of JSY Incentive by the Urban Beneficiaries of Bhavnagar District of Gujarat

By

Satarupa Sen

Dissertation submitted for the partial fulfillment of the
MBA Hospital and Health Management

Academic year, 2016-2018

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The Candidate has successfully carried out the study designated to her during dissertation training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.

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And has successfully completed her Dissertation on

National Deworming Day, February 2018 Program implementation in Bihar

between February 5, 2018 to May 5, 2018

She comes across as a committed, sincere & diligent person who has a strong drive and zeal for learning.

We wish her all the best for future endeavours.

Dated:

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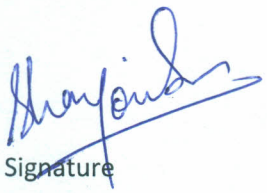

Signature

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ABBREVIATIONS

GoI- Government of India
WHO- World Health Organization
NDD- National Deworming Day
MUD- Mop-Up day
SHSB- State Health Society Bihar
BEPC- Bihar Education Project Council
ICDS-Integrated Child Development Services
WCD- Department of Women and Child Development
STH- Soil -Transmitted Helminth
EAG- Empowered Action Group
NVBDCP- National Vector Borne Disease Control Programme
LF-MDA- Lymphatic Filariasis- Mass Drug Administration
ASER- Annual Status of Education Report
SCCM- State Coordination Committee Meetings
DCCM- District Coordination Committee Meeting
MDM- Mid-Day Meal

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EXECUTIVE SUMMARY

There is a key gap between existing programs and the coverage needed for STH treatment in India, much of which can be filled by a high-quality school and *anganwadi*-based deworming program designed to reach preschool and school-age children at scale. The school and *anganwadi*-based deworming program approach, under aegis of National Deworming Day (NDD), provides an easy and cost-effective way to reach all children aged 1-19 years, through existing infrastructure.

Contributing to the same Government of India's (GoI) National Deworming Day (NDD) initiative, the state of Bihar implemented round eight of the mass school and *anganwadi* based deworming program in February 2018. NDD was conducted across 36 district on February 19, 2018 followed by mop-up day on March 7, 2018.

The study was done to understand and describe the implementation of eighth round of NDD in Bihar, conducted on February 19, 2018 with a Mop-up Day on March 7, 2018. Based on national level STH mapping and WHO guidelines, Bihar is required to conduct NDD twice a year. Desk review was done to understand program implementation in the NDD preparatory phase including the advocacy efforts and convergence of key stakeholders. During NDD and Mop-up day, visits were made to schools and *anganwadis* to understand the implementation at sampled schools and *anganwadis*. In consultation with Evidence Action team, recommendations were drafted and shared with state government for corrective actions to state/district and block officials.

The report is discussed under the headings of policy and advocacy, program planning and management, drug procurement, logistics and storage, training and distribution cascade, community awareness and mobilization and monitoring and evaluation. A program of such a large scale requires stakeholder convergence and collaborative efforts at each administrative and implementation level, which is imperative for effective implementation. Interdepartmental collaboration is the key for smooth program implementation.

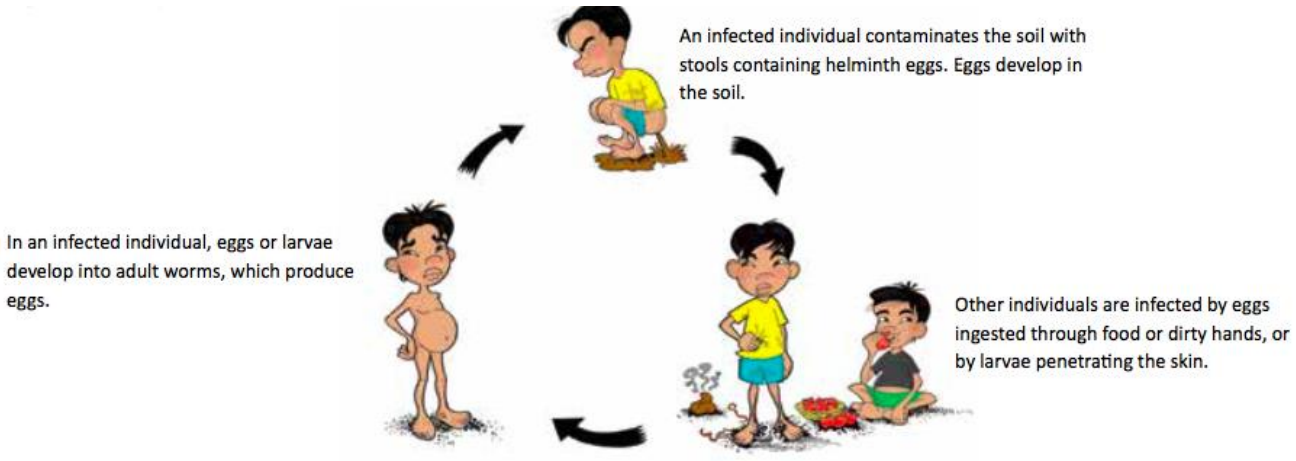
The analysis of Evidence Action monitoring visits showed that there was sufficient drugs in 89-92% schools and *anganwadis*. The provisions of deworming- drug (90-92%) and reporting form (100%) were high but availability of ORS packets was low (11-23%) in schools and *anganwadis*. 98% teachers and 95% *anganwadi* workers attended block level trainings and almost 100% of teachers & *anganwadi* workers were aware of adverse events.

Bihar NDD program is the largest school-based deworming program in the world and thus become a learning platform for other states where NDD is implemented, as well as other school health programs which reaches out to all children aged 1-19 years.

INTRODUCTION

Soil-Transmitted helminth (STH) infections are among the most common infections worldwide and affect the poorest and most deprived communities. They are transmitted by eggs present in human faeces which in turn contaminate soil in areas where sanitation is poor. The main species that infect people are the roundworm (Ascaris lumbricoides), the whipworm (Trichuris trichiura) and hookworms (Necator americanus and Ancylostoma duodenale). Almost 2 billion people (about a quarter of the world's population) are infected with soil-transmitted helminths worldwide.[1]

FIGURE 1: LIFE CYCLE OF SOIL-TRANSMITTED HELMINTHS



Source: World Health Organization. Helminth control in school-age children: a guide for managers of control programmes. Second edition. Geneva, 2011.

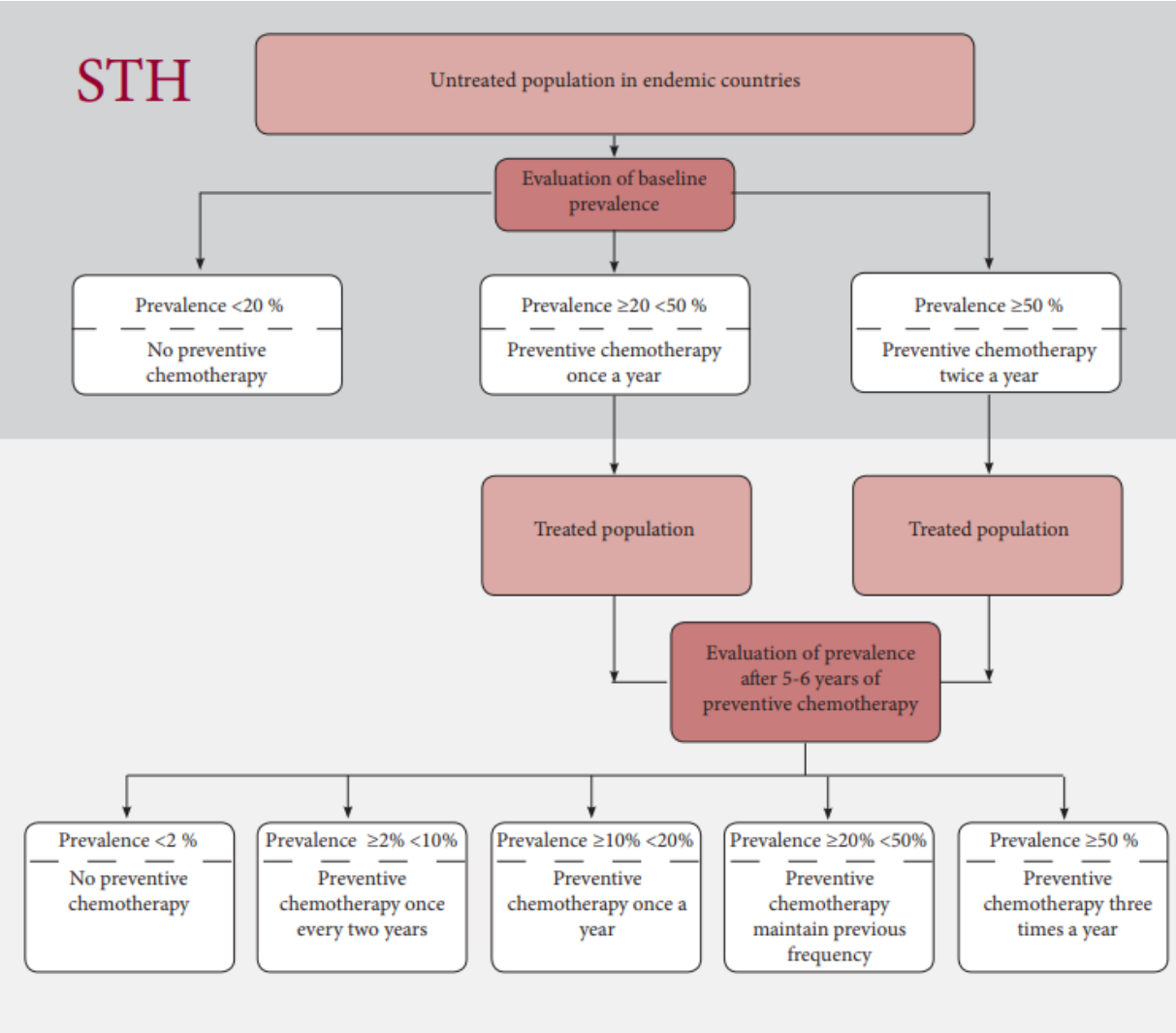
STH live in the intestine of infected individuals where they produce thousands of eggs each day that are passed in the faeces. When the environmental conditions are favourable, the eggs develop into infective stages and

*1-19 years census target is extrapolated using census 2001 and 2011 data
** Source- Coverage report submitted by state to MoHFW for February 2018 round

[1] Guideline: preventive chemotherapy to control soil-transmitted helminth infections in at-risk population groups- WHO 2017

spread to others by contaminating soil in areas where open defecation is common and sanitation is poor. STH infections interfere with the health, nutrition and education of children. Worms can cause anaemia and malnourishment, which has negative effects on mental & physical development. Malnourished and anaemic children are often underweight and have stunted growth. Children with heavy infections are often too sick or too tired to concentrate at school or attend school at all. Worm infection negatively affect children's physical and cognitive development, which could have long term negative impact on their work potential and wages in adulthood. Studies show that absenteeism in schools decreases by 25% with regular deworming[2].

FIGURE 2: DECISION TREE FOR STH CHEMOTHERAPY[3]



STH MAPPING IN INDIA

[2] Ministry of Health and Family Welfare | NATIONAL DEWORMING DAY (FEBRUARY 2018)

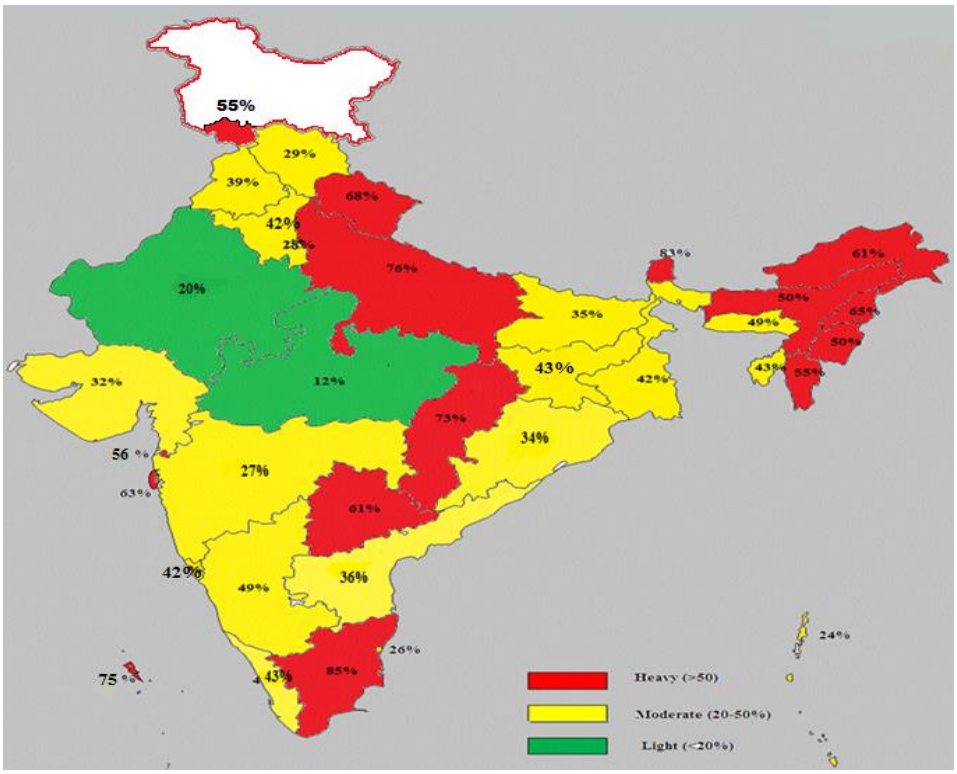
[3] Helminthic Control in school-age Children- WHO Guide for Managers of Control Programs (second edition)

As per WHO[4], India is endemic for STH. **In 2017**, the Ministry of Health and Family Welfare (MoHFW) completed the STH mapping across the country through National Centre for Disease Control, New Delhi and partners. The mapping was done to collect STH prevalence and intensity data to develop State-wide estimates of STH infections, and guides the decision on the frequency of deworming treatment, as per WHO guidelines.

TABLE 1: STH PREVALENCE IN INDIA[5]

STH Prevalence	**States**
=> 50% (High Prevalence)	Arunachal Pradesh, Assam, Chhattisgarh, Dadra & Nagar Haveli, Daman & Diu, J&K, Lakshadweep, Mizoram, Nagaland, Sikkim, Tamil Nadu, Telangana, UP Uttarakhand, Manipur
20% - 49 % (Moderate Prevalence)	A&N, Andhra Pradesh, **Bihar**, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Maharashtra, , Meghalaya, Odisha, Puducherry, Punjab, West Bengal , Chandigarh and Tripura
=<20% (Low Prevalence)	Madhya Pradesh and Rajasthan

FIGURE 3: STH MAPPING IN INDIA



[4] WHO 2010. Soil-transmitted helminthiases: Eliminating soil-transmitted helminthiases as a public health problem in children: progress report 2001-2010 and strategic plan 2011-2020

[5] Department of Parasitic Diseases, National Centre for Disease Control report- 2017

In 2009, the Government of India recommended[6] States/UTs to conduct mass deworming based on State-specific STH prevalence. The guidelines also recommend integrating biannual deworming with the Vitamin–A Prophylaxis program for under five children. Other Government programs launched in recent years like National Iron plus Initiative (including Weekly Iron and Folic Acid Supplementation for adolescents) mandates biannual deworming for children and adolescents under the age group of 1-19 years.

In February 2015, the MoHFW, Government of India launched the National Deworming Day (NDD) as part of National Health Mission in 11 states/UT, including Assam, Bihar, Chhattisgarh, Dadra and Nagar Haveli, Haryana, Karnataka, Maharashtra, Madhya Pradesh, Rajasthan, Tamil Nadu, and Tripura. After the unprecedented coverage of NDD with national level coverage of 89 million children[7], the MoHFW mandated the observation of the NDD at pan-India level from February 2016.

Deworming goals[8]:

- Global Goal: The WHO global target is to eliminate morbidity due to STH in children by 2020. This goal will be achieved by regularly treating at least 75% of the children in endemic areas.
- India goal: The objective of NDD in India is to deworm all preschool and school-age children between the ages of 1-19 years through the platform of government/ government aided and private schools and *anganwadi* centres in order to improve overall health, nutritional status, access to education and quality of life.

A fixed NDD approach has the potential to ensure maximum coverage with optimal utilization of resources, by leveraging existing programs and infrastructure. A fixed single day approach will:

- Motivate States/UTs to prioritize deworming within current ICDS and school health programs
- Increase public awareness around deworming with standardized campaign messages across the country
- Increase coverage of target beneficiaries (preschool and school age children)
- Establish structures to easily track and respond to any cases of adverse events
- Ensure quality and consistency of coverage reporting

In 2016, with an aim to intensify efforts towards STH control among children in India, MoHFW Government of India decided to observe NDD on February 10 in all 36 States/ UTs of the country, followed

[6] NDD guideline
[7] National Deworming Day Guideline
[8] Operational Guidelines, January 2016

by a mop-up day (MUD) on February 15 with the intent of deworming children who missed the dose on February 10. All schools and *anganwadi* centres will be the implementation sites of NDD across the country.

Target beneficiaries:

- All children in the age group of 1-19 years.
- The target age group includes:
  - Children enrolled in all government and government-aided schools
  - Children enrolled in private schools
  - Children registered at *anganwadi* centres
  - Unregistered and out-of-school children in *anganwadis* and schools, respectively

FIGURE 4: TREND IN NUMBER OF STATES PARTICIPATING IN VARIOUS ROUNDS OF NDD

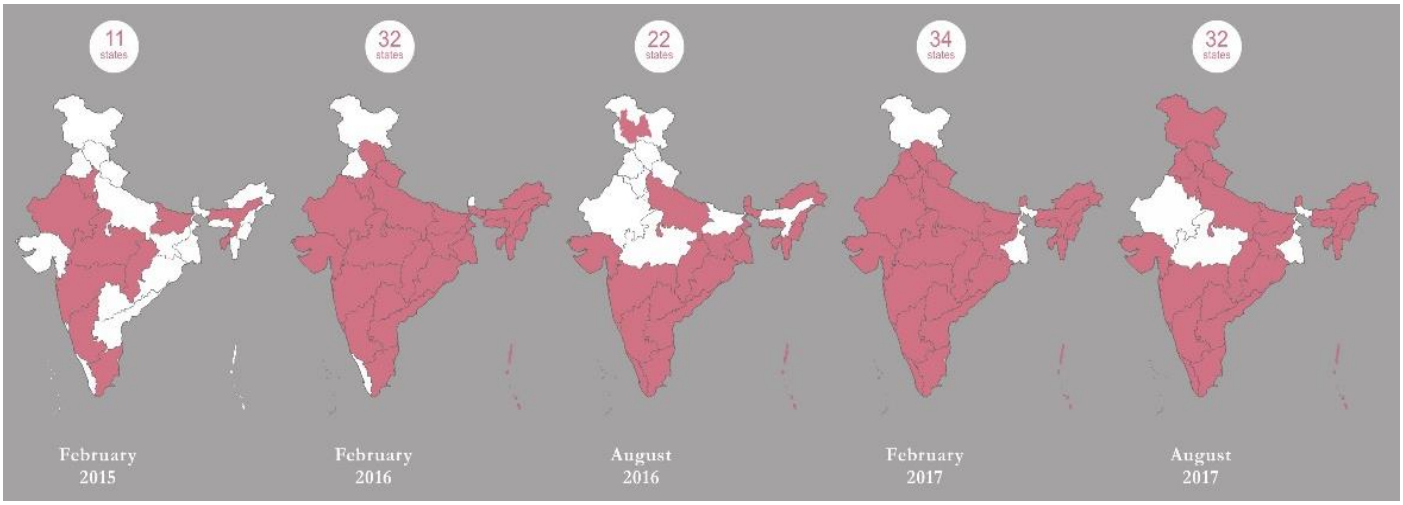


TABLE 2: TRENDS IN TARGET AND COVERAGE OF NDD ROUNDS

Target (in crores)	10.31	20.47	14	29.29	25.3
Coverage (in crores)	8.9	17.8	11.96	26	22.8

BIHAR NATIONAL DEWORMING DAY

The state of Bihar has been conducting mass school based deworming since 2011. Since February 2015, state has been conducting NDD as per operational guidelines issued from the Ministry of Health and Family Welfare (MoHFW), GoI targeting children of 1–19 years in all the 38 districts with joint efforts of SHSB, BEPC and WCD with technical assistance from Evidence Action.

Stakeholders for Bihar NDD program: The programme is being implemented through the combined efforts SHSB, BEPC, WCD and Department of Mid-Day Meal, along with JEEVIKA, Panchayat Raj Institutions, and State Madarsa Board.

RATIONALE

1. In areas where parasitic worms are endemic, administering safe, effective deworming drugs to children at schools is a development "best buy" due to its impact on educational and economic outcomes and low cost. The evidence shows that mass deworming leads to significant improvement in outcomes related to education, career choice, earnings, and long-term well-being. Rigorous research has shown significant gains from school-based deworming programs on children's health, access to education and livelihoods[9].

The benefits of school based deworming are immense. Schools offer a unique opportunity and platform to deliver deworming drug to a large number of children in a safe manner and enables the program to reach high coverage in a single day as majority of targeted children are available at the schools. Also, teachers can pass on knowledge about prevention and treatment for worm infections as they are highly respected by the community, including parents and children.

2. Bihar is shown to be an environment conducive to STH transmission, with some of the poorest sanitation indicators in India. Recognizing this, a state baseline prevalence survey of soil transmitted helminths was conducted in January 2011[10]. The prevalence of STH (including *hookworm, A. lumbricoides, and T. trichiura*) in Bihar was 67.5% with district prevalence ranging from 49.0% to 79.6%. In line with WHO guidance biannual mass deworming was recommended. The government determined that biannual deworming would occur through two programs: once through the existing National Filaria Control Program that administers albendazole annually to community members in all districts of Bihar, and once through the new school-based deworming program to administer albendazole annually to all school-age children.

Following three rounds of school-based deworming, a second prevalence survey was conducted in January and February 2015 by Evidence Action with approvals from SHSB, in order to understand the effect of deworming on STH infection levels. It was found that overall weighted prevalence of any STH infection

[9] Deworming-Millennium Development Goals, http:/whqlibdoc.who.int/hq/2005/who_cds_cpe_pvc_2005.12.pdf

[10] A state baseline prevalence survey of soil transmitted helminths in Bihar- Jimmy H. Kihara, Parasitologist, Ruth Dixon, Programme Manager, Kithsiri Gunawardena, Senior Parasitologist (January 2011)- Produced in partnership with: the Bihar education project council and the state health society, Bihar, India, Deworm the World, Washington DC, USA and partnership for child development, London, UK.

in the state was 35%. Roundworm (Ascaris) was the most prevalent infection (19%) whereas hookworm was second most prevalent (17%)[11]. Results of the survey suggested a significant difference in the average prevalence and intensity of the STH infections between 2011 and 2015, suggesting that deworming is having an effect on infection in school-age children. However, since the prevalence of the infection were still high, the continuation of biannual deworming strategies was recommended.

3. Studies show that access to healthcare in India is unequal among regions with variations such as caste and class[12]. National Rural Health Mission focusses on the eight socioeconomically backward states of Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttaranchal and Uttar Pradesh, referred to as the Empowered Action Group (EAG) states that lag behind in the demographic transition and receive special development effort form Government of India. As soil transmitted helminths (STH) is related to a number of contributing factors like nutritional status, Sanitation status, socio-economic status, below table shows the status of Bihar in relation to such factors.

TABLE 3: PROXY INDICATORS FOR STATUS OF BIHAR

Factors	Indicators	India	Bihar	Source
Nutritional status	• Children age 6-59 months who are anaemic • Children under 5 years who are stunted • Children under 5 years who are wasted • Children under 5 years who are severely wasted • Children under 5 years who are underweight	58.5 38.4 21.0 7.5 35.7	63.5 48.3 20.8 7.0 43.9	NFHS 4
Sanitation status	• Households with an improved drinking-water source • Households using improved sanitation facility	89.9 48.4	98.2 25.2	NFHS 4
Socio economic status	• Human development Index value • HDI rank	0.619 128 (out of 177)	0.367 21	HDI 2007-08

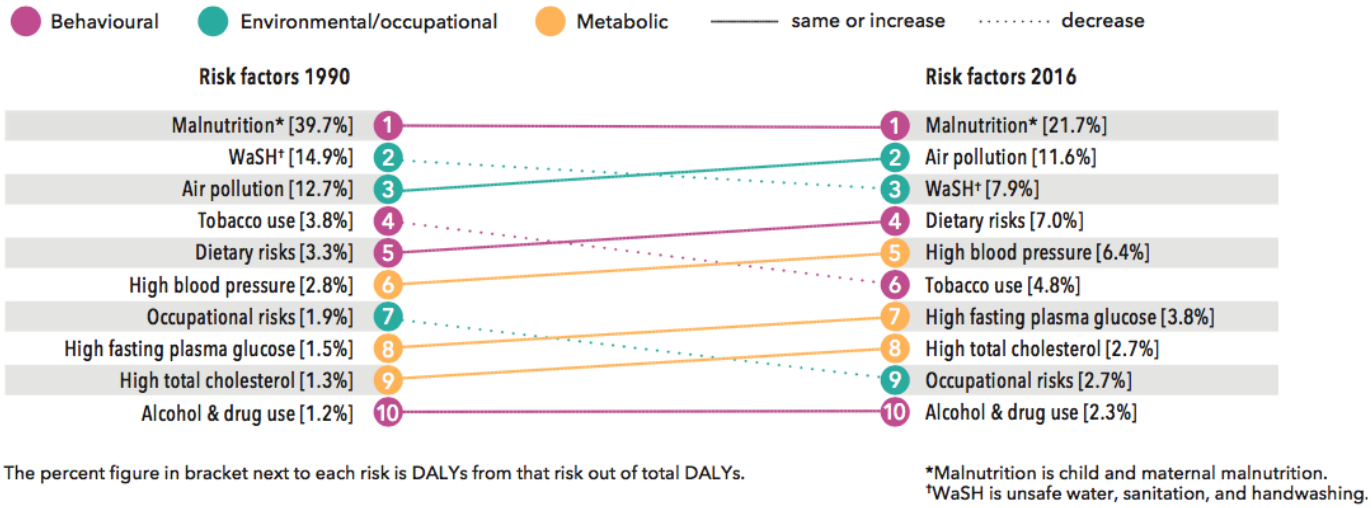
4. The below figure shows that Malnutrition and unsafe water and sanitation have remained the top risk factors for Bihar, thus reiterating the need for school-based deworming.

FIGURE 5 CONTRIBUTION OF TOP 10 RISKS TO DALYS NUMBER, BOTH SEXES, RANKED BY NUMBER OF DALYS, 1990-2016 IN BIHAR[13]

[11] As per the Prevalence Survey conducted by National Institute of Epidemiology, Chennai, Post Graduate Institute of Medical Research, Chandigarh, Regional Medical Research Center (ICMR), Dibrugarh, GFK Mode and Evidence Action In January 2015. The survey was conducted in partnership with the Government of Bihar; National Institute of Epidemiology; The Post-Graduate Institute of Medical Education and Research, Chandigarh; and GFK mode, a market research firm.

[12] Acharya Ss. Universal Health Care: Pathways from Access to Utilization among Vulnerable Populations. Indian J Public Health 2013

[13] Indian Council of Medical Research, Public Health Foundation of India, and Institute for Health Metrics and Evaluation. India: Health of the Nation's States — the India State-Level Disease Burden Initiative. New Delhi, India: ICMR, PHFI, and IHME; 2017.



5. <u>According to Annual Status of Education Report (ASER) 2016:</u> 80% of children aged 6-16 are enrolled in government schools, 6-13 percent are enrolled in private schools, almost one percent are enrolled in Madarsa and EGS (Education Guarantee Scheme) while 2-12 percent are not-in-school children.

TABLE 4: % CHILDREN ENROLLED IN DIFFERENT TYPES OF SCHOOLS 2016, BIHAR

Age group	Govt.	Pvt.	Other	Not in school	Total
Age 6-14: All	82.8	12.9	1.3	3.0	100
Age 7-16: All	82.4	12.0	1.2	4.5	100
Age 7-10: All	80.1	16.0	1.4	2.4	100
Age 7-10: Boys	76.5	19.5	1.6	2.4	100
Age 7-10: Girls	84.0	12.3	1.3	2.5	100
Age 11-14: All	84.9	10.0	1.0	4.1	100
Age 11-14: Boys	81.8	13.3	1.0	4.0	100
Age 11-14: Girls	88.0	6.6	0.9	4.4	100
Age 15-16: All	81.6	5.8	0.8	11.8	100
Age 15-16: Boys	79.1	7.5	1.0	12.4	100
Age 15-16: Girls	83.9	4.2	0.7	11.3	100

'Other' includes children going to Madarsa and EGS.
'Not in school' includes children who never enrolled or have dropped out.

TABLE 5: % CHILDREN AGE 3-6 ENROLLED IN DIFFERENT TYPES OF PRE-SCHOOL AND SCHOOL 2016, BIHAR

Age	In balwadi or anganwadi	In LKG/ UKG	In school			Out of school or pre-school	Total
			Govt.	Pvt.	Other		
Age 3	50.4	2.8				46.8	100
Age 4	60.4	7.4				32.2	100
Age 5	36.3	12.0	32.0	4.6	1.6	13.5	100
Age 6	10.8	10.2	62.5	8.1	1.7	6.7	100

Thus, school based and *anganwadi* based mass deworming is great initiative to cater maximum children in the desired age group in Bihar.

DEMOGRAPHIC CHARACTERISTICS OF BIHAR

- As per 2011 Census of India, Bihar is third most populated state of India with total population of 103,804,637 (54,185,347 Male and 49,619,290 Female). Only 11.3% of the population of Bihar lives in urban areas.
- Bihar has a total literacy rate of 69.83%. Overall male and female literacy rate is 70.32% and 53.57% respectively. Total rural literacy rate is 43.9%. In rural areas of Bihar, male and female literacy rate is 57.1 and 29.6 respectively. Total Urban literacy rate is 71.9%. In urban areas of Bihar, male and female literacy rate is 79.9% and 62.6% respectively. Total number of literates in Bihar is 3,16,75,607 which

consists 2,09,78,955 male and 1,06,96,652 female. Patna has highest Literacy Rate of 63.82% and Kishanganj has lowest Literacy Rate of 31.02%.

OBJECTIVES

1. To understand National Deworming Day February 2018 implementation in Bihar
2. To review the status of implementation at schools and *anganwadis* on NDD February 19, 2018 and mop-up day March 7, 2018.

METHODOLOGY

Study Design: Descriptive study

The following study was done to understand and describe the implementation of National Deworming Day February 2018 and not establish causal linkages among different elements. The intent was review of the program process which are under six program heads including policy and advocacy, program management, drug procurement, storage and transportation, training and distribution cascade, community awareness and mobilization and monitoring & evaluation. These heads are majority around the preparatory, during and post NDD phase.

Setting of the study: Bihar

Study period: Four months (February- May, 2018)

Methodology: The discussions in the study are based on four methodology adapted in the study. These methodologies provide an overview of the NDD February 2018 round in Bihar. Although the period of study is four months starting from February but the discussions include the preparatory activities that begin from November 2017. The methods adopted were:

1. **Desk review:** As part of understanding NDD implementation in the country and the review of NDD February 2018 implementation in the state, I reviewed the existing data collected from other resources. The data sources that were reviewed included a variety of documents including- NDD operational guidelines, WHO guidelines [14], and presentations of NDD National Review Meeting, State Coordination Committee Meetings, state operational plans.
2. **Field visit to schools and *anganwadis*:** NDD implementing districts during NDD and mop-up day: I got an opportunity to undertake field level monitoring as per the monitoring plan (developed by Evidence Action in consultation with SHSB) in order to ensure the activities are carried out as per the

[14] Discussed in the references

guideline. The visit was planned to implementing district (Vaishali) to monitor the process in five *anganwadis* and schools (3 government schools and 2 private schools).

During these visits, a monitoring checklist[15] (***Annexure A***) was to be filled for every site visited. The checklist was to access the preparations of the site for NDD and was a dichotomous questionnaire about NDD observations, training aspects, adverse events and community awareness & IEC materials. Evidence Action team adapted this tool in 'google forms' for real-time monitoring and facilitation of corrective actions on-field.

NDD guidelines advises mop-up to be conducted on February, 15 with the intent of deworming children who were absent or missed taking the albendazole tablet on NDD. But, due to proposed secondary board examinations & delay in drug availability & supply to the districts the mop-up day was conducted after 15 days of NDD.

3. **Close support to the Evidence Action team towards technical assistance support in program monitoring:** Worked in close coordination with the Bihar state team (of Evidence Action) towards program monitoring and facilitating corrective actions mainly around NDD, in between NDD and Mop Up Day and on Mop Up Day
   a. On NDD: Data from monitoring visits were fed into google form and helped Evidence Action state team to compile visits from 222 sites (govt school, private school & *anganwadi* centres) Real-time data was then shared by Evidence Action to SHSB for corrective actions prior to Mop Up Day
   b. In Between NDD and Mop-Up Day: To facilitate school-level reporting for NDD, the Integrated Voice Response System (IVRS) platform of the Mid-Day Meal (MDM)[16] program in the state was leveraged to receive real time information on coverage from schools participating in the MDM. It helped to generate key information points that were analysed for processing corrective actions in the field for mop-up day scheduled on March 7, 2018. Telephonic calls were made to sample school headmasters/teachers (on 20, 21, 22 Feb, 2018) to know about the status of deworming and the probable reasons of not conducting deworming. Two blocks from each of the 36 districts and subsequently, 2-3 schools[17] from each block were called depending on the percentage of deworming done in children who were in attendance based on the dataset shared. This helped to generate key information points that were analysed for processing corrective actions on mop-up

[15] Standard monitoring checklist provided under NDD resource kit by GoI which are available to all NDD monitors as apart of national guidelines.

[16] The Mid Day Meal Scheme Is A School Meal Program Of The Government Of India Designed To Improve The Nutritional Status Of School-Age Children Nationwide. MDM-IVRS Platform Is An Indigenous System That Collects Information On Program Reach Through Calls To Headmasters On A Daily Basis.

17 The Information Collected Through MDM Was Limited To Children From Class First To Eight.

day. I provided support to the state team in compilation of data sets & drafting letter for corrective actions in this window period.

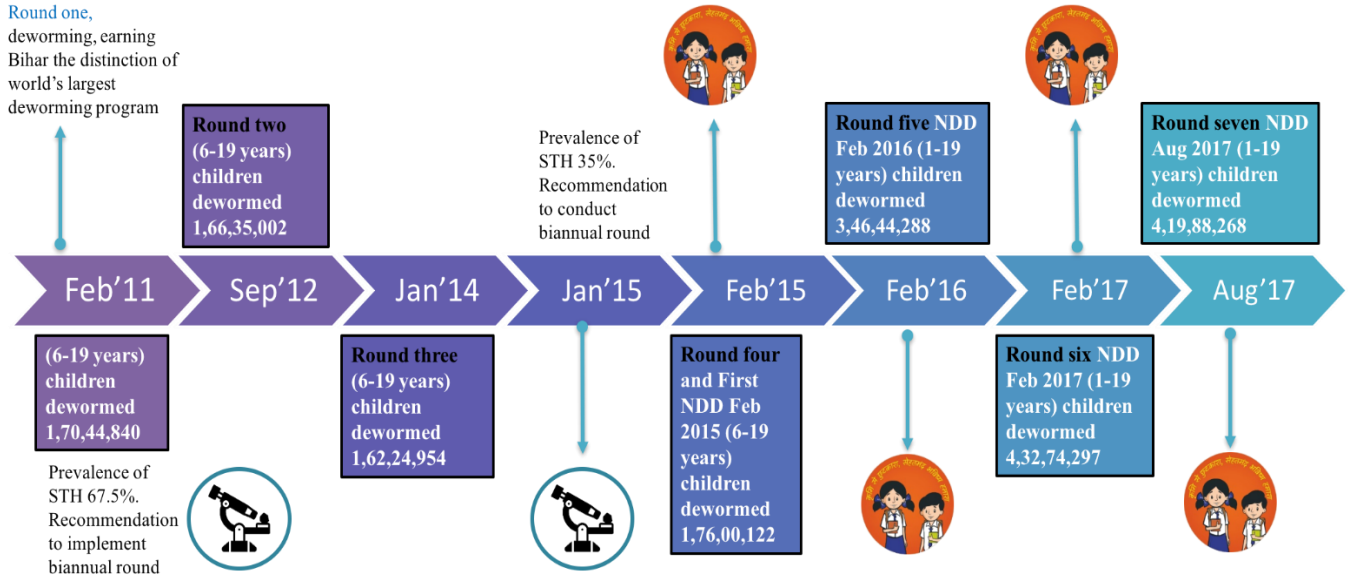
4. **Analysis of NDD field monitoring data:** The monitoring data that was collected by Evidence Action team was analysed & the same is discussed in detail in the Monitoring & Evaluation section.

DISCUSSION

STATE PROGRAM BACKGROUND

In 2011, a total of 1 crore 70 lakh children were dewormed at school, earning the distinction of being the world's largest school-based deworming programme. In 2012, 1 crore 66 lakh chicken were dewormed in round two. One crore 74 lakhs, including 1 crore 62 lakhs school children were dewormed as a part of round three in 2014. In Bihar, the first NDD round dewormed one crore seventy-six lakh children. In 2016, there was inclusion of WCD which dewormed three crores 46 lakhs children of 1 to 19 years.

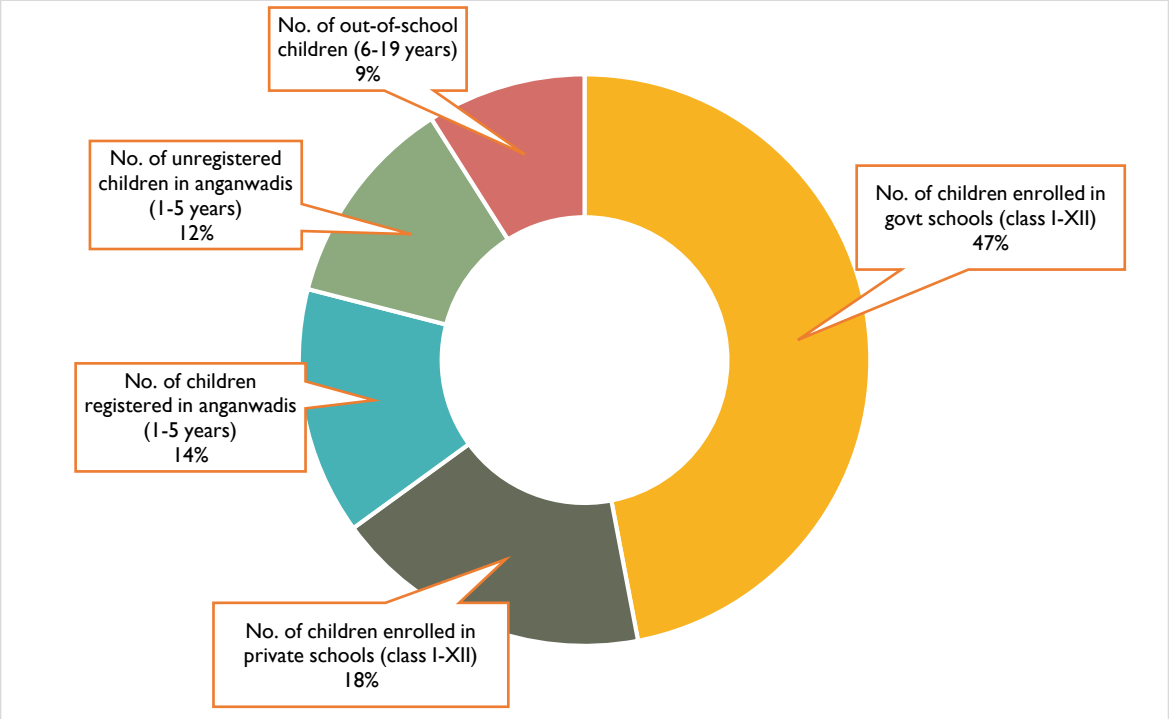
FIGURE 6: KEY MILESTONES IN BIHAR NATIONAL DEWORMING DAY



The graph below shows the proportion of different categories of children (1-19 years) in the pre-decided target of 5,28,80,800 for NDD February 2018. The category wise targets were used towards designing program implementation strategy.

GRAPH 1: PROPORTION OF DIFFERENT CATEGORIES IN STATE TARGET[18]

[18] Pre-NDD target as communicated by state to GoI



STATE PROGRAM IMPLEMENTATION

POLICY AND ADVOCACY

A program of such scale requires stakeholder convergence and collaborative efforts at each administrative and implementation level, which is imperative for effective implementation. SHSB led coordination with BEPC, and ICDS department, to achieve program goals through timely planning and implementation.

TABLE 6 EFFORTS TOWARDS STAKEHOLDER COLLABORATION

State Coordination Committee Meeting December 13, 2017	Meeting was chaired by Executive Director, SHSB. MD-BMSICL-cum Additional Executive Director & AED SHSB were present. Stakeholder departments including Department of Health, Women and Child Development, Department of Education, Mid-Day Meal program, representatives from Madarsa Board, Panchayati Raj Department, JEEVIKA, Swacha Bharat Abhiyaan, Team Leader ASHA, Private School Association were present in SCCM	• The function of the committee is to monitor the progress of NDD activities and resolve program related issues and gaps at state level and provide guidance to districts for effective implementation. • The date of NDD February 2018[19] was decided on Feb 19 keeping in mind the proposed exam and tentative delay in drug supply • It was decided that NDD will be conducted in 36[20] districts & letter will be sent to LF-MDA to communicate regarding the planning of LF-MDA scheduled in Feb • The target was finalized in alignment with census population. It was emphasized that

[19] Minutes of SCCM

[20] Two districts viz Jahanabd & Sheikhpura are Lymphatic Filariasis Mass Drug Administration (LF MDA) districts and were planned to undertake deworming under the same

		efforts should be made to ensure the benefits of deworming reach categories of children like polytechnics, unregistered private schools, urban slums & other technical & non-technical institutes. • D/O of Education & WCD should ensure timely release of guidelines at district level to improve participation in trainings. • It was decided that MDM-IVRS platform be leveraged in NDD Feb 2018 • It was recommended that IEC should be available at block level before beginning of block trainings. The importance of community mobilization was emphasized to cover out-of- school children.
State level Joint Directives January 18, 2018	• State-level Joint Directives signed by Principal Secretaries of Health, BEPC and WCD issued to all districts and blocks for NDD implementation & interdepartmental convergence at all levels	
State Video Conference to districts January 18, 2018	It was chaired by Executive Director-SHSB and AED-SHS cum MD-BMSICL, SPO-CH, Assistant Director-SHS, Team Leader ASHA and Evidence Action team and Civil Surgeons, DIOs, DPMs, DEOs, DPOs, RPMs from the participating districts participated	• To assess and review preparedness for NDD in districts i.e. drug and IEC availability, District and block level training dates, DCCM updates from the districts and including adverse event management • Instructions were given to the districts for completion of pending transportation of drugs to the districts. • Monitoring visits to be conducted by the district team and submission of visit report. • Instructed for district wise inauguration in all district on the same date as state i.e. on Feb 17, 2018
District Coordination Committee Meeting January 12-February 6, 2018	• The function of the committee is to implement and monitor the progress of NDD, resolve programmatic issues and fill gaps at district level and provide guidelines to blocks for effective implementation. • District Coordination Committee Meetings were conducted in 36 districts under the chairmanship of respective District Magistrate/Civil Surgeon with participation of important stakeholders to strategize NDD program implementation. • Discussions were around alignment with line departments to ensure timely rollout of NDD district action plan and inclusion of Private schools and *Madrasas* • There was private school representative participation in 33 out of 36 districts.	

Apart from private school participation in DCCMs, 14 districts conducted private school meetings at district levels.

Engagement of Private School children during NDD: In order to meet the goal established by NDD to reach all children aged 1-19, inclusion of private schools is critical to program success. Around 15% of total school enrolments in Bihar are in private schools, as per the Annual Status of Education Report (ASER 2016).

Private schools cater to all sections of society, including children from weaker socio-economic communities. For February 2018, almost 72.9 lakh children and 11 thousand private schools were targeted. The private school teachers were trained as per the NDD guidelines. Evidence Action drafted the private school resource kit for dissemination to private school children. This package consists of WhatsApp messages, *Prabhat Pheris* banners, posters, children activity books, short films for teachers and parents to support school level awareness generation efforts.

Engagement of out-of-school children during NDD: Out-of-school children are those between the ages of 6 to 19, who are not enrolled in schools or have been dropped out of school. Children who are excluded from education often face multiple and overlapping disadvantages. These children have been shown to be more heavily infected with Soil Transmitted Helminths than those who do go to school[21]. Due to the poor socio-economic status of out-of-school children in general, they are more exposed to unhygienic living conditions, poor sanitation practices and lack awareness on health education, healthy lifestyles, and ways of prevention of worm infection. Thus, these children, apart from being infected with parasitic worms, also lead to increased transmission of worms in their surroundings. Prevention and control of worm infection in this population is often a challenge, as they are located in unorganized settings. Government of Bihar targeted close to 51 lakh children in age group of 6-19 years for deworming.

PROGRAM MANAGEMENT

Technical assistance was extended by Evidence Action through a four-membered state based team, four field-based regional coordinators and short-term staff, consisting of 17 district coordinators and five tele-callers (at state-level). A detailed operational plan in discussion with state NDD nodal officer and shared further with stakeholders in SCCM (Social Welfare, Education, PRI, Jeevika) with the objective to strengthen inter-departmental and intra-departmental convergence for maximize reach to schools and *anganwadis* for increased coverage and effective implementation of program. State team assisted with program planning and coordinated with stakeholder departments to share real time updates on program implementation and facilitate corrective actions with respective government departments.

Regional Coordinators: Four RCs are hired by Evidence Action for year-round engagement with responsibilities of 9-11 districts. They provide program management & oversight to district coordinators, support information sharing, lead prompt corrective/ remedial action in the field, guide advocacy with district officials, facilitate training & distribution cascade & ensure timely reporting of coverage data. After the round is completed their efforts shifts toward exploring opportunities at districts for synergies with existing work

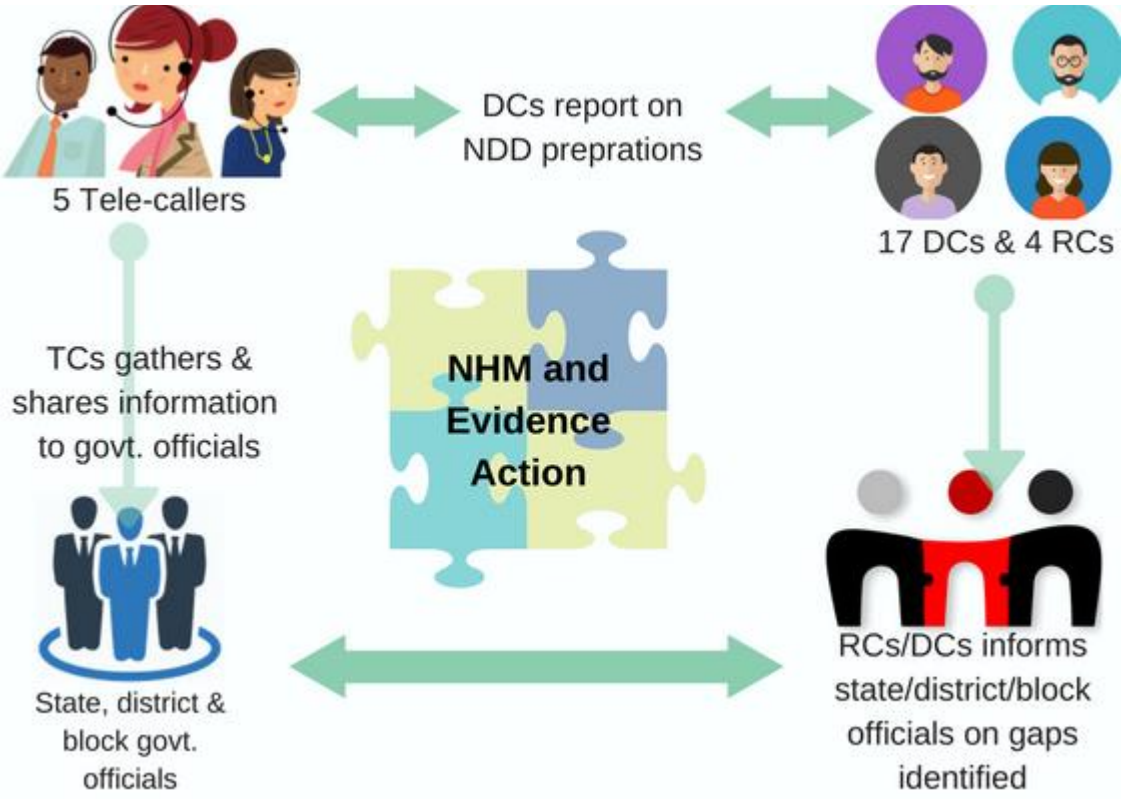
21 Husein et al., 1996

and possible platforms to integrate deworming. They also promote program institutionalization by working with district officials to include deworming in district action plans.

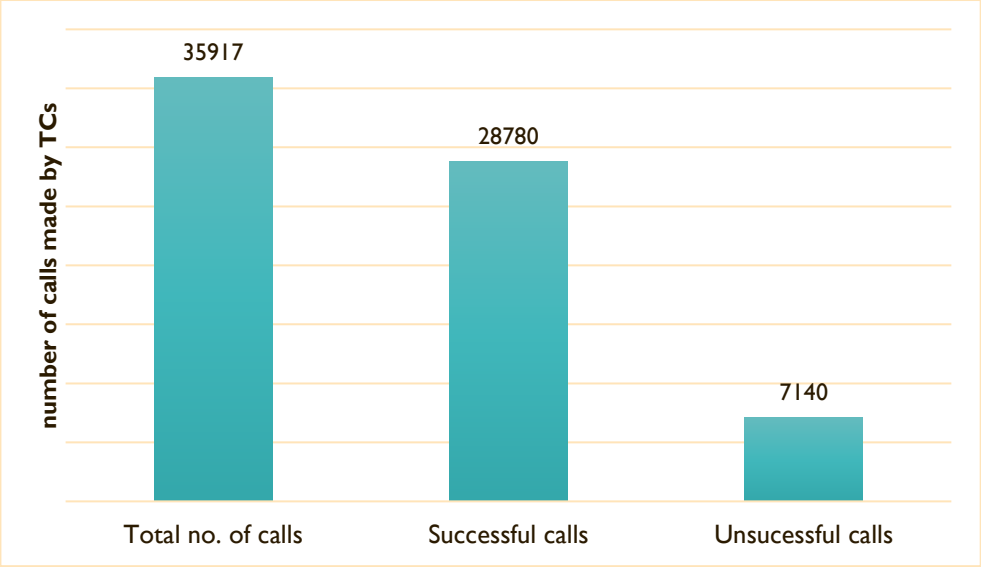
District Coordinators: 17 DCs are hired by Evidence Action for three months around NDD round. They are instrumental in ensuring timely delivery of training materials, distribution of NDD kits at training for all functionaries. They also participate in district & block level trainings & escalate observations for appropriate follow up at state level. They ensure high quality of trainings where pre & post tests were administered to participants. After NDD they provide rigorous follow ups with district and block officials to support timely compilation of coverage reports.

Tele-callers: Five TCs are hired by Evidence Action for three months around NDD round. They are assigned to work closely with RCs & DCs. They make calls to civil surgeon, DIO, DPM, MOIC, ANM, ASHA, DEO, BEO, head masters, DPO, CDPO, lady supervisors, *anganwadi* workers to obtain updates on drug &IEC availability, training schedules and status of reporting from all levels. This dynamic flow of information allows TCs to generate detailed, real-time program updates which are daily shared with state level officials and enables any necessary corrective actions to be taken.

FIGURE 7: OVERVIEW OF THE INFORMATION FLOW BETWEEN THE EVIDENCE ACTION TEAM AND DISTRICT AND BLOCK LEVEL OFFICIALS



GRAPH 2: TELE-CALLING SUMMARY



Out of the total calls (35,917) 80.12% were successful and around 20% were unsuccessful. The low rate of successful calls and the quality of existing contact database is a challenge towards seeking telephonic updates from schools and *anganwadis.*

DRUG PROCUREMENT, STORAGE & TRANSPORTATION

Drug Procurement: The state procured 5, 53, 05,201 albendazole tablets based on census population targets through state level procurement agency i.e. Bihar Medical Service and Infrastructure Corporation Limited (BMICL) for 36 districts by February 10, 2018 in line with the pre-determined target. District and block wise drug bundling and distribution plans were developed by Evidence Action to streamline integrated distribution of NDD kits at block level trainings. Integrated distribution is a cost effective approach wherein IEC materials, drugs[22] and reporting forms are distributed to functionaries at the block level trainings. The NDD kits were distributed to health functionaries at the district-level for onward distribution to BEPC and ICDS functionaries at the block level trainings.

FIGURE 8 OVERVIEW OF DRUG TRANSPORTATION AND DISTRIBUTION

[22] Albendazole 400mg tablets

Estimation of Albendazole tablets (400mg) for one deworming round:

(1 x number of children in the age group 1-19 enrolled/registered in government and government aided schools and *anganwadi* centres) + (1 x number of children in the age group 1-19 years unregistered and out-of-school children in *anganwadi* centres) + (1 x number of children in the age group 6-19 years enrolled in private schools) + 10% of total requirement as buffer (for wastage and spoilage)

Logistic and Supply Chain Management (Drugs and other supplies): Ensuring sufficient availability of required amount of drugs and supplies is critical to the success of the NDD. In this regard logistics were as followed:

- Sufficient stock of Albendazole tablets (based on the school and *anganwadi* enrolment/registration data) with 10% buffer stock for wastage and spoilage.
- The District Civil Surgeon/ Chief Medical Health Officer ensured transportation of drugs from District to Block (Health Nodal Officer). At the Block level MO-PHC ensured transfer of drug to the BEO and the Child Development Project Officer (CDPO). BEO and CDPO further ensured availability of drugs for distribution at the Block level training and project level monthly meeting respectively.
- For schools, final distribution of drugs and NDD kit IEC material + reporting formats and other relevant materials) were made to school principal/ teachers at the time of training at Block level.
- For *anganwadi* centers, subsequent distribution of drugs and NDD kit were made to LS during their monthly meetings. LS in turn did the final distribution of drugs and NDD kit to AWWs in their monthly meeting at sector level.
- Sufficient number of glasses and clean drinking water from the kitchen of the school and *anganwadi*.
- Sufficient stock of reporting forms available for different levels of the cascade.

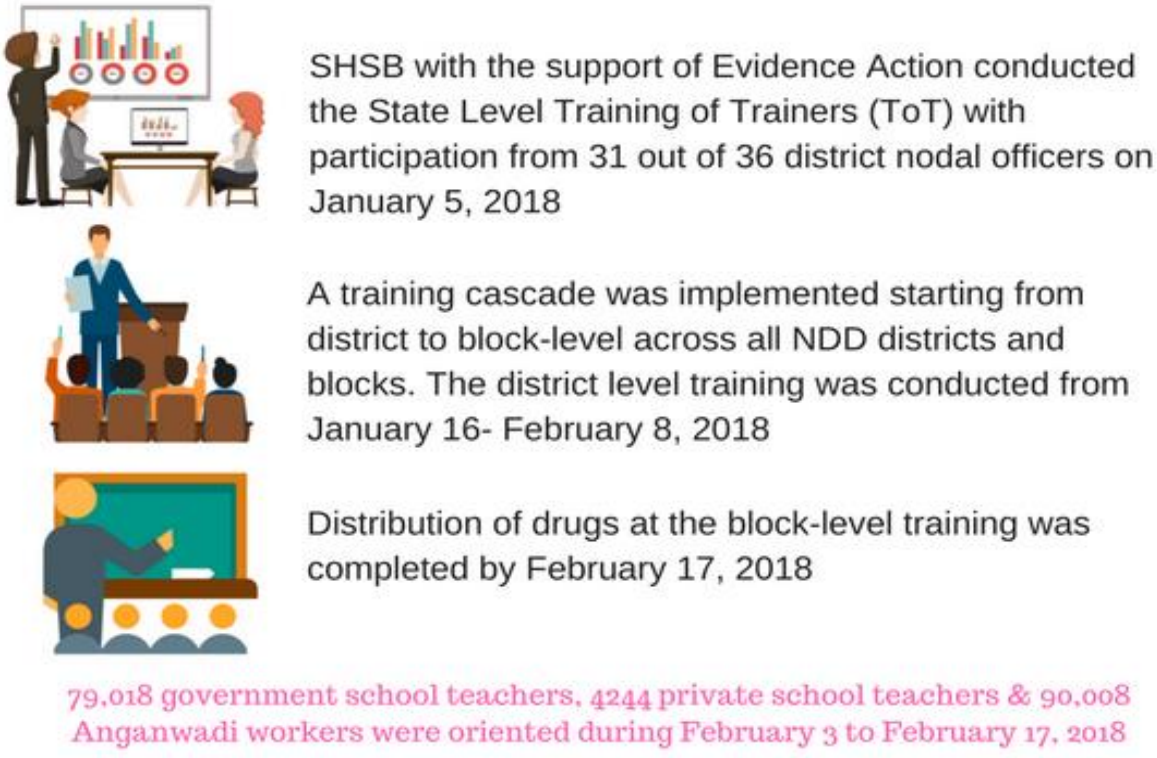
Adverse Event Management: The state adapted Adverse Event Management Protocol as per NDD Operational Guidelines. For both NDD and mop-up day, the state set up an adverse event management system

engaging Rashtriya Bal Swasthya Karyakram teams, to effectively manage any adverse events in the field. 102 (ambulance service), block-level emergency response teams were put on alert to facilitate appropriate emergency response action. Additionally, functionaries were trained for adverse event management. To emphasize the aspects of safe and supervised drug administration along with timely response to serious case, text messages to all frontline functionaries of Heath, Education & *anganwadis* were sent.

TRAINING & DISTRIBUTION CASCADE

Training Resources: The SHSB ordered printing of training resources at district levels. 91,893 handouts for teachers, 98,047 handouts for *anganwadi* workers, 98,520 leaflets for ASHAs were printed in districts. Evidence Action supported in drafting the training and IEC material bundling plan as per block requirements, enabling materials to be efficiently transported to all districts before trainings commenced.

FIGURE 9: NDD FEBRUARY 2018 TRAINING CASCADE



NDD Resource Kit Components:

1. *Anganwadi*/school Handout: A 2-pager, tri-folded, double-sided training document which gives teachers and *anganwadi* workers information on how to administer the deworming tablet to children as per NDD

Guidelines. The handout, reporting form, and Frequently Asked Questions (FAQs) are included in the same document to make sure all three essential documents are received together.

   a. Target audience: 1) Handout for teachers 2) Handout for *anganwadi* workers.
   b. Distribution/use: To be distributed to participants during the training and to be used by teachers and *anganwadi* workers to reinforce training messages before NDD

2. Flipcharts: A wall-calendar style flipchart with big, bold pictures, is an effective tool to train a group of teachers or *anganwadi* workers, especially where a projector might not be available to show the training presentation.
   a. Target audience: 1) Teacher flipchart for teachers 2) *Anganwadi* flipchart for *anganwadi* workers
   b. Distribution/use: These flipcharts will be used by trainers to training teachers and *anganwadi* workers
3. ASHA Leaflet: A one-pager leaflet informing ASHAs about the basic information on NDD and highlighting her key role in community mobilization.
   a. Target audience: ASHAs
   b. Distribution/use: To be distributed at the ASHA trainings/orientations. Other than the ASHA handouts, the ASHAs must be given the ASHA reporting form, at the time of training.
4. Community Handbill:
   a. 2 variations:
      i. Crisp handbill giving critical information on the program: NDD date and key messages on deworming to mobilize community on the deworming days
      ii. Detailed handbill containing additional details like symptoms of worm infestations, long term benefits of deworming etc.
   b. Target Audience: Community members
   c. Distribution/use: Through schools/*anganwadis*
5. Mini Checklist: This document is a concise version of the state specific operational guidelines for distribution to districts and allows for easy reference to info on NDD.
   a. Target audience: District-level officials of all stakeholder departments

FIGURE 10: NDD RESOURCE KIT COMPONENTS (SCREENSHOTS)

ASHA Handout

Community Handbill

Mini Checklist

Anganwadi training handout

Flipchart

Training Reinforcement through Bulk SMS: Evidence Action supported the reinforcement of key messages by delivering bulk SMS to key government officials and frontline functionaries in key stakeholder departments of Health, Education and WCD Department in addition to teachers/principals and AWWs. The SMS were sent to reinforce key messages related to drug administration, training and reporting timelines.

TABLE 7: DETAILS ON TRAINING REINFORCEMENT MESSAGES SENT

Departments	SMS sent	Key messages
SMS sent to Education Department	11,43,567 (DEO, BEO and Teachers of Government & Private schools)	• डिवर्मिंग दवा कम हो तो तुरंत स्वास्थ्यध् शिक्षा अधिकारी से संपर्क करें • डिवर्मिंग दवा खाली पेट भी दी जा सकती है बच्चे दवा चबाकर ही खायें • 7 मार्च मॉप अप दिवस को डिवर्मिंग रिपोर्ट MDM कॉल पर भी अवश्य दर्ज करें • मॉप अप दिवस 07 March को बच्चों की अधिकतम उपस्थिति सुनिश्चित करें • बच्चों को डिवर्मिंग दवा अपने सामने ही खिलाएं, घर न ले जाने दे • स्कूल डिवर्मिंग फॉर्म ANM को 12 March तक जमा करे एक कॉपी अपने पास रखे
SMS sent to Health Department	8,31,831 (MOIC, DIO, ASHA and ANM)	• 19 February को बच्चो को दवा खिलवाने के बाद अपनी लिस्ट में जानकारी दर्ज करे • स्कूल न जाने वाले बच्चो को डिवर्मिंग दवा 19 February को आंगनवाडी से खिलवाय • डिवर्मिंग दवा सुरक्षित है।अपातकालीन स्थिति मे आंगनवाडी पे सहयोग दे • डिवर्मिंग दवा खाली पेट भी दी जा सकती है बच्चे दवा चबाकर ही खायें • मॉपअप डे 7 March छूटे बच्चो को डिवर्मिंग दवा स्कूल, आंगनवाडी पे खिलवाए • डिवर्मिंग रिपोर्ट 12 March तक ANM को जमा करने में आंगनवाडी को सहयोग दे • ANM स्कूल, आंगनवाडी और आशा डिवर्मिंग रिपोर्ट 19 March तक ब्लाक पर जमा करे • सभी स्कूल, आंगनवाडी डिवर्मिंग, मॉनिटरिंग रिपोर्ट 3 April तक जिले पे जमा करे

SMS sent to ICDS	103788 (LS & AWW)	• डिवर्मिंग डे से पहले ।छडएचभ्ब् नजदीकी स्वस्थ्य केंद्र के संपर्क नंबर रखे • 19 February को दवा के साथ रजिस्टर में बच्चो के नाम पे 1 सही √ का निशान लगाए • बच्चे डिवर्मिंग दवा चबाकर ही ले, छोटे बच्चो को दवा चूरा करके ही खिलाए • डिवर्मिंग दवा खाली पेट भी दी जा सकती है बच्चे दवा चबाकर ही खायें • 07 March रजिस्टर, लिस्ट मे बच्चो के नाम पे दो सही √√ का निशान लगाए • रिपोर्टिंग फॉर्म में सही संख्या भरे व फॉर्म पूरा भर के ही जमा करे

Training Monitoring: This critical activity helps in understanding the quality of NDD trainings conducted and provides an opportunity to share real time feedback through SMS reminders to address knowledge gaps amongst teachers, *anganwadi* workers and ASHAs. A pre-post test was conducted by Evidence Action at the state training to assess gaps and for improvements. Sampled district level trainings were also monitored by Evidence Action team.

PUBLIC AWARENESS & COMMUNITY MOBILIZATION

The state customized the NDD IEC Resource kit. Further, all 36 districts printed the IEC materials such as posters, banners, and community handbills, which were later disseminated to all blocks for onward distribution at training of teachers and *anganwadi* workers.

The state also disseminated specialized mix-media private school package via email to 1,996[23] private schools in the districts in order to create awareness on the benefits of a deworming initiative and garner their support for NDD. This package consisted of WhatsApp, *prabhat pheri* banners, posters, children's activity book and short films for teachers and parents to support school-level awareness generation efforts.

State also used social network platform like Facebook for the first time, as a platform to build awareness for the NDD campaign. Additionally, WhatsApp groups were created for the district level nodal officers (District Immunization Officers) which included the Nodal Officer, Assistant Director and Evidence Action Team members. Regular updates on letters and guidelines issued, program progress and corrective actions were suggested and discussed. Similar platforms were also created at the district level to ensure that the NDD related communications are send to the blocks and below at earliest. Ministry of Health and Family Welfare, Government of India also advertised NDD advertisements on local TV channels and radio stations to give the mass media campaign an additional boost.

FIGURE 11: OVERVIEW OF PUBLIC AWARENESS & COMMUNITY MOBILIZATION ACTIVITIES

[23] Email ids gathered through telephonic calls done to these schools

Printing at district level	Printing was done in the second week of January. The NDD 2018 resource kit contains all the training & IEC prototypes along with open editable files which can be easily adapted as per state requirement. These files were then sent to each district for customization and printing
Mass Media campaign	State Governments used a mix of media, including mass media and mid-media with a combination of print (newspaper, poster, and banners), audio (radio, miking, and announcements), video (TV spot and scrolls, cable TV)
Social Media campaign	Coordination was done with the IPRD, Govt of Bihar to utilize their Facebook profile for NDD awareness. The first facebook post for NDD was done on Feb 14, which continued till mop-up day on March 7, 2018
State launch	State Launch was lead by of Hon'ble Minister of Health, Govt of Bihar on Feb 17 at Balika Madhya Uchya Vidhlaya. ED-SHS, AED-SHS, representatives of Department of Health, Education, ICDS, WHO, LF program, attended.
District launch	District launch was conducted in all the NDD implementing districts under the chairmanship of respective District Magistrates and Civil Surgeons on Feb 17, 2018.

FIGURE 12: SOCIAL MEDIA AND MASS MEDIA ACTIVITY

PLATFORM	TIMELINE	FREQUENCY
Facebook	Second week of February- third week of March	7 posts, 202 likes & 123 shares
Micking (Public Service Announcement)	February 17 & March 6, 2018	Done in two districts (Munger & Vaishali)
Rally	February 16 & March 6, 2018	Done in districts of Buxar, Vaishali Sheohar and Sitamadhi.
Radio jingle	March 5 & 7,2018.	4 times per day on Radio Mirchi and Prasar Bharti
TV Spot	March 5 & 7,2018.	1 spot per day on Doordarshan
Wall writings	February 10-17, 2018	55 writings in 11 districts*
Prabhat Pheris	February 16 & March 6, 2018	58 in 16 districts**
Newspaper advertisements	February 18-19 & March 5 & 7, 2018	in Dainik Jagran & Dainik Hindustan***

*wall writings were conducted in districts of Munger, Arwal, Kaimur, Nawada, Nalanda, Gopalgunj, Saran, Araria, Katihar, Kishanganj and Bhagalpur.
** Prabhat Pheris were conducted in districts of Darbhanga, Lakhisarai, Madhubani, Munger, Gaya, Arwal, Buxar, Bhijpur, Nawada, Nalanda, Vaishali, Muzaffarpur, Gopalgunj, Sheohar, Sitamadhi and Saran.
*** Apart from advertisements news paper coverage of NDD program was done in all the 36 NDD implementing districts. Prominent newspapers like Hindustan, Prabhat Khabar, Dainik Jagran, Urdu newspaper, Daunik Bhaskar covered components like DCCM, District and block trainings, program implementation and other community mobilization activities.

MONITORING AND EVALUATION

1. **Process Monitoring visits by Evidence Action:** On National Deworming Day (NDD) and mop-up day, monitoring visits were conducted by Evidence Action team, across 36 districts in the state. The monitors observed and collected the data on selected indicators of the program like- drug, IEC materials, training, reporting etc., to track several sub-activities of the program at field level. In order to monitor grassroots level activities during NDD and Mop-up Day, a monitoring checklist (***Annexure A)*** as recommended by Government of India was used to highlight key findings (experiences from *anganwadi* workers and headmaster/teachers) and learnings.

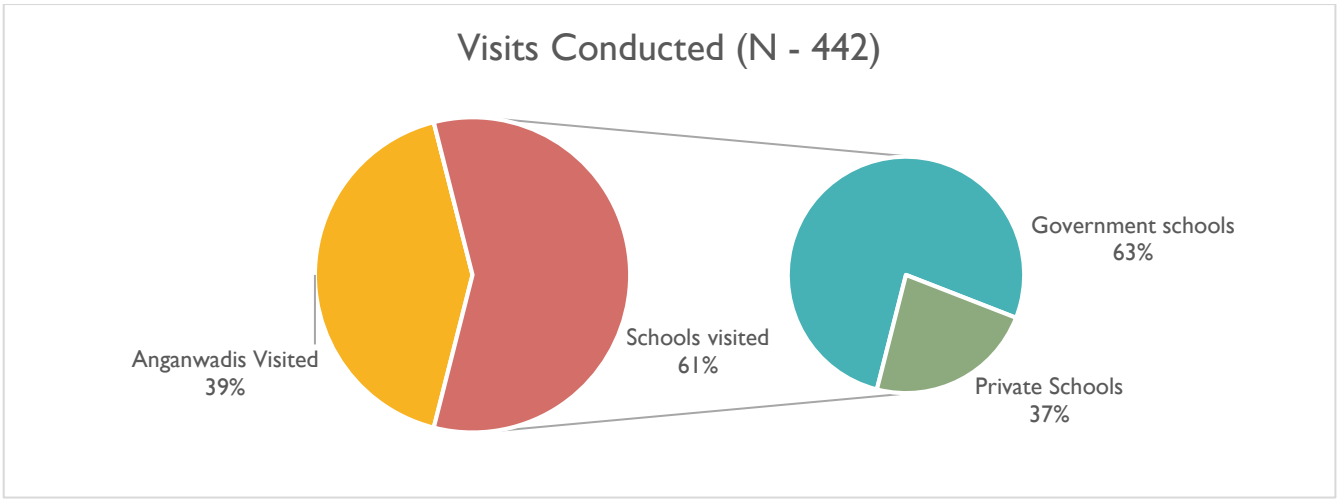
Purpose of Monitoring Visits - Monitoring plays a vital role in understanding the extent to which schools, *anganwadis*, and the health system are prepared to implement the National Deworming Day (NDD) followed by Mop-up day in the state. The purpose of the visits was to observe the quality of implementation and recommend areas of improvement for future NDD rounds.

Information on key indicators captured during monitoring visits include -

a) Provision of deworming in schools and *anganwadis*
b) Training participation and integrated distribution
c) Knowledge of adverse events and its management
d) Awareness generation through type of community mobilization activities

The data collected using monitoring checklist from all visits were entered in the standardized data entry template designed into Excel. Necessary data cleaning and consistency checks were done to ensure good quality data. In total, 432 monitoring visits were conducted by Evidence Action team. Out of the total visits School-256 (197 government schools & 59 private schools) and AWC-186 were conducted. Detailed findings of monitoring visits as ***annexure B***

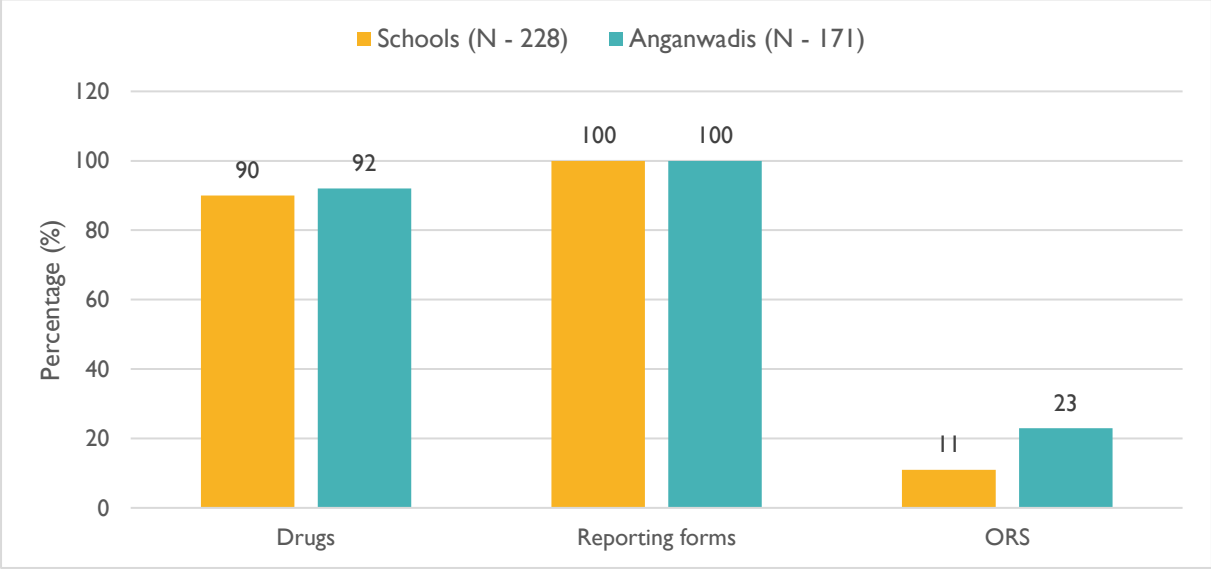
GRAPH 3: DISTRIBUTION OF SITES VISITED IN PROCESS MONITORING VISITS



Key Findings of the Monitoring Visits by Evidence Action during National Deworming Day, February 2018:

- Availability of provisions for deworming: During the visits, it was observed that 89% schools and 92% *anganwadis* had sufficient quantities of albendazole tablets. While 92% of teachers administered the tablets to children in schools, 91% of tablets were administered at *anganwadis* by the *anganwadi* workers. However, in remaining places, albendazole tablets were administered by ASHAs.

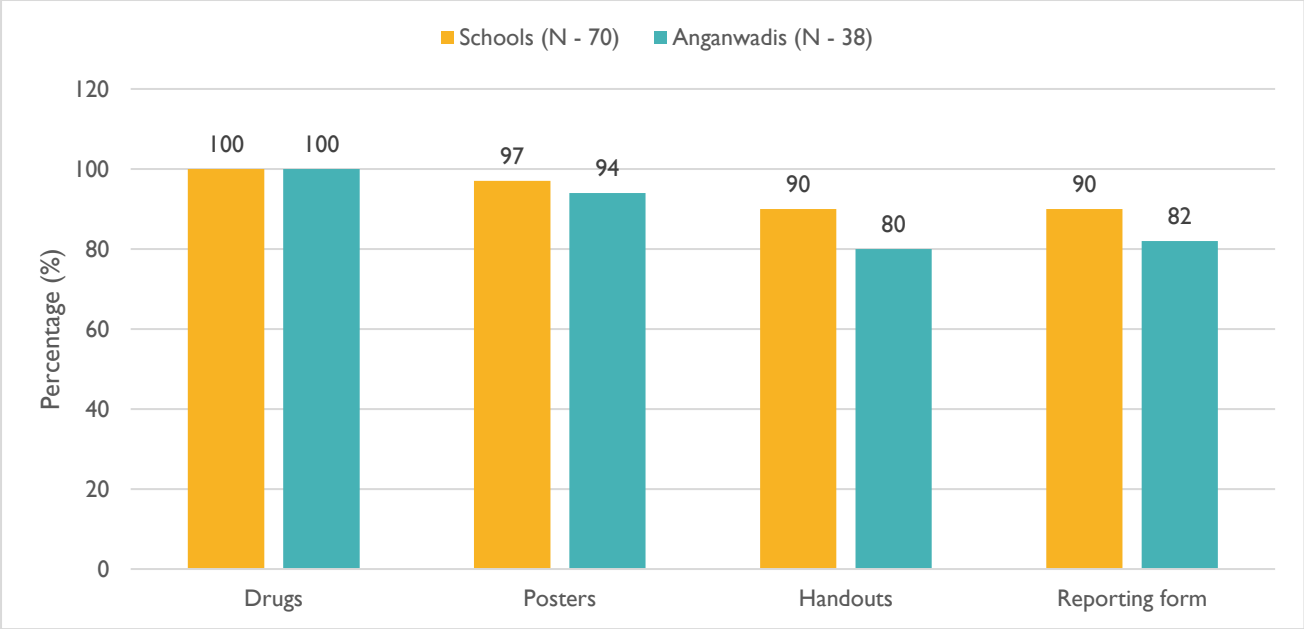
GRAPH 4: AVAILABILITY OF PROVISIONS FOR DEWORMING AT SCHOOLS AND *ANGANWADIS*



As can be seen from graph 6, most of the schools and *anganwadis* had drugs and reporting forms available, whereas Oral Rehydration Syrups (ORS) was not available in 89% of schools and 77% *anganwadis* visited. This could be due to the reason that no provision for ORS had been set aside by the state for the NDD round in particular.

- Training and Integrated Distribution of drugs, IEC material: Training and integrated distribution is one of the important indicators to understand program implementation. During visits, it is observed that 98% of teachers and 95% of AWWs had attended training.

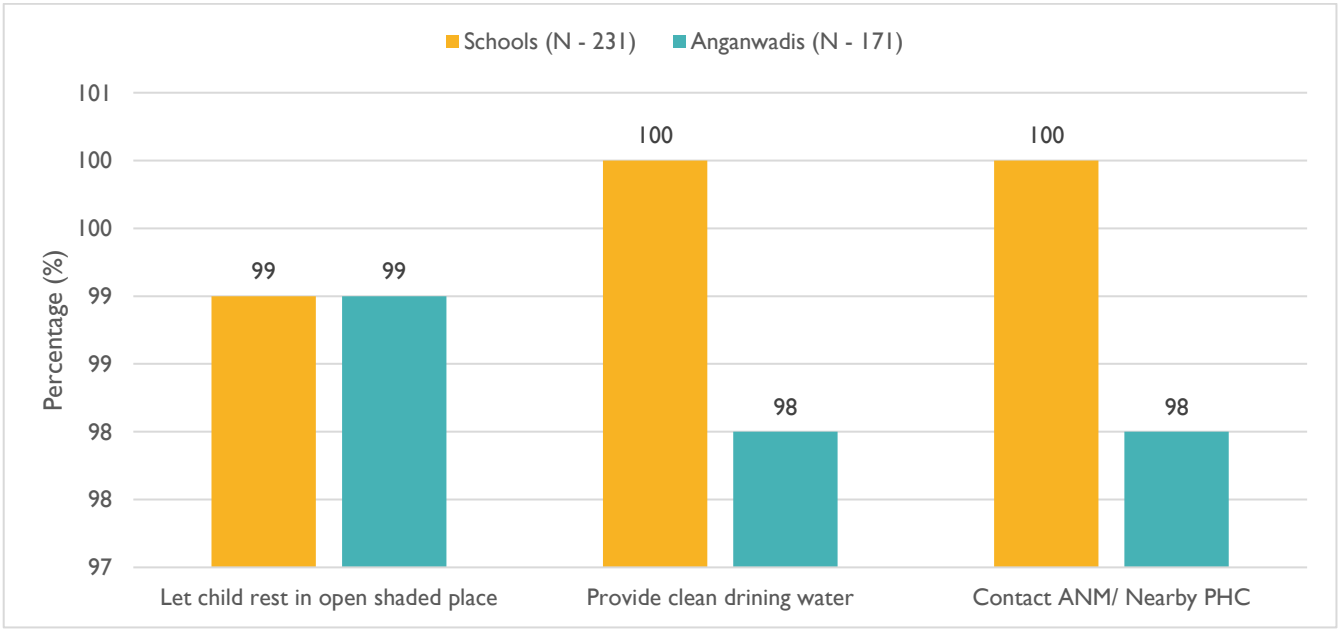
GRAPH 5: INTEGRATED DISTRIBUTION IN TRAININGS



The Graph 7 above shows integrated distribution in trainings, 100% schools and *anganwadis* received tablets, 97% schools and 94% *anganwadis* received posters, 90% schools and 80% *anganwadis* received handouts.

- <u>Adverse Events Knowledge and Management:</u> Questions about management in case of adverse events were asked in monitoring visits. These were asked for knowledge assessment as the same is a part of trainings. It was observed that 100% of the teachers and 99% of the *anganwadis* were aware of the possibility of adverse events (like mild abdominal pain, nausea/vomiting, diarrhoea, fatigue) from deworming. Adverse events were not witnessed in the schools and *anganwadis* during the visits by the monitors.

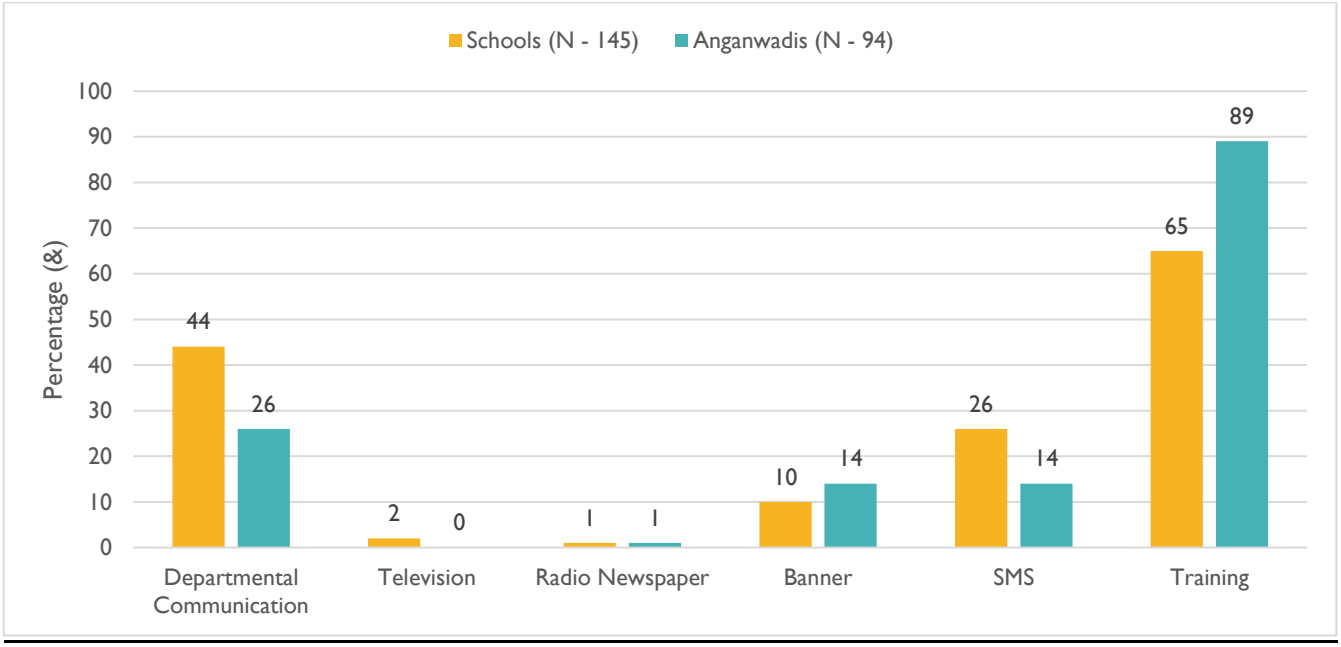
GRAPH 6: RESPONSE OF TEACHERS/*ANGANWADIS* IN CASE OF ADVERSE EVENTS



In Graph 8 shows the appropriate response in case of adverse event according to the teacher/ AWW

- Community awareness and IEC material: It was observed that 98% of the schools and 95% of the *anganwadis* had displayed posters. The teachers and *anganwadis* were enquired regarding the source of information received for the recent round of NDD. The Graph 9 below exhibits their responses received from teachers and *anganwadi* workers. As can be seen, training followed by departmental level communications were the most important means of information reaching front line workers including teachers and *anganwadis*, hence it is important that instructions are specific and given timely in trainings.

GRAPH 7: SOURCE OF INFORMATION ABOUT RECENT ROUND OF DEWORMING



2. **Tele-calling and Follow-up Actions:** Program preparedness was assessed prior to NDD through tele-callers who track the status of training, delivery and availability of drugs and IEC materials at the district, block, school and *anganwadi* levels. The tele-callers used pre-designed and standardized tracking sheets to capture the gaps in field implementation, as gathered from the telephonic follow-ups. Automated web-based application for tele calling was done with the technology partner with an objective to increase the efficiency of the tele-calling process. The compiled tele-calling sheets were shared with the state government on a daily basis to enable them to take rapid corrective actions as necessary, such as issuing departmental directives, reiterating at a video conference to coordinate with officials, or sending reinforcement messages through SMS. Evidence Action's district and regional coordinators made field visits to facilitate some of these corrective actions at the district and block level.

3. **Monitoring by Independent Agency:**

   a. Process monitoring: Evidence Action with approvals from the state government assesses the processes and performance of the program by hiring an independent survey agency, which provides trained monitors to observe implementation on NDD and mop-up day. The findings are shared real-time with state government officials on the day of visits to enable immediate corrective actions. Independent surveyors and supervisors for data quality assurance, visits sampled schools and *anganwadis* to collect program related information. During process monitoring, headmasters/teachers and *anganwadi* workers are interviewed from sampled sites and surveyors observed ongoing deworming activities in subsets of the sampled schools and *anganwadis*.

   b. Coverage Validation: It is an ex-post check of the accuracy of the reporting data and coverage estimates. Data collection happens during March through interviews of school teachers/headmasters, *anganwadis* and a sample of three students (in three randomly selected classes) in each of these schools, including checking registers and reporting forms of the sampled schools. This activity provides a framework to validate coverage reported by schools and *anganwadis* and to estimate the level of accuracy in the data by comparing the recounted numbers (based on the documentation available in schools and *anganwadis*) with numbers in reporting forms.

4. **Coverage Reporting:** NDD guidelines suggests states/UTs to use NDD mobile/ web application for coverage reporting. The state was provided with 523 user IDs and passwords (all blocks and districts) for NDD reporting in February, 2018 round from Government of India. The NDD coverage will be reported through the NDD App[24].

TABLE 8: COMPARISON OF TARGETS AND COVERAGE OF NDD FEBRUARY 2018[25]

Indicators		Census[26] target	Target as per Coverage report	Coverage[27]
Number of schools reporting coverage	Govt. Schools	83,262	74,414	74,016
	Private Schools		11,391	10,819
Number of *anganwadis* reporting coverage		90,008	86,279	85,271
	Govt. schools	2,60,48,390	2,51,40,572	2,25,02,291

[24] NDD app was developed in 2015 for reporting of coverage from blocks, districts and states in India. The data is entered at block level, approved by districts and is then sent to the state level. The app shows aggregate reports of all states with data entry and data approval status.

[25] Provisional coverage as reported in NDD app on May 16. 2018

[26] Census 2001 population extrapolated for 2018-19

[27] This is provisional coverage as on May 16, 2018

Number of enrolled children (classes 1-12) who were administered albendazole	Private Schools	94,98,007	72,99,680	58,29,401
Number of registered children dewormed (1-5 years) at *anganwadis*		79,56,839	96,52,032	85,32,502
Number of unregistered children dewormed (1-5 years) at *anganwadis*		66,91,870	55,99,325	46,85,784
Number of out-of-school children (6-19 years) dewormed		51,10,095	51,89,191	40,47,791
Total number of children dewormed (1-19 years)		**5,53,05,201**	**5,28,80,800**	**4,55,97,769**

RECOMENDATIONS

It is critical to conduct consistent high coverage program in all districts of the state in each round to bring down worm prevalence and slow reinfection rates. Therefore, continued and consistent efforts need to be made towards high quality program twice a year as mandated. Below recommendations are subject to findings of NDD field monitoring visit:

- For a high quality program, setting targets as per census and reporting coverage against the targets set prior to the NDD round is important.
- Training of schools and *anganwadis* was much delayed, which hampers distribution of materials in the NDD kit and their subsequent availability at school and *anganwadi* centers on NDD. To improve the gap observed, in upcoming rounds block level trainings must be planned and communicated in advance, and tracked and monitored by the respective departments at the district and block levels.
- Procurement and distribution of drugs, printing of IEC and training materials are critical components of the program for high quality and coverage and therefore implementation as per agreed timelines is critical for program success
- Role of ASHA in mobilizing unregistered and out-of-school children should be discussed in detail during trainings. Engagement with state ASHA cell at the planning stages of the program is crucial. Field level activities to be initiated at least two months prior to NDD providing sufficient time for community mobilization activities.
- A state level private school meeting can be planned for upcoming NDD round to sensitize private schools on NDD along with participation of their representatives in the State Steering Committee Meeting.
- For upcoming NDD rounds, the joint directive should be issued as per state operational plan. Joint directive and Program Directives must be issued at least 8 weeks prior to NDD round, for effective program coordination, planning and execution.

LIMITATIONS

As the study involved making observations and analysis of only one NDD round for a short period of only three months hence an in depth analysis of the overall situation of the program and factors affecting it couldn't be studied in depth. A more and better deliberated evaluation, as conducted through Evidence Action's independent monitoring will provide insights of the program in a better way.

CONCLUSION AND WAY FORWARD

Bihar is an old and largest school-based program, learnings from the state can help other state health programs. A high-quality program, under aegis of NDD, will help pave way towards reduced prevalence and intensity of STH in the state. The short-term route of deworming tablet administration, along with the long-term behavioural route of improved sanitation, hygiene, health education will aid towards meeting the goals set under NDD and WHO. NDD was included in the national government's *Niti Ayog* Nutrition Strategy[28] released in September 2017, reflecting policy and political recognition of deworming as a key initiative to address malnutrition.

Important clause on data sharing:

There was no specific data collected for this dissertation. The data / information included here is part of the larger technical assistance efforts of Evidence Action for Govt of Bihar. All rights in and to any information / data in writing or other readable form above, belongs to Evidence Action represented through it's in country technical assistance partner Pramanit Karya India Private Limited (PKIPL). It is part of MoU signed with the state government and should be used only for the purpose of this dissertation and is not be disseminated without approvals from PKIPL.

[28] National Nutrition Strategy launched in September 2017 lays down a roadmap for effective action, among both implementers and practitioners, in achieving country's nutrition objectives.

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