

Evidence  
**Action**

Deworm the  
World Initiative

**RAJASTHAN ANGANWADI AND SCHOOL-BASED MASS DEWORMING PROGRAM**



**DEWORM THE WORLD INITIATIVE**

**Operated by Action Foundation for  
Social Services**

**JUNE 2014**

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## GLOSSARY

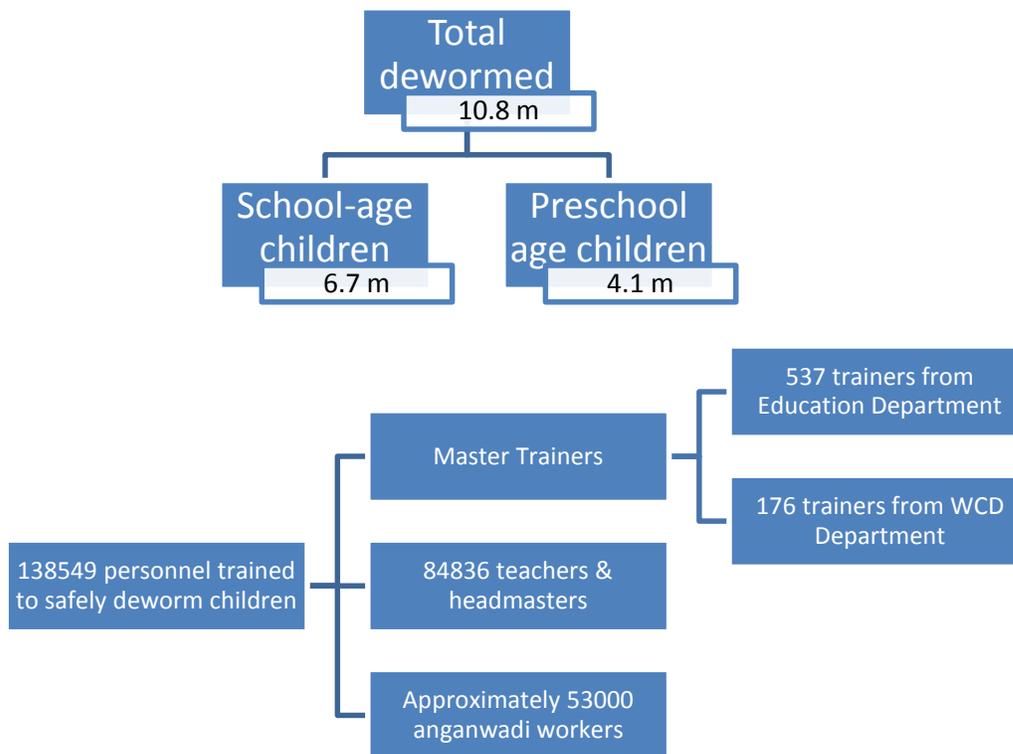
ASHA	Accredited Social Health Activist
AWW	Anganwadi Worker
BEO	Block Education Officer
BMHO	Block Medical Health Officer
CDPO	Child Development Project Officer
CHC	Community Health Center
CMHO	Chief Medical Health Officer
DC	District Coordinator
DEO	District Education Officer
DMHFW	Department of Medical, Health and Family Welfare
DtWI	Deworm the World Initiative
DWCD	Department of Women and Child Development
IEC	Information, Education, and Communication
M&E	Monitoring and Evaluation
MoU	Memorandum of Understanding
NHM	National Health Mission
PHC	Primary Health Center
PIP	Program Implementation Plan
RCEE	Rajasthan Council of Elementary Education
RMSC	Rajasthan Medical Services Corporation
Smt.	Shrimati (an official title for a lady in Hindi)
SSA	Sarva Shiksha Abhiyan
STH	Soil Transmitted Helminthes
WHO	World Health Organization

## SUMMARY

6.7 million school-age and 4.1 million preschool-age children were dewormed as a part of Rajasthan's second round of anganwadi and school-based deworming program. Held on October 15, 2013, followed by mop-up day on the 18<sup>th</sup>, deworming was made possible through a vast statewide network of 81,000 schools and 59,000 anganwadis.<sup>1</sup> The mass deworming program in Rajasthan is a collaborative effort between the Department of Medical Health and Family Welfare, the Department of Education through its two bodies, the Rajasthan Council for Elementary Education and Department of Secondary Education, the Department of Women and Child Development, Deworm the World Initiative, and UNICEF. The Government of Rajasthan is committed to continue the anganwadi and school-based mass deworming program and is keen to institutionalize deworming as a key and regular component of school health interventions in the state in the coming years.

## Key Achievements

**Figure 1: Outreach of the deworming program round 2**



<sup>1</sup>Government-run day care centers for preschool-age children

## BACKGROUND

### The Rationale for School-Based Deworming

In India, approximately 241 million children<sup>2</sup> are at risk of infection with intestinal worms, which can cause malnutrition and anemia and stunt children's physical and cognitive development. Rigorous studies have shown that dewormed children have increased school attendance, better educational outcomes, and consequently earn higher wages as adults than similarly vulnerable children who have not been regularly dewormed.

There is a simple solution to the problem of parasitic worm infections: by providing a single dose of safe, effective drugs to each child once or twice per year, worm infections can be treated and prevented. Research has shown that the existing and extensive infrastructure of schools provides an efficient and effective way to reach the highest number of children, since teachers, with support from the local health system, can administer this treatment with minimal training.

### Need in Rajasthan

In Rajasthan, poor sanitation and hygiene behaviors are prevalent throughout the population. A 2012 study conducted by Panchayati Raj Department, Government of Rajasthan with support from UNICEF, looked at household water and sanitation facilities in seven districts of Rajasthan. This study found that only 27.3% of households had a toilet in the house, and that the practice of open defecation was commonplace, ranging from 54.3% in Bikaner to 88.4% in Dhaulpur.<sup>3</sup>

Due to the correlation between poor sanitation and hygiene practices, and the high prevalence of intestinal worms, known as soil-transmitted helminths (STH)<sup>4</sup>, the Government of Rajasthan is committed to implementing a school and anganwadi-based deworming program in Rajasthan.

DtWI is committed to supporting governments in evidence-based decision making for program interventions. To establish the worm burden in the state and recommend a treatment strategy in line with WHO guidance, DtWI carried out a prevalence survey between August - September 2013 to assess the prevalence of STH in the state's school-age children. Based on the sampling design, stool samples were collected from children enrolled in 144 schools across 36 blocks of 12 districts of Rajasthan, which were analyzed to determine STH prevalence. The districts, blocks, schools, and children selected for participation in the survey were randomly selected using the multi-stage probability proportional to size sampling strategy method to ensure representativeness of the results for the state as a whole. The study was done in collaboration with the National Institute for Cholera and Enteric Diseases (NICED), an institute of Indian Council of Medical Research (ICMR) and WHO collaborating center, who performed the laboratory analysis. The University of California, Berkeley provided guidance for the sampling design and analysis. The study was carried out by NEERMAN, an organization specializing in field-based data collection and research, in collaboration with DtWI researchers.

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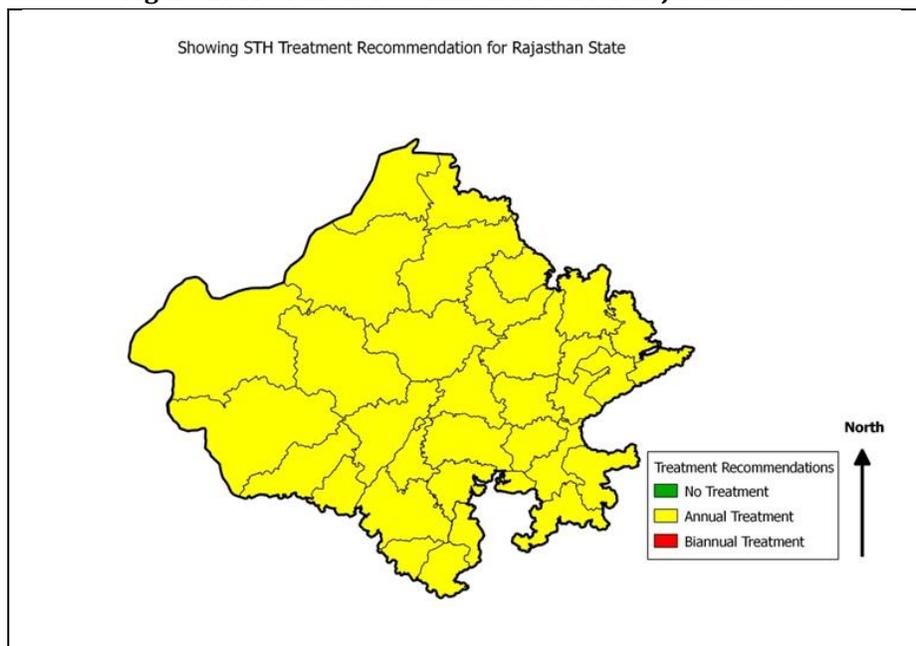
<sup>2</sup> [http://www.who.int/neglected\\_diseases/preventive\\_chemotherapy/sth/en/](http://www.who.int/neglected_diseases/preventive_chemotherapy/sth/en/)

<sup>3</sup> "WASH Validation in Rajasthan." Presentation by Mott MacDonald, 1/29/13.

<sup>4</sup> Parasitic worms such as roundworms (*A. lumbricoides* or *Ascaris*), whipworms (*T. trichiura* or *Trichuris*) and hookworms

Average prevalence of any STH in the state was found to be 21.1%. Average statewide prevalence of Ascaris, Hookworm, and Trichuris was found to be 20.2%, 1%, and 0.2% respectively. On the basis of WHO guidelines<sup>5</sup>, which recommend annual mass deworming in areas with STH prevalence between 20% and 50%, DtWI recommended annual deworming throughout the state to the Government of Rajasthan.

**Figure 2: Treatment recommendation for Rajasthan state**



## Program Background

A high quality statewide school-based deworming program could dramatically reduce the harm caused by STH on millions of children in Rajasthan in a cost-effective, simple and safe manner. In 2012, the Government of Rajasthan expressed keen interest in implementing a mass deworming program and approached DtWI to provide technical support. The Department of Education (represented by the Rajasthan Council for Elementary Education and Department of Secondary Education), DMHFW and DWCD, along with UNICEF and DtWI, came together in June 2012 under a Memorandum of Understanding to spearhead the preparedness and execution of such a program for the state's school-age and preschool-age children.

In 2012, all partners chose 15<sup>th</sup> October, which is also promoted as “global hand washing day”, to launch the mass deworming program in Rajasthan. Children enrolled in all government schools till class 12 were targeted to be covered at schools, while anganwadis were responsible for treatment of preschool-age children in the age group of 2-6 years in their operational area.

Support from all stakeholders ensured rapid roll-out for the first round, from the signing of the MoU in June 2012 to program launch just five months later. 10.9 million children – approximately 7 million school-age children and 3.9 million preschool-age children – were dewormed in October

<sup>5</sup> [http://whqlibdoc.who.int/publications/2011/9789241548267\\_eng.pdf?ua=1](http://whqlibdoc.who.int/publications/2011/9789241548267_eng.pdf?ua=1)

2012. Given the success of round 1, all stakeholders proceeded to collaborate in preparations for a second round of deworming in 2013, scheduled again for October 15.

## **Program Resources**

Primary support for round 2 of the program, as in round 1, was provided by the Government of Rajasthan. The largest inputs from the government was towards use of its infrastructure for drug storage, drug re-packaging, training sites and resources for district and block level training, as well as drug administration on deworming and mop-up day. The major in-kind contribution from the government came in the form of human resource support from schools and anganwadis for trainings and drug administration. Approximately 236,000 teachers, 81,000 headmasters, and 59,000<sup>6</sup> anganwadi workers were involved in the task of drug administration. On deworming day and mop-up day, the existing and tiered health infrastructure of the government – 13,227 sub-centers, 2,066 primary health centers, 551 community health centers and helpline numbers – was kept on alert to deal with any adverse events.

The different government departments issued instructions to their district and block level staff through circulars to monitor the deworming program. About 257 Block Education Officers (BEOs), 304 Child Development Project Officers (CDPOs), 257 Block Medical and Health Officers (BMHOs) and 33 district officers are estimated to have visited the program areas on deworming day.

The Department of Education took ownership of the program by planning trainings at 33 district headquarters with DtWI, and provided in-kind support through training venues at each district and block, and financial support to conduct training, such as payment of travel and daily allowances to trainers, arrangement of refreshments for participants and other related expenses. A total of 537 trainers from the education department and 176 trainers from women and child development department were trained at these district level trainings.

The government's commitment for the deworming program was demonstrated when it allocated separate budget for procurement of syrup bottles in the Program Implementation Plan) for 2013 under the National Health Mission. The DMHFW supported the deworming program by procuring deworming syrups (about 7 million syrup vials) for preschool-age children through its agency, Rajasthan Medical Services Corporation.

**In order to ensure that boys and girls of the state remain healthy and attend school regularly to acquire quality education, they should remain free from common infections. The idea behind rolling out programs like hand washing and deworming is to prevent children from getting common infections.**

***Smt. Veenu Gupta, Principal Secretary to Government, School Education, Rajasthan  
Deworming Launch Function, 15 October 2013***

The Michael & Susan Dell Foundation, an international philanthropic organization, funded the technical support activities of DtWI, including the worm prevalence survey between August -

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<sup>6</sup> Number of teachers and headmasters based on Department of Education figures. Numbers of anganwadi workers trained based on the number of anganwadis.

September 2013. UNICEF extended manpower support to DWCD in reviewing training contents, and in revision of reporting forms. The program also benefitted from the WHO-coordinated global drug donation program, which provided 11.2 million albendazole tablets for school-age children from GlaxoSmithKline.

### **Program Governance**

A program coordination committee, chaired by the Principal Secretary, DMHFW, provides overall strategic direction to the program and facilitates coordination among the implementing agencies. The Memorandum of Understanding (MOU) between the partners on June 13, 2012 mentioned the constitution of this committee. Committee members include Commissioner, Rajasthan Council of Elementary Education; Mission Director, National Health Mission; Managing Director, Rajasthan Medical Services Corporation; Director, Secondary Education and Director, DWCD; and technical assistance partners UNICEF and DtWI.

Day-to-day operational issues of the program are managed by a working group comprised of members representing all agencies engaged on the coordination committee. The working group met on an as-needed basis to share updates of the program implementation, review key activities and address any inter-agency coordination issues.

To coordinate among different partners, members of the program coordination committee and members of the working group, the MOU assigned the role of a secretariat to RCEE. In its role as secretariat for the program, RCEE, sought periodic updates from the partner agencies, convened meetings and coordinated the execution of responsibilities delegated to different partners. DtWI facilitated RCEE's role as secretariat by coordinating and following up with different partners and their respective officials. DtWI worked in close coordination with RCEE to help it initiate official communication with other partners for convening meeting and seeking status updates.

### **PROGRAM IMPLEMENTATION**

In round 2, the Rajasthan Council of Elementary Education and DWCD, managed key program elements for schools and anganwadis respectively, including the training cascade, drug distribution, implementation of deworming day and mop-up day activities and coverage reporting. DMHFW was responsible for procurement of drugs (syrups) for anganwadis, and for community sensitization and awareness including the availability of health infrastructure on deworming days. UNICEF provided manpower support to DWCD in activities related to training and consolidation of coverage data.

DtWI provided technical expertise across all program components, and served as the primary coordinating body among implementing agencies. DtWI facilitated drug donations from WHO, provided professional master trainers for training of trainers, developed training materials such as flipcharts, modified training booklet and reporting forms, designed and carried out independent monitoring, and developed adverse event protocols.

Coordination at the district and block level was also facilitated by DtWI-retained district coordinators in each of the 33 districts. District coordinators worked with district and block level officials from the departments of health, education and WCD, and provided support during district and block level trainings, monitored distribution of drugs and training booklets, and followed up for early

compilation of coverage data. District coordinators were hired for 60 days, a longer duration than in round 1, as their value addition in facilitation and timely reporting and feedback were critical to the success of the program. In a few districts, district coordinators facilitated district-level events on deworming day thereby garnering greater support and ownership in the district administration and coverage in the local press, impacting community sensitization efforts.

## **Drug Procurement, Storage, and Distribution**

The WHO continued its support to Rajasthan's mass deworming program by donating 11.2 million albendazole tablets for school-age children. DtWI provided support to the state government in submitting the drug requisition to WHO in March 2013, as well as in shipping, custom clearances and transportation upon arrival in India. Deworming syrups were procured by the health department, through RMSC, based on DWCD' estimate of requirements for preschool-age children in anganwadis. Budgeting for procurement of syrups in the PIP, demonstrates the governments commitment to the deworming program.

The distribution process for deworming tablets was separate from that for syrups since the implementation arms are different. The tablets were requisitioned as per enrollment figures, with some cushion, and not as per the packs of 200 tablets, these had to be repackaged by DtWI in food-grade plastic pouches of 50s and 100s. To instill confidence among the stakeholders that the drugs were of good quality, DtWI arranged for sample testing of the donated drugs by two independent labs<sup>7</sup>. Similarly, Rajasthan Medical Services Corporation sample tested the syrups they procured.

Transportation of tablets to all blocks was done by DtWI in coordination with Rajasthan Council of Elementary Education (RCEE). DtWI hired a vendor to transport these tablets to each block location. At the block-level training, where at least one participant from each school attended the training, the drugs were handed over to the participant. Drug handover documentation was maintained at the blocks both for receipt of drugs and distribution to teachers and headmasters during the training.

The syrup bottles of 10-ml each for the anganwadis were sufficient for one child, and no repackaging was necessary. The suppliers transported the drugs to the respective district drug warehouses as part of their contract. These were then handed over directly or through Block Medical and Health Officers (BMHOs), to the respective Child Development Project Officer (CDPO), who in turn made arrangements to send these to lady supervisors, using their office vehicles. The lady supervisors, who supervise a cluster of anganwadi workers, further distributed the bottles to the anganwadi workers at their scheduled meetings.

District coordinators played a key role in ensuring that drugs in adequate quantities were available with the offices of Block Education Officer (BEO) and Child Development Project Officer (CDPO) for further distribution to schools and anganwadis respectively. Since tablets from WHO are requested months in advance, the requisition is based on the previous year's enrollment figures. District coordinators collated the information on shortfall or surplus of drugs at BEO offices and shared this information with DtWI state team, which further shared this information with the education department, which in turn reallocated surplus drugs between blocks to meet the deficit.

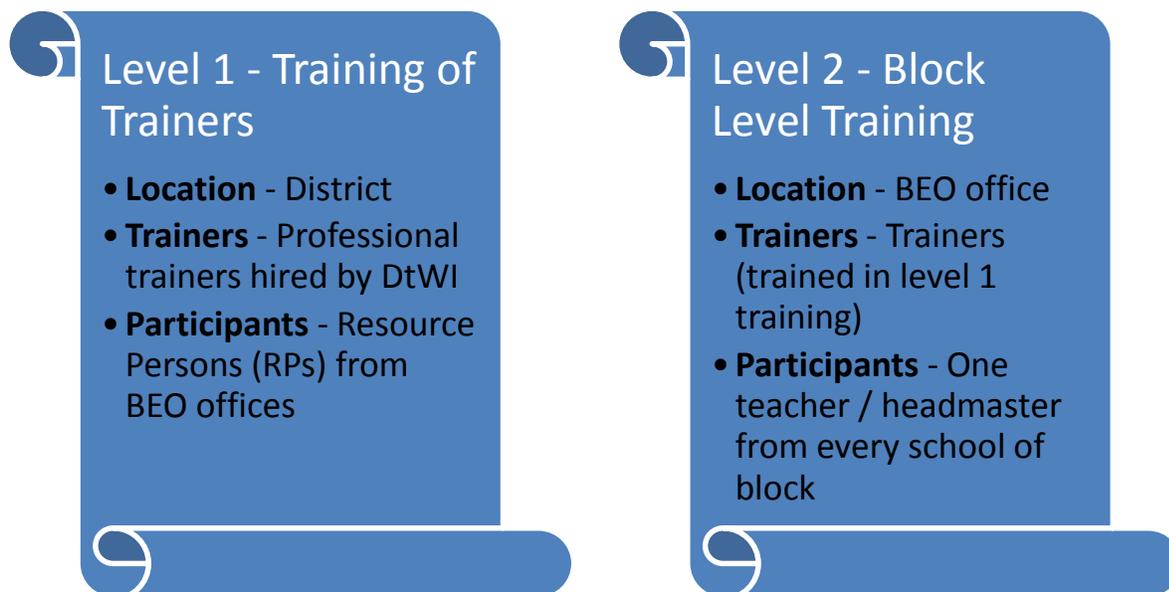
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<sup>7</sup> Sigma Test and Research Centre ([www.sigmatest.org](http://www.sigmatest.org)) and Ashco Niulab Industries Limited ([www.ashconiulab.com](http://www.ashconiulab.com))

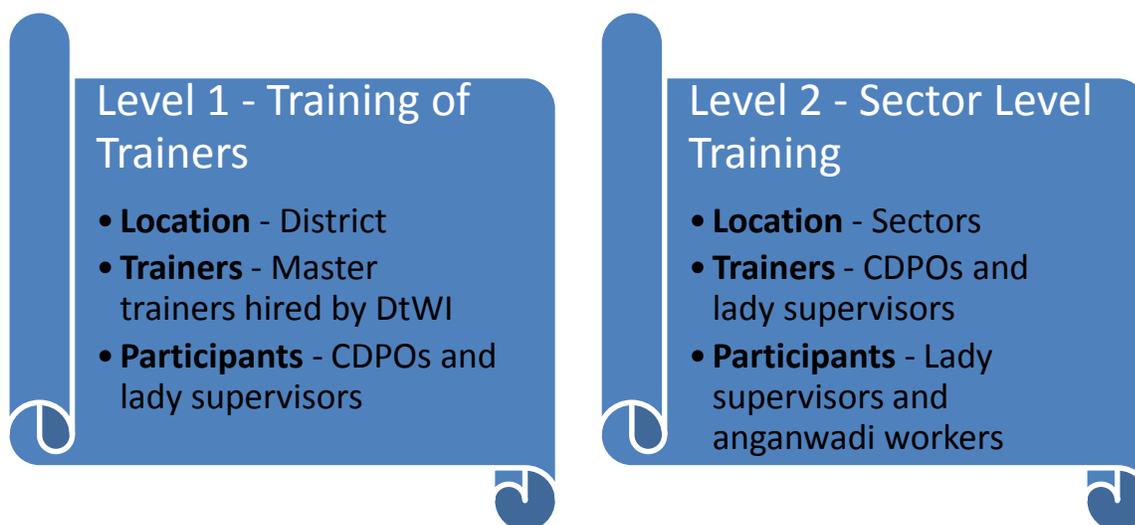
## Training

Imparting training to a large number of participants – one each from around 81,000 schools and 59,000 anganwadis – not only required significant planning for trainings sessions but also needed a large number of trainers. One of the major shifts in program strategy was shifting the training of master trainers from state to district level to effectively utilize resources, both financial and time. To fulfill the requirements, in consultation with Rajasthan Council of Elementary Education (RCEE), a pool of resource persons from each office of Block Education Officer was identified to be trained as master trainers. Child Development Project Officer from each project or a lady supervisor in the absence of these officers was invited as trainers from DWCD for these district level trainings. District coordinators helped offices of District Education Officer (DEO) offices to plan district level training and coordinated with block officials of education department and project level officials of DWCD to confirm participation of their representatives in training. This group was trained at district headquarters in September 2013 by DtWI-hired master trainers who were provided in-depth information about deworming - on worms, impact of worms on health and education outcomes of children, need for deworming, drug administration and reporting requirements. These trainers at the districts were then tasked to conduct trainings in their respective blocks and sectors for teachers and/ or headmasters and lady supervisors. For administration of anganwadis, a district is divided into projects, which are further sub-divided into sectors. A sector is a cluster of nearby anganwadis.

**Figure 3: Training Cascade for Schools**



**Figure 4: Training Cascade for Anganwadis**



In all 537 trainers from the education department and 176 trainers from DWCD were trained at the district level. They were provided with flipcharts, training booklets and reporting forms as training tools to be used for further training at block level.

Block-level trainings were organized at the offices of Block Education Officer (BEO), where at least one teacher or head master attended from each school. At these trainings participants were provided with training booklets, reporting forms and deworming tablets based on the enrollment of their respective schools. The participants were required to share the training content with their colleagues on return, so that all teachers were made aware of the importance of deworming and the process to be followed on deworming day. The block level trainings were monitored by district coordinators, DtWI staff, and officials from Rajasthan Council of Elementary Education (RCEE) and DWCD. District coordinators played a catalytic role in the organization of these trainings and ensuring there were no shortages of materials to be distributed.

The trainers from DWCD organized trainings in respective sectors, where all the lady supervisors and anganwadi workers in the sector were required to attend. Training pamphlets and reporting forms were handed over to the participants at the training. Anganwadi workers were advised to share the information related to deworming with their respective anganwadi sahayika and ASHA sahayoginis who play a key role in community mobilization. Anganwadi sahayika and ASHA sahayoginis engage themselves in community mobilization for various other government programs facilitated through anganwadis like vaccination, nutrition, counselling, family planning etc.

### **Community Awareness**

Community awareness activities are intended to encourage greater coverage through communicating the benefits of deworming to the school-age and preschool-age children, their parents and communities at large.

As part of their training, school headmasters/teachers were instructed to share information on the deworming program in the morning prayer sessions at their respective schools on a daily basis from October 6, 2013 onwards. They were also advised to convene school management committee

meetings to communicate about the benefits of deworming and the schedule of deworming program. School headmasters were also advised to carry out student rallies / processions (prabhat pheri) to create awareness in the communities.

Similarly, anganwadi workers were advised to brief parents of preschool-age children and other community members, such as members of the self help groups and village panchayats, who were key to raising awareness about the deworming program in community meetings.

The education department's official calendar, which is referred to by all officials at district and block as well as schools include October 15, 2013 as deworming day. This move ensures that deworming is a key program initiative of the education department since all officials refer to the calendar for planning trainings, exams and other activities.

One other key strategy adopted by DtWI to spread awareness was through text (SMS) reminders over mobile phones to school teachers, headmasters, Child Development Project Officers (CDPOs) and lady supervisors as a reminder about deworming day. SMSs were also used to reinforce precautions on drug administration, such as not giving drugs on an empty stomach, but only after midday meals and not giving drugs to sick children. In all, about 80,000 text messages were sent to school teachers and headmasters three times – a total of 2,40,000 messages. These messages were sent a day before deworming day, on mop-up day and after mop-up day. About 1400 such messages were sent twice to lady supervisors and CDPOs on a day before deworming day and on mop-up day. Similarly, five rounds of around 2400 text messages were sent to block level officials to expedite coverage reporting. This was an example of ensuring last-mile communication at low cost of about 12 paise per message (or roughly 1/5<sup>th</sup> of a cent).

### Sample Text Reminders

Message sent to teachers and headmasters a day before deworming day:

“15 Oct. ko 2 se 6 saal ke bachcho ko deworming ki dawa khane ke baad pilani hai. Bachcho ko us din jaroor aane ko kahe. Bimar / khali pet ye dawa na de. DtWI”

(English Translation: Children of 2-6 years of age are to be administered deworming drug after meals on 15<sup>th</sup> Oct. Ask children to come to school on that day. Do not give this drug on empty stomach / to sick children. DtWI)

Message sent to teachers and headmasters on mop up day:

**“15 Oct ko deworming se vanchit bachchon ko aaj khane ke baad deworming ki dawa de. Deworming ki soochna 21 Oct tak hare rang ke form me Nodal HM ko de. DtWI”**

(English Translation: Deworming drug is to be administered to those children after meals who could not be dewormed on 15<sup>th</sup> Oct. Submit report on deworming in the green-colored form to Nodal HM by 21<sup>st</sup> Oct. DtWI)

A state-level event to officially launch the deworming program was organized in Jaipur. The presence of key government officials and wide media coverage in newspapers and local TV channels played a key role in disseminating awareness among the public at large about the program. District coordinators also played a pivotal role in coordinating with departments of Health, Education and WCD at district level to organize launch events for program visibility (Annexure 6 for press coverage details).

On deworming day, quarter-page advertisements were released in the two leading Hindi dailies in Rajasthan, Rajasthan Patrika and Dainik Bhaskar, for mobilizing communities to send children for deworming. A local news channel, SITI NEWS, aired an interview with the Operations Director of DtWI India. DtWI supported the inaugural event and newspaper appeals.

Due to imposition of the election code of conduct in early October, prior to the deworming day, the government did not allow promotional activities around a government program even though there were funds allocated for the same.

## Deworming Day

Round 2 provided deworming in all government schools and anganwadis on October 15, 2013 while October 18, 2013 was observed as mop-up day to cover children who could not be administered drugs on deworming day due to sickness and/ or absenteeism. The major and crucial contribution from the government came in the form of human resource allocation and provision of venues for implementation of deworming activity in 81,000 schools and 59,000 anganwadis across the 33 districts in the state.

**Figure 6: Inaugural launch event of round 2 of mass deworming program at a school in Jaipur**



**Figure 5: Newspaper appeal spreading awareness about deworming**



The inaugural event at the state capital was attended by senior officials such as Smt Venu Gupta – Principal Secretary, School Education; Smt Gayatri Rathore – Mission Director, National Health Mission; Shri Bhaskar A Sawant – Commissioner, Rajasthan Council of Elementary Education (RCEE), other key officials from the government departments, and representatives from DtWI and UNICEF as well as members of the press.



*Gaurav, a student of class 3 in Government Primary School, Gandhinagar, comes from a very poor family. His alcoholic father does little to support the family, while his mother works as a domestic maid and his grandfather works as a daily laborer. His sister, Pratibha, also studies in the same school in class 5. Their grandfather drops them to school before leaving for work and their mother comes to collect them on close of school.*

*Gaurav is weak and falls sick regularly. His sister says that he used to eat sand and used to complain of stomach ache. He was prescribed a deworming drug by a doctor earlier but he did not take it.*

*The teachers at his school have spoken to the children on the benefits of deworming. On the deworming day, in Oct 2013, the teachers made sure that Gaurav took the drug. Even his grandfather was told about the benefits of deworming and he made sure that his grandchildren attended school on that day. He was grateful to the school for having launched such a beneficial scheme for the health of children.*

Management of adverse events on deworming and mop-up days was effectively handled through combined efforts of Rajasthan Council of Elementary Education (RCEE) and the health department, with timely support and coordination from DtWI. DtWI retained services of a medical advisor to support this effort. The health department had issued instructions to district officials to keep the health infrastructure alert and ready for any adverse events, including 13227 sub-centers, 2066 PHCs and 551 CHCs. In all, five adverse events were reported from the field. These were addressed timely as per protocols. The DtWI-hired medical advisor coordinated with the concerned headmasters and nearby government health officials to ensure psychological counselling and medical treatment to these reported cases.

## **MONITORING AND EVALUATION**

DtWI monitors and evaluates outreach and quality of the deworming program round in three ways: (1) process monitoring, (2) coverage reporting and (3) coverage validation. Process monitoring refers to actual observation of the processes across different components of the program to assess efficacy of program execution. Coverage reporting measures the program's success in reaching the target population. Coverage validation is an independent assessment of results, specifically pertaining to accuracy of reporting data, and is conducted by DtWI-hired independent monitors after deworming.

In order to carry out robust M&E activities, DtWI hired district coordinators, telecallers and independent monitors as detailed below. In addition, staff and officials from DMHFW, RCEE and DWCD also made several field visits to monitor the entire deworming program before, during, and after deworming day.

## Process Monitoring

To assess the preparedness across components and to observe the actual process of deworming, DtWI monitored various processes of the deworming program using two methods:

- a. Telephonic calls – By hiring telecallers and by outsourcing telephonic calls to a professional call center
- b. Physical Visits – By DtWI staff, DtWI-hired district coordinators and independent monitors

In order to monitor a larger number of schools and anganwadis in short time with low cost, it was decided to use telephonic calling and outsource this task to an existing call center. In round 2, in an attempt to cover 20% randomly selected schools from each of 257 blocks, around 16000 calls were made to school teachers and headmasters in a span of one week. The calls were made when the drug distribution and trainings were being conducted. The call center helped in establishing the last-mile connectivity at a cost of about 12 INR or 20 cents per school. The use of call centers also had one great advantage that information pertaining to daily calls, about 3000-4000 in number, came in a collated form from the call center on a daily basis. The information received from such calls was shared with the respective departments on a daily basis to enable them to take corrective action. The use of call center had one important limitation - it could not be used to assess preparedness at anganwadis due to absence of contact details of anganwadi workers.

Other than the use of a call center, DtWI also undertook telephonic monitoring by hiring short term manpower for telecalling. These telecallers monitored the supply chain of drugs, such as arrival of drugs at offices of Block Education Officers (BEOs) and confirmation of receipt of drugs by these offices. Similarly, they collated information on availability of albendazole syrup, by calling officials of DWCD. The information loop was closed by sharing updates with the Education department and DWCD on the status, post which corrective action was taken. They also followed up with trainers and district coordinators to obtain reports about the trainings conducted and the number of participants actually attending the trainings. Telecallers followed up with the trainers and the trainees for proposed district-level training and sought their confirmation to attend over phone. This acted as reminders and positively impacted the attendance in these trainings. They also remained in touch with trainers to seek information on scheduling of block level trainings and availability of drugs, training booklets and reporting forms during the block level trainings.

In addition to this telephonic monitoring, DtWI hired district coordinators who attended around 32 district and 198 block-level trainings, while DtWI staff attended five district level trainings. The block level trainings were monitored by the district coordinators for coverage of key messages during the training and the availability and adequacy of drugs, training booklets, and coverage reporting forms. Of the 198 trainings monitored by district coordinators, it was observed that the message that deworming drug should be given only after mid-day meal was reiterated in all trainings. However, in eight of the trainings, trainers failed to mention that this drug should not be given to sick children or children taking medication. These lapses on the part of trainers may increase the number of adverse events and should be emphasized time and again in trainings.

In addition to these district coordinators and DtWI staff who conducted physical visits, DtWI hired 91 independent monitors on a short term basis to conduct evaluation of the deworming program across 33 districts. A detailed training was held by DtWI's team for two days to ensure that the

monitors were equipped with the necessary knowledge to conduct evaluations effectively. Of the total 257 blocks in Rajasthan, 91 blocks were covered under independent monitoring, with each monitor covering one block. This was a step-up from round 1, when 66 blocks were covered by 66 monitors. These independent monitors, as part of preparatory monitoring phase, visited 150 schools and 148 anganwadis in these 91 blocks to directly ascertain the level of preparedness and awareness about the program amongst teachers and anganwadi workers. Since the aim of this preparatory monitoring was twofold- to scrutinize the degree of readiness; and to investigate the level of awareness; the focus of the questions ranged from the availability of drugs and reporting forms, to attendance in official training, to questions about the date of deworming, mop-up, last date for submission of forms etc.

To understand if deworming was taking place in the desired manner and the official protocols explained during training were being followed, 100 schools and 160 anganwadis were visited by independent monitors across deworming day and mop-up day. The purpose was to get a first-hand account of how well the deworming program were implemented in schools and anganwadis, and whether there needed to be any changes to future rounds of training to address the concerns raised by this part of the process monitoring. Monitors observed whether teachers were following the instructions given during training while administering the drugs. Apart from their observations, they also interviewed the school principal, before proceeding to a randomly selected class to interview the class teacher and a child.

The indicators that were measured during process monitoring are presented in Table 1 below:

**Table 1: Indicators for process monitoring**

<b>Component</b>	<b>Indicators</b>
<b>Drugs</b>	<ul style="list-style-type: none"> <li>- Drugs procured are of good quality, sufficient quantity, and are transported in time.</li> <li>- Drugs transported to schools and anganwadis are sufficient and are received in time.</li> <li>- Storage in schools and anganwadis is safe and secure.</li> </ul>
<b>Training</b>	<ul style="list-style-type: none"> <li>- Sufficient master trainers get trained and they are contacted well in advance about the block level trainings they need to attend</li> <li>- Sufficient flipcharts are available to master trainers</li> <li>- Sufficient trainings conducted to reach all schools and anganwadis</li> <li>- Training being imparted is effective and adequate.</li> </ul>
<b>Materials</b>	<ul style="list-style-type: none"> <li>- All schools and anganwadis have relevant materials (drugs, training booklets, coverage reporting forms etc.) on time and in sufficient quantity.</li> </ul>
<b>Deworming implementation</b>	<ul style="list-style-type: none"> <li>- All children (except those who are ill and absent) receive treatment.</li> <li>- Drug administered correctly (single dose, tablets chewed, tick marks).</li> <li>- Health education delivered at each school and anganwadi.</li> </ul>
<b>M&amp;E</b>	<ul style="list-style-type: none"> <li>- Report forms correctly filled out during deworming implementation.</li> <li>- Compilation of coverage information.</li> </ul>

While the details of process monitoring by independent monitoring is presented in detail in Annexure 2, some of the key findings are mentioned here. The monitoring indicates that anganwadis underperformed vis-à-vis schools on a number of parameters. During preparatory monitoring, while 92.2% of school principals were aware of the date for deworming day, only 58.24% of anganwadi workers were aware about the same. Low awareness about the deworming day would have adversely impacted coverage in anganwadis. Based on preparatory monitoring, deworming day monitoring and mop-up day monitoring, 91.1% of total visited schools and 69.9% of total visited anganwadis claimed to have attended the training. Low participation of anganwadi workers in the deworming training could be linked to the observation that while 93.3% teachers gave health education about deworming, only 85% of anganwadi workers did so. The deworming checklist, a short version of training booklet, was available only in 32.6% of anganwadis interviewed, while the training booklet was available in 90% of the schools. Only 38.68% of the anganwadis visited on mop up day had the reporting forms, while this number for schools stood at 91.1%. This calls for strengthening both training cascade and distribution cascade for anganwadis in the next round. Engagement with DWCD needs to be deepened in order to bring about substantial programmatic changes in the anganwadi system.

Both schools and anganwadis showed high adherence to drug storage conditions. In 97.7% schools and 96.5% anganwadis, the drug storage area was away from direct sunlight. It was also found out during teacher interviews that 57.8% of teachers were unaware of the possibility of adverse effects due to deworming drug administration. This feedback is critical in nature and engaging information on adverse effects should be incorporated in trainings, training kits and IEC materials.

### **Coverage Reporting**

As per information compiled and shared by education department and DWCD respectively, 6,691,558 school children and 4,151,147 preschool age children were dewormed in the round 2 of Rajasthan's mass deworming program carried out in October 2013. In both schools and anganwadis, the percentage coverage has witnessed improvements over the previous round. For school children, the coverage increased from 77.85% to 82.29%, while it improved from 55.29% to 59.37%. Despite the marginal improvement in the percentage coverage, the coverage of preschool age children through anganwadis is very low. In consultation with DWCD, efforts will be made to improve coverage for round 3, proposed to be carried out in October 2014.

The coverage in schools and anganwadis was recorded in the reporting forms developed by DtWI in consultation with RCEE and DWCD. In the school reporting form, information on enrollment, the number of children dewormed by class and gender as well as the number of children left out due to sickness or absenteeism was collected. In the anganwadi reporting form, information on enrollment was replaced by number of children in the target group of 2-6 years in the area of working for that anganwadi. The forms are attached in annexure 4.

School headmasters were required to hand over the completed reporting form to their respective nodal headmasters – a senior headmaster of a school looking after a cluster of schools – who in turn would submit these forms to the respective BEO office. Apart from the forms, the nodal headmasters also submitted the collated information. This information further gets consolidated first at block level, then at district level and finally at state level. Education department shared this compiled information with all the stakeholders.

DtWI also regularly followed up at different levels to expedite the task of data collation – by sending text messages in bulk to school teachers and headmasters, call up master trainers & BEOs at block level, getting government orders issued from the RCEE etc. District coordinators and telecallers played a key role in this follow-up across 33 district locations and 257 block locations. To expedite coverage reporting, schools were given the reporting forms in two copies, which obviated the need for photocopying the original form or manually drawing the format on a plain sheet of paper. The submission dates by schools and by nodal headmasters were written on the forms and were mentioned in the training flipchart. Text message reminders to school teachers, headmasters and master trainers also helped in early compilation of coverage data.

**Figure 7: Flow of coverage information for school children**



DtWI developed the reporting forms for anganwadis, lady supervisors, CDPOs and district offices and shared these forms with DWCD for further distribution. Angawadis recorded coverage information and sent this data to lady supervisors, who compiled it and sent it to CDPOs. After compilation at CDPO level, the data moved to the district office from where it was sent to DWCD at the state. Upon compilation, DWCD shared district-wise coverage data with DtWI and other stakeholders.

**Figure 8: Flow of coverage information for preschool-age children**



## Coverage Validation

Accuracy in reporting is measured by comparing the numbers reported by schools/anganwadis in the school reporting form, also called the Summary Form, with those found in their attendance/enrollment registers. For this purpose, 359 schools and 268 anganwadis were visited by DtWI’s independent monitors. Within one school, one monitor was sent to three randomly pre-selected classrooms, where they recorded the number of children given the drug according to the attendance register and corresponding numbers according to the summary form. Coverage validation also involves child interviews in the same manner as deworming day and mop-up day monitoring.

Correct recording of dewormed children on deworming day and mop up day forms the basis for correct coverage information. As per the recording protocol, shared with teachers during training, every teacher was required to put a single tick mark (✓) next to a child’s name in the attendance register, if they had consumed the tablet on deworming day. For children dewormed on mop up day, a double-tick mark (✓✓) next to a child’s name had to be put.

Coverage validation monitoring revealed that in 7.7% of schools visited, the recording protocol was not followed for deworming day. Similarly, there were no tick marks in the attendance registers in 33.9% of the schools visited on mop-up day. Coverage validation of anganwadis revealed that in 44.7% of anganwadis visited, the recording protocol of maintaining record of children dewormed was not followed.

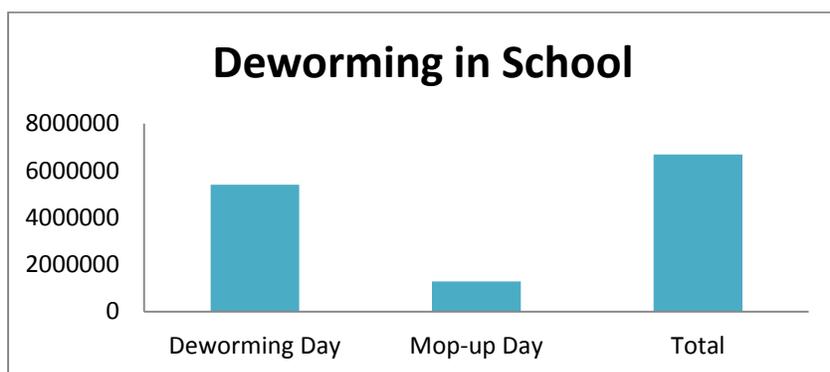
The discrepancies were also noticed in the recording of coverage information by schools and anganwadi. This was done by comparing the coverage reporting forms with the tick marks in the attendance registers. Deworming day coverage and mop day coverage as reported in reporting forms did not match with attendance register records in 10.35% and 8.12% schools. For anganwadis, this mismatch was 9.3% and 15.15% respectively for deworming day and mop up day. The discrepancies in these two sets of information indicate actual coverage being different than the reported coverage. The consultations will be held with education department and DWCD on the use of a better recording protocol and increased adherence to the current protocol. The importance of correctness of recording coverage information should also be emphasized in the training cascade.

First hand observation of deworming by monitors and interview with teachers, anganwadi workers and children also covered one dimension of coverage validation. 97.5% of head masters and 84.01% of anganwadi workers confirmed that deworming was carried out in their institution. 98.25% of the total children interviewed from the above institutions confirmed that they were given a white tablet. Monitors physically observed deworming taking place on designated deworming day and mop-up day in 92.3% of the institutions visited. Low participation of anganwadis in the deworming program could be addressed by improving training cascade and IEC strategy, which would also help in increasing % coverage in anganwadis.

## **PROGRAM RESULTS**

The total number of children dewormed in schools and preschools across deworming day and mop-up day is 10,842,705. Analysis of data confirms that the majority of children were given the deworming drug on deworming day. The number of children dewormed in schools on deworming day stood at 5,399,236 whereas the same number for mop-up day was 1,292,322. The following chart gives the percentage distribution across the two days.

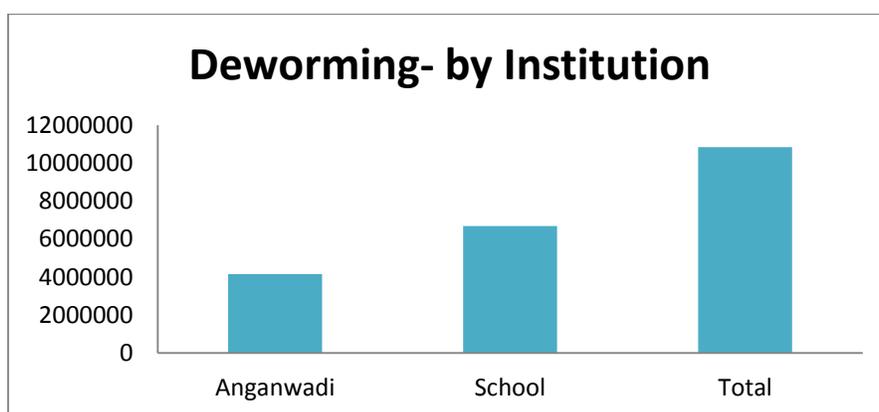
**Figure 9: Drug administration in schools on deworming and mop up day**



### Deworming Details – By Institution

A total of 6,691,558 children were dewormed in schools whereas 4,151,147 pre-school children were dewormed in anganwadis. The following table gives the break-up of coverage numbers by the type of institution.

**Figure 10: Deworming by institution**



### Geographical Patterns

#### Schools

The coverage numbers for schools was encouraging throughout the state. The coverage rate for the state stood at 82% of the total children enrolled in the participating institutions. Barring two districts, the coverage is above 70% in all other districts. The detailed coverage numbers of schools are given in the following table.

**Table 2: Percentage dewormed in schools, by district**

<b>District</b>	<b>Target Population (Enrollment)</b>	<b>No. of Children Dewormed - Schools</b>	<b>Coverage %</b>
AJMER	308765	259891	84%
ALWAR	397704	349048	88%
BANSWARA	343389	327499	95%
BARAN	157416	116394	74%
BARMER	495198	431309	87%
BHARATPUR	249826	207973	83%
BHILWARA	353282	291834	83%
BIKANER	270030	135198	50%
BUNDI	138251	118694	86%
CHITTORGARH	189684	169586	89%
CHURU	220998	192084	87%
DAUSA	193620	164395	85%
DHOLPUR	185690	171329	92%
DUNGARPUR	268774	225959	84%
GANGANAGAR	197680	159557	81%
HANUMANGARH	156915	129829	83%
JAIPUR	496164	387910	78%
JAISALMER	115574	74555	65%
JALORE	251888	199929	79%
JHALAWAR	191943	169661	88%
JHUNJHUNU	165978	143490	86%
JODHPUR	360060	267562	74%
KARAULI	164522	145132	88%
KOTA	149143	116195	78%
NAGOUR	345187	306822	89%
PALI	278356	209104	75%
PRATAPGARH	159043	139744	88%
RAJSAMAND	181435	167743	92%
SAWAI MADHOPUR	143155	114945	80%
SIKAR	233276	210940	90%
SIROHI	146039	114463	78%
TONK	170867	148828	87%
UDAIPUR	451879	323956	72%
<b>TOTAL</b>	<b>8131731</b>	<b>6691558</b>	<b>82%</b>

### Anganwadis

The percentage coverage numbers of anganwadis were lesser than those of schools. Program coverage ranged from 35% in Sikar to 83% in Jalore. The average coverage in anganwadis was 59%. The following table shows the program coverage in anganwadi centers (AWCs) for each district.

**Table 3: Percentage dewormed in anganwadis, by district**

<b>District</b>	<b>Target Population</b>	<b>No. of Children Dewormed - AWCs</b>	<b>Coverage %</b>
AJMER	250055	166344	67%
ALWAR	386755	182825	47%
BANSWARA	217680	124997	57%
BARAN	118401	94544	80%
BARMER	342656	192229	56%
BHARATPUR	287613	218867	76%
BHILWARA	236855	135698	57%
BIKANER	265260	162912	61%
BUNDI	103380	56166	54%
CHITTOGARH	138136	80840	59%
CHURU	206848	120011	58%
DAUSA	169985	88972	52%
DHOLPUR	143100	93503	65%
DUNGARPUR	160840	121481	76%
GANGANAGAR	163122	88341	54%
HANUMANGARH	152491	76105	50%
JAIPUR	608881	309971	51%
JAISALMER	89808	52851	59%
JALORE	209570	174112	83%
JHALAWAR	135425	108812	80%
JHUNJHUNU	184647	108891	59%
JODHPUR	400366	222971	56%
KARAULI	158469	122187	77%
KOTA	165412	98591	60%
NAGPUR	328876	193330	59%
PALI	190181	82151	43%
PRATAPGARH	100017	73262	73%
RAJSAMAND	115275	72615	63%
SAWAI MADHOPUR	131497	74837	57%
SIKAR	245402	85121	35%
SIROHI	114835	57085	50%
TONK	131261	78125	60%
UDAIPUR	338751	232400	69%
<b>TOTAL</b>	<b>6991850</b>	<b>4151147</b>	<b>59%</b>

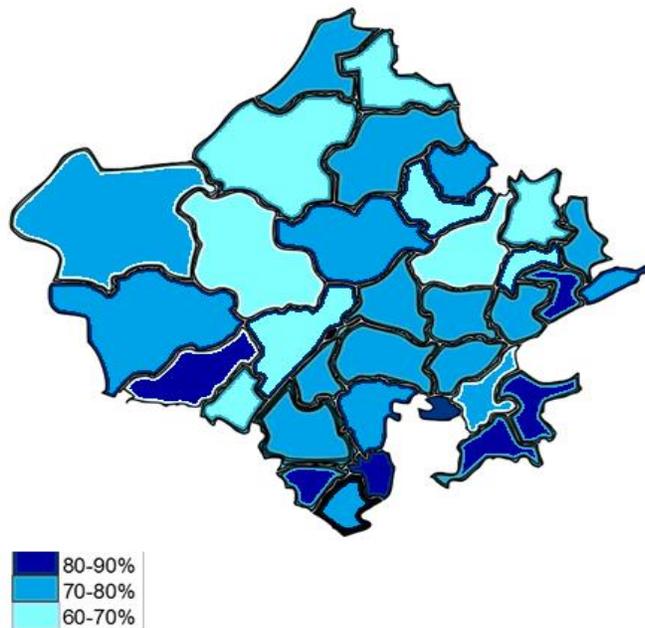
The total program coverage – combined for schools and anganwadis – for all districts is as follows.

**Table 4: Total dewormed in schools and anganwadis, by district**

<b>District</b>	<b>No. of Children Dewormed - AWCs</b>	<b>No. of Children Dewormed - Schools</b>	<b>Total No. Dewormed - Schools &amp; AWCs</b>
AJMER	166344	259891	426235
ALWAR	182825	349048	531873
BANSWARA	124997	327499	452496
BARAN	94544	116394	210938
BARMER	192229	431309	623538
BHARATPUR	218867	207973	426840
BHILWARA	135698	291834	427532
BIKANER	162912	135198	298110
BUNDI	56166	118694	174860
CHITTORGARH	80840	169586	250426
CHURU	120011	192084	312095
DAUSA	88972	164395	253367
DHOLPUR	93503	171329	264832
DUNGARPUR	121481	225959	347440
GANGANAGAR	88341	159557	247898
HANUMANGARH	76105	129829	205934
JAIPUR	309971	387910	697881
JAISALMER	52851	74555	127406
JALORE	174112	199929	374041
JHALAWAR	108812	169661	278473
JHUNJHUNU	108891	143490	252381
JODHPUR	222971	267562	490533
KARALI	122187	145132	267319
KOTA	98591	116195	214786
NAGPUR	193330	306822	500152
PALI	82151	209104	291255
PRATAPGARH	73262	139744	213006
RAJSAMAND	72615	167743	240358
SAWAI MADHOPUR	74837	114945	189782
SIKAR	85121	210940	296061
SIROHI	57085	114463	171548
TONK	78125	148828	226953
UDAIPUR	232400	323956	556356
<b>TOTAL</b>	<b>4151147</b>	<b>6691558</b>	<b>10842705</b>

The district-wise coverage is illustrated on the following map.

**Figure 11: District-wise deworming coverage**



## **KEY INNOVATIONS AND LESSONS LEARNED**

### **Key Innovations**

Round 2 of Rajasthan’s mass deworming program presented an opportunity to modify program approach towards the training cascade. Instead of conducting the first leg of training at state level, the training of trainers was conducted at all 33 district headquarters. Attending training in the respective district location caused minimal disruption to the routine of training participants. However, to roll this out, more trainers were needed and exhaustive planning. Therefore, DtWI retained the services of seven professional trainers who could travel from one district location to another to impart training to the trainers. All district coordinators were mandated to attend district level training.

### **Lessons Learned**

Since schools and anganwadis are involved in a number of other programs, arranging standalone trainings for deworming is increasingly difficult given limited budgets and increased workload due to the time of participants taken for training. Therefore, to ensure sustainability of the deworming program, it is important that deworming is integrated with other health interventions targeting school-age and preschool-age children that use the same delivery platform. This would help implementing partners to find synergies in terms of training rollout, drug distribution, reporting, and monitoring and evaluation. The possible integration with other health interventions would also mean increasing role and ownership of health department, which was hitherto being undertaken by education department in Rajasthan.

As regards issues related to availability of budgets for different components of the program such as training, transportation and IEC, it is imperative to coordinate closely with the health department in

the planning phase of the fiscal year budgets under National Health Mission. Ensuring budgets earmarked for deworming program would also ensure that the activities get started on time and therefore are more effectively implemented.

Independent monitoring of the program by DtWI points to comparatively weaker implementation and low coverage in anganwadis as compared to schools. On nearly every quality metric, the anganwadis performed poorly in comparison to schools. This suggests that the engagement with DWCD needs to deepen so as to strengthen training, drug distribution and overall implementation in the anganwadis. For example, the existing training infrastructure of the anganwadi system could be used to improve the training cascade.

The data on deworming coverage from schools was made available in about 2 months, while in case of anganwadis, it took about four months. This delay in coverage reporting could be minimized and both the departments, education and DWCD, need to be engaged during one-on-one meetings, working group meetings and program coordination committee meetings to find ways in their existing system to accomplish this.

To assess preparedness in terms of receipt of drugs, reporting forms and training booklets, around 16000 schools were contacted telephonically. While reaching out to thousands of schools through a call center ensures scale, it has proven a challenge to ensure follow ups with under-prepared schools. Since the call center works on scale, it is appropriate for these agencies to handle standard communication having fixed questions and short responses. In follow cases, the questions need to be customized and the responses might be detailed. Moreover, since these calls are made very close to the deworming day, in order to ensure that trainings have concluded and drugs / IEC materials have reached, it does not allow sufficient time to conduct follow up with a large number of schools. Currently, due to lack of contact details of anganwadi workers, this methodology could not be deployed for anganwadis, which also limits its use.

## **WAY FORWARD**

Repeated deworming rounds builds capacity in the state to run large scale mass drug administrations through the school and anganwadi system, and over time, teachers, anganwadi workers and government functionaries will become increasingly able to implement the process. The continued support of the Government of Rajasthan and its departments was integral to implementation of round 2 of the deworming program. Separate budget for procurement of deworming syrup bottles in the state's PIP (2013-14) and inclusion of deworming day in the education department's calendar is a positive sign for government ownership of the program. This increased government commitment is likely to continue with provisioning of budgets in the Program Implementation Plan for 2014-15 for other program components such as, training, transportation of drugs and IEC. The health department would increasingly play a lead role in the implementation of the program. Advocacy to include at-risk out-of-school children with the support of the government will be a focus area moving forward.

Going forward, DtWI will work closely with the government to strengthen the training cascade in anganwadis, improve coverage in anganwadis, ensure faster coverage reporting both from schools and anganwadis, move drug storage responsibilities to the health department and strengthen IEC

efforts. DWCD has already shared plans to involve its existing Anganwadi Training Centers to strengthen the training component for deworming. Such initiatives will help integrate key program activities in existing processes and available infrastructure, moving toward program institutionalization.

DtWI shall be working closely with the key government departments to identify opportunities for integrating deworming with other similar health interventions targeting school-age or preschool-age children. The government officials would be engaged through stakeholder meetings and the key government officials would be consulted through program coordination committee meetings.

## **ANNEXURES**

Annexure 1: Report of parasite worm load survey

Annexure 2: Independent monitoring data analysis

Annexure 3: Reporting forms

Annexure 4: Community awareness materials

Annexure 5: Press Coverage

# ANNEXURE 1 - REPORT OF PARASITE WORM LOAD SURVEY

## Background and Motivation

STH infections are the most prevalent form of enteric infections affecting billions worldwide. The worm infections interfere with nutrient uptake, may lead to anaemia, malnourishment and impaired mental and physical development, especially in children. WHO reports that more than 1.5 billion people or 24% of the world's population are infected with STH and that over 870 million school-age or younger children live in high transmission intensity areas.<sup>8</sup> The burden of STH infections is high in India as well. For example a 2005 survey in Pauri Garhwal district of Uttaranchal state estimated 28.8% of school children aged 9-10 years were infected by *Ascaris*, 5.1% by Hookworm and 1.9% by *Trichuris* (Bora et al., 2006). A recent survey by NICED in West Bengal also identified that 16% of the school children aged 10-15 years were infected by STH (Mukherjee et al., 2013). The main cause of STH infections is poor water and sanitation infrastructure and hygiene practices among the population. Therefore, WHO recommends mass deworming in areas with poor water, sanitation and health education and correspondingly high burden of STH infections.

The Government of Rajasthan recognized the significant public health impact of STH infections on under age 14 children given poor sanitation situation in the state. A 2012 study conducted by Panchayati Raj Department, Government of Rajasthan with support from UNICEF identified that only 27.3% of households with a toilet, and high levels of open defecation among the households ranging from 54.3% in Bikaner to 88.4% in Dhaulpur<sup>9</sup>. Although the STH infection burden is expected to be correspondingly high, no recent surveillance data was available. Therefore, to devise an appropriate treatment strategy as per WHO recommendations (WHO, 2011), the government requested technical support from the Deworm the World Initiative (DtWI) to conduct a survey to estimate prevalence of enteric worm infection.

The main research objective of this study is to estimate state level prevalence of STH infections (*Ascaris*, *Trichuris*, and Hookworm) in the target population of children enrolled in primary school

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<sup>8</sup> WHO (2013). Soil-transmitted helminth infections. Fact sheet No. 366, World Health Organization (WHO), available at <http://www.who.int/mediacentre/factsheets/fs366/en/>, updated June 2013. Last Accessed on 15 January 2014.

<sup>9</sup> UNICEF (2012). Sanitation and Hygiene Advocacy and Communication Strategy Framework 2012-2017. United Nations Children's Fund (UNICEF), available at [http://www.wsscc.org/sites/default/files/publications/sanhygadvcmmstrat\\_2012-2017\\_11-09-2012\\_final\\_2.pdf](http://www.wsscc.org/sites/default/files/publications/sanhygadvcmmstrat_2012-2017_11-09-2012_final_2.pdf). Last Accessed on 15 January, 2014.

Bora, D, VR Meena, H Bhagat, AC Dhariwal, S. Lal (2006), "Soil Transmitted Helminthes Prevalence in School Children of Pauri Garhwal District, Uttaranchal State," *Short Communication in Journal of Communicable Diseases*, 38(1): 112-114.

Mukherjee, AK, Chowdhury P, Das K, D. Raj, S. Karmakar, S. Ganguly, (2013), "Helminth burden among school going children of southern Bengal, India: A survey report," *Global Journal of Biology, Agriculture, and Health Sciences*, 2(3):189-191.

(class 1 to 5). Additionally, the study will establish a baseline for monitoring the STH prevalence in the state over time.

## **Study Design**

The study was designed and implemented by NEERMAN in collaboration with DtWI researchers. The study protocol was approved by a certified local IRB (Suraksha IEC, Hyderabad). University of California at Berkeley provided guidance on sample design and analysis.

A state level survey was designed to estimate prevalence of *Ascaris lumbricoides*, *Trichuris trichiura*, and hookworms (*Necator americanus* and *Ancylostoma duodenale*) among the children enrolled in primary schools across the state. The sample frame consisted of all primary schools in the state which had at least 15 enrolled students. The sample of 144 schools was selected using a multi-stage probability proportional to size (PPS) sampling strategy. The final sample consisted of 12 out of 33 districts, 3 blocks from each district (36 blocks), and 4 schools from each block (144 schools). The 12 districts were selected such that they represented the main ecological zones in Rajasthan.

Although as per sample design we required on average 15 children per school we also expected almost 50% non-response because of various reasons. Therefore, in each school, we randomly selected, on average, 34-35 children from the enrolment roster that the school teachers made available. If a school had less than 35 enrolled children then all of the children were listed for the survey. Overall, we contacted and conducted survey – considered incomplete if stool sample was not provided/collected – with 4975 children. Finally, as required per the sample design, we were able to collect and test stool samples of, on average, 14-15 children per school for a final sample size of 2075 children.

## **Field Implementation**

The survey was conducted between August 16, 2013 and September 19, 2013 by a team of trained enumerators. The team was trained rigorously by NEERMAN, NICED and DtWI researchers on study questionnaires, sample collection protocols, and ethics as approved by a local IRB. The training was conducted between 11 and 15 August and included class room lectures, mock interview practice, and actual field practice/pilot.

In each school, the field teams on average required 2 days to complete the survey. On the first day, children were randomly selected from the school enrolment roster, their house address was identified as per school records and help of children present in the school, the caregivers of selected children were reached at their homes and upon receiving consent a brief household survey was conducted. Finally, stool collection protocol was explained to the caregivers by the enumerators. On the second day, the field teams collected samples from the caregiver if the child had passed stool and caregiver remained interested in participating in the study. After tagging the sample bottle with unique identification stickers, SAF preservative was added to the sample and the samples were transported in a cold chain to a local center and refrigerated. Samples from different local centers were transported to Jaipur for centralized storage. Finally, the samples were sent to NICED in four batches in properly sealed ice boxes.

## Laboratory Protocols

NICED received the stool samples from the field and immediately stored them in refrigerated facility. NICED used a modified KATO-KATZ method to detect STH in the stool samples. The method involved preserving the stool samples in SAF in the field and then centrifuging the samples at high RPM to obtain a stool pellet. This pellet was tested using normal KATO-KATZ technique as explained in Section 2.4 by NICED. Two expert microbiologists independently confirmed all positive results as well as 10% of the negative results.

NICED also conducted a pilot study to assess whether fresh and SAF preserved stool resulted in different test findings. NICED concluded that SAF preserved samples followed by normal KATO-KATZ proved to be trustworthy technique as good as fresh stool KATO-KATZ, and apparently even more sensitive in cases of low intensity infection samples because of concentration of stool samples at high RPM.

## Data Analysis

The field questionnaires collected basic socio-economic and demographic data such as age and sex of the child, household construction type, caste, presence of toilet, and type of water source, incidence of diarrhoea in recent times and history of deworming of the child in past 1 year. These questionnaires were entered in CSPro data entry system. CSPro is a US census developed system that automatically conducts range and logical checks of the data and validates data entry to ensure high quality. NICED provided the test results in Excel format. Both these data sets were converted in STATA (v. 12) and merged together using a unique identification given to each sample in the field.

The data analysis consisted of three steps. First, we checked the descriptive statistics of key variables (mean, frequency and percentage) and set the dataset for further analysis. Because the sampling was a multi-stage sample, we set the data structure as per the sample design so that we can obtain accurate standard errors of mean estimated prevalence. Also, in each school on average, we obtained 14-15 complete test results out of 34-35 surveyed children. However, the response ranged varied between different schools. To adjust for such variable, response rate we weighted the observation in the data to obtained unbiased prevalence estimates.

Second, to assess representativeness of collected stool samples, we tested whether the key socio-economic and demographic characteristics were different between the children whose stool samples were tested versus the children whose stool samples were not collected or tested.

Third, state level prevalence of *Ascaris*, *Trichuris* and hookworm were estimated along with the standard error of the mean and the 95% confidence interval for the estimated prevalence. District and Block level prevalence were also estimated in STATA. Finally, we used spatial extrapolation tool (Krigging) in ArcGIS to extrapolate district level prevalence estimates to state wide prevalence maps for STH infections.

## Results

The prevalence of *Ascaris* was found to be highest amongst the three STH we tested. *Ascaris* prevalence is 20.2% at state level with 95% Confidence Interval of 14.4% - 25.9%. The hookworm



## **ANNEXURE 2: INDEPENDENT MONITORING DATA ANALYSIS**

The analysis shared here is based on monitoring of the deworming process in a sub-sample of schools and anganwadis on preparatory monitoring, deworming day, mop-up day, and for coverage validation.

A total of 609 schools and 576 anganwadis were visited by independent monitors under four monitoring components. The independent monitors visited 150 schools and 148 anganwadis for preparatory monitoring; 50 schools and 80 anganwadis each for deworming day and mop-up day monitoring, and finally, 359 schools and 268 anganwadis for coverage validation.

The broad areas which are monitored under these four events are:-

- Training and Training Cascade
- Operations/ Monitoring Tools
- Verification of Deworming
- Adverse Effect
- Effectiveness of Public Awareness campaigns
- Recording Protocol
- Drug Availability and Storage

### **Training and Training Cascade:**

- According to teacher training attendance report, a total of 84,836 teachers/ head master and officials participated at block-level trainings.
- Of the institutions visited on preparatory monitoring, deworming day monitoring and mop-up day monitoring, 245 schools i.e 91.1% of total visited schools and 69.9% of total anganwadis visited (172 anganwadis) reported attending the training.
- 85.6% of participants who attended the training, further disseminated information to other teachers.
- The number of participants from schools in the block level training ranged from 60 in Peepalkoth (Pratapgarh) to 1100 in Dhorimana (Barmer).
- Of the 358 institutions visited on deworming day and mop-up day, DtWI's monitoring results revealed that most teachers conducted the deworming according to the protocols shared during the training. The details are presented below:-

**Table 6: Cascade highlights**

<b>Cascade Highlights</b>	<b>Observed Result - School (%)</b>	<b>Observed Result - Anganwadi (%)</b>
Teachers who told children to chew tablets before swallowing	99.39	NA
Teachers who washed their hands with soap before administering the drug	90.91	80
Teachers who made the children to wash their hands with soap before administering the drug	87.27	72
Teachers who followed the correct recording protocol	85.45	92.8
Teachers who gave health education about deworming	93.3	85
Teachers who administered the deworming tablets after the children ate their meals	97.58	95.2
Schools and anganwadis where drinking water was available	97.58	94.9
Teachers who only washed their hands with water before administering the drug	4.24	12
Teachers who made the students wash their hands with only water before administering the drug	7.88	15.2

### Monitoring Tools:

- The deworming checklist was available in only 32.96% of anganwadis interviewed (89 anganwadis).
- The training booklet was available in 90% of the schools.
- 77.32% of respondents (832 out of a total of 1076) were aware of the last date of Summary form submission.
- The Summary form was available in 66.5% i.e 754 schools and anganwadis.
- Break-up of S-form availability in schools and anganwadis according to monitoring days:

**Table 7: Availability of reporting forms**

<b>Monitoring Day</b>	<b>S Form available –Anganwadi (% of Total visited that day)</b>	<b>S Form available –School (% of Total visited that day)</b>
Preparatory monitoring	29.67	87.7
Deworming day	33.34	94.4
Mop-up day	38.68	91.1

### Verification of Deworming:

- In 900 of the 984 schools and anganwadis observed across the four monitoring days (91.5% of the total), the head master or anganwadi worker confirmed that deworming was carried out in their institution ( 97.5% of the schools and 84.01% of anganwadis).
- 1,120 children or 98.25% of the total children interviewed from the above institutions confirmed that they were given a white tablet.
- Monitors physically observed deworming taking place on 15th October (deworming day) and 18th October (mop-up day) in 289, or 92.3% of the institutions visited.

### Adverse Effects

- 96.9% of teachers who were observed giving the deworming drug, identified sick children before giving the deworming drug.
- 57.8% of teachers who were interviewed were unaware of the possibility of adverse effects due to deworming drug administration.
- In 95.74% of the institutions, the sick children were physically separated from healthy children, as per deworming training protocol. The teachers are told to perform this exercise in the official block-level training to ensure no sick child is administered the tablet by mistake.
- In 3.1% of schools and anganwadis, monitors observed children being given more than one tablet/syrup bottle. As per protocol, the children should not have been given more than one tablet. Therefore in cases such as these, the monitors were trained to intervene and prevent the administration of an additional dose.
- The child interviews conducted as a part of the monitoring process revealed that 99.3% of the children receiving deworming tablets felt healthy before taking them. This was a crosscheck to confirm if sick children had been administered deworming drugs.

### Effectiveness of Public Awareness Campaigns

- The interviews conducted by monitors during preparatory monitoring revealed that out of the 181 teachers and anganwadi workers interviewed, 136 of them were aware of the date of deworming day and 121 were aware of the date of mop-up day.

- 928 children out of the total 1,120 children interviewed, knew the purpose of consuming deworming tablets. 47 out of the other 192 did not know the purpose of consuming the tablets, but were aware of deworming nonetheless.
- The percentage values of this information is provided below:-

**Table 8: Program awareness highlights**

<b>Program Awareness Highlights</b>	<b>Observed Result-School (%)</b>	<b>Observed Result-Anganwadi (%)</b>
Principals/anganwadi workers who were aware of the date for deworming day during preparatory monitoring	92.2	58.24
Principals/anganwadi workers who were aware of the date for mop-up day during preparatory monitoring	81.1	52.75
Children interviewed who knew what the tablet was for	82.86	N/A
Children who knew about deworming even though they did not know what the tablet was for	24.48	N/A
Children who gained awareness about deworming before deworming day	53.89	N/A
Children gained awareness about deworming only on deworming day	40.52	N/A

## Recording Protocol

In order to ensure that coverage reporting by schools through the school form is accurate, every participating school was instructed to follow a special recording protocol for deworming. Every teacher was required to put a single tick mark (✓) next to a child's name in the attendance register, if they had consumed the tablet on deworming day. The teachers were instructed to put a double-tick mark (✓✓) next to a child's name if s/he had been administered the tablet on mop-up day. The ex post evaluation of recording protocol during coverage validation gave the following results:-

- Coverage validation monitoring revealed that in 7.7% of schools visited (out of a total of 359 schools), the recording protocol was not followed for deworming day i.e. there were no (✓) signs in the attendance registers of the classes visited.
- There were no (✓✓) signs in the attendance registers in 33.9% of the 359 schools visited on mop-up day.

**Table 9: Percentage of schools that did not adhere to the Recording Protocol**

<b>Monitoring Day</b>	<b>School (%)</b> (n=359)
Deworming day	7.7
Mop-up day	33.9

- Coverage validation of anganwadis revealed that in 44.7% of anganwadis visited (out of a total of 268 anganwadis), the recording protocol of maintaining record of children dewormed was not followed.
- For schools that did have the school reporting forms, and that also had tick marks in the registers, the corresponding number of ticks recorded in the register was compared with the information recorded in the S form to test the accuracy of the reporting data. Percentage of schools where the number of ticks in the register did not match with the information in the Summary form are presented below:

**Table 10: Percentage of schools where tick marks did not match with School Summary (S) form data**

<b>Monitoring Day</b>	<b>School (%)</b>
Deworming day (n=280)	10.35
Mop-up day (n=197)	8.12

- Similarly, of the 86 anganwadis that had a written record of deworming, and had also filled the A form, the discrepancy between the two numbers is given below.

**Table 11: Percentage of anganwadis where records did not match with Anganwadi Summary (A) form data**

<b>Monitoring Day</b>	<b>Anganwadi (%)</b>
Deworming day	9.3%
Mop-up day	15.15%

## **Drug Availability and Storage**

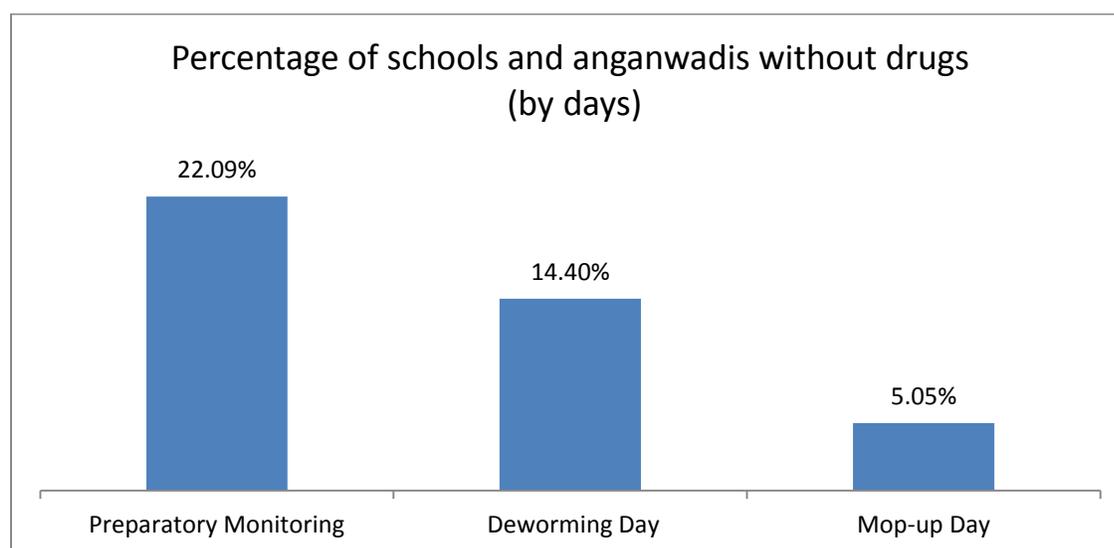
- Drug storage conditions were satisfactory in almost all schools and anganwadis.

**Table 12: Drug storage area characteristics**

<b>Storage Area Characteristics</b>	<b>Observation - School (%)</b>	<b>Observation - Anganwadi (%)</b>
Storage area away from direct sunlight	97.7	96.5
Storage area out of the reach of children	96.5	93.05
Storage area wet/damp	3.03	2.7

- 89.6% of the schools and anganwadis visited during preparatory monitoring, deworming day monitoring and mop-up day monitoring had received drugs. However, drug availability shows a rising trend as the monitoring days progressed, as illustrated by the chart below.
- The percentage of institutions that reported not receiving drugs decreased from 22.9% on preparatory monitoring to 5.05% on mop-up day monitoring.

**Figure 13: Percentage of schools and anganwadis without drugs - by days**



### ANNEXURE 3: REPORTING FORMS

**Global Hand Washing Day And Rajasthan Deworming Programme ( School Format)  
Copy for DtWI Record**

- The Principal has to fill up the form and submit the same to the Nodal H.M by 21<sup>st</sup> Oct 2013.
- The Nodal H.M.has to submit this form to the respective BEO Office.
- DtWI representative will collect this form from BEO Office.
- Post distributions please keep the remaining deworming tablets and the training manual in the safe custody.

School Name :				DISE CODE:				District				
Village Name :								Block				
Principal Name :								Mobile No.-				
Class	School Name			Number of student who has taken deworming tablet						Number of student those who have not given deworming tablet for below mentioned reason		
				15 October		18 October		Total of 15 and 18 October				
	Boys	Girls	Total	Boys	Girls	Boys	Girls	Boys	Girls	Total	Sickness	Absent
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
Total												

Fill up the information for deworming tablets			
Total Tablets Received	Total Tablets Used	Tablets wasted during distribution	Remaining tablets in school
Number of Training Manual Received.....			
Number of student washed hand with soap on 15 <sup>th</sup> October		Signature of Principal and Stamp of School	
Total Students	Teachers and Others		

## Global Hand Washing Day and Rajasthan Deworming Programme

### Format- For Anganwadi

- Make two copies of this formats and one copy has to be retained by the AWW in her safe custody.
- The second copy of this format has to be filled by the AWW and to be submitted to the LS in the next Sector meeting.
- Post distributions please keep the remaining Deworming Drug in the safe custody.

Name of Anganwadi Center..... Sector.....

Name of the Village/City.....

Name of the Project ..... District.....

Name of AWW ..... Mobile No.....

Signature of AWW .....

Total number of children aged 2-6 years as per anganwadi survey	Number of children given deworming syrup on day (15 <sup>th</sup> Oct)		Number of children given deworming Syrup on mop up day(18 <sup>th</sup> Oct)		Number of children not given deworming Syrup due to some reason		Total Number of AWWs, other workers /ladies given deworming syrup	Total number of deworming syrup received in anganwadi this year.	Total number of deworming syrup distributed	Total number of deworming syrup wasted during distribution	Remaining number of deworming syrup in anganwadi (10+11-12-13)		
	B	G	B	G	B	G							
1	2	3	4	5	6	7	8	9	10	11	12	13	14

## ANNEXURE 4: COMMUNITY AWARENESS MATERIALS

- Newspaper appeal in leading Hindi newspapers

Figure 14: Newspaper appeal in leading Hindi newspapers

**deworm the world**

कीड़ों से मुक्ति  
बच्चों को  
शक्ति

अभिभावकों से विनम्र अनुरोध  
**15 अक्टूबर, 2013**  
(मंगलवार)

राजस्थान के सभी  
राजकीय विद्यालयों में  
अध्ययनरत बच्चों एवं  
आंगनवाड़ियों में 2 से 6 वर्ष  
के सभी बच्चों को पेट के  
कीड़े मारने (डीवर्मिंग) की  
खुराक दी जायेगी।

डीवर्मिंग की खुराक बच्चों को पेट के  
कीड़ों से मुक्ति दिला उनके सम्पूर्ण  
विकास में सहायक है

- बच्चे चुस्त एवं तंदुरुस्त रहेंगे
- पढ़ने में मन लगा सकेंगे
- खून की कमी में सुधार आएगा
- बच्चों का मानसिक विकास होगा

**सावधानियाँ**

- दवा खाली पेट ना दें • मिर्ची से शस्त एवं अन्य बीमार बच्चों को यह दवा ना दें

**जो बच्चे 15 अक्टूबर को यह दवा नहीं ले सकें  
उन्हें 18 अक्टूबर को यह दवा दी जायेगी**

अधिक जानकारी एवं आवश्यक चिकित्सा सहायता हेतु नजदीकी स्वास्थ्य केन्द्र  
अथवा टोल फ्री हेल्पलाइन नं. 104 पर संपर्क करें

## **ANNEXURE 5: PRESS COVERAGE**

- **Message to become healthy on 'global handwashing day', Morning News, October 16, 2013**
- **Learnt the importance of washing hands, National Dunia, October 16, 2013**
- **Children to remain healthy for quality education, Daily News, October 16, 2013**
- **Deworming drug distributed, Times of India, October 16, 2013**
- **Celebrated global handwashing day, Jagruk Times, October 16, 2013**
- **15 million children dewormed, Jagruk Times, October 16, 2013**
- **8 million students got deworming drug in the state, Dainik Bhaskar, October 16, 2013**
- **Celebrated global handwashing day, Seema Sandesh, October 16, 2013**
- **Health-conscious kids happily took the deworming drug, Samachar Jagat, October 16, 2013**
- **Drive to get free from malnutrition, Lok Desh, October 16, 2013**
- **Deworming dose to 8 million school kids, Rajasthan Patrika, October 16, 2013**
- **Students need to be healthy to have quality education, News Jaipur, October 16, 2013**
- **Had the dose after washing hands, Metro Bytes, October 16, 2013**
- **Students need to be healthy, Punjab Keshri, October 16, 2013**
- **A snapshot of the newspaper coverage of deworming in Rajasthan 2013**

Figure 15: Morning News October 16, 2013

## 'हाथ धुलाई दिवस' पर दिया स्वस्थ रहने का संदेश

जयपुर 15 अक्टूबर (भोन्यू)। प्रमुख सचिव, स्कूल शिक्षा वीनू गुप्ता ने कहा है कि गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों का नियमित स्कूल जाना और इसके लिए स्वस्थ होना जरूरी है। गुप्ता मंगलवार को बालिका उच्च माध्यमिक विद्यालय मालवीयनगर में आयोजित 'विरव हाथ धुलाई दिवस' के अवसर पर राजस्थान विद्यालय एवं आंगनवाड़ी डिवर्मिंग कार्यक्रम के राज्य स्तरीय शुभारम्भ कार्यक्रम में मुख्य अतिथि के रूप में सम्बोधित कर रही थीं। आज प्रदेश में 80 हजार विद्यालयों एवं 6700 आंगनवाड़ी के लगभग 80 लाख विद्यार्थियों को डिवर्मिंग की दवा दी जाएगी।

प्रदेश के प्रत्येक बालक बालिका स्वस्थ रहे तथा नियमित स्कूल पहुंचकर गुणवत्तापूर्ण शिक्षा प्राप्त करें इसके लिए सामान्य बीमारियों से बच्चों का बचाव करने के लिए 'हाथ धुलाई' एवं 'डिवर्मिंग कार्यक्रम' चलाए गए



ताकि बच्चों को प्रारम्भिक स्तर पर ही बीमारियों से बचाकर स्वस्थ रखा जा सके। गुप्ता ने बताया कि स्कूलों बच्चों में साफ-सफाई की सरल आदतों के अपनाने तथा समय पर उपयुक्त उपचार से पेट (आंतों) में कृमि को नष्ट कर अतिसार, पीलिया, पोलियो आदि बीमारियों से बचाया जा सकता है।

राजस्थान में अक्टूबर 08 से हाथ धुलाई कार्यक्रम एवं वर्ष 12 से सभी स्कूलों में कृमि उन्मूलन कार्यक्रम चलाया जा रहा है। इस अवसर पर आवुक्त प्रारम्भिक शिक्षा परिषद भास्कर ए. सावंत ने

ने कहा कि हाथ धुलाई एवं डिवर्मिंग कार्यक्रम से बच्चों के स्वास्थ्य में सकारात्मक परिवर्तन लाया जा सकेगा।

कार्यक्रम में एन.आर.एच.एम. की प्रबन्ध निदेशक गायत्री राठोड़ ने बताया कि डिवर्मिंग की दवा से आज बीधित रहने वाले विद्यार्थियों को आगामी 18 अक्टूबर को दवा दिये जाने की व्यवस्था की गई है ताकि सभी सरकारी स्कूलों व आंगनवाड़ियों में अभ्यन्तरतः विद्यार्थियों को इन कार्यक्रमों से जोड़ कर लाभान्वित किया जा सके।

Figure 16: National Dunia October 16, 2013

# हाथ की धुलाई के महत्व को जाना

नेशनल दुनिया

**पहल**

- बच्चों को बताया हाथ धोने का महत्व
- डॉ-वार्मिंग सुरुआत दी गई

जयपुर। विश्व हाथ धुलाई दिवस पर मंगलवार को सरकारी स्कूलों बच्चों ने जहां हाथ की धुलाई के महत्व को जाना। वहीं दूसरी तरफ दोपहर के खाने के बाद डॉ-वार्मिंग की निशुल्क सुरुआत भी ली।

प्रदेश भर में चले इस कार्यक्रम का उद्घाटन मालवीय नगर स्थित राजकीय बालिका उच्च माध्यमिक विद्यालय में हुआ। इस मौके पर स्कूल की छात्र संसद ने ही पूरे कार्यक्रम को संयोजित किया और छात्राओं को हाथ की धुलाई के फायदे बताए।

डॉ-वार्मिंग द बर्लैंड जी और से राजस्थान में शुरू किए गए इन खास कार्यक्रम का उद्देश्य बच्चों में पेट के जीर्णों की बीमारी को जड़ से समाप्त करना है। इस मौके पर प्रोडान के निदेश अमान चटनी ने कहा कि राजस्थान ऐसा पहला प्रदेश है, जहां हाथ की धुलाई और डॉ-वार्मिंग कार्यक्रम दोनों एक साथ शुरू किया गया है। पेट के जीर्णों की बीमारी का अगर सही स्कूल में बच्चों की उपस्थिति पर पड़ता है।



**ग्रामीण क्षेत्रों में जागरूकता लाना उद्देश्य**

कार्यक्रम की अगुआ प्रमुख शिक्षा सचिव वीनू गुप्ता ने कार्यक्रम में कहा कि हमारा दृष्टिकोण व्यापक है। केवल बच्चों की संख्या ही नहीं उनकी सर्वांगीण विकास को हम विकसित करना हमारा लक्ष्य है। यही कारण है कि उन्हें नियमित स्कूल आने के लिए प्रेरित करना, शहरी क्षेत्रों के साथ ही ग्रामीण क्षेत्रों में भी जागरूकता लाना चाहते हैं। दिल्ली और तमिलनाडु के बाद यह कार्यक्रम राजस्थान में शुरू किया गया है। इस मौके पर प्राथमिक शिक्षा असुलत भास्कर व सहाय ने कहा कि कार्यक्रम के तहत करीब 80 लाख स्कूली बच्चों व करीब 60 लाख अग्रमजदूरी बच्चों को यह ज्ञान दी जायेगी। इसे हुए बच्चों को 38 अरबों को यह ज्ञान दी जायेगी।

Figure 17: Daily News October 16, 2013

## व्यालित्ती एजुकेशन के लिए बच्चे स्वस्थ रहें



गुणवत्ता पूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों को नियमित स्कूल जाकर अध्ययन करने के साथ ही उनका स्वस्थ होना आवश्यक है। यह कहना है प्रमुख शासन सचिव स्कूल शिक्षा वीनू गुप्ता का। वे मंगलवार को राजकीय बालिका उच्च माध्यमिक विद्यालय मालवीय नगर में 'विश्व हाथ धुलाई दिवस' के अवसर पर स्कूलों एवं आंगनबाड़ी डिवीज के राज्यस्तरीय कार्यक्रम को संबोधित कर रही थीं। उन्होंने कहा कि सामान्य बीमारियों से बच्चों का बचाव करने के लिए अक्टूबर 2008 से हाथ धुलाई कार्यक्रम एवं वर्ष 2012 से समस्त राजकीय स्कूलों में कृमि उन्मूलन डिवीज कार्यक्रम चलाया जा रहा है। कार्यक्रम में एनआरएचएम की प्रबंध निदेशक गायत्री गठौड़ ने कहा कि राज्य के कई बच्चे कुपोषण एवं अन्य बीमारियों से ग्रसित हैं उन्हें स्वस्थ रखने की दृष्टि से प्रारम्भिक स्तर पर ही इस प्रकार के स्वास्थ्य संबंधी कार्यक्रमों का संचालन किया जा रहा है। विद्यालय की छात्रा दीक्षा गुप्ता ने डिवीज एवं हाथ धुलाई कार्यक्रम के बारे में बताया।



Figure 21: Dainik Bhaskar October 16, 2013

## प्रदेश में 80 लाख छात्र-छात्राओं को कृमि उन्मूलन की दवा दी

राजधानी में प्रमुख शासन सचिव वीजू गुप्ता ने विश्व हाथ धुलाई दिवस के अवसर पर कार्यक्रम का शुभारंभ किया

जयपुर। प्रदेश के 80 हजार विद्यालयों और 6 हजार 700 आंगनवाड़ी केंद्रों के करीब 80 लाख छात्र-छात्राओं को मंगलवार को डी-वर्मिंग (कृमि उन्मूलन) दवा दी गई। प्रमुख शासन सचिव (स्कूल शिक्षा) वीजू गुप्ता ने मंगलवार को राजकीय बालिका उच्च माध्यमिक विद्यालय मालवीय नगर में आयोजित विश्व हाथ धुलाई दिवस के अवसर पर इस कार्यक्रम का शुभारंभ करते हुए कहा कि गुणवत्तापूर्ण शिक्षा के लिए विद्यार्थियों का नियमित तौर पर स्वच्छ-सुथरा होकर स्कूल आना चाहिए। इससे न केवल बीमारियों से छुटकारा मिलेगा, बल्कि कुपोषण की समस्या भी दूर होगी। प्रारंभिक शिक्षा परिषद के आयुक्त भास्कर ए. सावंत ने कहा कि राजस्थान में अक्टूबर 2008 से हाथ धुलाई और वर्ष 2012 में राजकीय स्कूलों में कृमि उन्मूलन कार्यक्रम शुरू किया था। उसके बाद से बच्चों के बीमार होने की संख्या में कमी आई है। एनआरएचएम की एमडी गायत्री राटौड़ ने कहा कि जो विद्यार्थी आज दवा नहीं सके हैं, उन्हें 18 अक्टूबर को दी जाएगी।

Figure 22: Seema Sandesh, Ratangarh October 16, 2013

## विश्व हाथ धुलाई दिवस मनाया

रतनगढ़। स्वस्थ शरीर में ही स्वस्थ मस्तिष्क का निवास होता है। अतः शिक्षा में उत्कृष्ट परिणाम प्राप्त करने के लिये शिक्षार्थियों का स्वास्थ्य के प्रति सजग रहना अत्यावश्यक है। ये विचार प्रधानाचार्य कुलदीप व्यास ने लोहा ग्राम में आयोजित विश्व हाथ धुलाई दिवस एवं डी-वर्मिंग डे पर व्यक्त किये।

Figure 23: Samachar Jagat October 16, 2013

## स्वास्थ्य के प्रति सजग बच्चों ने उत्साह से ली डी-वर्मिंग दवा मनाया विश्व हाथ धुलाई दिवस व डीवर्मिंग डे

रतनगढ़, (निसं)। स्वस्थ शरीर में ही स्वस्थ मस्तिष्क का निवास होता है।

अतः शिक्षा में उत्कृष्ट परिणाम प्राप्त करने के लिए शिक्षार्थियों का स्वास्थ्य के प्रति सजग रहना अत्यावश्यक है। ये विचार प्रधानाचार्य कुलदीप व्यास ने लोहा ग्राम में आयोजित विश्व हाथ धुलाई दिवस एवं डीवर्मिंग डे पर व्यक्त किए। शिक्षा एवं चिकित्सा विभाग के निदेशानुसार आयोजित कार्यक्रम में व्याख्याता सुल्तानासिंह ने हाथ

धुलाई का महत्व बताते हुए सही ढंग से हाथ धोना सिखाया। कार्यक्रम प्रभारी नरेन्द्र सांकृत्य ने सभी विद्यार्थियों को डी वर्मिंग दवा वितरित की। वहीं राजकीय माध्यमिक विद्यालय, जालोक (बड़ी) में विश्व हाथ धुलाई दिवस एवं डीवर्मिंग दिवस मनाया गया। कार्यक्रम की अध्यक्षता बजरंगसिंह वार्ड पंच ने की। महेशकुमार सेनी ने विद्यार्थियों को इसके सेवन एवं उपयोगिता के बारे में विस्तार से बताया।

Figure 24: Lok Desh October 16, 2013

## कुपोषण से मुक्त होने का अभियान

टोंक (लॉसं.)। महिला एवं बाल विकास विभाग की ओर से मंगलवार को आंगनवाड़ी केंद्रों पर बच्चों को पेट की कीड़े से मुक्ति दिलाने के लिए डीवर्मिंग डे मनाया गया। इस दौरान बच्चों को दवा पिलाई गई ताकि वे कुपोषण से मुक्त हो सकें। इसकी विधिवत शुरुआत उपखण्ड अधिकारी हिममतसिंह एवं महिला बाल विकास विभाग के उपनिदेशक राजेन्द्र गुर्जर ने आंगनवाड़ी केंद्र 29 पर बच्चों को दवा पिलाकर की। साथ ही वे से छह वर्ष के सतत हजार से अधिक बच्चों को दवा पिलाई गई। उपखण्ड अधिकारी हिममतसिंह ने कुपोषण से बच्चों को मुक्ति दिलाने के लिए दवा पिलाने का आह्वान किया। साथ ही प्रखण्ड आंगनवाड़ी केंद्र पर विश्व हाथ धुलाई दिवस मनाकर स्वच्छता का संदेश दिया गया। बाल विकास परियोजना अधिकारी कृष्ण कुमार शर्मा ने बताया कि जो बच्चों दवा पीने से बंधित रह गए उन्हें 18 अक्टूबर को दवा पिलाई जाएगी।

Figure 25: Rajasthan Patrika October 16, 2013

# 80 लाख स्कूली बच्चों को डीवर्मिंग खुराक



राजस्थान राज्य के राजकीय विद्यालय में विश्व हाथ धुलाई दिवस कार्यक्रम के दौरान स्कूली बच्चों को डीवर्मिंग खुराक दी जा रही है।

## विश्व हाथ धुलाई दिवस पर प्रदेशभर के स्कूलों व आंगणवाड़ी केंद्रों पर चला कार्यक्रम

जयपुर: विश्व हाथ धुलाई दिवस के मौके पर राजस्थान के राजकीय नगर शिक्षा राजकीय महिला उच्च माध्यमिक विद्यालय में राजस्थान विद्यालय एवं आंगणवाड़ी डीवर्मिंग कार्यक्रम कार्यक्रम चलाया गया। कार्यक्रम के दौरान स्कूल शिक्षा अधिकारी सुनील कुमार ने कहा कि स्कूलों, बच्चों के लिए राजस्थान के राज्य

विद्यालयों में डीवर्मिंग खुराक का सुझाव है। शिक्षा विभाग, राजस्थान विभाग, महिला एवं बाल विकास विभाग, बुनियादी ढांचे विभाग व अन्य विभागों के सहयोग से कार्यक्रम चलाया जा रहा है।

राजस्थान के प्रदेश के 80 हजार स्कूलों और 6700 आंगणवाड़ी केंद्रों में करीब 80 लाख बच्चों को डीवर्मिंग खुराक दी गई। जो कि 18 लाख बच्चों को एक ही बार में। कार्यक्रम में राजस्थान के राज्य विद्यालय, राजकीय, राजकीय, राजकीय, राजकीय विद्यालयों में शामिल किया जाएगा।

Figure 26: News Jaipur October 16, 2013

# गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों का स्वस्थ होना जरूरी

जयपुर। प्रमुख राजकीय विद्यालयों में विद्यार्थियों को स्वस्थ होना जरूरी है। गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों को स्वस्थ होना जरूरी है। गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों को स्वस्थ होना जरूरी है। गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों को स्वस्थ होना जरूरी है।

प्रमुख राजकीय विद्यालयों में विद्यार्थियों को स्वस्थ होना जरूरी है। गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों को स्वस्थ होना जरूरी है। गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों को स्वस्थ होना जरूरी है। गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों को स्वस्थ होना जरूरी है।

Figure 28: Punjab Keshri October 16, 2013

# विद्यार्थियों का स्वस्थ होना आवश्यक

राजस्थान राज्य के राजकीय विद्यालयों में विश्व हाथ धुलाई दिवस का आयोजन

जयपुर, 16 अक्टूबर। प्रमुख राजकीय विद्यालयों में विश्व हाथ धुलाई दिवस का आयोजन किया गया। इस अवसर पर विद्यार्थियों को स्वस्थ होना जरूरी है। गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों को स्वस्थ होना जरूरी है। गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों को स्वस्थ होना जरूरी है।



राजस्थान राज्य के राजकीय विद्यालयों में विश्व हाथ धुलाई दिवस का आयोजन किया गया। इस अवसर पर विद्यार्थियों को स्वस्थ होना जरूरी है। गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों को स्वस्थ होना जरूरी है। गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों को स्वस्थ होना जरूरी है।

जयपुर। प्रमुख राजकीय विद्यालयों में विश्व हाथ धुलाई दिवस का आयोजन किया गया। इस अवसर पर विद्यार्थियों को स्वस्थ होना जरूरी है। गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों को स्वस्थ होना जरूरी है। गुणवत्तापूर्ण शिक्षा प्राप्ति के लिए विद्यार्थियों को स्वस्थ होना जरूरी है।

Figure 27: Metro Bytes October 16, 2013

# हाथ धोकर खाई खुराक

जयपुर। विश्व हाथ धुलाई दिवस पर सरकारी स्कूलों के बच्चों ने जहां हाथ की धुलाई के महत्व को जाना, वहीं दूसरी दौहर के खाने के बाद डीवर्मिंग की निशुल्क खुराक भी पिलाई गई। मंगलवार को प्रदेश भर में चले इस कार्यक्रम की शुरुआत मालवीय नगर स्थित राजकीय बालिका उच्च माध्यमिक विद्यालय में हुई। इस मौके पर स्कूल की छात्र संसद ने ही पूरे कार्यक्रम का संयोजित किया और छात्राओं को हाथ की धुलाई से होने वाले लाभ बताए। डी-वर्मिंग वर्ल्ड की ओर से राजस्थान में शुरू किए गए इस खास कार्यक्रम का उद्देश्य बच्चों में पेट के कीड़ों की बीमारी को जड़ से समाप्त करना है। इस मौके पर प्रोग्राम के निदेश अयान चटर्जी ने कहा कि राजस्थान ऐसा पहले प्रदेश है, जहां हाथ की धुलाई और डी वर्मिंग कार्यक्रम दोनों एक साथ शुरू किया गया है। पेट के कीड़ों की बीमारी का असर सीधे स्कूल में बच्चों की उपस्थिति पर पड़ता है।

## विश्व हाथ धुलाई दिवस पर कार्यक्रम

जयपुर। विश्व हाथ धुलाई दिवस पर सरकारी स्कूलों के बच्चों ने जहां हाथ की धुलाई के महत्व को जाना, वहीं दूसरी दौहर के खाने के बाद डीवर्मिंग की निशुल्क खुराक भी पिलाई गई। मंगलवार को प्रदेश भर में चले इस कार्यक्रम की शुरुआत मालवीय नगर स्थित राजकीय बालिका उच्च माध्यमिक विद्यालय में हुई। इस मौके पर स्कूल की छात्र संसद ने ही पूरे कार्यक्रम का संयोजित किया और छात्राओं को हाथ की धुलाई से होने वाले लाभ बताए। डी-वर्मिंग वर्ल्ड की ओर से राजस्थान में शुरू किए गए इस खास कार्यक्रम का उद्देश्य बच्चों में पेट के कीड़ों की बीमारी को जड़ से समाप्त करना है। इस मौके पर प्रोग्राम के निदेश अयान चटर्जी ने कहा कि राजस्थान ऐसा पहले प्रदेश है, जहां हाथ की धुलाई और डी वर्मिंग कार्यक्रम दोनों एक साथ शुरू किया गया है। पेट के कीड़ों की बीमारी का असर सीधे स्कूल में बच्चों की उपस्थिति पर पड़ता है।

Figure 29: A snapshot of the newspaper coverage of deworming in Rajasthan 2013

