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REPORT

INDEPENDENT MONITORING OF SCHOOLS AND
COMMUNE HEALTH CENTERS DURING MASS DRUG
ADMINISTRATION CAMPAIGNS IN PHU THO, HOA
BINH, THANH HOA AND NGHE AN



EAST MEETS WEST FOUNDATION



CENTER FOR ENVIRONMENT AND HEALTH STUDIES

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INDEPENDENT MONITORING OF SCHOOLS AND COMMUNE HEALTH CENTERS DURING MASS DRUG ADMINISTRATION CAMPAIGNS IN PHU THO, HOA BINH, THANH HOA AND NGHE AN



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Assoc.prof. Trinh Huu Vach, PhD

Director of Center for Environment and Health Studies

ABBREVIATION

MUD	:	Mop-up Day
DW	:	Deworming Day
MDA	:	Mass Drug Administration
EMW	:	East Meets West
CHC	:	Commune Health Center
CHW	:	Commune Health worker

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1. General introduction

1.1. Background

East Meets West (EMW) is partnering with Evidence Action and the Vietnamese government to implement a school-based deworming program in Phu Tho, Hoa Binh, Thanh Hoa and Nghe An. School-based mass drug administration (MDA) campaigns, whereby anthelmintic medication is administered to school-age children, are a model proven to cost-effectively control intestinal worm infections.

The first round of school-based deworming as part of this program is scheduled to be implemented during the final week of April and first week of May. Deworming will be implemented in primary schools in two phases: (i) the main deworming day will be implemented over a 1-to-2 day period (April 28 and/or April 29) targeting all school-age children attending primary schools; (ii) a 'mop-up' day will be implemented on May 4, targeting children who could not receive deworming medication on the main deworming day. Deworming medication will be administered by commune health workers at the schools, with the assistance of teachers. At each school, the commune health workers will record, class-by-class, the number of children who received the deworming medication (albendazole). Following the mop-up day, the commune health staff will collate the information from each class and complete a reporting form detailing the number of children dewormed in all primary schools in the commune (constituting all main and 'satellite' schools). The week prior to deworming, representative commune health workers and teachers will receive training, detailing how albendazole should be administered safely, and how data should be collected.

Monitoring and evaluation (M&E) is an integral component of any large-scale drug-distribution program. M&E is an essential mechanism to ensure the efficient implementation of the program so that the target population achieves maximum benefit through cost-effective treatment. For a school-based deworming program, rigorous M&E at all stages of the process allows for issue identification and resolution during program execution, and lessons learned to be applied to decision-making for subsequent deworming rounds. As part of the technical assistance to the Government of Vietnam, East Meets West and Evidence Action will provide extensive monitoring of the school-based deworming program to evaluate whether key processes are performed correctly and the accuracy of reported data.

1.2. Monitoring objectives

The purpose of this monitoring exercise is to:

- Assess whether the expected processes are followed by commune health workers and teachers during the school-based deworming campaign
- Assess the accuracy of the reporting by the commune health staff

1.3. Monitoring time and sites

The monitoring was conducted from 28 April to 13 May 2016 at the main and satellite points of primary schools in 72 districts of Hoa Binh, Phu Tho, Thanh Hoa and Nghe An provinces.

1.4. Monitoring sample size

Table 1. Sample size

Monitoring activity	No. of monitoring visits required				Total
	Phu Tho	Hoa Binh	Thanh Hoa	Nghe An	
Monitoring of deworming at schools on main deworming day	12	10	25	20	67
Monitoring of deworming at schools on mop-up day	12	10	25	18	65
Coverage validation at CHCs and schools	13	11	27	21	72

The random-selection was performed by EMW/Evidence Action and the list of selected schools and alternative schools was provided to CEHS. As expected, the sample size for the monitoring at selected primary schools on main deworming day and mop-up day was 66 schools and that for coverage validation was 72 schools (one school was randomly selected at each district). However, during the monitoring process, the deworming plan of some communes/primary schools was changed depending on local working arrangement and geographical location also. The main deworming day at one commune (Nhon Mai commune) in Tuong Duong district of Nghe An province was on 4 May 2016 instead of 28 April 2016 as scheduled. Finding one replaced school for this case could not be done because the worming day at that school was also postponed 6 days to combine with the vaccination day in the commune. Therefore, the sample size for the monitoring on main deworming day increased one case and that for the monitoring on mop-up day decreased one case.

2. How to implement and manage the monitoring

2.1. Recruitment and training of monitors

Recruitment

All monitors are CEHS's staff, officers/lecturers from Thai Binh Medical and Pharmaceutical University. All of them are required as follows:

- Having at least bachelor of public health or higher, in which numerous monitors are doctors and masters;
- Having at least 5 experience-years in implementing studies, monitoring on public health, parasites and social medicine;
- Having ability to work with high pressure and travel in difficult areas;
- Having high responsibility and ability to work independently in the field.

Training

All 74 monitors were divided to join in two training sessions which were held in Hanoi during 2 days before implementing the official monitoring in the field. The trainer for two training sessions was the team leader. The purpose of the training sessions was to provide necessary information, protocols to be followed and interviewing skills for monitors. The monitors were trained and thoroughly discussed about the possible answers given for each question. For each question, the monitors were required to understand why this information should be collected. The participation of representation from East Meets West and Evidence Action contributed to further clarify the meaning of each question and any comments from monitors during the training.

2.2. How to implement and manage the monitoring

A total of 67 monitors operated to monitor the 66 schools for deworming day, each monitor visited one school. Similarly, 65 monitors for mop-up day and 72 ones for coverage validation were assigned to conduct his/her independent monitoring at one school only. Before each monitoring, all monitors were required to contact with the school and CHC that they would visit to confirm that the deworming plan would be held as scheduled. They were also required to inform CEHS's coordinator about the exact date they would conduct monitoring at locality afterwards. All monitors visited the schools for their monitoring on main deworming day and mop-up day before 7AM so that they would not miss any steps of deworming at schools. After completing observations and interviews as required, the monitors checked and finalized all necessary information and submitted completed forms to CEHS's coordinator.

The CEHS's coordinator was responsible for random checking of deworming time and availability of monitors at locality via telephone with some monitored schools, closely combined with staff from East Meets West to address any problems from monitors in the field, updated the information of replaced schools to inform monitors timely, reviewed all checklists and interviews completed by monitors before sending them for data entry.

2.3. Data processing and analysis

All checklists and interviews collected in the field were checked at the end of each time of monitoring to detect errors before entering data into computers. The data were entered twice by two different staff by Epi Data 3.1. The comparison was performed to detect and minimize data entry errors afterwards.

Analysis of Data from Monitoring of Main Deworming Day

Checklists: analysis of findings from observational monitoring of the main deworming day

Interviews: analysis of findings from interviews of commune health workers, head teachers, teachers and students performed at schools on the main deworming day

Analysis of Data from Monitoring of Mop-Up Day

Checklists: analysis of findings from observational monitoring of the mop-up day

Interviews: analysis of findings from interviews of commune health workers, head teachers, teachers and students performed at schools on mop-up day

Analysis of Data from Coverage Validation

Interviews at commune health centers: analysis of findings from interview of commune health worker at the commune health center during coverage validation

Interview of students at schools: analysis of findings from interview of children performed at schools during coverage validation.

2.4. Problems arisen during the monitoring in the field

Due to the large monitoring areas in all districts of four provinces, during the monitoring process, the monitors had met some problems in the field, however, CEHS's coordinator in combination with staff from East Meets West had addressed all problems timely to ensure the best quality of the monitoring.

Table 2. Some problems arisen during the monitoring in the field and how to solve

Problems	How to solve
Monitors contacted with locality 2-3 days before they visited, however the some localities confirmed that they did not conduct deworming on the scheduled date.	Monitors informed this to CEHS's coordinator. CEHS's coordinator called to confirm this with the locality and informed the monitors about name and telephone of the school for replacement.
The school selected for replacement did not conduct deworming also.	The monitor still visited the school and conducted interviews for the mop-up day. Because the school did not conduct deworming on mop-up day, so the monitor missed observations. The monitor was required to ask thoroughly about the reason of no deworming on mop-up day.
The scheduled date for deworming was on the same date of schools's exams.	CEHS's coordinator confirmed this with the district. If the exam schedule (of the school only) was on the same date of deworming, another replaced school would be selected for the monitoring. If the exam schedule (of the district) was on the same date of deworming, the monitoring would be implemented when the school conducted deworming.
In some communes of the border areas, when knowing about the monitor's visit at school, the local authorities and border guards also visited the school to confirm information and ask about the monitor's identity, that made the monitor inconvenient during the monitoring.	The monitor immediately informed this to CEHS's coordinator. Then, CEHS's coordinator urgently contacted with local contact persons for their support. This problem was solved in 10-15 minutes after receiving the information from the monitor to ensure the monitoring carried out as planned.

3. Main findings

3.1. Some detailed information of time and location of the monitoring

Table 3. Number of primary schools under the monitoring of deworming at each province

Information	Hoa Binh	Nghe An	Phu Tho	Thanh Hoa	Total
Main deworming day					
• Main school	10	20	12	25	67
• Satellite school	6	7	3	7	23
Mop-up day					
• Main school	10	18	12	25	65
• Satellite school	3	4	1	6	14
Coverage validation					
• Main school	11	21	13	27	72
• Satellite school	5	11	2	8	26

The table above shows total of main schools and satellite schools which were monitored on the main deworming, mop-up day and coverage validation, in which, 67 main schools and 23 satellite schools were monitored on the main deworming day in four provinces; 65 main schools and 7 satellite schools were monitored on the mop-up day; 72 main schools and 26 satellite schools were monitored on the coverage validation day. On the main deworming day and the mop-up day, if the main school had a satellite school that was implementing deworming day on the same day, that satellite school was visited after completing the monitoring at the main schools; if more than one satellite school was implementing deworming, the monitor randomly-selected one to visit. On the coverage validation, the main primary school had 1 or more satellite school, the monitor randomly-selected one to visit to interview and fill information about the satellite school selected for monitoring on the coverage validation.

There was a change in the monitoring sample size on the main deworming day and on the mop-up day as expected initially (increased one school on the main deworming day and decreased one school on the mop-up day). This was explained that: the primary school of Nhon Mai commune in Tuong Duong district (Nghe An province) conducted deworming for the main deworming day on 4 May instead of 28 April or 29 April as scheduled. The primary school of Huu Khuong commune was selected for replacement, but it conducted deworming for the mop-up day on 10 May which was the same date of EPI at CHC (instead of 4 May as other schools of the province conducted). Therefore, the monitor still visited the primary school of Nhon Mai commune as scheduled, but he conducted the monitoring for the main deworming instead of the mop-up deworming.

Table 4. List of main and satellite schools under the monitoring on the main deworming day

Information	Date of deworming	Main schools	Number of satellite schools	Satellite schools visited (1 Yes, 0 No)
Hoa Binh				
1. Yen Thuy	28-Apr-16	Phu Lai	0	0
2. Tan Lac	28-Apr-16	Phu Cuong	6	1
3. Lac Son	29-Apr-16	My Thanh	4	1
4. Cao Phong	28-Apr-16	Nam Phong	4	1
5. Mai Chau	28-Apr-16	Na Phon	0	0
6. Luong Son	28-Apr-16	Thanh Luong	2	1
7. Ky Son	28-Apr-16	Hop Thinh	1	0
8. Kim Boi	29-Apr-16	Cuoi Ha	2	1
9. Da Bac	28-Apr-16	Vay Nua	6	1
10. Hoa Binh city	29-Apr-16	Trung Minh	0	0
Phu Tho				
1. Viet Tri	28-Apr-16	Chu Hoa	0	0
2. Phu Tho	28-Apr-16	Le Dong	0	0
3. Lam Thao	28-Apr-16	Tu Xa 2	0	0
4. Cam Khe	29-Apr-16	Sai Nga	0	0
5. Doan Hung	28-Apr-16	Bang Luan	1	1
6. Ha Hoa	28-Apr-16	Chinh Cong	0	0
7. Thanh Thuy	28-Apr-16	Doan Ha	0	0
8. Thanh Ba	29-Apr-16	Vo Lao	0	0
9. Tam Nong	29-Apr-16	Thuong Nong	0	0
10. Thanh Son	28-Apr-16	Vo Mieu 1	1	1
11. Tan Son	29-Apr-16	My Thuan 2	1	1
12. Yen Lap	28-Apr-16	Dong Thinh	0	0
Thanh Hoa				
1. Muong Lat	04-May-16	Muong Chanh	3	1
2. Quan Hoa	04-May-16	Xuan Phu	0	0
3. Quan Son	05-May-16	Muong Min	3	1
4. Ba Thuoc	04-May-16	Dien Lu 2	1	0
5. Lang Chanh	04-May-16	Tan Phuc 2	1	1
6. Ngoc Lac	04-May-16	Phuc Thinh	1	1
7. Cam Thuy	04-May-16	Cam Phu	0	0
8. Thach Thanh	04-May-16	Thach Cam 1	0	0
9. Thuong Xuan	05-May-16	Ngoc Phung 1*	2	1
10. Nhu Thanh	05-May-16	Yen Tho 1	0	0
11. Nhu Xuan	05-May-16	Thanh Xuan	3	1
12. Vinh Loc	05-May-16	Vinh Hoa	0	0
13. Yen Dinh	04-May-16	Quy Loc 2	0	0
14. Trieu Son	04-May-16	Tho Ngoc	0	0
15. Tho Xuan	05-May-16	Tho Loc	0	0
16. Thieu Hoa	09-May-16	Thieu Hop	0	0
17. Dong Son	04-May-16	Dong Van	0	0

Information	Date of deworming	Main schools	Number of satellite schools	Satellite schools visited (1 Yes, 0 No)
18. Nong Cong	05-May-16	Thi Tran	0	0
19. Tinh Gia	05-May-16	Thanh Thuy	0	0
20. Hoang Hoa	04-May-16	Hoang Chau	0	0
21. Hau Loc	04-May-16	Minh Loc II	0	0
22. Nga Son	05-May-16	Nga Phu	1	1
23. Bim Son	04-May-16	Lam Son 1	0	0
24. Sam Son	04-May-16	Bac Son	0	0
25. Thanh Hoa city	04-May-16	Nguyen Van Troi	0	0
Nghe An				
1. Nghi Loc	28-Apr-16	Nghi Thuan	0	0
2. Quynh Luu	28-Apr-16	Quynh Thach	0	0
3. Nam Dan	28-Apr-16	Hung Tien	1	1
4. Con Cuong	29-Apr-16	Mon Son III	2	0
5. Vinh city	28-Apr-16	Quang Trung	0	0
6. Anh Son	28-Apr-16	Hung Son	0	0
7. Ky Son	29-Apr-16	Huu Lap	4	1
8. Quy Hop	28-Apr-16	Chau Thanh	2	0
9. Hung Nguyen	28-Apr-16	Hoa Binh	0	0
10. Quy Chau	28-Apr-16	TT.Tan Lac	0	0
11. Do Luong	28-Apr-16	Thuan Son	0	0
12. Thai Hoa town	28-Apr-16	Tay Hieu	2	1
13. Tuong Duong	28-Apr-16	Sieng My	5	1
14. Tuong Duong	04-May-16	Nhon Mai	6	1
15. Yen Thanh	29-Apr-16	Dai Thanh	0	0
16. Nghia Dan	28-Apr-16	Nghia Loi	1	1
17. Tan Ky	29-Apr-16	Phu Son	2	1
18. Que Phong	28-Apr-16	Hanh Dich	3	0
19. Thanh Chuong	28-Apr-16	Vo Liet II	0	0
20. Cua Lo town	28-Apr-16	Nghi Hoa	0	0

* Replaced schools

A total of 67 primary schools were visited, 28 ones of which have satellite schools (accounted for 41.8%). Among 28 primary schools having satellite schools, 23 ones were visited on the main deworming day but 17 ones were observed the deworming process. Five primary schools have satellite schools but not to be visited because they did not conduct deworming on the same date with the main schools. Up to 97% of primary schools held deworming as planned: 28 or 29 April for Hoa Binh, Phu Tho, Nghe An provinces and 4 or 5 May for Thanh Hoa province. However, two primary schools were monitored deworming on the another date including primary school of Nhon Mai commune (Tuong Duong district of Nghe An province) and primary school of Thieu Hop (Thieu Hoa district of Thanh Hoa province). Nhon Mai is a remote and mountainous commune, bordered with Tuong Duong district of Nghe An province, so the information exchange and receiving drugs for deworming were combined with the meeting held in the district on 29 April. The next days were 30 April and

1 May vacations, so the school had to change the deworming date on 4 May. For the primary school of Thieu Hop commune (Thieu Hoa district of Thanh Hoa province), the scheduled deworming date (on 4-5 May 2016) was on the same date of school exam schedule of the district, so the deworming schedule was postponed on 9 May 2016.

Table 5. List of primary schools and satellite schools under the monitoring on the mop-up day

Information	Mop-up day	Main schools	Number of satellite schools	Satellite schools visited (1 Yes, 0 No)
Hoa Binh				
1. Yen Thuy	05-May-2016	Da Phuc	0	0
2. Tan Lac	05-May-2016	Man Duc	1	0
3. Lac Son	05-May-2016	Van Nghia*	5	1
4. Cao Phong	05-May-2016	Binh Thanh	0	0
5. Mai Chau	05-May-2016	Hang Kia A*	2	0
6. Luong Son	05-May-2016	Hop Thanh	2	0
7. Ky Son	05-May-2016	Doc Lap	0	0
8. Kim Boi	04-May-2016	My Hoa	4	1
9. Hoa Binh city	05-May-2016	Yen Mong	1	0
10. Lac Thuy	04-May-2016	Phu Thanh	1	1
Phu Tho				
1. Viet Tri	04-May-2016	Minh Phuong	0	0
2. Lam Thao	04-May-2016	Tu Xa 2	0	0
3. Cam Khe	04-May-2016	Tuy Loc 1*	0	0
4. Doan Hung	04-May-2016	Minh Luong*	0	0
5. Ha Hoa	04-May-2016	Lenh Khanh	0	0
6. Thanh Thuy	04-May-2016	Hoang Xa 1	0	0
7. Thanh Ba	04-May-2016	Hoang Cuong	0	0
8. Tam Nong	04-May-2016	Co Tiet*	0	0
9. Thanh Son	04-May-2016	Cu Dong	0	0
10. Tan Son	04-May-2016	Kim Thuong*	3	1
11. Yen Lap	04-May-2016	Ngoc Dong	0	0
12. Phu Ninh	04-May-2016	Bao Thanh*	0	0
Thanh Hoa				
1. Quan Hoa	09-May-2016	Phu Xuan*	0	0
2. Quan Son	09-May-2016	Son Thuy	5	1
3. Ba Thuoc	09-May-2016	Ai Thuong*	2	0
4. Ngoc Lac	09-May-2016	Minh Tien 1	1	1
5. Cam Thuy	09-May-2016	Cam Quy*	2	1
6. Thach Thanh	09-May-2016	Ngoc Trao*	0	0
7. Thuong Xuan	09-May-2016	Luong Son 1	4	1
8. Nhu Thanh	09-May-2016	Mau Lam 1	1	1
9. Nhu Xuan	09-May-2016	Bai Tranh	3	1
10. Vinh Loc	09-May-2016	Vinh Long 1	0	0
11. Yen Dinh	09-May-2016	Yen Thai	0	0
12. Trieu Son	09-May-2016	Dong Tien	0	0

Information	Mop-up day	Main schools	Number of satellite schools	Satellite schools visited (1 Yes, 0 No)
13. Tho Xuan	09-May-2016	Xuan Tin	0	0
14. Thieu Hoa	11-May-2016	Thieu Chau	0	0
15. Dong Son	09-May-2016	Dong Yen*	0	0
16. Nong Cong	13-May-2016	Thang Tho	0	0
17. Tinh Gia	09-May-2016	Hung Son	0	0
18. Quang Xuong	09-May-2016	Quang Nham 2	0	0
19. Hoang Hoa	09-May-2016	Hoang Quy*	0	0
20. Hau Loc	09-May-2016	Ngu Loc II*	0	0
21. Nga Son	09-May-2016	Nga Van	0	0
22. Ha Trung	09-May-2016	Ha Lam	0	0
23. Bim Son	09-May-2016	Ba Dinh*	0	0
24. Sam Son	09-May-2016	Trung Son 2	0	0
25. Thanh Hoa city	09-May-2016	Hoang Long	0	0
Nghe An				
1. Nghi Loc	04-May-2016	Nghi Tho	0	0
2. Quynh Luu	05-May-2016	Quynh Luong*	0	0
3. Nam Dan	04-May-2016	Hoang Tru	0	0
4. Con Cuong	04-May-2016	Thi tran*	0	0
5. Vinh city	04-May-2016	Nghi Phu	0	0
6. Ky Son	04-May-2016	Pha Danh	6	1
7. Quy Hop	04-May-2016	Chau Dinh	1	0
8. Hung Nguyen	04-May-2016	Hung Loi	0	0
9. Quy Chau	04-May-2016	Chau Hanh*	1	1
10. Do Luong	04-May-2016	Minh Son	0	0
11. Thai Hoa town	05-May-2016	Hoa Hieu	0	0
12. Yen Thanh	04-May-2016	Kim Thanh	0	0
13. Nghia Dan	04-May-2016	Nghia Khanh	0	0
14. Tan Ky	04-May-2016	Ky Tan*	2	1
15. Que Phong	04-May-2016	Hanh Dich	3	0
16. Hoang Mai town	04-May-2016	Quynh Xuan	1	1
17. Thanh Chuong	04-May-2016	Thanh Tuong*	0	0
18. Cua Lo town	04-May-2016	Nghi Hoa	0	0

* Replaced schools

On the mop-up day, a total of 65 primary schools were visited, 21 ones of which have satellite schools (accounted for 32.3%). Among 21 primary schools having satellite schools, 14 ones were visited on the main deworming day but 7 ones were observed the deworming process. Fourteen satellite schools were not observed the deworming process because drug administration was completed by the time the monitors arrived.

A total of 65 main schools and 7 satellite schools were monitored on the mop-up day in four provinces. As planned, the date for mop-up day in provinces of Phu Tho, Nghe An was May 5, in Hoa Binh was May 5 and in Thanh Hoa was May 9. The result showed that 91.7% of visited schools were conducted the mop-up day as the scheduled. Some primary schools

conducted deworming before or after one day because CHC arranged to combine with the local activities, for example, the deworming day was combined with EPI day at CHC. The deworming schedule in Thieu Hoa communes was postponed on 9 May 2016, so its mop-up day was postponed two days afterwards. In Nong Cong district (Thanh Hoa), the mop-up day as planned (May 9) coincided with the date of school exam schedule and was postponed on May 13. The selected schools where 100% of students were dewormed on the deworming day were replaced by alternate schools, thus this rate is completely different when compared to the results on the coverage validation (Table 43).

Table 6. List of schools selected for replacement on the deworming day and the mop-up day

No.	Tỉnh/huyện	Main deworming day		Mop-up day	
		Selected school	Replaced school	Selected school	Replaced school
PHU THO					
1.	Cam Khe			Hien Da	Tuy Loc 1
2.	Doan Hung			Vu Quang	Minh Luong
3.	Tam Nong			Thanh Uyen	Co Tiet
4.	Phu Ninh			Le My	Bao Thanh
5.	Tan Son			Thu Cuc 2	Kim Thuong
HOA BINH					
6.	Lac Son			Binh Cang	Van Nghia
7.	Mai Chau			Tan Mai	Hang Kia A
THANH HOA					
8.	Thuong Xuan	Xuan Duong	Ngoc Phung 1	Xuan Le	Luong Son 1
9.	Hoang Hoa			Hoang Phuc	Hoang Quy
10.	Ba Thuoc			Luong Ngoai	Ai Thuong
11.	Bim Son			Ngoc Trao	Ba Dinh
12.	Thach Thanh			Thanh Vinh	Ngoc Trao
13.	Hau Loc			Tuy Loc	Ngu Loc II
14.	Quan Hoa			Nam Tien	Phu Xuan
15.	Cam Thuy			Cam Tu	Cam Quy
16.	Dong Son			Dong Van	Dong Yen
NGHE AN					
17.	Quynh Luu			Son Hai	Quynh Luong
18.	Con Cuong			Thach Ngan II	Thi Tran
19.	Quy Chau			Chau Hoan	Chau Hanh
20.	Tan Ky			Dong Van	Ky Tan
21.	Thanh Chuong			Hanh Lam	Thanh Tuong

The table above consists of the list of primary schools not to conduct deworming on the main deworming day or mop-up day and schools selected for replacement, in which one school did not conduct deworming on the main deworming day as scheduled and 21 schools did not conduct deworming on the mop-up day but replaced by another schools. For the main deworming day, the primary school of Xuan Duong commune was the location selected for good student exam on the deworming day, so the primary school of Ngoc Phung commune was selected for replacement. For the mop-up day, all students of the 21 selected schools above were dewormed on the main deworming day so that there was no need for a MUD, so the monitors had to move to alternate schools. Among 21 alternate schools

replaced, there was no MUD at 15 ones because of completing the drug administration on the main deworming day, but the monitors still visited schools and CHCs to implement interviews, including: primary schools of Minh Luong, Co Tiet, Bao Thanh, Kim Thuong communes (Phu Tho province), Van Nghia, Hang Kia A communes (Hoa Binh province), Luong Son 1, Hoang Quy, Ai Thuong, Ba Dinh, Ngu Loc II, Phu Xuan, Cam Quy communes (Thanh Hoa province), Con Cuong town, Ky Tan commune (Nghe An province). All these schools conducted deworming on the main deworming day, thus there was no observation at the 15 schools on the mop-up day.

Table 7. List of primary schools and satellite schools under the monitoring on the coverage validation

Information	Mop-up day	Main schools	Number of satellite schools	Satellite schools visited (1 Yes, 0 No)
Hoa Binh				
1. Yen Thuy	9-May-2016	Lac Hung	0	0
2. Tan Lac	9-May-2016	Nam Son	2	1
3. Lac Son	9-May-2016	Van Son	1	1
4. Cao Phong	9-May-2016	Nam Phong	4	1
5. Mai Chau	9-May-2016	Bao La	1	1
6. Luong Son	9-May-2016	Tan Vinh	0	0
7. Ky Son	9-May-2016	Dan Ha	0	0
8. Kim Boi	9-May-2016	Dong Bac	0	0
9. Da Bac	9-May-2016	Yen Hoa	3	1
10. Lac Thuy	9-May-2016	Lac Long	0	0
11. Hoa Binh city	9-May-2016	Dong Tien	0	0
Phu Tho				
1. Viet Tri	9-May-2016	Hy Cuong	0	0
2. Phu Tho town	9-May-2016	Ha Loc 2	0	0
3. Lam Thao	9-May-2016	Supe	0	0
4. Cam Khe	9-May-2016	Yen Tap	0	0
5. Doan Hung	9-May-2016	Dai Nghia	0	0
6. Ha Hoa	9-May-2016	Dai Pham	0	0
7. Thanh Thuy	9-May-2016	Son Thuy 2	0	0
8. Thanh Ba	9-May-2016	Yen Noi	0	0
9. Tam Nong	9-May-2016	Dau Duong	0	0
10. Phu Ninh	9-May-2016	Le My	0	0
11. Thanh Son	9-May-2016	Son Hung	1	1
12. Tan Son	9-May-2016	Thu Cuc 2	2	1
13. Yen Lap	9-May-2016	Yen Lap town	0	0
Thanh Hoa				
1. Muong Lat	13-May-2016	Muong Chanh	3	1
2. Quan Hoa	13-May-2016	Xuan Phu	0	0
3. Quan Son	13-May-2016	Tam Lu	3	1
4. Ba Thuoc	13-May-2016	Thanh Son	3	1
5. Lang Chanh	13-May-2016	Dong Luong	2	1
6. Ngoc Lac	13-May-2016	My Tan 1	0	0

Information	Mop-up day	Main schools	Number of satellite schools	Satellite schools visited (1 Yes, 0 No)
7. Cam Thuy	13-May-2016	Cam Son	1	1
8. Thach Thanh	13-May-2016	Thach Tuong 2	1	1
9. Thuong Xuan	13-May-2016	Bat Mot 2	1	1
10. Nhu Thanh	13-May-2016	Phuc Duong	0	0
11. Nhu Xuan	13-May-2016	Xuan Quy	0	0
12. Vinh Loc	13-May-2016	Vinh Long 2	0	0
13. Yen Dinh	13-May-2016	Dinh Hoa	0	0
14. Trieu Son	13-May-2016	Trieu Thanh	0	0
15. Tho Xuan	13-May-2016	Tho Nguyen	0	0
16. Thieu Hoa	13-May-2016	Thieu Trung	0	0
17. Dong Son	13-May-2016	Rung Thong town	0	0
18. Nong Cong	15-May-2016	Te Loi	0	0
19. Tinh Gia	13-May-2016	Hai Ninh	0	0
20. Quang Xuong	13-May-2016	Quang Tho	0	0
21. Hoang Hoa	13-May-2016	Hoang Xuyen	0	0
22. Huyen Hau Loc	13-May-2016	Xuan Loc	0	0
23. Nga Son	13-May-2016	Nga Bach	0	0
24. Ha Trung	13-May-2016	Ha Bac	0	0
25. Bim Son	13-May-2016	Bac Son	1	1
26. Sam Son	13-May-2016	Quang Tien 2	0	0
27. Thanh Hoa city	13-May-2016	Quang Thinh	0	0
Nghe An				
1. Nghi Loc	9-May-2016	Nghi Hung	0	0
2. Quynh Luu	9-May-2016	Quynh Hoa	1	1
3. Nam Dan	9-May-2016	Nam Tan	0	0
4. Con Cuong	9-May-2016	Chi Khe I	1	1
5. Vinh city	9-May-2016	Hung Loc	0	0
6. Dien Chau	9-May-2016	Dien Hoang	0	0
7. Anh Son	9-May-2016	Tao Son	0	0
8. Ky Son	9-May-2016	Muong Ai	6	1
9. Quy Hop	9-May-2016	Chau Thanh	2	1
10. Hung Nguyen	9-May-2016	Hung Linh	0	0
11. Quy Chau	9-May-2016	Chau Thuan	2	1
12. Do Luong	9-May-2016	Hien Son	0	0
13. Thai Hoa town	9-May-2016	Dong Hieu	1	1
14. Tuong Duong	9-May-2016	Tam Thai	4	1
15. Yen Thanh	9-May-2016	Dong Thanh	1	1
16. Nghia Dan	9-May-2016	Nghia Hieu	1	1
17. Tan Ky	9-May-2016	Nghia Binh	1	1
18. Que Phong	9-May-2016	Thi Tran	0	0
19. Hoang Mai town	9-May-2016	Quynh Loc	1	1
20. Thanh Chuong	9-May-2016	Thanh Linh	0	0
21. Cua Lo town	9-May-2016	Nghi Tan	0	0

For the coverage validation, a total of 72 primary schools were visited, 26 ones of which have satellite schools (accounted for 36.1%) and were visited as scheduled. All primary schools in Nong Cong district (Thanh Hoa) completed the mop-up day on May 13, thus the coverage validation in Nong Cong was conducted on May 15.

Table 8. Average number of students enrolled at each main school

Information	Hoa Binh	Nghe An	Phu Tho	Thanh Hoa	Total
Male students (\pm SD)	140.5 \pm 67.1	188.7 \pm 102.1	179.7 \pm 85.7	181.9 \pm 127.3	177.2 \pm 106.4
Female students (\pm SD)	137.2 \pm 64.1	178.7 \pm 100.0	164.8 \pm 73.8	169.5 \pm 114.0	166.4 \pm 97.6
Average number of students (\pm SD)	277.7 \pm 126	367.4 \pm 199.2	344.5 \pm 157.4	351.5 \pm 239.7	343.6 \pm 201.6
The least number of students	100	52	109	78	52
The most number of students	538	743	666	1287	1287

About the number of students, on average there are 343 students per main school, in which the highest in Nghe An (367 students/school) and the lowest in Hoa Binh (277 students/school). In general, the number of male students is slightly higher than that of female students. Average number of male/female students is 177/166, ratio 1.07:1. The least number of students are 52 (Xieng My primary school, Tuong Duong, Nghe An) and the most number of students are 1287 (Nguyen Van Troi primary school, Ngoc Trao, Thanh Hoa).

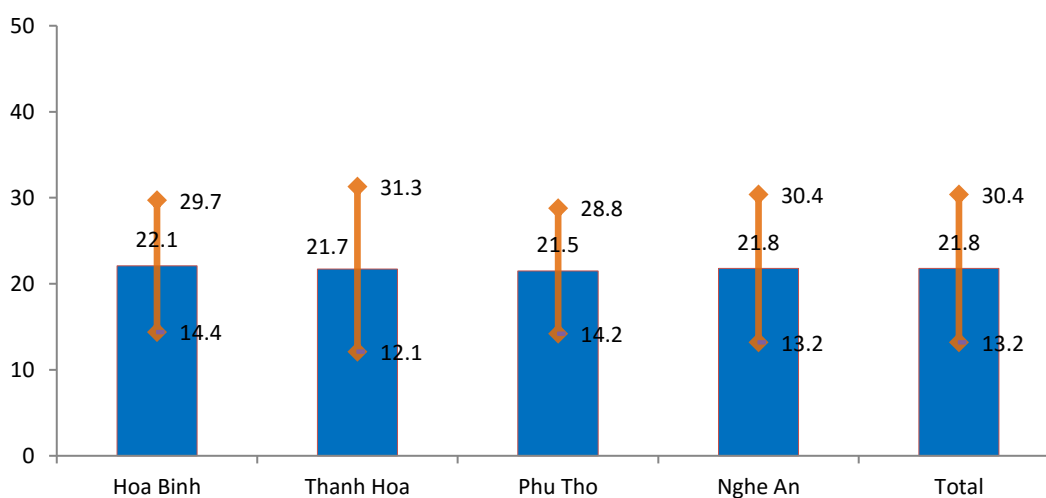


Figure 1. Average number of teachers at each school

On average, there are about 21-22 teachers at each monitored school. There is no a significant difference in the average number of teachers among provinces. Corresponding with students, the school has the least number of teachers are 6 teachers (Xieng My primary school, Tuong Duong, Nghe An) and the schools has the most number of teachers are 52 teachers (Nguyen Van Troi primary school, Ngoc Trao, Thanh Hoa).

Table 9. Percentage of schools having a school health teacher

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Yes	15	75.0	20	52.6	8	33.3	7	14.0	50	37.9
No	2	10.0	1	2.6	2	8.3	21	42.0	26	19.7
No full-time school health teacher, but a teacher acts in that capacity	3	15.0	17	44.7	14	58.3	22	44.0	56	42.4
Total	20	100.0	38	100.0	24	100.0	50	100.0	132	100.0

The result in the table above shows that, only 37.9% of schools have a school health teacher, 42.4% of schools have no a full-time school health teacher, but a teacher acts in that capacity. Especially, 19.7% of schools have no a school health teacher. School health is more and more important in health care for students in general and in the MDA campaigns in particular. Thus, the department of education and training should pay more attention to allocation school health teachers at these schools.

Hand-washing and toilet facilities

Table 10. Percentage of main schools having the primary hand-washing facility for students

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
No hand-washing facilities	1	5.0	0	0.0	0	0.0	0	0.0	1	0.8
Fixed hand-washing facility with tap	13	65.0	28	73.7	21	87.5	36	72.0	98	74.2
Fixed hand-washing facility with stored water	4	20.0	15	39.5	10	41.7	24	48.0	53	40.2
Hand-washing basins	6	30.0	23	60.5	10	41.7	15	30.0	54	40.9
Others	2	10.0	1	2.6	0	0.0	2	4.0	5	3.8
Total	20	100.0	38	100.0	24	100.0	50	100.0	132	100.0

Among 132 main schools visited on the deworming day and the mop-up day, 74.2% of schools have fixed hand-washing facility with tap, 40.2% of schools have fixed hand-washing facility with stored water and 40.9 of schools have hand-washing basins. Only one main school has no primary hand-washing facility for students (0.8%).

Table 11. Percentage of satellite schools having the primary hand-washing facility for students

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
No hand-washing facilities	5	55.6	0	0.0	0	0.0	1	7.7	6	16.2
Fixed hand-washing facility with tap	3	33.3	7	63.6	4	100.0	4	30.8	18	48.6
Fixed hand-washing facility with stored water	2	22.2	1	9.1	2	50.0	8	61.5	13	35.1
Hand-washing basins	0	0.0	2	18.2	0	0.0	4	30.8	6	16.2
Others	0	0.0	3	27.3	0	0.0	0	0.0	3	8.1
Total	9	100.0	11	100.0	4	100.0	13	100.0	37	100.0

In general, there is a lack of hand-washing facilities at satellite schools. A total of 37 satellite schools were visited on the deworming day and the mop-up day, however, up to 6/37 satellite schools (16.2%) have no hand-washing facilities, the rate was the highest in Hoa Binh province (5 satellite schools). The rate of satellite schools having fixed hand-washing facility with tap was much lower than that of main schools (48.6% vs. 74.2%). Similarly, the rate of satellite schools having hand-washing basins was also very low in compared with the rate at main schools (16.2% and 40.9%, respectively).

Table 12. Percentage of main schools having the primary toilet facility for students

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
No toilet	1	5.0	0	0.0	0	0.0	0	0.0	1	0.8
Septic tank latrine	15	75.0	33	86.8	18	75.0	44	88.0	110	83.3
Double vault latrine	0	0.0	4	10.5	4	16.7	1	2.0	9	6.8
Pour flush latrine	4	20.0	3	7.9	1	4.2	2	4.0	10	7.6
Others	1	5.0	0	0.0	1	4.2	3	6.0	5	3.8
Total	20	100.0	38	100.0	24	100.0	50	100.0	132	100.0

Currently about 0.8% of main schools have no latrine for students. It means that most of surveyed main schools (99.2%) have latrines for students. In which, 83.3% of schools have septic tank latrine (the highest in Thanh Hoa), 6.8 of ones have double vault latrine (the highest in Phu Tho) and 7.6% of ones have pour flush latrine.

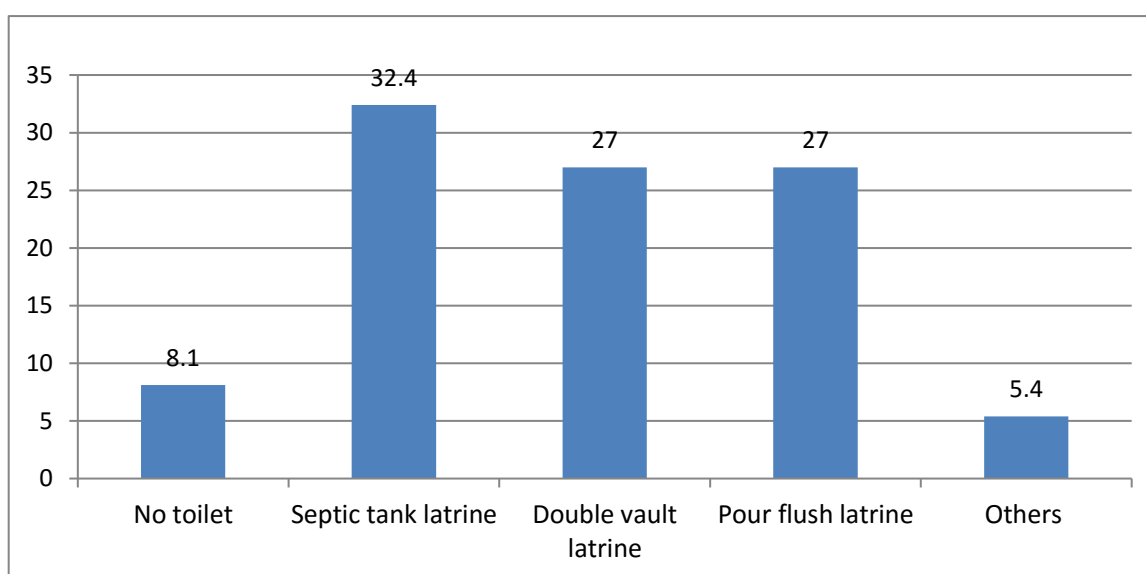


Figure 13. Percentage of satellite schools having the primary toilet facility for students

The rate of satellite schools having no toilet for students was higher than that of main schools (8.1% vs. 0.8%). Concurrently, the rate of septic tank latrine at satellite schools was much lower than that at main schools (32.4% vs. 83.3%). Although only 37 satellite schools were visited, this also shows that sanitation conditions for students at satellite schools is very limited. Information for all satellites for each visited primary school is presented in the ANNEX 2.

3.2. Results of deworming process observation on the main deworming day and the mop-up day

Table 14. Time of happening the deworming at the main schools

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Main deworming day										
Before 10AM	10	100.0	20	100.0	12	100.0	24	96.0	66	98.5
After 2PM	0	0.0	0	0.0	0	0.0	1	4.0	1	1.5
Total	10	100.0	20	100.0	12	100.0	25	100.0	67	100.0
Mop-up day										
Before 10AM	8	100.0	16	100.0	8	100.0	17	94.4	49	98.0
After 2PM	0	0.0	0	0.0	0	0.0	1	5.6	1	2.0
Total	8	100.0	16	100.0	8	100.0	18	100.0	50	100.0

For the main deworming day, most of the main schools conducted deworming for students before 10AM (98.5%), except Nguyen Van Troi school (Thanh Hoa city) the deworming for students was conducted after 2PM because all teachers here participated in the school exam meeting in the morning.

65 primary schools and 7 satellite schools were monitored on the mop-up day, however 15 replaced ones completed the deworming for all students on the main deworming day, they did not conduct mop-up deworming, so there was no observations at 15 these schools. The list of schools was mentioned above. Due to the number of remaining students for mop-up deworming was not big, so some schools conducted mop-up deworming at CHCs, such as primary schools of Dong Tien, Hoang Long, Quang Nham 2 communes (Thanh Hoa province), Cu Dong commune (Phu Tho province). The mop-up deworming at CHCs was still observed by checklists. However, the results from the coverage validation showed that only 56.9% of schools implemented MUD at the actual schools and up to 23.6% of schools performed MUD at the CHCs (see the coverage validation). Of the 50 cases observed, 49 ones conducted mop-up deworming for students before 10am (98.8%). Only the primary school of Bai Tranh commune (Nhu Xuan district of Thanh Hoa province) conducted mop-up deworming after 2PM because the school organized exams in the morning of 9 May.

Table 15. Time of happening the deworming at the satellite schools

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Main deworming day										
Before 10AM	3	100.0	4	80.0	2	66.7	5	83.3	14	82.4
Between 10am-12pm	0	0.0	1	20.0	1	33.3	0	0.0	2	11.8
After 2PM	0	0.0	0	0.0	0	0.0	1	16.7	1	5.9
Total	3	100.0	5	100.0	3	100.0	6	100.0	17	100.0
Mop-up day										
Before 10AM	1	100.0	3	100.0	0	0.0	1	33.3	5	71.4
Between 10am-12pm	0	0.0	0	0.0	0	0.0	1	33.3	1	14.3
After 2PM	0	0.0	0	0.0	0	0.0	1	33.3	1	14.3
Total	1	100.0	3	100.0	0	0.0	3	100.0	7	100.0

At the satellite schools, 82.4% of satellite schools on the DW day and 71.4% of ones on the MUD performed drug administration before 10AM, some conducted deworming for students between 10AM-12PM (2 satellite schools on the DW day and one on the MUD). Two satellite schools conducted drug administration after 2PM (in Thanh Hoa province).

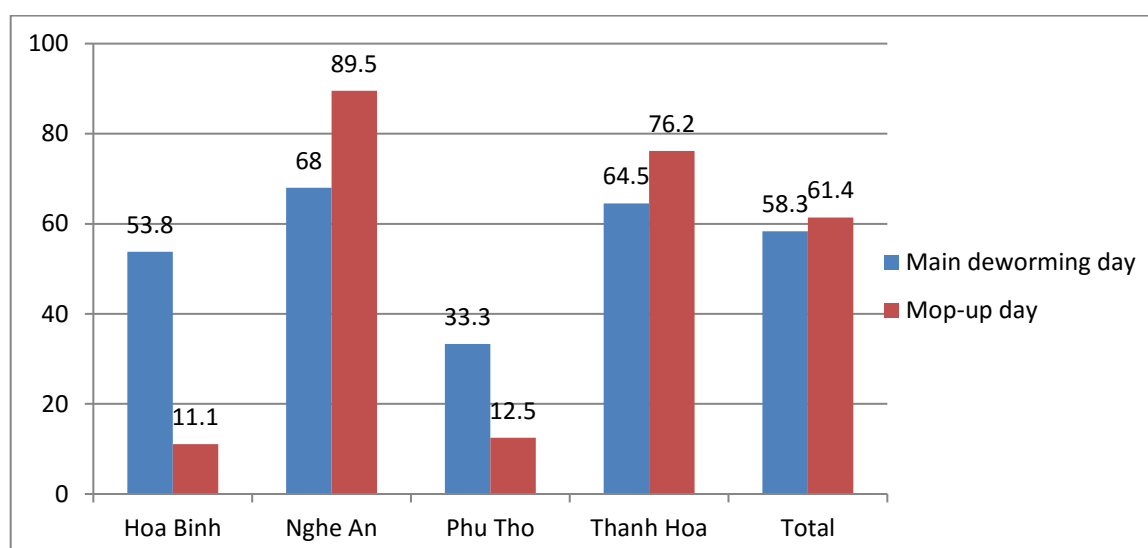


Figure 2. Percentage of CHCs' staff/teachers at all visited schools explaining to the children about worms and deworming before drug-administration on the main deworming day and mop-up day

Explanation to the students about worms and deworming is an important step in the deworming process at primary schools but about 40% of CHCs' staff/teachers ignored this, particularly only 5/15 visited schools on the DW day and 1/8 visited schools on the MUD in Phu Tho provinces implemented this step.

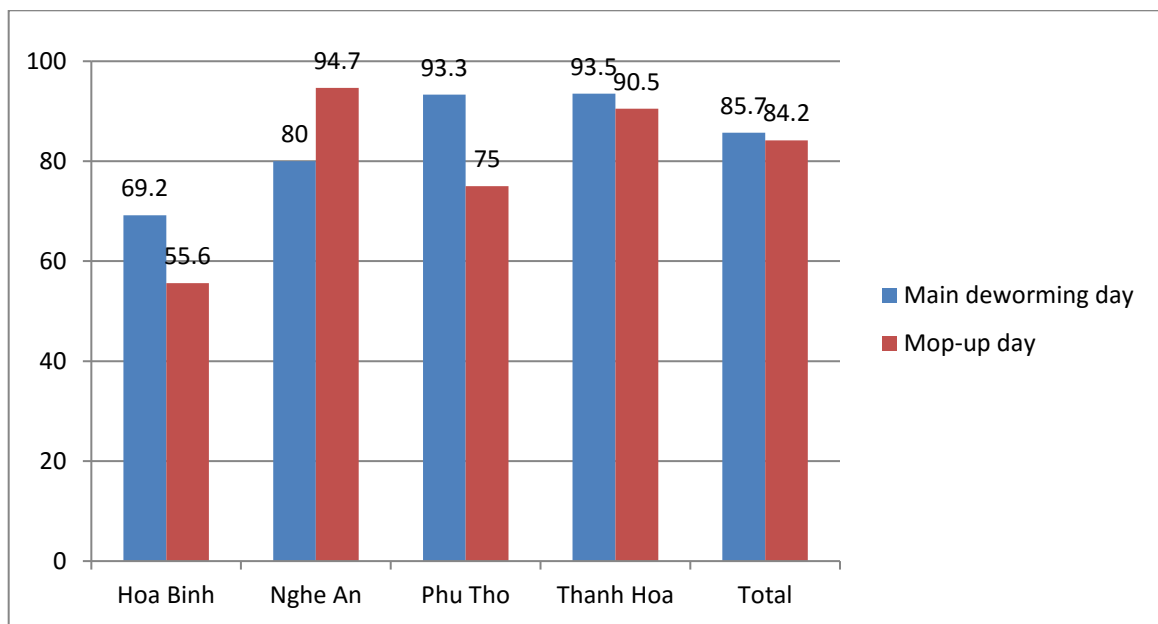


Figure 3. Percentage of CHCs' staff/teachers at all visited schools asking children if they were feeling unwell before drug-administration on the main deworming day and mop-up day

Determination of the students who were feeling unwell or were taking any other medication was required before drug-administration. These children should be advised to use albendazole after no taking of any other medication or refer to doctor's advice and would be dewormed on the mop-up day. However, the proportion of CHCs' staff/teachers at all visited schools asking if the children were feeling unwell before drug-administration on the main DW day and the MUD accounted only 85.7% and 84.2% respectively. Thanh Hoa and Nghe An provinces were found to implement this step the best among four monitored provinces.

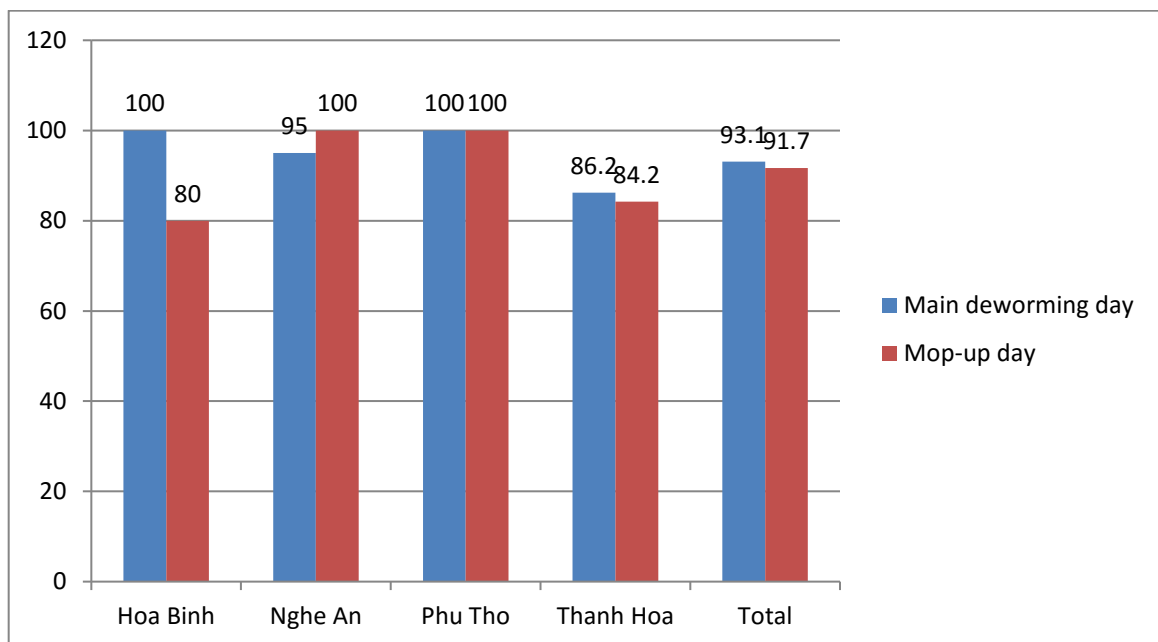


Figure 4. For schools where unwell children were identified, the percentage of those schools subsequently excluded unwell children from the main deworming day and mop-up day.

Among 72 main and satellite schools (85.7%) on the deworming day and 48 ones (84.2%) on the mop-up day where unwell children were identified before drug-administration, 93.1% and 91.7% of schools excluded unwell children from the main deworming day and mop-up day respectively. The remaining schools had no unwell student.

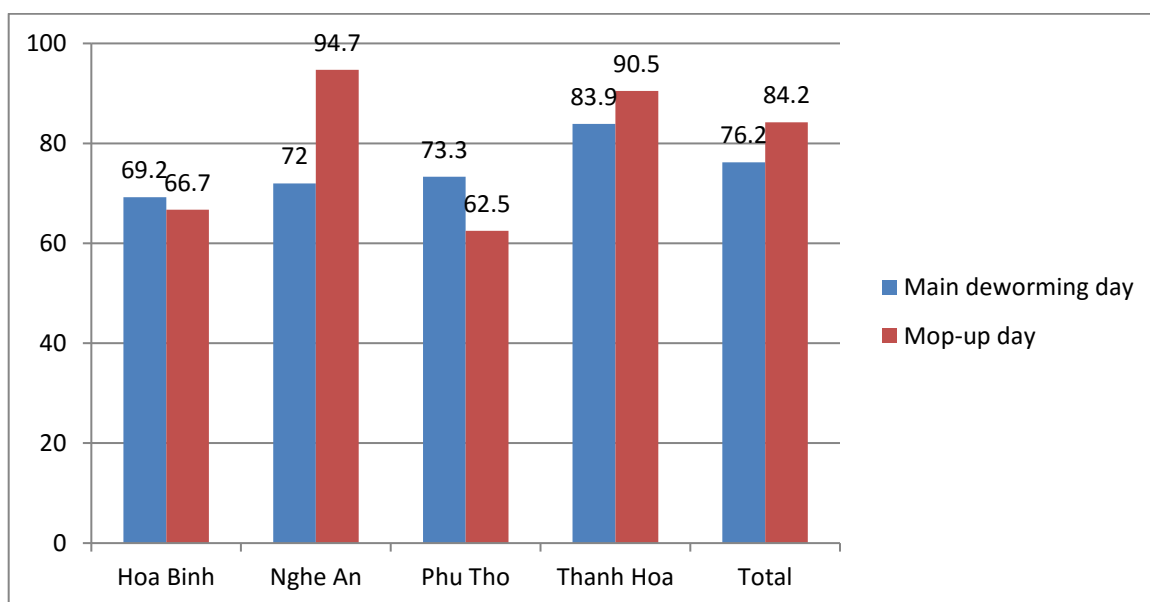


Figure 5. Percentage of CHCs' staff/teachers at all visited schools asking children if they were taking any other medication before drug-administration on the main deworming day and mop-up day

The proportion of CHCs' staff/teachers at all visited schools asking children if they were taking any other medication before drug-administration on the main deworming day and mop-up day was 76.2% and 84.2% respectively. The CHCs' staff/teachers at schools in Phu Tho and Hoa Binh provinces conducted this step with the lowest proportion among 4 provinces.



Picture 1. The main deworming day at primary school of Trung Minh (Hoa Binh city, Hoa Binh province)



Picture 2. The main deworming day at primary school of Phu Son (Tan Ky, Nghe An province)

Table 16. Percentage of those schools where excluded children taking other medication from the main deworming day and mop-up day.

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Main deworming day										
Yes	8	61.5	15	60.0	11	73.3	24	77.4	60	71.4
No	1	7.7	2	8.0	0	0.0	2	6.5	5	6.0
There were no such children present	4	30.8	8	32.0	1	6.7	5	16.1	18	21.4
Don't know/didn't observe this process	0	0.0	0	0.0	1	6.7	0	0.0	1	1.2
Total	13	100.0	25	100.0	15	100.0	31	100.0	84	100.0
Mop-up day										
Yes	4	44.4	13	68.4	3	37.5	14	66.7	34	59.6
No	1	11.1	0	0.0	1	12.5	1	4.8	3	5.3
There were no such children present	2	22.2	6	31.6	4	50.0	6	28.6	18	31.6
Don't know/didn't observe this process	2	22.2	0	0.0	0	0.0	0	0.0	2	3.5
Total	9	100.0	19	100.0	8	100.0	21	100.0	57	100.0

Via observation, 71.4% of schools on the deworming day and 59.6% of schools on the mop-up day excluded children who were taking other medication. On the deworming day, about 21.4% of schools where there were no such children, this rate on the mop-up day was slightly higher (31.6%).

Table 17. Percentage of schools excluded children having no signed permission forms from the main deworming day and mop-up day

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Main deworming day										
Yes	10	76.9	21	84.0	14	93.3	24	77.4	69	82.1
No	2	15.4	2	8.0	0	0.0	4	12.9	8	9.5
Permission forms are not used in this commune/district	0	0.0	0	0.0	0	0.0	3	9.7	3	3.6
Don't know/didn't observe this process	1	7.7	2	8.0	1	6.7	0	0.0	4	4.8
Total	13	100.0	25	100.0	15	100.0	31	100.0	84	100.0
Mop-up day										
Yes	3	33.3	16	84.2	8	100.0	12	57.1	39	68.4
No	4	44.4	2	10.5	0	0.0	5	23.8	11	19.3
Permission forms are not used in this commune/district	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Don't know/didn't observe this process	2	22.2	1	5.3	0	0.0	4	19.0	7	12.3
Total	9	100.0	19	100.0	8	100.0	21	100.0	57	100.0

Among 84 schools visited on the deworming day, 69 schools (accounting for 82.1%) excluded children having no signed permission forms, 8 schools (9.5%) did not this step. Remarkably, 3 schools in Thanh Hoa did not use permission forms. On the mop-up day, up

to 11 schools (accounting for 19.3%) did not exclude children having no signed permission forms.

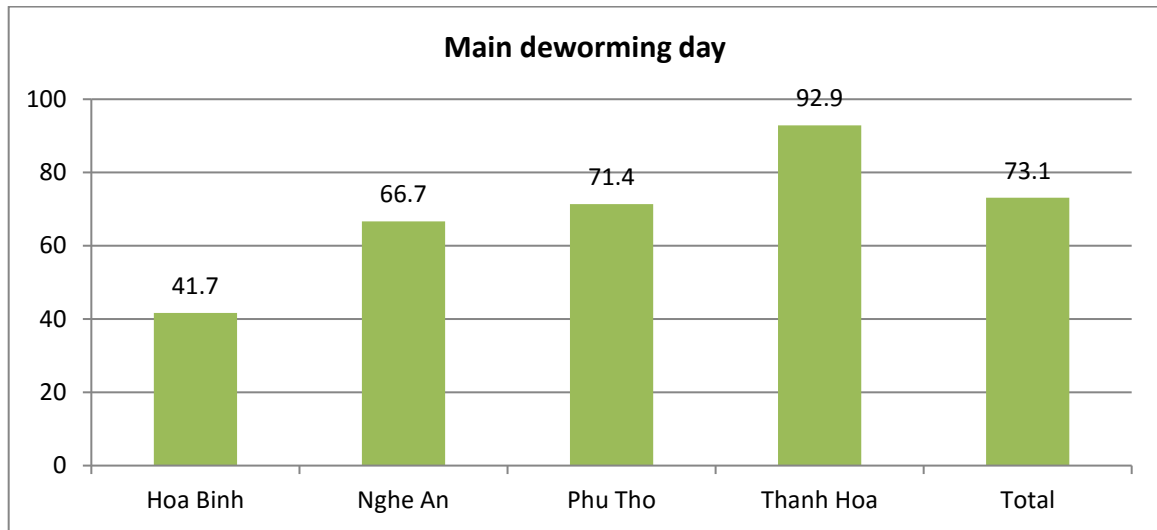


Figure 6. For schools where children who were unwell, taking other medication or had no signed permission form, the percentage of those schools subsequently explained that the children would be provided medicine on mop-up day

Among 84 schools visited (both main schools and satellite schools), 78 schools where children who were unwell, taking other medication or had no signed permission form, 6 schools where no child was excluded from the deworming day. The results showed that 73.1% of those schools explained the children would be provided medicine on mop-up day. The highest rate was found in Thanh Hoa and the lowest rate was found in Hoa Binh (92.9% and 41.7% respectively).

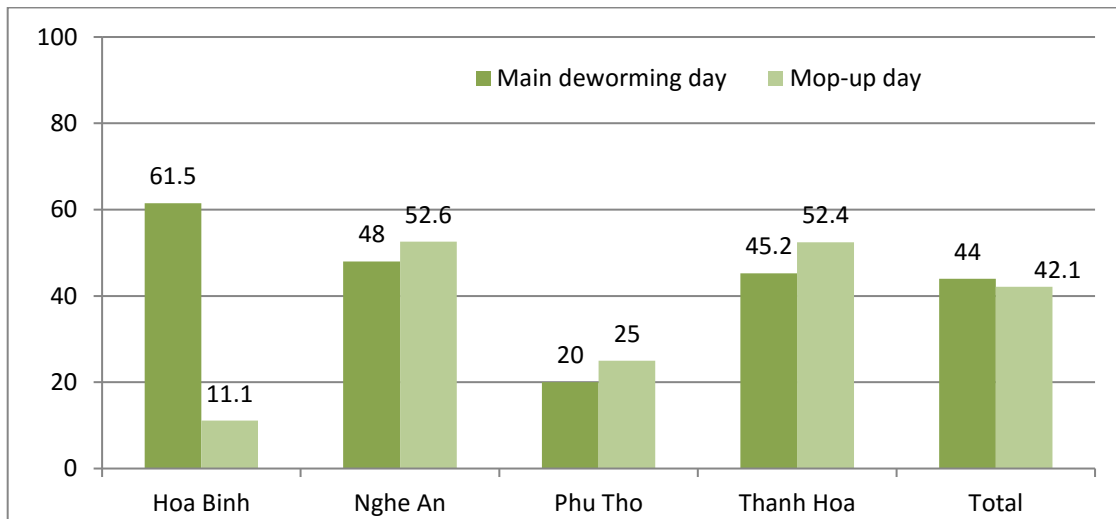


Figure 7. Percentage of CHCs' staff and teachers at all visited schools explaining that if side effects happen, they're most likely a sign that the drug is doing its job on the main deworming day and on the mop-up day

CHCs' staff or teachers need to explain to the children about the side effects that may occur after taking tablet such as mild abdominal pain, nausea, vomiting, diarrhea, tired, etc and emphasize they are most likely a sign that the drug is doing its job. However, only less than half of the monitored schools implemented this step on the main deworming day and mop-

up day (44% and 42.1% respectively). For the main deworming day, this percentage was found the highest in Hoa Binh (8/13 schools) and lowest in Phu Tho (3/15 schools). For the mop-up day, this percentage was found the highest in Nghe An province and the lowest in Thanh Hoa province.

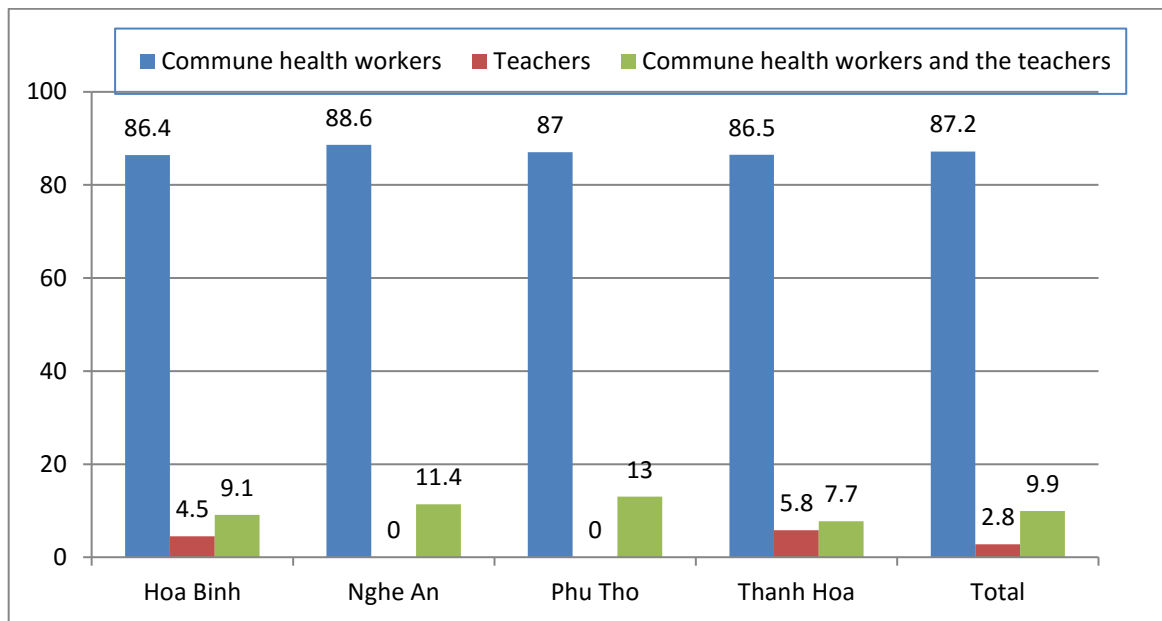


Figure 8. Persons directly administered tablets for students at all visited schools on both the DW day and the MUD

At most of visited schools, 87.2% of schools where the administration of albendazole for students was implemented by CHCs' staff. Only a few schools had combination between CHCs' staff and teachers in drug administration for students (9.9%). Noticeably, a small number of schools in Hoa Binh (1 school) and Thanh Hoa (3 schools), only the teacher administered the tablets. There was no difference between the main schools and satellite schools. Commune health workers administered all tablets at 21/24 satellite schools, at some satellite schools, there was a combination between commune health workers and the teachers in administration of albendazole. All monitored schools provided water and clean glasses for the students and most of students shared glasses (more than 90%).

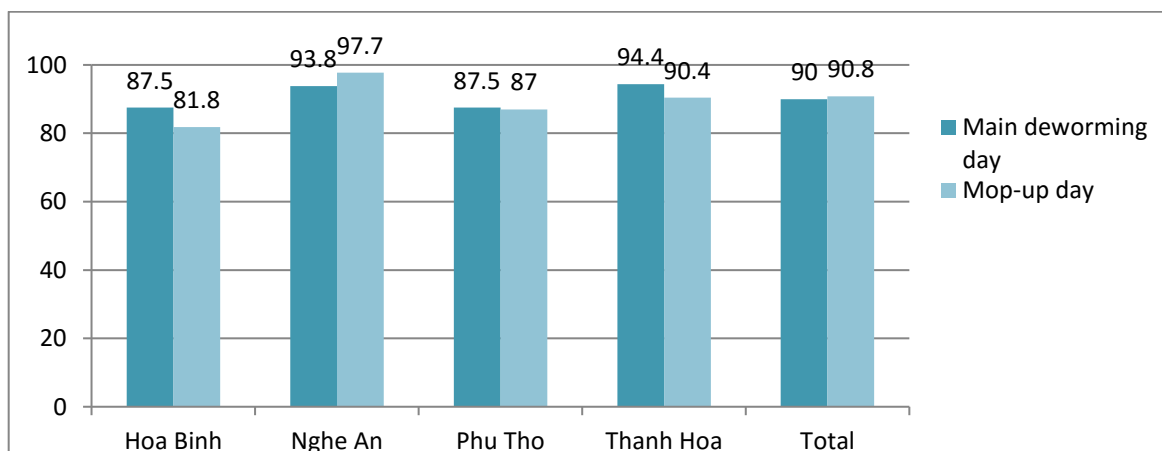


Figure 9. Percentage of CHCs' staff/teachers at all visited schools instructing on how to chew tablets

The observation results show that most of students were instructed on how to chew tablets on the main deworming day and mop-up day (90% and 90.8% respectively). In particular, all selected primary schools of Nghe An province implemented this step on the main deworming day.

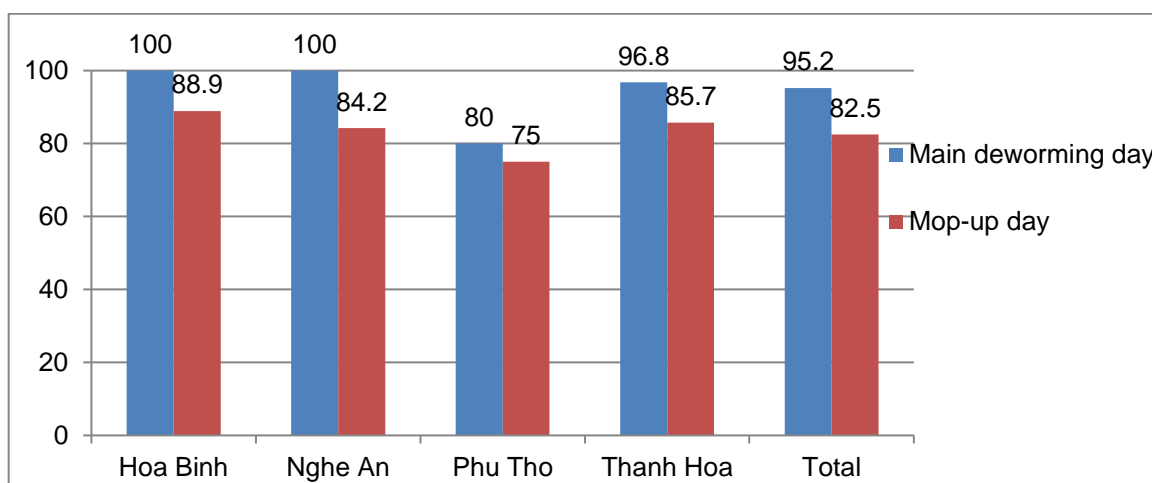


Figure 10. Percentage of CHCs' staff/teachers at all visited schools ensuring that the child swallowed the tablet

The observation results show that a very high proportion of CHCs' staff and teachers ensured that the child swallowed the tablet on the main deworming day and the mop-up day (95.2% and 82.5% respectively).

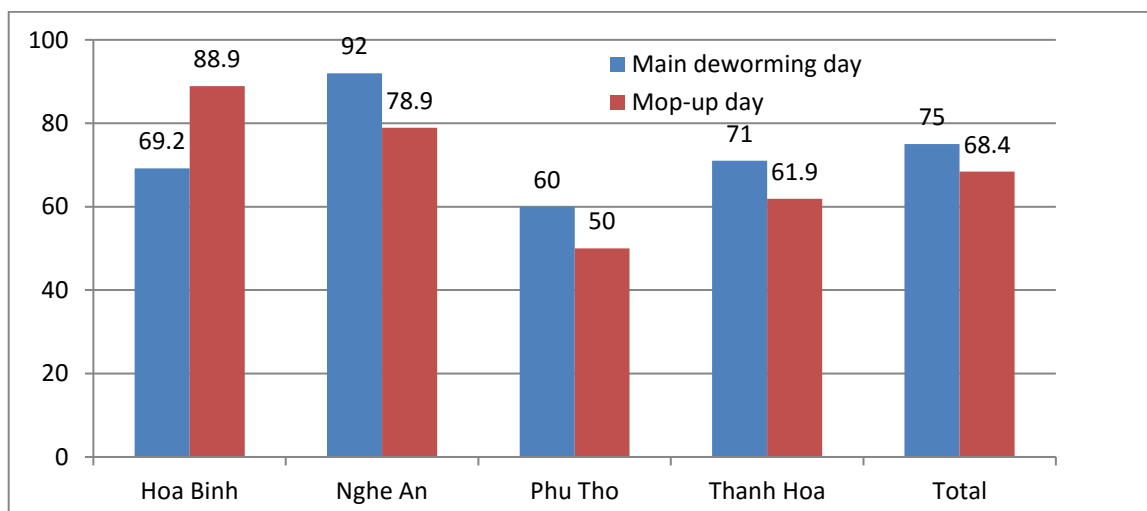


Figure 11. Percentage of CHCs' staff/teachers at all visited schools ticking off the name of the child in the class list upon swallowing the tablet

After ensuring that the student swallowed the tablet, CHCs' staff/teachers should tick (✓) on the next to the name of each student in the class list. As observed by the monitors, 75% of schools implemented properly this step on the main deworming day. Thus, up to 26% of CHCs' staff teachers did not comply with deworming process that they had been trained, of which, up to 10.7% of observation results reported that the students were ticked off the name in the class list before drug administration on the main deworming day in both main schools and satellite schools. This rate was lower for the mop-up day, only 68.4% of CHCs'

staff/teachers at all visited schools ticked (✓) on the next to the name of each student in the class list.

Table 18. Number of main schools and satellite schools with children spitting out the tablet

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Main deworming day										
At main schools	0	.0	1	5.0	2	16.7	3	12.0	6	9.0
At satellite schools	0	.0	1	20.0	0	.0	0	.0	1	5.9
Total	13		25		15		31		84	
Mop-up day										
At main schools	0	.0	1	6.3	0	.0	0	.0	1	2.0
At satellite schools	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	9		19		8		21		57	

Out of 84 schools observed on the main deworming day, 7 ones were found the student spat out the tablet (8.3%), 85.7% of schools on the DW had no student spitting out the tablet and there was no observation of any incidences, but the monitors couldn't be sure at 5 schools (3 main schools and 2 satellite schools). With 7 schools with students spitting out tablets, CHCs' staff at 5 schools gave another tablet to the student for replacement, CHC's staff at 3 schools (2 main schools and 1 satellite school) did not implement this but still ticked off the name in the class list. For the mop-up day, only 1/57 visited schools (one main school in Nghe An) found the child who spat out the tablet.

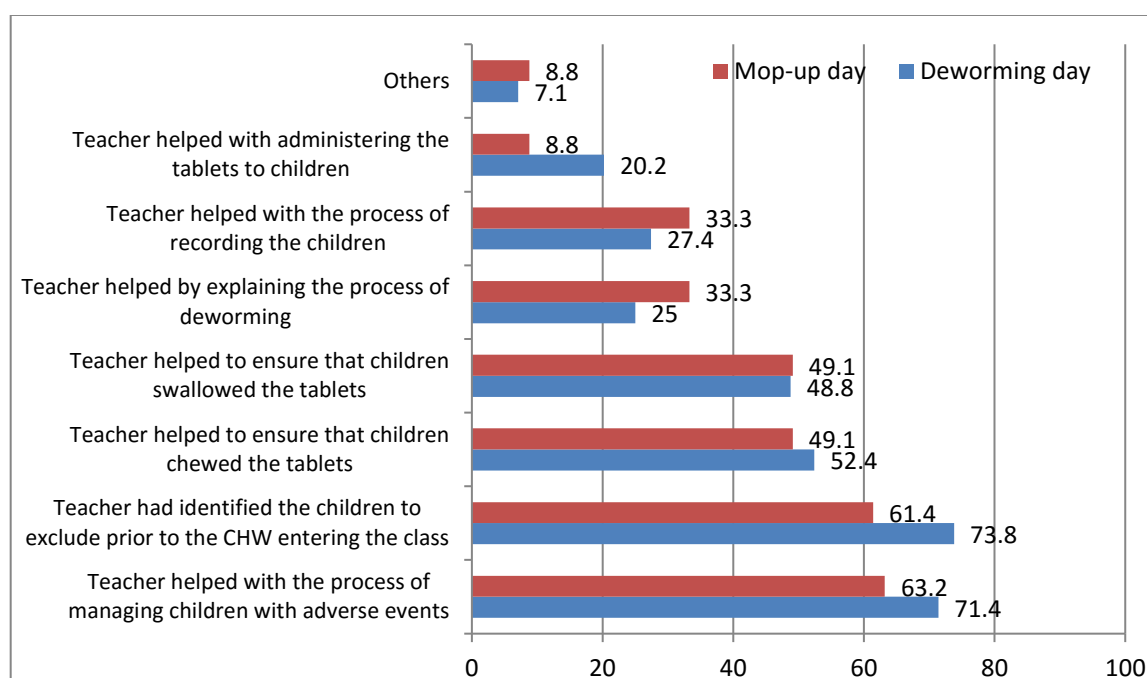


Figure 12. Percentages of schools where teachers assisted the commune health workers on the main deworming day and the mop-up day

The figure above shows the important role of teachers in assisting the commune health workers in the MDA campaign. Most of schools where teachers helped with the process of managing children with adverse events and identified the children to exclude prior to the

commune health worker entering the class both on the deworming day (more than 71%) and the mop-up day (more than 61%). About 50% of schools where teachers helped to ensure that children chewed and swallowed the tablets. More than 20% of schools where teachers helped with administering the tablets to children on the deworming day, meanwhile this rate on the mop-up day was only 8.8%. This can be explained that some schools implemented the mop-up day at CHCs, so only CHWs administered the tablets to children.

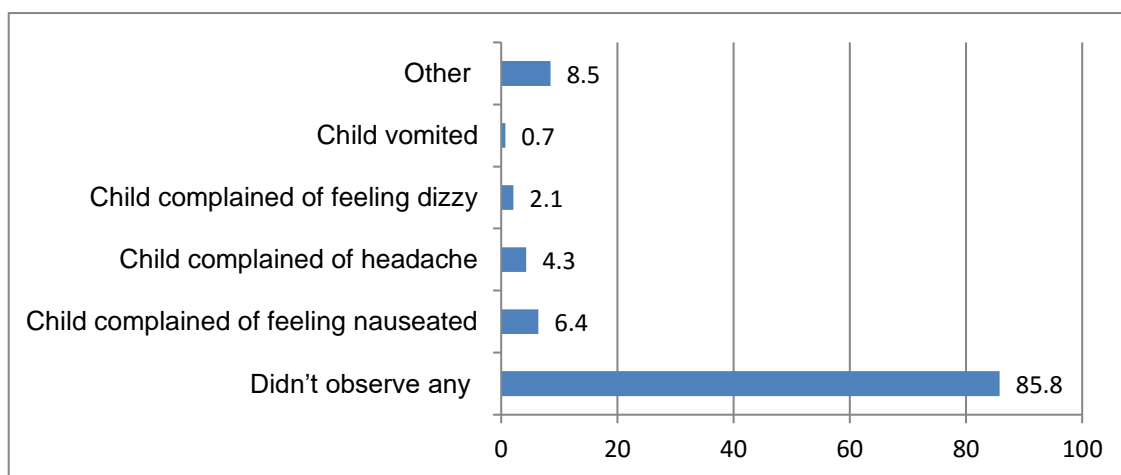


Figure 13. Side effects that the monitors observed at all schools on the main deworming day and the mop-up day
 Observation results at 84 schools on the main deworming day and 57 schools on the mop-up day showed that most of monitors could not observe any side effects after the children took albendazole (85.8%). Some monitors observed complain of feeling nauseated (6.4%), headache (4.3%) and feeling dizzy (2.1%). Only one monitor at a satellite school in Nghe An reported that child vomited on the main deworming day.

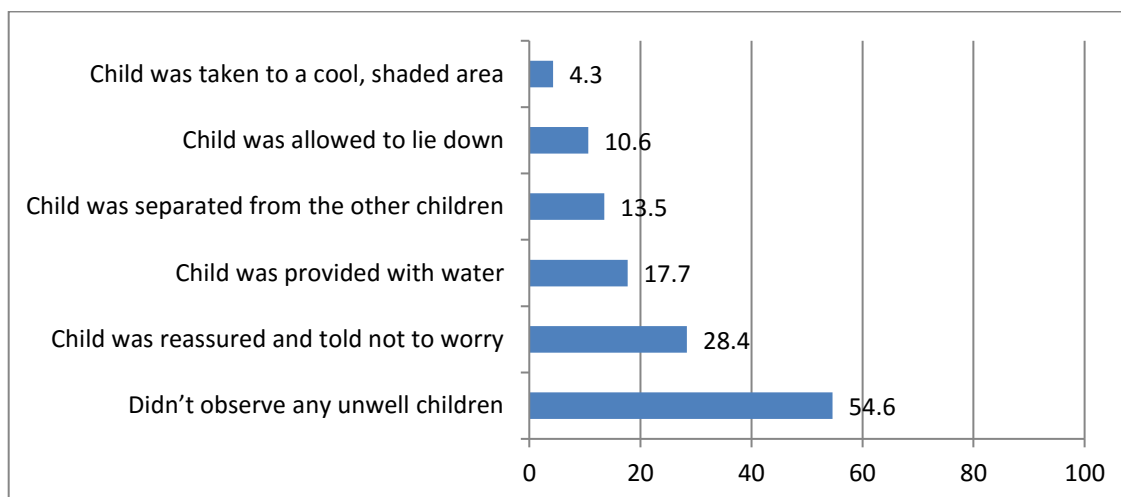


Figure 14. Percentages of schools where commune health worker and/or teacher dealt with children who reported feeling unwell

Commune health workers and/or teachers dealt quite well with child who reported feeling unwell. Children who reported feeling unwell were reassured and told not to worry (28.4%), followed by provided with water (17.7%), separated from the other children (13.5%) and allowed to lie down (10.6%). Very few children were taken to a cool, shaded area (4.3%).

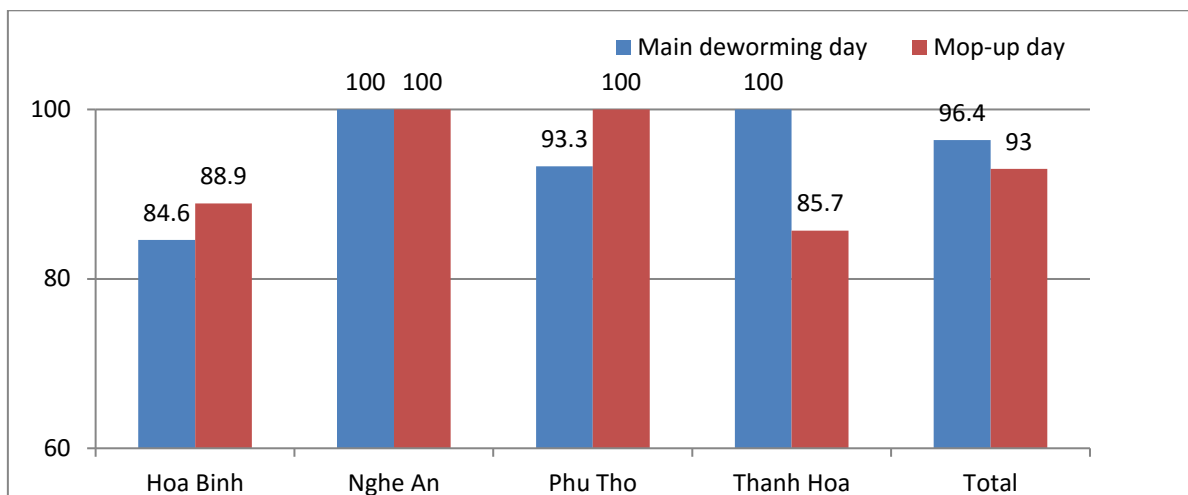


Figure 15. Percentage of all visited schools keeping students on the school premises for at least 2 hours after taking albendazole to follow side effects

On the deworming day, 95.2% of schools in total (98.5% of main schools and 82.4% of satellite schools) conducted deworming before 10AM (reported in Table 8 and Table 9). The percentage of schools keeping students on the school premises for at least 2 hours after taking albendazole was slightly higher (96.4%). However, the data for the individual provinces (particularly Hoa Binh) don't match well with the data in table 8 and 9. Although 100% of schools (13/13 schools) in Hoa Binh dewormed for children before 10AM, only 84.6% of schools implemented keeping students on the school premises for at least 2 hours to follow side effects. It will be ideal if the data from different questions are similar. However, this also shows a fact that some schools, especially in Hoa Binh did not follow the process of deworming.

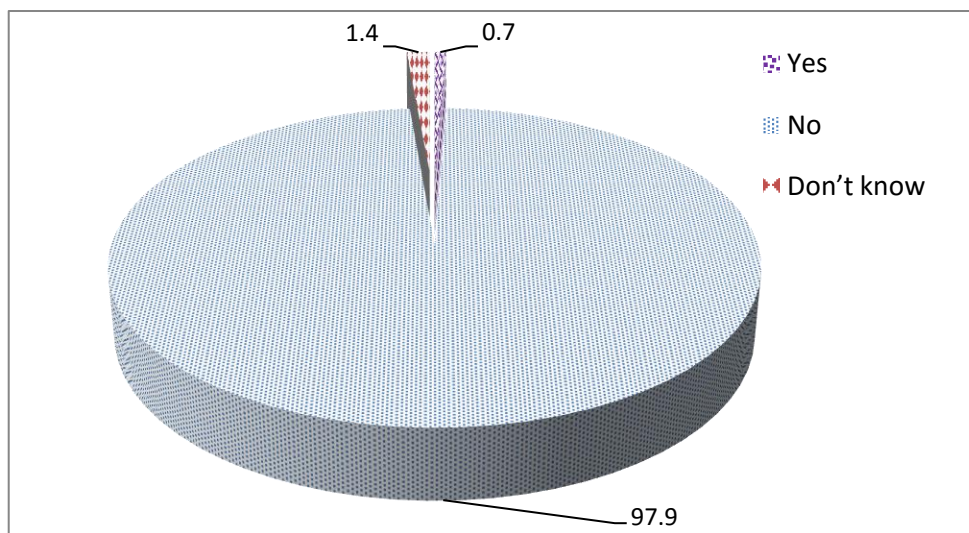


Figure 16. Percentage of all visited schools where non-enrolled children receive tablets

The figure above shows that non-enrolled children are not being integrated within the school-based mass drug administration campaigns. Non-enrolled children received tablets at only one school (0.7%) (at Muong Chanh primary school, Muong Lat, Thanh Hoa) and the commune health worker made a note on a separate sheet of paper to record. Up to nearly

98% of main and satellite schools where monitors did not observe any non-enrolled children receive a tablet at the school.

3.3. Some results of interviews on the main deworming day and the mop-up day

3.3.1. Preparation for deworming day via interviews with head teachers

Time of notification for deworming day

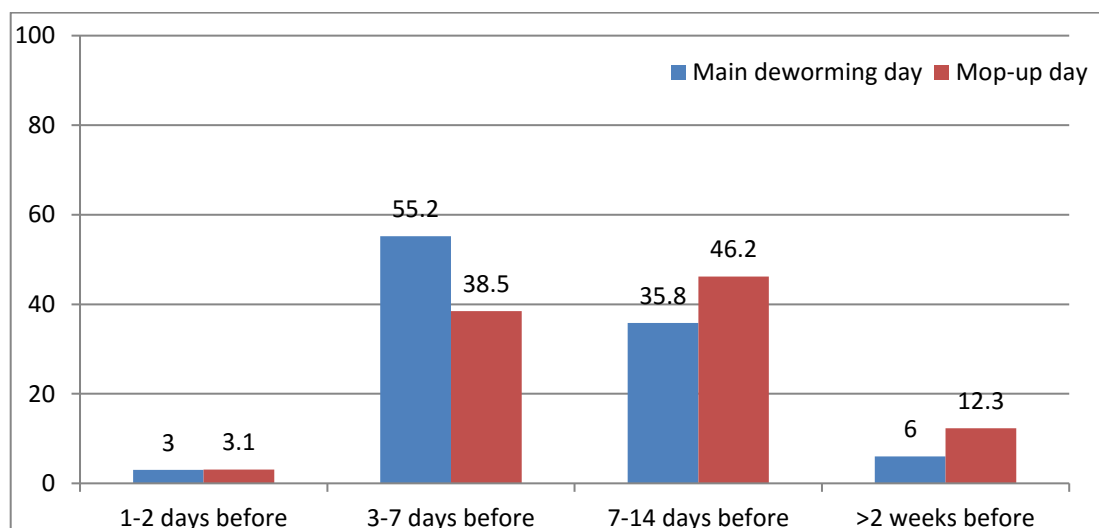


Figure 17. The time of notification for deworming day

The results of interviews with head teachers of 132 monitored schools on the deworming day and the mop-up day showed that, most of schools were informed the dates for deworming day from 3 to 14 days. Only a few schools were informed 1-2 days ago.

Training for deworming

Table 19. Number of representatives from the main schools attending the official training for deworming

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
0 representative	0	0.0	2	5.3	0	0.0	0	0.0	2	1.5
1 representative	1	5.0	3	7.9	0	0.0	8	16.0	12	9.1
2 representatives	6	30.0	32	84.2	21	87.5	31	62.0	90	68.2
More than 2 representatives	13	65.0	1	2.6	3	12.5	11	22.0	28	21.2
Total	20	100.0	38	100.0	24	100.0	50	100.0	132	100.0

Primary schools were requested to send 2 members of staff to attend the official training for deworming. However, only 68.2% of schools sent 2 representatives to the training, 9.1% of schools sent 1 member of staff. Among 132 monitored primary schools, only primary school of Hanh Dich (Que Phong, Nghe An) did not assign any representative to attend the training because the school could not allow staff to attend due to teaching commitments (the figure in the table above shows "2" because Hanh Dich school was monitored both on the main deworming day and the mop-up day).

Table 20. Number of representatives from the satellite schools attending the official training for deworming

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
0 representative	0	0.0	1	9.1	0	0.0	1	7.7	2	5.4
1 representative	1	11.1	3	27.3	2	50.0	3	23.1	9	24.3
2 representatives	1	11.1	6	54.5	1	25.0	3	23.1	11	29.7
More than 2 representatives	6	66.7	0	0.0	0	0.0	5	38.5	11	29.7
Don't know	1	11.1	1	9.1	1	25.0	1	7.7	4	10.8
Total	9	100.0	11	100.0	4	100.0	13	100.0	37	100.0

Satellite schools were requested to send one member of staff. This is important information as we are advocating strongly that satellite schools are fully engaged in the program. Twenty-three class teachers on the main deworming day and 14 ones on the MUD at the satellite schools were interviewed. The results showed that 24.3% of satellite schools sent one representative to the official training for deworming; 22/37 (59.5%) satellite schools sent 2 and more than 2 members of staff. Especially, up to 10.8% of class teachers did not know how many representatives from the satellite schools attended the official training for deworming.

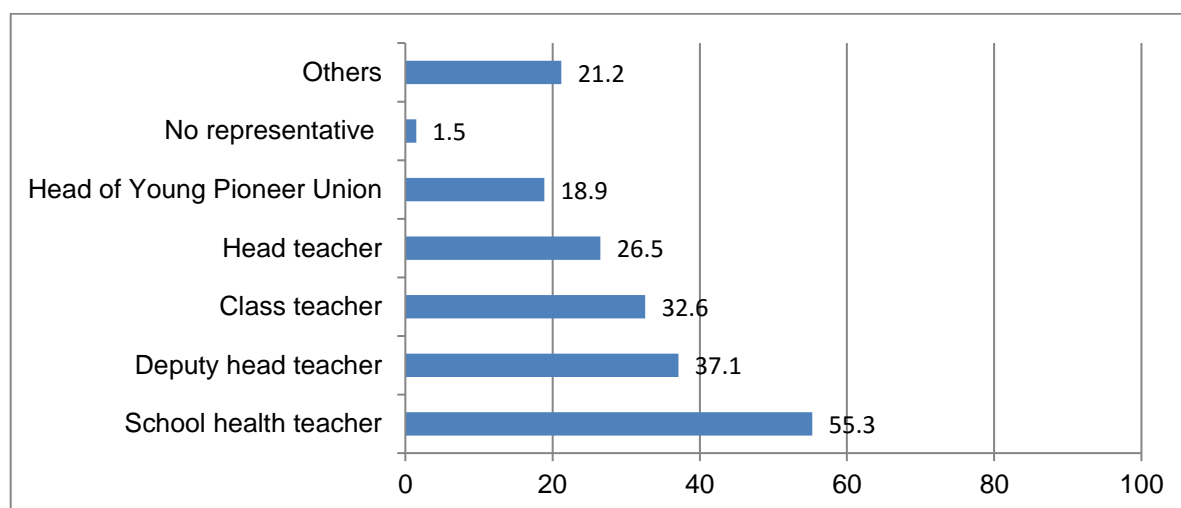


Figure 18. Representative from the school attended the training

Over a half of monitored primary schools on the deworming day and the mop-up day assigned school health teacher to attend the training class on deworming (55.3%), many schools assigned head teacher, deputy head teacher or class teacher (ranging from 26.5% to 37.1%). Among 132 monitored primary schools, only primary school of Hanh Dich (Que Phong, Nghe An) did not assign any representative to attend the training because the school could not allow staff to attend due to teaching commitments.

Table 21. Percentage of trained teachers training for other teachers at the main schools

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Yes – all teachers were trained	15	75.0	32	84.2	23	95.8	37	74.0	107	81.1
Yes – some teachers were trained	2	10.0	2	5.3	0	0.0	5	10.0	9	6.8
No	3	15.0	2	5.3	1	4.2	8	16.0	14	10.6
Not applicable – no teachers attended the official deworming training	0	0.0	2	5.3	0	0.0	0	0.0	2	1.5
Total	20	100.0	38	100.0	24	100.0	50	100.0	132	100.0

Conveying contents of training train colleagues at school is very important to make sure all the teachers of school implement deworming for students under a same process. Results of interviews with head teachers, deputy head teachers showed that all teachers of the school were trained by the trained teacher (81.1%), 6.8% of head teachers said that some teachers were trained. Percentage of trained teachers training for all teachers was the highest at schools in Phu Tho province (95.8%) and lowest in Thanh Hoa (74%). Still 10.6% head teachers reported that trained staff did not train for colleagues of the school.

Table 22. Percentage of schools where trained teachers trained for other teachers at the satellite schools

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Yes – all teachers were trained	7	77.8	9	81.8	3	75.0	10	76.9	29	78.4
Yes – some teachers were trained	1	11.1	1	9.1	0	0.0	1	7.7	3	8.1
No	0	0.0	1	9.1	0	0.0	0	0.0	1	2.7
A teacher from the main school provided information to the staff at the satellite school	1	11.1	0	0.0	1	25.0	1	7.7	3	8.1
Not applicable – no teachers attended the official deworming training	0	0.0	0	0.0	0	0.0	1	7.7	1	2.7
Total	9	100.0	11	100.0	4	100.0	13	100.0	37	100.0

At the satellite schools, 78.4% of class teachers said that all teachers were trained by the persons who attended the official training for deworming. Three respondents reported that a teacher from the main school provided information to the staff at the satellite school. Although one primary school in Que Phong, Nghe An did not assign any representative to attend the training. In addition, this school has some satellite schools but they were not visited because deworming day and mop-up day were conducted on another day of monitoring day. Thus there is no information on this content for satellite of this school.

IEC materials

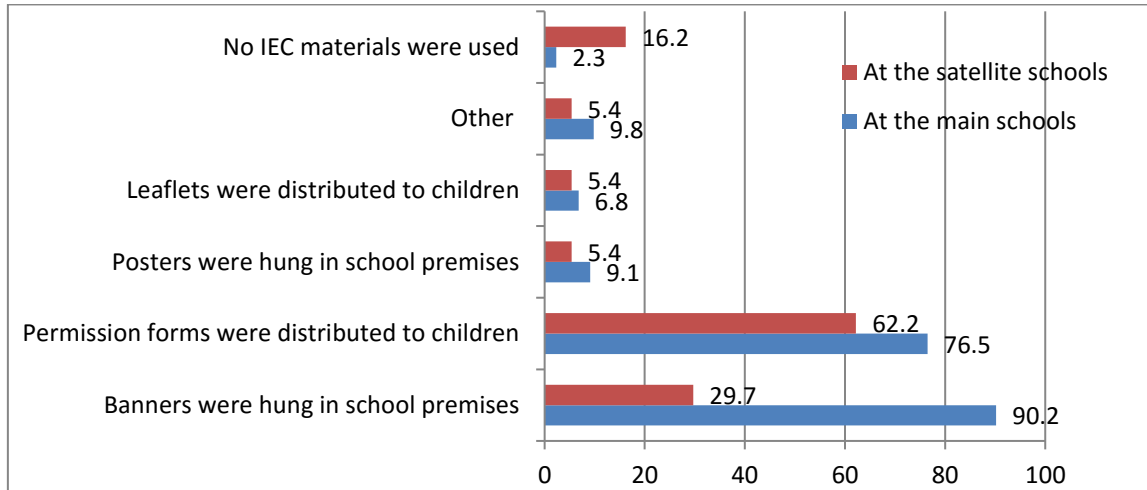
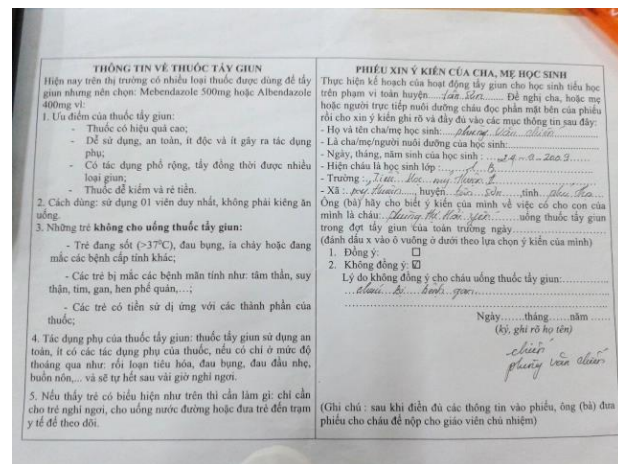


Figure 19. IEC materials were used at the main and satellite schools in advance of deworming day and mop-up day

When asked what IEC materials had been used in the school in advance of deworming day and mop-up day, most answers of respondents at main schools were: banners were hung in school premises (90.2%); however, this rate at satellite schools was much lower than that (29.7%). More than 76% of respondents at main schools said that permission forms were distributed to children; meanwhile the rate at satellite was 62.2%. Leaflets and posters were scattered only in a minority of schools (under 10%). Noticeably, up to 16.2% of class teachers at satellite schools reported that no IEC materials were used. Some information about deworming drug was printed on one side of the permission forms. When the permission forms were distributed to families of students, their parents could read and understand more about deworming drugs used for children and it also helped parents to identify cases contraindicated albendazole.



Picture 3. Project's banner was hung at primary school of Chau Thanh, Quy Hop, Nghe An



Picture 4. Permission forms with sign of parents of students (at primary school of My Thuận 2, Tan Son, Phu Tho)

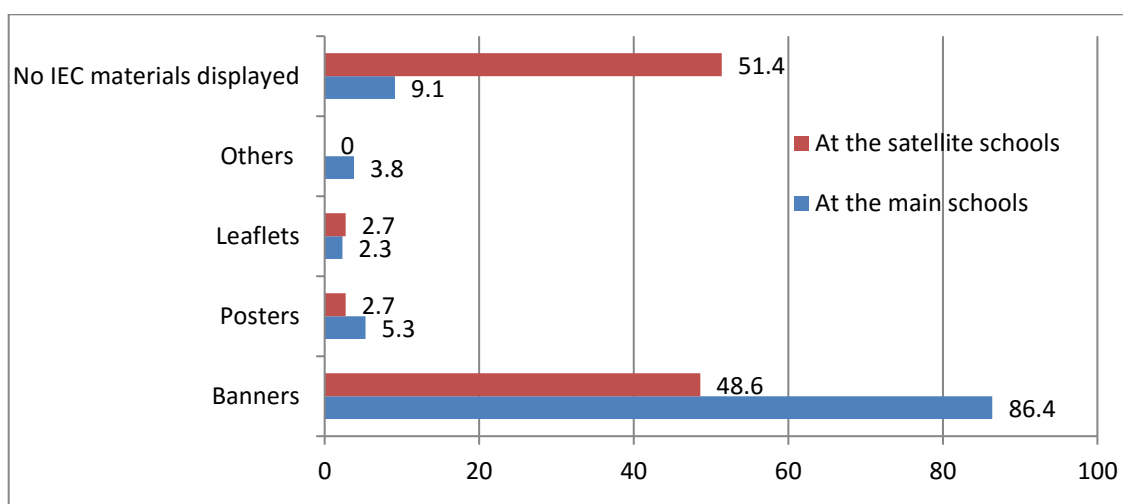


Figure 20. Percentage of schools where monitors actually observed IEC materials at the main and satellite schools

There is a disparity between responds of head teachers and observation of monitors on IEC materials. The results of observation showed that 86.4% of main schools hung banners in school premises, this rate was slightly lower than the responds of head teachers (90.2%). At satellite schools, monitors saw 11 satellite schools on the DW day and 7 satellite schools on the MUD (48.6%) with banners in school premises, however, this rate was much higher than the responds of head teachers (29.7%). Noticeably, the rate of head teachers reporting no IEC materials had been used was very low (2.3% and 16.2% on DW day and MUD respectively), meanwhile, the rate of schools where no IEC materials had been displayed (observed by monitors) was much higher (9.1% and 51.4% on DW day and MUD respectively).

Table 23. Forms that children/parents at the main schools received information on the deworming activity

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
The school played no role in informing children/parents	0	0.0	1	2.6	0	0.0	1	2.0	2	1.5
Only the IEC material provided were used	1	5.0	9	23.7	4	16.7	11	22.0	25	18.9
Individual teachers explained to their respective classes	13	65.0	27	71.1	13	54.2	18	36.0	71	53.8
School-wide announcement(s) were made	7	35.0	22	57.9	10	41.7	14	28.0	53	40.2
Parent meetings were conducted	0	0.0	4	10.5	1	4.2	3	6.0	8	6.1
Leaflets/letters were sent home with each student	4	20.0	10	26.3	4	16.7	5	10.0	23	17.4
Loudspeaker announcements were made in the commune	6	30.0	28	73.7	11	45.8	21	42.0	66	50.0
Permission forms were sent home with children for parents to sign	19	95.0	36	94.7	23	95.8	44	88.0	122	92.4
Teachers wrote a note for parents in each student's book	1	5.0	3	7.9	0	0.0	0	0.0	4	3.0
Other	1	5.0	1	2.6	2	8.3	11	22.0	15	11.4
Total	20	100.0	38	100.0	24	100.0	50	100.0	132	100.0

The figure above also shows that most students/parents received information on the deworming via the permission forms (92.4%), the highest in Phu Tho (95.8%) and the lowest in Thanh Hoa (88%). This value does not seem to correspond to the value listed on the previous page about IEC materials were used at the main schools – in that section it states that 76.5% of schools distributed permission forms to children. This could be explained that there were different purposes between two questions, one for IEC materials that used at school and one for receiving information on deworming activity of children/parents.

The other notification forms were also mentioned by some head teachers as individual teachers explained to their respective classes (53.8%), loudspeaker announcements were made in the commune (50%), school-wide announcement(s) were made (40.2%)... Other forms were mentioned by few head teachers (under 20%). It is clear that, sending permission forms home with children for parents to sign is a useful way to both provided information to students/parents and helped CHC's staff/teachers have grounds to determine the children contraindicated albendazole. In particular, primary schools conducted well in sending the permission forms home with children because nearly 90% of schools distributed the permission forms more than 2 days before deworming day.

Table 24. Forms that class teachers at satellite schools informed the children or parents about deworming

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Explained to children about deworming day	6	66.7	9	81.8	3	75.0	8	61.5	26	70.3
Provided permission forms to children	9	100.0	11	100.0	4	100.0	9	69.2	33	89.2
Spoke to individual parents about deworming	2	22.2	3	27.3	1	25.0	2	15.4	8	21.6
Communicated to parents by writing in the students' books	2	22.2	2	18.2	0	0.0	4	30.8	8	21.6
A parent-teacher meeting was convened	0	0.0	1	9.1	0	0.0	0	0.0	1	2.7
Other	0	0.0	1	9.1	0	0.0	2	15.4	3	8.1
Total	9	100.0	11	100.0	4	100.0	13	100.0	37	100.0

The result is similar at the satellite schools. Nearly 90% of schools provided permission forms to children, which shows the importance of permission forms in deworming. Thanh Hoa seems to be poor at distributing permission forms at satellite schools (only 69.2%), similar to the main schools. Thus, it is necessary to continue using the permission form on the next school-based mass drug administration (MDA) campaigns, especially in Thanh Hoa province.

3.3.2. Knowledge and practice of CHC's staff and teachers about deworming for children

Total 165 CHC's staff (132 ones at main schools and 33 ones at satellite schools) and 169 class teachers (132 ones at main schools and 37 ones at satellite schools) were interviewed in the deworming day and the mop-up day. Four communal health workers at satellite schools were the same persons who conducted deworming at the main school, thus they were excluded in the sample size at satellite schools.

Table 25. Percentage of communal health workers and class teachers attending the training

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Communal health workers										
Yes	19	67.9	41	85.4	23	85.2	48	77.4	131	79.4
No	5	17.9	3	6.3	1	3.7	3	4.8	12	7.3
No, but I received training from a colleague who did attend the training	4	14.3	4	8.3	3	11.1	11	17.7	22	13.3
Total	28	100.0	48	100.0	27	100.0	62	100.0	165	100.0
Class teachers										
Yes	14	48.3	14	28.6	1	3.6	14	22.2	43	25.4
No	6	20.7	14	28.6	10	35.7	21	33.3	51	30.2
No, but I received training from a colleague who did attend the training	9	31.0	21	42.9	17	60.7	28	44.4	75	44.4
Total	29	100.0	49	100.0	28	100.0	63	100.0	169	100.0

Results showed that 79.4% of CHC's staff participated in training on deworming, 13.3% of CHC's staff received training from their trained colleagues and 7.3% of interviewees did not attend the training and did not receive training from their colleague. For class teachers, 1/4 of interviewees attended the training, 44.4% interviewees said that they received information from their colleagues who did attend the training but up to 1/3 of interviewees did not attend the training and receive training contents from their colleagues.

Table 26. Number of representatives from the commune health center attending the training

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
0 representative	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
1 representative	4	14.3	18	37.5	2	7.4	4	6.5	28	17.0
2 representatives	24	85.7	27	56.3	23	85.2	53	85.5	127	77.0
>2 representatives	0	0.0	3	6.3	2	7.4	5	8.1	10	6.1
Total	28	100.0	48	100.0	27	100.0	62	100.0	165	100.0

All CHCs sent representatives to attend the official training for deworming, in which, most CHCs sent 2 representatives (77%), about 17% of CHCs sent 1 representative. The remaining CHCs sent more than representatives to attend the training.

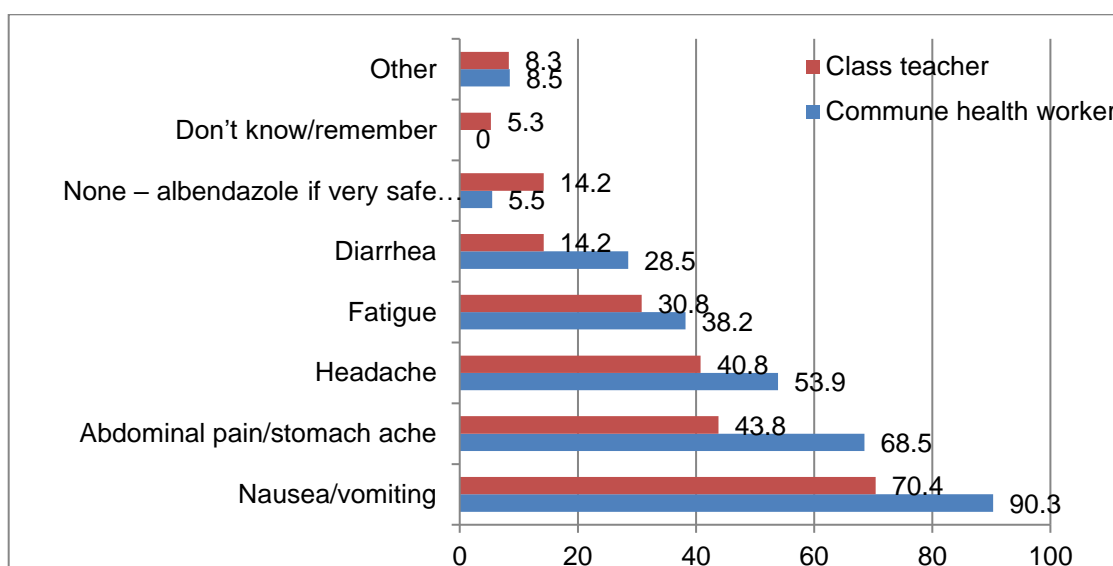


Figure 21. Percentage % of commune health workers and class teachers knowing possible side effects when children use albendazole

Overall, the knowledge of commune health workers about possible side effects when children use albendazole was better than that of class teachers. All commune health workers could point out the side effects, but 5.3% of teachers did not know any reaction. Only 5.5% of commune health workers said that albendazole was very safe and doesn't cause any adverse events, whereas this percentage was 14.2% in group of teachers.

Table 27. Percentage % of commune health workers and class teachers managing if children complain of mild abdominal pain and/or nausea

Information	Commune health worker		Class teacher	
	n	%	n	%
Separate the child from the rest of the class	80	48.5	56	33.1
Make the child lie down in an open and shaded area	81	49.1	45	26.6
Offer the child water	116	70.3	59	34.9
Reassure the child and tell them not to worry	81	49.1	49	29.0
Immediately alert a medical team	35	21.2	127	75.1
Immediately alert the parents	15	9.1	28	16.6
Immediately stop all deworming activities in the school	2	1.2	0	0.0
Call the emergency helpline	3	1.8	2	1.2
Other	38	23.0	22	13.0
Total	165	100.0	169	100.0

Clearly, the management of commune health workers and teachers in the case of children complain of mild abdominal pain and/or nausea are was also quite different. Meanwhile the majority of commune health workers offered the child water (70.3%), most of teachers said they would immediately alert a medical team (75.1%). This reflects the expertise and responsibilities of the medical and educational institutions in the coordination of deworming for students.

Table 28. Percentage % of commune health workers and class teachers managing if children continue to report significant discomfort

Information	Commune health worker		Class teacher	
	n	%	n	%
Reassure the child and tell them not to worry	44	26.7	30	17.8
Alert the parents	60	36.4	61	36.1
Call an emergency helpline	36	21.8	26	15.4
Take the child to the nearest medical facility	118	71.5	127	75.1
Immediately report the situation to the head of the commune health center	58	35.2	77	45.6
Other	26	15.8	3	1.8
Total	165	100.0	169	100.0

If a child continues to report significant discomfort (e.g. continuing abdominal pain, vomiting, diarrhea), most CHWs and class teachers said that they would take the child to the nearest medical facility (71.5% and 75.1% respectively), followed by immediately reporting the situation to the head of the commune health center and alerting the parents. Reassuring the child and tell them not to worry was mentioned by higher rate of CHWs than that of class teachers (26.7% vs. 17.8%).

Table 29. Percentage % of commune health workers and class teachers knowing children who should NOT be given a tablet

Information	Commune health worker		Class teacher	
	n	%	n	%
NO children should be excluded -- ALL children should be given a tablet	1	0.6	3	1.8
Children who do not provide a signed permission form	91	55.2	75	44.4
Children who are feeling unwell	138	83.6	141	83.4
Children who are taking other medication	121	73.3	104	61.5
Children who suffered adverse events previously to albendazole	59	35.8	36	21.3
Children who have been dewormed recently	129	78.2	120	71.0
Children who have not eaten breakfast	54	32.7	55	32.5
Don't know/don't remember	0	0.0	2	1.2
Others	25	15.2	14	8.3
Total	165	100.0	169	100.0

Knowledge of commune health workers and teachers about these contraindicated cases with albendazole was quite good and there was no obvious difference. The majority of the respondents believed that the children who are feeling unwell, taking other medication, have been dewormed recently should not be given a tablet (ranging from 61.5% to 83.6%). Children who do not provide a signed permission form were mentioned only about a half of the respondents (55.2% among commune health workers and 44.4% among teachers). A few

respondents mentioned cases should not take albendazole such as children who have not eaten breakfast, children who suffered adverse events previously to albendazole...

Interview results also showed that 94.5% of commune health workers and 92.3% of teachers advised the children to chew the tablet.

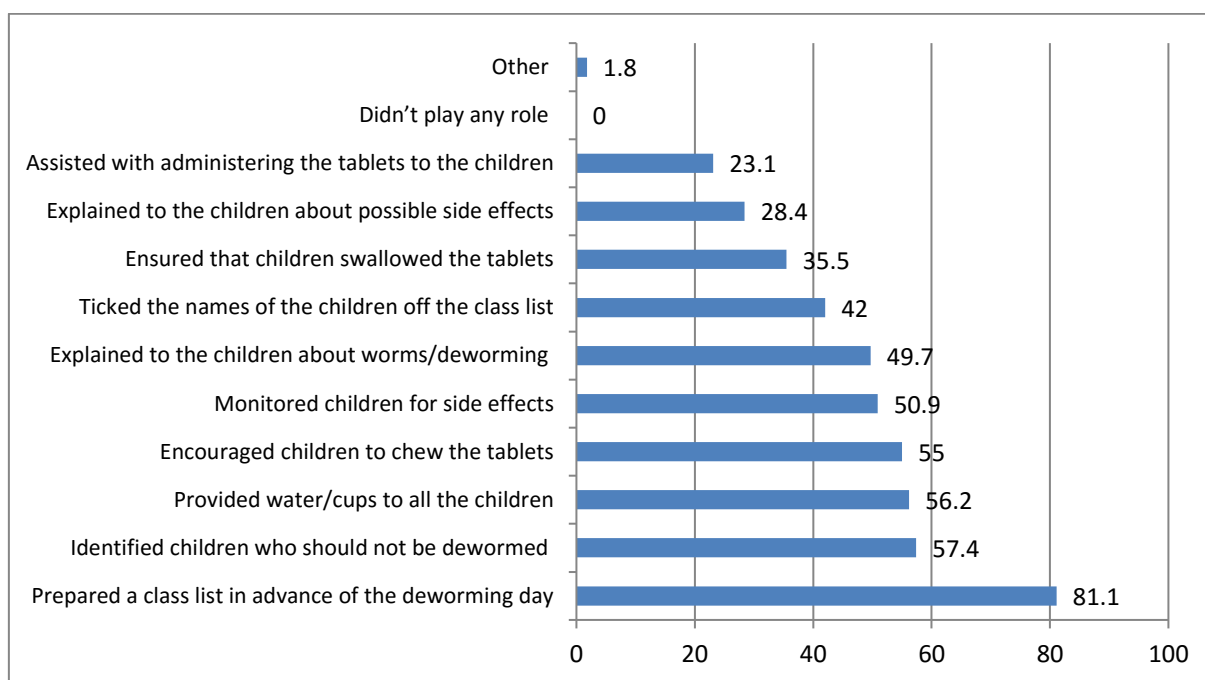


Figure 22. Role of class teachers in assisting CHWs (via interviewing the teachers)

Teachers played an important role in the process of deworming. Among 169 of class teachers interviewed, most of them said that they prepared a class list in advance of the deworming day (81.1%), followed by identified children who should not be dewormed, provided water/cups to all the children, monitored children for side effects (more than 50%). About 23.1% of class teachers assisted with administering the tablets to the children, this rate is slightly higher than that observed by monitors (20.2%).

Table 30. Allocation of albendazole to commune health center

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
At the training	10	35.7	14	29.2	12	44.4	24	38.7	60	36.4
Commune staff traveled to district health center to collect it	16	57.1	34	70.8	15	55.6	31	50.0	96	58.2
District Health Center delivered it directly to the commune	2	7.1	0	0.0	0	0.0	7	11.3	9	5.5
Total	28	100.0	48	100.0	27	100.0	62	100.0	165	100.0

When asked "how did the commune health center receive its allocation of albendazole?" the answers focused on commune staff traveled to district health center to collect it (58.2%), the highest proportion in Nghe An (70.8%); 36.4% of respondents said that they received albendazole at the training class. A small number of commune health workers reported that district Health Center delivered albendazole directly to the commune (5.5%).

Table 31. Average number of students and tablets brought to school on the main deworming day

Information	Hoa Binh	Nghe An	Phu Tho	Thanh Hoa	Total
Average number of students	239	333	354	350	329
Average number of tablets	280	396	360	382	367
Number redundant tablets compared to students	41	63	6	32	38

The results in the table above shows, the average number of tablets brought to schools on the main deworming day was more than the average number of students in all four provinces.

Table 32. Percentage of all schools having sufficient and insufficient tablets

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Sufficient	27	96.4	47	97.9	26	96.3	55	88.7	155	93.9
Insufficient	1	3.6	1	2.1	1	3.7	7	11.3	10	6.1
Total	28	100.0	48	100.0	27	100.0	62	100.0	165	100.0

Most information from interviews with commune health workers (93.9%) also showed that the quantity of tablets brought to schools was sufficient for the total number of children at the school.

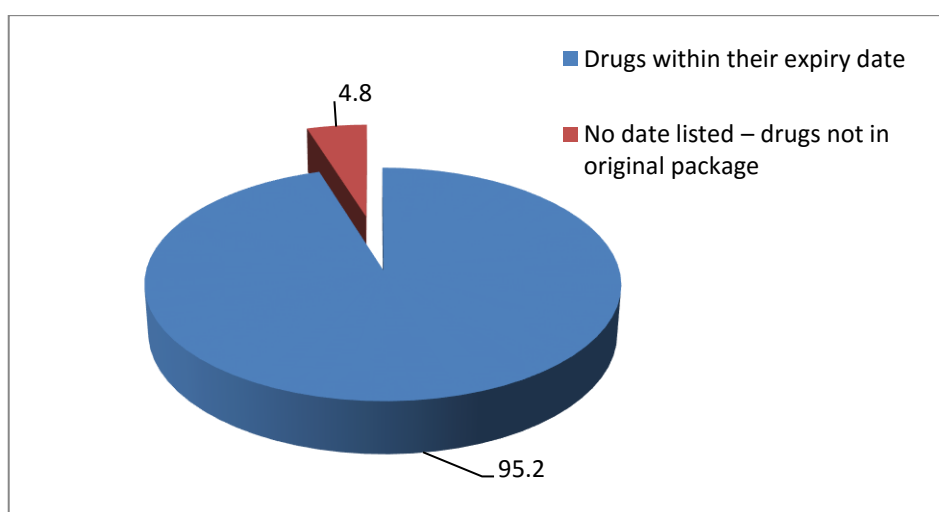


Figure 23. Expiration date of Albendazole

When asking the commune health workers to show the containers of albendazole, no drug past their expiry date, 95.2% of drugs were within their expiry date (May, 2010) and 4.8% of drugs have no date listed – drugs are not in original package. The manufacturer of albendazole is GlaxoSmithKline.

Commune health workers should bring a class list to mark the children who were dewormed. Actually, still 6.1% of commune health workers had no a class list when performing deworming. Some monitors reported, commune health workers who had no a list of students ticked on the students' permission forms. Thus, marking the students who were dewormed was not really good in all four provinces.

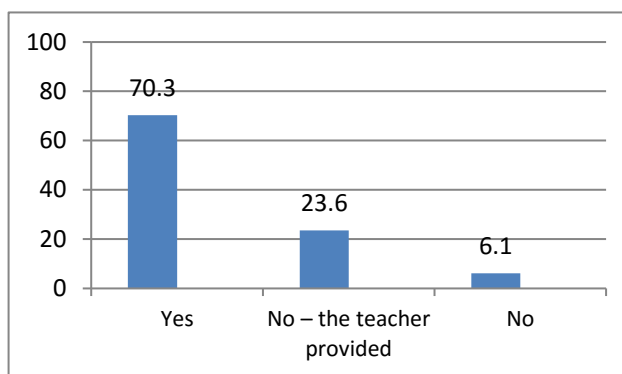


Figure 24. Percentage of commune health staff bringing the class lists from the commune health center

Table 33. Time of ticking off the names of children from the class list

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Names of all children present are ticked off before tablets are distributed	3	10.7	2	4.2	1	3.7	3	4.8	9	5.5
Names of children eligible for receiving a tablet are ticked off after ineligible children are excluded	2	7.1	2	4.2	4	14.8	5	8.1	13	7.9
Names are ticked off as the tablets are distributed to children	6	21.4	8	16.7	7	25.9	11	17.7	32	19.4
Names are ticked off only when children are observed to have swallowed the tablet	17	60.7	35	72.9	14	51.9	43	69.4	109	66.1
Others	0	0.0	1	2.1	1	3.7	0	0.0	2	1.2
Total	28	100.0	48	100.0	27	100.0	62	100.0	165	100.0

Commune health workers should tick on the next to the name of each student in the class list after the child had already swallowed the tablet. Interview results showed that only 66.1% of respondents answered correctly, 19.4% of respondents said their names were ticked off as the tablets were distributed to children. Still a few commune health workers thought all children's name were ticked off before tablets are distributed (5.5%).

Table 34. The process for deworming non-enrolled children

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Non-enrolled children are encouraged to come to the school on deworming day	2	7.1	4	8.3	3	11.1	7	11.3	16	9.7
Non-enrolled children are encouraged to come to the school on mop-up day	2	7.1	4	8.3	3	11.1	3	4.8	12	7.3
Non-enrolled children are dewormed at the commune health center	10	35.7	23	47.9	8	29.6	13	21.0	54	32.7
Non-enrolled children are dewormed at the village communal house	0	0.0	3	6.3	0	0.0	1	1.6	4	2.4
Non-enrolled children are dewormed by health workers going door-to-door	0	0.0	3	6.3	0	0.0	2	3.2	5	3.0
There is no process in place for deworming non-enrolled children	7	25.0	7	14.6	5	18.5	17	27.4	36	21.8
Non-enrollment is not an issue in this commune	6	21.4	4	8.3	2	7.4	5	8.1	17	10.3
Don't know	0	0.0	0	0.0	0	0.0	1	1.6	1	0.6
Other	2	7.1	8	16.7	6	22.2	15	24.2	31	18.8
Total	28	100.0	48	100.0	27	100.0	62	100.0	165	100.0

The program is actively encouraging non-enrolled children to attend the schools to be dewormed. However, only about 17% of CHWs said that non-enrolled children were encouraged to come to the school for deworming. Meanwhile, up to 21.8% of CHWs reported there was no process in place for deworming non-enrolled children, the highest in Thanh Hoa and the lowest in Nghe An. Nearly 1/3 of CHWs said that non-enrolled children were dewormed at the commune health center. This shows that non-enrolled children do not really access to the program.

Table 35. Forms that the commune health center received the reporting forms

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
At the training	17	60.7	30	78.9	24	100.0	38	76.0	93	56.4
Commune staff traveled to district health center to collect a hard copy	10	35.7	14	36.8	1	4.2	11	22.0	36	21.8
DHC delivered a hard copy directly to the commune health center	1	3.6	3	7.9	2	8.3	5	10.0	11	6.7
District health center e-mailed a soft copy to the commune health center	0	0.0	0	0.0	4	16.7	12	24.0	16	9.7
Have not received the reporting form	0	0.0	1	2.6	0	0.0	0	0.0	1	0.6
Don't know	0	0.0	10	26.3	3	12.5	12	24.0	33	20.0
Total	28	100.0	38	100.0	24	100.0	50	100.0	165	100.0

More than a half of CHCs received the reporting forms at the training (56.4%), followed by commune staff traveled to DHC to collect a hard copy. Few CHWs said that DHC delivered a hard copy directly to the commune health center (6.7%) or e-mailed a soft copy to the commune health center (9.7%). Especially, 20% of CHWs did not know how the commune health center received the reporting forms.

Table 36. The way data reported to the district after commune reporting form completed

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
The original is kept at the commune health center, and a copy is sent to the district health center	14	50.0	26	54.2	14	51.9	36	58.1	90	54.5
The original is sent to the district health center	14	50.0	21	43.8	13	48.1	24	38.7	72	43.6
The district will request the information	0	0.0	0	0.0	0	0.0	2	3.2	2	1.2
Don't know	0	0.0	1	2.1	0	0.0	0	0.0	1	0.6
Total	28	100.0	48	100.0	27	100.0	62	100.0	165	100.0

After completing the reporting forms of deworming, more than a half of commune health said the original form was kept at the commune health center and a copy would be sent to the district health center (54.5%), the rest of the reviews reported that CHCs would send the original forms to district health center (43.6%) or would send when district requested the information (1.2%).

Table 37. Deadline for submitting the commune reporting form to the district

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
29-Apr-16	0	0.0	0	0.0	0	0.0	4	6.3	4	2.4
04-May-16	0	0.0	0	0.0	0	0.0	2	3.2	2	1.2
05-May-16	1	3.4	5	10.2	1	3.6	28	44.4	35	20.7
06-May-16	1	3.4	0	0.0	15	53.6	2	3.2	18	10.7
07-May-16	0	0.0	8	16.3	2	7.1	1	1.6	11	6.5
08-May-16	0	0.0	4	8.2	0	0.0	1	1.6	5	3.0
09-May-16	0	0.0	13	26.5	1	3.6	2	3.2	16	9.5
10-May-16	10	34.5	10	20.4	1	3.6	9	14.3	30	17.8
11-May-16	4	13.8	2	4.1	2	7.1	1	1.6	9	5.3
12-May-16	0	0.0	0	0.0	1	3.6	2	3.2	3	1.8
13-May-16	0	0.0	1	2.0	0	0.0	1	1.6	2	1.2
14-May-16	1	3.4	1	2.0	0	0.0	1	1.6	3	1.8
15-May-16	4	13.8	1	2.0	0	0.0	0	0.0	5	3.0
16-May-16	0	0.0	0	0.0	0	0.0	1	1.6	1	0.6
17-May-16	1	3.4	0	0.0	0	0.0	0	0.0	1	0.6
Don't know	7	24.1	4	8.2	5	17.9	8	12.7	24	14.2
Total	29	100.0	49	100.0	28	100.0	63	100.0	169	100.0

The percentage of CHWs knowing the date for reporting is important information, however, 14.2% of CHWs did not know the deadline for submitting the commune summary form to the district. This rate was the highest in Hoa Binh (24.1%) and the lowest in Nghe An (8.2%). The deadline for submitting the reporting form to the DHC is different among 4 provinces and not inhomogeneous as the schedule. Most CHWs said that May 10, 2016 was the date for reporting in Hoa Binh, May 9, 2016 is for Nghe An, May 6, 2016 is for Phu Tho and May 5, 2016 is for Thanh Hoa.

3.3.3. Students

At each monitored schools, one student at the 5th in the class list was randomly selected to interview on the deworming day and the mop-up day. A total of 132 students at main schools and 37 ones at satellite schools were interviewed. Results showed that most of the students knew they were given tablets for treating worms (93.5%), the highest rate in Hoa Binh (100%) and Nghe An (98%). Only a few students did not know what tablets given out to treat for (5.9%).

Table 38. Percentage of students knowing why tablets are being given out on the main deworming day and mop-up day

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
To treat worms	29	100.0	48	98.0	22	78.6	59	93.7	158	93.5
To treat anything else	0	0.0	0	0.0	0	0.0	1	1.6	1	0.6
Don't know/don't remember	0	0.0	1	2.0	6	21.4	3	4.8	10	5.9
Total	29	100.0	49	100.0	28	100.0	63	100.0	169	100.0

Most of the students said that their teacher told them tablets would be given in the past few days (82.2%). This doesn't seem to correspond to the data reported in Figure 14, where only 53.8% of teachers said they explained to children at their classes. It may be explained that two questions are for different subjects with the different ways of interview.

Table 39. Percentage of students knowing tablets would be given

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
The teacher told us this morning	1	3.4	8	16.3	5	17.9	12	19.0	26	15.4
The teacher told us in the past few days	27	93.1	42	85.7	22	78.6	48	76.2	139	82.2
There were announcements made during school assembly	1	3.4	13	26.5	5	17.9	2	3.2	21	12.4
Posters/banners were hung in the schools	3	10.3	11	22.4	3	10.7	3	4.8	20	11.8
My parents told me	2	6.9	13	26.5	8	28.6	10	15.9	33	19.5
There were announcements made on the loudspeaker in the village	4	13.8	13	26.5	4	14.3	5	7.9	26	15.4
I did not know	1	3.4	0	0.0	0	0.0	0	0.0	1	0.6
Other	2	6.9	4	8.2	3	10.7	0	0.0	9	5.3
Total	29	100.0	49	100.0	28	100.0	63	100.0	169	100.0

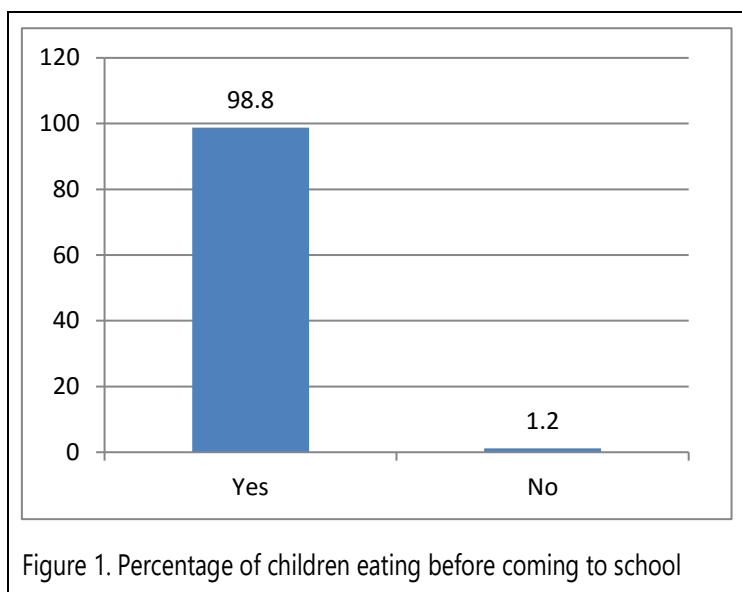
Before tablets were given out in the class, 87% of students were explained that the tablets were for treat worms, 9.5% of students were not told what the tablets were for.

Table 40. Percentage of students receiving tablets

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
1	29	100.0	48	98.0	27	96.4	60	95.2	164	97.0
≥2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
0	0	0.0	1	2.0	1	3.6	3	4.8	5	3.0
Total	29	100.0	49	100.0	28	100.0	63	100.0	169	100.0

The results of interviews also showed that 97% of students received 1 tablets, no interviewed students received more than two ones, a very small number (3%) did not receive any tablet

(4 children on the deworming day and 1 child on the mop-up day). The reasons were having a fever, forgetting the permission form at home, busy to do homework, be dewormed recently. 98.2% of students felt fine BEFORE taking the tablet and 97.6% of the children who receives medicine said that they felt well AFTER taking tablets.



Breakfast is the most important meal of the day for both adults and children, because it gives the body the energy needed for all activities during the day. Breakfast plays an important role in enhancing physical activity, mental as well as increasing a child's ability to learn. Having a breakfast seems to be very common for children in 4 provinces. The figure above shows that almost of students had eaten before coming to school (98.8%).

3.4. Coverage validation

3.4.1. Assessment of deworming result

A total of 72 main schools and 26 satellite schools were visited on the coverage validation. The monitoring results are presented as below.

Table 41. The date of the main deworming day taking place

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	N	%	n	%	n	%	n	%	n	%
April 28	8	50.0	24	75.0	7	46.7	1	2.9	40	40.8
April 29	8	50.0	8	25.0	8	53.3	2	5.7	26	26.5
May 4	0	0.0	0	0.0	0	0.0	15	42.9	15	15.3
May 5	0	0.0	0	0.0	0	0.0	14	40.0	14	14.3
Other date	0	0.0	0	0.0	0	0.0	3	8.6	3	3.1
Total	16	100.0	32	100.0	15	100.0	35	100.0	98	100.0

The table above shows all monitored primary schools in Hoa Binh, Nghe An and Phu Tho organized deworming for students under the general plan of the provinces (April 28-29). The satellite schools implemented the deworming day according to the planned schedule. In Thanh Hoa province, the school-based mass drug administration campaign was not conducted according to the general plan at all schools. The results showed that 22/27 schools (81.5%) implemented deworming for children on May 4-5. Two primary schools implemented on April 28-29, 3 ones including primary school of Hai Minh (Tinh Gia)

implemented on May 6, primary school of Ha Bac (Ha Trung) and primary school of Thieu Trung (Thieu Hoa) implemented on May 9.

Table 42. The plan for conducting a mop-up day at main schools (via interviews with head teachers)

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Yes: on May 4 in Phu Tho, Nghe An, May 9 in Thanh Hoa, May 5 in Hoa Binh	5	50	16	80	9	75	13	52	43	64.2
Yes: other day this week (different date above)	3	30	1	5	1	8.3	3	12	8	11.9
Yes: next week	0	0	2	10	1	8.3	3	12	6	9.0
No; mop-up day will happen at the CHC	1	10	0	0	1	8.3	2	8	4	6.0
No; mop-up day will happen at the local village communal houses	0	0	0	0	0	0	0	0	0	0.0
No; mop-up day will be arranged by health workers going door-to-door	0	0	1	5	0	0	0	0	1	1.5
No; there is no mop-up day	1	10	0	0	0	0	1	4	2	3.0
Not aware how mop-up day is arranged	0	0	0	0	0	0	3	12	3	4.5
Total	10		20		12		25		67	

As planned, the mop-up day would be conducted on May 4 in Phu Tho, Nghe An, May 9 in Thanh Hoa, May 5 in Hoa Binh. Most of head teachers at main schools (61.7%) also confirmed that plans. Only 3% of head teachers said that there was no mop-up day.

Table 43. Percentage % of CHCs/main primary schools performing a separate mop-up day

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	N	%
Yes; performed at the school	7	63.6	12	57.1	10	76.9	12	44.4	41	56.9
Yes; performed at the commune health center	3	27.3	5	23.8	0	.0	9	33.3	17	23.6
Yes; performed somewhere else	0	0.0	0	0.0	1	7.7	0	0.0	1	1.4
No; there is no formal mop-up day in this commune	1	9.1	4	19.0	2	15.4	6	22.2	13	18.1
Total	11	100.0	21	100.0	13	100.0	27	100.0	72	100.0

However, on the coverage validation, up to 18.1% of CHCs/main schools actually did not perform a separate mop-up day, much higher than the plan (3%). The rate of schools where the mop-up day was performed at the CHCs also much higher than the plan (23.6% vs 6%). More than a half of CHC's heads (56.9%) said that a separate mop-up day was held at the schools, slightly lower than the plan (64.2%). Table 47 is used to show the total number of students whose names were ticked in the class and total number of students reported in the commune reporting form for each school visited during coverage validation.

Table 44. Percentage % satellite schools performing a separate mop-up day

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Yes	0	0.0	8	72.7	1	50.0	3	37.5	12	46.2
Mop-up day was performed at the commune health center	2	40.0	0	0.0	0	0.0	0	0.0	2	7.7
Mop-up day was performed somewhere else	0	0.0	1	9.1	0	0.0	2	25.0	3	11.5
No mop-up day was arranged in the commune	2	40.0	1	9.1	1	50.0	3	37.5	7	26.9
Don't know	1	20.0	1	9.1	0	0.0	0	0.0	2	7.7
Total	5	100.0	11	100.0	2	100.0	8	100.0	26	100.0

There was a difference in performing a separate mop-up day between the main and satellite schools. At the satellite schools, rate of the satellite schools performing a separate mop-up day was lower than that of the main schools (46.2% vs. 56.9%). However, up to 26.9% of class teachers at satellite schools said that no MUD was arranged, this rate at the main schools was only 18.1%. Only 7.7% (2 satellite schools) performed a separate mop-up day at the commune health center.

Table 45. Percentage % CHCs completed the reporting form

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Completed	7	63.6	17	81.0	9	69.2	20	74.1	53	73.6
In the process of being completed	2	18.2	2	9.5	0	.0	1	3.7	5	6.9
Already sent to district health center	2	18.2	2	9.5	4	30.8	6	22.2	14	19.4
Total	11	100.0	21	100.0	13	100.0	27	100.0	72	100.0

73.6% of CHC's heads said that the reporting forms of deworming were completed, and 19.4% of CHCs had already sent the reporting forms to district health center. Only 6.9% of CHC's heads told that the reporting forms were in the process of being completed.

Table 46. Average number of children who were enrolled in the commune, according to the commune reporting form

Information	Hoa Binh	Nghe An	Phu Tho	Thanh Hoa	Total
Boys (\pm SD)	165.5 \pm 167.2	246.6 \pm 95.5	222.5 \pm 119.7	204.4 \pm 144.8	212.7 \pm 132.6
Girls (\pm SD)	149.8 \pm 142.0	229.9 \pm 91.7	205.5 \pm 119.6	201.2 \pm 141.1	201.3 \pm 125.6
Average total number of children (\pm SD)	315.4 \pm 308.9	476.5 \pm 185.5	427.9 \pm 237.3	405.6 \pm 282.6	414.0 \pm 256.1
The least number of children	108	237	146	96	96
The most number of children	1179	312	837	1295	1295

About the number of children who were enrolled in the commune, according to the commune reporting form, on average there are 414 students per commune, in which the highest in Nghe An (476 children) and the lowest in Hoa Binh (315 children). In general, the number of male students is slightly higher than that of female students. Average number of male/female students is 212/201. This date is slightly higher than that the data in the table 8. It is explained that the data in the table 8 is for main schools only.

Table 47. Total number of students whose names were ticked in the class list and total number of students reported in the commune reporting form

No.	Province	District	School name	Total # Boys		Total # of Girls		TOTAL # of children		Reporting/ counting
				Dewormed in commune		Dewormed in commune		Dewormed in the commune		
				Number obtained from counting of the class lists	Number reported in commune reporting form	Number obtained from counting of the class lists	Number reported in commune reporting form	Number obtained from counting of the class lists	Number reported in commune reporting form	
1	Hoa Binh	Lac Thuy	lac long	<i>No data</i>						
2	Hoa Binh	Tan Lac	nam son	44	51	44	48	88	99	Higher
3	Hoa Binh	Da Bac	yen hoa	60	61	49	48	109	109	Equal
4	Hoa Binh	Mai Chau	bao la	68	68	57	57	125	125	Equal
5	Hoa Binh	Yen Thuy	lac hung	58	58	61	61	119	119	Equal
6	Hoa Binh	Long Son	tan vinh	129	129	111	111	240	240	Equal
7	Hoa Binh	Ky Son	dan ha	173	173	130	130	303	303	Equal
8	Hoa Binh	Lac Son	van son	183	183	181	181	364	364	Equal
9	Hoa Binh	Kim Boi	dong bac	211	211	184	184	395	395	Equal
10	Hoa Binh	Cao Phong	nam phong	184	162	171	193	355	356	Higher
11	Hoa Binh	Hoa Binh city	dong tien	604	604	516	516	1120	1120	Equal
12	Nghe An	Tuong Dong	tam thai	<i>No class list</i>						
13	Nghe An	Nghia Dan	nghia hieu	111	105	101	108	214	213	Lower
14	Nghe An	Ky Son	mong ai	137	142	126	131	263	273	Higher
15	Nghe An	Nam Dan	nam tan	153	153	139	139	292	292	Equal
16	Nghe An	Quy Chau	chau thuan	190	190	149	149	339	339	Equal
17	Nghe An	Que Phong	kim son	154	199	155	158	309	357	Higher
18	Nghe An	Quynh Luu	quynh hoa	190	190	164	164	354	354	Equal
19	Nghe An	Anh Son	tao son	149	149	174	174	323	323	Equal
20	Nghe An	Quy Hop	chau thanh	200	200	180	180	380	380	Equal

No.	Province	District	School name	Total # Boys		Total # of Girls		TOTAL # of children		Reporting/ counting
				Dewormed in commune		Dewormed in commune		Dewormed in the commune		
				Number obtained from counting of the class lists	Number reported in commune reporting form	Number obtained from counting of the class lists	Number reported in commune reporting form	Number obtained from counting of the class lists	Number reported in commune reporting form	
21	Nghe An	Nghi Loc	nghi hng	174	173	182	181	356	354	Lower
22	Nghe An	Thai Hoa town	dong hieu	233	233	191	191	424	424	Equal
23	Nghe An	Thanh Chong	thanh linh	183	183	193	193	376	376	Equal
24	Nghe An	Dien Chau	dien hoang	220	220	196	196	416	416	Equal
25	Nghe An	Hung Nguyen	hung linh	206	206	197	197	403	403	Equal
26	Nghe An	Con Cuong	chi khe I	197	199	200	200	397	399	Higher
27	Nghe An	Tan Ky	nghia binh	229	240	218	225	447	465	Lower
28	Nghe An	Yen Thanh	dong thanh	293	297	242	238	535	535	Equal
29	Nghe An	Do Long	hien son	298	298	269	269	567	567	Equal
30	Nghe An	Vinh city	hung loc	413	413	344	344	757	757	Equal
31	Nghe An	Hoang Mai town	quynh loc	369	369	357	357	726	726	Equal
32	Nghe An	Cua Lo town	nghi tan	362	362	405	405	767	767	Equal
33	Phu Tho	Thanh Ba	yen noi	86	86	56	56	142	142	Equal
34	Phu Tho	Tam Nong	dau dong	68	79	63	71	131	150	Higher
35	Phu Tho	Thanh Son	son hung	126	126	101	101	227	227	Equal
36	Phu Tho	Doan Hung	dai nghia	84	101	94	105	178	206	Higher
37	Phu Tho	Ha Hoa	dai pham	127	127	106	106	233	233	Equal
38	Phu Tho	Viet Tri city	huy cuong	151	151	119	119	270	270	Equal
39	Phu Tho	Cam Khe	yen tap	164	164	167	167	331	331	Equal
40	Phu Tho	Phu Ninh	le my	194	194	187	187	381	381	Equal
41	Phu Tho	Thanh Thuy	son thuy 2	291	291	240	240	531	531	Equal

No.	Province	District	School name	Total # Boys		Total # of Girls		TOTAL # of children		Reporting/ counting
				Dewormed in commune		Dewormed in commune		Dewormed in the commune		
				Number obtained from counting of the class lists	Number reported in commune reporting form	Number obtained from counting of the class lists	Number reported in commune reporting form	Number obtained from counting of the class lists	Number reported in commune reporting form	
42	Phu Tho	Yen Lap	yen lap	302	302	252	252	554	554	Equal
43	Phu Tho	Phu Tho town	ha loc 2	237	237	282	282	519	519	Equal
44	Phu Tho	Lam Thao	supe	362	362	325	325	687	687	Equal
45	Phu Tho	Tan Son	thu cuc 2	399	399	390	390	789	789	Equal
46	Thanh Hoa	Muong Lat	mong chanh				<i>No data</i>			
47	Thanh Hoa	Quan Hoa	xuan phu	48	49	45	47	93	96	Higher
48	Thanh Hoa	Nhu Thanh	phuc dong	69	69	60	60	129	129	Equal
49	Thanh Hoa	Thuong Xuan	bat mot 2	38	38	64	64	102	102	Equal
50	Thanh Hoa	Ngoc Lac	my tan 1	99	99	77	73	176	172	Lower
51	Thanh Hoa	Ba Thoc	thanh son	96	96	76	76	172	172	Equal
52	Thanh Hoa	Nhu Xuan	xuan quy	99	99	76	76	175	175	Equal
53	Thanh Hoa	Hoang Hoa	hoang xuyen	88	88	103	103	191	191	Equal
54	Thanh Hoa	Hau Loc	xuan loc	127	127	113	113	240	240	Equal
55	Thanh Hoa	Thach Thanh	thach tong 2	107	107	126	126	233	233	Equal
56	Thanh Hoa	Quan Son	tam lu	118	118	131	131	249	249	Equal
57	Thanh Hoa	Cam Thuy	cam son	178	178	132	132	310	310	Equal
58	Thanh Hoa	Nong Cong	te loi	194	194	132	132	326	326	Equal
59	Thanh Hoa	Tho Xuan	tho nguyen	130	130	160	160	290	290	Equal
60	Thanh Hoa	Lang Chanh	dong long	183	184	166	166	349	350	Higher
61	Thanh Hoa	Trieu Son	trieu thanh	196	196	168	168	364	364	Equal
62	Thanh Hoa	Ha Trung	ha bac	161	161	179	179	340	340	Equal

No.	Province	District	School name	Total # Boys		Total # of Girls		TOTAL # of children		Reporting/ counting
				Dewormed in commune Number obtained from counting of the class lists	Number reported in commune reporting form	Dewormed in commune Number obtained from counting of the class lists	Number reported in commune reporting form	Dewormed in the commune Number obtained from counting of the class lists	Number reported in commune reporting form	
63	Thanh Hoa	Thieu Hoa	thieu trung	118	118	188	188	306	306	Equal
64	Thanh Hoa	Yen Dinh	dinh hoa	189	189	202	202	391	391	Equal
65	Thanh Hoa	Thanh Hoa city	quang tinh	231	246	197	210	428	456	Higher
66	Thanh Hoa	Dong Son	rung thong	244	244	213	213	457	457	Equal
67	Thanh Hoa	Nga Son	nga bach	226	226	235	235	461	461	Equal
68	Thanh Hoa	Bim Son	bac son	273	271	240	240	513	501	Lower
69	Thanh Hoa	Quang Xuong	quang tho	274	274	298	298	572	572	Equal
70	Thanh Hoa	Vinh Loc	vinh long 2	250	250	368	368	618	618	Equal
71	Thanh Hoa	Tinh Gia	hai ninh	562	562	542	542	1104	1104	Equal
72	Thanh Hoa	Sam Son	quang tien 2	678	678	609	609	1287	1287	Equal

The table above shows the difference between total number of students whose names were ticked in the class list and total number of students reported in the commune reporting form. The data shows that 54/72 CHCs (75%) reported accurately, 10 CHCs (13.9%) over-reported and 5 CHCs (6.9%) reported less than the number obtained from counting the class list. Especially, one CHC had no class list (Tam Thai primary school, Tuong Duong, Nghe An) and two CHC had no data.

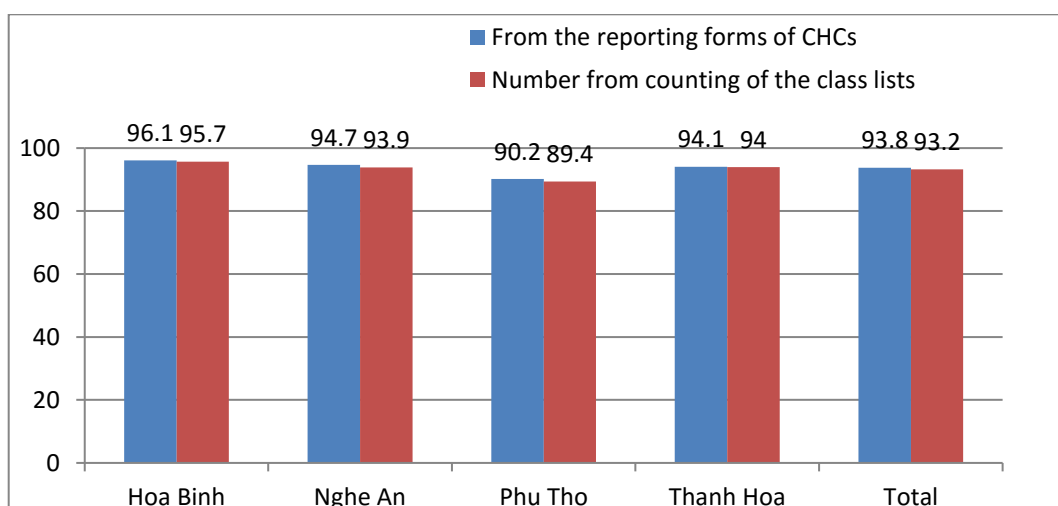


Figure 25. Percentage of students dewormed at monitored communes, number from reporting forms of CHCs and number obtained from counting of the class lists

There was a slight difference in the proportion of students dewormed between number from reporting forms of CHCs and number from counting of the class lists conducted by monitors. The proportion from reporting forms of CHCs was 93.8% and from counting of the class lists was 93.2%. The slight difference was popular at all 4 provinces. The rate of CHCs reporting accurately and over-reporting was presented for each CHC on the table above.

Table 48. Percentage of CHC's heads reporting that the reporting form (the original or a copy) was submitted to the district health center

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Had been submitted	8	72.7	17	81.0	9	69.2	24	88.9	58	80.6
Had not been submitted	3	27.3	4	19.0	4	30.8	3	11.1	14	19.4
Total	11	100.0	21	100.0	13	100.0	27	100.0	72	100.0

According to the interviews, more than 80% of CHC's heads said the reporting form (the original or a copy) had been submitted to the district health centers, remaining 19.4% of CHCs had not submitted the report due to deworming activity was not completed as the general plan of the provinces (21.4%). This does not agree with the data presented in table 45, which states that only 19.4% of CHCs have submitted the report. It can be explained that two questions are for different purposes, the data in table 45 is for completing the reporting form, the data in this table is for submitting the report.

Table 49. The date of the reporting form submitted to the district health center

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
On or before May 9 (HB, PT, NA) or 13/5 (TH)	3	27.3	8	38.1	4	30.8	8	29.6	23	31.9
Other date	5	45.5	9	42.9	5	38.5	16	59.3	35	48.6
Total	11		21		13		27		72	

The date of report submission also was various among the provinces, of which only 31.9% of reports were submitted on or before the prescribed date (May 9 for Hoa Binh, Phu Tho, Nghe An and May 13 for Thanh Hoa). The reasons for the late submission of the report included: deworming wasn't completed in the commune in time, some CHC's heads said that they would submit on the afternoon of the coverage validation day or the days after deworming were on holiday (April 30 and May 1).

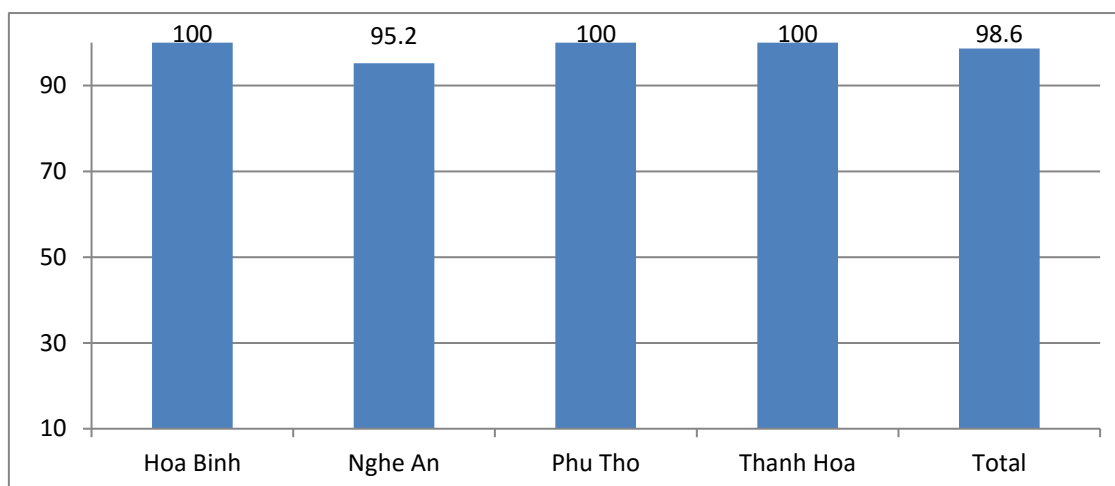


Figure 26. Percentage of CHCs that accurately filled-in the commune reporting form based on the class list

Up to 98.6% of CHCs has completed the reporting forms by using the class lists to count the number of children dewormed in each class. Only one CHC of Tam Thai, Tuong Duong in Nghe An counted the number of children basing on the signed permission forms. However, 94.4% of CHC's heads said the lists were available at CHCs, the remaining 5.6% of CHC's heads said the class lists were kept at the schools (3 CHCs) and one CHC's head said there was no class list but based on the permission forms to count.

Table 50. Number of non-enrolled children who were reported as being dewormed, according to the commune reporting form

Province	District	Name of primary school	No. of non-enrolled children
Thanh Hoa	Quan Hoa	Xuan Phu	3
Thanh Hoa	Nhu Thanh	Phuc Dong	2
Thanh Hoa	Ngoc Lac	My Tan 1	5
Thanh Hoa	Thanh Hoa city	Quang Thinh	3
Thanh Hoa	Quang Xong	Quang Tho	10
Phu Tho	Tam Nong	Dau Duong	30
Nghe An	Ky Son	Muong Ai	7
Nghe An	Con Cuong	Chi Khe I	2
Nghe An	Tan Ky	Nghia Binh	18
Total			80

According to the commune reporting form, 80 non-enrolled children were dewormed. In which, the highest number was found in Dau Duong commune, Tam Nong, Phu Tho,

followed by Nghia Binh commune, Tan Ky, Nghe An (30 and 18 non-enrolled children, respectively). Only Hoa Binh did not report any non-enrolled child who was dewormed.

3.4.2. Results of interviews with students

A total of 392 students of 72 primary schools along with 26 satellite schools were interviewed on the coverage validation.

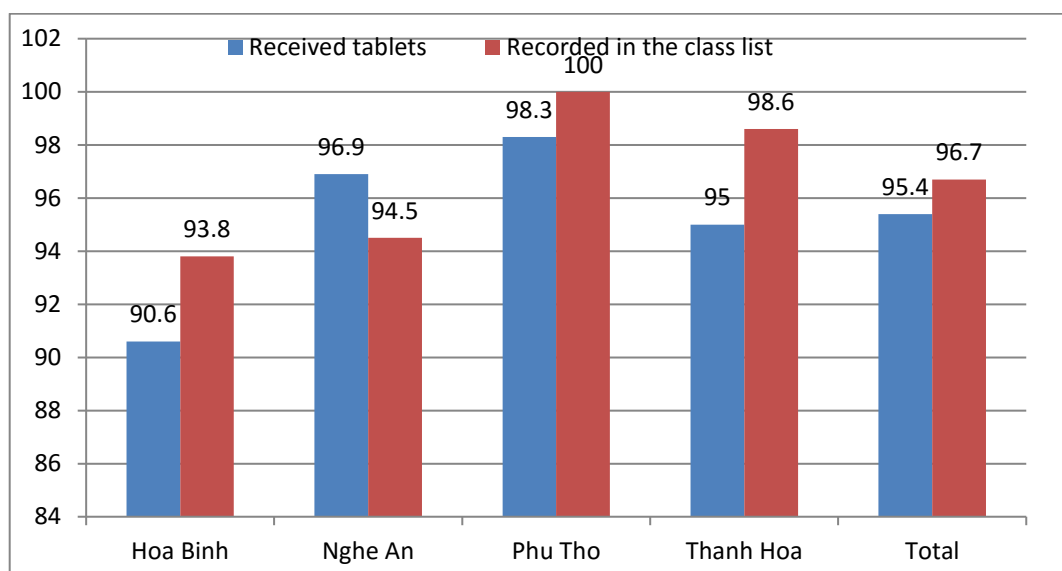


Figure 27. Percentage of students receiving medicine at schools last week and recorded in the class list

The results showed that, 374 students among 392 ones (95.4%) said that they had received medicine at school last week, the highest rate was found in Phu Tho (98.3%) and the lowest rate in Hoa Binh (90.6%). There is no different between this rate of interviews with students and the rate of interviews with head of CHCs as above (95.4%). The monitors looked at the class lists and verified if the child's name was/was not ticked-off in the class list, the results showed that the rate of students recorded in the class list was a little higher than that of students receiving medicine (96.7% vs. 95.4%). This rate is quite different among provinces.

Table 51. Percentage of students knowing what the medicine was for

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
To treat worms	57	98.3	118	95.2	55	93.2	130	97.7	360	96.3
To treat anything else	0	.0	5	4.0	0	.0	0	.0	5	1.3
Don't know/don't remember	1	1.7	2	1.6	4	6.8	3	2.3	10	2.7
Total	58		124		59		133		374	

Among students who received medicine, 96.3% of them knew the medicine was for treating worms.

Table 52. The persons who gave students the medicine

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Commune health worker	52	89.7	117	94.4	52	88.1	103	77.4	324	86.6
Teacher	6	10.3	4	3.2	7	11.9	23	17.3	40	10.7
Other	0	0.0	3	2.4	0	0.0	5	3.8	8	2.1
Don't know/don't remember	0	0.0	0	0.0	0	0.0	2	1.5	2	0.5
Total	58	100.0	124	100.0	59	100.0	133	100.0	374	100.0

97.3% of students said they were given the medicine by commune health workers (86.6% and teachers (10.7%).

Table 53. Percentage of students saying about type of medicine was given out

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
Tablet	58	100.0	124	100.0	59	100.0	133	100.0	374	100.0
Liquid/syrup	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Injection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	58	100.0	124	100.0	59	100.0	133	100.0	374	100.0

The results in the table above shows that 100% of students said medicine was tablet.

Table 54. Number of tablets given

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
1	58	100.0	123	99.2	59	100.0	133	100.0	373	99.7
>1	0	0.0	1	0.8	0	0.0	0	0.0	1	0.3
Total	58	100.0	124	100.0	59	100.0	133	100.0	374	100.0

Up to 99.7% of students were given only one tablets. One student in Nghe An received more than one tablet.

Table 55. Percentage of students remembering the color of the tablet

Information	Hoa Binh		Nghe An		Phu Tho		Thanh Hoa		Total	
	n	%	n	%	n	%	n	%	n	%
White	58	100.0	123	99.2	58	98.3	111	83.5	350	93.6
Any other color	0	0.0	1	0.8	1	1.7	20	15.0	22	5.9
Don't know/don't remember	0	0.0	0	0.0	0	0.0	2	1.5	2	0.5
Total	58	100.0	124	100.0	59	100.0	133	100.0	374	100.0

The tables from 35 to 38 showed that at least 93.6% of students gave the correct replies, so we can be confident that at least 93.6% of interviewed student did receive the tablets.

4. Conclusions and recommendations

4.1. Conclusions

Deworming day and mop-up day

On the main deworming day, 97% of primary schools performed deworming day as planned: 28 or 29 April for Hoa Binh, Phu Tho, Nghe An provinces and 4 or 5 May for Thanh Hoa province. On the mop-up day, 91.7% conducted as scheduled: on 4 May in Phu Tho and Nghe An provinces, on 5 May in Hoa Binh province and 9 May in Thanh Hoa province. This rate is not for showing how many schools did or did not conduct a mop-up day, it shows how many schools performed the mop-up day on the date of the province/program defined. Twenty-one schools did not conduct deworming on the mop-up day because of completing deworming on the main deworming day and all of them were replaced by alternate schools.

More than 98% of main schools on both the deworming day and mop-up day conducted deworming for students before 10AM. At the satellite schools, 82.4% of satellite schools on the DW day and 71.4% of ones on the MUD performed drug administration before 10AM, some conducted deworming for students between 10AM-12PM.

40% of CHCs' staff/teachers at the main schools ignored explaining to the students about worms and deworming. More than 80% of CHCs' staff/teachers asked children if the children were feeling unwell and were taking any other medication.

The proportion of CHCs' staff/teachers at all visited schools asking if the children were feeling unwell before drug-administration on the main DW day and the MUD accounted only 85.7% and 84.2% respectively. The proportion of CHCs' staff/teachers at all visited schools asking children if they were taking any other medication before drug-administration on the main deworming day and mop-up day was 76.2% and 84.2% respectively.

70% of schools had to exclude children who were feeling unwell on the DW day. Similarly, 71.4% of visited schools actually had to exclude children who were taking other medication, 82.1% of schools had to exclude children who did not have signed permission forms.

Only less than half of the monitored schools explained to the children about the side effects that may occur after taking tablet on the deworming day and mop-up day (44% and 42.1% respectively).

At most of primary schools (87.2%), the administration of albendazole for students was implemented by CHCs' staff. There was no difference between the main schools and satellite schools.

Most of students were instructed on how to chew tables on the main deworming day and mop-up day (92.5% and 90% respectively).

A very high proportion of CHCs' staff and teachers ensured that the child swallowed the tablet on the main deworming day and mop-up day (95.2% and 82.5% respectively).

Only 75% of CHCs' staff/teachers ticked on the next to the name of each student in the class list the on main deworming day. This rate on the mop-up day was 68.4%.

Only 68.2% of main schools sent 2 representatives to the training, 9.1% of schools sent 1 member of staff, 24.3% of satellite schools sent one representative to the official training for deworming. Over a half of main primary schools assigned school health teacher to attend the training class on deworming (55.3%), all teachers of the main school were trained by the trained teacher with rate of 81.1%; at the satellite schools, 78.4% of class teachers said that all teachers were trained by the persons who attended the official training for deworming. 90.2% head teachers said that banners were used and hung in main school premises, this rate at satellite schools was much lower than that (29.7%). More than 76% of respondents at main schools said that permission forms were distributed to children; meanwhile the rate at satellite was 62.2%.

79.4% of CHC's staff and only 25.4% of teachers participated in training on deworming. Only 5.5% of commune health workers said that albendazole was very safe and doesn't cause any adverse events, whereas this percentage was 14.2% in group of teachers. Knowledge of commune health workers and teachers about these contraindicated cases with albendazole was quite good and there was no obvious difference. Interview results also showed that 94.5% of commune health workers and 92.3% of teachers advised the children to chew the tablet.

The average number of tablets brought to schools on the main deworming day was more than the average number of students in all four provinces. Most information from interviews with commune health workers (93.9%) also showed that the quantity of tablets brought to schools was sufficient for the total number of children at the school.

Still 6.1% of commune health workers had no a class list when performing deworming. Only 65.2% of repondents answered correctly that names of students should be ticked off only when children were observed to have swallowed the tablet.

Results showed that most of the students knew they were given tablets for treating worms (93.5%), the highest rate in Hoa Binh (100%) and Nghe An (98%). 97% of students received 1 tablets, no interviewed students received more than two ones, 3% of students did not receive any tablet.

Coverage validation

All monitored primary schools in Hoa Binh, Nghe An and Phu Tho organized deworming for students under the general plan of the provinces; 81.4% of schools in Thanh Hoa performed deworming as scheduled (May 4-5). Up to 18.1% of CHCs/primary schools did not perform a separate mop-up day. More than a half of CHC's heads said that a separate mop-up day was held at the schools, 23.6% of communes performed at the commune health center. At the satellite schools, rate of the satellite schools performing a separate mop-up day was lower than that of the main schools (46.2% vs. 56.9%). However, up to 26.9% of class teachers at satellite schools said that no MUD was arranged.

There was a slight difference in the proportion of students dewormed between number from reporting forms of CHCs and number from counting of the class lists conducted by monitors. The proportion from reporting forms of CHCs was 94.6% and from counting of the class lists was 90.8%.

More than 80% of CHC's heads said the reporting form (the original or a copy) had been submitted to the district health centers. The date of report submission also was various among the provinces, of which only 39.7% of reports were submitted on or before the prescribed date.

95.4% of students received medicine at school. However, the rate of students recorded in the class list was a little higher than that of students receiving medicine (96.7% vs. 95.4%).

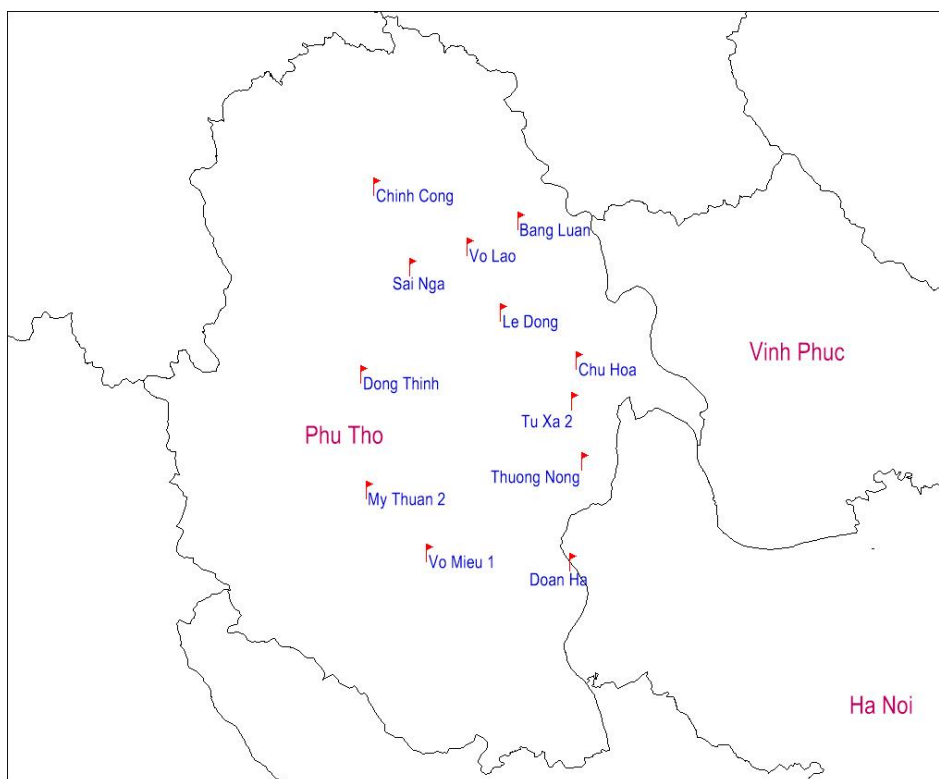
Among students who received medicine, 96.3% of them knew the medicine was for treating worms, 100% of them said medicine was tablet and given by commune health workers (86.6% and teachers (10.7%); 99.7% of students were given only one tablets.

4.2. Recommendations

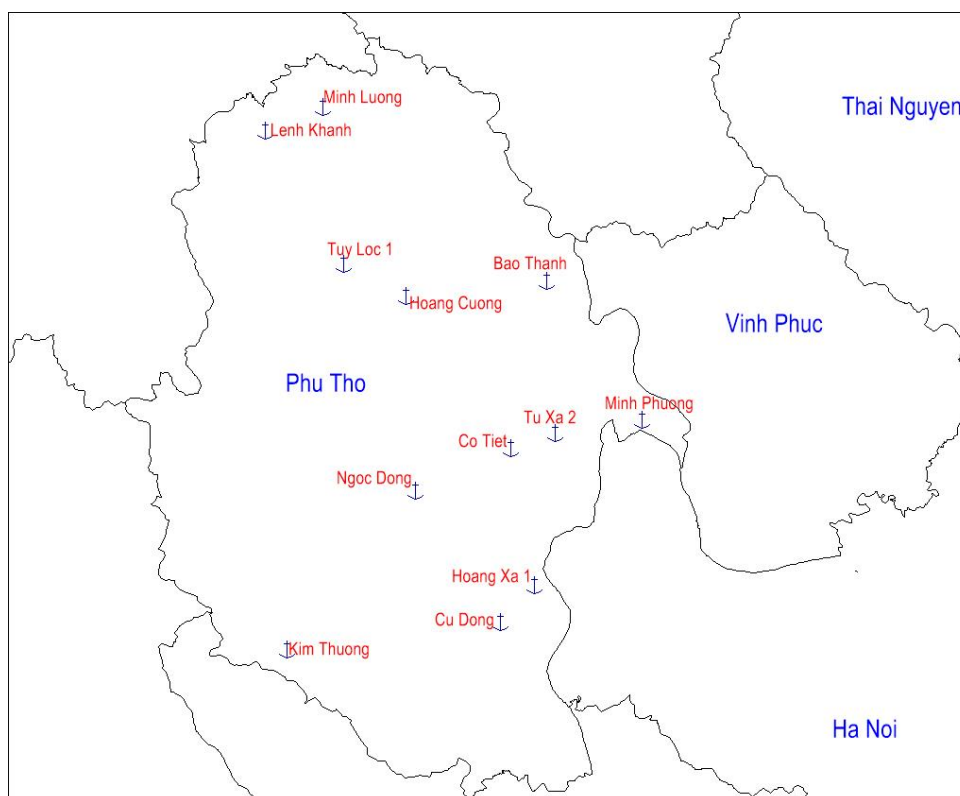
In general, the monitoring showed quite good results on performing the mass drug administration campaign in 4 provinces. Most of commune health workers and teachers followed the expected processes. Some recommendations are drawn as follows:

- Continue to support localities in implementation of school-based mass drug administration campaigns;
- It is necessary to monitor from provincial and district level to ensure the expected process followed by commune health workers and teachers during the school-based deworming campaign;
- Before school-based mass drug administration campaigns, it is necessary to train for commune health workers and teachers on deworming process, focusing on bringing the class lists and how to mark the student's name during deworming;
- Local authorities should strengthen communication activities for parents, students on worms and deworming, ensuring coverage of deworming for children reaches to 100%.

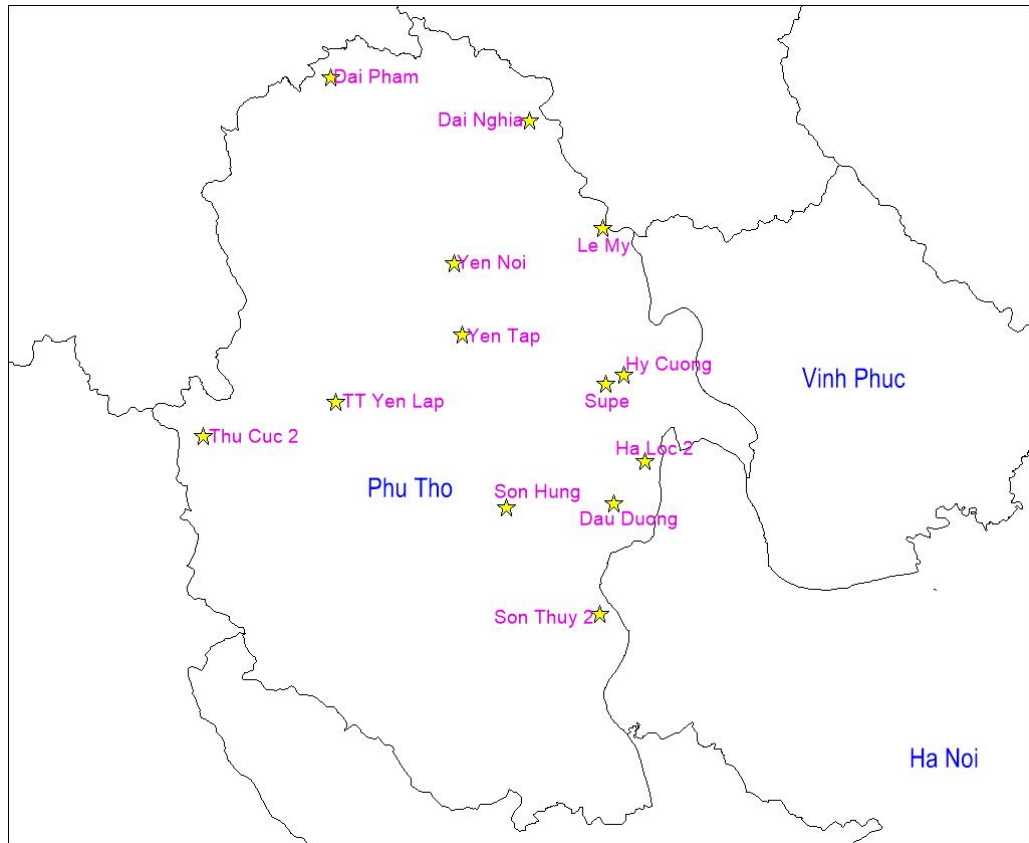
Annex 1. Maps of main/satellite points of primary schools and CHCs



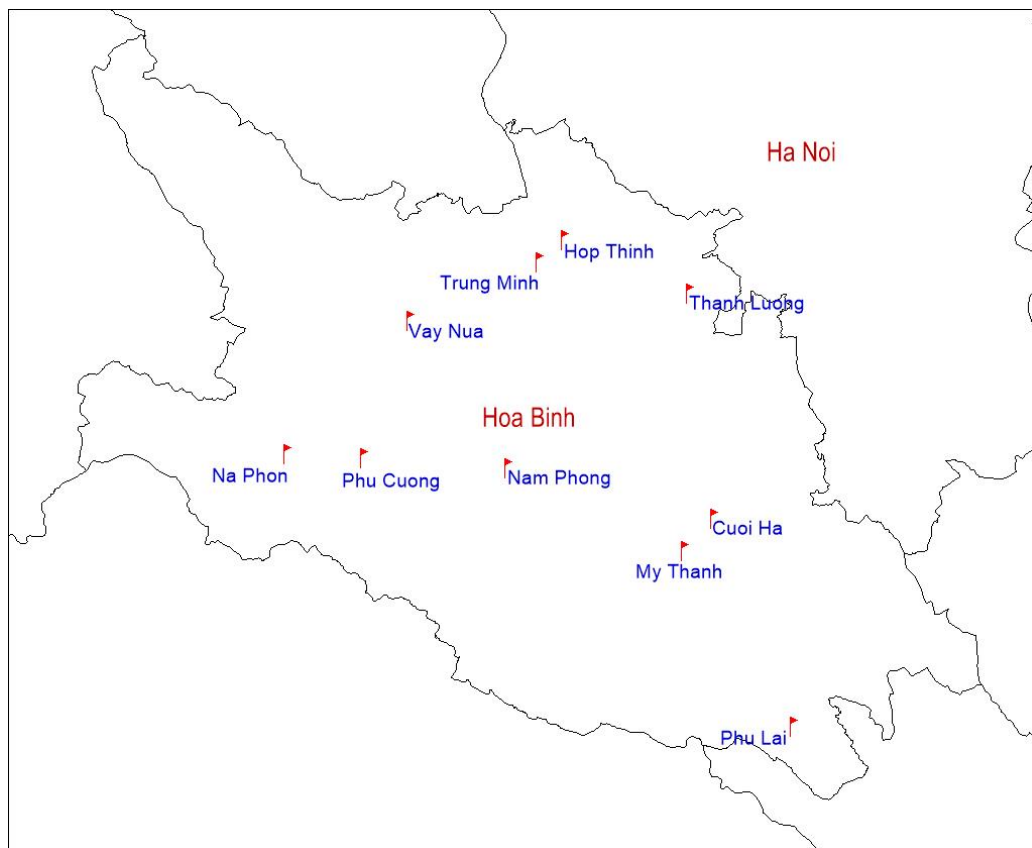
Map 1. Position of primary schools for the monitoring on **main deworming day** in Phu Tho province



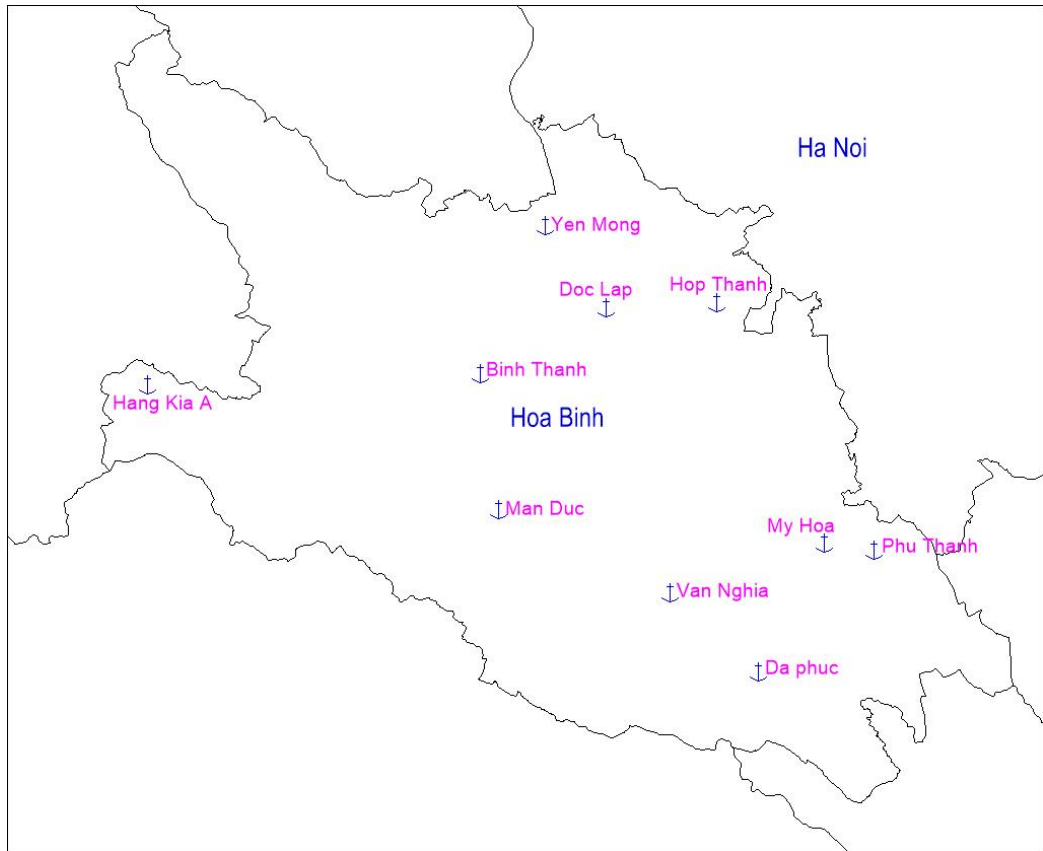
Map 2. Position of primary schools for the monitoring on mop-up day in Phu Tho province



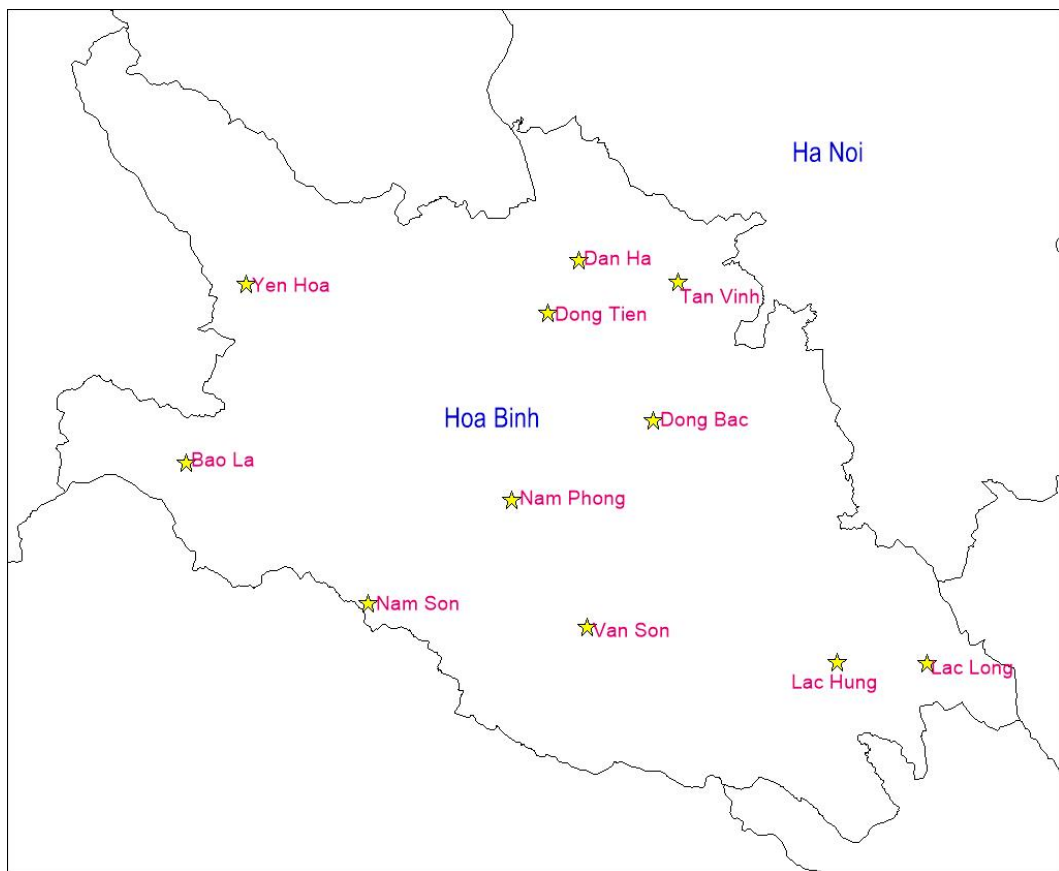
Map 3. Position of primary schools for **coverage validation** in Phu Tho province



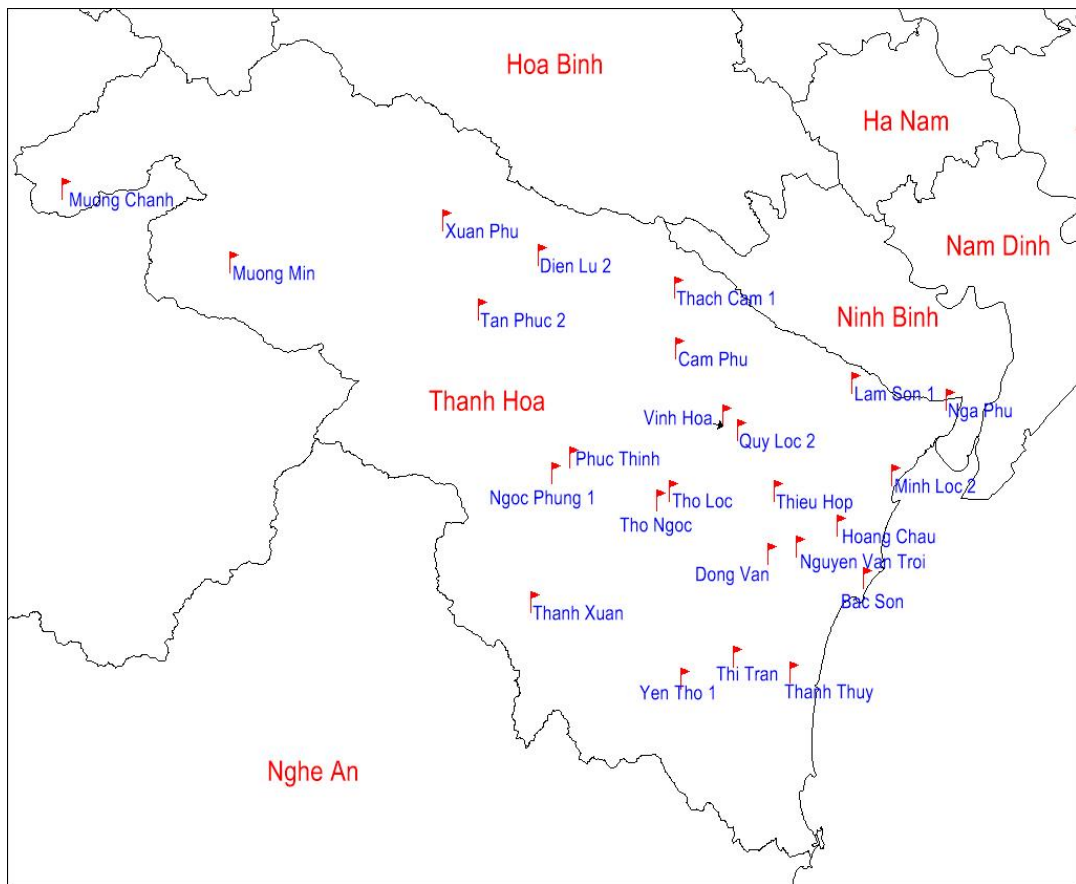
Map 4. Position of primary schools for the monitoring on **main deworming day** in Hoa Binh province



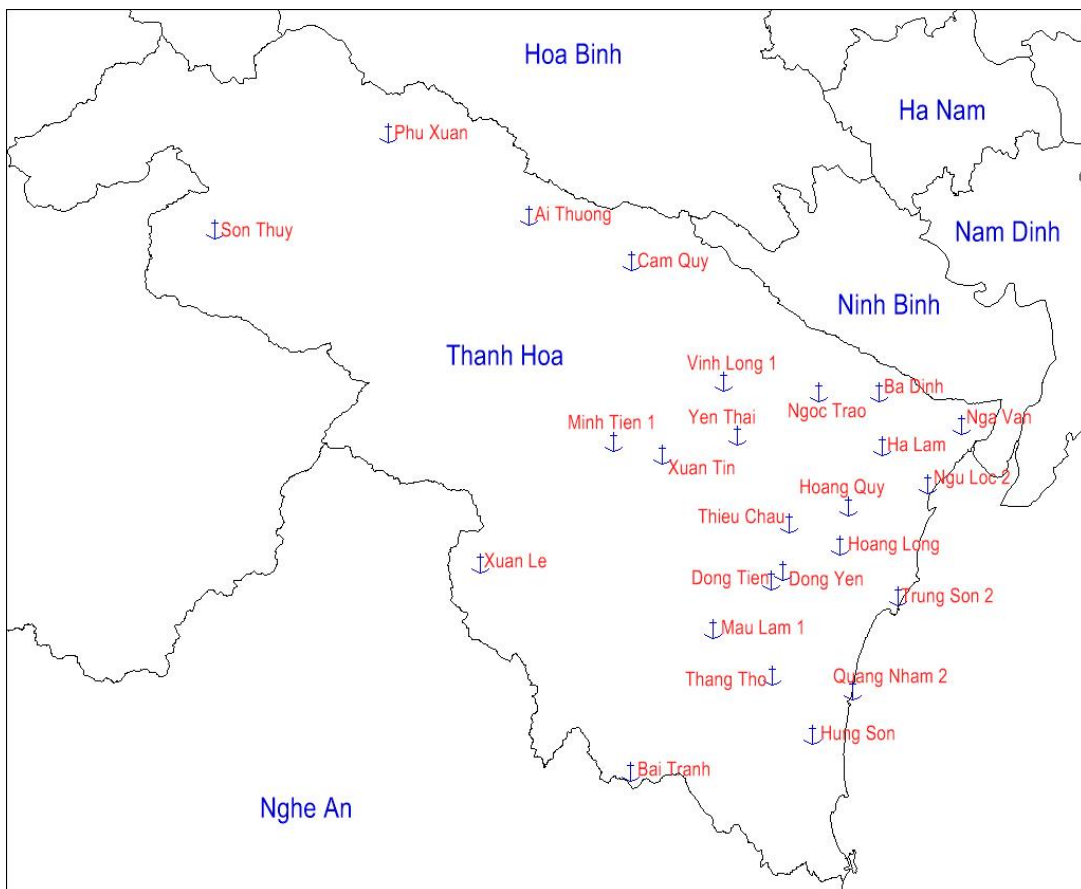
Map 5. Position of primary schools for the monitoring on **mop-up day** in Hoa Binh province



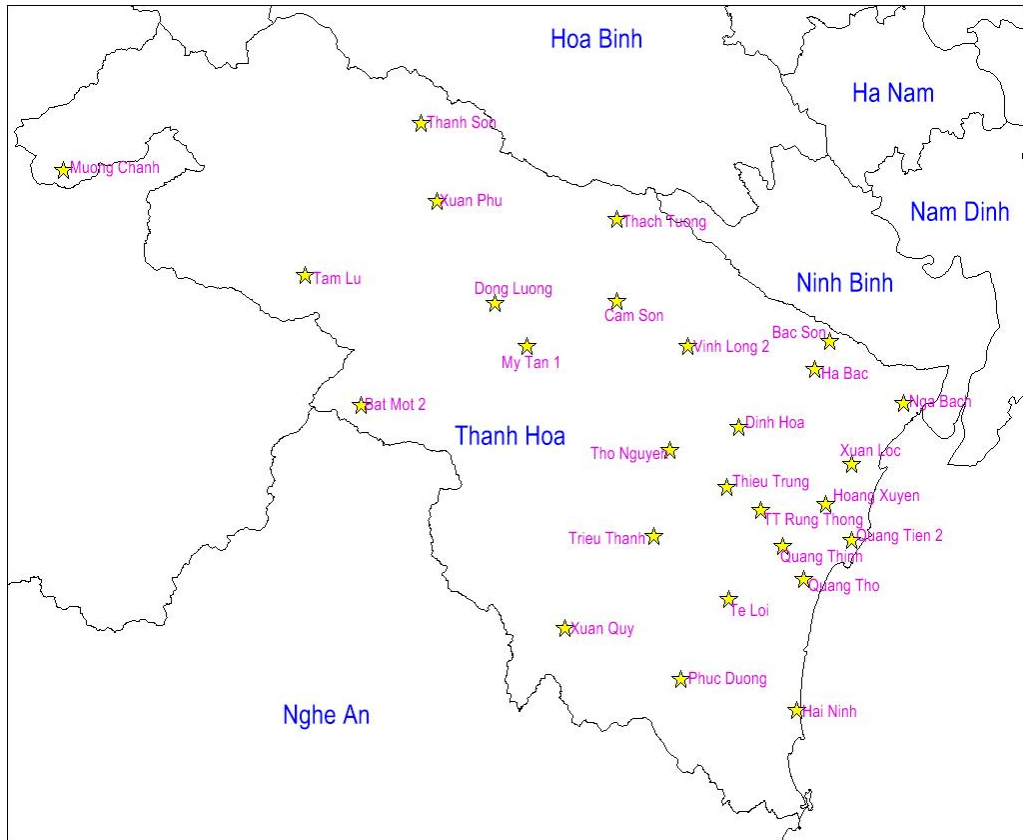
Map 6. Position of primary schools for **coverage validation** in Hoa Binh province



Map 7. Position of primary schools for the monitoring on **main deworming day** in Thanh Hoa province



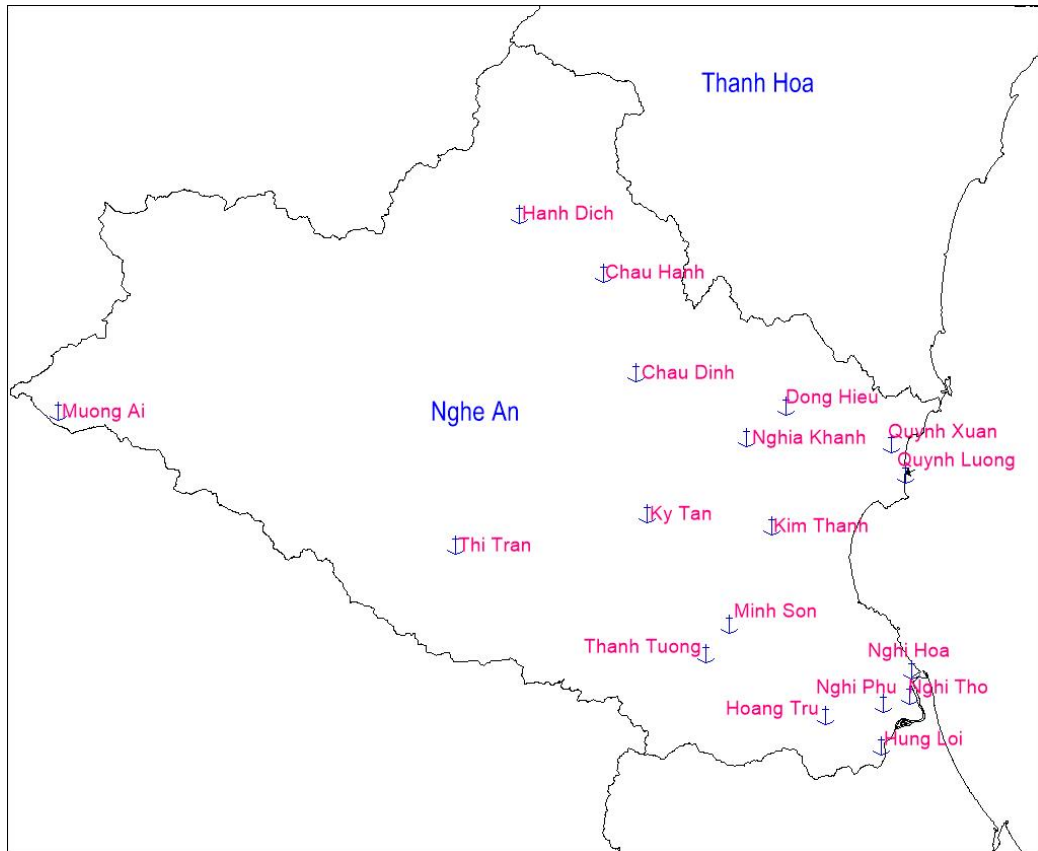
Map 8. Position of primary schools for the monitoring on **mop-up day** in Thanh Hoa province



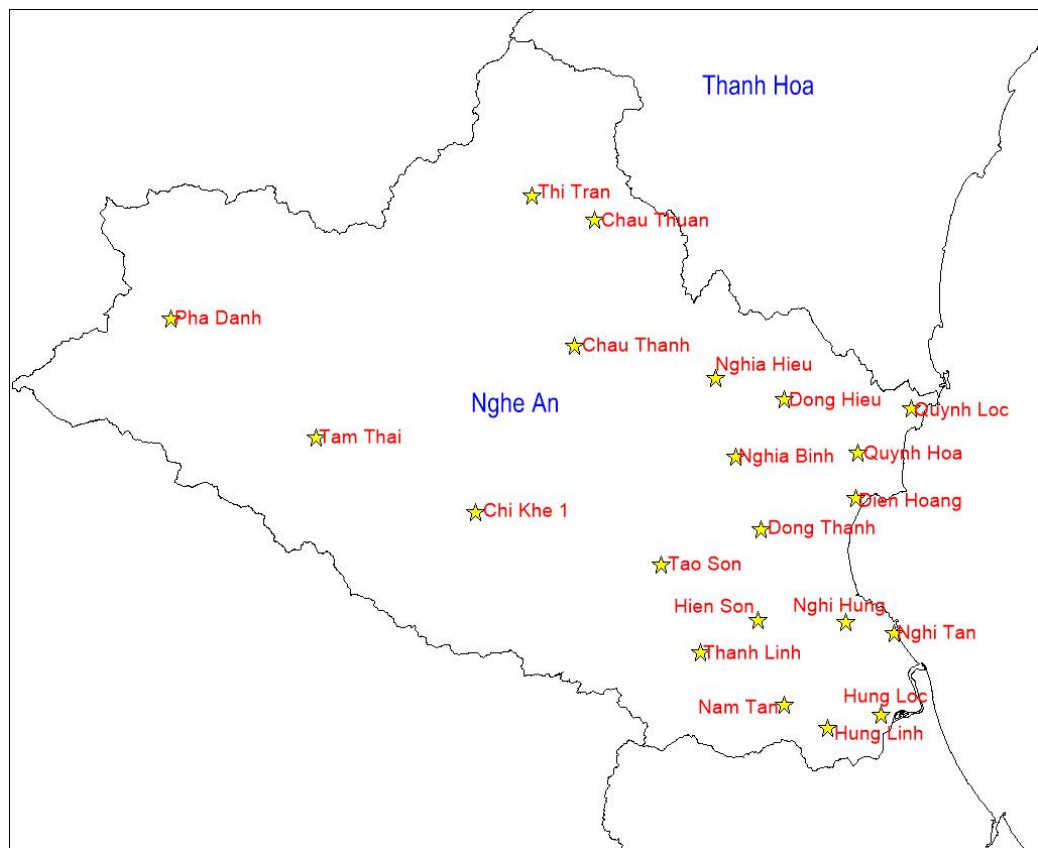
Map 9. Position of primary schools for **coverage validation** in Thanh Hoa province



Map 10. Position of primary schools for the monitoring on **main deworming day** in Nghe An province



Map 11. Position of primary schools for the monitoring on **mop-up day** in Nghe An province



Map 12. Position of primary schools for **coverage validation** in Thanh Hoa province

Annex 2. Information about satellite schools

Province	District	Main school	Satellite schools	Number of Students	Number of classes	Distance from main school (Km)	Contact Number			
Hoa Binh	Lac Son	My Thành	si	19	1	2	01649016463			
			riec	19	1	2	01696039023			
			ba rong	10	1	3	0989932061			
			co giua	24	2	3	01673027935			
Hoa Binh	Da Bac	Vay Nua	thin	18	5	10	01643184093			
			lan bai	14	2	14	01693115672			
			na	20	5	15	0985497117			
			tham	6	2	4	01674493278			
			mo ne	67	5	10	01687602368			
			xang trech	34	5	18	01687602368			
	Da Bac	yen hoa	men	15	1	2	01692701124			
			qang	20	2	7	0985436144			
			hat	11	2	6	01679035268			
			go muc	21	1	2	01659528368			
Hoa Binh	Long Son	Thanh Long	thanh xuan	49	3	5	01685186142			
			khanh	17	1	5	0976490965			
Hoa Binh	Tan Lac	Phy Cong	trao	82	5	5	01628182510			
			via	13	1	2.5	01679364337			
			bay	29	2	2.5	0976490575			
			khoi	32	2	3	0978112978			
			cai	28	2	3	0987056076			
			khieng	79	5	7	01686795236			
			trong	7	1	5	01682602319			
			xem	9	1	7	0975160397			
			Hoa Binh	Kim Boi	Cuoi Ha B	nghia	12	1	4	0988459218
						bo cao	11	1	7	01675502504
Hoa Binh	Cao Phong	Nam Phong	mac	66	4	3	01698306536			

Province	District	Main school	Satellite schools	Number of Students	Number of classes	Distance from main school (Km)	Contact Number
			khuan	47	3	5	01256326570
			ong	54	4	5	0968153780
			duc	9	1	6	0979302141
Hoa Binh	Ky Son	Hop Thinh	tom	26	2	4	01652102479
Hoa Binh	Lac Son	van nghia	ken 2	64	4	7	01649974746
			sao	11	1	10	01686119293
			doi	29	2	4	01674074830
			pheo	45	4	7	01683974369
	Lac Son	van son	ray	44	3	6	01682033136
Hoa Binh	Kim Boi	my hoa	my dong	14	1	3	01664814935
			my	23	1	3.5	0965424208
			bai khoai	19	1	2.5	01682295774
Hoa Binh	Mai Chau	hang kia	thung mai	30	3	7	01643351355
	Mai Chau	bao la	na chao	16	2	3	0978194659
Hoa Binh	Long Son	hop thanh	chi thang	28	2	3	
Nghe An	Nghia Dan	Nghia Loi	lung ha	91	4	4	0934536276
Nghe An	Ky Son	Huu Lap	xop nhi	23	3	5	0914128548
			xop thap	16	2	3	01657002845
			cha lan	69	5	5	0989807957
			nong o	51	5	10	0914747524
	Ky Son	muong ai	xot xang	10	1	2	0917645938
			nhan lang	35	5	4	0962431522
			huoi khe	30	5	5	0912430616
			ban phung	48	5	9	01673645765
			ai khe	33	3	13	01238473427
			xop phong	20	3	5	0942622857
Nghe An	Tan Ky	Phu Son	hung son	91	5	3	01239241109
			tan lam	54	5	4	0915238626
Nghe An	Thi Xa Thai Hoa	Toy Hieu	phu my	118	5	3	01677125910
			hung cong	53	4	8	01682374036

Province	District	Main school	Satellite schools	Number of Students	Number of classes	Distance from main school (Km)	Contact Number
Nghe An	Tuong Duong	Xieng My	cha hia	37	3	4	
			ban chon	23	3	5	
			noong mo	56	4	6	
			pieng o	63	5	7	
			khe quynh	28	3	8	
	Tuong Duong	tam thai	canh trap	48	4	1	01658486339
			can	98	5	3	0976887585
			khoi	13	2	8	01687544834
			xoong con	18	3	10	0919551550
			binh son	128	7	1.5	01688270223
Nghe An	Nam Dan	Hung Tien					
Nghe An	Tong Dong	Nhon Mai	na hy	55	4	4	
			na lot	38	4	10	
			xoi voi	34	4	15	
			tham tham	10	2	18	
			huoi co	32	4	20	
			pha mut	20	3	14	
			phieng luong	65	5	7	
			phia ot	19	3	13	
			Nghe An	Quy Hop	Chau Thanh	ban cai	120
na an	93	5				6	01633553786
Nghe An	Con Cuong	Mon Son 3	ban co phat	47	5	20	
Nghe An	Que Phong	Hanh Dich	ban khe bung	73	5	35	
			cham put	23	2	5	0965385757
			ban cong	74	5	8	0968965956
Nghe An	Tan Ky	ky tan	mong dang	68	5	13	01644773172
			dien nam	95	5	5	01294436178
Nghe An	Ky Son	pha khao	phiem hom	78	5	12	01655912872
			xop nhuc	7	2	20	0947447065
			bang san	25	4	7	01694710065
			pha khom	14	3	10	0982632481

Province	District	Main school	Satellite schools	Number of Students	Number of classes	Distance from main school (Km)	Contact Number
			hoi nhuc	19	4	13	01665454774
			ban theo luc 3	67	5	5	
	Quy Chau	chau thuan	ban piu	91	4	1	
			ban bong	87	5	2	
Nghe An	Nghia Dan	nghia hieu	cat mong	59	4	6	01686679188
Nghe An	Quynh Luu	quynh hoa	Hamlet 12	20	2	4	
Nghe An	Thi Xa Thai Hoa	dong hieu	dong ha	111	5	3	01692688699
Nghe An	Con Cuong	chi khe I	tong chai	19	2	3	01669927511
Nghe An	Tan Ky	nghia binh	hamlet 9	133	5	3	0948707659
Nghe An	Yen Thanh	dong thanh	dong xuan	180	7	2	01253889392
	Thi Xa Hoang						
Nghe An	Mai	quynh loc	quynh loi b	311	15	3	01637425212
Phu Tho	Thanh Son	Vu Mieu 1	4	166	8	5	0977059055
Phu Tho	Thanh Son	son hung	khuon son	35	4	4	02103874962
Phu Tho	Doan Hung	Bang Luon	bang luan	48	3	3.5	01699081603
Phu Tho	Tan Son	My Thuan 2	khu mi - my	49	4	2	01643597878
Phu Tho	Tan Son	kim thong	cua dam	86	5	7	01677684629
			tan hoi	22	2	11	
	Tan Son	thu cuc 2	lien trung	59	5	11	0914672177
			my a	91	6	7	
Thanh Hoa	Thong Xuan	Ngoc Phung 1	hung long	79	5	3	
			phu vinh	56	5	3	
Thanh Hoa	Lang Chanh	Ton Phuoc 2	tan cong	33	4	3	01692031872
	Lang Chanh	dong luong	chong	139	6	7	01694740678
			khu thung	19	2	12	0988296756
Thanh Hoa	Ngoc Lac	Phuc Thinh	trac	68	4	2.5	0978147211
Thanh Hoa	Nhu Xuan	Thanh Xuan	dong phong	16	1	2	09634818586
			thanh dong	41	3	3	0963046536
			thanh tien	15	2	4.5	0963256567
Thanh Hoa	Mong Lat	Muong Chanh	cang na hin	54	3	4	0984890201

Province	District	Main school	Satellite schools	Number of Students	Number of classes	Distance from main school (Km)	Contact Number
			trai lat	54	4	4.5	01635550168
			ngo na chua	47	3	3	01275801997
Thanh Hoa	Nga Son	Nga Phu	tan phat	85	3	1.5	0648700137
Thanh Hoa	Quan Son	Mong Mon	min	23	2	2	
			yen	54	5	8	
			bon	51	4	4	
	Quan Son	tam lu	pieng khoe	19	3	3	
			tin	14	2	4	
			hat	15	1	3	
Thanh Hoa	Ba Thuoc	Dien Lu 2	song vo	35	1	5	0984027048
	Ba Thuoc	thanh son	kho mong	25	2	5	
			fo ken	13	1	6	
			pa pan	12	1	6	
Thanh Hoa	Quan Son	son thuy	muong	98	5	5	
			kha	7	1	16	
			mua xuan	53	5	22	
			xia noi	21	2	24	
Thanh Hoa	Thong Xuan	long son 1	trung thanh	58	3	2	0919315183
			minh quang	70	3	3	01686964676
			minh ngoc	17	2	5	01223359246
Thanh Hoa	Nhu Xuan	bai tranh	me	78	5	3	
			moi	93	6	5	
Thanh Hoa	Ba Thoc	ai thong	lang mi	91	6	6	
Thanh Hoa	Thuong Xuan	bat mot 2	duc	22	3	5	0978971014
Thanh Hoa	Thach Thanh	thach tuong 2	thach tong 2	18	1	4	01648904077
Thanh Hoa	Cam Thuy	cam son	trong son	34	3	3	
Thanh Hoa	Bim Son	bac son	10	128	5	2	0918834969

