Episcopal Relief & Development / ADDRO PDCU REPORT to AMF

Project Title/Name: Universal LLIN Distribution Campaign in Greater Accra, Northern and Upper West Regions, Ghana

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http://www.AgainstMalaria.com

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1.0 Introduction

The Anglican Diocesan Development and Relief Organization (ADDRO), in collaboration with Episcopal Relief & Development and with support from the Against Malaria Foundation (AMF), partnered with Ghana's National Malaria Control Program (NMCP)/Ghana Health Service (GHS) and others for a universal Long Lasting Insecticidal Nets (LLINs) campaign in three regions of Ghana, namely: Northern, Upper West and Greater Accra. As part of the LLINs campaign, ADDRO's team is to conduct Post-Distribution Check-Ups (PDCU) every 6 months for a duration of 2.5 years. The purpose of the PDCU is to assess the level of continued net use and provide significant data and locally actionable information to the relevant GHS/NMCP leaders and other partners, to contribute to health intervention decisions and planning.

The first and the second PDCU exercises for Northern Region were conducted in November 2016 and May 2017 respectively. This report covers the third PDCU (PDCU at 18 months) exercise which was carried out from 30th October to 12th December, 2017.

2.0 Planning for Northern Region PDCU at 18 Months

In planning for the PDCU at 18 months, ADDRO HQ team held a series of discussions with ADDRO Northern regional team via phone and exchange of emails on how to factor in the recommendations of the IDInsight team in the PDCU activities. Some of these recommendations were:

1. To provide more in-depth training to enumerators and supervisors (especially targeting/paying close attention to first time/new enumerators and supervisors).
2. Supervisors to be trained on their roles and responsibilities in the PDCU process for at least one hour before the general training on the PDCU for both the supervisors and the enumerators.
3. To ensure that the 5% checks enumerators start data collection after the third day of the 5% main data collection. Supervisors were therefore to withhold the household list of the 5% checks and only hand them out to enumerators after the third day of the main data collection.

The dates for the recruitments, training of enumerators and supervisors, data collection, supervision of data collection and retrieval of PDCU forms from enumerators/supervisors were also agreed on during the discussion with the regional team.

3.0 The PDCU process

The Northern region mass LLINs distribution exercise was carried out from 11th to 17th April, 2016 in all the 20 AMF supported districts. A grace period of one month was given to enable beneficiaries who could not redeem their nets in the first week to do so. Following the distribution, the first and second PDCUs data collection were carried out in November 2016 and May 2017 respectively in addition to the current one (PDCU at 18 months) in all the 20 AMF supported districts.

3.1 Meetings with Ghana Health Service

ADDRO regional team had discussions with the District Directors of Health Services and/or their representatives in the 20 AMF supported districts on the PDCU at 18 months. The discussions were via phone and the purpose of the discussion was to inform them about the PDCU at 18 months data collection in their districts and sub-districts. This activity took place from 11th to 13th October 2017.

3.2. Development of data collection tools and sampling

The PDCU form used in the second PDCU data collection was the same form used for the PDCU at 18 months data collection. See Annex 1 for the PDCU form.

AMF worked on the sampling of households for the 5% main and 5% checks and generated the household list. An additional 50% household list was generated as "spare" to take care of household heads who might be absent (deceased, relocated, etc.) during the survey. A total of 25,551 households were sampled for the 5% main and 1,406 for the 5% checks.

3.3 Printing and distribution of data collection tools

Ahead of the data collection, the Northern regional team printed, sorted out and packaged the household lists and PDCU forms according to sub-districts and communities. Each pack (a plastic folder/file) contained one community household list and the PDCU forms based on the number of households sampled in that community. These packets (containing PDCU forms and a

community household list) were given out to main enumerators (5% main) through their supervisors during the PDCU training. The forms for the 5% checks were kept by supervisors and only given to the enumerators for the checks after the third day of the main data collection.

3.4 Recruitment/Replacement of Sub-District Supervisors and Enumerators

In preparing for the PDCU at 18 months, ADDRO regional team contacted the supervisors and enumerators (via phone) who participated and performed well during the PDCU at 12 months for selection/recruitment. It was however realized that some of the supervisors and enumerators were not available for the exercise. This was because some had travelled and others who were students had gone back to school. The supervisors and enumerators who were not available were replaced. The existing supervisors supported in the replacement of enumerators who were not available for the activity. They compiled the list of interested candidates and forwarded the candidates' details to ADDRO regional team. ADDRO Regional team had discussions with those candidates for recruitments. The ADDRO regional team also visited sub-districts where supervisors were not available for the third PDCU and recruited supervisors for the activity.

The criteria for the replacement of supervisors and enumerators were as below:

Supervisors should:

- Be resident in the sub-district
- Have minimum qualification of Senior High School Certificate (SSCE)
- Have experience in supervising volunteers (an added advantage)
- Have good leadership skills
- Have excellent written and verbal communication skills
- Have the ability to implement activities and accomplish within deadlines
- Have the ability to motivate enumerators to carry out planned activities to achieve the desired results
- Be 25 years and above
- Have a motorbike to facilitate their work
- Have basic knowledge in computer use

Enumerators should:

- Have minimum qualification of Senior High School Certificate (SSCE)
- Be able to speak the local language of the area

- Be resident in the community

- Have experience in household surveys (an added advantage)

- Have excellent written and verbal communication skills

- Have ability to meet targets within deadlines

- Be 25 years and above

The role of the enumerators was to collect PDCU data by administering PDCU questionnaires to the sampled households and the role of the supervisors was to supervise the enumerators in the PDCU data collection. During supervision, each supervisor visits all enumerators under his/her care at their various locations/sites. S/he follows the enumerators to observe them interview some households so that if there are issues they can help address and also check completed data collection sheets/forms to ensure that they are correctly filled before endorsing and collecting them.

A total of 319 Enumerators and 92 Supervisors were recruited to participate in the third PDCU in Northern Region. One hundred and seventeen (117) were new enumerators while two hundred and two (202) participated in the previous PDCUs. Also, of the ninety-two (92) supervisors recruited, eighty-four (84) participated in the previous PDCUs whiles eight (8) were new supervisors.

The supervisors and enumerators recruited were independent people and not GHS staff or volunteers. Two hundred and thirty three (233) of the enumerators were recruited for 5% main data collection and 86 enumerators for 5% checks data collection. The recruitment/replacement of the supervisors and enumerators was carried out from 16th to 22nd October, 2017.

See table 1 below for details of number of enumerators and supervisors recruited for the PDCU at 18 months.

Table 1: Number of Supervisors and Enumerators Recruited

District	# of Enumerators			# of Supervisors		
	New	Old	Total #	New	Old	Total #
Bole	5	11	16	0	6	6
Bunkprugu	12	6	18	1	4	5
Central Gonja	4	14	18	0	6	6
Chereponi	6	6	12	1	4	5
East Gonja	8	14	22	1	5	6
East Mamprusi	9	13	22	0	5	5
Gushegu	14	12	26	1	4	5
Karaga	6	11	17	0	4	4
Kpandai	8	7	15	0	4	4
Kumbungu	4	11	15	1	4	5
Mamprugu Moagduri	4	7	11	0	4	4
Mion	4	11	15	0	4	4
Nanumba North	4	16	20	1	3	4
Nanumba South	8	9	17	0	4	4
North Gonja	3	7	10	0	4	4
Saboba	3	8	11	0	3	3
STK	6	11	17	1	4	5
Tatale-Sanguli	3	8	11	1	4	5
West Gonja	3	10	13	0	5	5
Zabzugu	3	10	13	0	3	3
Total	**117**	**202**	**319**	**8**	**84**	**92**

4.0 PDCU Trainings

The PDCU trainings were organised at three levels; first a refresher training for ADDRO regional staff, an hour training for supervisors and then a combined training for enumerators and supervisors. The trainings were designed to further enhance the knowledge of the old participants (Supervisors and Enumerators) and also equip the new supervisors and enumerators with knowledge and skills to carry out the post distribution check-up.

4.1 Staff Training

ADDRO HQ carried out a one-day refresher Training of Trainers (ToT) for ADDRO Northern regional team on 30th October, 2017. The participants were made to do peer training on how to conduct the actual training of the supervisors and enumerators using the PDCU form. Each staff led in training his/her colleague staff in using the PDCU form. This strategy ensured that facilitators were equipped to conduct effective training for the supervisors and enumerators. Participants were also given scenarios to fill out during the ToT to ascertain whether or not they would be able to replicate the same training for supervisors and enumerators at the sub-district level. Finally, participants at the training were also taken through the supervisory checklist for both sub-district supervisors and ADDRO supervisors to enable them effectively supervise the supervisors and enumerators in the PDCU exercise.

4.2 Training of Supervisors

The supervisors were trained for at least an hour before the combined training of the supervisors and enumerators. The training of the supervisors took place from 31st October to 4th November, 2017 in each of the 14 clusters. They were trained on their specific roles and responsibilities in the entire PDCU exercise including the following:

- Supervise and provide technical support to the enumerators during data collection.
- Vet and correct all forms filled by enumerators
- Fill at least one checklist for each enumerator while he/she is in the field.
- Trouble shoot to identify problems and resolve them.

4.3 Training of Supervisors and Enumerators

The supervisors and enumerators were trained together after an hour training of the supervisors. The training was carried out from the 31st October to 4th November, 2017 in 14 clusters in the 20 AMF supported districts. The training focused on the PDCU form since it is the main tool for the data collection. The main strategies for the training were as follows:
- A brief overview of the AMF program, partners and strategy of PDCU data collection
- Roles and responsibilities of supervisors and enumerators.
- Sharing of experiences and challenges of the last PDCU by enumerators
- Definition of key terms/terminologies in the PDCU data collection forms (e.g. AMF, Household ID, First name, Last name, Brand of Net, Very Good, Ok, Poor, etc.)

- How to collect data using the PDCU form: Participants were taken through how to fill the PDCU form, how to use the HH list and how to ask questions on the PDCU form to get the appropriate responses.

- Steps for entering households (community entry skills): Participants were taken through the process of household entry and the communication skills involved when collecting data. These included greeting the household head and asking of their health, keeping eye contact, paraphrasing responses for confirmation, etc.

- Filling out a PDCU form with a given scenario: The PDCU form was drawn on flip chart using markers. A scenario on LLINs was used and the answers were written on the flip chart for all to see and understand. Participants were also given two printed out scenarios to test their understanding on how to fill the form.

- Field practical test: Participants were put into groups and asked to move into nearby households to practice filling the PDCU form and then present their findings to the rest of the groups for discussion. In instances where trainees could not go to nearby households to practice filling the form, more role plays were conducted at the training to enhance participants' skills.

- Translating all questions on the PDCU forms into the local languages of the area by participants to enable them ask the questions correctly and elicit the right responses from households.

- The use of role plays on how to enter the house and how to ask questions to fill the PDCU form.

In all, 396 supervisors and enumerators were trained to undertake the third PDCU. This comprised 306 enumerators (189 old and 117 new) and 90 supervisors (82 old and 8 new).

Thirteen (13) enumerators and two (2) supervisors recruited did not participate in the training and as such were not part of the actual PDCU data collection. Households that would have been visited by those enumerators who did not turn up for the training were added to other enumerators whose communities were closer and had less workload. The enumerators who did not have supervisors were directly supervised by ADDRO regional staff. See table 2 below for number of supervisors and enumerators trained.

Table 2: Number of Supervisors and Enumerators Trained for NR PDCU@18 Months

District	# of Enumerators Recruited	# of Enumerators Trained (A)		Total	# of Supervisors Recruited	# of Supervisors Trained (B)		Total	Total (A&B)
		New	Old			New	Old		
Bole	16	5	11	16	6	0	5	5	21
Bunkpurugu	18	12	6	18	5	1	4	5	23
Central Gonja	18	4	14	18	6	0	6	6	24
Chereponi	12	6	5	11	5	1	4	5	16
East Gonja	22	8	10	18	6	1	4	5	23
East Mamprusi	22	9	11	20	5	0	5	5	25
Gushegu	26	14	12	26	5	1	4	5	31
Karaga	17	6	11	17	4	0	4	4	21
Kpandai	15	8	6	14	4	0	4	4	18
Kumbungu	15	4	11	15	5	1	4	5	20
Mamprugu Moagduri	11	4	7	11	4	0	4	4	15
Mion	15	4	8	12	4	0	4	4	16
Nanumba North	20	4	15	19	4	1	3	4	23
Nanumba South	17	8	9	17	4	0	4	4	21
North Gonja	10	3	6	9	4	0	4	4	13
Saboba	11	3	8	11	3	0	3	3	14
STK	17	6	11	17	5	1	4	5	22
Tatale-Sanguli	11	3	8	11	5	1	4	5	16
West Gonja	13	3	10	13	5	0	5	5	18
Zabzugu	13	3	10	13	3	0	3	3	16
Total	319	117	189	306	92	8	82	90	396

Challenges and actions taken

1. Some trainings did not start at 8:30am as planned but started at 10:00am because of the late arrival of enumerators. Training therefore extended to 5:00pm in order to cover all topics. Individual enumerators who came in late were given extra support to pick-up.

2. In few instances, trainees could not be taken to nearby communities to practice filling of PDCU forms because of the late start of training. In those instances, more role plays were done to enhance enumerators' skills.

3. At training centres that had new enumerators, the training approach was to tackle the training as if all enumerators were being trained for the first time but allowing the old enumerators to share their experiences. Also in conducting the role plays, the new enumerators played the role of enumerators whiles the old enumerators played the role of household heads.

5.0 Data Collection

Data collection was carried out by the three hundred and six (306) trained enumerators from the 6th to 12th November, 2017. The data collection involved enumerators using the sampled HH list containing detailed information of the HH head - their full names, community, household location, house number and phone number to enable them locate the sampled household heads to interview. The enumerators were directly supervised by ninety (90) sub-district supervisors daily to ensure effective data collection. On the average, each enumerator was to visit at least 140 households, which is about 20 households a day for seven days.

5.1 Data Collection Challenges and Actions Taken
- The PDCU exercise happened during the peak of harvest of farm produce; hence people usually left early mornings to their farms and returned late in the evenings. In such instances, enumerators had to visit the households either at dawn (between 4:30am and 6:30am) or wait till evening around 5:00pm.
- It was difficult identifying some household heads because only one name was used during the registration exercise and hence on the household list. In such circumstances, the spare list was used.
- In some communities, about five or more different household heads could share one mobile number. Enumerators had to work with some community volunteers especially those who took part in the LLIN registration exercise to locate and identify those household heads.

- Some communities are located across rivers with no bridges. This posed a challenge for some enumerators and supervisors. They had to get to these communities with a canoe or an engine boat.
- Some communities could only be visited on some particular days when they do not go to the farm

6.0 Supervision of PDCU data collection

The data collection by enumerators was supervised by the 90 trained supervisors. Each supervisor had a number of enumerators in his/her sub-district to supervise. The number of enumerators supervised by each supervisor depended on the size of the sub-district but on average, one supervisor was responsible for supervising three enumerators during the data collection. Each supervisor supervised all the enumerators at their various locations/sites. Supervisors checked the PDCU data collection forms daily to ensure that they were correctly filled before endorsing and collecting them. The supervisors used the supervisor's checklist for supervision; see Annex 3 for a sample of the checklist.

The supervisors and enumerators were also supervised by ADDRO regional and HQ staff during the PDCU data collection exercise. ADDRO regional and HQ teams selected districts and sub-districts for the supervision of the data collection. The team visited twelve (12) districts out of the 20 districts and in the 12 districts, the team visited thirty-two sub-districts and met with twenty-six (26) supervisors and eighty (80) enumerators (see table 3 below).

Although monitoring in Chereponi district was not part of ADDRO's original itinerary, the team visited one sub-district (Wenchiki sub) on their way to Bunkpurugu district and met with two enumerators, as part of their random checks. In all, the supervision by supervisors and ADDRO team was successful and provided an opportunity to correct certain errors made by new enumerators. Some of the errors identified and corrected were counting bedrooms as "regularly used sleeping spaces" (instead of counting the actual number of regularly used sleeping spaces in the bedrooms as there could be more than one sleeping space in a bedroom), hence the number of nets hung were more than the number of regularly used sleeping spaces in the household. In some cases, the number of nets written under "sum of ticked above" in question 3 were not the

same as the number of ticks in table 2. Enumerators were made to re-visit such households to make the necessary corrections.

Table 2: Number of Supervisors and Enumerators visited

Districts	# of Sub-Districts	# of Sub Districts visited	# of Supervis ors	Supervis ors met	# of Enumer ators	# of Enumera tors Met
Bunkprugu	5	3	5	2	18	7
Central Gonja	6	3	6	3	18	10
Chereponi	5	1	5	0	11	2
East Gonja	6	3	6	3	18	5
East Mamprusi	5	4	5	4	20	12
Gushegu	5	3	5	2	26	9
Karaga	4	2	4	1	17	5
Kpandai	4	2	4	2	14	5
Nanumba North	4	2	4	2	19	6
Nanumba South	4	2	4	2	17	5
North Gonja	4	2	4	1	9	4
West Gonja	5	5	5	4	13	10
Total	**57**	**32**	**57**	**26**	**200**	**80**

6.1 Observations during supervision by ADDRO Team
- The Sub-district supervisors were seen on the field monitoring the activities of the enumerators and supporting them in the collection of household data.
- Household heads were co-operating with enumerators and providing relevant information.
- Enumerators conducted themselves well and properly introduced the purpose of the survey to the household heads.

6.2 Challenges and Actions taken during supervision
- Difficulty in reaching some of the enumerators because of mobile network problems. Supervisors and enumerators who could not be met on the field carrying out their work were met in their homes after close of the day's work to check the PDCU forms and supervision checklist.

- It was difficult to reach some communities especially communities across rivers without a bridge. In such cases, ADDRO staff had to call supervisors and enumerators on phone.

7.0 Collection of completed PDCU forms and transportation to Data Centre

7.1 Collection of completed PDCU forms

ADDRO Northern Regional team retrieved the completed PDCU forms from the supervisors and enumerators from 14th to 20th November, 2017. The regional team visited all sub-districts in the 20 AMF supported districts to collect the PDCU forms. Before collection and payment of enumerators and supervisors for the work done, ADDRO staff reviewed each PDCU form for accuracy and completeness. Each enumerator was paid according to the number of forms correctly filled while supervisors were paid a fixed amount for the period of supervision.

7.2 Challenges and Actions Taken

- There were difficulties in reaching some of the supervisors and enumerators to schedule dates for collection of forms due to poor mobile networks. The regional team had to send messages through the accessible supervisors to relay the information to their colleagues in those hard-to-reach communities to avail themselves for the retrieval of forms. These included Supervisors in Bawena, Mankarigu, Lingbensi in North Gonja District; Kalba in Sawla Tuna Kalba District; Mankuma in Bole District, Yala in the Central Gonja District; Buma/Abrumase and Salga/Makango in East Gonja; and Yikpabongo and Kunkwa in Mamprugu Moagduri
- It was difficult to reach some communities such as Buma/Abrumase in the East Gonja District which are across a big river without a bridge. The PDCU forms were transported across with the use of engine boats and canoes to Salaga for the ADDRO team to retrieve them.

7.3 Transportation of Collected forms to data Centre

The completed PDCU forms were properly packaged and transported to the data entry centre at the ADDRO headquarters in Bolgatanga on 27th November, 2017. Each community's PDCU forms were packaged in a plastic file called *My Clear Bag*. The various community forms in *My Clear Bags* were then parcelled in brown envelopes per sub-district and clearly labelled. The

brown envelopes were put into small jute bags (each district had one jute bag which were also labelled accordingly). The jute bags containing the forms were then transported to the Data Entry centre at the ADDRO Headquarters (HQ) in Bolgatanga. The summary sheets indicating the number of forms collected under each district and sub-district (both 5% main and 5% checks) were then sent by email to the M&E officer at ADDRO HQ. In all, 24,171 and 1,406 completed forms for 5% main and 5% checks respectively were received at the data centre.

8.0 PDCU Data Entry:

AMF added PDCU at 18 months' data entry field to the Northern Region PDCU data entry site. Data entry started on 29th November, 2017 and ended on 12th December, 2017. Thirty-four (34) data entry clerks did the data entry for the Northern Region PDCU. A total of 24,171 households PDCU forms for the 5% main and 1,406 PDCU forms for the 5% checks were entered by the clerks.

8.1 Results of PDCU

Twenty four thousand, one hundred and seventy one (24,171) households' data have been entered into the AMF database as against 25,551 target households; this represents 95%. The reason for the shortfall in the number of forms expected from the field is that some households could not be located either because they had relocated from the community or due to death of the HH heads. Despite the use of the spare list, the target could not be met. A total of 66,695 LLINs were reported as received by the 24,171 households visited during the PDCU survey. Out of this total LLINs received, 60,031 (90%) were found hung over sleeping spaces; 3,250 (5%) were present in the households but not hung over sleeping spaces. 3% were not present in the households (nets worn out hence not usable) and 2% not present in the households for other reasons than worn out. Some major reasons (other than nets worn out) respondents gave for nets received but not present in the households were: nets given to wards to take to school and nets given to other family members in different communities. See table 4 below for summary of nets received and their status (copied from the AMF database, Dec 21st, 2017).

Table 3: LLINs received and their status

Region	Households			Nets Received	Nets Hung		Present not hung		Missing		Worn out/not usable		Missing + Worn Out
	Target	# entered	%	#	#	%	#	%	#	%	#	%	%
Northern	25,551	24,171	95	66,695	60,031	90	3,250	5	1342	2	2,072	3	5

The header "AMF Nets" spans all columns.

Results of PDCU at 18 months Versus Results of PDCU at 6 months and at 12 months

Analysis of the results of PDCU at 6 months, 12 months and 18 months shows the following:

1. PDCU at 18 months has a higher percentage of households interviewed (95%) than PDCU at 6 months and 12 months which achieved 82% and 94% respectively.

2. Number of LLINs found hung is higher at PDCU at 18 months as against PDCU at 12 months but the same as PDCU at 6 months (90% of LLINs hung at PDCU at 18 months, 87% hung at PDCU at 12 months and 90% at PDCU at 6 months).

3. LLINs present in the households but not hung are lower during PDCU at 18 months than PDCU at 12 months and PDCU at 6 months. That is 5% at PDCU at 18 months, 9% for PDCU at 12 months and 7% for PDCU at 6 months. This means that more LLINs were being hung than the previous PDCUs. The reasons for LLINs present but not hung include: have fewer sleeping spaces than LLINs, LLINs producing heat, and LLINs reserved for future use.

4. The percentage of LLINs worn out were higher during PDCU at 18 months than PDCU at 12 months and 6 months (3%, 2% and 1% respectively). This implies that the LLINs gets worn out with time, hence at 18 months, more LLINs were worn out than at 12 and 6 months PDCUs.

Table 5: Results of PDCU at 18 months vs. results of PDCU at 6 months and at 12 months

Region	PDCUs		
PDCU	PDCU@6 months	PDCU@12 months	PDCU@18 months
Target HHs to be visited	25,504	25,542	25,551
Actual HHs visited/entered in to database	20,949	23,940	24,171
%	82%	94%	95%
Nets received	64,823	67,899	66,695
Net hung	58,331	58,793	60,031
% of Net hung	90%	87%	90%
Nets present but not hung	4,696	6,119	3,250
% of Nets present but not hung	7%	9%	5%
Nets Missing	1,355	1,520	1342
% of Nets Missing	2%	2%	2%
Nets worn out/not usable	441	1,467	2,072
% of Nets worn out/not usable	1%	2%	3%
% of Nets missing+ worn out/not usable	3%	4%	5%

9.0 IDInsight Recommendations factored in PDCU at 18 in the Northern Region

The following recommendations made by the IDInsight team were incorporated in the PDCU.

1. Supervisors were trained for at least one hour before the joint enumerators and supervisors training. The training of supervisors focused on their roles and responsibilities in the PDCU.

2. ADDRO regional team emphasized and ensured that the 5% checks enumerators started data collection after the third day of the main data collection. HH lists and the PDCU forms for the 5% checks were kept by the supervisors and only given to the 5% checks enumerators after the third day of the 5% main collection.

10.0 Malaria Case Rate Data (Monthly uncomplicated malaria cases)

These are monthly positive malaria cases collected from 20 AMF supported districts of the Northern Region. Table 6 shows a summary of malaria case data from June 2017 to October, 2017.

Table 6: Summary of monthly malaria cases per District (2017)

District	Central Gonja	West Gonja	Kumbungu	Bole	North Gonja	STK	East Gonja	N. North	N. South	Kpandai	total
June	1,524	1,131	305	3,737	421	3,786	857	2,154	2,024	756	16,695
July	2,326	1,300	809	4,533	770	2,926	1,088	3,044	2,963	1,137	20,896
August	2,713	2,841	933	3,800	1,209	3,246	1,204	2,844	3,220	2,019	24,029
September	2,803	2,299	614	3,966	1,046	2,953	1,898	2,511	3,189	2,299	23,578
October	19,424	1,717	817	4,807	286	992	-	2,286	3,527	1,979	35,835

District	Zabzugu	Tatale	Chereponi	Saboba	Karaga	Gushegu	Mion	East Manprusi	B. Yunyoo	Mamprugu Moagduri	Total
June	425	1,246	874	2,736	230	317	1,527	871	1,261	437	9,924
July	663	1,370	1,636	2,663	692	402	2,296	1,068	1,323	840	12,953
August	651	782	1,660	3,306	1,018	864	2,560	2,174	2,360	1,395	16,770
September	1,022	986	1,680	3,493	1,272	507	2,454	3,527	1,355	98	16,394
October	461	1,286	-	3,156	1,062	-	-	2,803	1,273	67	10,108

Please note that no information was available for the month of October from East Gonja, Chereponi, Gushegu and Mion because those Districts had run out of rapid diagnostic test (RDT) kits, so they were unable to do testing during that month

Table 7: Total Malaria Cases per Month (2017)

District	Month	Total Malaria cases
All 20 Districts	June	26,619
	July	33,849
	August	40,799
	September	39,972
	October	45,943

Table 8: Total Malaria Cases per Month: June-Oct, 2016 compared to June-Oct, 2017

District	Month	Total Malaria cases	
		June to October, 2016	June to October, 2017
All 20 Districts	June	23,627	26,619
	July	30,172	33,849
	August	30,462	40,799
	September	33,702	39,972
	October	40,758	45,943
	Total	**158,721**	**187,182**

10.1 Analysis of malaria case data for Northern Region – June to October, 2017

Table 6 and 7 above are summaries of malaria case data from June to October, 2017 in the 20 AMF supported districts of the Northern Region. The details are shown in Annex 2. The malaria case data in table 7 shows a general increase in malaria cases from June to October, 2017 across the districts. In June 2017, the total malaria cases for the 20 districts was 26,619. This increased to 33,849 in July, and further increased to 40,799 in August. However, in September malaria cases dropped slightly to 39,972. The increase in malaria cases continued in October. Reasons for the slight decrease in malaria cases in September is not known, however, the increase from June through to October may be due to the fact that the period falls within the rainy season in the Northern Region. Malaria cases are higher in the rainy season because of increased availability of clean stagnant waters (providing breeding places for the female Anopheles mosquitoes which transmit the malaria parasites).

Table 8 shows malaria cases per month for June to October, 2016 compared with malaria cases within the same period of 2017. It is observed that total malaria cases within the period was higher in 2017 (187,182) than in 2016 (158,721). This same observation holds for the monthly data; in June for example, 23,627 malaria cases were recorded in 2016 and 26,619 in 2017. However, since these are absolute figures (malaria cases) and not rates, comparison may not give a true picture of the malaria situation in the same time period of 2016 and 2017 as there may be some underlying factors contributing to the differences, example, unavailability of rapid diagnostic test kits, etc.

11.0 <u>Conclusion</u>

The PDCU at 18 months built on experiences and lessons of PDCU at 12 months and 6 months as well as the recommendations of IDinsight team on the training and data collection. This contributed to improving the PDCU exercise. The number of PDCU forms that were correctly filled and entered into the AMF database increased to 95% from 94% in PDCU at 12 months and 82% in PDCU at 6 months.

12.0 Annexes

Annex 1: Detailed Malaria Cases data

Year/Month	Age Group	Central Gonja	West Gonja	Kumbungu	Bole	North Gonja	STK	East Gonja	N. North	N. South	Kpandai
Jun-17	U5 years	487	437	99	1801	167	1868	300	831	1028	354
	PW	37	42	17	178	16	79	12	145	52	21
	5 to 70+ years	1000	652	189	1758	238	1839	545	1178	944	381
Total		1524	1131	305	3737	421	3786	857	2154	2024	756
Jul-17	U5 years	788	479	286	2259	322	1322	384	1356	1416	548
	PW	110	14	36	228	25	87	32	180	90	24
	5 to 70+ years	1428	807	487	2046	423	1517	672	1508	1457	565
Total		2326	1300	809	4533	770	2926	1088	3044	2963	1137
Aug-17	U5 years	871	1118	348	1900	500	1521	495	1059	1563	895
	PW	51	54	50	224	34	73	29	114	128	86
	5 to 70+ years	1791	1669	535	1676	675	1652	680	1671	1529	1038
Total		2713	2841	933	3800	1209	3246	1204	2844	3220	2019
Sep-17	U5 years	1087	857	196	1889	494	1389	560	1141	1645	1074
	PW	71	64	11	256	21	61	64	151	138	90
	5 to 70+ years	1645	1378	407	1821	531	1503	1274	1219	1406	1135
Total		2803	2299	614	3966	1046	2953	1898	2511	3189	2299
Oct-17	U5 years	18499	541	315	2236	108	445	0	1152	1864	964
	PW	42	30	32	191	11	23	0	110	114	80
	5 to 70+ years	883	1146	470	2380	167	524	0	1024	1549	935
Total		19424	1717	817	4807	286	992	0	2286	3527	1979
Total U5 years		21732	3432	1244	10085	1591	6545	1739	5539	7516	3835
Total PW		311	204	146	1077	107	323	137	700	522	301
Total 5 to 70+ years		6747	5652	2088	9681	2034	7035	3171	6600	6885	4054
Grand Total		**28790**	**9288**	**3478**	**20843**	**3732**	**13903**	**5047**	**12839**	**14923**	**8190**

Year/Month	Age Group	Zabzugu	Tatale	Chereponi	Saboba	Karaga	Gushegu	Mion	East Manprusi	B. Yunyoo	Mamprugu Moagduri
Jun-17	U5 years	213	553	534	1055	111	120	696	246	401	169
	PW	10	31	2	80	9	25	13	17	37	12
	5 to 70+ years	202	662	338	1601	110	172	818	608	823	256
Total		425	1246	874	2736	230	317	1527	871	1261	437
Jul-17	U5 years	328	608	967	1105	306	164	1017	333	471	272
	PW	9	52	5	46	14	26	40	13	27	29
	5 to 70+ years	326	710	664	1512	372	212	1239	722	825	539
Total		663	1370	1636	2663	692	402	2296	1068	1323	840
Aug-17	U5 years	331	442	923	1560	459	357	1206	1004	898	506
	PW	15	23	20	91	28	49	45	21	53	29
	5 to 70+ years	305	317	717	1655	531	458	1309	1149	1409	860
Total		651	782	1660	3306	1018	864	2560	2174	2360	1395
Sep-17	U5 years	503	520	909	1621	544	223	1246	1427	442	32
	PW	27	45	34	112	40	34	44	22	21	12
	5 to 70+ years	492	421	737	1760	688	250	1164	2078	892	54
Total		1022	986	1680	3493	1272	507	2454	3527	1355	98
Oct-17	U5 years	232	643	0	1344	466	0	0	976	434	34
	PW	9	41	0	94	35	0	0	12	28	1
	5 to 70+ years	220	602	0	1718	561	0	0	1815	811	32
Total		461	1286	0	3156	1062	0	0	2803	1273	67
Total U5 years		1607	2766	3333	6685	1886	864	4165	3986	2646	1013
Total PW		70	192	61	423	126	134	142	85	166	83
Total 5 to 70+ years		1545	2712	2456	8246	2262	1092	4530	6372	4760	1741
Grand Total		**3222**	**5670**	**5850**	**15354**	**4274**	**2090**	**8837**	**10443**	**7572**	**2837**

Please note that no information was available for the month of October from East Gonja, Chereponi, Gushegu and Mion because those Districts had run out of rapid diagnostic test (RDT) kits so were unable to do testing during that month.

Annex 2: PDCU Form

POST-DISTRIBUTION CHECK-UP OF MOSQUITO NET USAGE
AGAINST MALARIA FOUNDATION

Country/Region: GHANA/NORTHERN	District name:
Date of distribution: APR - MAY 2016	Sub-District name:
Date of this survey:	Community name:

Household ID: _____ **PLEASE WRITE IN CAPITALS**

To the Household Head In the past, you received mosquito nets for free in a community distribution. We are conducting a survey of randomly selected households to assess net usage and condition. We would like to ask your permission to enter your home to gather this information.

I agree to allow you to enter my home, in my presence, to assess the use and condition of my mosquito nets.　**Signature/Thumb Print of Household Head**

Name of the Household Head　First name _____　Last name _____

Contact Number _____

1. How many regularly used sleeping spaces are there in the household? _____

2. Please complete the following table for all nets found hanging in the household:
(If there are zero nets found hanging, skip to question #3)

	Brand of net (tick one)			Net distributed in recent mass distribution?	Net condition (tick one)			How many slept under this net last night?				Net condition
	Olyset	Perma-Net	Other		Very Good	OK	Poor	# Children Under 5	# Children 5 to 18 yrs	# Preg W	# Other adult	Very Good fewer than 2 holes of less than 2cm each
Example	O	☑	O	☑	☑	O	O	1		1		
Net 1	O	O	O	☐	O	O	O					OK fewer than 10 small holes
Net 2	O	O	O	☐	O	O	O					
Net 3	O	O	O	☐	O	O	O					Poor more than 10 small holes or 1 big hole, larger than 10 cm
Net 4	O	O	O	☐	O	O	O					
Net 5	O	O	O	☐	O	O	O					
Net 6	O	O	O	☐	O	O	O					If there are more than 10 nets continue on another form (and mark both forms).
Net 7	O	O	O	☐	O	O	O					
Net 8	O	O	O	☐	O	O	O					
Net 9	O	O	O	☐	O	O	O					
Net 10	O	O	O	☐	O	O	O					

3. Of the nets received in the recent universal coverage campaign ONLY:

Number originally received	Hung sum of ☑ ticked above	Present but not hung ✱	Not present	
			Worn out	Other ✱

✱Reason:

4. Does the household head know how to hang and use a net correctly?　Yes / No
Ask the household head to demonstrate how the nets are used at night if not obvious from the nets hanging

5. How many people in this household have had blood-test diagnosed malaria in the last month? _____

6. How many people are there in this household? _____

CERTIFICATION:
I certify the information in this form is correct

Surveyor's name and position:	Supervisor's name and signature:	Official Stamp

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Annex 3: Checklist for PDCU Supervision

GHANA AMF SIX-MONTHLY PDCU - SUPERVISORY CHECKLIST

COMMUNITY LEVEL SUPERVISION

<u>**FOR USE BY SUB-DISTRICT SUPERVISORS**</u>

<u>**Instruction for sub-district supervisors: Fill form for each enumerator during the PDCU data Collection.**</u>

District _____   **Sub-district**_____

Community_____   **Date** _____   **Time** _____

Name of supervisor_____   **Signature**_____

---

1. Does the enumerator have adequate number of PDCU forms needed for the day's work? Yes/No ………..If No, why?....................

2. Observe the enumerator collect data in <u>one household</u> from start to finish and record the following:

    2.1. Record the start time here (e.g. 2.43pm) ……………………….

    2.2. Did enumerator greet the household head? Yes/No

    2.3. Did enumerator explain the purpose of the visit? Yes/No

    2.4. Did enumerator ask for household head's Consent before interview? Yes/No

    2.5. Did enumerator ask household head to sign or thumbprint PDCU form? Yes/No

    2.6. Did enumerator fill the details of HH head (names & phone number) Yes/No

    2.7. Did enumerator check the number of LLINs household received during campaign? Yes/No

    2.8. Did enumerator ask of the condition of LLINs in the HH? Yes/No

    2.9. Did enumerator ask of number of people who slept under LLINs the previous night Yes/No

    2.10. Did enumerator ask of nets hung, not present etc. Yes/No

2.11. Did enumerator ask if HH head know how to hang and use nets correctly Yes/No?

2.12. Did enumerator ask how many people in HH had blood-test diagnosed malaria in the last month?

Yes/No?

2.13. Did enumerator ask how many people are in the HH Yes/No?

2.14 Record the finish time here (e.g. 2.57pm) …………

(Explain to the enumerator any corrections and improvements required in private.)

3. Select one completed PDCU form and follow-up to the HH and verify the following information:

4. Ask the head of the household if enumerator visited the household

5. If yes to 4 Ask/check the following
   5.1. The number of LLINs received………………………………
   5.2. The number hanging……………………………………………….
   5.3. The number of people in the HH…………………………….

6. Does 5.1, 5.2 and 5.2 agree with information on completed form Yes/No.? If no find out why.

7. What problems were observed and what corrective actions were taken? Use the following table below.

No	Problems observed	Corrective action taken

7. Enumerate 2 key observations/lessons learnt