

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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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 PDCU exercise (PDCU at 6 months) was carried out in the Northern Region in November 2016. This report covers the second PDCU (PDCU at 12 months) which was carried out from 8th to 18th May, 2017 in 20 districts in the Northern Region.

2.0 Planning for PDCU at 12 Months

In planning for the PDCU at 12 months in Northern region, ADDRO and Episcopal Relief & Development teams had review meetings face-to-face and also via Skype to review the first round of completed PDCUs (PDCUs at 6 months in each of the three regions). The meetings were held on 28th March, 2017 via Skype and 20th April, 2017 at Tamale. The purpose of the review meetings was to assess various aspects of the PDCU activities that went well, those that need improvement and lessons that will be applied to the next round of PDCUs. Some of the lessons agreed to be factored into the next round of PDCUs (PDCU at 12 months) in all the three regions were:

- The need to have the sampled household list (generated by AMF) before the recruitment/replacement of enumerators and supervisors for the PDCU exercise. This will avoid/minimize recruiting enumerators/supervisors who do not reside/live close to the selected communities hence having difficulty in travelling long distances (as happened in the first round of PDCUs) to carry out the survey.
- Enumerators and supervisors who performed poorly during the first round of PDCUs will be replaced in the next round of PDCUs.

- Consultative meetings with GHS was very key in promoting cooperation at community level and should be continued
- Strengthening the capacity of supervisors and involving them in the recruitment of enumerators will increase the effectiveness of PDCU

The ADDRO HQ team also held a series of discussions with ADDRO Northern regional team via phone and exchange of emails on how to effectively carry out the PDCU at 12 months. The discussion centred on the following:

- How to factor in the recommendations of the first PDCU review meetings
- How to go about the recruitment/replacement of supervisors and enumerators
- Printing and packaging of PDCU forms according to communities, sub-district and districts
- Clustering of districts for the training
- Training of enumerators and supervisors
- Actual PDCU data collection
- Supervision of data collection
- Retrieval of completed data collection forms from the field
- Transportation of data collection forms to the data entry centre

At the end of the discussions, the following were agreed on:

- Dates for the recruitments, training, data collection and supervision
- To recruit enumerators after AMF has shared the sampled HH list (so that enumerators will be selected from the sampled communities).

3.0 The PDCU process

The Northern region mass LLINs distribution exercise was carried out from 11th to 17th April with a grace period of one month given to enable beneficiaries who could not redeem their nets in the first week to do so. Following the distribution, the first PDCU at 6 months data collection was carried out in November 2016. Subsequently, the second PDCU at 12 months was carried out in May 2017 in all the 20 AMF supported districts. Below are details of various activities carried out to ensure a successful PDCU.

3.1 Consultative meetings with GHS

ADDRO regional team had discussions with the District Directors of Health Services or their representatives in the twenty AMF supported districts on the PDCU at 12 months. The discussions were via phone and the purpose of the discussion was to share with them the key activities to be carried out in the next PDCU in their districts and sub-districts. This activity took place from the 3rd to 5th April, 2017.

3.2. Development of data collection tools and sampling

The PDCU form which was used for the PDCU at 6 months was used for the PDCU at 12 months. The only edit made to the form was changing the “form number” on the PDCU form at 6 months to Household ID to conform to what is on the household list. See Annex 1 for the revised PDCU form.

AMF worked on the sampling of households for the 5% main and 5% checks and generated the household list. The “spare” household list was increased from 30% to 50% to take care of household heads who might be absent (deceased, relocated, etc.) during the survey. A total of 25,542 households were sampled for the 5% main and 2,096 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 enumerators through their supervisors during the PDCU training.

3.4 Recruitment/Replacement of Sub-district Supervisors and Enumerators

The strategy was to use supervisors and enumerators who took part in the first PDCU and only replace those who did not perform satisfactorily in the first PDCU or those who were not available/not interested in participating in the second PDCU. ADDRO started working on the recruitment of supervisors and enumerators after the HH list was shared by AMF. ADDRO

regional team contacted the supervisors and enumerators who participated and performed well during the first PDCU through phone calls for selection/recruitment. Enumerators who did well during the first PDCU and were available for the PDCU at 12 months were placed in their own communities. The existing Supervisors supported in the replacement of enumerators who did not perform satisfactorily in the first PDCU and or were not available for the PDCU at 12 months. They compiled the list of interested enumerators and forwarded the list with candidates' details to ADDRO regional team. ADDRO Regional team had discussions with those enumerators for recruitments. The ADDRO regional teams also visited sub-districts where supervisors were not available for the second PDCU and recruited supervisors who then assisted in the recruitment/replacement of the enumerators by compiling the list of interested enumerators and forwarding same to ADDRO regional team for recruitment.

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

Supervisors should:

- Be resident in the sub-district
- Have minimum 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 meet deadlines
- Have the ability to motivate volunteers 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 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

A total of 254 Enumerators and 93 Supervisors were recruited to participate in the second PDCU in Northern Region. One hundred and thirty (130) of these enumerators took part in the first PDCU while 124 were new enumerators. Also, 77 of the supervisors took part in the first PDCU while 16 were new supervisors. The supervisors and enumerators recruited were independent people and not GHS staff or volunteers. Two hundred and thirty-four (234) of the enumerators were recruited for 5% main data collection and 20 enumerators for 5% checks data collection. The recruitment/replacement of the supervisors and enumerators was carried out from 6th to 24th April, 2017.

The role of the enumerators was to collect PDCU data by administering PDCU questionnaires to the sampled households and the role of the sub-district supervisors was to supervise the enumerators in PDCU data collection. During supervision, each supervisor visited all enumerators under his/her care at their various locations/sites. The supervisors followed enumerators to observe them conduct interviews in some households so that if there were issues, they could help address them. They also checked completed data collection forms to ensure that they were correctly filled before endorsing and collecting them.

The number of enumerators were increased to 254 in the second PDCU as against 224 in the first PDCU. In the first PDCU, each enumerator was to visit 25 households a day for seven days. However, due to the widely dispersed nature of the communities and the long distances between households in the Northern region, it was difficult for enumerators to complete 25 households in a day. Based on this experience, the number of households to be completed by an enumerator in a day was reduced to 20 and hence, the increased number of enumerators. See table 1 for details of number of enumerators and supervisors recruited/replaced during the second PDCU in the Northern Region.

Table 1: Number of Supervisors and Enumerators Recruited for NR PDCU12

District	# of Enumerators			# of Sub-district Supervisors		
	Old enumerators	New enumerators	Enumerators (Total)	Old supervisors	New supervisors	Supervisors (Total)
Bole	5	5	10	2	4	6
Bunkprugu/ Yunyo	9	4	13	2	3	5
Central Gonja	7	7	14	1	5	6
Chereponi	7	4	11	5	0	5
East Gonja	14	1	15	6	0	6
East Mamprusi	5	17	22	4	1	5
Gusheigu	0	12	12	5	0	5
Karaga	7	8	15	4	0	4
Kpandai	8	7	15	5	0	5
Kumbungu	4	8	12	5	0	5
Mamprugu Moagduri	3	5	8	4	0	4
Mion	6	3	9	4	0	4
Nanumba North	12	8	20	3	1	4
Nanumba South	6	7	13	4	0	4
North Gonja	4	3	7	4	0	4
Saboba	6	5	11	3	0	3
STK	6	11	17	4	1	5
Tatale-Sangule	8	2	10	5	0	5
West Gonja	5	3	8	5	0	5
Zabzugu	8	4	12	2	1	3
Total	130	124	254	77	16	93

3.5 Challenges and Actions taken during Recruitment

- ✓ It was difficult reaching some enumerators and supervisors on phone due to network problems. The recruitment team had to make several calls to reach some of them. In some cases, the team had to travel to districts and sub-districts of enumerators and supervisors who could not be contacted via phone.

4.0 PDCU Trainings

The PDCU trainings were organised at two levels; first a refresher training was conducted for ADDRO regional staff after which the training of supervisors and enumerators was conducted.

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 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 1st May 2017 at the ADDRO Northern Region office. The ToT built the capacity of the regional team on new strategies for the second PDCU to improve upon training and data collection. Participants (ADDRO Regional staff) were made to do peer training on how to conduct the actual training of the supervisors and enumerators using the PDCU form. Each staff was made to lead in training his/her colleague staff using the PDCU form. All relevant questions such as, if a household is in the sampled list but did not receive nets what should the enumerator do, were given clarification. In this case, for example, the explanation was that the household head should be interviewed but LLINs originally received will be zero. This 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. The peer training and scenarios done showed that the ADDRO Northern regional team were capable of effectively carrying out the training of supervisors and enumerators.

Finally, participants at the training were also taken through the supervisory checklist for both sub-district supervisors and ADDRO level supervisors to enable them effectively supervise the supervisors and enumerators in the PDCU exercise.

4.2 Training of Supervisors and Enumerators

Supervisors and enumerators who were recruited for PDCU at 12 months (both newly recruited enumerators/supervisors and enumerators/supervisors who took part in PDCU at 6 months) were duly trained to build their capacities on data collection using the PDCU data collection form. The training was carried out from the 2nd to 6th May, 2017 in 13 clusters in the 20 AMF districts.

The training focused on the PDCU form since that is the main tool for the data collection. The main strategies for the training were as follows:

- A brief introduction of ADDRO and Partners (Episcopal Relief & Development and Against Malaria Foundation)
- A 15-minute recap of the first PDCU data collection – Successes and Challenges
- What each abbreviation or terminology on the form stood for (AMF, Household ID, First name, Last name, Brand of Net, Very Good, Ok, Poor, etc)
- How to ask questions with demonstrations to allow Household heads to understand properly in order to give correct information.
- Community/Household 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 and 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 transferred onto the flip chart for all to see and understand. Participants were also given two already 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.
- All questions on the PDCU form were translated into the local languages of the area by participants to enable them ask the questions correctly and elicit the right responses from households.
- Questions and answer session: Participants were given enough time to ask questions on the PDCU form and any other topic that was treated, e.g. should a visitor who slept under a net the previous night be counted in the HH? Etc.

In all, 335 supervisors and enumerators were trained to undertake the second PDCU. This comprised 247 enumerators (125 old and 122 new) and 88 supervisors (72 old and 16 new). This means 247 enumerators were trained for data collection for PDCU at 12 months as against 200 enumerators trained during PDCU at 6 months. Seven enumerators and five supervisors recruited

did not participate in the training and as such were not retained for the actual PDCU. The 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: Enumerators and Supervisors recruited and trained for NR PDCU12

District	# of Enumerators Recruited	# of Enumerators trained		# of Supervisors Recruited	# of Supervisors trained		Total # of Enumerators and Supervisors Trained
		Old	New		Old	New	
Bole	10	5	5	6	2	4	16
Bunkpurugu/Yunyo	13	9	4	5	2	3	18
Central Gonja	14	7	7	6	1	5	20
Chereponi	11	7	4	5	5	0	16
East Gonja	15	14	1	6	6	0	21
East Mamprusi	22	5	17	5	4	1	27
Gusheigu	12	0	12	5	3	0	15
Karaga	15	7	8	4	4	0	19
Kpandai	15	8	6	5	4	0	18
Kumbungu	12	4	8	5	5	0	17
Mamprugu Moagduri	8	3	5	4	4	0	12
Mion	9	6	3	4	4	0	13
Nanumba North	20	12	8	4	3	1	24
Nanumba South	13	6	7	4	4	0	17
North Gonja	7	4	3	4	4	0	11
Saboba	11	5	5	3	3	0	13
STK	17	6	11	5	4	1	22
Tatale-Sangule	10	6	2	5	3	0	11
West Gonja	8	5	3	5	5	0	13
Zabzugu	12	6	3	3	2	1	12
Total	254	125	122	93	72	16	335

4.3 Training Challenge(s) and Actions Taken During Training

- ✓ Due to rains, some trainings were delayed. To be able to cover all the issues, the training time for those trainings were extended to around 6:00pm

- ✓ Busunu Sub-District of West Gonja District was not trained on the scheduled date. The reason is that the supervisor and enumerators could not be reached when the dates for the trainings were being communicated. They were trained on the 9th May, 2017.

5.0 Data Collection

The Northern Region Post Distribution Check-up data collection was carried out by two hundred and forty-seven (247) trained enumerators from the 8th to 18th May, 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 eighty-eight (88) 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 survey coincided with the farming season making it difficult to meet some household heads at the first visit. In such instances enumerators had to visit the households a couple of times to meet them in order to collect the data.
- ✓ It was difficult identifying some household heads because only one name was used. Enumerators had to work with some community volunteers especially those who took part in the 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.

6.0 Supervision of PDCU data collection

The data collection by enumerators was supervised by the 88 trained subdistrict 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 on daily basis to ensure that they were

correctly filled before endorsing and collecting them. The supervisors used the supervisor’s checklist for supervision; see Annex 2. Some of the observations recorded by supervisors during their supervision include:

- Some households did not want to give the actual figures of the number of nets hung as they thought when they give the correct numbers they will not be given nets again if there is an upcoming distribution. With an explanation on the reasons for the check-up, they understood and showed enumerators all the nets.
- Supervisors also recorded that they observed some enumerators asking for the coupons household heads used to redeem the LLINs which helped them know the actual number of LLINs received during campaign.

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-eight sub-districts and met with thirty-five (35) supervisors and eighty (80) enumerators (See table 3 below). In all, the supervision by sub-district supervisors and ADDRO team was successful and provided an opportunity to correct certain errors made by enumerators. Some of the errors identified and corrected were enumerators putting the number of people who slept under three different nets the previous night into one net, making it difficult to know who slept in the various nets that were hung. Other enumerators were still counting bedrooms as “regularly used sleeping spaces”. Because of this, in some cases, the number of nets hung were more than the number of sleeping spaces.

Table 3: Number of Supervisors and Enumerators visited

District	# of Sub-Districts	# of Sub-Districts Visited	# of Sub-District Supervisors	Super-visors Met	# of Enumerators	# of Enumerators Met
Nanumba North	4	3	3	2	20	8
Zabzugu	3	2	2	2	12	5
Nanumba South	4	3	3	3	13	6
Gusheigu	5	3	3	3	21	7

Karaga	4	3	3	3	15	9
Kumbungu	5	5	5	4	13	10
West Gonja	5	4	4	4	10	8
North Gonja	4	3	3	2	10	4
STK	5	3	3	3	15	7
Bunkpurugu/Yunyoo	5	3	3	3	13	6
East Mamprusi	5	2	2	2	22	4
Mion	4	4	4	4	9	6
Total	53	38	38	35	173	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 intention of the survey to the household heads
- Some household heads complained that they did not redeem their nets during the distribution
- Some enumerators were putting the number of people who slept under three different nets the previous night into one net, making it difficult to know who slept in the other nets that were hung.
- Other enumerators were still counting bedrooms as “regularly used sleeping spaces”. Because of this, in some cases, the number of nets hung were more than the number of sleeping spaces. Enumerators were asked to re-work on such forms before they could be accepted.

6.2 Challenges and Actions taken during supervision

- ✓ Difficulty in reaching some of the enumerators because of mobile network problems. 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
- ✓ Some enumerators carried out their work in the evenings because most household heads were busy on their farms during the day. In view of this, the ADDRO team had to follow

some enumerators to the field in the evening to supervise them on the conduct of the survey.

- ✓ Some households which were duly registered but did not receive nets initially refused to respond to the questionnaire. Those households were later convinced to respond to the questions.
- ✓ Many community members in Manayikpo community in the Puduia sub-district under Nanumba South District said they did not receive LLINs though they were registered and issued with coupons. ADDRO followed-up with Ghana Health Service and it was explained that the community is a fishing community with community members living along the river. The community members were registered and issued with coupons but during the distribution, majority of them had moved and were no more living in that community.

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 22nd to 30th May, 2017. The regional team visited all sub-districts in the 20 AMF supported districts to collect the PDCU forms. The team reviewed each form for accuracy and completeness before collection and payment of enumerators and supervisors for the work done. 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

- ✓ It was difficult to reach some communities such as Abromasi in the East Gonja District which are across rivers without bridges. The PDCU forms were transported across with the use of engine boats and canoes.
- ✓ There were also 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.

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 1st June, 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 was 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 (both 5% main and 5% checks) were then sent by mail to the M&E officer at ADDRO HQ. Twenty three thousand nine hundred and forty-one (23,941) and 1,686 completed forms for 5% main and 5% checks respectively were received at the data centre.

8.0 PDCU Data Entry:

AMF added a field to the Northern Region PDCU data entry site called PDCU at 12 months for the data entry. Data entry started on 13th June, 2017 and ended on the 24th July, 2017. Thirty-nine (39) data entry clerks did the actual data entry for the Northern Region PDCU. A total of 23,940 households PDCU forms were entered by the clerks.

8.1 Results of PDCU

Twenty three thousand, nine hundred and forty (23,940) households' data have been entered as shown in the AMF database. This implies 23,940 (representing 94%) PDCU forms were entered into the database as against 25,542 expected/target. One form was rejected at the data entry centre. The form was rejected because it was not correctly filled with HH ID and the name could not be found in the household list. The reason for the shortfall in the number of expected forms 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. A total of 67,899 LLINs were reported as received by the 23,940 households visited during the PDCU survey. Out of this total LLINs received, 58,793 (87%) were found hung over sleeping spaces; 6,119 (9%) were present in the households but not hung over sleeping spaces; 2% were not present in the households (nets worn out hence not usable) and 2% not present in the households for reasons other 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 schools 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, July 25th, 2017)

Table 4: LLINs received and their status at NR PDCU12

AMF Nets													
Region	Households			Nets Received	Nets Hung		Present not hung		Missing		Worn out/not usable		Missing + Worn Out
	Target	# entered	%	#	#	%	#	%	#	%	#	%	%
Northern	25,542	23,940	94	67899	58793	87	6,119	9	1520	2	1467	2	4

8.2 Results of PDCU at 6 months versus PDCU at 12 months

An analysis of the results of PDCU at 6 months and PDCU at 12 months shows the following:

1. PDCU at 12 months recorded a higher percentage of households interviewed (94%) than PDCU at 6 months (84%). The reason may be because of the increase in enumerators for PDCU at 12 months as against PDCU at 6 months.
2. The number of LLINs found hung is lower at PDCU at 12 months (87% LLINs hung) than PDCU at 6 months (90% LLINs hung). The reasons given by household heads for LLINs not hung include keeping LLINs for future use, having fewer sleeping spaces than LLINs, LLINs producing heat, and LLINs reserved for future use.
3. LLINs present in the households but not hung are higher during PDCU at 12 months (9%) than PDCU at 6 months (7%).
4. The proportion of LLINs worn out was higher during PDCU at 12 months than PDCU at 6 months. This could imply that the LLINs gets worn out with time. So at 12 months more LLINs were worn out than at 6 months. See table 5 below.

Table 5: Comparing Results of NR PDCU at 12 and PDCU at 6 months

PDCU Survey Question	PDCU @ 6 months	PDCU @ 12 months
Target HHs to be visited	25,504	25,542
Actual HHs visited/entered in to database	20,949	23,940
%	82%	94%

Nets received	64,823	67,899
Net hung	58,331	58,793
% of Net hung	90%	87%
Nets present but not hung	4,696	6,119
% of Nets present but not hung	7%	9%
Nets Missing	1,355	1,520
% of Nets Missing	2%	2%
Nets worn out/not usable	441	1,467
% of Nets worn out/not usable	1%	2%
% of Nets missing+ worn out/not usable	3%	4%

9.0 Lessons learnt from previous PDCU and incorporated into PDCU at 12 months

To enhance the conduct of PDCU at 12 months, the following issues were incorporated:

- ✓ During the training, facilitators drew the PDCU form especially Table 1 and 2 on a Flip chart and used that to explain to participants on how to fill the PDCU form accurately. This enhanced participants understanding.
- ✓ The number of households on the spare list was increased from 30% to 50% to ensure that there were enough household heads available to replace household heads in the regular list who were not available to be interviewed.
- ✓ Recruitment/replacement of enumerators and supervisors were done after the sampled HH list was shared by AMF. This reduced the challenge of enumerators living far from sampled communities.
- ✓ Enumerators and supervisors who performed poorly in the first PDCU were replaced with more qualified enumerators for the PDCU at 12 months.
- ✓ To ensure that enumerators asked the PDCU questions accurately and elicit the right responses, all six questions in the PDCU form were interpreted in the local dialects of the various communities and enumerators were taught how the questions should be asked. This improved the questioning skills of enumerators and supervisors.
- ✓ During the training, each enumerator was required to complete two printed out scenarios during practical sessions. Enumerators and supervisors with challenges were assisted to gain better understanding of the PDCU form
- ✓ In the urban areas where it was difficult to identify the sampled HH heads for the data collection, the services of community volunteers who took part in the pre-distribution registration were engaged to assist enumerators to identify these households.

- ✓ During the supervision of data collection, ADDRO staff strategically reached out first to enumerators who were identified during the training to have low level of understanding of the PDCU to monitor their work and correct errors where necessary before visiting other enumerators

10.0 Malaria Case Data (Monthly uncomplicated malaria cases)

Pleas see table 6 below for monthly malaria case rate data acquired from the Ghana Health Services. Please note that no information was available for the month of May from Zagzubu because that station had run out of rapid diagnostic test (RDT) kits so were unable to do testing during that month.

Table 1: Detail monthly uncomplicated malaria positive cases in AMF supported districts in Northern region (Nov 2016 - May 2017)

Year/Month	Age Group	Central Gonja	West Gonja	Kumbungu	Bole	North Gonja	STK	East Gonja	Nanumba North	Nanumba South	Kpandai	Total
Nov-16	U5 years	142	248	167	831	117	730	516	634	88	754	4227
	PW	10	25	15	184	12	40	22	39	4	19	370
	5 to 70+ years	125	378	88	582	75	660	405	649	68	509	3539
	Total	277	651	270	1597	204	1430	943	1322	160	1282	8136
Dec-16	U5 years	142	83	80	487	21	212	240	91	156	340	1852
	PW	45	58	32	98	29	103	56	105	42	56	624
	5 to 70+ years	139	154	75	720	36	439	398	103	190	629	2883
	Total	326	295	187	1305	86	754	694	299	388	1025	5359
Jan-17	U5 years	413	119	237	578	20	760	379	795	622	420	4343
	PW	66	5	24	101	2	44	11	105	62	23	443
	5 to 70+ years	915	201	319	790	56	1216	782	1115	456	672	6522
	Total	1394	325	580	1469	78	2020	1172	2015	1140	1115	11308
Feb-17	U5 years	293	130	254	607	37	876	156	338	185	249	3125
	PW	78	12	27	110	8	73	9	67	66	15	465
	5 to 70+ years	531	212	341	721	45	1044	371	493	184	265	4207
	Total	902	354	622	1438	90	1993	536	898	435	529	7797
Mar-17	U5 years	108	84	199	518	22	611	242	278	73	77	2212
	PW	21	8	23	110	7	23	16	38	24	3	273
	5 to 70+ years	251	98	219	638	45	1104	368	585	107	136	3551
	Total	380	190	441	1266	74	1738	626	901	204	216	6036
Apr-17	U5 years	389	65	72	529	48	462	161	220	261	96	2303
	PW	33	4	7	98	4	30	19	17	67	10	289
	5 to 70+ years	667	85	94	594	49	616	268	260	303	156	3092
	Total	1089	154	173	1221	101	1108	448	497	631	262	5684
May-17	U5 years	306	134	107	842	46	1006	224	174	404	253	3496
	PW	42	18	10	140	4	69	21	29	76	21	430
	5 to 70+ years	699	186	138	893	54	967	505	195	485	421	4543
	Total	1047	338	255	1875	104	2042	750	398	965	695	8469
	Total U5 years	1793	863	1116	4392	311	4657	1918	2530	1789	2189	21558
	Total PW	295	130	138	841	66	382	154	400	341	147	2894
	Total 5 to 70+yrs	3327	1314	1274	4938	360	6046	3097	3400	1793	2788	28337
	GrandTotal	5415	2307	2528	10171	737	11085	5169	6330	3923	5124	52789

Year/Month	Age Group	Zabzugu	Tatale	Chereponi	Saboba	Karaga	Gushiegu	Mion	East Mamprusi	Bunkpurugu Yunyoo	Mamprugu Moagduri	Total
Nov-16	U5 years	562	535	101	654	642	794	516	508	684	206	5202
	PW	32	48	0	22	33	43	19	10	43	20	270
	5 to 70+ years	418	307	112	354	277	405	180	634	718	166	3571
Total		1012	890	213	1030	952	1242	715	1152	1445	392	9043
Dec-16	U5 years	221	218	92	193	225	494	216	137	255	20	2071
	PW	82	125	130	46	78	121	46	21	91	43	783
	5 to 70+ years	222	269	0	286	157	575	223	415	441	33	2621
Total		525	612	222	525	460	1190	485	573	787	96	5475
Jan-17	U5 years	459	357	196	416	300	411	244	312	434	95	3224
	PW	37	30	4	15	23	20	15	4	24	14	186
	5 to 70+ years	433	338	176	681	205	458	251	529	585	148	3804
Total		929	725	376	1112	528	889	510	845	1043	257	7214
Feb-17	U5 years	205	230	179	192	234	203	146	409	550	98	2446
	PW	17	24	12	4	13	25	15	18	33	8	169
	5 to 70+ years	246	181	160	350	227	281	169	586	867	166	3233
Total		468	435	351	546	474	509	330	1013	1450	272	5848
Mar-17	U5 years	62	184	198	270	213	118	127	201	384	32	1789
	PW	40	23	11	36	17	24	7	376	32	4	570
	5 to 70+ years	124	194	158	397	198	115	137	21	590	35	1969
Total		226	401	367	703	428	257	271	598	1006	71	4328
Apr-17	U5 years	106	133	147	177	220	116	141	235	146	91	1512
	PW	23	29	12	12	24	22	9	11	16	8	166
	5 to 70+ years	153	157	154	324	190	110	165	473	254	93	2073
Total		282	319	313	513	434	248	315	719	416	192	3751
May-17	U5 years	0	222	84	349	133	84	130	116	320	104	1542
	PW	0	38	0	31	6	21	10	14	27	10	157
	5 to 70+ years	0	204	108	612	136	121	175	249	635	161	2401
Total		0	464	192	992	275	226	315	379	982	275	4100
Total U5 years		1615	1879	997	2251	1967	2220	1520	1918	2773	646	17786
Total PW		231	317	169	166	194	276	121	454	266	107	2301
Total 5 to 70+ years		1596	1650	868	3004	1390	2065	1300	2907	4090	802	19672
GrandTotal		3442	3846	2034	5421	3551	4561	2941	5279	7129	1555	39759

Table 2: Summary of monthly Malaria Cases from June 2016 to May 2017

Summary of malaria Cases from June 2016 to October 2016						Summary of malaria Cases from November 2016 to May 2017							
District	16-Jun	16-Jul	16-Aug	16-Sep	16-Oct		16-Nov	16-Dec	17-Jan	17-Feb	17-Mar	17-Apr	17-May
Bole	2489	1761	2536	2262	2518		1597	1305	1469	1438	1266	1221	1875
Bunkpurugu-Yunyoo	1086	1543	1794	2655	4312		1445	787	1043	1450	1006	416	982
Central Gonja	2696	4446	3141	2969	2840		277	326	1394	902	380	1089	1047
Chereponi	685	892	1101	1327	1663		213	222	376	351	367	313	192
East Gonja	1757	1999	1863	2359	1724		943	694	1172	536	626	448	750
East Mamprusi	943	1063	1229	2617	3438		1152	573	845	1013	598	719	379
Gushiegu	1419	2107	1200	1428	1827		1242	1190	889	509	257	248	226
Karaga	777	1114	1303	1575	2046		952	460	528	474	428	434	275
Kpandai	1202	1407	1621	1678	2606		1282	1025	1115	529	216	262	695
Kumbungu	247	626	933	1078	1957		270	187	580	622	441	173	255
Mamprugu-Moagduri	456	512	694	872	1071		392	96	257	272	71	192	275
Mion	487	779	1007	1132	1196		715	485	510	330	271	315	315
Nanumba North	902	1003	1172	1120	1640		1322	299	2015	898	901	497	398
Nanumba South	1466	1532	1718	1976	2135		160	388	1140	435	204	631	965
North Gonja	295	1628	578	661	703		204	86	78	90	74	101	104
Saboba	1132	1325	1490	1533	1703		1030	525	1112	546	703	513	992
Sawla-Tuna-Kalba	2531	2583	3122	2135	2512		1430	754	2020	1993	1738	1108	2042
Tatale-Sangule	1000	1115	1176	1163	1448		890	612	725	435	401	319	464
West Gonja	1015	1426	1318	1754	1743		651	295	325	354	190	154	338
Zabzugu	1042	1311	1466	1408	1676		1012	525	929	468	226	282	0
Grand Total	23627	30172	30462	33702	40758		17179	10834	18522	13645	10364	9435	12569

10.1 Analysis of malaria case data for Northern Region – November 2016 to May 2017

Table 6 above is the malaria case rate data from November 2016 to May 2017 in the 20 AMF supported districts of the Northern Region. Data in table 6 has been categorized into malaria cases among children under five years, malaria in pregnancy and malaria among other age groups (5years to 70+years). Details on malaria from June 2016 to October 2016 was added to PDCU at 6 months report.

Table 7 is a summary of malaria cases from June 2016 to May 2017. Observations made on the malaria case rate data from June 2016 to May 2017 are as follows:

- The data from November 2016 to May 2017 shows a decreasing trend in malaria cases compared to data from June to October 2016). In October 2016, there were overall 40,758 malaria cases in the 20 districts but this dropped drastically to 17,179 in November 2016 and further dropped to 10,834 in December 2016. January, 2017 was an exceptional month where malaria cases increased to 18,522. However, February through to May, 2017 experienced a decrease in malaria cases as shown in table 7 above. The reason for the increase in malaria cases in January, 2017 is not known. The reasons for the high malaria cases from June, 2016 to October 2016 compared to November, 2016 to May, 2017 might be because of the rainy season. The rainy season in the Northern Region is a seven-month period spanning from April to October and the rest of the period being dry season. Malaria cases are higher in the rainy season because of increased availability of clean stagnant waters (providing breeding places for the *Anopheles* mosquitoes – to aid in the transmission of malaria).

11.0 Conclusion

The PDCU at 12 months built on experiences and lessons of the first PDCU (PDCU at 6 months). The new strategies which were incorporated into the process especially in the training and data collection contributed to improving the PDCU exercise. There were fewer errors seen in the PDCU forms filled by enumerators. The number of PDCU forms that were correctly filled and entered into the AMF database increased from 82% in PDCU at 6 months to 94% in PDCU at 12 months.

12.0 Annexes

Annex 1: PDCU Form



POST-DISTRIBUTION CHECK-UP OF MOSQUITO NET USAGE

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 <small>(tick one)</small>			Net distributed in recent mass distribution?	Net condition <small>(tick one)</small>			How many slept under this net last night?				Net condition
	Olynet	Perma-Net	Other		Very Good	OK	Poor	# Children Under 5	# Children 5 to 10 yrs	# Preg W	# Other adult	
Example	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	1		1		Very Good fewer than 2 holes of less than 2cm each
Net 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					OK fewer than 10 small holes
Net 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					Poor more than 10 small holes or 1 big hole, larger than 10 cm
Net 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					if there are more than 10 nets continue on another form (and mark both forms).
Net 4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
Net 5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
Net 6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
Net 7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
Net 8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
Net 9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
Net 10	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					

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

Number originally received	Hung sum of <input checked="" type="checkbox"/> 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

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 <small>(tick one)</small>			Net distributed in recent mass distribution?	Net condition <small>(tick one)</small>			How many slept under this net last night?				Net condition
	Olynet	Perma-Net	Other		Very Good	OK	Poor	# Children Under 5	# Children 5 to 10 yrs	# Preg W	# Other adult	
Example	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	1		1		Very Good fewer than 2 holes of less than 2cm each
Net 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					OK fewer than 10 small holes
Net 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					Poor more than 10 small holes or 1 big hole, larger than 10 cm
Net 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					if there are more than 10 nets continue on another form (and mark both forms).
Net 4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
Net 5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
Net 6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
Net 7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
Net 8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
Net 9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
Net 10	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					

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

Number originally received	Hung sum of <input checked="" type="checkbox"/> 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?

Annex 2: Checklist for PDCU Supervision

GHANA AMF SIX-MONTHLY PDCU - SUPERVISORY CHECKLIST

COMMUNITY LEVEL SUPERVISION

FOR USE BY SUB-DISTRICT SUPERVISORS

Instruction for sub-district supervisors: Fill form for each enumerator during the PDCU data Collection.

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/NoIf No, why?
2. Observe the enumerator collect data in one household 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

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7. Enumerate 2 key observations/lessons learnt

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