

Notes from a site visit to a Long-Lasting Insecticide-treated Net (LLIN) distribution program funded by the Against Malaria Foundation (AMF) in Greater Accra, Ghana, August 15-18, 2016

GiveWell staff on this site visit

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Note: These notes were compiled by GiveWell and summarize the primary observations and information learned from the site visit.

Summary

GiveWell staff visited the site of a LLIN distribution program in Greater Accra, Ghana as part of its ongoing review of AMF. They met with actors involved in the recent AMF-funded distribution, including AMF, Episcopal Relief & Development, the Anglican Diocesan Development & Relief Organization (ADDRO), and the Greater Accra Regional Health Directorate of the Ghana Health Service (GHS). GiveWell staff also visited some of the semi-urban and rural communities where the distribution took place. They also met with representatives of Ghana's National Malaria Control Program (NMCP); notes from this conversation are published in a separate document.

Meetings with organizations involved in the recent AMF-funded distribution in Ghana

GiveWell staff met with representatives of AMF, Episcopal Relief & Development, and ADDRO to learn about the recent AMF-funded distribution in Ghana.

Against Malaria Foundation

- Shaun Walsh – Program Director, AMF

Mr. Walsh accompanied GiveWell staff during their site visit. Mr. Walsh worked in several organizations in Africa for over 35 years before leading Episcopal Relief & Development's *NetsforLife*® program for eight years. He began working for AMF after it had signed the agreement for this Ghana distribution. His role has been to assess potential NGO partners, participate in the planning process, meet with the National Malaria Control Program (NMCP), and help with course corrections (for example, when it was realized that there was no plan for transporting registration coupon books to the data entry center).

While visiting the Northern Region distribution, Mr. Walsh observed that there was a lack of good documentation on the number of nets removed from one location for transport and the number of nets arriving at the other end. He addressed this with the NMCP, which acted quickly to fix the problem through retraining.

Episcopal Relief & Development

- Priscilla Amuah – Senior Program Officer, Episcopal Relief & Development
- Samuel Asiedu Agyei – Research and Evaluation Manager, Episcopal Relief & Development
- Hilary Abii Asiah – Program Officer for Ghana Health Partnership, Episcopal Relief & Development

Anglican Diocesan Development & Relief Organization

- Bishop Jacob Ayeebo – Founder and Executive Director, Anglican Diocesan Development & Relief Organization (ADDRO); elected representative from the Upper East Region on the Council of State, a 25-member advisory body to the President of Ghana
- John Awumbila – Monitoring and Evaluation Officer, ADDRO
- Atise S. Abire – Regional Coordinator, Greater Accra ADDRO team
- Kwadwo Berko Appaw – Volunteer Supervisor, Greater Accra ADDRO team
- Robert Kingsley Baffoe – Accounts Officer, Greater Accra ADDRO team

ADDRO's Greater Accra team members were hired in June of this year. Mr. Abire has a Master's degree in education and counselling, ten years of experience in development work, and ten years of experience in teaching. Mr. Apau has a social work degree, and knows Ms. Amuah from a previous internship experience at Episcopal Relief & Development. Mr. Baffoe has an accounting degree and an MBA in finance; ADDRO is his first work experience in an NGO.

ADDRO's front line workers are unpaid volunteers, though their work is incentivized by a small stipend of 10 GH¢ (~2.50 USD) per month. ADDRO has 35 staff and an annual budget of \$1 million. It does not evangelize through its work, and does not consider religion when choosing which beneficiaries and regions to target.

Relevant background information on Ghana

Ghana's ten regions are divided into 216 districts. Districts are further divided into sub-districts, which are composed of many communities. The Northern Region has 26 districts (24 ordinary, 1 municipal, and 1 metropolitan); the Greater Accra Region has 16 districts (7 ordinary, 7 municipal, and 2 metropolitan); and the Upper West Region has 11 districts. Communities are composed of households, which are defined as 'people who eat from the same pot.'

In continuous distributions, nets are delivered through antenatal clinics, child welfare clinics, or schools. Nets left over from mass distributions are often used for continuous distributions.

Malaria is present throughout the country, and is most prevalent in the south.

Net recipients' knowledge, attitudes, and practices

While some people in Ghana express dissatisfaction with certain parts of the distribution process, most are generally pleased and willing to receive nets. Most people are aware that malaria is contracted through mosquito bites, and that sleeping under nets can prevent malaria. There are some education gaps in other areas: for example, some people are not aware that hanging nets in the sun can cause the chemicals to break down. Some people believe that nets are only intended for use by children under 5 years of age. Complaints about bed nets include that:

- They can be too hot to sleep under.
- They limit movement in bed.
- They make it harder to get up in the night to use the toilet or nurse a baby, as it can be difficult not to let mosquitoes in while tucking and untucking the net upon entering and exiting.
- They are more difficult to hang than conical nets.
- Nets in general, particularly white ones, can be a reminder of funerals. This is a particular concern for Muslims in the country, who wrap their dead in white shrouds. This led to a messaging strategy that asked: "Do you want to look like a corpse, or do you want to *be* a corpse?"

Sometimes, people sell their nets or use them for purposes other than malaria protection, including table decorations, and in fishing and agricultural activities.

Ongoing net distribution (2014-present)

Ghana's current universal net distribution began in late 2014. AMF-funded nets are helping to cover some of the distribution's final districts in a few regions:

- **Northern Region:** AMF nets covered 20 of 26 districts; the distribution occurred between April 11 and 17, 2016.
- **Greater Accra Region:** AMF nets covered 12 of 16 districts; the distribution occurred between July 4 and 12, 2016. Post-distribution validation occurred between August 15 and 27, 2016.
- **Upper West Region:** AMF nets covered all 11 districts; this distribution took place between September 5 and 11, 2016.

Nets used in distributions in other districts were provided by other funders.

The last national distribution in Ghana occurred between 2010 and 2013. A 'hang-up' approach was used, in which nets were allocated by sleeping space. The decision to use a point distribution approach for the current distribution was based on several factors, including that a hang-up approach is more expensive and time-intensive, more invasive (for example, some individuals are not comfortable with agents entering and possibly arranging things in their bedrooms in order to hang nets) and may be less necessary once individuals have already had and know how to use nets.

In the present distribution, core responsibilities of Episcopal Relief & Development and ADDRO include:

- Monitoring the NMCP-led pre-distribution and distribution activities, and providing feedback to the NMCP. NMCP also does its own monitoring.
- Post-distribution monitoring.

Phase 1 – Planning and registration

The registration phase was implemented by the government and is now complete in all three regions.

Step 1 – Informative Meetings with Ghana Health Service Regional Health Directorates

At these meetings, stakeholders discuss the LLIN distribution implementation model, the schedule of activities, and budgets. Stakeholders also agree on a date for the regional planning workshop.

Step 2 – Regional planning workshops

At these workshops, stakeholders discuss the registration and distribution processes, budgets, rules, and responsibilities for different groups. In the Greater Accra regional planning workshop, the stakeholders also discussed which households to target (in other regions, all households were targeted).

Step 3 – Orientation for national and regional supervisors

Representatives from each region, as well as key representatives from each district in the region, participate in an orientation run by the NMCP and VectorWorks. Topics include how to register a household, how to issue coupons/vouchers, and how to mobilize communities and the point distribution exercise.

Step 4 – Training of district supervisors and GHS volunteers

Orientation attendees then pass on this training to supervisors and volunteers in their district; this cascades down until all volunteers are trained. In order to avoid

any manipulation of the system, volunteers do not learn the details of the household net allocation process.

Step 5 - Registration

GHS volunteers carry out the registration process, which takes place more than one month before the distribution. Volunteers are organized by the Ministry of Health (MoH) and participate in a number of government health programs, such as vaccination campaigns (immunization days). Many of them are long-time volunteers with considerable experience. The district might pair together more literate, experienced, and more-highly-incentivized volunteers with less experienced volunteers. All volunteers receive cash incentives; this funding comes from the NMCP, but the districts determine how they are allocated among volunteers.

Volunteers visit each house in their zone. The head of household, or someone else who is present, is asked how many people are in the household based on the 'people who eat from the same pot' definition. Ghana's policy is to provide one net for every two individuals in a household; as a result, in contrast to previous AMF distributions, volunteers were not required to check households' existing nets or number of sleeping spaces. The only exception to this policy is that household members aged 70 or older are not counted in the household total, and each receive their own net. In a polygamous marriage, each wife, and her children and other relatives, count as one household, and the husband is appended to one of these households. Guests of the household are not included in household number counts. Because registration volunteers are from the community, they understand and know how to be sensitive to different household situations and dynamics.

The volunteers have coupon books containing 50 two-sided perforated coupons, and record the same information on each side of the coupon: name of household head, number of persons in the household, telephone number, and house number/location. The larger side, which contains educational messages about malaria and bed nets, is given to the household to bring to the distribution. The smaller side remains in the book for record-keeping purposes. In some districts, volunteers make a mark on the wall of registered houses; these may wash off in approximately a month (depending on the season), but will last during the few days required to complete the registration process.

Volunteers are expected to register 50 households per day and to spend five days doing the registration. Households are informed that the community will be notified when it is time for the distribution. If the date and/or place of the distribution is known, as was the case in the Northern Region, volunteers write this information on the back of the recipient's half of the coupon.

According to NMCP policy, if a household does not bring a coupon to the distribution point, it cannot obtain nets.

Step 6 – Calculation of net allocations/Compilation of household registration data

Coupon books are collected at the sub-district's GHS office, where each household's number of nets is calculated by dividing the number of people in the household by two. Odd household numbers are rounded up. Household allocation numbers are recorded in the 'nets allocated' field of the record-keeping portion of the coupon. Only this side of the coupon has 'nets allocated' and 'nets given' fields. Total number of people registered and total number of nets allocated are indicated on the inside cover page of each registration booklet. Summaries of population registered and nets allocated for each community, sub-district and the district are made.

Step 7 - Pre-distribution validation

In all three regions with AMF-supported distributions, all coupons underwent a pre-distribution validation process by the NMCP and non-profit partners.

At the community level, total estimated nets (based on 2010 census data) are compared to the total number of nets allocated during registration. This gives a sense of the variance between these figures; communities with more than 2% variance might be spot-checked.

The validators also look for other potential problems with the coupons, including:

- illegible entries
- households with over 20 members
- mismatches between the numeral and text versions (both are required) of figures in the 'nets allocated' field
- miscalculation of figure in 'nets allocated' field

If there are problems, the representative follows up with the volunteer who collected the data. The volunteer might return to the household to correct mistaken entries; if not, the representative will do so in person, or if that is too costly, by phone. If the information cannot be verified or corrected, the coupon is discarded.

Monitoring of registration process by Episcopal Relief & Development and ADDRO

As it had done in its Malawi distribution, AMF had planned to double-register 5% of the population in order to verify the data collected by GHS volunteers during the initial registration period. According to Episcopal Relief & Development, it was not possible to do this, as the NMCP did not give AMF access to the coupon data prior to the distribution phase. However, AMF will eventually have access to all of the information stored in the coupon books as AMF is putting the paper-based (coupon) information for all households in Northern Region, Greater Accra and Upper West into a database (see page 11).

Instead, Episcopal Relief & Development and ADDRO carried out "light monitoring," and considered themselves "embedded" in the pre-distribution and distribution work. Monitoring activities included:

- **Attending meetings**, including planning meetings at the national level, as well as a sample of district meetings and training sessions. This was done to observe whether activities were proceeding according to the NMCP's checklist and, if there were issues, to follow up with the NMCP.
- **ADDRO monitors observed the registration process** in a randomly selected sample of 50% of the 20 districts in the Northern Region and all districts in the other two regions. Names of all of the sub-districts in these districts were written on slips of paper and randomly selected. Episcopal Relief & Development/ADDRO reported that it did not skip any of the randomly selected districts, even those that were far away. The order of sub-district visits was determined by what made sense geographically.
 - Monitors called the supervisors before arrival and visited some households to see whether they were aware that registration was happening in their area that day; almost everyone was aware.
 - Monitors also observed the work of multiple community-based agents (CBAs); sometimes, they would do a cross-check by performing this task without the supervisor. They listened to the CBA's conversations with households, verified that the correct information had been recorded in the book, and addressed any issues with the CBA. They then went back through the route traveled by the CBA to ensure that households that should have been registered were registered, and that the coupons had been correctly filled out. This process is facilitated by the practice of marking registered houses. Monitors also asked households if they were aware of the date and location of the distribution.
 - Monitors met with supervisors, analyzed completed coupon books to identify any problems, and filled out forms summarizing their daily observations.
 - Monitors might address issues by:
 - Debriefing with supervisors at the end of the day, so that learnings could be applied to the next day's work;
 - Communicating directly with CBAs if they encounter the CBA before meeting with the supervisor;
 - Observing CBAs without informing the supervisor, if they observed a number of issues the previous day.

Observations

While the monitors did not find any pervasive issues in the registration process, they did identify some isolated problems (e.g. some households being missed during registration, some incorrect data recorded). Common errors included (from most important to least important issues):

- **Important data missing (2.4% of records):** Data for one or more of the following: number of nets given (both numeral and text versions of figures, both of which are required), serial number, number of nets allocated, number of people in household, name of household head. This information is important as it is required to identify a household, allocate and distribute nets. (97.6% of household records (470,016 of 481,460) had the information necessary to identify, allocate and distribute nets.)
- **Unimportant data missing (46%):** Telephone contact information (largely), household location information. Telephone numbers are not key data for the correct assessment and distribution of nets so this is not a key issue. Telephone numbers were missing, incorrect, or incomplete. Sometimes, household members could not recall the correct phone number. This was relatively unsurprising to Episcopal Relief & Development as not every household has a telephone (usually mobile) number.

Community sensitization activities

In the period leading up to the distribution, community sensitization activities are implemented to provide more community "ownership" of the program and make people aware of the distribution date and location. Activities might include:

- Theatrical presentations
- Placing posters in the local health center and child welfare clinics
- Playing a gong to announce the upcoming distribution or on the day of the distribution
- Making announcements at churches and mosques
- Making announcements on local radio stations and information vans

Phase 2 – Distribution

Steps in the distribution process

1. Beneficiaries walk a short distance to their distribution point. One staff member employed by GHS and at least one GHS volunteer are stationed at each distribution point; there are never just two GHS volunteers.
2. Before giving out each net, the distributors rip the packaging to help prevent reselling.
3. Distributors gather together groups of recipients in order to transmit educational messages.

4. The nets are distributed. Distributors make sure the recipients' coupons (brought by recipients) match the registration copies (brought by distributors) and make a mark on each side. The recipient's coupon is returned to them. Distributors also have a tally sheet with rows of 5 bubbles, and mark off a bubble for every net they give out. Distributors do not have an opportunity to sit or take a lunch break during distribution days.

The distribution site closes at a specific time each evening. Recipients still in line are given numbered cards to enable them to re-enter the line at the appropriate place the next day.

We were informed that beneficiaries are allowed to pick up nets for other households, although one community member told us that when she gave her coupon to a neighbor to pick up nets for her, the neighbor was refused and informed that the person whose name was on the coupon had to come herself.

One-month grace period

After the distribution, there is a one-month grace period during which households can bring their coupon to a local health center, sub-district office, or other central location and obtain their nets. During this period, nets are usually stored at the sub-district level. These households might have missed the distribution for a number of reasons, including going to the wrong distribution point.

Individuals who have lost their copy of the coupon can also request assistance during this period. They are advised to look at the serial numbers of their neighbors' coupons so that the appropriate coupon book, and the registration copy of their coupon, can be located. If they are not too busy, distributors might address these cases during the distribution itself.

If a household was not registered in the registration phase, they cannot obtain nets.

In Ada West district, Sege sub-district, GiveWell staff were told that many people came to obtain nets during the grace period because they had missed the distribution. Only one of these individuals, an elderly woman, had misplaced her coupon.

Left-over nets

After the one-month grace period, most left-over nets are transferred to continuous distribution channels. ADDRO believes that distributors would not consider misappropriating nets because communities would complain if they did not receive the appropriate number of nets.

Post-mortem meeting

At the end of the Northern Region's distribution phase, national level monitors, representatives from the region, and other stakeholders attended a "post-mortem meeting." Various topics were discussed, including:

- Initial quantities of LLINs received by the districts.
- LLINs expected to be received by the districts after the pre-distribution validation.
- District-level adjustments to LLINs received (if any)
- Quantities of nets distributed so far (at the time of the meeting)
- Social mobilization activities in the districts
- Best practices observed during the distribution
- Challenges with the distribution, and actions taken to address the challenges

Post-distribution validation

After the grace period, coupon books are returned to the district level for the post-distribution validation process. This is carried out by the NMCP and non-profit partners, and involves analyzing the coupon books in order to:

- Check for coupons that were not crossed out; for example, this scenario might arise if a household did not pick up their nets.
- Check that the number of nets allocated matches the number of nets given.
- Add total values for household size, nets allocated, and nets given, and record them on the inside cover of each coupon book.

In Greater Accra, post-distribution validation tracing was implemented for a random sample of households. The same process is planned for the Upper West Region. The Global Fund imposed this requirement.

Monitoring of the distribution process by ADDRO

ADDRO has two or more monitoring teams per region; each of these has a vehicle. The NMCP has 2-3 evaluators per district; each has a vehicle. ADDRO representatives attend the NMCP planning meeting. ADDRO monitors introduce themselves to the municipal health directorate, and are taken by a representative to each distribution point in a sub-district to ensure that their presence will be accepted by those whose work they will be monitoring.

In the Greater Accra Region, the malaria focal person for the district took monitors to a distribution point. From there, they went to other distribution points in the sub-district. They asked the focal person which areas were the least accessible and attempted to focus on those; in total, they visited 60% of the distribution points. They had the distributors' phone numbers so they could ask for directions if necessary.

Monitors verified that:

- nets were being distributed
- distributors were using the tally sheet
- nets were kept in the shade
- coupons were marked when nets were distributed
- a Ghana Health Services staff member was present
- distributors were giving helpful messages to the recipients

NMCP monitors were also present during the distribution.

Observations

Monitors did not observe any major problems with the distribution process. Their observations included that:

- A few people came to the distributions without coupons.
- Ghana Health Services staff were present at all distribution points.
- There were few cases of distributors forgetting to open the packages.
- There were isolated cases of distributors wanting to do the record-keeping after handing out all of the nets, rather than during the process itself; for example, some were taking notes on a blank sheet of paper instead of filling out the necessary paperwork as nets were distributed. Monitors told them to follow the proper recordkeeping procedures in order to not forget the information.
- Recipients, especially those in rural areas, were eager to receive nets. In some cases, they lined up at 6 a.m. for a distribution that was set to begin at 8 a.m. Some recipients feared that nets would run out, which contributed to large turnouts and, sometimes, chaos on the first day, or the first few days, of a distribution. This fear might have been due to recipients only seeing a day's worth of nets at each site, as daily allocations were delivered to the site each morning. No distribution point ran out of nets, on a daily basis or overall, as supervisors could move them between distribution points as needed, and each district had been allocated the proper amount based on registration numbers.
- Some disagreements occurred in line-ups, for example, when men would try to cut in front of women. In one location, pregnant women and nursing mothers were directed to a priority line that was served more frequently than the regular line, which was often much longer. For example, one person in the priority line was served for every three people in the regular line. This led some women to borrow babies from other women. Sometimes, there were separate lines for men and women. Distribution staff, chiefs, and other community leaders helped maintain order in these types of situations.
- As 2016 is an election year in Ghana, some people believed that nets were an attempt to buy votes. These accusations were more frequently directed

towards the incumbent party. ADDRO monitors emphasized to recipients that this was not the case.

- Some nets distributed in the Northern Region were not AMF nets. As that distribution began before AMF nets had arrived in the country, some of the nets that were distributed were "loaned." They were packaged in bales of 50. As a result, some AMF nets were later used in another area. Some people expressed dissatisfaction with the non-AMF nets because they were made of nylon, which they felt resulted in a rougher texture and were "too warm."
- At one distribution point, distributors were not crossing out the coupons correctly. This allowed some recipients to obtain their nets, re-enter the line, and obtain more nets.
- Many recipients complained about the decision to allocate one net for every two people.
- In one district, those in charge of social mobilization were not able to carry out the necessary activities because they would have occurred during a religious period during which loud noise was not appropriate, and because the distribution dates kept changing.
- At some distribution points, distributors stayed an extra day to serve those who had not yet received their nets. For example, they might help track down the coupons of those who had lost their copies of the coupon, or call individuals who had not yet redeemed their coupons.

Location and storage of coupon books throughout the process

After the registration phase, coupon books are aggregated at the sub-district level for the pre-distribution validation. Coupon booklets remain at the sub-districts for the point distribution exercise. After the distribution exercise, the coupon booklets are validated (post-validation exercise). After completing the validation for each community, the validators put all the coupon booklets for each community into large brown well labelled envelopes - name of community boldly written on it, and organized into large labelled bags (one for each sub-district). During the pre- and post-distribution validation processes, they are stored at the sub-district level, and used during the distribution exercise. Once the post-distribution validation process is complete, they are transported to a central data center.

Data entry

As part of the agreement between AMF and the NMCP, AMF secured agreement from the NMCP to allow all paper-based information from the households to be put in electronic form. This is the first time this has ever been done in Ghana. AMF considers this an important activity to increase levels of accountability associated with the distribution. AMF is paying for this work. The data center is rented by ADDRO, who manages the data entry process. ADDRO has had a positive experience with the data center. There are approximately 60 data entry staff, some of whom are

recent graduates of Master's programs. As it is difficult to find work in Ghana, it is generally easy to hire for these positions.

All of the data from each coupon is entered into the computer using a web program created by AMF, and is easily downloadable in an Excel spreadsheet. The software allows Episcopal Relief & Development, ADDRO, and AMF staff (in particular its Head of Technology, Andrew Garner) to watch for odd data patterns that might be caused by data entry problems. For example, data clerks' actions can be analyzed to determine whether they are frequently deleting or editing data.

As it might be confusing to use a 5% figure in too many contexts, AMF and Episcopal Relief & Development decided to run verifications on 6% of the data entered by clerks. This data is reentered by another individual and checked against the original data. If there are discrepancies, the coupon book is verified.

While the data entry step is an AMF requirement, Episcopal Relief & Development expects that the output might be helpful for planning future distributions and facilitate the availability of information, such as the number of nets distributed per district. As this is the first time this software system is being used, data from previous distributions was not used to plan the current distribution.

AMF believes the data entry system will enable it to check on Episcopal Relief & Development's progress without having to consult with, and take up additional time, of individual staff members.

Monthly visits

In most countries where it works on LLIN distributions, Episcopal Relief & Development supports point distribution with monthly household follow-up. In this distribution, ADDRO will manage this process, which will take place during an 18-month period beginning approximately one month after distribution, followed by quarterly visits thereafter until the end of the last post-distribution check-up. ADDRO will recruit and train volunteers to conduct monthly household visits to provide additional malaria prevention education, including how to care for the nets, and quarterly visits to ensure that nets are properly installed. These types of checks are less invasive than the 'hang-up' distribution process, as they can generally be done from the front door without having to enter recipients' sleeping spaces. These visits also involve education and data collection on other health topics and interventions.

Post-distribution check-ups

In addition to monthly visits, ADDRO, rather than the GHS, will be implementing a series of post-distribution check-ups (PDCUs), which will begin 6 months after the conclusion of the distribution and each 6 months thereafter for a total period of 2.5 years. The process is expected to take seven days every six months.

PDCUs use the '100 and 5 percent' model, in which 100% of the data is collected by volunteers, and then different enumerators with different training verify 5% of the data. Enumerators, who are literate and independent of the health system, are paid; volunteers receive the 10 GH¢/month cash incentive.

Episcopal Relief & Development and ADDRO will advertise on the radio for enumerators. They expect it will be easy to hire enumerators because there are not enough jobs for highly skilled people, and recent graduates are good candidates for these positions. To be hired, enumerators will have to pass an interview and a test.

In PDCUs, volunteers ask to physically check the quality of each net in the household and verify whether it is correctly hung. They ask how many people slept under each net the previous night. Volunteers and enumerators do not attempt to observe people sleeping at night.

ADDRO tries not to send enumerators to their own communities to avoid data being manipulated in favor of their community members. As enumerators will generally not be working in their home communities, they might face challenges finding and navigating their way through communities. In the Greater Accra Region, some communities are not aware of their designated name. Enumerators have house numbers, and sometimes have phone numbers; supervisors can also help them locate households.

Funding

Most of ADDRO's implementation costs for this distribution, including staff time, transportation, data center costs, and volunteer incentives (the 10 GH¢/month incentive equates to roughly \$2.50/month per volunteer) are being covered through a combination of funding from AMF along with a cost share from Episcopal Relief & Development. Where AMF is covering the costs of an activity, such as the PDCUs, Episcopal Relief & Development passes that funding from the AMF grant along through to ADDRO. In cases where AMF does not cover expenses, such as costs related to monthly monitoring visits prior to the PDCUs, Episcopal Relief & Development provides funding directly to ADDRO from other sources. Episcopal Relief & Development does not pay ADDRO for the use of existing office space or for equipment, such as motorbikes and laptops.

If able to access additional funding, ADDRO would like to increase the stipends of volunteers conducting monthly visits; it appears that this is primarily because ADDRO would like them to receive a fairer compensation amount.

Prior to the distribution, AMF provided Episcopal Relief & Development with a detailed budget template, and requested that it include all necessary items, including proportional pay for staff time spent on AMF activities. Due to the level of detail required, this was a relatively challenging task. Episcopal Relief & Development had to make subsequent funding requests for certain items that were

left out of the initial budget, such as the cost of packaging and transporting coupon books to the data center; AMF approved this request.

Community visits

Process for randomly selecting communities to visit

Episcopal Relief & Development informed us that we would have enough time to visit three out of the twelve districts in the Greater Accra Region where AMF-funded nets were distributed. It gave us a numbered list of the districts, and we used a random number generator to choose three of them. These ended up being two semi-urban districts, Ga South and La Dadekotopon, which we visited on Day 3, and one rural district, Ada West, which we visited on Day 4.

For each of the selected districts, Episcopal Relief & Development gave us a numbered list of sub-districts. We used a random number generator to choose one in each district. Episcopal Relief & Development then gave us a list of communities in the chosen sub-districts, and we used a random number generator to choose two in each sub-district. Due to travel time considerations, it would have been difficult to visit different communities in different sub-districts on the same day.

There ended up being two deviations from a purely random selection of households:

- We got lost on the way to the Bortianor sub-district in Ga South, so we only had time to visit one community in that sub-district, New Bortianor, instead of two. The other community we randomly chose but did not visit was called "Block Factory."
- We did not use a consistent process for randomly choosing households. We tried to start at a house and visit every fifth house after that, but this was challenging because it is not always clear which buildings are houses and which are not.

Semi-urban community visits

GiveWell staff visited 13 households in Ga South and La Dadekotopon districts. The Greater Accra distribution began on July 5th and lasted approximately one week; we are not sure exactly when the distributions in these two communities took place.

Main observations

None of the households we visited were sleeping under an AMF net: some were sleeping under an older net, and some had received AMF nets but were not yet sleeping under them.

We did not ask a consistent set of questions at each household, but tried to cover the main parts of recipients' experience with the process. Some recipients said they

received a net and plan to hang it, but have yet to do so. Discussions also revealed significant confusion about basic net educational messages.

The first community we visited was New Bortianor in Bortianor sub-district of Ga South, an area near the ocean with a lot of construction of large houses, and with many gated houses. It seemed relatively suburban, and there was a Western-looking mall relatively nearby. The current residents might have been involved in the construction projects, or might have been a combination of construction workers and long-term residents. They did not seem wealthy. Residents' experiences with registration, receipt and use of nets varied considerably, and did not appear to follow a specific pattern.

The second and third communities we visited in Tenashie sub-district of La Dadekotopon district were adjacent to each other. These communities seemed semi-urban, with dirt roads, houses and shops placed close together, and smaller alleys leading to courtyard-like openings with a pocket of facing houses. House construction materials varied, and some houses had gates. Residents told us that the area has a significant mosquito problem which limits outside activities after dark, and pointed out open gutters. Despite these concerns, some were also reluctant to use nets.

Rural community visits

In Ada West district, we visited the Sege sub-district, which is the district capital of Ada West. We were accompanied by Akumatey Tetteh Kwesi, a Disease Control Officer. As the district's post-distribution validation process was still ongoing, Mr. Tetteh was waiting for a meeting with validators; he delegated that meeting in order to accompany us.

The two communities we randomly selected to visit were Addodoadzi and Tugah/Agbenyagah. We did not end up visiting Tugah/Agbenyagah: Mr. Tetteh told us that we should visit Luhuour on the way to Tugah/Agbenyagah, but after our visit to Luhuour, we no longer had enough time to continue on to Tugah/Agbenyagah.

Our household selection process was not systematically random. We walked around different parts of the communities to find households, but were biased towards choosing people who were sitting outside of their houses.

Mr. Tetteh described some challenges of the distribution process:

- The validation process and coupon work can be tedious.
- Some residents are more difficult to reach. For example, there are some fishermen in the community who live alone; they received nets.

Main observations

Our main observations from visiting two rural communities included:

- All eight households we talked to registered for and received nets from the 2016 AMF distribution.
- One household with five members apparently only received two, rather than three, nets.
- One older woman complained that the 1 per 2 people net allocation policy did not work well for her household as she lives with her adult sons.
- Four households told us that everyone in their household had slept under 2016 AMF nets the previous night.
- At one household, a man told us that he did not sleep under an AMF net, but that his wife and children did.
- Other households were still using old nets, and hadn't yet hung up the new ones; one exception was a household that had hung up, but later removed, the AMF nets in order to re-plaster the wall of their house.
- People we talked to generally seemed excited about bed nets. Everyone we talked to had previously owned bed nets before this distribution. Most had been procured through the area's last mass distribution four years ago, but some had been purchased or received from a clinic more recently.
- Unlike in the urban areas, we did not hear any complaints about nets irritating users' skin.

In Addodoadzi community, we observed that some people had bought cloth and made their own bed covers.

We were not able to visit some households in Addodoadzi because the residents were working on farms.

In Luhuour community, we saw some teal-blue nets (the same color as the nets from the recent AMF distribution) being used as fencing for vegetable gardens. We are uncertain whether these nets were from the recent AMF distribution or not.

A volunteer we spoke with in Luhuour said that the nets easily accommodate two people sleeping under one net, and that recipients like the nets. He described the rule of registering people 70 and older separately; it was not clear to us from speaking with households that this rule was being applied consistently. He also described some challenges he encountered during the process:

- When trying to register people who lived in a compound, there were some households where no one was present. He registered those where someone was present, but as they did not know their neighbors, they could not tell him how many members were in the other households.
- People thought the allocation would be one net per person.
- People wash and dry nets in the sun, and he finds it challenging to educate them to do otherwise.

Mr. Tetteh explained that residents of Lahuour would rather keep unused nets for the future than give or barter them to other households because nets are expensive and rare, residents have limited access to opportunities to buy nets, and distributions are unpredictable.

Meeting with the Greater Accra Regional Health Directorate of the Ghana Health Service

- Dr. John Yabani – Acting Deputy Director
- Dorothy Abudey – Regional Malaria Focal person

Social mobilization activities

Registration for the Greater Accra distribution took place during a week-long period in May 2016. The following activities occurred to publicize the registration:

- The regional minister did a press briefing in the Regional Coordinating Council Hall.
- At the district level, letters were sent to schools, churches, and mosques.
- Radio and TV programs in different languages were created for and broadcasted in different radio and TV stations.
- Announcements were made on loud speakers in market information centers.
- In rural areas, announcements were made by town criers and by chiefs, who also used gongs.
- Street Announcements were made by mobile vans in the various districts.

Location of distribution points

When deciding where to locate distribution points, the Greater Accra GHS considered safety, costs (for example, the cost of renting a warehouse) and proximity to other distribution points. They also selected 12-13 pre-positioning points in each distribution area.

The primary challenges faced in the implementation of this distribution included:

- **Delays:** Due to the timing of a weekend, it was difficult to find enough trucks and workers to move the nets from a central location to districts on time. The Greater Accra GHS addressed this by having some trucks deliver nets to districts through the middle of the night. Some points still did not receive nets on time; those distributions were delayed by one day.
- **Loss of nets and coupon books:** A truck tipped over while driving in the middle of the night, and the nets and coupon counterfoils (the side of the coupons left in the coupon books after registration) it was transporting fell

into the mud. The nets were dried; those that were too muddy were unusable, but some were recovered. Some of the coupon counterfoils were ruined. One representative commented that the extent to which roads are maintained can affect net distribution work.

- **Policy of one net per two people:** Some recipients did not understand why two people should have to share one net.
- **Theft attempt:** At one distribution point, a community member attempted to steal nets. The police intervened, and the Greater Accra GHS responded by moving the distribution point to a more secure location near the police station.

The Greater Accra GHS told us that they expected that rural areas were likely to have a higher uptake level of nets than semi-urban areas.

*All GiveWell site visit notes are available at
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