



Indoor Residual Spray & IEC/BCC Campaign

Borno State, 2021



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Reducing Deaths and Suffering from Tropical Diseases

Acronyms

AOG – Armed opposition groups

BSA – Borno State Agency for humanitarian coordination

CCCM – Camp Coordination Camp Management

HH – Household

IDP – Internally Displaced Person

INGO – International Non-Governmental Organization

IVM – Integrated vector Management

IRS – Indoor Residual Spraying

LLIN – Long-Lasting Insecticide Treated Net

LSM – Larval Source Management

MOH – Ministry of Health

NEMA – National Emergency Management Agency

NMEP – National Malaria Elimination Program

PEHO – Principal Environmental Health Officer

PPE – Personal Protective Equipment

SBCC – Social & Behavioural Change Communication

SEMA – State Emergency Management Agency

SMEP – State Malaria Elimination Program

SMOH – State Ministry of Health

SPHCDA – State Primary Healthcare Development Agency

WASH – Water, Sanitation and Hygiene

WHO – World Health Organization

1. Introduction

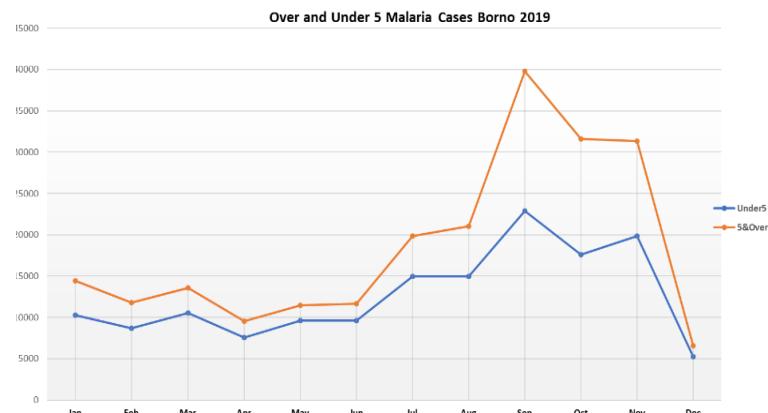
In Borno state, malaria is the number one cause of morbidity and mortality with peak disease burden during and immediately following the rainy season between June-September. The LGA of Monguno bears the brunt of this worsening health crisis, having the highest proportional rates of malaria in the state, while Maiduguri and Jere accommodate the largest number of IDPs.



Malaria rates over time in Borno State – Blue Arrows illustrates link between onset of rainy season and sharp rise in malaria rates

Reported cases of malaria in Borno State increased by almost 10% from 279,389 in 2019 to 307,175 in 2020. World Health Organization (WHO) Early Warning, Alert and Response System (EWARS) and Integrated Disease Surveillance and Response (IDSR) estimates indicate that more than half of recorded deaths in the BAY states in 2020 were due to malaria, more than all other causes of death combined, including cholera, measles, hepatitis and key non-communicable diseases.

While endemic, it is also clear from that malaria morbidity is most significantly experienced during the rainy season from July-September in Borno State. Fresh surface water from rainfall creates breeding grounds for the anopheles malaria vector, causing these spikes in recorded malaria rates. Transmission continues to increase annually, highlighting the urgent need for intervention. Furthermore, the prevalence of malnutrition amongst at-risk communities and IDPs causes higher rates of infection, more severe and dangerous symptoms, and complications in treatment. This can be illustrated clearly by the fact that adults are contracting malaria at far higher rates than children under five in a region where they would normally have developed a natural immunity, and consequently underlines the need for effective disease prevention strategies that target all demographics.



Malaria rates throughout 2019 in Borno state – blue line shows cases in children under 5, orange line shows cases in people aged 5 and over.

The *Anopheles* mosquito that spreads malaria tends to bite humans inside their homes in the evening/night whilst they sleep. This vector behavior lends itself to effective large-scale protection interventions. Indoor residual spraying (IRS) is one the important component of Integrated Vector Management (IVM) that shows high impact especially in emergency context where populations are more exposed to vectors. IRS is a well proven and recommended malaria prevention approach using safe and effective WHO approved insecticides. When over 80% of structures in a community are sprayed correctly, the risk of malaria infection decreases by over 60%. It is the most rapid prevention option for malaria.



The *Anopheles* mosquito spreads malaria

Between February and July 2021, The MENTOR Initiative conducted IRS (Indoor Residual Spray) and IEC/BCC campaigns (Information Education and Communication and Behaviour Change Communication) targeting 386,538 people in Monguno, Maiduguri, and Jere. This included 116,537 IDPs across 12 camps and 58,000 host community members in Monguno, as well as 212,520 IDPs living in 17 camps in Maiduguri and Jere.

2. Planning meetings

In order to implement successful IRS and IEC/BCC activities in the target locations, planning meeting were held at the National Malaria Elimination (NMEP) office, in Abuja on 25th March 2021. MENTOR presented its plan of activities, and it was agreed that three NMEP monitoring visits would be conducted before, during, and after the IRS campaign, and that a further planning meeting will be held at the state level.

The state level planning meeting was held on 14th and 15th April 2021. MENTOR provided a comprehensive presentation of the needs and planned activities for IRS/IEC BCC campaigns in Borno state. Participants from NMEP, State Malaria Elimination Program (SMEP), National Emergency Management Agency (NEMA), State Emergency Management Agency (SEMA) and other key stake holders attended the meeting. The main focus of these meetings was; Supportive role of NMEP and SMEP, comprehensive advocacy for IRS implementation, recruitment procedures and criteria of the IRS workers, MENTOR to arrange the IRS Training of Trainers for the state and Local Government agencies (LGAs) focal persons (FPs), sub-committees and their roles, involvement of the MoH monitors (both NMEP and SMEP) during the IRS campaigns.

2.1 IRS advocacy

As IRS is the new intervention in Nigeria, it was essential for comprehensive advocacy to be carried out to ensure community understanding and acceptance at all administrative levels (LGAs, wards, camps and host communities). To address this, meetings were arranged with NMEP, SMEP, Health Commissioner, NEMA, SEMA, Borno State Agency (BSA), influential people, traditional rulers, religious leaders and other key stakeholders, Primary Health Care (PHC), Role Back Malaria (RBM), LGA chairman, IDP leaders, host community leaders (chairman and village heads), camp coordination and management, as well as youth and women groups (in camps & host community). Through these meetings

MENTOR was able to effectively communicate both what IRS is and how it will help those that receive it, and thus established a significant understanding and trust with the community.



NMEP, SMEP, and MENTOR teams during advocacy session with Honorable Health Minister of Borno state

Similarly, comprehensive and effective supervision was required as a result of the large IRS teams that MENTOR would be operating. Effective supervision is essential for ensuring the quality of IRS, sprayer safety, maintenance of spray pumps, quality data recording, as well excellent acceptance and coverage rates etc. To address this need, SMEP & LGA FPs were involved in the monitoring and supervision of campaigns. They were therefore actively involved in solving daily challenges during/before IRS campaigns. In addition, several

meetings were also carried out with the SMEP Program Manager and agreed with the 17 state and LGA focal persons for advocacy and monitoring of IRS implementation.

2.2 Pre IRS-Mobilization

In close coordination with the SMEP focal persons, MENTOR selected 2-3 people in each target camp to conduct 5-day mass awareness campaigns to promote an understanding of IRS, malaria, and good hygiene practices.

Well-designed IEC/BCC flyers, posters, and banners were developed in close coordination with SMEP and were disseminated in the target IDP camps and host community. Megaphones were also provided to community mobilizers to facilitate their ability to communicate to larger numbers of community members. Such advocacy campaigns were key in ensuring community acceptance of this new intervention, and in ensuring that coverage exceeded the 80% rate required to provide strong community protection from malaria.



Pre-mobilization IEC/BCC in Camps

2.3 IRS Training-of-Trainers

Following one of the agreed action points in the planning meeting with the state and NMEP authorities, a comprehensive IRS training, in line with the WHO methodology, was arranged by MENTOR in Dijuma hotel for the SMEP, SMOH, IVM and LGAs Focal Points. The following 41 members attended training and it is encouraging to note that there was significant improvement in IRS knowledge. The training evaluation shows that the average pre-test score was 26% while the average post test score was 63%. The number of participants from the different departments are shown in the below table-1. Trainings such as these are key to developing capacity in the communities where MENTOR conducts its interventions.

Table-1: Number of participants attended 2 days IRS Training of Trainers

Department	Number of Participants
SMOH	3
PEHO	1
SMEP	4
RBM	25
SPHCDA	2
SEMA	1
INTERSOS	3
IVM	1
SBCC	1
Total	41

2.4 Pre-IRS planning

After the initial advocacy and awareness campaigns were completed, several planning meetings were carried out with SMEP from 15th to 23rd May 2021. Throughout these meetings, work plans were revised based on the latest population figures of the target camps and communities in Monguno, Maiduguri, and Jere. The plans reflected the following necessary information/activities.

- Campaign start and end dates
- Community mobilization and sensitization schedules
- Campaign phases
- Target areas: camp and host community
- Total Population to be reached
- Number of estimated household/structures to be spread in each camp and in the host community
- Number of IRS teams required per camp (Supervisors, Mobilizers, and Sprayers)
- Number of spray pumps, amount of insecticide, and other equipment/materials required for the campaign
- Numbers of pre-IRS mobilizers required per camp for 5 days pre-IRS sensitization

3. IRS Training

A total of 495 IRS workers were effectively trained in Monguno, Maiduguri, and Jere on proper IRS procedures according to the WHO standards. The main topics included: IRS methodology, spray swath, distance between the nozzle and the sprayed surface, spray velocity, care and maintenance of spray pumps, spray operator safety, effective spray mobilization, record keeping, accurate monitoring and supervision. Sufficient time was allocated for the practical sessions to ensure the accurate spraying practices.



IRS Team Trainings

All participants were carefully briefed on MENTORs Code of Conduct and safeguarding/PSEA policies and signed MENTORs code of conduct.

3.1 IRS worker selection criteria and team compositions

MENTOR adopted the following criteria for the selection of IRS teams in line with the WHO recommendations.

- They should be from the same community
- They should be able to read and write
- They should above the age of 18 years and below 60 years
- They should be considered trustworthy
- They should not be pregnant or lactating
- They should not suffer from any chronic diseases

Selection of IRS teams was conducted in close coordination with SMEP Focal Points and camp management.

One IRS team composed of 5 spray operators, 5 mobilizers/recorders and 1 supervisor. Using full Personal Protective Equipment (PPE) the IRS operators were responsible for spraying according to the WHO methodology while the mobilizers/recorders were responsible for the mobilization of the house owners, providing important messages regarding IRS, malaria and promoting proper hygiene practices using well-designed pictorial flyers and posters. They also helped in the removal of household items and recording necessary information in the daily data forms. This included information such as: the number

of sleeping shelters, animal shelters, and number of male and female individuals. Mobilizers were also responsible in ensuring that children and animals stayed away during spraying, and informed the homeowners not to wash, plaster, or paint the sprayed surfaces for at least 6 months.

A supervisor was responsible for the supervision of 5 sub teams (5 spray operators and 5 mobilizers/record keepers) in order to ensure the correct procedures of IRS, proper record keeping and IEC/BCC were being upheld. They also helped in mobilization of the homeowner through communication of the benefits IRS would provide the community. They also reported to camp management and SMEP focal points for the support in mobilization/awareness in cases where community members refused to have their home sprayed.

Initially it was planned that a total of 50 sub-teams (50 mobilizers, 50 spray operators and 10 supervisors) were to be hired during different phases of the IRS campaigns, but due to the short program period the number of spray operators, mobilizers and supervisors was increased. In Monguno a total of 60 spray operators, 60 mobilizers/record keepers, and 12 supervisors while in Maiduguri and Jere a total of 70-75 spray operators and same number of mobilizers were recruited, with 14-14 supervisors.



Training of IRS workers in Maiduguri

4. IRS Campaign Monitoring

In order to ensure effective community advocacy, mobilization, sensitization, as well as effective implementation of activities, continual monitoring was carried throughout the implementation phase of IRS. MENTOR's prevention team, including the Prevention Coordinator, Senior Prevention Officers, Prevention Officers, as well as the Security and Liaison Manager were actively involved on a daily basis. The Prevention Coordinator, who took overall responsibility for prevention activities, made regular field visits and the Country Director also conducted random spot visits to ensure activities were implemented correctly.

One IVM officer and one LGA Focal Person of the respective LGAs who had already received IRS training and who were selected by SMEP were also actively involved in the selection of IRS workers, advocacy, awareness, monitoring of IRS training, and implementation of the campaign. A team of three key people (IVM specialist, IRS FP, and IT Officer) from the NMEP also visited the program activities on three occasions, as agreed in the original planning meeting. Once during the planning phase of the program, and twice during the active implementation of the IRS campaign assisting in the training, mobilization, advocacy, and implementation of the campaign.

An IRS monitoring checklist in line with WHO methodology was regularly used by the monitoring teams to ensure the quality of spraying, and identifying gaps in good time so that they could be addressed.

Similarly, checklists were developed for the door-to-door IEC/BCC activity to ensure all IEC messages were covered and that data was correctly collected on a daily basis. Each day data was verified by Prevention Officers, and then subsequently cross checked by a Senior Prevention Officer and spot checked by the Prevention Coordinator before being entered into a database. This also allowed for the daily monitoring of different IRS teams, allowing for problems to be quickly identified and solved as the campaign unfolded.

At the end of each day, a meeting was held between the MENTOR prevention team, LGA FP, SMEP FP and NMEP monitoring team (when they were available) and the IRS supervisors. This would provide an opportunity to discuss the daily performance and the spray teams, and discuss challenges and explore solutions to problems the teams were experiencing.



Ongoing IRS supervision by senior MENTOR staff



Household items outside an IDP shelter ready for IRS to be conducted

All of the above efforts that reinforced effective implementation all the way from advocacy and mobilization through to the spraying itself and monitoring of spray teams, with support from NEMA, SEMA, and coordination with MoH (SMEP and NMEP) and other relevant authorities both in camps and host communities contributed to The MENTOR Initiative achieving excellent coverage and an acceptance rate of 99% in targeted communities.

5. Fludora Fusion Insecticide for IRS campaign

Fludora Fusion is a WHO recommended new class of insecticide manufactured by Bayer and was used by MENTOR for the purpose of this IRS program. Fludora Fusion combines two unrelated modes of action (Clothianidin (500 g/kg) and deltamethrin (62.5 g/kg), providing optimum effectiveness under conditions of insecticide resistance. It comes as powder formulation in the form of water-soluble sachets of 100g per 10-liter pump. It is tested product and proven effective against >12 resistant strains of mosquitoes that expressing resistance mechanism to organophosphate, carbamates, and pyrethroids in 16 countries. Depends on the type of surfaces, its residual effect varies from 6-12 months. Water soluble sachets provide many benefits as they are easier and safer to transport and store, as well as being simpler and safer to use for spray teams.

6. IRS implementation

6.1 Monguno IDP camps

IRS implementation was successfully carried out in 3 phases to cover all 12 IDP camps in Monguno by using 12 teams (60 sub teams) that comprised of 60 Spray Operators, 60 mobilizers/recorders, and 12 supervisors. The teams reached the 12 IDP camps through a phased approach. A total of 27,699 houses were sprayed out of 28,626 available houses meaning there was an excellent overall coverage rate of 97.76%, and an acceptance rate of 97.84%. A total of 123,433 individuals' homes were sprayed (54,097 males and 69,336 females). A total of 5,508 Fludora Fusion sachets were used to cover all the 12 camps with average of 5.03 houses sprayed per sachet. With an original target of 116,537 people to be reached with IRS this means that MENTOR achieved 106% of its original target in Monguno camps.

Similarly, a total of 7,545 houses out of 7,580 available houses were sprayed in the nearby host community with excellent coverage rate of 99.54 and acceptance rate of 99.5%, only 35 households refused, with refusal rate of only 0.5%. A total 59,316 people's homes were sprayed (27,630 males and 31,686 females) with a total of 1,500 sachets of Fludora Fusion were utilized. The initial target was 58,000 population IRS in the host community while the actual coverage achieved was 59,316 meaning 102% of the original target was reached.

It is concluded that a total of 182,749 individuals were covered in both the IDP camps and host community of Monguno with overall coverage rate of 97.3% and acceptance rate of 97.34%. A total of 7,008 Fludora Fusion sachets were utilized in all the IRS campaigns in IDP and host community in Monguno.

Door to door IEC/BCC was also successfully conducted to the sprayed houses by mobilizers that included messages regarding malaria, importance of IRS, care of sprayed surfaces and good hygiene practices.

The IRS campaigns (phases) started in last week of May and completed in the 2nd week of July. Summary of IRS achievements is shown in table-2.



IRS being applied to a shelter in Monguno

Table-2: Summary of IRS achievements in Monguno IDP camps and nearby host community

Name Of Camps	Houses Visited	Houses Sprayed	No Of Males	No of Females	Total Occupants	F-Fusion sachets used	Acceptance Rate	% Coverage
NRC 1 & 2 Camp	1067	990	1965	2834	4799	210	99.3	92.78
Stadium camp	851	802	2764	3925	6689	170	94.2	94.24
Kuya Primary school camp	3215	3074	7422	10111	17533	696	95.6	95.61

Government day secondary camp	766	721	1446	1813	3259	152	94.1	94.13
Fulatari Camp	1588	1491	3567	4225	7792	320	93.9	93.89
Veterinary Camp	699	661	1701	2294	3995	142	94.6	94.56
Gana Ali Camp	2544	2482	4738	6471	11209	435	97.6	97.56
Ngurno Camp	1190	1156	1835	2408	4243	229	97.1	97.14
Garderner Lowcost Camp	316	311	566	602	1168	64	98.4	98.42
GGSS IDP Camp	4913	4697	8361	10129	18490	840	95.6	95.6
Water Board Camp	5332	5286	9530	11640	21170	1050	99.1	99.14
GSSSS camp	6145	6028	10202	12884	23086	1200	98.1	98.1
Subtotal IDPs	28626	27699	54097	69336	123433	5508	97.84	97.76
Subtotal Host Community	7580	7545	27630	31686	59316	1500	99.5	99.54
Grand Total	36206	35244	81727	101022	182749	7008	97.34	97.3



IRS being conducted in IDP camps

6.2 Maiduguri and Jere IDP camps

IRS implementation was successfully carried out in 3 phases to cover 17 IDP camps in Maiduguri and Jere by using 14-15 teams (70-75 sub teams) that composed of 70-75 Spray Operators, 70-75 mobilizers/recorders and 14-15 supervisors. All IRS were workers recruited from the same camps they sprayed and a total of 3 training sessions for 3 phases of the IRS campaigns were arranged. A total of 34,930 houses were sprayed out of 34,944 available houses with excellent overall coverage and acceptance rates of 99%. A total of 230,351 individuals were covered (106,264 males and 124,105 females). A total of 7,119 Fludora Fusion sachets were used to cover all the 17 camps with average of 4.9 houses sprayed per sachet. The initial target was for Maiduguri and Jere was 212,538, and the total reached after spraying was complete was 230,351. This means 108% achievement obtained against the initial target.

Door to door IEC/BCC was also successfully conducted to the sprayed houses by mobilizers that included messages regarding malaria, importance of IRS, care of sprayed surfaces, good hygiene practices.

The IRS campaigns (phases) started in the 1st week of June and completed in the 2nd week of July. Summary of IRS achievements for Maiduguri and Jere are shown in table-3.



IEC/BCC activities being conducted in Maiduguri

Table-3: Summary of IRS achievements in Maiduguri and Jere IDP camps

Name of Camps	Houses Visited	Houses Sprayed	No of Males	No of Females	Total Occupants	F-Fusion sachets used	Acceptance Rate	% Coverage
El-Yakub Camp	520	520	1304	1340	2644	109	100	100
Kesa-Kura Camp	497	497	1504	1400	2904	87	100	100
El-Miskin 1 Camp	999	999	2538	2798	5336	189	100	100
El-Miskin 2 Camp	1623	1623	4542	4665	9207	335	100	100
Shuwari 5 Camp	1114	1112	3431	3884	7315	214	99.8	99.82
Madinatu Camp	1817	1807	5780	5455	11235	312	99.3	99
Madinatu Ext Camp	1367	1365	3983	4797	8780	222	99.5	100
Bakasi IDP Camp	6311	6311	20156	20453	40609	1352	100	100
Stadium Camp	2518	2518	7579	10017	17596	664	100	100
Teacher Village	4114	4114	10134	13991	24125	751	100	100
Doro Camp	1448	1448	3655	4859	8514	274	100	100
EYN Can Center	877	877	2327	2829	5156	255	100	100
Dala Standard	1133	1133	2990	3818	6808	234	100	100
Farm Center	4261	4261	16170	19047	35217	937	100	100
Fariya Camp	2905	2905	7810	9730	17540	501	100	100
Garba Buzu 1	1182	1182	5433	6370	11803	240	100	100
Garba Buzu 2	584	584	2148	2826	4974	121	100	100
Total	34944	34930	106246	124105	230351	7119	99.95	99.9

The total population covered in IDP camps in Maiduguri, Jere, Monguno and the nearby host community in Monguno was **413,100** compared to the original target of **386,538**. Thus, overall MENTOR achieved **107%** population coverage against the initial target.

6.3 Disposal of empty sachets and cleaning of IRS equipment

After each day of IRS activity, empty Fludora Fusion sachets were counted and collected by the MENTORs Prevention Officers from the spray teams and kept in a locked store room. At the end of the IRS campaigns with the support from MoH, all the empty sachets were burnt in incinerators. All the spray pumps and PPE were cleaned and overhauled properly and kept in the well-ventilated stores for future IRS program.

7. IRS evaluation

7.1 Entomological evaluation of IRS

In order to evaluate the impact of IRS on vector density, Pyrethrum Spray Catches (PSC) are being carried out in three camps that received IRS and one control camp in Maiduguri. The PSC (also referred to as flitting) is a useful mosquito sampling method for MENTOR's routine monitoring and evaluation (M&E).

Mosquitoes are collected by clearing out household items and placing a white sheet on the floor. Any gaps are plugged with material and the eaves blocked while making sure not to damage the shelter in any way. One person then sprays pyrethrum spray into the shelter through the eaves or any other gaps whilst walking around the outside of the shelter. Concurrently, a second person, making sure to wear a dust mask, sprays for ~10 seconds continuously in a clockwise rotation within the shelter until it is filled with a fine mist. The shelter is then left with the door closed and sealed for 10-12 minutes to let the spray take effect. After the 10-12 minutes have elapsed, the shelter is re-entered, and the sheets carefully picked up from the corners and carried outside. The contents of the sheets are then inspected and quickly separated by genera. The culicines are counted (disaggregated by sex and physiological status), recorded, and discarded. Vectors are then counted and recorded, and transferred to individual petri dishes allowing them to be labelled according to location, shelter, and date. These petri dishes are returned to the office for quality control and / or further analysis.



Mosquitoes being carefully identified during a routine PSC in Maiduguri

Throughout the process MENTOR is careful to engage with the community, not only to explain what is being done but also to take the opportunity to deliver the IEC that is conducted in line with the IRS

campaign. PSCs are an unusual activity that tends to generate interest from the community and so this offers a great opportunity to achieve strong community engagement and sensitization.

So far four PSCs have been conducted; once pre-IRS and three times post IRS (the first after one week followed by a monthly schedule). PSCs will be continued for at least 4-6 months post IRS to see the clear impact of IRS on mosquito density with the passage of time. The sampled shelters have their basic demographic information recorded along with location, whether it is pre- or post-IRS and date, and the species complex, sex, and physiological status of the collected mosquitoes are also recorded. Results will be published shortly after final collections are made and analysis of results is complete.

7.2 Insecticide Residuality Analysis

Fludora Fusion is trailed in almost 16 countries on different surfaces but in Nigeria this is the first time the product has been used. The WHO is currently seeking to increase the evidence base for IRS feasibility and impact in camp settings. This program is supporting that aim by conducting routine collection of sprayed swatches of material types (plastic sheeting etc) that represent those used in Maiduguri for temporary shelter materials. Three plastic sheets were sprayed on in the MENTOR compound, among which one is a control and two are sprayed with F-Fusion. One sprayed sheet was erected inside and the outside so that it is exposed to weather (sun & rain). 9 pieces of 20x20m² sections are cut from each 3 sheets (3 from top, 3 from the middle and 3 from the bottom), the first taken a week after spraying and concurrently on a monthly basis. These samples are being wrapped in aluminium foil, labelled, and refrigerated. Once sample collection is complete these will be sent to a laboratory partner in Europe for analysis. The laboratory will not know the order in which samples were taken to ensure an unbiased analysis of the samples and a fair test of insecticide residuality in these conditions.



Shelter samples being packaged before storage

7.3 Epidemiological analysis of IRS

With IRS campaigns now having been completed by mid-July, MENTOR will continue to coordinate with the health cluster in Borno in order to receive regular updates on malaria cases in areas where IRS was conducted throughout the rainy season. This will allow a comparative analysis to be made with previous years where no IRS was conducted to assess the impact that the intervention has had in the communities that have been sprayed. There are certain aspects of this which will complicate analysis, the largest being that malaria data is recorded by LGA and not by camp or by ward, this means that we will not be able to do like for like area comparisons because not all of a given LGA has been sprayed. However, working closely with health partners MENTOR aims to receive data from specific facilities in areas that have received IRS to allow for a more targeted form of analysis.

8. Challenges

As with any program implemented in such a complex and insecure context, there were a number of challenges that MENTOR faced in its efforts to provide these disease prevention activities. Here are some of the more significant challenges, and their requisite solutions, that MENTOR faced:

- A series of delays to the start of activities occurred due to the significant number of approvals that MENTOR needed to acquire from different state and national authorities. This ultimately meant that the campaign itself was conducted in a shorter time frame than originally planned, and so to achieve this MENTOR recruited and trained more spray teams to increase overall daily average coverage rates.
- While entomological monitoring was conducted, certain resources were not available in country for certain types of monitoring to be conducted. In its 2022 IRS campaigns, MENTOR plans to internationally procure the additional items it needs to conduct such entomological monitoring techniques.
- In some camps that was a lack of water for insecticide dilution and pumps cleaning, however MENTORs prevention team in support of LGA FPs and camp management solved the problem by arranging water carriers on a daily basis.
- Significant challenges were encountered when IRS was being conducted in certain camps in Jere. Many of the community believed that because they were being asked to remove their belongings temporarily from their home (to allow the shelter to be sprayed) that this was an effort to relocate them per the state governments relocation plans. This confusion was difficult to resolve, even with support from the NMEP, SMEP, and camp management authorities.

9. Additional Successes

Overall, the 2021 IRS and IEC/BCC campaigns in Borno were a resounding success, with incredibly high acceptance, high coverage, and significantly exceeding the original population target – this was achieved in a short time frame, with a limited budget, and in an insecure context that had never received IRS before.

While there were some initial challenges regarding acceptability, a standout aspect of the program for the team was the rapid uptake of IRS acceptance that occurred in communities that were receiving it. Significant advocacy and sensitization had been conducted to ensure that communities understood the benefit that this activity would provide, in particular the protection against malaria. However, in many instances, it was the immediate (and therefore in many ways the most noticeable) impact of IRS that was most appealing to these communities. Spray teams started their second and third day of spraying, they found shelters already emptied ahead of time for families to receive IRS. This was because those whose shelters had received IRS the previous days were telling people that the lice, mites, and other biting insects that had previously infested their shelter were dead, and that they finally were getting good nights sleep. In fact, in MENTORs endline survey 96% of households surveyed reported that the number of insects in their home after IRS had reduced.

This highlights an additional, often overlooked, benefit of these this intervention; it improved community dignity, and overall wellbeing, especially in IDP camp settings, by removing nuisance insects and improving the day-to-day comfort of these communities.

10. Conclusion

This was the first IRS campaign that has been conducted in Borno state, a highly insecure context with significant needs for effective disease control interventions. Despite challenges, this was a highly successful campaign reaching over 413,100 IDPs and conflicted affected individuals, with 99% coverage and 99% acceptance. This includes 123,433 IDPs across the 12 camps and 59,316 conflict affected host community members in Monguno, as well as a further 230,351 IDPs living in camps in Maiduguri and Jere. These beneficiaries will benefit from a WHO recommended malaria prevention tool throughout the 2021 rainy season, reducing not just malaria morbidity and mortality but also reducing the burden on a strained health system, and improving the day-to-day dignity and well-being of beneficiaries.

This program was a significant and collaborative effort involving many state and national ministries such as the NMEP, SMEP, SPHCDA, SEMA, NEMA, and the MoH as well as support from INGOs and UN bodies such as UNHAS, WFP, PUI, INGO Forum, WASH and Health clusters, camp management, and many others.

MENTOR will continue to evaluate the impact of its intervention with its entomological monitoring and evaluation of epidemiological data throughout the 2021 rainy season.

MENTOR will be conducting another IRS and IEC/BCC campaign across Borno state in 2022.

