Whether we discuss new learnings as lessons learned, or best practices, both refer to knowledge management. So from this perspective (of Knowledge management), how do we all as members of the global malaria community work together to put in place a knowledge management platform where learnings like the ones presented during this meeting can be shared in a more structured, hierarchical and dynamic way so that every other member of the community can have access to a specific piece of information just by typing some key words? It is very likely that at the moment we are having this meeting, other members are having their own meetings at different places in different formats. We need to be able to distinguish what we know we know from what we don’t know, in order to determine what we need to know.

- Medicines for Malaria Ventures (MMV): Dr. André-Marie Tchouatieu

My position about this question is that this should be coordinated at RBM level, as several partners have developed experience and knowledge about malaria and the single organization that could centralize this knowledge, considering the design of the organization that works in partnership and is opened to all malaria stakeholders. There are thematic working groups attached to RBM that could work on this topic.

Au Burkina Faso tous les districts sont couverts par la SMC, la première prise est supervisée par les distributeurs communautaires et les doses du 2 et 3e jour sont administrées par les parents. Nous remarquons qu’à partir de la 3e semaine suivant le cycle d’administration, les cas de paludisme ressurgissent. Ce qui pose des questionnements sur l’administration effective des doses par les parents. De plus on constate que beaucoup d’enfants rejettent une quantité non négligeable pendant l’administration.
Catholic Relief Services (CRS) & Programme Nationale de Lutte contre le Paludisme (PNLP), Benin: Dr. William Hounjdo, and Elijah Egwu

C’est effectif ce qui est dit. Nous avons constaté au cours du deuxième passage que les parents n’ont pas bien donné les 2è et 3è doses aux enfants. Ceci remet en cause le changement de stratégie car le Bénin avait commencé avec le TDO.

Would it be possible to share the maps and/or population data generated during the SMC campaign in Benin with the PMI Impact Malaria project?

CRS & PNLP Benin: Dr. William Hounjdo, and Elijah Egwu

The benefit of generating this data is for utilization to improve subsequent campaigns and other programs. CRS has no objection to sharing the data, but this request needs to be routed through the Government PNLP. Also, CRS will ensure that global data best practice principles are met before the data is securely transferred.

What tool/platform was used to digitize data and create a coverage map? Was there a partner involved in its creation and/or implementation?

CRS & PNLP Benin: Dr. William Hounjdo, and Elijah Egwu

There were smartphones to collect data that is sent to servers. We have a dashboard for all the information to request. The CRS CAT platform was used to digitize the campaign. CRS worked with the National program (PNLP) to develop the software requirements, tools and reports to fit the scope of the project.

Benin digital data collection is the source from a pre-agreed location in area of residence? Or door to door?

CRS & PNLP Benin: Dr. William Hounjdo, and Elijah Egwu

The digital data collection for the campaign was performed door to door.

Was food insecurity or hunger a factor in the adverse reactions reported in children after the first dose?
• CRS & PNLP Benin: Dr. William Hounjdo, and Elijah Egwu

Yes. In most cases, mothers or caregivers have been advised to feed children before taking SPAQs.

Do all community distributors use the phones while they are distributing SPAQ? Have you had any issues with literacy? What is the additional training need?

• CRS & PNLP Benin: Dr. William Hounjdo, and Elijah Egwu

Each distribution team consist of two people. The 1st person who is assigned the mobile phone is expected to be quite knowledgeable in the use of an android phone and must at least have with a secondary school leaving certificate BEPC before being selected for the program. While the second person is a community relay who is from his assigned village/locality who understands the route of how to move around the village and supports with the drug administration to the children.


• CRS & PNLP Benin: Dr. William Hounjdo, and Elijah Egwu

Effectivement les données collectées sont utilisées à temps réel. Ces données sont stoquées dans un serveur sur un cloud et toutes données existent passage par passage dans un dashboard et est accessible et exploitable par le PNLP. Ce sera une bonne expérience pour le Mali, et un plaisir pour CRS de soutenir le Mali.

Benin, what was the cost difference as compared with a paper-based version?

• CRS & PNLP Benin: Dr. William Hounjdo and Elijah Egwu

For Benin, this is relative because the SMC program did not need to buy mobile phones and other required tools. The SMC campaign leveraged on the existing investment by the Bill and Melinda Gates Foundation in procuring mobile phones, and other tools for the just concluded nationwide ITN mass distribution campaign. Digitization over time lowers the cost of the campaign as the devices and other software related tools can be utilized over time for subsequent campaigns. A cost benefit analysis has not been conducted yet but if this is done in the future it would be shared widely.
How were data entry issues by CDD’s rectified?

- CRS & PNLP Benin: Dr. William Hounjdo and Elijah Egwu

The software is designed with data validation controls to limit data entry errors and completely block wrong data entry/values. Other learning related data entry issues are managed by Technology and Training Administrators (TTAs) who have technical skills in data management and use of mobile devices and were trained to solve these problems.

Benin: What was the proportion of households that did not have at least one cell phone?

- CRS & PNLP Benin: Dr. William Hounjdo and Elijah Egwu

Smart phones were not given to households but rather community workers used smart phones to collect information from every household.

In Benin, how did the MoH address refusals in some households due to fear of COVID-19? Were SBC strategies in place to prevent rumors and refusals?

- CRS & PNLP Benin: Dr. William Hounjdo and Elijah Egwu

Benin has implemented an effective prevention strategy against COVID19. All officers were provided with facemasks to be worn before entering each household. They also have bars of soap to wash their hands regularly when moving from one house to another or from one household to another. Officers were advised to let mothers or caregivers give the drugs to the children themselves under their supervision. All of this has reduced COVID 19 risk and refusals.

Elijah: what were the challenges, specific to the use of the digital resources as a first experience?

- CRS & PNLP Benin: Dr. William Hounjdo and Elijah Egwu

Suboptimal knowledge of the community health workers which required intense training and supervision.
The digitalization project in Benin is great. From the vector control sector I know how this supported the mass distribution campaign in Benin. As the project is funded by the Gates Foundation, what about sustainability in Benin after Gates? Are the costs accessible to other countries?

- CRS & PNLP Benin: Dr. William Hounjdo and Elijah Egwu

CRS has an ongoing capacity development and technology transfer plan to build the capacity of staff of the MoH and PNLP respectively for effective transfer of tools and resources for subsequent campaigns. The cost of digitizing the campaigns would be available to other countries if requested.

Has Benin faced any challenge regarding hackers attempt to accessing the SiCapp tool that required constant updates to the App?

- CRS & PNLP Benin: Dr. William Hounjdo and Elijah Egwu

Our software developers are abreast of emerging tools and software changes and keep updating the application security protocols as necessary. At the moment we have not experienced any hack attempt.

Were the facilities where the 500,000 children were referred to able to cope with the numbers needed to treat and what were the outcomes of the treatments given in terms of recovery default and deaths?

- PMI Impact Malaria: Maman Bacharou Badamassi

Retenons d’abord que l'objectif 1er de couplage CPS et dépistage de la malnutrition est de renforcer l’accessibilité aux services et soins de santé aux enfants malnutris. Certes en 2019 quelques centres de santé avaient connu des ruptures en intrants nutritionnels. Par contre pour la campagne 2020, 100% des centres de santé disposent des intrants suffisants. La prise en charge se déroule dans le temps avec des résultats satisfaisants.

Niger: Pourquoi la différence entre le nombre des enfants qui on reçut le CPS et le nombre des enfants qui ont été dépistées pour la malnutrition ? Ou cela en rouge représentent les enfants dépistées et avec de la malnutrition ?

- PMI Impact Malaria: Maman Bacharou Badamassi
Le CPS est pour les enfants de 3-59 mois, et le dépistage de malnutrition à partir de 6 mois, donc la différence est les bébés de 3 à 6 mois.

Appreciating the comments on the need for country adaptation of SMC from Dr. Alonso, and recognizing the presence of many national program leaders on this call, what are the key operational research questions that have been prioritized to address/explore, for the 2021 season and beyond?

- Medicines for Malaria Ventures (MMV): Dr. André-Marie Tchouatieu

Without any prioritization for the following few ideas, I think some questions need to be answered to allow planning to extend SMC and maximize its impact without jeopardizing the intervention:

- Defining areas with the need for additional months of SMC by going through their raining data and correlating those with the malaria incidence data;
- If the door is opened for 5 months of SMC, the next question would be “why not more?” Defining the maximum consecutive monthly doses of SPAQ that can be given without increasing the safety risks of the combination is therefore a need. There are existing data about the safety of AQ when administered for prophylaxis but I am not sure about data on long term use (more than 5 consecutive monthly doses of SPAQ);
- Looking at the burden of uncomplicated and severe malaria by age groups of 5 years and considering 5-10 years and 10-15 years. Several anecdotal reports are complaining about the shift towards the higher age groups of the burden of the disease and this needs to be confirmed everywhere in order eventually to increase the age limit of SMC up to 10 years as Senegal is doing and conclusive pilot in Mali;
- SMC is being associated with other non-malaria interventions. What is the potential of coupling it with other malaria interventions to boost the move to the state of elimination? Coupling SMC with MDA to the rest of the population for further decreasing the potential of transmission (SMC + Ivermectin; SMC+LD Primaquine, MDA with ACTs + LD Primaquine before SMC etc…) 

My question is to the CRS Benin presentation. The use of unique identifiers in the form of QR codes was used. Where were these placed? Were they on cards or something that were then given to the children/households? Then scanned for the verification he stated? I don’t know if I missed that but would be happy to be clear on that. Well done to the team. Thanks.

- CRS & PNLP Benin: Dr. William Hounjdo and Elijah Egwu

A QR code unique identifier was provided to each child in the form of a badge (ID Card). This badge contained, in printed text, the name and age of the child, name and phone number of the head of household. The badge of the child is delivered to the mother or caregiver at the point of registration and each time a dose is administered to the child the
badge is presented and scanned to validate the presence of the child, his/her dose administration and post reaction information is recorded likewise. The badge is used over the 4-month period of the dose administration. If a child's badge is maybe missing, there is a system in place to validate the child's presence using his ID no. and household information.

**Pour nos collègues du Niger : à travers le couplage SMC + Dépistage de Malnutrition, quels ont été les principaux défis rencontrés ? A mon avis il serait aussi bon de ressortir le nombre d’enfants dépistés MAS et quelle a été la conduite tenue ?**

- **PMI Impact Malaria : Maman Bacharou Badamassi**

Les principaux défis dans la phase préparatoire au moment de la planification, concevoir des modules de formation intégrés, des supports de collecte et des supports de communication portant sur les thématiques de paludisme et de nutrition, petits matériels. Des experts et des Consultants ont aidé à mettre en place ce dispositif. La formation des acteurs a permis de rendre opérationnelle cette stratégie. L’autre défi réside dans la mobilisation des intrants nutritionnels. Enfin les enfants malnutris qu’ils soient MAM ou MAS ils sont pris en charge gratuitement selon le protocole défini par le MSP.

**Have you seen a change in community / HH acceptance of SMC this year during COVID-19?**

- **PMI Impact Malaria : Maman Bacharou Badamassi**

Le contexte Covid-19 n’a pas affecté l’acceptabilité de la CPS dans la communauté. Pour preuve le Niger a connu plus de cas de refus en 2019. Alors qu’en 2020 il n’y a pas de cas de refus dans 100% des districts sanitaires. Le MSP a anticipé dans la sensibilisation en campagne de mass, interpersonnelle et médiatique.

**This question is on the integration of nutrition with SMC. I would like to know how the country was able to prepare for and absorb the surge in children needing admission for malnutrition (>12,000 according to the presenter) based on referrals from screening during SMC campaign. Thanks.**

- **PMI Impact Malaria : Maman Bacharou Badamassi**

Pendant les 4 jours que dure un passage de la CPS, les services de santé font une répartition des tâches incluant la supervision de la CPS, et la prise en charge des cas qui se présentent au niveau des centres de santé. Pour la nutrition l’étape importante c’est d’abord l’admission des enfants dans les centres de prise en charge de la malnutrition. Après la CPS les rendez-vous continuent avec la enfants malnutris jusqu’à guérison complète.
Nigeria: You mentioned for the trainings providing screening and sanitizer. What about masks, did you procure and provided those for the trainings?

- Malaria Consortium: Olatunde Adesoro

The following items were provided for training: 1) For participants and trainers: face masks and hand sanitizer. 2) For the venue: each venue had infra-red thermometers for screening and temperature logs for recording; hand washing facilities; seats at 2m distance; surfaces decontaminated with bleach solution and maximum of 20 people per training.

Question on Benin presentation: How were children who took 2nd and 3rd doses of SMC tracked digitally considering that these doses were to be administered by the caregivers?

- CRS & PNLP Benin: Dr. William Hounjdo and Elijah Egwu

In Benin, we used two strategies for the 4 health zones: 1) Zones with 3 supervised doses - In this case, the Community health worker visit the household on the 2nd and 3rd day to supervise the 2nd and 3rd doses administered to the child and this information is recorded directly to the smartphone. 2) Zones with 1 supervised dose. The 2nd and 3rd doses are provided to the mothers or caregivers to administer for the 2nd and 3rd day respectively. The feedback information of the 2nd and 3rd dose administration is asked to the mother or care giver in the next round of the campaign and the response is recorded across the unique profile of the child in the smart phone.

Nigeria has good SMC coverage (12 million). Was SMC door-to-door-intensive (10, 000 trained) delivery planned from the beginning or implemented as a mitigation to COVID 19?

- Malaria Consortium: Olatunde Adesoro

SMC has been implemented in Nigeria for several years, so the campaign was planned before COVID-19 pandemic, with household-to-household as the standard delivery strategy. When COVID-19 emerged, a decision was made early on to implement SMC as scheduled as an essential health service. There were over 100,000 community distributors and supervisors. All were trained on SMC and COVID-19 infection prevention and control (IPC) modules.
**The reporting of ADR is almost nonexistent, why?**

- **Malaria Consortium: Olatunde Adesoro**

  The presentation focused more on COVID-19 adaptations. There were few reported cases of mild drug reactions such as transient body rashes and vomiting, but no serious adverse reactions were reported. The National Agency for Food and Drug Administration and Control (NAFDAC), the statutory body in charge of drug control in Nigeria is part of SMC technical working group and actively participated in pharmacovigilance training and reporting.

**In Nigeria, how was compliance with COVID-19 prevention strategies measured during monitoring/supervision? The 95% compliance with mask wearing was noted in the presentation.**

- **Malaria Consortium: Olatunde Adesoro**

  Data elements on COVID-19 compliance were included in the supervision checklist of supervisors, data were captured electronically, and feedback provided real time to each operating unit (health facility). We also routinely conduct end-of-cycle coverage surveys (using LQAS methodology), which include questions about community distributors' compliance with COVID-19 guidelines (e.g. if they wore a mask when they visited the household). All these data were triangulated, and feedback provided for improvement.

**Quels ont été les critères de sélection des distributeurs pour l'utilisation de l'outil informatique (Benin)?**

- **CRS & PNLP Benin: Dr. William Hounjo and Elijah Egwu**

  Ce sont des agents qui ont au moins le niveau BEPC qui ont l'habitude de manipuler les téléphones androids.

**My question is on the SMC presentation in Nigeria, were the COVID-19 cases related in any way to the SMC cycle 1 – i.e was any staff infected?**

- **Malaria Consortium: Olatunde Adesoro**
The slight increase in COVID-19 cases in Kano and Borno state 3/4 weeks after cycle 1 did not make the trend in the two states significantly different from others and was not clearly attributable to SMC. No staff was infected with COVID-19, however few distribution personnel with high temperature were disallowed from participating and advised to go for further testing.

My questions are for Olatunde: Did you have to conduct trainings before each distribution cycle? How was the responsiveness and effectiveness of the virtual state level trainings? Any documented challenges? There was no mention of drug reactions among these children. Are there any acute or chronic reactions resulting from the drugs administered?

- Malaria Consortium: Olatunde Adesoro

The main and initial training was in June, before cycle 1. Other learning opportunities were provided:
1. SMC to implementers on COVID-19 and SMC a day before and during the delivery days of each cycle.
2. Community distributors interphase with their supervisors twice a day (morning and evening) for the purposes of review and mentoring.
3. Supportive supervision was provided for community distributors
4. Based on LQAS findings, low-performing operating units were identified and provided with refresher trainings and extra supervision.

To Elijah, how does data collected feed into the DHIS2?

- CRS & PNLP Benin: Dr. William Hounjdo and Elijah Egwu

The data collected is currently stored in a central cloud database server and at the end of the campaign, the Government comes up with a specific data set that would be transferred and uploaded to DHIS2 and other Government databases. The dataset can be exported from the current platform in CSV and other readable formats compatible with DHIS2, thus upload would be seamless.

Will SMC be extended beyond 4 months? If so, do you have already the consumption forecast?

- Malaria Consortium: Olatunde Adesoro

In 2020, in all states that implemented SMC, four cycles were implemented. In 2021, NMEP plans to expand SMC to additional states. Discussions about expanding to 5 cycles in those areas are ongoing. For the states where Malaria Consortium will support SMC
with philanthropic funding, 5 cycles in the new states has been anticipated and included in our consumption forecast.

**Est que le Niger et le Nigeria ont utilisé la prise supervisée des trois doses?**

- PMI Impact Malaria : Maman Bacharou Badamassi
  
  Au Niger la 1ère dose AQSP est supervisée par les distributeurs. Ces derniers donnent des conseils pour la prise de la 2è et 3è dose (non supervisées) à domicile.

- Malaria Consortium: Olatunde Adesoro
  
  No, community distributors only supervise the administration of SP and the first dose of AQ on day 1. There is little evidence to suggest that supervising Administration of AQ on days 2 and 3 would be cost-effective.

**Everyone: How did you address the cases of side effects to SMC drugs that may require visits to health facilities, and the situation around COVID-19 chances to get COVID by having to go the health facilities in case of side effects?**

- CRS & PNLP Benin: Dr. William Hounido and Elijah Egwu
  
  Cases of side effects are referred or referred to appropriate training for their management. Barrier measures against COVID 19 are implemented and respected in all health facilities

- PMI Impact Malaria : Maman Bacharou Badamassi
  
  La plus part des effets secondaires de la CPS sont mineurs. Lorsqu'ils surviennent 30 minutes après l'administration les parents se rendent dans les formations sanitaires ou bien auprès des distributeurs pour récupérer les doses supplémentaires. Dans la pratique on ne constate pas des cas importants des effets indésirables nécessitant des vas et viens vers les centres de santé.

- Malaria Consortium: Olatunde Adesoro
  
  Each health facility worker benefitted from COVID-19 IPC conducted by the National Primary Healthcare Development Agency. In addition, health facility workers participating in SMC activities were further trained on SMC adaptations to COVID-19. All referral health facilities were provided with infra-red thermometers, hand washing and disinfection materials (bleach solutions) for COVID-19 IPC activities. The caregivers were adequately educated on precautionary measures for COVID-19 at home and when they visit the hospital for referral purposes.
Many thanks to all of the presenters for a great job! Question for any of the implementers: did any of the teams find opportunities to coordinate and/or synergize SMC efforts with ongoing vector control operations (ITN distributions of IRS, for example). Either before or after COVID?

- **CRS & PNLP Benin: Dr. William Hounjdo and Elijah Egwu**

  
  
  
  (CRS) There is a good synergy within the vector control space in Benin in leveraging the digital tools and resources. The national ITN distributions were implemented digitally using smart phones and other software tools. These smart phones, software and the database of children under 5’s generated during the household enumeration of the ITN distribution were migrated and utilized to setup the digital SMC system. Largely, one of the visions of BMGF, is to see that Benin leverages the existing investment of the procured smart phones, software and other tools not just for vector control related campaigns but other health campaigns which is quickly becoming a reality and leading to great synergy within the vector control space. CRS is working with respective stakeholders in Benin to support this vision.

  
  
  (PNLP Benin): Thank you very much. It must be said that we have not planned other complementary interventions to the CPS. Benin is considering coupling another intervention to SMC from 2021.

- **Malaria Consortium: Olatunde Adesoro**

  
  LLIN distribution was co-implemented with SMC in Zamfara State – planning and implementation. In 2019, Malaria Consortium tested the co-implementation of SMC and vitamin A supplementation as part of a research study. This was not taken up in 2020 due to COVID-19, but remains an option going forward.