

Notes from a site visit to a seasonal malaria chemoprevention (SMC) program supported by Malaria Consortium in Burkina Faso, August 18-22, 2019

People on this site visit

Key Malaria Consortium staff

- Charles Nelson – CEO
- Madeleine Marasciulo– Global Case Management Specialist and U.S. Development Lead
- Christian Rassi – SMC Program Director
- Johanna Stenstrom – Burkina Faso Country Director

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Note: These notes were compiled by GiveWell and give an overview of the topics discussed and the activities undertaken during this site visit.

Summary

GiveWell met with Malaria Consortium staff and others in Burkina Faso in August 2019 to improve its understanding of how Malaria Consortium implements seasonal malaria chemoprevention (SMC), as well as to discuss the funding landscape for SMC in countries where Malaria Consortium works, the organization's monitoring processes, the organization's role in the broader landscape of SMC in these countries, and various other research questions.

Organizational structure of Malaria Consortium's Burkina Faso program

Malaria Consortium's Burkina Faso office has 13 full-time employees and is split into four teams: program, finance, logistics, and monitoring/evaluation.

In 2019, Malaria Consortium's SMC programme in Burkina Faso covered 23 of the country's 70 health districts in nine out of 13 regions. The organization employs one project manager and four field officers who each cover approximately five districts, and will visit one or two of these districts per SMC cycle (a 28-day period that includes a four to five-day distribution period). They also support the detailed micro-planning for these districts and training at the different levels

Although SMC is a seasonal program, the project manager and field officers remain busy throughout the year, planning for the next round of treatment (i.e., the next

annual peak malaria transmission season) and analyzing results from the previous one.

Other key roles

Technical coordinator

The technical coordinator ensures Malaria Consortium's technical approach at a regional level. This person also works with national level policy makers and stakeholders to review and update malaria and community level health policy and guidelines, including the national approach to community mobilization as well as national tracking of malaria incidence and other M&E activities, using a [high-burden/high-impact approach](#).

Additionally, the technical coordinator supports efforts to integrate other important interventions with SMC, wherever possible. In Burkina Faso, community SMC distributors screen children for malnutrition, using mid-upper arm circumference (MUAC) measurements as part of SMC campaigns. GiveWell staff was able to observe this identification process on the ground during this visit.

Logistics coordinator

Malaria Consortium's logistics coordinator supports the management of drugs for its SMC program. Procurement is handled by Malaria Consortium's global operations team based in London. Once in country, the Ministry of Health and La Centrale d'Achat des Médicaments Essentiels Génériques et des Consommables Médicaux (CAMEG), the central medical store, are responsible for storage, and distribution of SMC medications in Burkina Faso. CAMEG distributes the drugs to health facilities and recovers any leftover drugs after each round of SMC. The logistics coordinator also procures non-drug supplies for Malaria Consortium's community distributors, for example bags, t-shirts etc.

How SMC program implementation works

Household-to-household and fixed-point distribution

Distributions of SMC drugs are carried out mostly going household-to-household, to reach high coverage efficiently. Children who are sick are referred to the health facility by community distributors to be tested for malaria and, if the test is negative, receive SMC there. People who live near a health facility or children who happen to be at a facility for health issues not related to malaria can also receive SMC at the health facility. In urban areas in particular, while household-to-household remains the primary delivery mechanism, the fixed-point delivery method plays a more important role due to the differences in lifestyles.

In comparison, the household-to-household distribution in Nigeria is more difficult to staff and manage because some of the population lives in polygamous compounds, where male health workers cannot enter according to custom, and finding female health workers to take their place can be difficult.

Roles of different treatment providers in Burkina Faso

There are two main types of frontline implementers directly involved in SMC campaigns: salaried, facility-based health workers and community drug distributors.

Drug distributors are generally volunteers and based in the communities they serve. Many of them are Community Health Workers (CHWs), a formally recognized component of Burkina Faso's primary healthcare system, who receive a small stipend from the government year-round. However, it is usually necessary to recruit additional volunteers specifically for the SMC campaign, which typically happens in May (roughly two months before the SMC campaign begins). Community distributors work in pairs to directly administer the SMC drugs, sulfadoxine-pyrimethamine + amodiaquine (SPAQ). There are approximately 15,000 drug distributors involved in SMC implementation in areas supported by Malaria Consortium's SMC program in Burkina Faso. All distributors must be able to read and write in French to be able to read instructions, fill out data forms and participate in training.

The approximately 1,700 salaried, facility-based health workers involved in SMC in areas supported by Malaria Consortium are on the staff of the Ministry of Health. Health workers train drug distributors, supervise the SMC administration, and compile data collected by the distributors.

In the 18 rural districts where Malaria Consortium implements SMC in Burkina Faso, there are too few CHWs to carry out the campaign, so additional volunteer distributors are recruited. There are no CHWs in the capital city, Ouagadougou, but former health workers are sometimes called in to help if they are still able to.

Supervision

Generally, roughly one health worker from the health facility supervises every five pairs of drug distributors.

The health workers in a given location are overseen by the local health facility in-charge. Facility in-charges are overseen by the district, and all SMC district activities are supervised by the National Malaria Control Program (NMCP), which is part of the Ministry of Health.

Health worker strike in 2019

At the time of this visit, the salaried health workers were on strike. The reasons cited for the strike were generally poor working conditions. The strike was not related to the SMC campaign. Not wanting to deprive communities of potentially life-saving interventions, health workers continued to provide services and to work on campaigns such as SMC. To strengthen their bargaining position with the government, the health workers were not collecting payments from patients and they refused to report any data from health facilities up to central level. The latter affected the SMC campaign as administrative campaign data was not reported to the district level.

GiveWell was instructed not to ask any questions about the strike during our field observations because of political sensitivity. It also appeared controversial for workers at a health facility to show us the SMC tally sheets because, as mentioned above, the health workers are systematically not reporting any data to higher levels as part of the strike.

Drug procurement and storage in Burkina Faso

Malaria Consortium determines how much SPAQ co-blistered packs to order by starting with estimating the population of children between 3 to 59 months within a targeted distribution area and adding a 10% buffer. There are two doses of SPAQ, one for infants 3 to 12 months and one for children 12 to 59 months.

CAMEG and drug storage

There are 10 CAMEG facilities across the country, including two in Ouagadougou and two in Bobo-Dioulasso. The total storage capacity is 30,000 square meters (150,000 cubic meters), and the facilities provide both room-temperature and cold storage. CAMEG stores drugs for HIV/AIDS, TB, malaria, hepatitis, non-communicable diseases, and other treatments, but does not store vaccines. In addition to managing the SMC drugs used for SMC in Burkina Faso, CAMEG also buys the drugs for the World Bank's SMC work in Burkina Faso, Mali, and Niger; other partners, including Malaria Consortium, procure SPAQ through their own procurement systems.

Drugs are stored at CAMEG's central storage in Ouagadougou and then sent by truck to district level facilities. From there, they are sent to health facilities, where the health-facility in-charges distribute them to community distributors each day of each cycle.

GiveWell's impression of CAMEG during this visit was that it seemed clean and well run.

Public sensitization to SMC in Burkina Faso

Administrative channels, religious and traditional leaders, town criers, and health workers all help to spread the word about SMC campaigns. At the district level, radio broadcasts are also used to publicize SMC. GiveWell was not able to observe most of these efforts during this visit, but did witness a town crier on a motorcycle who was publicizing SMC in Boussé.

Protocol for locating children and distributing treatment in Burkina Faso

Malaria Consortium's drug distributors do not use a list or register of households to locate children. The health-facility in-charges use maps of streets, houses and villages to structure the area assigned to each pair of drug distributors such that all households may be covered, and the distributors walk door to door. The SMC Tally Sheet used by the distributors to record administrative coverage (including number of treatments administered and number of referrals to health facilities) was created

because it was not feasible to use a register to document which children had and had not received SMC.

Caregivers must give their verbal consent for children to receive SMC. Children who have a fever or are otherwise sick do not receive SMC from the drug distributor; they are instead given a paper referral form and instructions directing them to a health facility to be tested for malaria. If they test positive, they are not given SPAQ but treated for malaria. Children who have received sulfadoxine-pyrimethamine or amodiaquine in the past 4 weeks are not given SPAQ for the current cycle. Children taking clotrimazole or other sulfa-based medicines are also not given SPAQ. Drug distributors ask whether the children are taking any medications before giving the treatment. Drug distributors also ask about a history of allergies to SPAQ or sulfa-based medicines and whether they had any side effects after the previous cycle.

Challenges of implementing SMC in Burkina Faso

Underestimation of population in Ouagadougou

The official government count of the eligible population of under-five-year-olds in Ouagadougou, where Malaria Consortium carried out SMC treatment this year for the first time, underestimated the real total by a wide margin. In a city with an official total population of 2.2 million, Malaria Consortium guesses that the government estimate of eligible under-five-year-olds was 200,000 to 300,000 lower than the actual eligible population across four districts (later revised to 150,000-170,000 lower).

The underestimation appears to be due largely to high rates of recent urbanization. The latest official government figure is based on a census conducted circa 2006, adding ~3% for each intervening year to account for population growth. The percentage population growth was based on smaller, rural censuses that had taken place since 2006, but does not account for migration from rural to urban areas.

Malaria Consortium expected that official population figures for urban areas would be an underestimate. While normally, only official figures are used, in this case, the Ministry of Health agreed with Malaria Consortium to determine a more recent estimate, taking into account numbers of people reached during other campaigns in May/June 2019, notably for bed nets and vitamin A. Even before estimates were final, to counter a possible shortfall, Malaria Consortium ordered extra drugs that would allow for a generous top-up of SMC after the first treatment cycle. On completion of the first cycle, four of the five capital city districts reported that not all children had been reached. Consequently, Malaria Consortium again reviewed the population estimates using recent figures from health facilities, and for the following cycles, increased the SPAQ supplied, the number of community distributors and days for supervision by health facility in-charges.

Observations of program implementation

During this visit, GiveWell observed two days of SMC delivery in areas supported by Malaria Consortium.

The first took place in Boussé, a rural district of small villages where many of the households own livestock. It is one of three districts making up the Central Plateau region of Burkina Faso, and has an officially estimated population of 189,000.

To observe the implementation, GiveWell staff split into three groups, each of which was accompanied by Malaria Consortium staff. GiveWell also visited the district health facility and one of 29 local health facilities within the district.

The second day of SMC delivery GiveWell witnessed took place in Bogodogo, one of the five subdivisions that make up Ouagadougou, on the outskirts of the city. GiveWell staff split into two groups, each joined by Malaria Consortium staff.

Overall quality of implementation

GiveWell found that the program seemed well organized and well run overall, although there were notable differences between the two locations. Implementation also seemed to work mostly according to GiveWell's expectations, and for the most part, drug distributors and their supervisors seemed to be delivering SPAQ in a high-quality way.

Implementation in Boussé (rural)

Implementation seemed generally to be of higher quality in Boussé than in Bogodogo, and Ms. Stenstrom confirmed that the distribution team she and two GiveWell staff observed in Boussé was particularly good. Malaria Consortium has also said that rural distributions are easier in general, because households tend to be larger and more children tend to be found per household, and people are more likely to be at home.

GiveWell noticed that the drug distribution seemed less hurried in Boussé, perhaps because the district had been treated before, so the distributors had been performing this work longer and the population was accustomed to it. The distributors in Boussé also seemed to have closer, more personal ties to the community. One distributor seemed especially practiced at interacting with the children and caregivers; she avoided tilting the babies' heads back as they swallowed the dose (which is a choking hazard) and supported the mothers so that they could hold their babies themselves, which can help to keep the babies calm.

However, GiveWell and Malaria Consortium staff both observed that the drug distributors sometimes did not give caregivers detailed instructions on how to give the subsequent doses of amodiaquine at home. Instructions were often limited to versions of "Take these two pills over the next two days." This lack of detail may have been because Boussé has received SMC in the past, so caregivers can be expected to have some familiarity with the process, but giving full instructions is a best practice.

Additionally, malnutrition screenings, which were done by measuring the left mid-upper-arm circumference (MUAC), often did not include a measurement of upper-

arm length to determine where to correctly assess the circumference, which is necessary for accurate assessment.

Implementation in Bogodogo (urban)

Implementation quality seemed less consistently high in Bogodogo. SMC had not previously been implemented in Ouagadougou. In addition, the area has been affected by rapid and unplanned urbanization in recent years. Drug distributors in Bogodogo appeared to need more correcting and to follow protocol less rigorously overall. For instance, the distributors sometimes held babies' heads back (or allowed caregivers to do so) while administering the dose, despite the associated choking risk and attendant risk of pneumonia. At other times, the distributors gave the children more water to disperse the pills than was indicated, or neglected to inform caregivers of all possible side effects.

Program implementation also seemed more difficult in Bogodogo. In this urban area, children seemed to wander in groups farther from their homes, and more caregivers were away at work during the day and therefore unable to consent for their children to be treated. GiveWell observed one child in Bogodogo who could not be treated due to inability to get consent from parents, and another child who had a proxy consent. At the same time, the children seemed to have a good sense of what was happening and would sometimes point the distributors toward a house where they knew a child lived who had not yet been treated.

The distributors in Bogodogo also seemed to be less familiar with the assigned area and who lived there. In urban areas, unlike in rural areas, SMC distributors are not necessarily from the locations where they distribute SMC. The number of children treated per hour seemed to be about the same in both Boussé and Bogodogo, but it is not clear how generalizable this would be to other distributions in other settings. One of the drug distribution teams we shadowed had a goal of distributing at least 50 treatments that day.

GiveWell staff noted that an extra drug distribution team appeared to have been sent to one of the neighborhoods where GiveWell and Malaria Consortium were observing the implementation.

Overall, GiveWell's impression was that the level of organization in Bogodogo was impressive given that this was the second cycle of the first round of SMC ever carried out there.

Program acceptability among the population

GiveWell found that the target populations in both Boussé and Bogodogo seemed to be largely receptive to the SMC campaigns. Overall, parents seemed willing to accept medical advice and treatment delivered door to door. GiveWell staff witnessed no refusals in either area, and the chief medical officer in Boussé said that SMC refusals are not even counted there because the rate of refusal is extremely low and speculated that that refusals are more common in urban areas such as Bogodogo because residents there have better access to malaria treatment. There also seems

to be greater concern over side effects in urban areas, and GiveWell noticed that some of the urban households visited seemed somewhat suspicious or surprised (note that the program is also newer in Ouagadougou).

The rural households receiving treatment during this round of implementation may also have been more accepting because Boussé has been targeted for SMC for several years; by contrast, the campaign in Bogodogo was part of the first round of SMC to be carried out in Ouagadougou.

GiveWell staffers sometimes observed mothers bringing their children directly to the drug distributors to get SMC treatment. In Boussé, GiveWell saw one child who was referred to a health center because he was sick, then saw that same family taking the child to the health center later on.

Identification of households to target

GiveWell observed that the method used in Bogodogo to select households seemed to carry a high risk of error, and did not feel highly confident that all households were reached. Malaria Consortium noted that this area of Ouagadougou is particularly challenging because of recent rapid and unplanned urbanization. In Ouagadougou, 10 to 30 pairs of drug distributors were allocated to cover each district. Each pair was given instructions about where to start and where to walk to, and would visit any households along their path. A map posted at the local health facility also indicated the process for how each district would be covered in theory.

However, the number of winding side streets in the district made it seem likely that houses would be missed, and sometimes it seemed difficult to identify with certainty where one household or compound ended and the next began, as many were behind walls. On the other hand, several children in Bogodogo who had already been treated followed the GiveWell and Malaria Consortium staff as they continued on to other households, so that they could watch other children getting treated. By the end, ~15 children had joined the group. (Children may have been following the group because of the presence of GiveWell and foreign Malaria Consortium staff.) These children would often point the way toward houses that had not yet been visited, which seemed to help improve the odds that all houses were being reached.

Identification of children for treatment

Age assessment, to determine children's eligibility for treatment and what dose to provide, seemed to be carried out in a fairly informal way in both treatment locations, and GiveWell is uncertain about the overall success of drug distributors at identifying age eligibility. However, GiveWell staff could not identify any particular instances when a child obviously older than five was given SMC, or when a child obviously within the right age range was skipped. GiveWell also noted that children generally seemed to be getting age-appropriate doses, but again, it was not possible to confirm this.

Because ages of children are not always clear from sight alone and because of a lack of an official birth registration system, distributors will sometimes test to see if a

child is over five by asking them to curl one arm over the top of their head and grab their opposite ear (in order to gauge whether the child's limbs have grown out to become proportional to their head and torso). One GiveWell staffer on this visit witnessed this informal test being carried out, and noted that the drug distributors she shadowed in Bogodogo seemed to pay extra attention to confirming age eligibility when children appeared closer to the upper limit of the eligible age range. This may have been because the distributors were not able to ask caregivers directly how old the children were, or GiveWell's presence may have led the distributors to be extra careful. The same staffer also noticed that babies seemed somewhat overrepresented among the children treated by the distributors she shadowed, although this may have been random.

As an example of the informal means sometimes used to determine age, one distributor in Boussé remarked that he knew that a particular child was six years old because he was a relative, so the distributor knew to skip that house. The same distributor knew to skip another house because he knew no children lived there.

GiveWell noticed one child in Bogodogo who appeared to be sick, and who a Malaria Consortium staff member said had a liver disease. This child did not receive SMC, in accordance with the SMC eligibility protocol. The child was also referred to the health facility.

Identification of children and households that had been treated

In both treatment locations, houses were marked on the outside with chalk to indicate the current treatment cycle, the number of children in the household, the number of children treated in the household, and the number of children referred to the health facility. GiveWell noticed that the chalk markings had become illegible at one house, probably due to rain, but this seemed like a relatively minor issue.

In Bogodogo, in addition to marking the houses with chalk, the distributors marked children's fingernails with black marker to track the children who had received SMC, which seemed like a helpful strategy. In Boussé, GiveWell noticed that most people had kept their SMC cards from previous treatment campaigns.

Communication of feedback between distributors, health workers, and supervisors

Supervision of drug distributors of somewhat variable quality in both treatment locations. Malaria Consortium's district coordinator, who is a central-level supervisor and accompanied GiveWell staff on both the Bogodogo and the Boussé implementations, was very good at giving feedback and suggesting improvements to the health workers; however, another supervisor, in Boussé, did not give the distributors he accompanied any feedback. The district health director in Boussé did not correct the distributors when they improperly administered the SPAQ (such as by holding children's noses closed while giving them the drug, which is another choking risk). Another supervisor, in Bogodogo, seemed distracted as distributors held children's heads back while administering the drug, and did not correct them until Ms. Stenstrom raised the issue.

Documentation of administrative coverage

Distributors used tally sheets to record administrative coverage data for the SMC treatments they delivered and the malnutrition screenings they carried out. GiveWell staff were able to visit the health clinic in Bogodogo, view the tally sheets, and check a small sample of them for errors, to gauge how common errors are and understand the process of tallying.

Some of the malnutrition screening tallies were not filled out completely (though these tallies are not very relevant to GiveWell's evaluation of Malaria Consortium's SMC implementation), and GiveWell noticed one tally sheet (out of approximately 10) on which the numbers did not add up, but overall, documentation of the SMC campaign via the tally sheets appeared to be reasonably high-quality.

GiveWell attempted to get more information at the Bogodogo health clinic about what checks supervisors perform on the tally sheets and how they aggregate the data. However, due to the ongoing health worker strike, GiveWell was not able to observe any supervisor checks and was ultimately unable to get more information on this process.

Observed implementation challenges

Infants spitting up SPAQ

One issue that appeared more significant than GiveWell had anticipated was the high rate at which infants seemed to spit up the SPAQ. One GiveWell staffer estimated that babies spat up the dose about 50% of the time, while two others saw three out of eight babies spit up a considerable amount of the dose.

In two of those cases, the health workers thought that the babies had managed to keep enough of the dose down and did not need another. (There did not seem to be precise guidelines around how much must stay down and when another dose must be given.) The third baby spat up two attempted doses, but apparently had already been feeling sick prior to the drug administration. Afterward, this baby was referred to a health facility, per protocol.

None of the children observed over the age of ~18 months spat up the SPAQ.

Other negative reactions to the SPAQ

The vast majority of babies cried briefly after or while taking the SPAQ. Most older children were less bothered by the SPAQ, and even seemed to enjoy getting treated in a group with their friends.

A few children in Bogodogo, who seemed to be around four years old, were very unhappy at the treatment; one threw a tantrum, and another needed to be bribed with a treat to take the SPAQ.

Communication of side effects

One GiveWell staffer noted that successful communication of side effects, and the appropriate responses to them, between the program representatives and the children's caregivers seemed like a significant challenge.

Other observations

Treated children all received SPAQ from the same cup and spoon. These were rinsed with water in between uses, but were not cleaned with soap. This seemed less than ideal from a hygiene standpoint, but unlikely to lead to major adverse effects.

Monitoring and evaluation

GiveWell was not able to directly observe Malaria Consortium's coverage surveys during this visit, as SMC delivery was ongoing during this time and coverage surveys take place at a later point. GiveWell was able to observe the collection of tally sheets, which record administrative coverage data from the treatment campaign, and also to observe the supervisors as they oversaw the distributors.

Lot quality assurance sampling (LQAS) versus coverage surveys

Malaria Consortium uses lot quality assurance sampling (LQAS) to determine whether an SMC campaign has achieved the minimum expected coverage of 80% in a given "supervision area." Because LQAS can be completed relatively quickly, results from this process can be incorporated into Malaria Consortium's body of data before the next treatment cycle. Coverage surveys collect a much broader range of information than LQAS.

Process for LQAS

- First, the supervision area (usually a district) is defined.
- The correct sample size is calculated by plugging numbers into a tool that then returns the correct number of households to survey. (During the demonstration GiveWell witnessed on this trip, the number produced was 19; this is the same number used in past Malaria Consortium LQAS surveys reviewed by GiveWell.)
- The households are selected randomly by first randomly selecting a health facility, then a village in its catchment area, and then a household. As Malaria Consortium does not maintain lists of households in each catchment area, households are selected via random walk (i.e., a pen is spun at the center of a village, and the surveyors start walking in the direction it ends up pointing). Any household with at least one child under 10 is eligible to be surveyed, even though SMC is given only to children under five; this is presumably so Malaria Consortium can assess how many five- to 10-year-olds were given SMC in error.
- Once the selected household or compound (in Nigeria, compounds are more common) is reached, the parents are asked about the coverage of all children in the household. Surveyors then ask for more detail on one child, though it is unclear to GiveWell how that individual child is selected. Surveyors ask to

see that child's SMC card and blister packs, although Mr. Rassi's impression is that it is households do not keep blister packs reliably enough for these to serve as a high-quality check on the results.

Malaria Consortium is still in the process of standardizing its LQAS process and analysis of results across all countries.

Who conducts the surveys

In Burkina Faso and Nigeria, the planning of Malaria Consortium's coverage surveys is done by contractors, while LQAS planning is performed in-house. The data collectors used in Burkina Faso, for both coverage surveys and LQAS, are enlisted from local universities.

In Chad, planning surveys is contracted out, and temporary data collectors from local universities are used for both LQAS and coverage surveys. Malaria Consortium noted that the quality of the Chad surveys in 2018 did not meet its standards.

Process for ensuring data quality in coverage surveys

Malaria Consortium attempts to ensure data quality in coverage surveys with a three-level approach:

- Designing surveys to make collection of high-quality data more likely.
- Country-level training.
- Supervisors shadowing data collection teams.

Malaria Consortium's relationship with the Burkinabè government

The country's entire SMC program is run through the Ministry of Health (of which the NMCP is one department); implementation is done through the government health system, using health facilities. The Ministry is charged with developing strategy and leads on decision-making, though Malaria Consortium is present for all relevant conversations. The nature of the relationship with the government is such that Malaria Consortium would inform the NMCP of any plans to, for instance, visit a district health facility. For example, the NMCP was aware of GiveWell's visit and accompanied GiveWell to observe SMC implementation.

The only program Malaria Consortium implements in Burkina Faso right now is SMC; it also supports research on SMC in Burkina Faso, and would like to support other life-saving programs, such as bednet distribution and intermittent preventive treatment in pregnancy (IPTp) for malaria.

Funding

Countrywide funding landscape

Representatives from the President's Malaria Initiative (PMI)/USAID told GiveWell that Burkina Faso's health budget is 13% of its overall budget. Within that, the

Burkinabè government has very limited funding for malaria programs. The government pays for treating malaria cases and pays the health workers. For SMC, the government pays the salaries and stipends of health workers and community health workers involved in the campaign all other costs are donor-funded.

Funders of SMC in Burkina Faso, in addition to Malaria Consortium, include the World Bank, the Global Fund, and PMI. Implementing organizations include Programme d'Appui au Développement Sanitaire (Support Program for Health Sector Development), or PADS, for the World Bank and the Global Fund; Jhpiego (which is exiting in 2020) for PMI; and Malaria Consortium. Malaria Consortium is the only organization in Burkina Faso that both funds and implements SMC.

Other major funders of SMC in Burkina Faso

- **Global Fund** – Negotiations over what the Global Fund will cover for SMC in 2021-2023 will begin in April 2020. In 2020, the Global Fund is covering all of the districts in Burkina Faso that were formerly covered by funding from the World Bank.
- **PMI** – PMI puts together a plan document for each year; the plan for 2020 is already complete. Consultation normally takes place in May of each year, and in September, PMI makes intervention-level allocation decisions for the following year.

In Burkina Faso, PMI uses VectorLink as its implementing organization for bednet distribution and indoor residual spraying (IRS). Jhpiego is PMI's implementing organization for SMC, although this partnership is coming to an end in 2020.

PMI noted during this visit that it would not have been able to step in in areas of Burkina Faso where the World Bank is pulling out of its SMC campaigns (and where the Global Fund has stepped in) without cutting other programs.

- **World Bank** – The funding provided by the World Bank to Burkina Faso will be quite non-specific. For example, future loans will be earmarked for “health” rather than “SMC” or “malaria.”

Malaria Consortium's influence on other funders

Advocacy role and leverage

Malaria Consortium sees policy and implementation as synergistic, exemplified by the fact that it originally helped design SMC and is now an implementer. Malaria Consortium was consulted in the initial design phase of the Sahel Malaria and Neglected Tropical Diseases Initiative, which included \$19 million for SMC in Burkina Faso, Mali, and Niger. (That program is now coming to an end.) Malaria Consortium sees the swift rollout of SMC, from building the evidence base for SMC as an intervention to its own implementation of SMC, as its biggest accomplishment.

Malaria Consortium has no dedicated policy/advocacy team in Burkina Faso. It also does not explicitly target any funders of SMC in Burkina Faso, such as the Global

Fund, the World Bank, PMI, or the U.K. Department for International Development (DFID). It has a nine-person External Relations team based in London and well-connected senior staff who have contacts at the above-named funders. Malaria Consortium convenes and attends various global meetings on malaria, and have been to give technical advice on malaria projects. The Gates Foundation and DFID often ask Malaria Consortium for their views on malaria-related developments. The late Dr. Sylvia Meek, who was Malaria Consortium's global technical director, was widely seen as an expert on malaria by major institutions.

Malaria Consortium revisits its advocacy goals every two years. Its current priorities are advocating for the rollout of integrated community case management (iCCM) and stratification of national malaria programs. "Stratification" in this context means treating different regions with different approaches, e.g., extending SMC to five months in places with longer rainy seasons.

To fund more of this work, Malaria Consortium would need more unrestricted core funding, because the communications and senior staff are paid with core funds rather than funds attached to any one program. The core funding budget is currently ~\$1 million. Raising core funding is challenging and takes up much of Mr. Nelson's time.

Lack of funding

Because the Burkinabè government has little funding for SMC, and because it would face more restrictions if SMC funding came primarily from the World Bank and the Global Fund, it seems very unlikely that the government would fund SMC if Malaria Consortium were no longer operating there.

Malaria Consortium's funding decisions

Timeline for planning drug distributions

Malaria Consortium needs relatively little notice (approximately two months) to plan a drug distribution as long as the drugs are available. Drug procurement, however, can require extensive lead time; for instance, during this visit in August 2019, Malaria Consortium's global operations team placed an order for drugs to be used in 2020. This means that funding decisions involving drug procurement must be made in August of the preceding year at the latest and ideally in June/July.

A second manufacturer of SPAQ is expected to enter the market eventually.

Prioritization of regions to fund

In Burkina Faso, prioritization of what areas should be funded for SMC is decided in conversation between the government and other funders; however, all of Burkina Faso is currently covered. The country's NMCP has indicated that if complete coverage with SMC were not possible, the government would target the areas with highest prevalence. It is also possible that the government would prioritize the districts that have been covered the longest. The government would rather conduct

high-quality implementation in a smaller number of districts than conduct low-quality implementation more widely.

In Chad, there are currently only five uncovered regions, all of which are difficult to work in for logistical reasons (because they are very remote) or due to security concerns. Malaria Consortium plans to expand its SMC work in Chad to currently uncovered regions over the next two years. begin working in four of the five uncovered regions over the next two years.

Plans for expansion to a new country in 2020

Possible countries Malaria Consortium could enter in 2020 include Togo, Niger, Guinea-Bissau, and Mauritania. The decision on which country to enter will depend on the following five factors:

- Disease burden
- Costs
- Language
- Government relationship
- Security

Malaria Consortium would need two years' worth of guaranteed funding in order to start operating in a new country.

The decision on where to expand to will likely be made in early 2020. Mr. Rassi believes Togo is the most likely candidate because UNICEF and the Global Fund have already supplied the drugs there, so the required support is mainly around ensuring high-quality implementation, an area Malaria Consortium considers a core strength of its SMC programme. Planning timelines in new countries can be shorter than in established ones because there are fewer stakeholders to bring together.

Plans for treating new age groups

Malaria Consortium has considered expanding SMC to include five- to 10-year-old children. However, it is unlikely that Malaria Consortium will implement this until it is recommended by the WHO and the available co-blistered drug packs for older children are available. Malaria Consortium is currently unlikely to expand its treatment population to include older children because shortfalls in manufacturing sulfadoxine-pyrimethamine are currently a binding constraint, and older children require a higher dose of the drug and the most appropriate dosing regimen has not yet been established, coverage gaps remain among under-5s, and Malaria Consortium believes that optimizing the SMC delivery model (i.e. ensuring high coverage and quality) and adjusting timing and frequency of SMC cycles are likely to result in greater benefits than extending the age range.

Malaria trends in Burkina Faso, Nigeria, and Chad

Changes in access to care

In Burkina Faso, the availability of treatment for malaria has improved meaningfully in the past few years: health care has been ostensibly free for children under five

since 2016, and PMI and the Global Fund are providing rapid diagnostic tests (RDTs) and artemisinin-based combination therapy (ACT). Health-seeking behavior has also improved in Burkina Faso. However, there are concerns that there have not been concurrent improvements in quality of health care and distance of travel to receive care.

In Chad and Nigeria, access to health care has improved in the regions where PMI and the Global Fund work.

Changes in seasonality of malaria transmission

The chief medical officer at the district health facility in Boussé said that malaria rates during the rainy season have improved in recent years.

Impact of security concerns in Burkina Faso, Nigeria, and Chad

Mr. Rassi believes security will worsen in all three countries in which Malaria Consortium operates, although he does not believe it will become unworkable. In some regions, including two districts in Burkina Faso, Malaria Consortium already cannot send staff to provide supervision or conduct monitoring due to security concerns.

Different funders and implementing organizations have different risk tolerances. For example, PMI is taking over Zamfara State in Nigeria, a challenging place to work, from Malaria Consortium.

GiveWell's activities and meetings during this visit

Day 1

- Met Malaria Consortium staff for lunch.
- Visited Malaria Consortium's offices for a security briefing and field visit briefing from Ms. Stenstrom, and a Q&A session with Mr. Rassi on Malaria Consortium's SMC work.
- Met Malaria Consortium staff for dinner.

Day 2

- Visited the country's Ministry of Health to meet with the NMCP coordinator and team, and to discuss the SMC program and the funding landscape.
- Met Malaria Consortium's Burkina Faso SMC team at the organization's office, for introductions to team members and a discussion of Malaria Consortium's organizational structure.
- Visited the national drug storage facility run by CAMEG, where SPAQ for SMC is stored. CAMEG staff gave a presentation and a tour of the warehouse.
- Isabel and James met with Ms. Stenstrom and Mr. Rassi to further discuss the funding landscape and Malaria Consortium's relationship to the government.
- Met Malaria Consortium staff for dinner.

Day 3

- Field visit to Boussé in rural Kourwéogo Province:

- Meeting with the chief medical officer at the Boussé District Health Office.
- Short visit to Naprabogo Health Facility.
- Observation of door-to-door administration of SMC.
- Isabel and James met with Mr. Rassi about room for more funding.
- Isabel and James met with Mr. Rassi and Ms. Stenstrom about security challenges, availability of malaria treatment, and other assorted topics.
- Met Malaria Consortium staff for dinner.

Day 4

- Field visit to Bogodogo, an urban district on the outskirts of Ouagadougou:
 - Meeting with the chief medical officer and district data manager at the Signonguin District Health Office.
 - Visit to Bissighin Health Facility, including observation of planning materials and of SMC administration at the health facility (for those who had been referred there).
 - Observation of door-to-door administration of SMC.
 - Return to Bissighin Health Facility for observation of tally sheets and data reporting.
- Met Mr. Rassi and Ms. Stenstrom for dinner.

Day 5

- Met at Malaria Consortium's office to cover outstanding questions, including questions about monitoring and evaluation and other miscellaneous issues.
- Held a debrief on the site visit as a whole at Malaria Consortium's office, including reflections from both Malaria Consortium and GiveWell about what went well and what could have been improved.
- Met with representatives from PMI and USAID at the U.S. Embassy.

All GiveWell conversations and site visit notes are available at <http://www.givewell.org/research/conversations>