



# ACCESS SMC

Achieving catalytic expansion of seasonal malaria chemoprevention in the Sahel

## The costs of Seasonal Malaria Chemoprevention (SMC) implementation in the Sahel sub-region of Africa A Multi-Country Cost Analysis

August 2016



### **About ACCESS-SMC**

ACCESS-SMC is a UNITAID-funded project, led by Malaria Consortium in partnership with Catholic Relief Services, which is supporting National Malaria Control Programs to scale up access to seasonal malaria chemoprevention (SMC) to save children's lives across seven countries in the Sahel sub-region of Africa. By demonstrating the feasibility and impact of SMC at scale, ACCESS-SMC will promote its wider adoption. For further information, visit [www.access-smc.org](http://www.access-smc.org) and [www.unitaid.org](http://www.unitaid.org).

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# ACCESS SMC

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## Acronyms

ACCESS-SMC	Achieving Catalytic Expansion of Seasonal Malaria Chemoprevention in the Sahel
AQ	Amodiaquine
CFA	West African CFA franc
CHAI	Clinton Health Access Initiative
CHW	Community health worker
CRR	Central River Region
CRS	Catholic Relief Services
iCCM	Integrated community case management
IPTi	Intermittent preventive treatment in infants
IPTc	Intermittent preventive treatment in children
IPTp	Intermittent preventive treatment in pregnant women
LGA	Local government area
LSHTM	London School of Hygiene and Tropical Medicine
MoH	Ministry of Health
MoHs	Ministries of Health
MSH	Management Sciences for Health
NAFDAC	National Agency for Food and Drug Administration and Control
NGO	Non-governmental organization
NMCP	National Malaria Control Program
NMEP	National Malaria Elimination Programme
RDTs	Rapid diagnostic tests
SBCC	Social behavior change communication
SIAPS	Systems for Improved Access to Pharmaceuticals and Services project
SMC	Seasonal Malaria Chemoprevention
SP	Sulfadoxine-pyrimethamine
URR	Upper River Region
USAID	United States Agency for International Development
USD	United States Dollar
WHO	World Health Organization

## GLOSSARY

### SMC Glossary

**Adverse event** : Any untoward (unwanted) occurrence in a patient (child) given a pharmaceutical product, which is not necessarily causally related to the treatment. An adverse event is any unfavorable or unintended symptom or disease (including laboratory findings temporally associated with use of a medicinal product), which may or may not be considered to be related to the medicinal product.

**Severe adverse event** : When the adverse event is: life threatening, requires or prolongs hospitalization, results in disability or incapacity, results in congenital abnormality or birth

defect, results in death, or may require intervention to prevent one of the outcomes listed above.

*NB: **adverse drug reaction** and **severe adverse drug reaction** can only be used once the cause of the event has been conclusively determined to be related to the intake of SP or AQ.*

**Caregiver** : Family member who brings the child for SMC drugs.

**Child** : Anyone under the age of 18. Children between 3 to 59 months (infants 3 to under 12 and children 12 to 59 months) are eligible for in SMC drugs as long as they meet all other eligibility criteria.

**Community Health Worker (CHW)** :General term to include a community member, who may be volunteer or paid health worker who does not have formal training as a health care provider and who works in the community not in a health facility.

**Course** : A course of treatment with SMC drugs over three days: one dose of SP and one daily dose of AQ for 3 days. Each child should take one course of SMC drugs each **cycle** and four courses each **round**.

**Cycle** : The one month interval between courses of SMC drugs. There are four cycles in each round.

**Distribution Period** : A period within each cycle when SP and AQ are distributed to all eligible children.

**Door-to-door delivery** :When the drugs are distributed by CHWs in the child's home.

**Fixed-Point Delivery** : When SMC drugs are delivered by CHWs in a central location in the community

**Health Facility (HF)** : Place where children are referred by CHWs for fever, illness or side effect to SMC drugs. It is staffed by health providers trained in SMC and case management of childhood illnesses

**Health Facility Worker (HFW)** : Individuals based in a **health facility**, who are trained and responsible for delivering SMC drugs, assessing for fever, managing cases of childhood malaria and other childhood illnesses, assessing and managing **adverse events and serious adverse events**

**Pharmacovigilance** : The science and activities relating to the detection, assessment, understanding and prevention of adverse effects or any other drug-related problem.

**Referral** : Sending sick children who cannot be managed at home or by a CHW to the health facility.

**Round** :One transmission season consisting of four **cycles**.

**SMC Delivery or Distribution** : The act of providing the health services, such as the distribution of SMC medicines to eligible children, from the manufacturer up to the child

**SMC Drug Administration**; The act of giving the medicines to a child.

**SMC Medicines/ SMC drugs** : One dose of sulfadoxine / pyrimethamine (SP) and three doses of amodiaquine (AQ) given each month for four months to children between the ages of 3 to 59 months.

## Executive Summary

Seasonal Malaria Chemoprevention (SMC), the intermittent administration of antimalarial medicine during the malaria season<sup>1</sup> is among the World Health Organization (WHO)'s key interventions for preventing malaria in children. SMC was endorsed by the WHO through the 2012 policy guidelines. There are an estimated 25 million children aged 3-59 months living in the Sahel sub-region eligible for SMC, which when administered helps averts millions of cases of plasmodium falciparum malaria and thousands of deaths per year<sup>2</sup> while significantly reducing the financial and economic burdens experienced by patients, families, and the national health systems. Thus, a comprehensive understanding of the costs of implementing SMC at a large scale should help countries effectively plan and advocate for the allocation of sufficient financial resources for the implementation of SMC.

To better understand the costs associated with delivering SMC, Management Sciences for Health (MSH) conducted cost analyses in the seven countries supported by the UNITAID-funded ACCESS-SMC project in 2015: Burkina Faso, Chad, Guinea, Mali, Niger, Nigeria and The Gambia. The results presented in this report are intended to provide information that can guide future SMC programming, facilitate comparisons of SMC efficiency, and improve the affordability, efficiency, and quality of SMC. Specifically; the objectives of this research were to:

- 1) Determine the total program costs and unit cost per child receiving the recommended four cycles of SMC, based on the 2015 coverage results;
- 2) Identify the principal recurrent cost-drivers of SMC (e.g. drugs and supplies, distributor remuneration, management, supervision, meetings, trainings, and other recurrent costs);
- 3) Estimate SMC distribution efficiency including the number of SMC administered per distributor, ratio of distributors per supervisor, and SMC medicine wastage;
- 4) Calculate the 2015 and 2016 financial gaps of reaching all eligible children for SMC in the seven countries;
- 5) Contribute to global learning on the implementation and scale-up of SMC.

From September 2015 to January 2016, MSH staff collected programmatic and cost data in all seven ACCESS-SMC project countries<sup>1</sup> and analyzed costs using the spreadsheet-based SMC Costing and Financing Tool, developed by MSH. The hypothesis was that programmatic data related to SMC coverage are directly linked to the cost of SMC - in general, high SMC coverage rates combined with lower fixed costs (for management, supervision, trainings, and remuneration) result in a lower average recurrent cost per child (3-59 months).

In 2015, through support from the ACCESS-SMC project, an equivalent of 3.12 million children (3-59 months)<sup>2</sup> of the targeted 3.2 million children received SMC in the seven countries. This

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<sup>1</sup> At the time of writing this report, complete cost data for Chad was not available and therefore cost results have been omitted. An addendum including the Chad cost results may be included at a later time.

<sup>2</sup> This figure is calculated by dividing the total number of cycles by four and does not represent the actual number of children who received four cycles. The coverage survey conducted by the LSHTM indicates that many of the

figure is derived from the 12.46 million SMC treatments that were distributed monthly for 4 cycles in the seven ACCESS-SMC countries, ranging from 308,830 treatments in The Gambia to 3,149,867 treatments in Nigeria.

In 2015, the total start-up costs for the ACCESS-SMC project were USD 0.5 million and the total recurrent costs were USD 12.1 million.<sup>3</sup>, with recurrent costs ranging from USD 0.4 million in The Gambia to USD 3.5 million in Nigeria.

The average cost for 4 cycles of SMC per child treated in 2015, was USD 4.56, ranging from USD 3.45 in Niger to USD 6.07 in The Gambia. Given the significant differences across the countries and programs, these results should be treated as indicative and not definitive. In the ACCESS-SMC project sites, financing of total recurrent costs for SMC distribution activities for 2015 was mostly from the UNITAID grants (ranging from 77% in Niger to 94.10% in Guinea); additionally, the Sahelian governments made considerable contributions through payment of MoH staff, including the NMCP/PNLP/NMEP personnel, through the health system levels. .

The ACCESS-SMC project, in addition to efforts from other implementing partners, contributed significantly to providing SMC for eligible children (3-59 months) in the seven countries in 2015. Though, in some countries, the unmet need for SMC remains substantial, especially in Nigeria where up to 9.8 million children (3-59 months) did not receive SMC, since only two states implemented SMC.<sup>4</sup> Considerable concerted and consistent support and financial investments is needed to reach all SMC eligible children in the near future.

This analysis presents several lessons and suggestions for further operations research:

Recommendations for the implementation of SMC scale up:

- I. To be cost-effective and affordable, there must be high SMC coverage among targeted populations. Moreover, SMC must be effectively and efficiently administered while program management and supervision should be organized to both minimize those costs while ensuring high-quality provision.
- II. To improve the sustainability of SMC, it will be essential to integrate SMC into the national health systems. Also plans should be developed to commit the governments to take over certain activities and related costs.
- III. Information on the numbers of children who receive one, two, three or four cycles (and which cycles they received) should be routinely collected and reported on.

Recommendations for further research:

- IV. Studies are needed to determine the cost-effectiveness of various SMC delivery mechanisms (e.g. door-to-door, fixed point, and mobile) in each setting and the

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children received fewer than four cycles, meaning that more children were reached in total but some received three cycles or less.

<sup>3</sup> These figures do not include cost data from Chad for which final cost data was not available.

<sup>4</sup> According to the Nigeria Federal MoH, Jigawa, and Katsina states benefited from the 2013-2014 rounds) and for 2015, SMC was only in some of the LGAs of Sokoto, and Zamfara.



integration of other services with SMC provision. This study should take into account economic costs, such as volunteer time and family out-of-pocket costs and productivity losses.

- V. A study on the feasibility of SMC integration into government services could help to facilitate its long-term sustainability.
- VI. Data should be collected on the utilization of health facility and community malaria treatment services to identify any impact from SMC on malaria service utilization.
- VII. A cost-benefit analysis comparing SMC with other malaria interventions would enable decision-makers to effectively allocate financial resources based upon evidence.

## Background

Malaria remains a leading cause of morbidity and mortality worldwide, particularly in sub-Saharan Africa and accounts for 88% of the 214 million annual cases and 90% of the 438,000 annual malaria deaths.<sup>3</sup> Children are particularly affected by malaria; in 2015, malaria contributed to an estimated 306,000 under-five deaths globally, including 292,000 under-five deaths in the African region.<sup>4</sup>

A key intervention for preventing malaria among children is *seasonal malaria chemoprevention* –the intermittent administration of full treatment courses of an antimalarial medicine given during the malaria season to prevent malaria. The objective of SMC is to maintain therapeutic antimalarial medicine concentrations in the blood throughout the period of greatest malarial risk<sup>5</sup> Endorsed by the World Health Organization in 2012, SMC could benefit 25 million children (3-59 months) living in the Sahel sub-region, averting millions of cases of *Plasmodium falciparum* malaria and thousands of deaths per year<sup>6</sup> while significantly reducing the financial and economic burdens experienced by patients, families, and national health systems.

The UNITAID-funded ACCESS-SMC project commenced in late 2014, SMC drugs distribution began in 2015 in seven countries in the Sahel - Burkina Faso, Chad, Guinea, Mali, Niger, Nigeria and The Gambia, . - And is due to run for three years with a second distribution campaign in 2016. SMC is administered for four cycles per year; with the first dose of sulfadoxine-pyrimethamine and amodiaquine (SP+AQ) administered as directly observed treatment, by a trained community health worker or drug distributor. The remaining two doses of AQ are administered by the child's caregiver at home.

Despite the feasibility, effectiveness, and potential impact of SMC, there is limited documented evidence on the costs of SMC in various country contexts and the costs of SMC programs implemented on a large scale. The lack of evidence on the costs of SMC prevents donors and Ministries of Health (MoHs) from mobilizing and allocating financial resources for introducing or scaling-up SMC in eligible geographic areas. Having a comprehensive understanding of the costs of implementing SMC on a large scale could help countries effectively plan or advocate for the allocation of sufficient financial resources. Moreover, countries which are transitioning from donor-funded programs would benefit from such evidence in order to facilitate the allocation and monitoring of domestic financial resources.

To better understand the costs associated with SMC, Management Sciences for Health (MSH) on behalf of the ACCESS-SMC project conducted cost analyses of SMC in the seven countries for the 2015 campaign. The results of these analyses are intended to provide information that can be used to guide future SMC programming, assist with conducting comparisons of efficiency, and improve the affordability, efficiency, and quality of SMC. The body of the report covers the overall findings while country reports and findings are in the Annex section. The specific objectives of this research were to:

- 1) Determine the total program costs and unit cost per child receiving the recommended four cycles of SMC, based on the 2015 coverage results;
- 2) Identify the principal recurrent cost-drivers of SMC (e.g. drugs and supplies, distributor remuneration, management, supervision, meetings, trainings, and other recurrent costs);
- 3) Estimate SMC distribution efficiency including the number of SMC administered per distributor, ratio of distributors per supervisor, and SMC medicine wastage;
- 4) Calculate the 2015 and 2016 financial gaps of reaching all eligible children for SMC in the seven countries; and
- 5) Contribute to global learning on the implementation and scale-up of SMC.

This cross-country analysis did not determine the economic costs incurred by volunteer distributors or by beneficiary families (i.e. productivity losses or money spent out-of-pocket accessing SMC). Also, this analysis did not determine the quality of SMC distribution or the number of children who received the full course of treatment (one combined dose of SP+AQ and two subsequent doses of AQ).<sup>5</sup> While several of the possible demand-side determinants of SMC coverage are mentioned in this report, this study did not aim to explore the reasons for differing coverage rates across the countries. Lastly, neither the efficiency nor the cost-effectiveness of the different service delivery methods (door-to-door, fixed point, and mobile distribution) was determined due to the lack of complete and reliable estimates from the country-level data. A study on the cost-effectiveness of the various distribution methods is planned for 2017.

## Methods

For this analysis, MSH staff collected 2015 programmatic and cost data in all seven ACCESS-SMC project countries from September 2015 to January 2016.<sup>6</sup> The data collection and initial analysis took an average of two weeks in-country. Data were collected at all levels of the health system:

- 1) Central level from the Ministry of Health (MoH)/National Malaria Control Program (NMCP) and from implementing organizations (Catholic Relief Services, Malaria Consortium, and Speak Up Africa)
- 2) Regional/State level from MoH and implementing organization staff<sup>7</sup>
- 3) District/Local Government Authority level from the MoH staff
- 4) Health facility level MoH staff
- 5) Community level

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<sup>5</sup> The coverage surveys conducted by the LSHTM provide estimates on the numbers of children who received the three complete doses.

<sup>6</sup> At the time of writing this report, complete cost data for Chad was not available and therefore cost results are omitted. An addendum including the Chad cost results may be included at a later time.

<sup>7</sup> In Nigeria, Malaria Consortium also had staff at the State level.

Using standard semi-structured questionnaires and data checklists, MSH staff conducted interviews with program managers, supervisors, and SMC distributors. Implementing partner non-governmental organizations (NGOs) and MoH/NMCP staff provided data on the costs of all inputs (e.g. equipment and drugs, travel and transportation costs, personnel salaries and incentives, meeting and training costs, and social mobilization). MSH staff also collected information on SMC distribution protocols as well as data on population coverage and the numbers of SMC administered. All data collected was for 2015 – the first year of distribution of the ACCESS-SMC project.

The MoH/NMCP and implementing partners determined the selection of sub-national areas and health facilities for sampling based on three key criteria: (1) accessibility – i.e. time required to access the health facility in the context of weather and road conditions; (2) representation of the SMC program – ideally sub-national areas and health facilities with varying catchment population sizes and geography; and (3) availability of staff (supervisors and SMC distributors) to participate in interviews.<sup>8</sup>

In collaboration with implementing partners and MoH personnel, MSH staff visited an average of one district/LGA and five health facilities in each country, and conducted interviews with an average of three distributors and one direct supervisor per health center, totaling approximately 15 distributors and five direct supervisors in each country. This sample was limited by time and budgetary constraints but was sufficient to provide a “reality check” of the national description and norms of the SMC program, to determine the actual structure and service delivery approach of the project at the community level, the supervision structure, and the involvement of the sub-national levels in implementing the project.

MSH analyzed the costs using the SMC Costing and Financing Tool which was adapted from the USAID iCCM Costing and Financing Tool,<sup>9</sup> developed by MSH. During the design process, MSH reviewed a number of other tools and it was deemed that the adaptation of the USAID iCCM Costing and Financing Tool would be the easiest and most appropriate. Other SMC costing studies identified in the literature review (see below) indicated the use of spreadsheets to calculate the costs but it does not appear that any standard tools were used.

Total programmatic costs are separated by start-up costs (i.e. those incurred at the beginning of the program) and recurrent costs (i.e. those that are repeated ever year). The resulting figures are a mixture of standard and actual costs, obtained from accounting and budget records and through interviews, in what is sometimes known as an “ingredients” approach. The costs in this analysis represent the total costs incurred by governments and by implementing NGO partners (most of which were financed by UNITAID). In the SMC Costing and Financing tool, the costs are linked with the financing sources, such as UNITAID or MoH/NMCP contributions.

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<sup>8</sup> While MSH staff sought to sample health facilities in both urban and hard-to-reach areas, in some countries, this was not possible due to the time constraints and issues of accessibility.

<sup>9</sup> MSH iCCM Costing and Financing Tool. Available at: <http://www.msh.org/resources/integrated-community-case-management-costing-financing-tool>

MSH conducted a separate literature review to collect comparable evidence on the costs of SMC as well as other mass administration campaigns of malarial drugs using community-based service delivery platforms (e.g. intermittent preventive treatment for pregnant women and infants). The objective of this literature review was to inform the overall methodology of the costing studies, including the design of the SMC Costing and Financing Tool and the in-country data collection process. Of the 476 articles retrieved using the electronic online database MEDLINE, only three articles were determined relevant for this analysis (reviewers also checked the references of screened articles for any additional relevant articles). A summary of the findings of this literature review can be found in the discussion section and the full report is available separately.<sup>7</sup>

## Results

### Geographic and population coverage

The protocol for SMC administration<sup>10</sup> is standard across all seven ACCESS-SMC project countries. The first dose of SP+AQ is administered by a trained distributor on the first day and the remaining two doses of AQ are administered by the child's caregiver at home on the second and third day. There are, however, programmatic and operational differences among the countries which impact the cost of SMC. These differences include the scale of each program (i.e. geographic and population coverage), the number of days required per distribution cycle, the methods of SMC distribution, as well as the numbers of SMC distributors, direct supervisors, and program support staff.

Among the seven ACCESS-SMC project countries, Guinea was the only country which had never previously implemented SMC. All other countries had at some point supported SMC distribution beyond the scale of a pilot program (i.e. at district scale or beyond) with assistance from other donors.<sup>11</sup>

Through support from the ACCESS-SMC project, the seven countries implemented SMC during the four peak months of malaria transmission which varied depending on the seasonality of malaria transmission. However, in Mali, it was reported that SMC distribution was delayed by one-month due to the late arrival of the SMC drugs.

Among the seven countries, the number of days for SMC distribution ranged from three to five (see Table 1), depending on the expected number of children SMC distributors were able to reach in the health facility catchment area given issues of distance, accessibility, and bad weather. In the case of Guinea, which had never previously implemented an SMC program, the first cycle lasted three days but was deemed insufficient to cover the number of targeted

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<sup>10</sup> Eligible children (3-59 months) receive SP+AQ on a monthly basis over a four-month period during the peak malaria transmission season.

<sup>11</sup> Both Chad and Mali began SMC implementation in 2012. Burkina Faso, Niger, and Nigeria began SMC in 2013. The Gambia began SMC in 2014.

children (3-59 months) due to issues of accessibility and therefore the remaining three cycles were extended to four days each.

The target population (i.e. children 3-59 months) among country programs ranged from 90,925 children in The Gambia to 809,638 children in Mali. The average ratio of the number of targeted children to SMC distributor was 161:1, ranging from 95:1 in Burkina Faso to 276:1 in Niger.

Nigeria deployed 7,954 distributors while The Gambia deployed 582 distributors.<sup>12</sup> For the purpose of this analysis, the number of trained distributors comprises all those who participated in SMC distribution including trained volunteers and health facility personnel who assessed the eligibility of children and administered SMC, data recorders, and security guards who helped to organize crowds at fixed points (in the case of Niger).<sup>13</sup>

In Chad, Guinea, and The Gambia, a door-to-door distribution strategy was used; in the other countries a mix of distribution methods were used, comprising door-to-door, fixed point distribution, and mobile distribution (i.e. SMC distribution at fixed points in hard-to-reach areas).

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<sup>12</sup> In The Gambia, the ACCESS-SMC project trained 291 teams made up of one data collector and one SMC distributor (total: 582) and SMC cycles were carried out consecutively (not simultaneously) in two regions.

<sup>13</sup> This number of does not include volunteers trained on social mobilization who did not participate in the distribution of SMC.



**Table 1. ACCESS-SMC geographic and population coverage (2015)**

	Burkina Faso	Chad	Guinea	Mali	Niger	Nigeria	The Gambia
SMC commencement <sup>14</sup>	2013	2012	2015	2012	2013	2013	2014
Months of ACCESS-SMC distribution	July – November 2015	July - October 2015	July - October 2015	August – November 2015	August - November 2015	August - November 2015	August - November 2015
Number of distribution cycles	4	4	4	4	4	4	4
Number of days per distribution cycle	4 days	3 days	4 days (1 <sup>st</sup> cycle: 3 days)	5 days	5 days	4 days	5 days
Geographic coverage	11 districts in 3 regions	6 districts in 2 regions	6 districts in 3 regions	14 districts in 5 regions	6 districts in 3 regions	17 LGAs in 2 states	18 districts in 2 regions
SMC distribution method	Door-to-door & fixed point	Door-to-door	Door-to-door	Fixed point & mobile	Fixed point & door-to-door <sup>15</sup>	Door-to-door & fixed point	Door-to-door
Number of SMC distributors	<b>6,855</b>	<b>2,086</b>	<b>1,217</b>	<b>4,606</b>	<b>2,161</b>	<b>7,954</b>	<b>582</b>
Number of direct supervisors	671	92	156	658	350	182	65
Target population (3-59 months)	<b>649,693</b>	<b>275,000</b>	<b>210,047</b>	<b>809,638</b>	<b>595,901</b>	<b>792,133</b>	<b>90,925</b>
Target population (3- <12 months)	96,607	63,250	42,023	141,353	106,888	150,088	15,859
Target population (>12-59 months)	553,086	211,750	168,024	668,285	489,013	642,045	75,066
Ratio of target population per distributor	<b>95</b>	<b>132</b>	<b>173</b>	<b>176</b>	<b>276</b>	<b>100</b>	<b>156</b>

<sup>14</sup> Before 2015, SMC was supported by other projects not by the ACCESS-SMC project which began SMC distribution in 2015.

<sup>15</sup> Niger introduced door-to-door SMC distribution in the fourth cycle in Maradi district.



### **SMC coverage and utilization**

The numbers of children who received the four cycles of SMC were calculated by dividing the total number of SMC drugs administered, by four months. These figures do not represent the actual number of children who received four cycles. The SMC coverage percentages were calculated by dividing the estimated numbers of children reached by the estimated target populations.

The percent coverage ranged from 69.97% in Niger to 105.93% in Burkina Faso (see Table 2). SMC coverage rates of more than 100% were likely due to a combination of an initial underestimation of the target population or children who came from outside the catchment area who received SMC. In general, the demand for SMC increased between the first and fourth cycles with the exception of Mali where SMC coverage decreased after the second cycle.

The coverage surveys conducted by the London School of Hygiene and Tropical Medicine (LSHTM) indicate that many of the children received fewer than four cycles of SMC, which presumably demonstrates that more children were reached in total but some received less than the recommended four cycles of SMC (i.e. three cycles or less). For example, in Chad and Mali, as per LSHTM coverage surveys, only 22.7% and 33.7% of children (3-59 months), respectively, received all four cycles of SMC (see Table 2).

**Table 2. ACCESS-SMC coverage (2015)**

	Burkina Faso	Chad	Guinea	Mali	Niger	Nigeria	The Gambia
Total number of SMC drugs administered in 2015	2,721,731	1,058,324	805,131	2,751,353	1,667,890	3,149,867	308,830
Estimated number <sup>a</sup> of children who received four cycles (3-59 months)	680,433	264,581	201,283	687,838	416,973	787,467	77,208
Percent coverage of target (3-59 months)	<b>104.73%</b>	<b>96.21%</b>	<b>95.83%</b>	<b>84.96%</b>	<b>69.97%</b>	<b>99.41%</b>	<b>84.91%</b>
Estimated number <sup>a</sup> of children who received four cycles (3 up to 12 months)	94,556	46,618	42,715	132,635	74,793	151,432	12,408
Percent coverage (3 up to 12 months)	97.88%	73.70%	101.65%	93.83%	69.97%	100.89%	78.24%
Estimated number <sup>a</sup> of children who received four cycles (>12 - 59 months)	585,877	217,964	158,074	555,203	342,179	636,035	64,799
Percent coverage (>12 - 59 months)	105.93%	102.93%	94.08%	83.08%	69.97%	99.06%	86.32%
<b>Campaign results (children 3-59 months)</b>							
Cycle 1	648,290	250,233	174,448	691,231	342,837	736,858	71,121
Cycle 2	672,185	265,193	211,997	711,973	415,255	744,827	84,298
Cycle 3	698,877	270,517	208,238	687,709	432,321	840,392	76,489
Cycle 4	702,379	272,381	210,448	660,440	477,477	827,790	76,922
Percent of children (3-59 months) receiving four full cycles of SMC, based on LSHTM coverage survey	69%	22.7%	NA	37.7%	Varies by district <sup>16</sup>	42%	56%

<sup>a</sup> This figure is calculated by dividing the total number of SMC medicines administered by four and does not represent the actual number of children who received four cycles.

NA = Not available

SMC coverage could be influenced by a number of supply- and demand-side factors which should be explored further to better understand their impact. For instance, countries reported that SMC coverage rates were impacted by the timing of SMC distribution which coincides with both the rain and farming seasons. During times of rain, people often stay inside their homes (and are reluctant to travel to distribution points) or are farming away from their homes. Bad weather conditions also could have impacted the efficiency of SMC distributors (particularly

<sup>16</sup> According to the LSHTM coverage surveys, in Aguié, 45% of eligible children received four cycles of SMC. In Madaoua, 43% of children received four cycles of SMC. In Zinder, 7% of eligible children received four cycles of SMC. In Maradi, 4% of eligible children received four cycles of SMC.

those conducting door-to-door distribution) and corresponding coverage rates. Following the first distribution cycle in Guinea, for example, the ACCESS-SMC project purchased umbrellas for all of its SMC distributors to facilitate their movement for door-to-door SMC distribution.

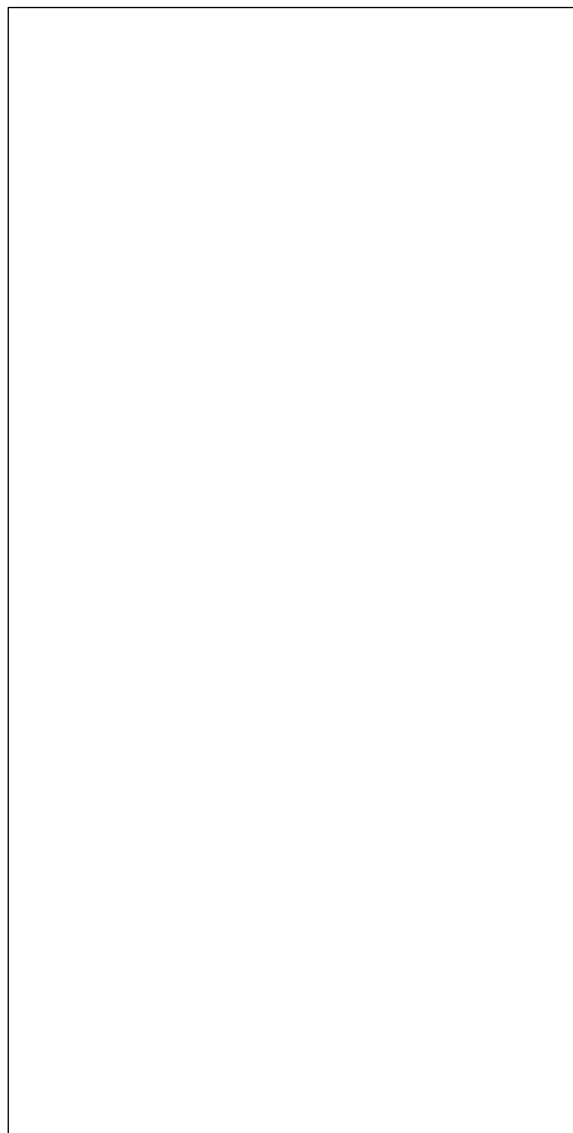
The maturity (i.e. years of previous implementation) of SMC programs also varied across countries and this could have impacted the initial coverage among targeted populations. However, 2015 was the first year of SMC implementation in Guinea and the overall coverage was relatively high compared to Mali which had supported SMC distribution since 2012. Additional research is necessary to determine if, and how, SMC maturity could have affected coverage in areas with and without previous SMC programs.

### **SMC costing analyses**

Featured in Table 3 are the results of the costing analyses<sup>17</sup> which are presented in U.S. Dollars (USD).<sup>18</sup>

Total program costs are divided into start-up and recurrent costs. The start-up costs of an SMC program represent those incurred on a one-time basis such as initial launch meetings, the production of videos, the development of radio spots, and other activities that would not need to be repeated each year.<sup>19</sup> The recurrent costs are those incurred every year (e.g. for medicines, equipment, recurrent meetings and trainings). The recurrent cost per child covered is calculated by dividing the total recurrent costs by the equivalent number of children who received SMC over the four months of the campaign.<sup>20</sup> The recurrent cost per child therefore represents the cost of providing SMC to an equivalent of one child for four months.

#### **Text Box 1: SMC cost categories defined**



<sup>17</sup> Complete cost data was not available for Chad at the time of this analysis.

<sup>18</sup> The following exchange rates were used for this analysis: 1 USD is equivalent to 600 West African CFA; 7730.75 Guinean Francs; 160.85 Nigerian Naira and 40 Gambian Dalasi.

<sup>19</sup> Start-up costs did not include initial trainings in Dakar, Senegal and Morocco.

<sup>20</sup> The cost of medicines and supplies is estimated by multiplying the standard amounts required for each child. Therefore, the costs do not include wastage or any losses incurred in medicines during storage or handling.

In four countries, the total start-up costs ranged from USD 48,533 to USD 59,180. However, in Burkina Faso and Nigeria, the start-up costs totaled USD 117,851 and USD 209,409, respectively. In Burkina Faso, start-up costs included those for initial advocacy and planning meetings as well as for activities such as the creation of a monitoring and evaluation plan, conducting a situational analysis, and field-testing logos and job aides. In Nigeria, start-up costs included a logistics management training organized by MSH, start-up meetings and situational analyses, social behavior change communication (SBCC) planning and development of communications materials. At the time of writing this report, an in depth-analysis focused on the reasons for varying start-up costs had not been conducted.

The total recurrent costs ranged from USD 468,567 in The Gambia (which had the lowest target population) to USD 3,532,323 in Nigeria. In Mali, which had the largest target population, the total recurrent costs were USD 2,772,482. Additional details on the breakdown of the recurrent costs can be found in the country reports in the annex.

The average recurrent cost for four cycles of SMC ranged from USD 3.45 in Niger to USD 6.07 in The Gambia. In general, higher SMC coverage rates combined with lower fixed costs (for management, supervision, trainings, and remuneration) resulted in a lower average recurrent cost per child. Some fixed costs are still incurred regardless of the quantity of SMC distributed. Therefore, if fixed costs are spread among a higher quantity of SMC, the average recurrent cost per child will be lower. Additional analysis is provided in the next section.

This cross-country comparison of recurrent costs does not provide any insight into the relative cost-effectiveness of each distribution method (e.g. door-to-door, fixed point, and mobile distribution) or of integration of SMC with other services. Such analysis would require additional data which was not available at the time of writing this report. A cost-effectiveness analysis of distribution methods is planned for 2017 to compare the costs and numbers of SMC distributed associated with each distribution method.

**Table 3. Total costs and cost per child of four cycles of SMC (2015, USD)**

	Burkina Faso	Chad	Guinea	Mali	Niger	Nigeria	The Gambia
Total program costs	\$3,052,307	NA	\$1,059,995	\$2,831,662	\$1,488,356	\$3,741,732	\$524,578
Total recurrent costs	\$2,934,456	NA	\$1,010,048	\$2,772,482	\$1,439,823	\$3,532,323	\$468,567
Total start-up costs	\$117,851	NA	\$49,947	\$59,180	\$48,533	\$209,409	\$56,011
Average recurrent cost for four cycles	<b>\$4.31</b>	NA	<b>\$5.02</b>	<b>\$4.03</b>	<b>\$3.45</b>	<b>\$4.49</b>	<b>\$6.07</b>

NA = Not available

The recurrent costs of SMC programs are driven by the number of children covered and the mixture of variable and fixed costs. Variable costs change based on the level of SMC coverage and are primarily the costs of medicines and supplies (e.g. sugar and plastic bags or dispensing envelopes for storing medicines). The total fixed costs, which should not significantly change with the level of SMC coverage within the targeted sub-national area,<sup>21</sup> include the costs related to management, supervision, meetings, trainings, and social mobilization.

The breakdown of recurrent costs indicates some of the reasons for the differences in costs across the countries (Table 4). The analysis shows that the main reasons for the higher cost per child reached in The Gambia were due to the cost of and supplies, remuneration for SMC distributors and training (USD 1.45, USD 1.32 and USD 1.31, respectively). In Guinea, the cost of and supplies (USD 1.52) was also the biggest cost-driver followed by the costs of supervision (USD 1.01). Variations in the cost of medicines and supplies per child reached were mainly due to differences in custom levies, handling, storage, and transport costs within the countries.<sup>22</sup>

<sup>21</sup> If coverage expands to new a new sub-national area (e.g. regions or districts) then additional fixed costs for sub-national management, supervision, etc. would be incurred.

<sup>22</sup> It is important to note that the categorization of costs provided by the country programs varied across the countries which makes it the comparisons of some cost elements less than precise.

**Table 4. Recurrent costs and average recurrent cost for four cycles of SMC (3-59 months) (2015, USD)**

<b>Recurrent costs</b>	<b>Burkina Faso</b>	<b>Chad</b>	<b>Guinea</b>	<b>Mali</b>	<b>Niger</b>	<b>Nigeria</b>	<b>The Gambia</b>
Medicines and supplies	\$995,953	NA	\$305,304	\$888,500	\$540,687	\$969,070	\$112,080
SMC distributor remuneration	\$664,505	NA	\$108,248	\$1,047,662	\$212,504	\$993,805	\$101,850
Management	\$620,524	NA	\$169,355	\$363,003	\$496,345	\$534,894	\$63,241
Supervision	\$159,436	NA	\$203,185	\$273,259	\$105,351	\$159,963	\$38,999
Meetings	\$207,480	NA	\$21,945	\$56,645	\$13,335	\$181,387	\$4,231
Trainings - recurrent	\$134,243	NA	\$36,304	\$46,509	\$42,894	\$619,645	\$101,203
Other recurrent program costs including social mobilization	\$152,315	NA	\$165,708	\$96,902	\$28,706	\$73,561	\$46,964
<b>Total</b>	<b>\$2,934,456</b>	<b>NA</b>	<b>\$1,010,048</b>	<b>\$2,772,480</b>	<b>\$1,439,823</b>	<b>\$3,532,323</b>	<b>\$468,567</b>
<b>Percent of recurrent costs</b>	<b>Burkina Faso</b>	<b>Chad</b>	<b>Guinea</b>	<b>Mali</b>	<b>Niger</b>	<b>Nigeria</b>	<b>The Gambia</b>
Medicines and supplies	33.94%	NA	30.23%	32.05%	37.55%	27.43%	23.92%
SMC distributor remuneration	22.64%	NA	10.72%	37.79%	14.76%	28.13%	21.74%
Management	21.15%	NA	16.77%	13.09%	34.47%	15.14%	13.50%
Supervision	5.43%	NA	20.12%	9.86%	7.32%	4.53%	8.32%
Meetings	7.07%	NA	2.17%	2.04%	0.93%	5.14%	0.90%
Trainings - recurrent	4.57%	NA	3.59%	1.68%	2.98%	17.54%	21.60%
Other recurrent program costs including social mobilization	5.19%	NA	16.41%	3.50%	1.99%	2.08%	10.02%
<b>Total</b>	<b>100%</b>	<b>NA</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Average recurrent cost for four cycles (3-59 months)</b>	<b>Burkina Faso</b>	<b>Chad</b>	<b>Guinea</b>	<b>Mali</b>	<b>Niger</b>	<b>Nigeria</b>	<b>The Gambia</b>
Medicines and supplies	<b>\$1.46</b>	NA	<b>\$1.52</b>	\$1.29	<b>\$1.30</b>	\$1.23	<b>\$1.45</b>
SMC distributor remuneration	\$0.98	NA	\$0.54	<b>\$1.52</b>	\$0.51	<b>\$1.26</b>	\$1.32
Management	\$0.91	NA	\$0.84	\$0.53	\$1.19	\$0.68	\$0.82
Supervision	\$0.23	NA	\$1.01	\$0.40	\$0.25	\$0.20	\$0.51
Meetings	\$0.30	NA	\$0.11	\$0.08	\$0.03	\$0.23	\$0.05
Trainings - recurrent	\$0.20	NA	\$0.18	\$0.07	\$0.10	\$0.79	\$1.31
Other recurrent program costs including social mobilization	\$0.22	NA	\$0.82	\$0.14	\$0.07	\$0.09	\$0.61
<b>Total</b>	<b>\$4.31</b>	<b>NA</b>	<b>\$5.02</b>	<b>\$4.03</b>	<b>\$3.45</b>	<b>\$4.49</b>	<b>\$6.07</b>

NA = Not available

Figure 1. Total recurrent costs for ACCESS-SMC by country (3-59 months) (2015, USD)

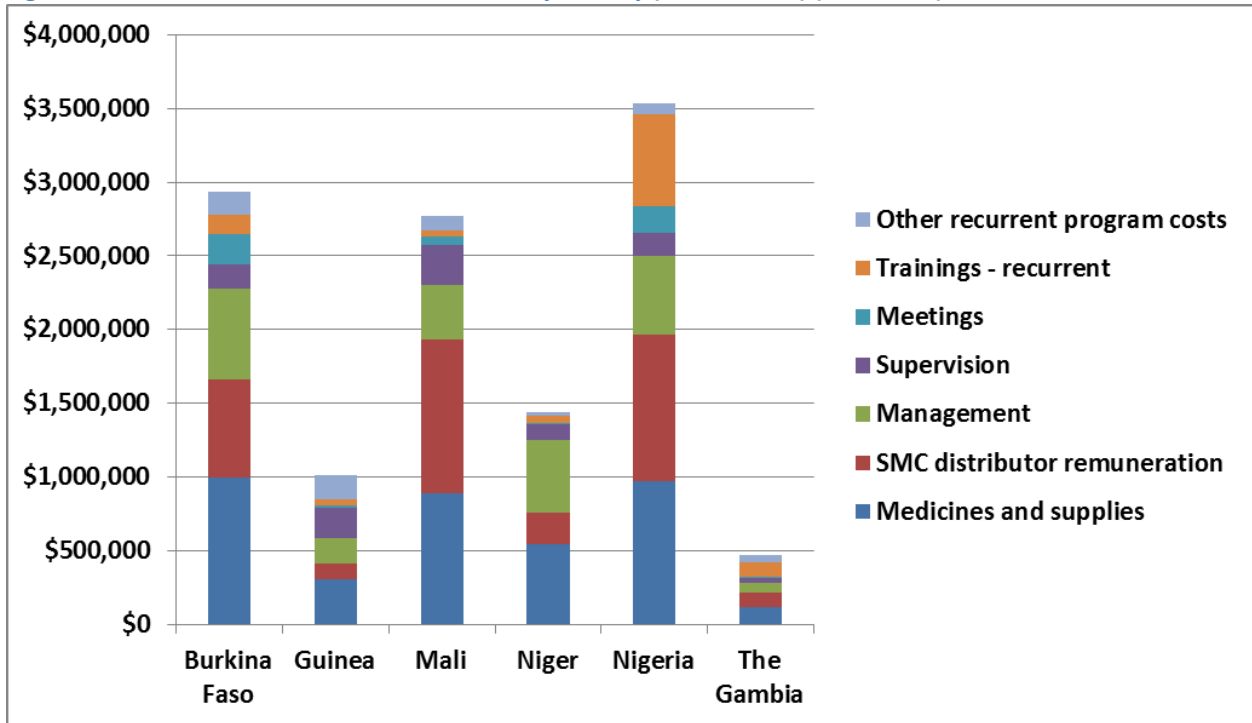
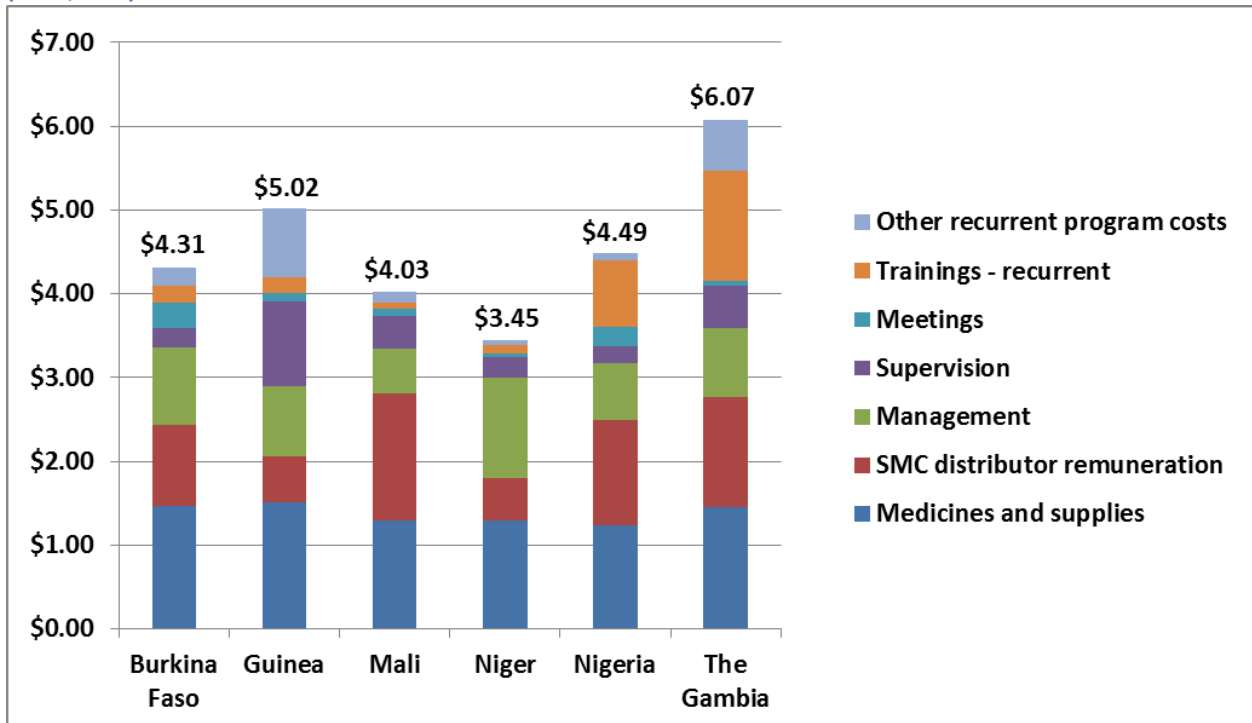


Figure 1. Average recurrent cost per child receiving four cycles of SMC by country (3-59 months) (2015, USD)



## SMC financing

The majority of the ACCESS-SMC project activities were financed by UNITAID; however, the country governments have generally covered a portion of the costs, often in the form of MoH staff salaries (see Table 5). UNITAID contributions ranged from 77% of the total recurrent costs in Niger to 94.10% of the total recurrent costs in Guinea. As SMC becomes more established, it will be essential to ensure that it is integrated into government health services so it can be sustained with minimal donor support. Additional information on the financing of programs can be found in the Annex.

**Table 5. Financing of ACCESS-SMC recurrent costs (2015, USD)**

	Burkina Faso	Chad	Guinea	Mali	Niger	Nigeria	The Gambia
Total recurrent costs (2015, USD)	\$2,934,456	NA	\$1,010,048	\$2,772,482	\$1,439,823	\$3,532,323	\$468,567
UNITAID contributions (% of total recurrent costs)	\$2,546,286 (86.77%)	NA	\$950,495 (94.10%)	\$2,546,306 (91.84%)	\$1,080,858 (77%)	\$3,075,881 (87.088%)	\$439,502 (93.80%)
Government contributions (% of total recurrent costs)	\$388,170 (13.23%)	NA	\$58,031 (5.75%)	\$210,932 (7.61%)	\$331,213 (23%)	\$456,442 (12.92%)	\$29,065 (6.20%)
Other contributions (% of total recurrent costs)	0	NA	\$1,522 (0.15%)	\$15,244 (0.55%)	0	0	0

NA = Not available

## SMC efficiency

The efficiency of SMC distribution can be measured using the average number of children receiving SMC per individual distributor. However, this is dependent on the distribution system and several aforementioned contextual and programmatic factors, including distance from households to fixed points or from health facilities to households, distance between households, numbers of eligible children per household, the demand for SMC among the target population, and weather conditions, among factors. Moreover, the quantity of SMC distributed per cycle (i.e. number of children reached in addition to the wastage of medicine) varies depending on the number of days per distribution cycle which is different across countries. Therefore, it is important to use caution when comparing efficiency indicators among the countries.

The average number of SMC effectively administered (i.e. excluding wastage of SMC)<sup>23</sup> per individual SMC distributor was 34 per day, ranging from 25 in Burkina Faso to 44 in Guinea (Table 6). Although SMC is administered by teams of distributors as opposed to individual

<sup>23</sup> Defined as SMC medicines that were either administered but not effectively administered due to children vomiting or damaged (e.g. SMC tablet that fell on the ground and is unusable).



distributors, this data allows for efficiency comparisons across countries which used a combination of trained distributors (including those who served as data recorders).

While all SMC distributors reported being available throughout the day during SMC distribution cycles, certain cadres of distributors (e.g. fixed point distributors in Burkina Faso) reported only providing SMC to children who presented or were referred to the health facility (the Burkina Faso practice is in line with the SMC guidelines). Therefore not all SMC distributors administered SMC to a large number of children per day. In Mali, SMC distributors reported using rapid diagnostic tests (RDTs) to test febrile children for malaria and made referrals to the health facility for those who tested positive for malaria (which is a novel approach). The additional time required to administer an RDT could have affected the efficiency of SMC distribution.

At the time of reporting, data on SMC wastage ranged from 0.44% (Chad) to 1.96% (Mali) of the total SMC effectively administered. The wastage of medicines was reported by the implementing partner in each country and, in some cases, the definition may have varied. For instance, if a child vomits the first dose of SP+AQ, it may be recorded as wastage; however, in some cases, the second and third doses of AQ could be salvaged for additional use. Nevertheless, the wastage of SMC contributes to higher costs of distribution due to loss of medicines and time. According to SMC guidelines, SMC distributors must wait 30 minutes before providing a second dose of SMC to children who vomit after receiving the first dose. It is possible that wastage of SMC due either to contamination (i.e. tablets that fall on the ground) can be effectively reduced by using medicine grinders (i.e. pill crushers) as demonstrated in The Gambia; however, evidence is currently unavailable.

The average ratio of total SMC distributors per direct supervisor was 15 : 1, ranging from 6 : 1 in Niger to 44 : 1 in Nigeria (see Table 5); however, this ratio varied depending on the type of SMC distributors (e.g. door-to-door, fixed point, and mobile). While supervision is important to ensure the quality of SMC distribution, reporting, and dissemination of messages to caregivers, it was not possible to determine the quality of supervision provided to distributors and whether this level of quality varied depending on the ratio of supervisors to distributors. Due to lack of information, it was also not possible to compare supervision efficiencies (e.g. number of visits per SMC distributor).

**Table 6. SMC distribution efficiency (2015)**

	Burkina Faso	Chad	Guinea	Mali	Niger	Nigeria	The Gambia
Total SMC medicines distributed (including the wastages)	2,747,443	1,062,955	812,021	2,806,247	1,695,426	3,198,414	310,241
Total SMC effectively administered by distributors (excluding wastage)	2,721,731	1,058,324	805,131	2,751,353	1,667,890	3,149,867	308,830
Total wastage of SMC	25,712	4,631	6,890	54,894	27,536	48,547	1,411
Wastage as percent of total SMC distributed	0.94%	0.44%	0.85%	1.96%	1.62%	1.52%	0.45%
Total number of children 3-59 months reached	680,433	264,581	201,283	687,838	416,973	787,467	77,208
Actual SMC drugs administered per individual distributor per day	25	42	44	30	39	25	27
Actual ratio of distributors per direct supervisors <sup>24</sup>	10 : 1	23 : 1	8 : 1	7 : 1	6 : 1	44 : 1	9 : 1

### 2015 SMC gap analysis

The unmet need for SMC among eligible children in 2015 varied significantly across the seven countries (Table 7). The figures on SMC coverage and the number of total eligible children are based upon inputs provided by implementing partners and MoHs/NMCPs.

The percent of children reached by the ACCESS-SMC project as a proportion of all SMC coverage by all implementing partners ranged from 49.37% in Mali to 100% in Guinea and The Gambia (Table 6). The unmet need for SMC in 2015 ranged from 13,717 children in The Gambia to 9,883,583 in Nigeria. In terms of percentage coverage, the unmet need for SMC ranged from 15.09% in The Gambia to 91.08% in Nigeria. Within the ACCESS-SMC project target populations, the numbers of children not reached ranged from 4,666 in Nigeria to 178,928 in Niger, based on the estimated target populations. The target population in Burkina Faso was exceeded (30,740 children reached beyond estimated target population).

<sup>24</sup> In Burkina Faso, the ratio of total SMC distributors for door-to-door and fixed point distribution (6,855) to direct supervisors (671) was 10.22 : 1. However the ratio of door-to-door distributors (6,500) to supervisors (671) was: 9.69 :1.

In Mali, the ratio total SMC distributors for mobile and fixed point distribution (4,606) to supervisors (658) was 7:1. However, the ratio of mobile distributors (3,172) to supervisors (658) was 5:1.

In Nigeria, the ratio of total SMC distributors for door-to-door, fixed point, and health center distribution (7,954) to ward supervisors (182) was 44: 1. However, the ratio of door-to-door distributors (3,654) to ward supervisors (182) was 20: 1.

Based on the average recurrent cost per child in 2015, the estimated financial gaps for ensuring SMC coverage for all eligible children have been calculated in six of the seven countries. The 2015 financing gaps range from approximately USD \$83,000 in The Gambia to approximately USD 44 million in Nigeria. These estimates assume that no additional start-up costs would be needed and no additional economies of scale would be achieved. Moreover, these estimates do not take into consideration key variables such as distance or potential for additional supervision, among others. It should be noted that the estimates for Nigeria may be low, since expanding coverage would involve starting in other provinces where the project did not operate in 2015.

These results will allow MoHs to estimate the percentage of funding for procurement for SMC products and delivery by each implementing partner and donor, in addition to funding provided by UNITAID through the ACCESS-SMC project. However, key costs related to program management, supervision, trainings, and meetings may differ significantly among implementing partners.

**Table 7. Unmet gap of SMC coverage and costs (2015, USD)**

	Burkina Faso	Chad	Guinea	Mali	Niger	Nigeria	The Gambia
Children eligible for SMC (2015)	2,503,937	NA	415,622	2,897,966	3,700,000	10,851,345	90,925
Estimated number <sup>a</sup> of children who received four cycles (3-59 months) by UNITAID ACCESS-SMC	680,433	264,581	201,283	687,838	416,973	787,467	77,208
Estimated number <sup>a</sup> of children who received four cycles (3-59 months) by other implementing partners	273,614	NA	0	705,417	206,704	180,295	0
Estimated number <sup>a</sup> of children who received four cycles (3-59 months) reached by all implementing partners	954,047	NA	201,283	1,393,255	623,677	967,762	77,208
Percent of children <sup>b</sup> who received SMC by UNITAID ACCESS-SMC	71.32%	NA	100%	49.37%	66.86%	81.37%	100%
Percent of children <sup>b</sup> who received SMC by all implementing partners	38.10%	NA	48.43%	48.08%	16.86%	8.92%	84.91%
Children <sup>c</sup> with unmet need for SMC	1,549,890	NA	214,339	1,504,711	3,076,323	9,883,583	13,717
Children <sup>c</sup> not reached by ACCESS-SMC in targeted districts	0 <sup>d</sup>	10,419	8,764	121,800	178,928	4,666	13,717
Percent <sup>c</sup> of total eligible children with unmet need for SMC	61.90%	NA	51.57%	51.92%	83.14%	91.08%	15.09%
Cost of reaching total number of children with unmet need	\$6.68 million	NA	\$1.1 million	\$6.1 million	\$10.62 million	\$44.33 million	\$83,248

<sup>a</sup> This figure is calculated by dividing the total number of SMC medicines distributed by four and does not represent the actual number of children who received four cycles.

<sup>b</sup> More children were reached but not all of them received the full four cycles.

<sup>c</sup> Some as the children included under unmet need received at least one cycle of SMC but not all four cycles.

<sup>d</sup> The number of cycles distributed was higher than the target and so this number is showed as zero.

NA = Not available

## 2016 SMC gap analysis

Based on data from implementing partners and MoHs/NMCPs, the projected unmet need for SMC in the countries in 2016 (Table 8) was most significant in Nigeria with a gap of nearly 9.8 million children. In 2016, the ACCESS-SMC project plans to scale-up SMC coverage in all countries with the exception of The Gambia, which has maintained its 2015 target population estimate for 2016 based on a revised estimate of total eligible children.

The estimated cost of reaching children targeted for SMC (2016) in each country is based on the average recurrent cost per child in 2015 and assumes that no additional start-up costs would be needed and no additional economies of scale would be achieved. Inflation is not included. These figures may result in an underestimation of the cost in countries, such as in Nigeria, where expanding SMC coverage would involve implementing in new subnational areas (e.g. States and LGAs).

**Table 8. Unmet gap of SMC coverage and costs (2016, USD)**

	Burkina Faso	Chad	Guinea	Mali	Niger	Nigeria	The Gambia
Children eligible for SMC <sup>25</sup> (2016)	2,576,067	NA	438,123	2,982,007	3,840,600	11,198,591	90,925
Children targeted for SMC by UNITAID ACCESS-SMC	1,394,653	518,656	438,123	1,461,520	1,210,499	1,735,602	90,925
Children targeted for SMC by other implementing partners	1,181,414	411,948	0	411,948	1,056,127	0	0
Children targeted for SMC by all implementing partners	2,576,067	930,604	438,123	1,873,468	2,266,626	1,735,602	90,925
% of all children targeted for SMC by UNITAID ACCESS-SMC	54.14%	NA	100%	49.01%	31.52%	15.50%	100%
Children with unmet need for SMC	0	NA	0	1,108,539	1,573,974	9,462,989	0
Cost of reaching children targeted for SMC by all implementing partners (using 2015 unit costs)	\$11.11 million	NA	\$2.2 million	\$7.55 million	\$7.83 million	\$7.8 million	\$551,818
Cost of reaching children with unmet need (using 2015 unit costs)	0	NA	0	\$4.5 million	\$5.43 million	42.45 million	0

NA = Not available

<sup>25</sup> number of children in 2015 increased for population growth

## Discussion

The analysis shows that the total start-up costs for the ACCESS-SMC project for six countries were USD 0.5 million and the total recurrent costs were USD 12.1 million (excluding Chad). The recurrent costs ranged from USD 0.4 million in The Gambia to USD 3.5 million in Nigeria.

The average recurrent cost for four cycles of SMC was USD 4.56 across the six countries (excluding Chad), ranging from USD 3.45 in Niger to USD 6.07 in The Gambia.

In four countries (Burkina Faso, Guinea, Mali, Niger, and The Gambia), the highest cost drivers was medicines and supplies. In Nigeria, the highest cost drivers were SMC distributor remuneration, likely due to the high number of distributors used.

The literature review<sup>8</sup> identified three original costing studies relating to community-based service delivery.<sup>9 10 11</sup> The costs from these and other studies were inflated and presented as USD 2010 equivalents in a report by Pitt *et al* for the World Health Organization Technical Expert Group on Preventive Chemotherapy.

For the purposes of comparison with the ACCESS-SMC project results, the most relevant figures in that report are the costs per child per month of SP+AQ delivered by CHWs. These figures were USD 0.55 per month in Basse, The Gambia,<sup>12</sup> USD 1.14 in Jakisan, Ghana,<sup>13</sup> and USD 1.24 in Tivouane in Senegal<sup>26</sup>. Since these are monthly costs, the extrapolated costs for four months would have been USD 2.20, USD 4.56 and USD 4.96, respectively. These figures from Ghana and Senegal are comparable to the costs for the ACCESS-SMC project countries.

In addition, a study carried out by Malaria Consortium in Katsina State, Nigeria estimated the cost of SMC as USD 3.98 per child for three complete cycles in 2013 and projected a cost of USD 3.77 per child for four complete cycles if the program is fully mature in 2014.<sup>14</sup> An analysis by the Clinton Health Access Initiative (CHAI) of the costs of four months of SMC in Kano State, Nigeria, in 2013 estimated a total cost of USD 6.10 per child for door-to-door distribution.<sup>15</sup> This is somewhat higher than the ACCESS-SMC project estimate of USD 4.49 in Nigeria, partly because the costs of medicines and supplies as well as the costs for community sensitization seem to be higher.

While it was not possible to cost and compare both the efficiency and effectiveness of some of the technologies or innovations used in 2015 by the ACCESS-SMC project, it is possible that they improved the efficiency of the program which may have reduced costs. An example includes the use of medicine grinders (i.e. pill crushers) in The Gambia which could reduce the time of distributors and minimize the wastage of medicines, though this may not be relevant in the future due to the introduction of dispersible tablets. Another

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<sup>26</sup> The cost for Senegal was derived in the Literature Review from figures quoted in the report by Pitt et al.

example is the use of electronic tablets versus paper-based reporting<sup>27</sup>. Also the simplification of reporting tools (and expanded use of electronic tablets for data recording) in year two of the ACCESS-SMC project as well as the increased awareness of the perceived effectiveness of SMC among target populations should increase the efficiency of distribution. Furthermore, the planned use of dispersible medicines in 2016 may also contribute to greater distribution efficiency.

Sufficient data were not available to conduct an analysis of the cost-effectiveness of the different service delivery methods; however, such a study is planned for 2017.

## Limitations

There were a number of limitations which could have affected the results of this multi-country cost analysis:

- To get a more comprehensive picture of the costs in each country, the sample size for the sub-national areas and health facilities should have been bigger. Though for the purposes of this study, the sample size was considered sufficient.
- The attribution of MoH/NMCP staff salaries to the ACCESS-SMC project was based on estimates provided by the persons interviewed. In some cases, MoH salary scales were used to obtain an average salary for those involved in management and supervision; however, this is not likely to have significantly affected the results of the study. The coverage of SMC distribution was measured as a percent relative to the estimated target population of the ACCESS-SMC project in each country. In many countries, these estimates were not accurate. Obtaining reliable baseline or population estimates are essential for assessing true coverage and hence program performance. Any future comprehensive costing analyses would benefit from having more accurate figures
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- The costs per cycle cannot be translated into costs per child as the actual numbers of cycles received by an individual child were not captured, other than in The Gambia, where electronic beneficiary cards can be used to retrieve such information
- The financial costs of managing severe adverse effects (SAE) of SMC medicines were not included in this analysis because these are integrated within the routine health care systems, and there is variation in the maturity of SMC pharmacovigilance systems across the seven countries. This is against the background that for 2015, the numbers of children experiencing SAE from SMC

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<sup>27</sup> We however do not have evidence that electronic data collection systems are much cheaper or more cost effective than the paper based system.

were minimal (9 out of all children reached).<sup>28</sup> Additionally, treatment costs would likely depend on the severity of these cases (e.g. Steven Johnson’s syndrome a known serious adverse event).

- Data on SMC wastage was not consistently reported among countries and therefore the costs pertaining to wastage were not included in this analysis but should be considered for inclusion in future costing studies as they may be significant.<sup>29</sup>
- This analysis focused on the direct project expenditure or costs on SMC and did not include indirect economic costs such as the time of volunteers or the time and out-of-pocket costs of families spent accessing SMC at fixed or mobile service delivery points.
- The results also do not include the costs of the regional and home offices of the implementing NGO partners incurred for the initial start-up and design of the ACCESS-SMC project. They also do not include costs incurred by UNITAID personnel for oversight and coordination of the ACCESS-SMC project.
- At the time of writing this report, complete data from Chad were not available and were therefore not included in this analysis. An addendum including the Chad cost results may be included at a later time.
- Furthermore, 2016 SMC country targets may be revised by MoHs and NMCPs which would affect the cost estimates included in the gap analyses (e.g. 2016 scale-up targets).
- This report has not done comparative studies on costs with other malaria interventions

## Recommendations

Based on this cross-country analysis, there are several lessons learned and suggestions for further operations research which would benefit the global learning on the implementation and scale-up of SMC.

Programmatic recommendations:

- I. To be cost-effective and affordable, there must be high SMC coverage among targeted populations. Moreover, SMC must be effectively and efficiently administered while program management and supervision should be organized to both minimize those costs while ensuring high-quality provision.
- II. To improve the sustainability of SMC, it will be essential to integrate SMC into the national health systems. Also plans should be developed to commit the governments to take over certain activities and related costs.

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<sup>28</sup> ACCESS-SMC Project Indicator report, 2015

<sup>29</sup> It is expected that with the introduction of dispersible tablets, wastage will significantly reduce and therefore this suggested research may not be relevant.



- III. Obtaining reliable baseline or population estimates are essential for assessing true coverage and hence Programme performance. Any future comprehensive costing analyses would benefit from having more accurate figures
- IV. Information on the numbers of children who receive one, two, three or four SMC cycles (and which cycles they received) should be routinely collected and reported on.

Recommendations for further analysis:

- I. Further research is needed to determine the cost-effectiveness of various SMC delivery mechanisms (e.g. door-to-door, fixed point, and mobile) in each setting and the integration of other services with SMC provision. This study should take into account economic costs, such as volunteer time and family out-of-pocket costs and productivity losses.
- II. A study on the feasibility of SMC integration into government services could help to facilitate its long-term sustainability.
- III. Data should be collected on the utilization of health facility and community malaria treatment services to identify any impact from SMC on malaria service utilization.
- IV. A cost-benefit analysis comparing SMC with other malaria interventions would enable decision-makers to effectively allocate financial resources based upon evidence.

## Conclusions

The distribution of SMC in the Sahel sub-region of Africa has the potential to prevent millions of malaria cases and avert thousands of malaria deaths annually among children under-five.<sup>16</sup> Although proven safe, effective, and feasible, there has been limited documented evidence on the costs of delivering SMC in various country contexts. Consequently, countries and donors lack evidence-based information to make sound investment cases for mobilizing additional financial resources for future SMC implementation and scale-up.

In 2015 the ACCESS-SMC project delivered SMC to 3.12 million children<sup>30</sup> (3 to 59 months) during the peak four months of malaria transmission in 7 countries in the Sahel for an average recurrent cost of between approximately USD 3.45 and USD 6.07 per child. This is a significantly low cost compared to the expected health benefits for the child, the family and the related reduction of burden to the health systems.

However, there remains a significant unmet need for SMC in 2016, notably in Nigeria and Niger where an estimated 9.5 million and 1.6 million children may not be covered for

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<sup>30</sup> This figure is calculated by dividing the total number of cycles by four and does not represent the actual number of children who received four cycles. The coverage survey conducted by the LSHTM indicates that many of the children received fewer than four cycles, meaning that more children were reached in total but some received three cycles or less.

SMC, respectively. Significant additional funding would be needed to provide SMC to these children.

The total costs of SMC program implementation include the important contributions of the international NGO partners in each country. With the integration of SMC into the government health services in the countries, SMC should be more affordable and sustainable.

## **Annexes**

The following annexes are individual country reports which provide additional details on the ACCESS-SMC project in each of the seven countries. These are followed by a list of references.

## Annex 1 - Burkina Faso

From July to November 2015,<sup>31</sup> the ACCESS-SMC project, managed by Malaria Consortium in partnership with the National Malaria Control Program supported the distribution of SMC in 11 districts in three regions of Burkina Faso,<sup>32</sup> targeting an estimated 649,693 children (3 to 59 months). Each of the four SMC distribution cycles lasted four days.

A combination of 6,500 trained community distributors and 355 health facility staff (e.g. nurses and midwives) distributed SMC by way of two distribution methods: door-to-door (two-person teams) and at fixed points located at health facilities that worked as referral centers (one-person teams). It was estimated that 90% of SMC was distributed by door-to-door teams and 10% was distributed at fixed points. To ensure the acceptability of SMC and high rates of coverage within communities, 3,483 trained community mobilizers sensitized communities on the benefits of SMC prior to and during each distribution cycle.

Trained staff at the health facility, district, regional and national levels conducted regular supervision of the SMC distributors throughout the campaign to monitor the quality of SMC medicines administration and data reporting while ensuring distributors had available stock of SMC

**Table 9. ACCESS-SMC geographic and population coverage - Burkina Faso (2015)**

	<b>Burkina Faso</b>
SMC commencement	2013
Months of SMC distribution	July – November 2015
Number of distribution cycles	4
Number of days per distribution cycle	4 days
Geographic coverage	11 districts in 3 regions
SMC distribution method <sup>33</sup>	Door-to-door & fixed point
Number of SMC distributors	<b>6,855</b> (6,500 volunteers & 355 health facility staff)
Number of direct supervisors	671
Target population (3-59 months)	<b>649,693</b>
Target population (3 – up to 12 months)	96,607
Target population (>12 - 59 months)	553,086
Ratio of target population per distributor	<b>95</b>

By the end of the campaign, a total of 2,721,731 SMC medicines had been distributed, resulting in an average of 680,433 children 3-59 months, reached in four cycles,<sup>34</sup> which

<sup>31</sup> The first cycle began on July 31, 2015.

<sup>32</sup> The ACCESS-SMC project implemented the project in three regions: Centre Nord, Est, Plateau Central and eleven districts: Barsalogo, Boulsa, Kaya, Bogande, Diapaga, Fada, Gayeri, Manni, Pama, Ziniare, and Zorgho.

<sup>33</sup> SMC distribution methods include: door-to-door and fixed point distribution.

<sup>34</sup> This figure is calculated by dividing the total number of cycles by four and does not represent the actual number of children who received four complete cycles of SMC as it is estimated that some children did not receive all four cycles. The coverage survey conducted by the LSHTM indicates that many of the children received fewer than four cycles, meaning that more children were reached in total but some received three cycles or less.

represented a coverage rate of 104.73%.<sup>35</sup> From the first to the fourth cycle, the number of SMC distributed increased from 648,290 to 702,379.

Coverage surveys that were later conducted by the LSHTM indicate that around 84% of eligible children received at least 3 cycles of SMC, 69% received all 4 cycles with the remainder each receiving two cycles or less. This presumably shows that more children were reached than the coverage rate indicates but that many of them received less than the recommended four cycles.

**Table 10. ACCESS-SMC coverage - Burkina Faso (2015)**

	Burkina Faso
Total number of SMC medicines distributed	2,721,731
Estimated number of children (3to 59 months) <sup>a</sup>	680,433 (104.73%)
Estimated number of children (3 – up to 12 months) <sup>a</sup>	94,556 (97.88%)
Estimated number of children (>12 - 59 months) <sup>a</sup>	585,877 (105.93%)
<b>Campaign results children (3 to 59 months) reached per cycle</b>	
Cycle 1	648,290
Cycle 2	672,185
Cycle 3	698,877
Cycle 4	702,379
Percent of children (3to 59 months) who received four full cycles of SMC, based on LSHTM coverage survey	69%

<sup>a</sup> This figure is calculated by dividing the total number of SMC medicines distributed by four and does not represent the actual number of children who received four cycles.

The estimated 2015 total program costs were USD 3,052,307, comprised of start-up costs (i.e. those incurred at the beginning of the program) and recurrent costs (i.e. those that are repeated ever year). Start-up costs amounted to USD 117,851 and included costs of the initial launch meetings, planning meetings, the adaptation of job aids and training manuals, among other one-time activities. The recurrent costs totaled USD 2,934,456 and included the costs of ongoing activities (e.g. meetings, trainings, supervision visits, etc.) and purchases (e.g. medicines, equipment, reporting tools, etc.).

**Table 11. Total costs and cost for four cycles of SMC per annum- Burkina Faso (2015, USD)**

	Burkina Faso
Total program costs <sup>36</sup>	\$3,052,307
Total recurrent costs	\$2,934,456
Total start-up costs	\$117,851
Average recurrent cost per child reached for four cycles	<b>\$4.31</b>

The average recurrent cost of administering four cycles of SMC was USD 4.31. The majority of the recurrent costs were for medicines and supplies (33.94%), SMC distributor

<sup>35</sup> SMC coverage higher than 100% could be due to two factors: 1) an initial underestimation of the target population; 2) children from outside the intervention area received SP+AQ.

<sup>36</sup> Total financial costs spent by the ACCESS-SMC project and Ministry of Health. These do not include patient costs.

remuneration (22.64%), and management (21.15%) in the form of MoH/NMCP and Malaria Consortium staff salaries.

**Table 12. Recurrent costs and average recurrent cost per child reached for four cycles– Burkina Faso (2015, USD)**

Cost drivers	Recurrent costs	% of recurrent costs	Average recurrent cost per child reached for four cycles
Medicines and supplies	\$995,953	33.94%	\$1.46
SMC distributor remuneration	\$664,505	22.64%	\$0.98
Management	\$620,524	21.15%	\$0.91
Supervision	\$159,436	5.43%	\$0.23
Meetings	\$207,480	7.07%	\$0.30
Trainings – recurrent	\$134,243	4.57%	\$0.20
Other recurrent program costs	\$152,315	5.19%	\$0.22
<b>Total</b>	<b>\$2,934,456</b>	<b>100%</b>	<b>\$4.31</b>

UNITAID financed 86.77% of the total recurrent costs of the ACCESS-SMC project activities and the MoH financed 13.23% of the total recurrent costs. The MoH portion was made up of 11% of distributor remuneration and 50.49% of management costs (i.e. MoH salaries).

**Table 13. Financing of ACCESS-SMC recurrent costs – Burkina Faso (2015, USD)**

Burkina Faso	
Total recurrent costs (2015, USD)	\$2,934,456
UNITAID contributions (% of total recurrent costs)	\$2,546,286 (86.77%)
Government contributions (% of total recurrent costs)	\$388,170 (13.23%)
Other contributions (% of total recurrent costs)	0

On average, each SMC distributor administered SMC to 25 children per day. The average ratio of SMC distributors to direct supervisors was approximately 10:1. The estimated wastage rate of SP+AQ distributed was 0.94%.<sup>37</sup>

**Table 14. SMC distribution efficiency – Burkina Faso (2015)**

Efficiency indicators	Burkina Faso
Total SMC medicines distributed (including wastage)	2,747,443

<sup>37</sup> This figure does not account for wastage of AQ at the level of caregivers of children.

Total SMC medicines effectively administered by distributors <sup>38</sup>	2,721,731
Total wastage of SMC	25,712
Wastage as percent of total SMC distributed	0.94%
Estimated number of children (3to 59 months) reached	680,433
Actual SMC treatments administered per distributor per day	25
Actual Ratio of distributors per direct supervisors <sup>39</sup>	10 : 1

In 2015, the ACCESS-SMC project reached to an estimated 680,433 children (3to 59 months) with four cycles of SMC; while other implementing partners reached to an estimated 273,614 children (3to 59 months) with four SMC. Based on the 2015 ACCESS-SMC project recurrent cost estimates, the required cost of reaching the 1,549,890 eligible children who remained with unmet need would have been approximately USD 6.68 million.<sup>40</sup>

**Table 15. Unmet gap of SMC coverage and costs – Burkina Faso (2015, USD)**

2015 coverage and cost indicators	Burkina Faso
Children eligible for SMC (2015)	2,503,937
Estimated number of children (3 to 59 months) who received four cycles by UNITAID ACCESS-SMC <sup>a</sup>	680,433
Estimated number of children (3 to 59 months) who received four cycles by other implementing partners <sup>a</sup>	273,614
Estimated number of children(3 to 59 months) who were reached by all implementing partners <sup>a</sup>	954,047
Percent of children who received SMC through the UNITAID ACCESS-SMC visa vie other implementing partners	71.32%
Percent of eligible children who received SMC by all implementing partners	38.10%
<b>2015 gap analysis</b>	
Estimated number of children with unmet need for SMC	1,549,890
Estimated number of children not reached by ACCESS-SMC in targeted districts <sup>b</sup>	0 <sup>c</sup>
Percent of total eligible children with unmet need for SMC <sup>b</sup>	61.90%
Cost of reaching total number of children with unmet need (2015, USD)	\$6.68 million

<sup>a</sup> This figure is calculated by dividing the total number of SMC medicines distributed by four and does not represent the actual number of children who received four cycles.

<sup>b</sup> More children were reached but not all of them received the full four cycles.

<sup>c</sup> The ACCESS-SMC project exceeded its target for SMC in 2015 by an equivalent of 30,740 children (3-59 months).

According to data from the Burkina Faso NMCP, the ACCESS-SMC project plans to target 1,394,653 children (3-59 months) for SMC distribution in 2016 while other implementing partners plan to target 1,181,414 children (3-59 months), covering 100 percent of all eligible children. Based the average recurrent cost per child in 2015, and assuming that no

<sup>38</sup> This figure does not include wastage of SP+AQ distributed.

<sup>39</sup> In Burkina Faso, the ratio of total SMC distributors for door-to-door and fixed point distribution (6,855) to direct supervisors (671) was 10.22 : 1. However the ratio or door-to-door distributors (6,500) to supervisors (671) was: 9.69 :1.

<sup>40</sup> Plus any additional start-up costs required.

additional start-up costs would be needed and no additional economies of scale would be achieved, the cost of reaching the children targeted by all providers would be approximately USD 11.11 million (excluding inflation).

**Table 16. Unmet gap of SMC coverage and costs – Burkina Faso (2016, USD)**

<b>2016 coverage and cost indicators</b>	<b>Burkina Faso</b>
Children eligible for SMC (2016)	2,576,067
Children targeted for SMC by UNITAID ACCESS-SMC	1,394,653
Children targeted for SMC by other implementing partners	1,181,414
Children targeted for SMC by all implementing partners	2,576,067
Percent of all children targeted for SMC by UNITAID ACCESS-SMC	54.14%
<b>2016 gap analysis</b>	
Children with unmet need for SMC	0
Cost of reaching children targeted for SMC by all implementing partners (using 2015 unit costs)	\$11.11 million
Cost of reaching children with unmet need using 2015 unit costs (2016, USD)	0



From July to October 2015, the ACCESS-SMC project (implemented by Malaria Consortium in partnership with the Chadian National Malaria Control Program) supported the distribution of SMC in six districts in two regions of Chad,<sup>41</sup> targeting an estimated 275,000 children (3-59 months). Each of the four SMC distribution cycles lasted three days.

During the first three cycles, 2,120 trained volunteer distributors were deployed; however, for the fourth cycle, the number of distributors decreased to 1,987. All distributors delivered SMC through the door-to-door method.

Ninety-two trained staff at the health facility, district, regional, and national levels conducted regular supervision of the SMC distributors throughout the campaign to monitor the quality of medicines administration and data reporting while ensuring distributors had available stock of SMC.

**Table 17. ACCESS-SMC geographic and population coverage - Chad (2015)**

	<b>Chad</b>
SMC commencement	2012
Months of SMC distribution	July - October 2015
Number of distribution cycles	4
Number of days per distribution cycle	3 days
Geographic coverage	6 districts in 2 regions
SMC distribution method	Door-to-door
Number of SMC distributors	<b>2,086</b> <b>(falling to 1987 with 4<sup>th</sup> Cycle)</b>
Number of direct supervisors	92
Target population (3-59 months)	<b>275,000</b>
Target population (3 – up to 12 months)	63,250
Target population (>12 - 59 months)	211,750
Ratio of target population per distributor	<b>132</b>

By the end of the 2015 round/campaign, a total of 1,058,324 SMC medicines had been distributed; resulting in an equivalent of 264,581 children 3 to 59 months reached<sup>42</sup> which represented a coverage rate of 96.21%. From the first to the fourth cycle, the number of SMC drugs administered per cycle increased from 250,233 to 272,381.

However, coverage surveys conducted by LSHTM indicate that 82% of children received an SMC card (were reached) , and around 60% of eligible children received at least 3 cycles and only 22.7% of the children (3 to 59 months) received the full four cycles, with the remainder each receiving three cycles or less. This presumably shows that more children

<sup>41</sup> The ACCESS-SMC project distributed SMC in two regions: Chari-Baguirmi and Hadjer-Lamis and six districts: Massenya, Dourbali, Mandelia, Massakory, Massaguet, and Mani.

<sup>42</sup> This figure is calculated by dividing the total number of SMC medicines distributed by four and does not represent the actual number of children who received four complete cycles of SMC as it is estimated that some children did not receive all four cycles. The coverage survey conducted by the LSHTM indicates that many of the children received fewer than four cycles, meaning that more children were reached in total but some received three cycles or less.

were reached than the coverage rate indicates but that many of them received less than the recommended four cycles.

**Table 18. ACCESS-SMC coverage - Chad (2015)**

	Chad
Total number SMC medicines administered in 2015	1,058,324
Estimated number of children (3to 59 months) reached <sup>a</sup>	264,581 (96.21%)
Estimated number of children (3 – up to 12 months) reached <sup>a</sup>	46,618 (73.70%)
Estimated number of children (>12 - 59 months) reached <sup>a</sup>	217,964 (102.93%)
<b>Campaign results (total SMC cycles distributed)</b>	
Cycle 1	250,233
Cycle 2	265,193
Cycle 3	270,517
Cycle 4	272,381
Percent of children (3-59 months) receiving four full cycles of SMC, based on LSHTM coverage survey	22.7%

<sup>a</sup> This figure is calculated by dividing the total number of SMC drugs distributed by four and does not represent the actual number of children who received four cycles.

At the time of writing this report, complete data from Chad were not available and were therefore not included in this analysis. Therefore, the cost figures for Tables 20-25 are not included. An addendum including the Chad cost results may be included at a later time.

**Table 19. Total costs and cost of four cycles of SMC per annum - Chad (2015, USD)**

	Chad
Total program costs	NA
Total recurrent costs	NA
Total start-up costs	NA
Average recurrent cost for four cycles	NA

NA = Not available

**Table 20. Recurrent costs and average recurrent cost per child (3-59 months) receiving four cycles per annum– Chad (2015, USD)**

Cost drivers	Recurrent costs	% of recurrent costs	Average recurrent cost per child receiving four cycles (3-59 months)
Drugs and supplies	NA	NA	NA
SMC distributor remuneration	NA	NA	NA
Management	NA	NA	NA
Supervision	NA	NA	NA
Meetings	NA	NA	NA
Trainings - recurrent	NA	NA	NA
Other recurrent program costs	NA	NA	NA
<b>Total</b>	NA	NA	NA

NA = Not available

**Table 21. Financing of ACCESS-SMC recurrent costs – Chad (2015, USD)**

	Chad
Total recurrent costs (2015, USD)	NA
UNITAID contributions (% of total recurrent costs)	NA
Government contributions (% of total recurrent costs)	NA
Other contributions (% of total recurrent costs)	NA

NA = Not available

On average, each SMC distributor administered SMC to 42 children per day. The average ratio of SMC distributors to direct supervisors was approximately 23:1. The estimated wastage rate of SP+AQ was 0.44%.

**Table 22. SMC distribution efficiency – Chad (2015)**

Efficiency indicators	Chad
Total SMC drugs distributed (including wastage of drugs)	1,062,955
Total SMC drugs effectively administered by distributors <sup>43</sup>	1,058,324
Total wastage of SMC	4,631
Wastage as percent of total SMC distributed	0.44%
Total number of children reached	264,581
Actual SMC treatments administered per distributor per day	42
Actual ratio of distributors per direct supervisors	23 : 1

In 2015, the ACCESS-SMC project provided the equivalent of 264,581 SMC treatments through four cycles of SMC while other implementing partners provided 273,614 treatments. Due to missing cost data, figures on the 2015 gap analysis estimates are not available.

<sup>43</sup> This figure does not include wastage of SP+AQ distributed.

**Table 23. Unmet gap of SMC coverage and costs – Chad (2015, USD)**

2015 coverage and cost indicators	Chad
Children eligible for SMC (2015)	NA
Estimated number of children (3-59 months) who received four cycles through UNITAID ACCESS-SMC <sup>a</sup>	264,581
Estimated number of children (3-59 months) who received four cycles SMC by other implementing partners <sup>a</sup>	NA
Estimated number of children(3-59 months) who received four SMC cycles reached by all implementing partners <sup>a</sup>	NA
Percent of all children reached who received SMC by UNITAID ACCESS-SMC	NA
Percent of eligible children who received SMC by all implementing partners	NA
<b>2015 gap analysis</b>	
Children with unmet need for SMC	NA
Children not reached by ACCESS-SMC in targeted districts <sup>b</sup>	10,419
Percent of total eligible children with unmet need for SMC <sup>b</sup>	NA
Cost of reaching total number of children with unmet need (2015, USD)	NA

<sup>a</sup> This figure is calculated by dividing the total number of treatments by four and does not represent the actual number of children who received four cycles.

<sup>b</sup> More children were reached but not all of them received the full four cycles.

In 2016, the ACCESS-SMC project plans to reach an estimated 518,656 children (3-59 months) while other implementing partners reportedly plan to reach 411,948 children (3-59 months).

**Table 24. Unmet gap of SMC coverage and costs – Chad (2016, USD)**

2016 coverage and cost indicators	Chad
Children eligible for SMC (2016)	NA
Children targeted for SMC by UNITAID ACCESS-SMC	518,656
Children targeted for SMC by other implementing partners	411,948
Children targeted for SMC by all implementing partners	930,604
Percent of children targeted for SMC by UNITAID ACCESS-SMC (2016, USD)	NA
<b>2016 gap analysis</b>	
Children with unmet need for SMC	NA
Cost of reaching children targeted for SMC by all implementing partners (using 2015 unit costs)	NA
Cost of reaching children with unmet need using 2015 unit costs (2016, USD)	NA

NA = Not available

### Annex 3 - Guinea

From July to October 2015, the ACCESS-SMC project (implemented by CRS in partnership with Guinean NMCP and Speak Up Africa) supported the distribution of SMC in six districts in three regions of Guinea,<sup>44</sup> targeting an estimated 210,047 children (3-59 months).

The first cycle of SMC distribution lasted three days but was deemed insufficient to cover the number of targeted children (3-59 months) and therefore, the remaining three cycles were extended to four days each. During the first cycle, 1,084 trained volunteer distributors were deployed; however, to improve coverage, the number of distributors was increased to 1,261 during the remaining three cycles (1,217 represents an average number of distributors over the four cycles).

To ensure the acceptability of SMC and high rates of coverage within communities, 104 trained community mobilizers sensitized communities on the benefits of SMC prior to and during each distribution cycle. In addition, the ACCESS-SMC project supported the airing of educational radio spots prior to and during each distribution cycle.

Trained staff at the health facility, district, regional and national levels conducted regular supervision of the SMC distributors throughout the campaign to monitor the quality of distribution and data reporting while ensuring distributors had available stock of SMC

**Table 25. ACCESS-SMC geographic and population coverage - Guinea (2015)**

	Guinea
SMC commencement	2015
Months of SMC distribution	July - October 2015
Number of distribution cycles	4
Number of days per distribution cycle	4 days (except cycle 1 which was 3 days)
Geographic coverage	6 districts in 3 regions
SMC distribution method	Door-to-door
Number of SMC distributors	<b>1,217</b>
Number of direct supervisors	156
Target population (3-59 months)	<b>210,047</b>
Target population (3 – up to 12 months)	42,023
Target population (>12 - 59 months)	168,084
Ratio of target population per distributor	<b>173</b>

By the end of the campaign, a total of 805,131 SMC medicines had been distributed; resulting in an estimated 201,283 children 3-59 months reached<sup>45</sup> which represented a coverage rate of 95.83%. From the first to the fourth cycle, the number of estimated children reached increased from 174,448 to 210,448.

<sup>44</sup> The ACCESS-SMC project distributed SMC in three regions: Boké, Labé, Faranah and six districts: Koubia, Mali, Tougue, Gaoual, Koundara, and Dinguiraye.

<sup>45</sup> This figure is calculated by dividing the total number of SMC treatments distributed by four and does not represent the actual number of children who received four complete cycles of SMC as it is estimated that some children did not receive all four cycles. The coverage survey conducted by the LSHTM indicates that many of the children received fewer than four cycles, meaning that more children were reached in total but some received three cycles or less.

**Table 26. ACCESS-SMC coverage - Guinea (2015)**

	<b>Guinea</b>
Total number of SMC medicines distributed	805,131
Estimated number of children (3 to 59 months) <sup>a</sup>	201,283 (95.83%)
Estimated number of children (3 – up to 12 months) <sup>a</sup>	42,715 (101.65%)
Estimated number of children (>12 - 59 months) <sup>a</sup>	158,074 (94.08%)
<b>Campaign results children (3 to 59 months) reached per cycle</b>	
Cycle 1	174,448
Cycle 2	211,997
Cycle 3	208,238
Cycle 4	210,448
Percent of children (3-59 months) who received four full cycles of SMC, based on LSHTM coverage survey	NA

<sup>a</sup> This figure is calculated by dividing the total number of cycles by four and does not represent the actual number of children who received four cycles.

NA = Not available

The estimated 2015 total program costs were USD 1,059,995, comprised of start-up costs (i.e. those incurred at the beginning of the program) and recurrent costs (i.e. those that are repeated ever year). Start-up costs amounted to USD 49,947 and included costs of the initial launch meetings in Conakry and in districts, the production of videos and radio spots, the removal of artesunate/amodiaquine (ASAQ) in intervention zone health facilities,<sup>46</sup> among other one-time activities. The recurrent costs totaled USD 1,010,048 and included the costs of ongoing activities (e.g. meetings, trainings, supervision visits, etc.) and purchases (e.g. drugs, equipment, etc.).

**Table 27. Total costs and cost for four cycles of SMC per annum - Guinea (2015, USD)**

	<b>Guinea</b>
Total program costs <sup>47</sup>	\$1,059,995
Total recurrent costs	\$1,010,048
Total start-up costs	\$49,947
Average recurrent cost for four cycles	<b>\$5.02</b>

The average recurrent cost of administering four cycles of SMC was USD 5.02. The highest recurrent cost elements were for medicines and supplies (30.23%), supervision (20.12%), and management (16.77%).

<sup>46</sup> The USAID Systems for Improved Access to Pharmaceuticals and Services (SIAPS) program, led by Management Sciences for Health, replaced remaining artesunate/amodiaquine (ASAQ) with artemether-lumefantrine (AL) at health facilities in SMC intervention districts due to potential pharmacovigilance issues.

<sup>47</sup> Total financial costs spent by the ACCESS-SMC project and Ministry of Health. These do not include patient costs.

**Table 28. Recurrent costs and average recurrent cost for four cycles (3-59 months) – Guinea (2015, USD)**

Cost drivers	Recurrent costs	% of recurrent costs	Average recurrent cost for four cycles (3-59 months)
Medicines and supplies	\$305,304	30.23%	\$1.52
SMC distributor remuneration	\$108,248	10.72%	\$0.54
Management	\$169,355	16.77%	\$0.84
Supervision	\$203,185	20.12%	\$1.01
Meetings	\$21,945	2.17%	\$0.11
Trainings – recurrent	\$36,304	3.59%	\$0.18
Other recurrent program costs	\$165,708	16.41%	\$0.82
<b>Total</b>	<b>\$1,010,048</b>	<b>100%</b>	<b>\$5.02</b>

Of the total program costs, 94.1% were financed by UNITAID, 5.75% by the Ministry of Health (MoH) and 0.15% by the USAID Systems for Improved Access to Pharmaceuticals and Services (SIAPS) project led by MSH. MoH contributed 52% of management costs. The MoH figure is based on the reported average time spent and salaries of NMCP/MoH staff involved in supporting the program at all levels of the health system. Management costs financed by UNITAID comprised salaries paid to CRS and Speak Up Africa as well as top-up payments paid to NMCP/MoH staff.

**Table 29. Financing of ACCESS-SMC recurrent costs – Guinea (2015, USD)**

Guinea	
Total recurrent costs (2015, USD)	\$1,010,048
UNITAID contributions (% of total recurrent costs)	\$950,495 (94.10%)
Government contributions (% of total recurrent costs)	\$58,031 (5.75%)
Other contributions (% of total recurrent costs)	\$1,522 (0.15%)

On average, each SMC distributor administered SMC to 44 children per day. The average ratio of SMC distributors to direct supervisors was approximately 8:1. It was estimated that the wastage rate of SP+AQ distributed was 0.85%.<sup>48</sup>

**Table 30. SMC distribution efficiency – Guinea (2015)**

Efficiency indicators	Guinea
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<sup>48</sup> This figure does not account for wastage of AQ at the level of caregivers of children.

Total SMC cycles distributed (including wastage )	812,021
Total SMC cycles effectively administered by distributors (excluding wastage)	805,131
Total wastage of SMC	6,890
Wastage as percent of total SMC distributed	0.85%
Total number of four cycles	201,283
Actual SMC medicines administered per distributor per day	44
Actual ratio of distributors per direct supervisors	8 : 1

In 2015, the ACCESS-SMC project provided the equivalent of 201,283 SMC medicines (there were no other implementing partners distributing SMC). Based on the 2015 ACCESS-SMC project recurrent cost estimates, the estimated cost of reaching the remaining 214,339 eligible children with unmet need would have been approximately USD 1.1 million. This is based on the average recurrent cost per child in 2015 and assumed that no further start-up costs would be needed.

**Table 31. Unmet gap of SMC coverage and costs – Guinea (2015, USD)**

2015 coverage and cost indicators	Guinea
Children eligible for SMC (2015)	415,622
Estimated number of children (3 to 59 months) who received four cycles by UNITAID ACCESS-SMC <sup>a</sup>	201,283
Estimated number of children (3 to 59 months) who received four cycles by other implementing partners <sup>a</sup>	0
Estimated number of children(3 to 59 months) who were reached by all implementing partners <sup>a</sup>	201,283
Percent of children who received SMC through the UNITAID ACCESS-SMC visa vie other implementing partners	100%
Percent of eligible children who received SMC by all implementing partners	48.43%
<b>2015 gap analysis</b>	
Children with unmet need for SMC	214,339
Children not reached by ACCESS-SMC in targeted districts	8,764
Percent of total eligible children with unmet need for SMC	51.57%
Cost of reaching total number of children with unmet need (2015, USD)	\$1.1 million

<sup>a</sup> This figure is calculated by dividing the total number of cycles by four and does not represent the actual number of children who received four cycles.

In 2016, the ACCESS-SMC project intends to expand SMC coverage to eight districts<sup>49</sup> in four regions, targeting an estimated 438,123 children (3-59 months). The estimated cost of reaching children targeted for SMC (2016) is USD 2.2 million. This is based on the average recurrent cost per child in 2015 and assumed that no additional start-up costs would be needed (excluding inflation).

<sup>49</sup> Districts include: Gaoual, Koundara, Mali, Koubia, Tougué, Dinguiraye, Sigui, and Mandiana.



**Table 32. Unmet gap of SMC coverage and costs – Guinea (2016, USD)**

<b>2016 coverage and cost indicators</b>	<b>Guinea</b>
Children eligible for SMC (2016)	438,123
Children targeted for SMC by UNITAID ACCESS-SMC	438,123
Children targeted for SMC by other implementing partners	0
Children targeted for SMC by all implementing partners	438,123
Percent of children targeted for SMC by UNITAID ACCESS-SMC (2016, USD)	100%
<b>2016 gap analysis</b>	
Children with unmet need for SMC	0
Cost of reaching children targeted for SMC by all implementing partners (using 2015 unit costs)	\$2.2 million
Cost of reaching children with unmet need using 2015 unit costs (2016, USD)	0

#### Annex 4 - Mali

From August to November 2015, the ACCESS-SMC project (implemented by CRS in partnership with Mali National Malaria Control Program and Speak Up Africa) supported the distribution of SMC in 14 districts in five regions of Mali,<sup>50</sup> targeting an estimated 809,638 children (3-59 months). Each of the four SMC distribution cycles lasted five days.

A total of 4,606 trained personnel (volunteers and MoH health workers) distributed SMC by way of two methods: mobile distribution in villages (658 teams of four people) and at fixed points located at health facilities (329 teams of six-people). The majority of distributors were salaried MoH personnel. It was estimated that 31% of SMC was distributed by mobile teams and 69% of SMC was distributed at fixed points; however, data supporting this estimate was unavailable. SMC distributors also reported using RDTs to test febrile children for malaria and then referred to the health facility children who tested positive for malaria in line with the project SMC guidelines.

To ensure the acceptability of SMC and high rates of coverage within communities, 3,483 trained community mobilizers sensitized communities on the benefits of SMC prior to and during each distribution cycle.

Trained staff at the health center, district, regional and national levels conducted regular supervision of the SMC distributors throughout the campaign to monitor the quality of distribution and data reporting while ensuring distributors had available stock of SMC

**Table 33. ACCESS-SMC geographic and population coverage - Mali (2015)**

	<b>Mali</b>
SMC commencement	2012
Months of SMC distribution	August – November 2015
Number of distribution cycles	4
Number of days per distribution cycle	5 days
Geographic coverage	14 districts in 5 regions
SMC distribution method	Fixed point & mobile
Number of SMC distributors	<b>4,606</b>
Number of direct supervisors	658
Target population (3-59 months)	<b>809,638</b>
Target population (3 – up to 12 months)	141,353
Target population (>12 - 59 months)	668,285
Ratio of target population per distributor	<b>176</b>

By the end of the 2015 campaign, a total of 2,751,353 SMC medicines had been distributed, resulting in an estimated 687,838 children –59 months reached,<sup>51</sup> which

<sup>50</sup> The ACCESS-SMC project supported SMC distribution in five regions: Kayes, Koulikoro, Sikasso, Segou, and Mopti and 14 districts: Diema, Nioro, Koulikoro, Nara, Bougouni, Kadiolo, Yanfolila, Baraoueli, Macina, Niono, Tominian, Markala, Djenne, Douentza.

<sup>51</sup> This figure is calculated by dividing the total number of SMC medicines distributed by four and does not represent the actual number of children who received four complete cycles of SMC as it is estimated that some children did not receive all four cycles. The coverage survey conducted by the LSHTM indicates that many of the children received fewer than four cycles, meaning that more children were reached in total but some received three cycles or less.

represented a coverage rate of 84.9%. From the first to the second cycle, the number of children reached increased from 691,231 to 711,973. However, the number of children reached declined to 660,440 in the fourth cycle.

Coverage surveys that were later conducted by the LSHTM indicate that the reach of the SMC Programme in Mali has been good, with 86% of children having received an SMC card and at least one cycle of SMC; around 56% of eligible children received at least 3 cycles of SMC, 38% received all 4 cycles. Coverage of the first cycle appears to be highest at around 70%, with coverage at the final cycle in November having the lowest coverage at 50%. This implies that most children here received two cycles or less. This presumably shows that more children were reached than the coverage rate indicates but that many of them received less than the recommended four cycles.

**Table 34. ACCESS-SMC coverage - Mali (2015)**

	<b>Mali</b>
Total number of SMC medicines distributed	2,751,353
Estimated number of children (3to 59 months) <sup>a</sup>	687,838 (84.96%)
Estimated number of children (3 – up to 12 months) <sup>a</sup>	132,635 (93.83%)
Estimated number of children (>12 - 59 months) <sup>a</sup>	555,203 (83.08%)
<b>Campaign results children (3 to 59 months) reached per cycle</b>	
Cycle 1	691,231
Cycle 2	711,973
Cycle 3	687,709
Cycle 4	660,440
Percent of children (3-59 months) who received four full cycles of SMC, based on LSHTM coverage survey	37%

<sup>a</sup> This figure is calculated by dividing the total number of SMC medicines distributed by four and does not represent the actual number of children who received four cycles.

The estimated 2015 total program costs were USD 2,831,662, comprised of start-up costs (i.e. those incurred at the beginning of the program) and recurrent costs (i.e. those that are repeated ever year). Start-up costs amounted to USD 59,180 and included costs of the initial launch meetings in and in districts, the production of videos and radio spots, among other one-time activities. The recurrent costs totaled USD 2,772,482 and included the costs of ongoing activities (e.g. meetings, trainings, supervision visits, etc.) and purchases (e.g. medicines, equipment, etc.).

**Table 35. Total costs for four cycles of SMC per annum - Mali (2015, USD)**

	<b>Mali</b>
Total program costs <sup>52</sup>	\$2,831,662
Total recurrent costs	\$2,772,482
Total start-up costs	\$59,180
Average recurrent cost for four cycles per child reached	<b>\$4.03</b>

<sup>52</sup> Total financial costs spent by the ACCESS-SMC project and MOH. These do not include patient costs.

The average recurrent cost of administering four cycles was USD 4.03. The highest cost elements were distributor remuneration (37.79%) and medicines and supplies (32.05%). The relatively high cost of distributor remuneration is likely due to the large number of salaried MoH workers who were trained as SMC distributors.

**Table 36. Recurrent costs and average recurrent cost per child reached for four cycles (3-59 months) – Mali (2015, USD)**

Cost drivers	Recurrent costs	% of recurrent costs	Average recurrent cost for four cycles per child reached (3-59 months)
Medicines and supplies	\$888,500	32.05%	\$1.29
SMC distributor remuneration	\$1,047,662	37.79%	\$1.52
Management	\$363,003	13.09%	\$0.53
Supervision	\$273,259	9.86%	\$0.40
Meetings	\$56,645	2.04%	\$0.08
Trainings – recurrent	\$46,509	1.68%	\$0.07
Other recurrent program costs	\$96,902	3.50%	\$0.14
<b>Total</b>	<b>\$2,772,480</b>	<b>100%</b>	<b>\$4.03</b>

The majority of program costs were financed by UNITAID (91.84%) and the Government of Mali funded 7.61% of the costs. The Government of Mali financed 58.11% of the management costs (i.e. salaries of MoH staff) while the USAID SIAPS program, led by MSH, contributed 4.20% of management costs for supply chain support to the MoH, amounting to 0.55% of total recurrent costs.

**Table 37. Financing of ACCESS-SMC recurrent costs – Mali (2015, USD)**

Mali	
Total recurrent costs (2015, USD)	\$2,772,482
UNITAID contributions (% of total recurrent costs)	\$2,546,306 (91.84%)
Government contributions (% of total recurrent costs)	\$210,932 (7.61%)
Other contributions (% of total recurrent costs)	\$15,244 (0.55%)

On average, each SMC distributor administered SMC to 30 children per day. The ratio total SMC distributors for mobile and fixed point distribution (4,606) to supervisors (658) was 7:1. However, the ratio of mobile distributors (3,172) to supervisors (658) was 5:1. The estimated wastage rate of SMC was 1.96%.

**Table 38. SMC distribution efficiency – Mali (2015)**

Efficiency indicators	Mali
Total SMC cycles distributed (including wastage of medicines)	2,806,247
Total SMC cycles effectively administered by distributors <sup>53</sup>	2,751,353
Total wastage of SMC	54,894
Wastage as percent of total SMC distributed	1.96%
Estimated number of children reached with four cycles	687,838
Actual SMC medicines administered per distributor per day	30
Actual ratio of distributors per direct supervisors <sup>54</sup>	7 : 1

In 2015, the ACCESS-SMC project reached an estimated 687,838 children 3-59 months while other implementing partners reached 705,417. Based on the 2015 ACCESS-SMC project recurrent cost estimates, the estimated cost of reaching the 1,504,711 eligible children who remained with unmet need would have been USD 6.1 million.

**Table 39. Unmet gap of SMC coverage and costs – Mali (2015, USD)**

2015 coverage and cost indicators	Mali
Children eligible for SMC (2015)	2,897,966
Estimated number of children (3 to 59 months) who received four cycles by UNITAID ACCESS-SMC <sup>a</sup>	687,838
Estimated number of children (3 to 59 months) who received four cycles by other implementing partners <sup>a</sup>	705,417
Estimated number of children(3 to 59 months) who were reached by all implementing partners <sup>a</sup>	1,393,255
Percent of children who received SMC through the UNITAID ACCESS-SMC vis a vis other implementing partners	49.37%
Percent of eligible children who received SMC by all implementing partners	48.08%
<b>2015 gap analysis</b>	
Children with unmet need for SMC	1,504,711
Children not reached by ACCESS-SMC in targeted districts	121,800
Percent of total eligible children with unmet need for SMC	51.92%
Cost of reaching total number of children with unmet need (2015, USD)	\$6.1 million

<sup>a</sup> This figure is calculated by dividing the total number SMC distributed by four and does not represent the actual number of children who received four cycles.

According to data from the NMCP, in 2016, the ACCESS-SMC project plans to target 1,461,520 children (3-59 months) for SMC distribution while other implementing

<sup>53</sup> This figure does not include wastage of SP+AQ distributed.

<sup>54</sup> In Mali, the ratio total SMC distributors for mobile and fixed point distribution (4,606) to supervisors (658) was 7:1. However, the ratio of mobile distributors (3,172) to supervisors (658) was 5:1.

partners<sup>55</sup> plan to reach 411,948 children (3-59 months), covering a total of 49% of all eligible children.

The estimated cost of reaching all the children targeted for SMC (2016) would be approximately USD 7.55 million. The estimated cost of meeting the unmet need of 263,341 children would be approximately USD 4.5 million. These figures are based on the average recurrent cost per child in 2015 and assumed that no additional start-up costs would be needed. Inflation is not included.

**Table 40. Unmet gap of SMC coverage and costs – Mali (2016, USD)**

<b>2016 coverage and cost indicators</b>	<b>Mali</b>
Children eligible for SMC (2016)	2,982,007
Children targeted for SMC by UNITAID ACCESS-SMC	1,461,520
Children targeted for SMC by other implementing partners	411,948
Children targeted for SMC by all implementing partners	1,873,468
Percent of children targeted for SMC by UNITAID ACCESS-SMC (2016, USD)	49.01%
<b>2016 gap analysis</b>	
Children with unmet need for SMC	1,108,539
Cost of reaching children targeted for SMC by all implementing partners (using 2015 unit costs)	\$7.55 million
Cost of reaching children with unmet need using 2015 unit costs (2016, USD)	\$4.5 million

<sup>55</sup> Other implementing partners include: USAID/PMI, ALIMA, Mali MoH/PNLP, UNICEF, Médecins Sans Frontières (MSF)-France, and Action Contre La Faim (ACF)

## Annex 5 - Niger

From August to November 2015, the ACCESS-SMC project (implemented by CRS in partnership with the National Malaria Control Program and Speak Up Africa) supported the distribution of SMC in eight districts in three regions of Niger,<sup>56</sup> targeting an estimated 595,901 children (3 to 59 months). Each of the four SMC distribution cycles lasted five days.

During the first three distribution cycles, 2,100 trained volunteer distributors<sup>57</sup> were responsible for distributing SMC at fixed points (350 teams of six-people). In the fourth cycle, an additional 245 trained distributors were taken on to support door-to-door distribution in Maradi District (due to low coverage in the previous cycles). The figure of 2,161 represents an average number of distributors over the four cycles.

Trained staff at the health facility, district, regional and national levels conducted regular supervision of the SMC distributors throughout the campaign to monitor the quality of distribution and data reporting while ensuring distributors had available stock of SMC

**Table 41. ACCESS-SMC geographic and population coverage - Niger (2015)**

	Niger
SMC commencement	2013
Months of SMC distribution	August - November 2015
Number of distribution cycles	4
Number of days per distribution cycle	5 days
Geographic coverage	6 districts in 3 regions
SMC distribution method <sup>58 59</sup>	Fixed point & door-to-door
Number of SMC distributors <sup>60</sup>	<b>2,161</b>
Number of direct supervisors	350
Target population (3-59 months)	595,901
Target population (3 – up to 12 months)	106,888
Target population (>12 - 59 months)	489,013
Ratio of target population per distributor	<b>276</b>

By the end of the campaign, a total of 1,667,890 SMC medicines had been distributed, resulting in an estimated 416,973 children reached,<sup>61</sup> which represented a coverage rate

<sup>56</sup> The ACCESS-SMC project implemented in three regions: Maradi, Tahoua, and Zinder and eight districts: Aguié, Bouza, Madaoua, Maradi, Matameye, Mayahi, Mirriah, and Zinder.

<sup>57</sup> Includes 350 security agents responsible for controlling and managing crowds at SMC distribution sites.

<sup>58</sup> SMC distribution methods include: door-to-door, fixed point, and mobile distribution.

<sup>59</sup> Door-to-door distribution only took place during the fourth cycle in Maradi district.

<sup>60</sup> This figure represents the average number of distributors given the increase of distributors during the fourth cycle.

<sup>61</sup> This figure is calculated by dividing the total number of cycles by four and does not represent the actual number of children who received four complete cycles of SMC as it is estimated that some children did not

of 69.97%. From the first to the fourth cycle, the number of SMC increased from 342,837 to 477,477.

Coverage surveys that were later conducted by the LSHTM indicate that fewer than 50% of the children received the full four cycles, with the remainder each receiving three cycles or less. This presumably shows that more children were reached than the coverage rate indicates but that many of them received less than the recommended four cycles.

**Table 42. ACCESS-SMC coverage - Niger (2015)**

	<b>Niger</b>
Total number of SMC medicines distributed	1,667,890
Estimated number of children (3to 59 months) <sup>a</sup>	416,973 (69.97%)
Estimated number of children (3 – up to 12 months) <sup>a</sup>	74,793 (69.97%)
Estimated number of children (>12 - 59 months) <sup>a</sup>	342,179 (69.97%)
<b>Campaign results children (3 to 59 months) reached per cycle</b>	
Cycle 1	342,837
Cycle 2	415,255
Cycle 3	432,321
Cycle 4	477,477
Percent of children (3-59 months) who received four full cycles of SMC, based on LSHTM coverage survey	Varies by district <sup>62</sup>

<sup>a</sup> This figure is calculated by dividing the total number of SMC medicines distributed by four and does not represent the actual number of children who received four cycles.

The estimated 2015 total program costs were USD 1,488,356, comprised of start-up costs (i.e. those incurred at the beginning of the program) and recurrent costs (i.e. those that are repeated ever year). Start-up costs amounted to USD 48,533 and included costs of the initial launch meetings, planning meetings, the adaptation of job aids and training manuals, among other one-time activities. The recurrent costs totaled USD 1,439,823 and included the costs of ongoing activities (e.g. meetings, trainings, supervision visits, etc.) and purchases (e.g. medicines, equipment, reporting tools, etc.).

**Table 43. Total costs for four cycles of SMC per annum - Niger (2015, USD)**

	<b>Niger</b>
Total program costs <sup>63</sup>	\$1,488,356
Total recurrent costs	\$1,439,823
Total start-up costs	\$48,533
Average recurrent cost per child reached four cycles	<b>\$3.45</b>

NA = Not available

The average recurrent cost of administering four cycles was USD 3.45.

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receive all four cycles. The coverage survey conducted by the LSHTM indicates that many of the children received fewer than four cycles, meaning that more children were reached in total but some received three cycles or less.

<sup>62</sup> According to the LSHTM coverage survey, in Aguié, 45% of eligible children received four cycles of SMC. In Madaoua, 43% of children received four cycles of SMC. In Zinder, 7% of eligible children received four cycles of SMC. In Maradi, 4% of eligible children received four cycles of SMC.

<sup>63</sup> Total financial costs spent by the ACCESS-SMC project and MoH. These do not include patient costs.



The highest recurrent cost elements were related to drugs and supplies (37.55%) and management (34.47%).

**Table 44. Recurrent costs and average recurrent cost for four cycles (3-59 months) – Niger (2015, USD)**

Cost drivers	Recurrent costs	% of recurrent costs	Average recurrent cost per child for four cycles (3-59 months)
Medicines and supplies	\$540,687	37.55%	\$1.30
SMC distributor remuneration	\$212,504	14.76%	\$0.51
Management	\$496,345	34.47%	\$1.19
Supervision	\$105,351	7.32%	\$0.25
Meetings	\$13,335	0.93%	\$0.03
Trainings - recurrent	\$42,894	2.98%	\$0.10
Other recurrent program costs	\$28,706	1.99%	\$0.07
<b>Total</b>	<b>\$1,439,823</b>	<b>100%</b>	<b>\$3.45</b>

The majority of all program costs were financed by UNITAID (77%) with 23% financed by the Government of Niger. The Government of Niger contributed 67% of the management costs (i.e. salaries for MoH staff and salaries of supervisors). This figure is based on the reported average time spent and salaries of NMCP/MoH staff involved in the program.

**Table 45. Financing of ACCESS-SMC recurrent costs – Niger (2015, USD)**

Niger	
Total recurrent costs (2015, USD)	\$1,439,823
UNITAID contributions (% of total recurrent costs)	\$1,108,610 (77%)
Government contributions (% of total recurrent costs)	\$331,213 (23%)
Other contributions (% of total recurrent costs)	0

On average, each SMC distributor administered SMC to 39 children per day. The average ratio of SMC distributors to direct supervisors was approximately 6: 1. Based on data provided, the estimated wastage rate was 1.62%.

**Table 46. SMC distribution efficiency – Niger (2015)**

Efficiency indicators	Niger
Total SMC medicines distributed (including wastage)	1,695,426
Total SMC treatments effectively administered by distributors <sup>64</sup>	1,667,890
Total wastage of SMC	27,536
Wastage as percent of total SMC distributed	1.62%
Total number of treatments administered four	416,973

<sup>64</sup> This figure does not include wastage of SP+AQ distributed.

Actual SMC treatments administered per distributor per day	39
Actual Ratio of distributors per direct supervisors	6: 1

In 2015, the ACCESS-SMC project delivered SMC to 623,677 children 3 to 59 months for four cycles, while other implementing partners<sup>65</sup> provided SMC to 206,704 children. Based on the 2015 ACCESS-SMC project recurrent cost estimates, the estimated cost of reaching the 3,076,323 eligible children who remained with unmet need would be approximately USD 10.62 million.<sup>66</sup>

**Table 47. Unmet gap of SMC coverage and costs – Niger (2015, USD)**

2015 coverage and cost indicators	Niger
Children eligible for SMC (2015)	3,700,000
Estimated number of children (3 to 59 months) who received four cycles by UNITAID ACCESS-SMC <sup>a</sup>	416,973
Estimated number of children (3 to 59 months) who received four cycles by other implementing partners <sup>a</sup>	206,704
Estimated number of children(3 to 59 months) who were reached by all implementing partners <sup>a</sup>	623,677
Percent of children who received SMC through the UNITAID ACCESS-SMC visa vie other implementing partners	66.86%
Percent of eligible children who received SMC by all implementing partners	16.86%
<b>2015 gap analysis</b>	
Children with unmet need for SMC	3,076,323
Children not reached by ACCESS-SMC in targeted districts	178,928
Percent of total eligible children with unmet need for SMC	83.14%
Cost of reaching total number of children with unmet need (2015, USD)	\$10.62 million

<sup>a</sup> This figure is calculated by dividing the total number of SMC medicines distributed by four and does not represent the actual number of children who received four cycles.

According to data from the Niger NMCP, in 2016, the ACCESS-SMC project plans to target 1,210,499 children (3-59 months) for SMC distribution while other implementing partners<sup>67</sup> plan to reach 1,056,1127 children (3-59 months).

The estimated cost of reaching all children targeted for SMC (2016) is approximately USD 7.83 million. The estimated cost of reaching the 1,573,974 children with unmet need is USD 5.43 million. These estimates are based on the average recurrent cost per child in 2015 and assumed that no additional start-up costs would be needed. Inflation was not included.

<sup>65</sup> Other 2015 implementing partners included MSF Belgium, MSF France, and MSF Suisse.

<sup>66</sup> Plus any additional start-up costs required.

<sup>67</sup> Other 2016 implementing partners include MSF Suisse and partners supported by the World Bank, UNICEF, Islamic Relief Service, and Bien-Être de la Femme et de l'Enfant au Niger (BEFEN).

**Table 48. Unmet gap of SMC coverage and costs – Niger (2016, USD)**

<b>2016 coverage and cost indicators</b>	<b>Niger</b>
Children eligible for SMC (2016)	3,840,600
Children targeted for SMC by UNITAID ACCESS-SMC	1,210,499
Children targeted for SMC by other implementing partners	1,056,127
Children targeted for SMC by all implementing partners	2,266,626
Percent of children targeted for SMC by UNITAID ACCESS-SMC (2016, USD)	31.52%
<b>2016 gap analysis</b>	
Children with unmet need for SMC	1,573,974
Cost of reaching children targeted for SMC by all implementing partners (using 2015 unit costs)	\$7.83 million
Cost of reaching children with unmet need using 2015 unit costs (2016, USD)	\$5.43 million

## Annex 6 - Nigeria

From August to November 2015, the ACCESS-SMC project, implemented by Malaria Consortium in partnership with Nigerian National Malaria Elimination Programme (NMEP), supported the distribution of SMC in 17 local government areas (LGAs)<sup>68</sup> in Zamfara and Sokoto states, targeting an estimated 792,133 children (3 to 59 months). Each of the SMC distribution cycles lasted four days.

A total of 7,954 trained distributors were responsible for distributing SMC by way of three distribution methods. A breakdown of the number of distributors and team composition is as follows:

- Door-to-door: 3,654 total distributors (1,827 two-person teams)
- Fixed point: 2,946 distributors (982 three-person teams)
- Health facility: 1,354 distributors (451 three-person teams)

To ensure the acceptability of SMC and high rates of coverage within communities, the ACCESS-SMC project used 543 community mobilizers and 543 town announcers who sensitized communities on the benefits of SMC prior to and during each distribution cycle. In addition, the ACCESS-SMC project disseminated local language fliers and posters in target areas prior to and during each distribution cycle. In Sokoto State, the ACCESS-SMC project conducted four radio broadcasts to inform communities about the benefits of SMC and the dates for the upcoming distribution.

Trained staff at the health facility, ward, LGA, state, and national levels conducted regular supervision of the SMC distributors throughout the campaign to monitor the quality of distribution and data reporting while ensuring distributors had available stock of SMC.

**Table 49. ACCESS-SMC geographic and population coverage - Nigeria (2015)**

	<b>Nigeria</b>
SMC commencement	2013
Months of SMC distribution	August - November 2015
Number of distribution cycles	4
Number of days per distribution cycle	4 days
Geographic coverage	17 LGAs in 2 states
SMC distribution method	Door-to-door & fixed point (including at health facilities)
Number of SMC distributors	7,954
Number of direct supervisors <sup>69</sup>	182
Target population (3-59 months)	792,133
Target population (3-11 months)	150,088
Target population (12-59 months)	642,045

<sup>68</sup> The ACCESS-SMC supported SMC distribution in the following 10 LGAs in Sokoto: Gada, Goronyo, Gudu, Gwadabawa, Illela, Isa, Sabon Birnin, Tangaza, Wamako and Wurno and the following 7 LGAs in Zamfara: Bakura, Birnin Magaji, Bungudu, Kauran Namoda, Shinkafi Talata, Mafara, and Zurmi.

<sup>69</sup> Ward supervisors

Ratio of target population per distributor	100
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By the end of the campaign, a total of 3,149,867 SMC medicines had been distributed, resulting in an estimated 787,467 children 3-59 months reached,<sup>70</sup> which represented a coverage rate of 99.41%.<sup>71</sup> From the first to the third cycle, the number of children (3-59 months) receiving SMC increased from 736,858 to 840,392 though the numbers reached in the fourth cycle dropped to 827,790.

Coverage surveys that were later conducted by the LSHTM indicate that only 42% of the children received the full four cycles, with the remainder each receiving three cycles or less. This presumably shows that more children were reached than the coverage rate indicates but that many of them received less than the recommended four cycles.

**Table 50. ACCESS-SMC coverage - Nigeria (2015)**

	<b>Nigeria</b>
Total number of SMC medicines distributed	3,149,867
Estimated number of children (3to 59 months) <sup>a</sup>	787,467 (99.41%)
Estimated number of children (3 – up to 12 months) <sup>a</sup>	151,432 (100.89%)
Estimated number of children (>12 - 59 months) <sup>a</sup>	636,035 (99.06%)
<b>Campaign results children (3 to 59 months) reached per cycle</b>	
Cycle 1	736,858
Cycle 2	744,827
Cycle 3	840,392
Cycle 4	827,790
Percent of children (3-59 months) who received four full cycles of SMC, based on LSHTM coverage survey	42%

<sup>a</sup> This figure is calculated by dividing the total number of cycles by four and does not represent the actual number of children who received four cycles.

The estimated 2015 total program costs were USD 3,741,732 which are comprised of start-up costs (i.e. those incurred at the beginning of the program) and recurrent costs (i.e. those that are repeated ever year). Start-up costs amounted to USD 209,409 and included costs of the initial launch meetings, planning meetings, the adaptation of job aids and training manuals, among other one-time activities. The recurrent costs totaled USD \$3,532,323 and included the costs of ongoing activities (e.g. meetings, trainings, supervision visits, etc.) and purchases (e.g. medicines, equipment, reporting tools, etc.).

<sup>70</sup> This figure is calculated by dividing the total number of SMC treatments distributed by four and does not represent the actual number of children who received four complete cycles of SMC as it is estimated that some children did not receive all four cycles. The coverage survey conducted by the LSHTM indicates that many of the children received fewer than four cycles, meaning that more children were reached in total but some received three cycles or less.

<sup>71</sup> The estimated number of children covered was calculated by dividing the total number of SMC treatments administered during the four cycles (3,149,867) by four. This calculation assumes that the child's caregiver successfully administered the remaining two doses of AQ. ACCESS-SMC project limitation is that it cannot determine whether an individual child received 3 or 2 or 1 cycles; the figure, therefore, assumes that the same children were covered for the full four cycles.

**Table 51. Total costs for four cycles of SMC per annum - Nigeria (2015, USD)**

	<b>Nigeria</b>
Total program costs <sup>72</sup>	\$3,741,732
Total recurrent costs	\$3,532,323
Total start-up costs	\$209,409
Average recurrent cost of four cycles per child reached	<b>\$4.49</b>

The average recurrent cost of administering four cycles of SMC per child reached was USD 4.49. The majority of the recurrent costs were attributed to SMC distributor remuneration (28.13%), medicines and supplies (27.43%), cascade trainings (17.54%), and management (15.14%) in the form of MoH/NMEP and Malaria Consortium staff salaries.

**Table 52. Recurrent costs and average recurrent cost for four cycles (3-59 months) – Nigeria (2015, USD)**

<b>Cost drivers</b>	<b>Recurrent costs</b>	<b>% of recurrent costs</b>	<b>Average recurrent cost per child for four cycles (3-59 months)</b>
Medicines and supplies	\$969,070	27.43%	\$1.23
SMC distributor remuneration	\$993,805	28.13%	\$1.26
Management	\$534,894	15.14%	\$0.68
Supervision	\$159,963	4.53%	\$0.20
Meetings	\$181,387	5.14%	\$0.23
Trainings - cascade	\$619,645	17.54%	\$0.79
Other recurrent program costs	\$73,561	2.08%	\$0.09
<b>Total</b>	<b>\$3,532,323</b>	<b>100%</b>	<b>\$4.49</b>

The majority of all program costs were financed by UNITAID (87.08%) with 12.92% financed by the Government of Nigeria. The Government of Nigeria financed an estimated 4% of management (i.e. salaries for MoH/NMEP personnel) and 44% of SMC distributor remuneration for trained distributors who received a salary.

**Table 53. Financing of ACCESS-SMC recurrent costs – Nigeria (2015, USD)**

	<b>Nigeria</b>
Total recurrent costs (2015, USD)	<b>\$3,532,323</b>
UNITAID contributions (% of total recurrent costs)	\$3,075,881 (87.08%)
Government contributions (% of total recurrent costs)	\$456,442 (12.92%)
Other contributions (% of total recurrent costs)	0

<sup>72</sup> Total financial costs spent by the ACCESS-SMC project and MoH. These do not include patient costs.

On average, each SMC distributor administered SMC to 25 children per day. The average ratio of SMC distributors to direct supervisors (ward supervisors) was approximately 44: 1. It was estimated that the wastage rate of SMC was 1.52%. Additional data would be required to determine the efficiency indicators of the three distribution strategies (door-to-door, fixed point, and fixed point at health facilities).

**Table 54. SMC distribution efficiency – Nigeria (2015)**

Efficiency indicators	Nigeria
Total SMC cycles distributed (including wastage )	3,198,414
Total SMC cycles effectively administered by distributors <sup>73</sup>	3,149,867
Total wastage of SMC	48,547
Wastage as percent of total SMC distributed	1.52%
Total number of four cycles	787,467
Actual SMC treatments administered per distributor per day	25
Actual Ratio of distributors per direct supervisors <sup>74</sup>	44 : 1

In 2015, the ACCESS-SMC project delivered SMC to 787,467 children under-five.<sup>75</sup> Other implementing partners delivered SMC to 180,295 children in Jigawa and Katsina states. Based on the 2015 ACCESS-SMC project recurrent cost estimates, the estimated recurrent cost of reaching the additional children who remained with unmet need would have been approximately USD \$44.33 million although this figure would likely fall due to economies of scale and the expansion of SMC. Inflation was not included.

<sup>73</sup> This figure does not include wastage of SP+AQ distributed.

<sup>74</sup> In Nigeria, the ratio of total SMC distributors for door-to-door, fixed point, and health center distribution (7,954) to ward supervisors (182) was 44: 1. However, the ratio of door-to-door distributors (3,654) to ward supervisors (182) was 20: 1.

<sup>75</sup> According to Malaria Consortium and the NMEP, the 2015 target population for SMC distribution may have been overestimated.

**Table 55. Unmet gap of SMC coverage and costs – Nigeria (2015, USD)**

2015 coverage and cost indicators	Nigeria
Children eligible for SMC (2015)	10,851,345
Estimated number of children (3 to 59 months) who received four cycles by UNITAID ACCESS-SMC <sup>a</sup>	787,467
Estimated number of children (3 to 59 months) who received four cycles by other implementing partners <sup>a</sup>	180,295
Estimated number of children(3 to 59 months) who were reached by all implementing partners <sup>a</sup>	967,762
Percent of children who received SMC through the UNITAID ACCESS-SMC visa vie other implementing partners	81.37%
Percent of eligible children who received SMC by all implementing partners	8.92%
<b>2015 gap analysis</b>	
Children with unmet need for SMC	9,883,583
Children not reached by ACCESS-SMC in targeted districts	4,666
Percent of total eligible children with unmet need for SMC	91.08%
Cost of reaching total number of children with unmet need (2015, USD)	\$44.33 million

<sup>a</sup> This figure is calculated by dividing the total number of cycles by four and does not represent the actual number of children who received four cycles.

According to data provided by the Nigeria NMEP, in 2016, the ACCESS-SMC project plans to target 1,735,602 children (3 to 59 months) for SMC distribution; no other implementing partners plan to implement SMC in 2016. The estimated cost of reaching all children targeted for SMC (2016) is USD 7.8 million. The estimated cost of reaching children with unmet need is USD 42.45 million. These estimates are based on the average recurrent cost per child in 2015 and assumed that no additional start-up costs would be needed. Inflation is not included.

**Table 56. Unmet gap of SMC coverage and costs – Nigeria (2016, USD)**

2016 coverage and cost indicators	Nigeria
Children eligible for SMC (2016)	11,198,591
Children targeted for SMC by UNITAID ACCESS-SMC	1,735,602
Children targeted for SMC by other implementing partners	0
Children targeted for SMC by all implementing partners	1,735,602
Percent of children targeted for SMC by UNITAID ACCESS-SMC (2016, USD)	15.50%
<b>2016 gap analysis</b>	
Children with unmet need for SMC	9,462,989
Cost of reaching children targeted for SMC by all implementing partners (using 2015 unit costs)	\$7.8 million
Cost of reaching children with unmet need using 2015 unit costs (2016, USD)	\$42.45 million



## Annex 7 - The Gambia

From August to November 2015, the ACCESS-SMC project (implemented by CRS in partnership with The Gambian National Malaria Control Program and Speak Up Africa) supported the distribution of SMC in 18 districts in two regions of The Gambia,<sup>76</sup> targeting an estimated 90,925 children (3 to 59 months). Each of the four distribution cycles lasted five days. Due to shortages of electronic tablets for data reporting, the ACCESS-SMC project conducted SMC cycles consecutively in the two regions.

A combined 582 trained volunteer<sup>77</sup> distributors and data collectors distributed SMC through door-to-door (teams of two-people) and used electronic tablets to record patient information and report on number of children receiving SMC.<sup>78</sup> SMC distributors used pill crushers to facilitate the distribution of SMC. To ensure the acceptability of SMC and high rates of coverage within communities, the ACCESS-SMC project supported the airing of television and radio spots prior to and during each distribution cycle.

Trained staff (including logisticians, data managers, and store managers) at the health facility, district, regional and national levels conducted regular supervision of the SMC distributors throughout the campaign to monitor the quality of distribution and data reporting while ensuring distributors had available stock of SMC

**Table 57. ACCESS-SMC geographic and population coverage - The Gambia (2015)**

	The Gambia
SMC commencement	2014
Months of SMC distribution	August - November 2015
Number of distribution cycles	4
Number of days per distribution cycle	5 days
Geographic coverage	18 districts in 2 regions
SMC distribution method	Door-to-door
Number of SMC distributors <sup>79</sup>	<b>582</b>
Number of direct supervisors	65
Target population (3-59 months)	<b>90,925</b>
Target population (3 – up to 12 months)	15,859
Target population (>12 - 59 months)	75,066
Ratio of target population per distributor	<b>156</b>

By the end of the campaign, a total of 308,830 SMC medicines had been distributed, resulting in an equivalent of 77,208 children under-five reached.<sup>80</sup> This represented

<sup>76</sup> The ACCESS-SMC project supported SMC distribution in two regions: Central River Region (CRR) and Upper River Region (URR) and 18 districts: Lower Saloum, Upper Saloum, Nianija, Niani, Sami, Niamina Dankunku, Niamina West, Niamina East, Lower Fuladu West, Upper Fulladu West, Janjanbureh, Jimara, Basse, Tumana, Kantora, Wulli West, Wulli East, and Sandu.

<sup>77</sup> Distributors and data collectors received 350 Delasi per day.

<sup>78</sup> Data collectors continued to fill out daily tally sheets.

<sup>79</sup> In The Gambia, the ACCESS-SMC project trained 291 teams made up of one data collector and one SMC distributor (total: 582) and SMC cycles were carried out consecutively (not simultaneously) in two regions. This number of does not include volunteers trained on social mobilization who did not participate in the distribution of SMC.

coverage of 84.9%. From the first to the fourth cycle, the number of children reached increased from 71,121 to 76,922, respectively.

Coverage surveys that were later conducted by the LSHTM indicate that the reach of the SMC Programme in the Gambia has been excellent, with around 95% of children having received an SMC card and at least one SMC cycle, over 84% of eligible children received at least 3 cycles of SMC and only 56% of the children received the full four cycles, with the remainder each receiving three cycles or less. This presumably shows that of the children reached, many of them received less than the recommended four cycles.

**Table 58. ACCESS-SMC coverage - The Gambia (2015)**

	<b>The Gambia</b>
Total number of SMC medicines distributed	308,830
Estimated number of children (3to 59 months) <sup>a</sup>	77,208 (84.91%)
Estimated number of children (3 – up to 12 months) <sup>a</sup>	12,408 (78.24%)
Estimated number of children (>12 - 59 months) <sup>a</sup>	64,799 (86.32%)
<b>Campaign results children (3 to 59 months) reached per cycle</b>	
Cycle 1	71,121
Cycle 2	84,298
Cycle 3	76,489
Cycle 4	76,922
Percent of children (3-59 months) receiving four full cycles of SMC, based on LSHTM coverage survey	56%

<sup>a</sup> This figure is calculated by dividing the total number of cycles by four and does not represent the actual number of children who received four cycles.

The estimated 2015 total program costs were USD 524,578, comprised of start-up costs (i.e. those incurred at the beginning of the program) and recurrent costs (i.e. those that are repeated ever year). Start-up costs amounted to USD 56,011 and included costs of the initial launch meetings, planning meetings, the adaptation of job aids and training manuals, the production of videos and radio spots, listening and focus groups, among other one-time activities. The recurrent costs totaled \$468,567 and included the costs of ongoing activities (e.g. meetings, trainings, supervision visits, etc.) and purchases (e.g. medicines, equipment, etc.).

**Table 59. Total costs for four cycles of SMC per annum - The Gambia (2015, USD)**

	<b>The Gambia</b>
Total program costs <sup>81</sup>	\$524,578
Total recurrent costs	\$468,567
Total start-up costs	\$56,011
Average recurrent per child for four cycles	<b>\$6.07</b>

<sup>80</sup> This figure is calculated by dividing the total number of cycles by four and does not represent the actual number of children who received four complete cycles of SMC as it is estimated that some children did not receive all four cycles. The coverage survey conducted by LSHTM indicates that many of the children received fewer than four cycles, meaning that more children were reached in total but some received three cycles or less.

<sup>81</sup> Total financial costs spent by the ACCESS-SMC project and MoH. These do not include patient costs.

The average recurrent cost per child of administering four cycles of SMC was USD 6.07. The biggest programmatic cost-drivers were for medicines and supplies (23.92%) followed by SMC distributor remuneration (21.74%), and recurrent trainings (21.60%).

**Table 60. Recurrent costs and average recurrent cost per child receiving four cycles (3-59 months) – The Gambia (2015, USD)**

Cost drivers	Recurrent costs	% of recurrent costs	Average recurrent cost per child for four cycles (3-59 months)
Medicines and supplies	\$112,080	23.92%	\$1.45
SMC distributor remuneration	\$101,850	21.74%	\$1.32
Management	\$63,241	13.50%	\$0.82
Supervision	\$38,999	8.32%	\$0.51
Meetings	\$4,231	0.90%	\$0.05
Trainings – recurrent	\$101,203	21.60%	\$1.31
Other recurrent program costs	\$46,964	10.02%	\$0.61
<b>Total</b>	<b>\$468,567</b>	<b>100%</b>	<b>\$6.07</b>

The majority of all program costs (93.80%) were financed by UNITAID with the other 6.2% funded by the Gambian government, which funded 54% of the management costs. This figure is based on the reported average time spent and salaries of NMCP/MoH staff involved in supporting the program at all levels of the health system. Management costs financed by UNITAID included those paid to CRS and Speak Up Africa as well as top-up payments paid to NMCP/MoH staff.

**Table 61. Financing of ACCESS-SMC recurrent costs – The Gambia (2015, USD)**

The Gambia	
Total recurrent costs (2015, USD)	\$468,567
UNITAID contributions (% of total recurrent costs)	\$439,502 (93.80%)
Government contributions (% of total recurrent costs)	\$29,065 (6.2%)
Other contributions (% of total recurrent costs)	0

On average, each SMC distributor administered SMC to 27 children per day. The average ratio of SMC distributors to direct supervisors was approximately 9: 1. According to the available data, the estimated wastage rate of SMC was 0.45%.

**Table 62. SMC distribution efficiency – The Gambia (2015)**

Efficiency indicators	The Gambia
Total SMC medicines distributed (including wastage)	310,241
Total SMC cycles effectively administered by distributors (excluding wastage)	308,830
Total wastage of SMC	1,411
Wastage as percent of total SMC distributed	0.45%
Total number of four cycles	77,208
Actual SMC treatments administered per individual distributor per day	27
Actual ratio of distributors per direct supervisors	9 : 1

In 2015, the ACCESS-SMC project reached an estimated number of children (3 to 59 months) 77,208 SMC drugs through four cycles of SMC campaign.<sup>82</sup> There were no other implementing partners distributing SMC in-country. The estimated cost of reaching the remaining 13,717 eligible children with unmet need would have been USD 83,248.<sup>83</sup> This is based on the average recurrent cost per child in 2015 and assumes that no further start-up costs would be needed or additional economies of scale achieved.

**Table 63. Unmet gap of SMC coverage and costs – The Gambia (2015, USD)**

2015 coverage and cost indicators	The Gambia
Children eligible for SMC (2015)	90,925
Estimated number of children (3 to 59 months) who received four cycles by UNITAID ACCESS-SMC <sup>a</sup>	77,208
Estimated number of children (3 to 59 months) who received four cycles by other implementing partners <sup>a</sup>	0
Estimated number of children(3 to 59 months) who were reached by all implementing partners <sup>a</sup>	77,208
Percent of children who received SMC through the UNITAID ACCESS-SMC visa vie other implementing partners	100%
Percent of eligible children who received SMC by all implementing partners	84.91%
<b>2015 gap analysis</b>	
Children with unmet need for SMC	13,717
Children not reached by ACCESS-SMC in targeted districts	13,717
Percent of total eligible children with unmet need for SMC	15.09%
Cost of reaching total number of children with unmet need (2015, USD)	\$83,248

<sup>a</sup> This figure is calculated by dividing the total number of cycles by four and does not represent the actual number of children who received four cycles.

<sup>82</sup> According to CRS and the NMCP, the 2015 target population for SMC distribution may have been overestimated.

<sup>83</sup> Plus any additional start-up costs required.

According to data from CRS, in 2016, the ACCESS-SMC project plans to maintain the same 2015 target population for SMC distribution of 90,925 children (3-59 months); no other implementing partners plan to implement SMC in 2016. The estimated cost of reaching all children targeted for SMC (2016) is USD 551,818. These estimates are based on the average recurrent cost per child in 2015 and assumed that no additional start-up costs would be needed. Inflation is not included.

**Table 64. Unmet gap of SMC coverage and costs – The Gambia (2016, USD)**

<b>2016 coverage and cost indicators</b>	<b>The Gambia</b>
Children eligible for SMC (2016)	90,925
Children targeted for SMC by UNITAID ACCESS-SMC	90,925
Children targeted for SMC by other implementing partners	0
Children targeted for SMC by all implementing partners	90,925
Percent of children targeted for SMC by UNITAID ACCESS-SMC (2016, USD)	100%
<b>2016 gap analysis</b>	
Children with unmet need for SMC	0
Cost of reaching children targeted for SMC by all implementing partners (using 2015 unit costs)	\$551,818
Cost of reaching children with unmet need using 2015 unit costs (2016, USD)	0

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