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Extending seasonal malaria chemoprevention to five cycles: A feasibility and acceptability study in Cascades region, Burkina Faso

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Background

- Most malaria cases and deaths in under-fives occur during the rainy season.
- In 2012, the World Health Organization (WHO) recommended seasonal malaria chemoprevention (SMC) in the Sahel sub-region.
- SMC involves administration of sulphadoxine-pyrimethamine and amodiaquine (SPAQ) by community health workers (CHWs) to children 3–59 months at monthly intervals during the high transmission period.
- SMC is 75 percent effective at protecting under-fives against uncomplicated and severe malaria.

WHO Global Malaria Programme

WHO Policy Recommendation:
Seasonal Malaria Chemoprevention (SMC)
for *Plasmodium falciparum* malaria control in highly seasonal transmission areas
of the Sahel sub-region in Africa

March 2012

SEASONAL MALARIA
CHEMOPREVENTION
WITH SULFADOXINE-
PYRIMETHAMINE PLUS
AMODIAQUINE IN CHILDREN

A FIELD GUIDE



SMC in Burkina Faso

- Malaria is highly endemic.
- Prevalence of 17 percent among under-fives (2017–2018).^[1]
- Highly seasonal transmission during the rainy season.
- SMC introduced in 2014; reached all 70 health districts in 2019.
- Four monthly SMC cycles starting in July, ending in October.
- Observed shift in the rainy season — now starts as early as June in some parts of the country.

1. National Institute of Statistics and Demography, Health Development Support Programme, National Malaria Control Programme and ICF. Malaria Indicator Survey in Burkina Faso, 2017-2018. [2018; cited 2020 Oct 06]. Available from: http://www.insd.bf/n/contenu/enquetes_recensements/enquete_palu/EIPBF_2018.pdf.



Pilot study

Aim

- To understand whether extending SMC to five cycles is feasible, acceptable and reduces malaria incidence in children 3–59 months.

Design

- Pilot implementation study using mixed methods.
- Site: Mangodara district in the Cascade region.
 - Region with highest malaria prevalence in Burkina Faso.
- Additional cycle implemented in June 2019.
- 30,645 children under five were estimated to be eligible for SMC in Mangodara.



Map of Burkina Faso with Mangodara and Cascades region highlighted

Methods

Study component	Study objectives
End-of-round survey	Assessing feasibility
Focus group discussions (FGDs)	Assessing acceptability
Key informant interviews (KIIs)	Assessing feasibility Assessing acceptability
Health management information system (HMIS) data	Assessing malaria incidence

Quantitative results

- No HMIS data available in 2019 to report impact on mortality.
- No difference in coverage between five cycles in Mangodara and four cycles in the rest of the country.
- No significant difference in coverage for the fifth cycle in Mangodara.

Table 1: Proportions of eligible children 3–59 months who received SPAQ from community distributors

Number of day one SPAQ administered during campaign	Number of children surveyed	Number of children covered (by number of cycles)	Cumulative proportion (by number of cycles)	Percent (%) coverage (95% CI)
Burkina Faso (22 health districts exc. Mangodara)				
None	3,923	286	100	7.3 (6.5–8.1)
One		21	92.7	0.5 (0.3–0.8)
Two		80	92.2	2.0 (1.6–2.5)
Three		259	90.2	6.6 (5.9–7.4)
Four		3,277	83.5	83.5 (82.3–84.7)
Burkina Faso (Mangodara health district only)				
None	1,063	29	100	2.7 (1.9–3.9)
One		7	97.3	0.7 (0.3–1.4)
Two		28	96.6	2.6 (1.8–3.8)
Three		62	94.0	5.8 (4.6–7.4)
Four		66	88.2	6.2 (4.9–7.8)
Five		871	81.9	81.9 (79.5–84.1)

Qualitative results

Themes	Quotes
Knowledge about the five-cycle campaign	“According to my calculations, this year drugs were given earlier than last year; because this year it was at the beginning of the rainy season. The first one was at the beginning of the season.” (Caregiver 1A)
Perceptions of reasons for five cycles	“This year we can say that there was a lot of rain and a lot of diseases. So, [health workers] may have noticed that many children suffer more from malaria and maybe that is why they wanted to help us and they started early to fight against this disease.” (Caregiver V2) “It brought a lot of advantages. The early start produced a lot of benefits. Every year, the children would really suffer from malaria. But this year, we thank God very much because it did not affect the children seriously.” (Caregiver M3)
Children’s reaction to the additional dose	“We say that the children were able to bear the five doses because after taking them, they did not get sick anymore.” (Caregiver M4)
Reactions at policy and programme level	“As I say, it’s [the potential] resistance to this treatment [caused by additional cycles], and also the fact that WHO has not yet formally authorised that.” (Policy maker 1B)

Themes	Quotes
Reactions at policy and programme level	<p>“The Ministry [of Health] operates according to WHO guidelines. So, until WHO recommends it, it will be difficult for us.” (Policy maker P2)</p> <p>“Not really concerns, but because, as you know, the WHO has issued guidelines on SMC and any intervention that does not comply with these guidelines may raise concerns related to the fact that these are drugs being administered to children...so the concerns were a bit related to the fact that we were not complying with WHO guidelines.” (Policy maker N1)</p>
Caregivers support continuation of five cycles	<p>“We will agree with the Ministry [of Health] because the SMC campaign was very successful. We are going to support them because we have seen the benefits of five cycles. They helped us and if it continues, it is good for us.” (Caregiver 1C)</p>
Key informants concern about the need for more evidence	<p>“As soon as we have evidence from this study, and can compare this to other studies that show us how to be effective, efficient, this is what we have to do. So, the problem is not about acceptability or not — it's a problem of scientific evidence and for us to actually align ourselves with it.” (Policy maker 2B)</p>

Limitations

- It is not possible to assess the impact of the fifth cycle on malaria incidence due to a country-wide strike, which meant health-facility data were unavailable.
- Female CHWs were underrepresented in the FGDs.
- SMC tally sheet data were also unavailable due to the strike.

Conclusions and recommendations

- Stakeholders at the community, regional and national level accept the five-cycle campaign.
- Respondents perceived positive health impacts of five cycles of SMC on children under five.
- Respondents outline critical challenges and key recommendations, such as the need to align the start SMC campaign with the onset of the rainy season.
- National-level stakeholders strongly recommended that further evidence is generated about the impact of a tailored SMC campaign on malaria incidence.
- Additional studies need to be conducted to show the (cost-)effectiveness of tailoring SMC to weather cycles. These were planned for 2020 but were postponed due to COVID-19.

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Community members



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Thank you

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