

A comparative cost analysis of an integrated seasonal malaria chemoprevention and vitamin A supplementation campaign with a stand-alone campaign among children under five in Nigeria

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This study demonstrates that full integration of vitamin A delivery with seasonal malaria chemoprevention campaigns is feasible at a minimal additional cost

Introduction

In Nigeria, malaria and malnutrition contribute significantly to child mortality, which is a critical concern. Vitamin A supplementation (VAS) and seasonal malaria chemoprevention (SMC) are effective interventions that can be delivered through integrated health campaigns to reduce this mortality. This study assesses the cost implications of integrating SMC and VAS among children under five in northeast Nigeria.

Methods

- A cost analysis compared standalone SMC (cycle 1) with an SMC-VAS integrated campaign (cycle 4) in two local government areas in Bauchi state in 2021, targeting 149,582 eligible children.
- Data collection utilised a mixed-method approach, drawing from primary and secondary sources, including programmatic, financial and administrative coverage records.
- Costs were categorised into distribution, SMC medicines, training, supplies, meetings, labour, supervision, vitamin A and social mobilisation.

Results

- Delivering one cycle of standalone SMC costs \$158,934.21 while one cycle of integrated SMC-VAS delivery costs \$186,426.60 (Table 1).
- Distribution and drug costs were the largest contributors in both scenarios (Figure 2).
- The cost of SMC only per child was \$0.94, while the integrated SMC-VAS cost per child was \$1.18 (Table 2).

Figure 1. Map of Nigeria and Bauchi state showing study local government areas

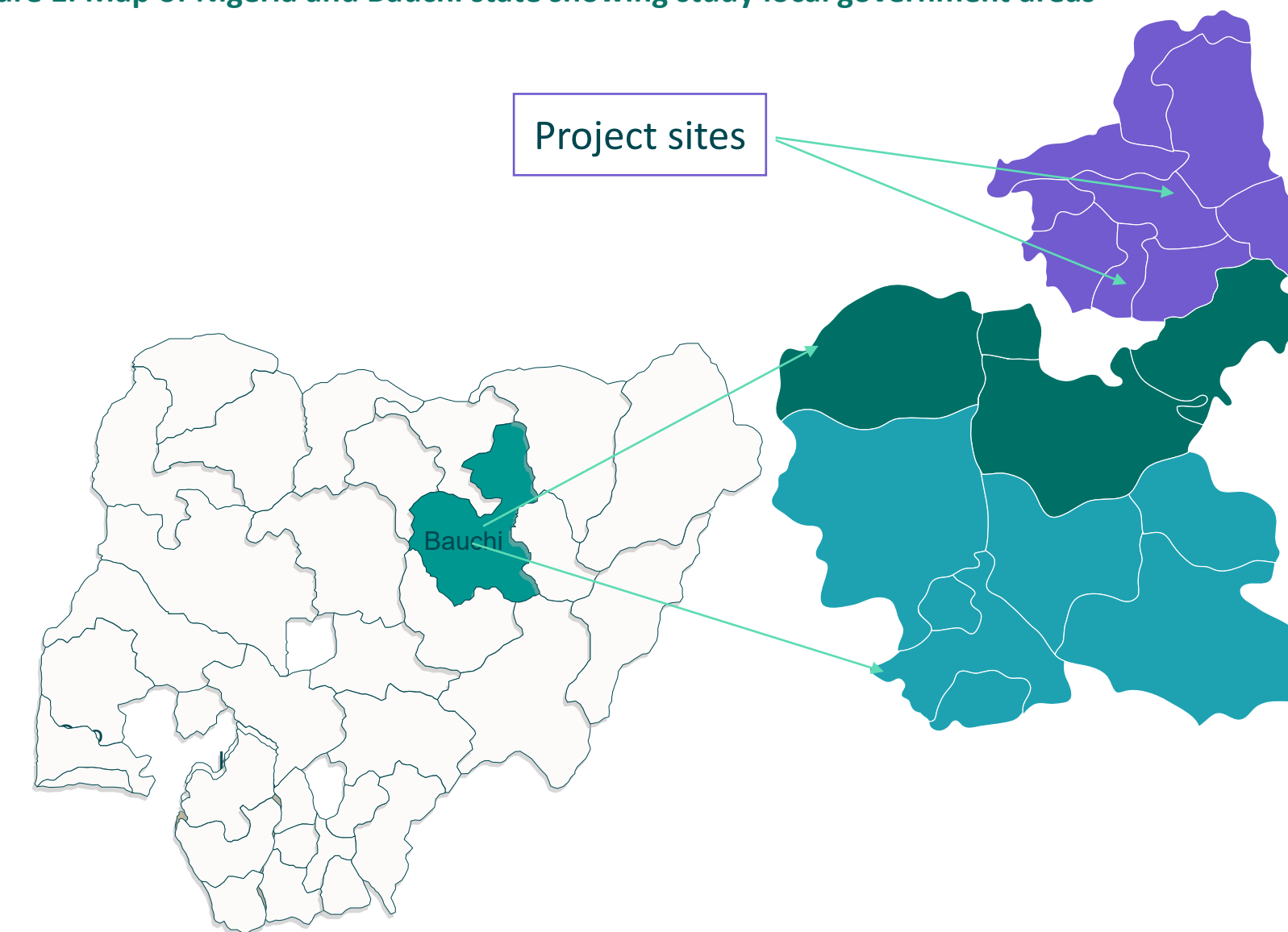


Table 1. The main cost categories of cost analysis and proportion of total cost for the SMC campaign in cycle 1 (SMC) and 4 (SMC-VAS) campaigns, 2021

Cost category	SMC		SMC-VAS	
	Cost (\$)	Proportion	Cost (\$)	Proportion
Distribution cost	48,565.67	30.6	59,472.34	31.9
SMC medicines	47,771.74	30.1	48,213.71	25.9
Training	28,783.33	18.1	45,544.69	24.4
Supplies	25,114.65	15.8	13,748.13	7.4
Meetings	1,958.13	1.2	7,523.41	4.0
Labour cost	6,301.28	4.8	6,746.47	3.6
Supervision	439.42	0.3	945.60	0.5
Vitamin A	-	-	3,416.90	1.8
Social mobilisation	-	-	815.36	0.4
Total	158,934.21	100.0	186,426.60	100.0

Conclusion

Integrating VAS with SMC campaigns increases the cost by \$0.24 per child, a modest increment considering the potential health benefits. However, detailed consideration of recurrent costs and long-term sustainability is vital for policymaking. Further research is recommended to explore cost-effectiveness across various integrated distribution models.

Figure 2. Distribution of the main cost categories of cost analysis for the SMC campaign in cycles 1 (SMC) and 4 (SMC-VAS), Bauchi state, 2021

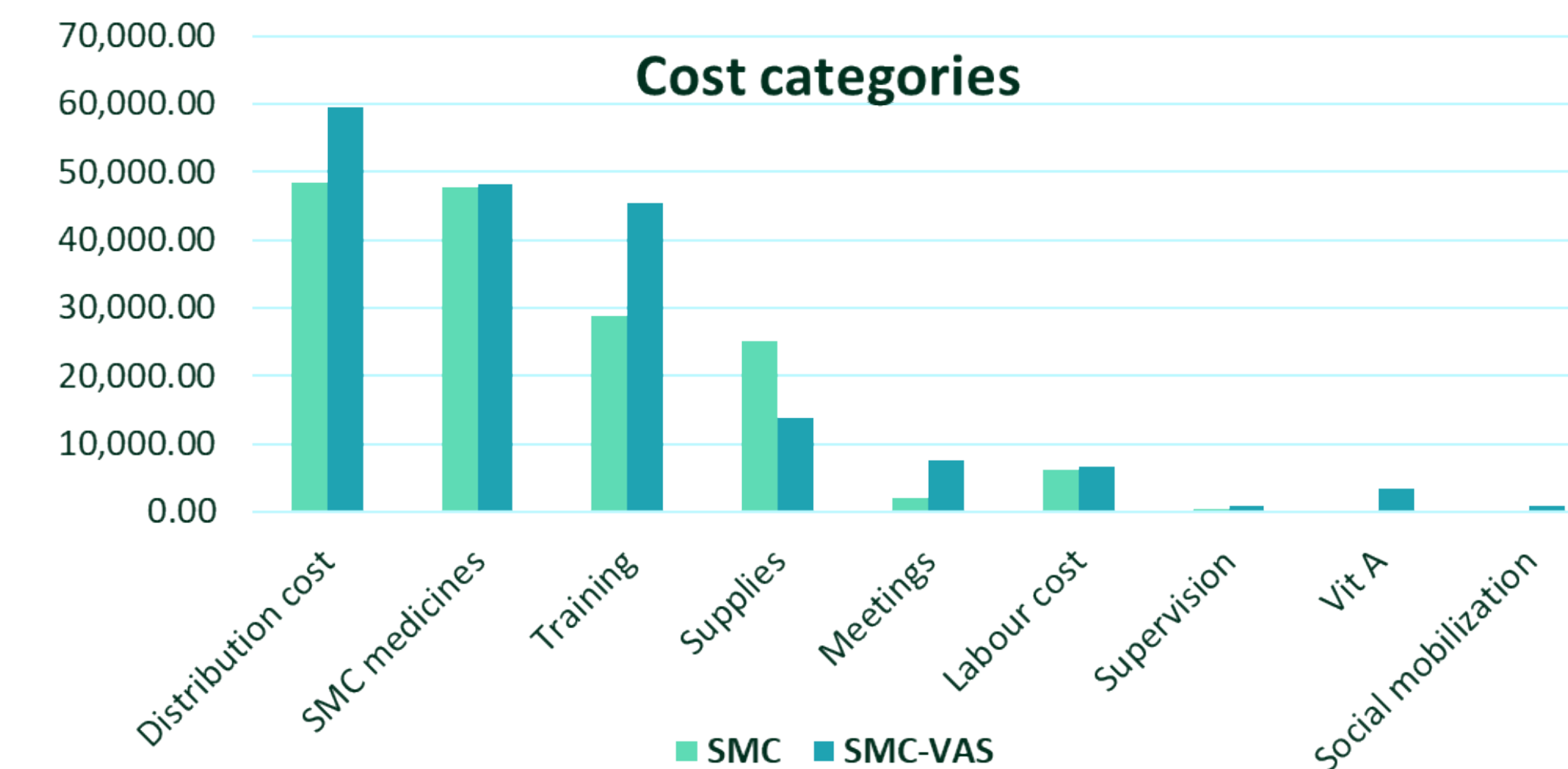


Table 2. Cost per child receiving only SMC (cycle 1), both vitamin A and SMC (cycle 4) and only SMC (cycle 4) in the study local government areas

Cycle	Cost indicator	Total cost (₦)	No. of children reached	Cost per child (USD)
SMC without VAS	Total cost per child receiving only SMC (cycle 1)	65,105,015.72	168,820	0.94
SMC with VAS	Total cost per child receiving both vitamin A and SMC (cycle 4)	76,366,858.73	157,876	1.18



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Reference

1. Boonstoppel L, Banks C, Moi F, Vaughan K, Ozaltin A, Brenzel L. How to Conduct an Immunization Campaign Costing Study: Methodological Guidance. Washington DC, USA: ThinkWell; 2021.