



**malaria
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Cost of delivering pyrethroid-piperonyl butoxide insecticide-treated nets to households in Ondo and Anambra states in Nigeria through universal campaigns

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Introduction

- Resistance of malaria vectors to pyrethroids has necessitated the use of new types of insecticide-treated nets (ITNs).
- Malaria Consortium distributed 2,965,125 and 3,851,250 ITNs containing alpha-cypermethrin and piperonyl butoxide (PBO) in Ondo and Anambra states in December 2021 and August 2022, respectively.
- As pyrethroid-PBO ITNs are more expensive than pyrethroid-only ITNs, it was necessary to understand the cost implications to optimise coverage.

Objectives

To determine the financial and opportunity costs associated with the campaigns to provide data on costs per ITN delivered to households



Methods

Methods

- Micro-costing approach used to collect financial and opportunity costs of the campaigns from provider perspective.
- Opportunity cost data gathered from sample of 48 wards in each state, selected based on probability proportionate to size sampling using stratified multi-stage cluster sampling design.

Methods

- Financial cost data (actual expenses of running the campaigns) were collected from financial, logistic and operational records kept by Malaria Consortium.
- Opportunity cost data (donations and volunteer times) were collected from implementers using:
 - key informant interviews (KIIs) at national, state and local government area levels
 - focus group discussions (FGDs) at ward level, with each FGD session including approximately six respondents directly involved in the campaign.



Methods

- 87 KIIs and 48 FGDs held in Ondo.
- 114 KIIs and 48 FGDs held in Anambra.
- Opportunity cost data were valued at the actual market prices of associated items and shadow pricing was used to estimate costs where price data were unavailable.



Results

Results

- Total financial and opportunity costs:
 - Ondo: \$9,553,893 to distribute 2,965,125 nets
 - Anambra: \$12,256,930 to distribute 3,850,316 nets.
- Financial costs:
 - Ondo: \$9,370,545
 - Anambra: \$11,935,111.
- Opportunity costs:
 - Ondo: \$183,346 (1.9 percent of total cost)
 - Anambra: \$321,819 (2.6 percent of total cost).

Results

Ondo

Cost category	Financial cost	Opportunity cost	Total	Cost per ITN distributed	%
ITN purchase, incl. assurance	6,091,895	0	6,091,895	2.05	63.8
Shipping (freight and insurance)	1,257,011	0	1,257,011	0.42	13.2
Distribution (including ICT4D cost*)	970,731	135,439	1,106,169	0.37	11.6
M&E and supervision	153,299	193	153,492	0.05	1.6
Microplanning	170,735	17,388	188,124	0.06	2.0
Training	561,016	3,703	564,720	0.19	5.9
Social mobilisation	61,599	26,623	88,223	0.03	0.9
Malaria Consortium personnel salary	104,259	0	104,259	0.04	1.1
Total	9,370,545	183,346	9,553,893	3.22	100.0

*The cost of ICT4D was US\$ 533,842 or 5.6 percent of the total cost of the campaign

Results

Anambra

Cost category	Financial cost	Opportunity cost	Total	Cost per ITN distributed	%
ITN purchase, incl. assurance	9,026,680	0	9,026,680	2.34	73.6
Shipping (freight and insurance)	1,062,549	0	1,062,549	0.28	8.7
Distribution (including ICT4D cost)	1,072,654	264,290	1,336,944	0.35	10.9
M&E and supervision	78,910	4,029	82,939	0.02	0.7
Microplanning	99,683	10,325	110,008	0.03	0.9
Training	479,155	11,025	490,180	0.13	4.0
Social mobilisation	35,462	32,150	67,612	0.02	0.6
Malaria Consortium personnel salary	80,018	0	80,018	0.02	0.7
Total	11,935,111	321,819	12,256,930	3.19	100

Conclusion

- Total cost to deliver an ITN to a household in Ondo and Anambra states was USD 3.22 in Ondo and USD 3.19 in Anambra
 - Ondo: 1.9 percent opportunity cost
 - Anambra: 2.6 percent opportunity cost.
- Cost of purchasing ITNs, including freight and insurance, was the key driver of the overall cost of the campaigns
 - Ondo: 77 percent of total cost
 - Anambra: 82 percent of total cost.
- The findings will support economic evaluations of pyrethroid-PBO ITNs delivered through universal campaigns and contribute to value-for-money assessments.

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Malaria Consortium is one of the world's leading specialist non-profit organisations. Our mission is to improve lives in Africa and Asia through evidence-based programmes that combat targeted diseases and promote universal health coverage.

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