How much does it cost to conduct an integrated measles-rubella campaign in in Sierra Leone?

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1. Background and rationale

Introduction

- There is a lack of evidence on the cost of delivering vaccines in Sierra Leone, and **no evidence on the cost of immunization campaigns**
- Co-delivering multiple antigens through immunization campaigns is likely to take place more frequently over the coming years, though how integration affects costs is not known
- Ahead of a switch from measles to measles-rubella (MR) vaccine in the routine schedule, a catch-up campaign was implemented nationwide in 2019, integrated with other interventions
- ThinkWell conducted a costing study **aiming to estimate the cost of this campaign**

Campaign overview

MR catch-up campaign integrated with oral polio vaccine (OPV) nationwide and with Vitamin A and Albendazole (deworming) in half of the country's districts

Implemented for 7 days nationwide in June 2019, 95% coverage aim

Intervention	Target population	Doses delivered	Coverage achieved
MR	9 months – 14 years	2.9 million	93%*
OPV	0 – 5 years	1.3 million	120%
VitA	6 months – 5 years	440,229	97%
Albendazole	1 – 5 years	375,130	97%

* Based on post-campaign coverage survey. All other figures are administrative data.

Financing and integration

- The campaign was primarily financed by Gavi, the Vaccine Alliance, supplemented by funding from the government of Sierra Leone, Global Polio Eradication Initiative, the Canadian government (particularly for the nutritional interventions), and supported by the WHO and UNICEF
- Lower coverage districts were selected for integration with nutritional supplements
- Delivery was fully integrated, from planning and coordination to transport and service delivery
- Interventions were delivered at health facilities, schools and other temporary sites, and by mobile teams

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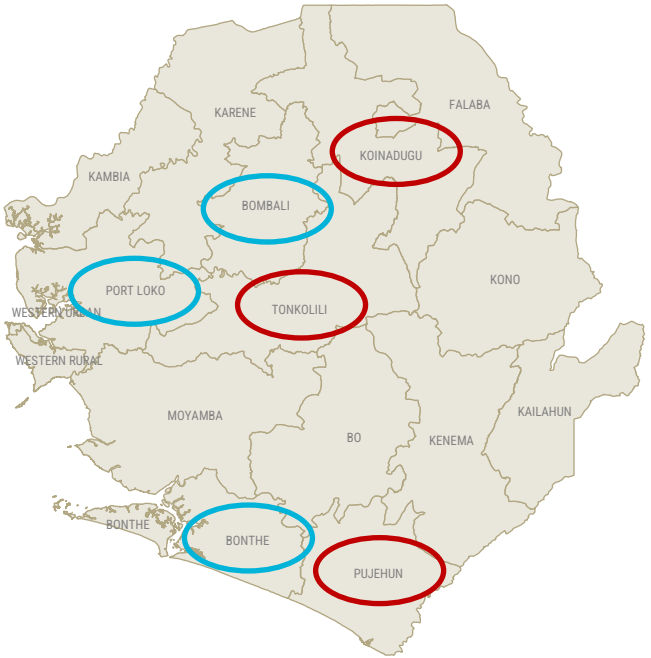
2. Design and methods

Methods overview

Objective	To estimate the **economic** and **financial delivery cost** (operational cost) of the campaign
Perspective	Gov. entity responsible for the campaign's implementation at all administrative levels and implementing partners (payer)
Design	**Bottom-up** retrospective costing
Sampling strategy	Purposive and random selection of districts, random sampling of facilities using the Sample Design Optimizer
Time horizon	Costs incurred during planning, implementation and wrap-up
Main output	**Average cost per dose delivered** (weighted by volume delivered and inverse probability of sampling, USD 2020)

Study sample

- 28 facilities in 6 districts
  - Two districts sampled purposively, others randomly
  - Stratified random sampling of health facilities to include a mix of rural and urban sites
- National level government
- 10 district level partners
- UNICEF and WHO at national level



MR and OPV only

MR, OPV, VitA, Alb

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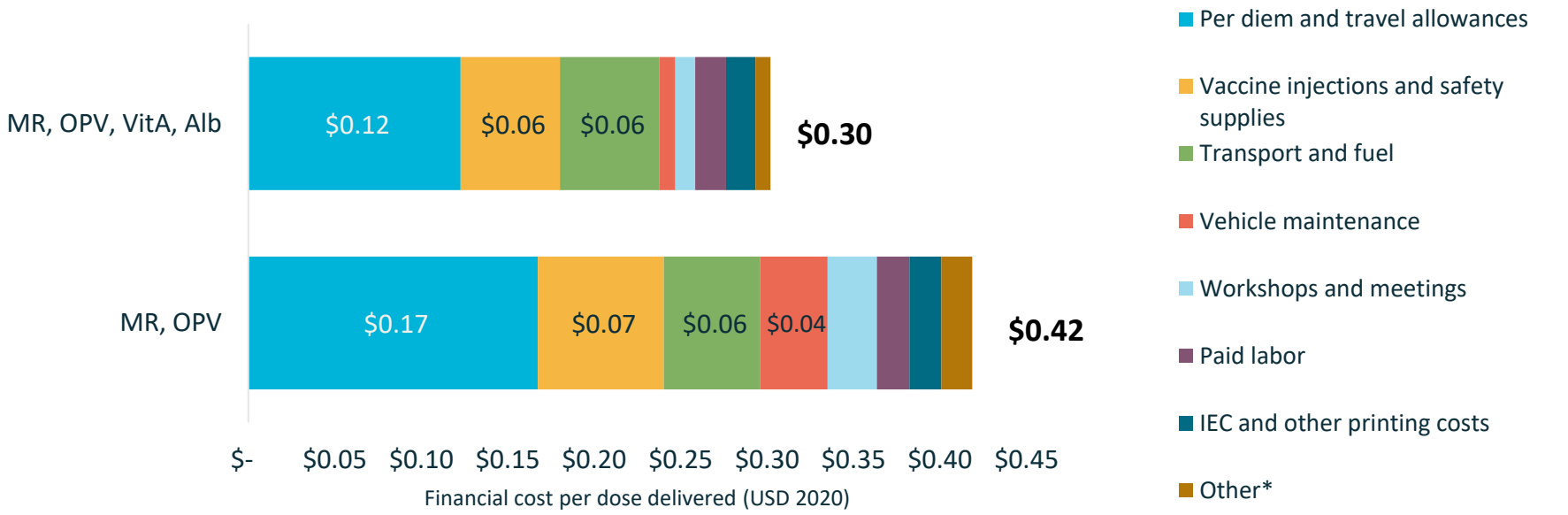
3. Findings

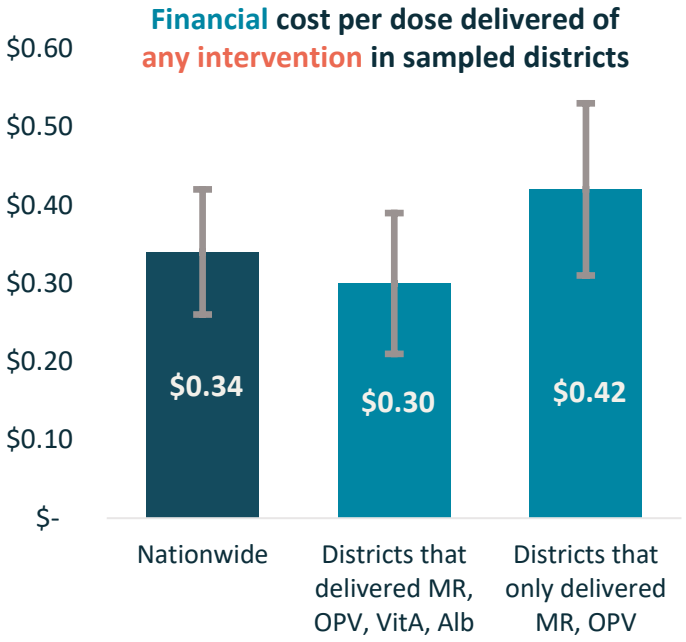
Similar cost profile across the two sets of districts, per diems were the main cost driver



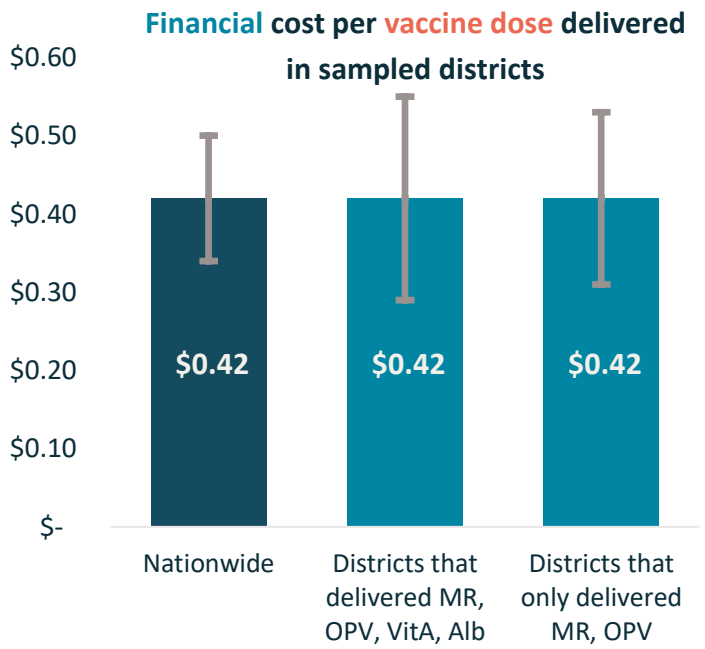
- Per diems, transport and fuel costs, and vaccine injection and safety supplies were the main cost drivers in all districts
- Proportion of per diems was similar in both sets of districts (40-41%)

**cold chain equipment, cold chain repairs and energy costs, stationery and other supplies, communication*

On average, financial delivery cost efficiencies were achieved through this form of integration

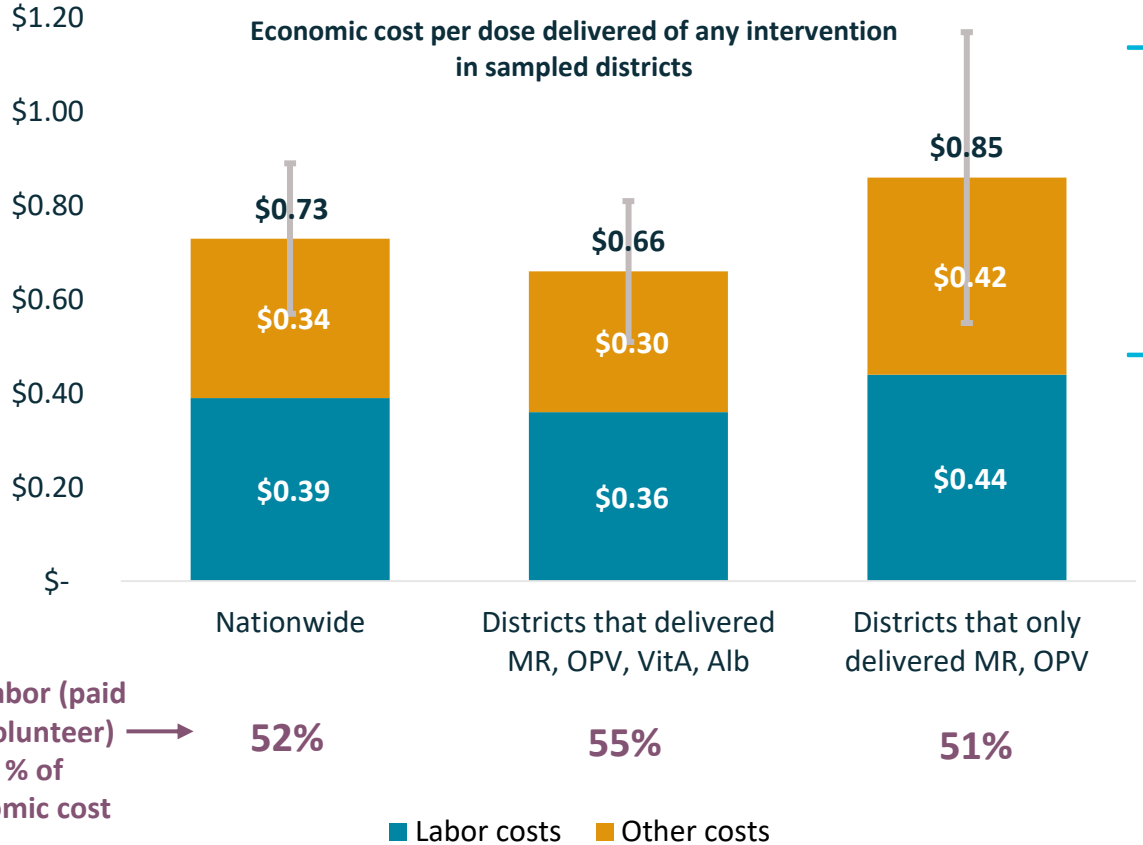


The average financial cost per dose delivered of any intervention was **lower in co-delivery districts**



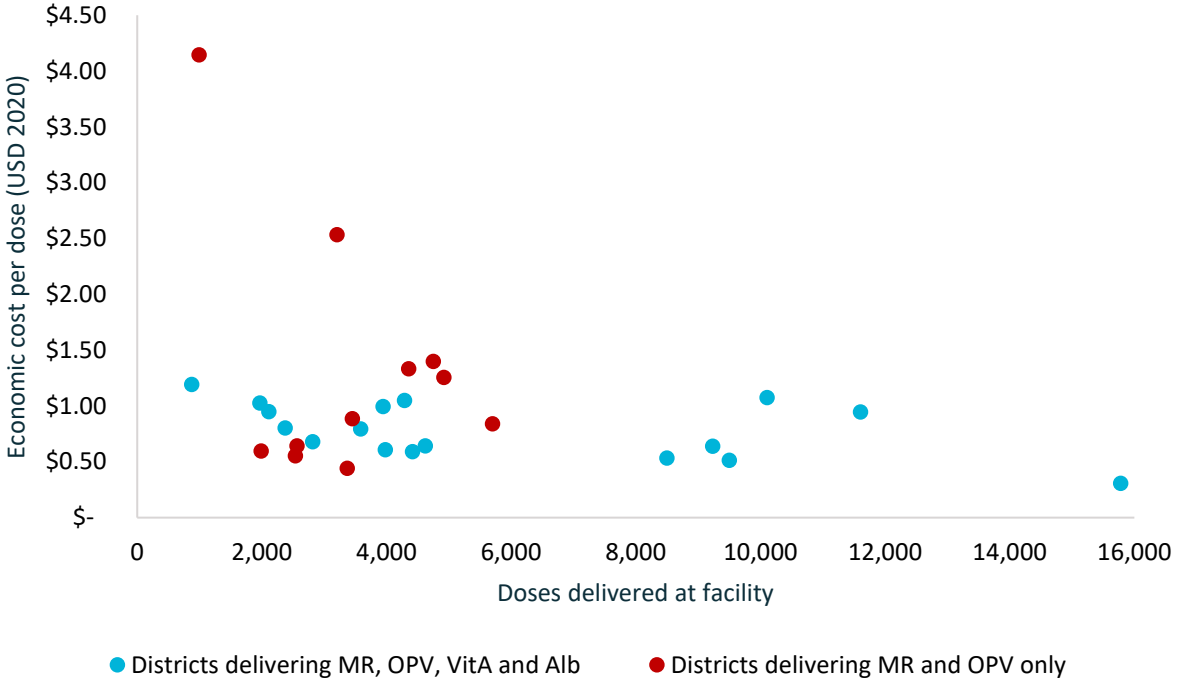
When using a common denominator for all districts (MR and OPV doses) the average financial cost per dose delivered was similar

Labor accounted for 51-55% of the economic cost per dose



- The proportion of labor costs were on average slightly greater in areas that delivered more interventions
- Labor costs (both paid and unpaid) were relatively higher as co-delivery districts deployed staff with higher salary grades

The economic unit cost tended to decrease with increasing volume delivered at facilities



- The cost per dose tended to be **lower in facilities that delivered more doses**
- Co-delivery districts had a higher average number of doses delivered per facility (5864 to 3438)

Conclusions

- These findings suggest financial cost efficiencies from co-delivery during this campaign, however results were not significantly different
- Costs are likely influenced by differences in how the campaign was implemented, which we cannot correct for. The selection of districts for integrated nutritional interventions was not random, as these were districts with lower coverage
- This evidence is the first on the cost of conducting immunization campaigns in Sierra Leone and can be used for the planning and budgeting of future campaigns

Thank you!

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