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The Cost of Periodic Intensification of Routine Immunization and Mobile Health and Nutrition Teams in the Afar and Somali regions in Ethiopia

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Photo credit: “Fatuma Abubeker nurse, Mobile Health and Nutrition team (MNHT)” by UNICEF Ethiopia, CC BY-NC-ND 2.0

Outline

- Introduction
- Methods
- Findings
- Conclusions

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Introduction

Ethiopia is home to over 1.1 million zero-dose children

- To close the gap, the Ministry of Health developed the "*Accelerated Action plan to address zero-dose, and under-vaccinated children in Ethiopia 2023-2025*"
- Includes several strategies to reach zero-dose children, but the cost of these are not known

Purpose of this study: to estimate the effectiveness and cost of immunization delivery strategies aimed at reaching zero-dose children

Photo credit: Mobile Health and Nutrition team (MNHT)" by UNICEF Ethiopia, CC BY-NC-ND 2.0

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Methods

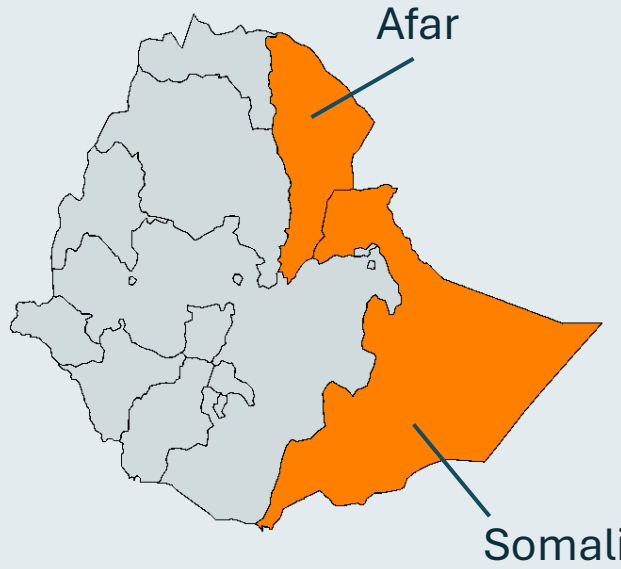
Quantitative analysis:

- Activity-based, bottom-up micro-costing study from a health systems perspective
- Cost represent volume weighted averages in 2024 USD
- Sample: 6 woredas (districts), 17 health centers, 32 health posts covering Dec 2023 to Nov 2024

Qualitative analysis:

- Conducted 16 key informant interviews across all system levels (from national level MOH to health extension workers) to contextualize cost findings and understand operational and financial enablers and bottlenecks

Geographic scope:



Rural regions with nomadic pastoralist populations, conflict-affected areas, among the most marginalized, with limited access to basic healthcare, the lowest immunization coverage, and the highest rates of zero-dose children

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Immunization strategies

1. Routine immunization and regular outreach (RI/RO)

- Implemented by health centers and health posts (each health center oversees up to 5 health posts)
- Health centres provide facility-based services five days a week and conduct regular monthly outreach, while health posts primarily focus on outreach activities.

2. Mobile Health and Nutrition Teams (MHNT)

- Mobile teams primarily delivering maternal, nutrition, and immunization services in hard-to-reach areas
- Operates 6 days per week, one dedicated day per kebele, a kebele 'graduates' when key indicators (such as stunting) have sufficiently improved
- Dedicated staff and vehicles funded by UNICEF

3. Periodic intensification of routine immunization (PIRI)

- Campaign-style approach implemented from woreda (district) level, with strong community involvement
- Per policy should be implemented 4x per year, in reality 2-3 times per year, dependent on when Gavi funding for it is made available

Photo credit: “Health Worker and team member of the Mobile Health and Nutrition team (MNHT)” by UNICEF Ethiopia, CC BY-NC-ND 2.0

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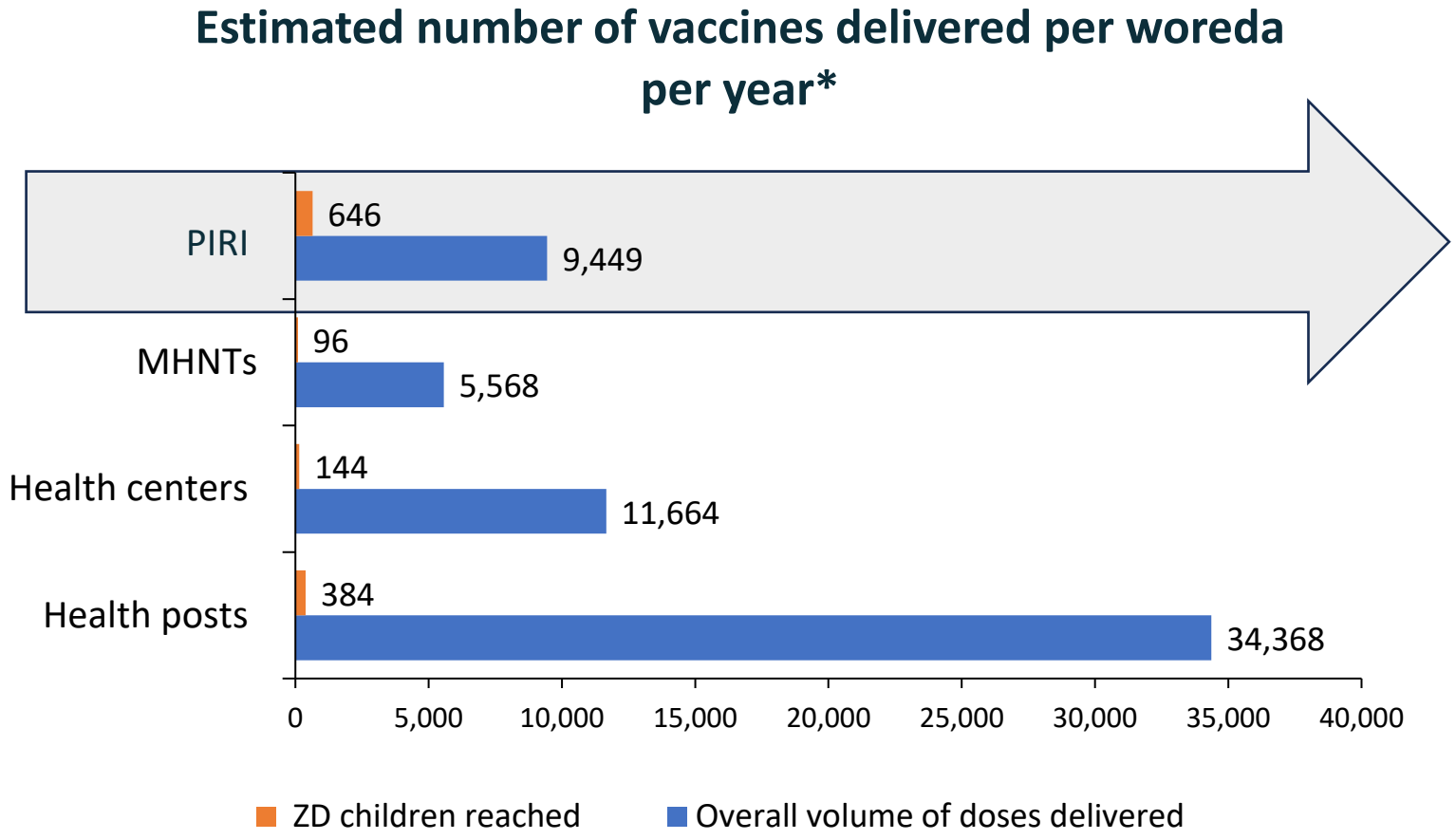
Health posts deliver the majority of all vaccine doses but PIRI sessions are most effective at reaching zero-dose children



Even though only conducted a few times per year, PIRI reaches more ZD children (646) than all health centers and health posts in a woreda combined (528)

MHNTs reach fewer ZD children though there is only one such team per woreda, and they operate in a highly targeted manner, delivering a full package of services before they continue to the next kebele

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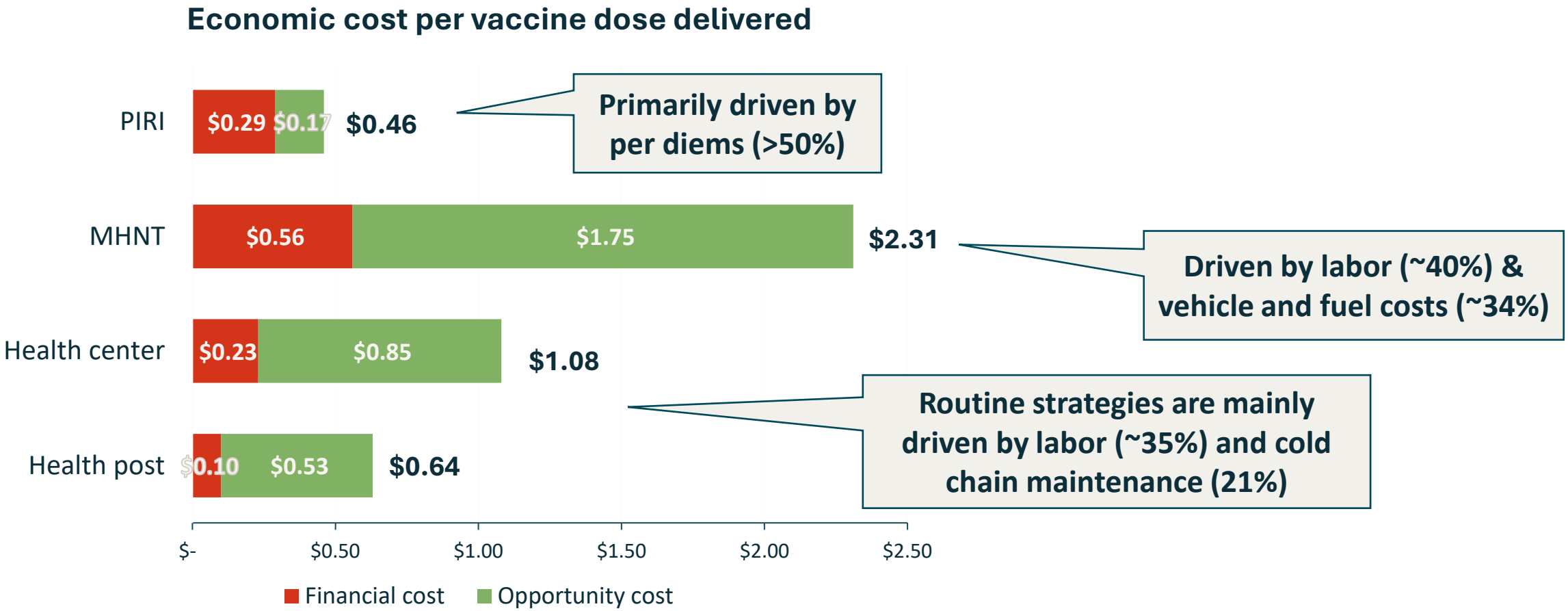
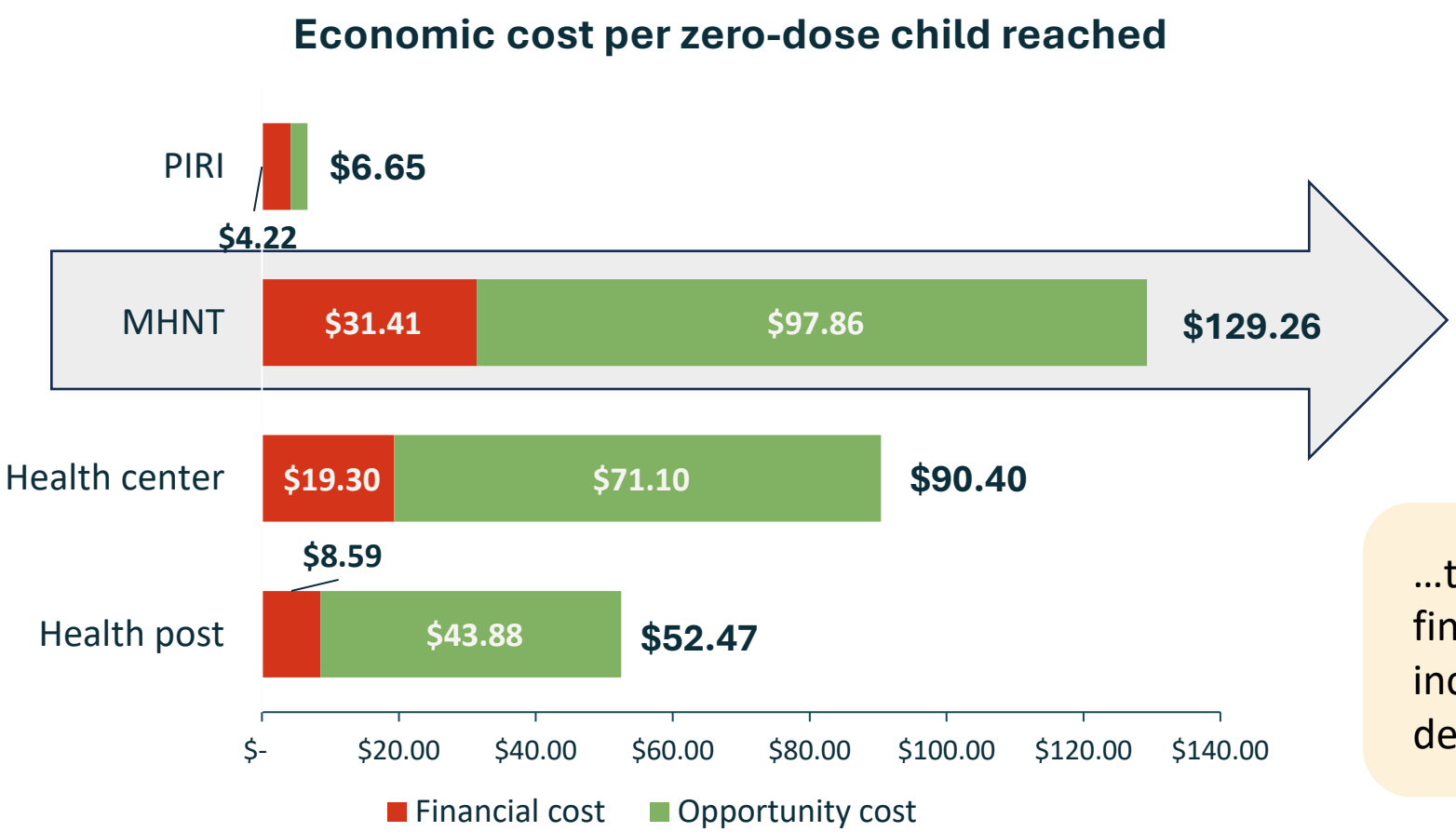
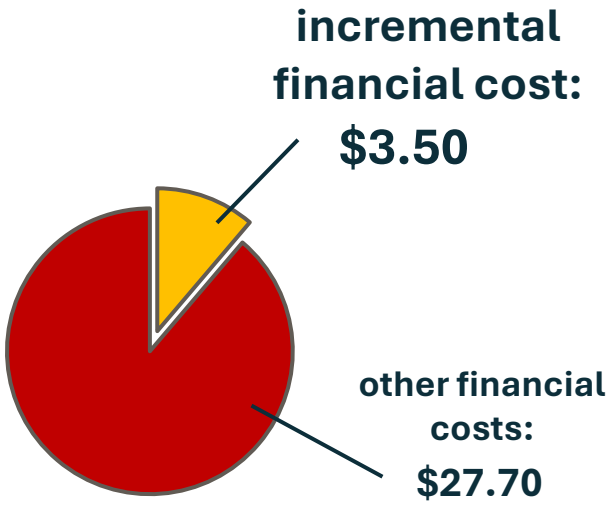
** Monthly data and per session data extrapolated over a year. Considering 16 health posts, 3 health centers, and 1 mobile health and nutrition team per woreda, and PIRI sessions conducted 2.67 per year*

Cost per dose of PIRI is driven by per diems while other strategies are mainly driven by the cost of labor



Per zero-dose child reached PIRI seems the most cost-efficient delivery strategy at first…





…though only a really small portion of the financial cost per dose for MHNTs is incremental/immunization-specific as it delivers many other services

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Conclusions

Both **MHNT and PIRI are effective** at filling operational challenges and resource gaps in the routine system by reaching missed children among mobile communities in hard-to-reach areas

Strategies must complement, not replace each other, as simultaneous MHNT and PIRI may cause **resource overlap** and **reduced effectiveness**.

PIRI is most effective and cost-efficient at reaching zero-dose children, though as it is implemented only 2-3 times per year, children remain permanently behind on schedule unless they are linked up with the routine system

Referral linkages with routine have been weak, resulting in **dropouts**, and reportedly parents have **postponed vaccination visits** to wait for an upcoming PIRI campaigns. Furthermore, if the frequency of PIRI were to increase, its cost-efficiency would drop.

The immunization-specific financial cost of **MHNT** delivery is low, and it offers a more **comprehensive, consistent, targeted, integrated approach** to reaching vulnerable communities

Moreover, integration with other highly demanded services such as nutrition has **increased uptake** of immunization compared to standalone delivery.