The cost of identifying and reaching zero dose children in Uganda

A case study of house-to-house registration and targeted outreaches

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Introduction

- Significant progress has been made in improving immunization coverage in Uganda
- Despite this there is an increasing number of outbreaks, low coverage for some antigens and accumulation of Zero Dose (ZD) and Under Immunised (UI) children.
- Immunisation program conducted the “Big catch-up campaign” in November 2024.
  - Aimed to reach 297,687 ZDC and 676,712 UI children

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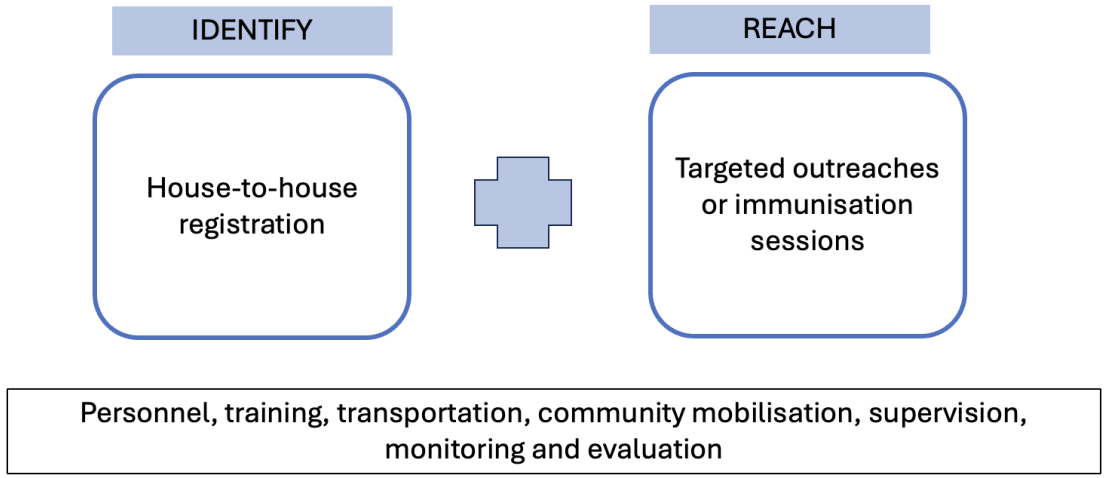
Rationale and Objective

- Previous costing exercises or studies have mainly focused on estimating the costs of routine immunisation and mapping financing flows for routine immunisation.
- Limited evidence on the costs of identifying and reaching ZD children.
- Findings will inform country and global level planning, budgeting and future guidelines.

Objective

To estimate the incremental costs of identifying and reaching ZD and UI children through the selected interventions implemented as part of the "Big Catch-up campaign."



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Methods

Design	Retrospective costing study
Costing approach	Ingredients costing using bottom-up approaches. (Both financial and economic costs)
Study sites	• Mubende district: Underserved, hard to reach and pastoral communities • Wakiso district: Urban, peri-urban, and island communities. • Kasese District: Hilly, sparsely populated, with a presence of fishing and border communities.
Study population	Children <5 years (Defined by UNEPI)
Perspective	Payer perspective- costs of delivering the intervention.
Outcome	Primary outcome: Cost per ZD child vaccinated

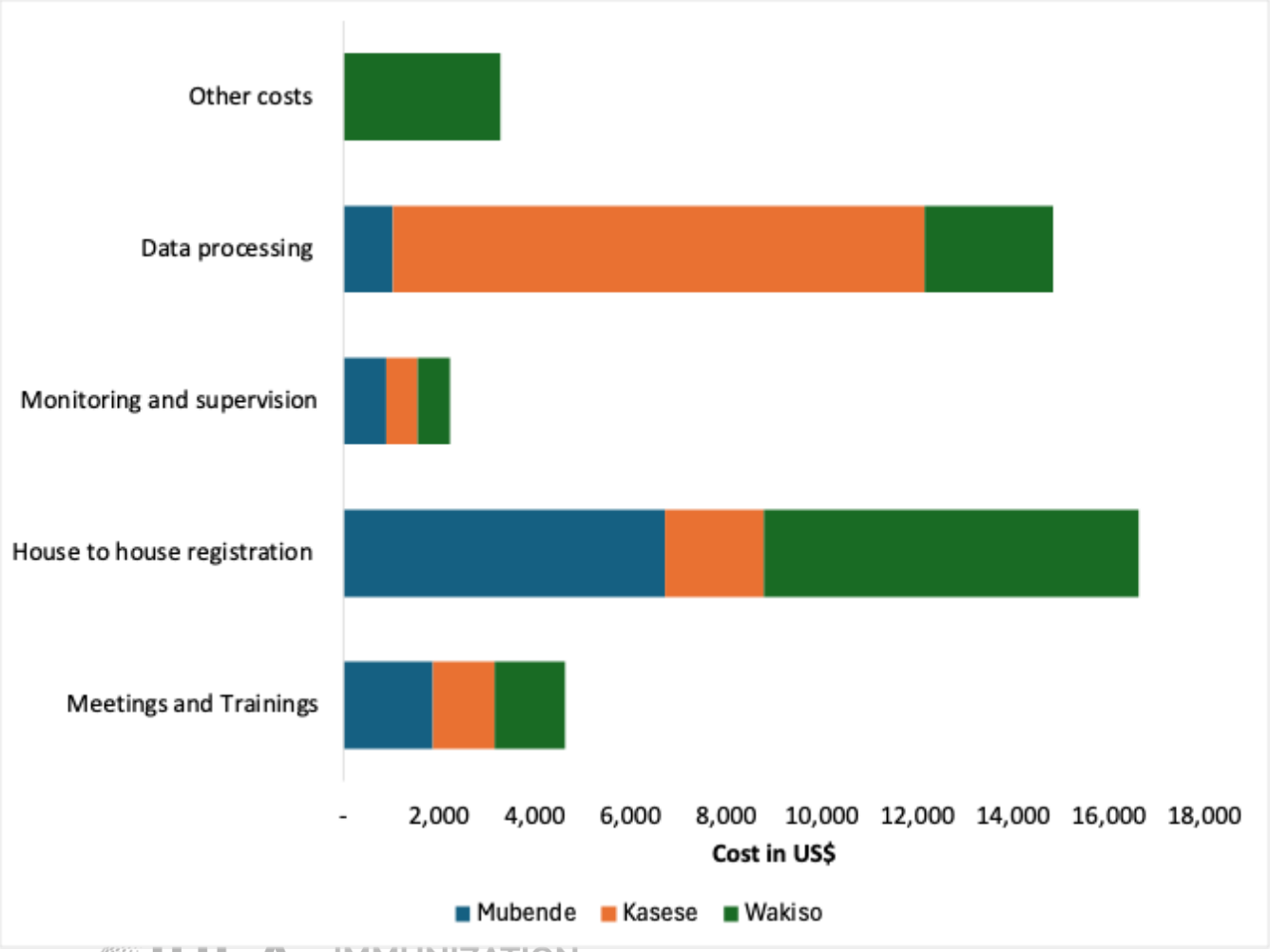

Results

Number of ZD children registered and vaccinated

119,156 ZD children were registered, 8% (14,425) were zero-dose children

23,716 ZD children were vaccinated

Registration costs



$3.07 Cost per ZD child identified

	Mubende	Kasese	Wakiso
Total costs attributed to DPT1	$2,258	$2,963	$1,396
Number of ZD children identified	587	515	1053
Costs per child identified (Zero Dose Child)	$3.85	$5.75	$1.33

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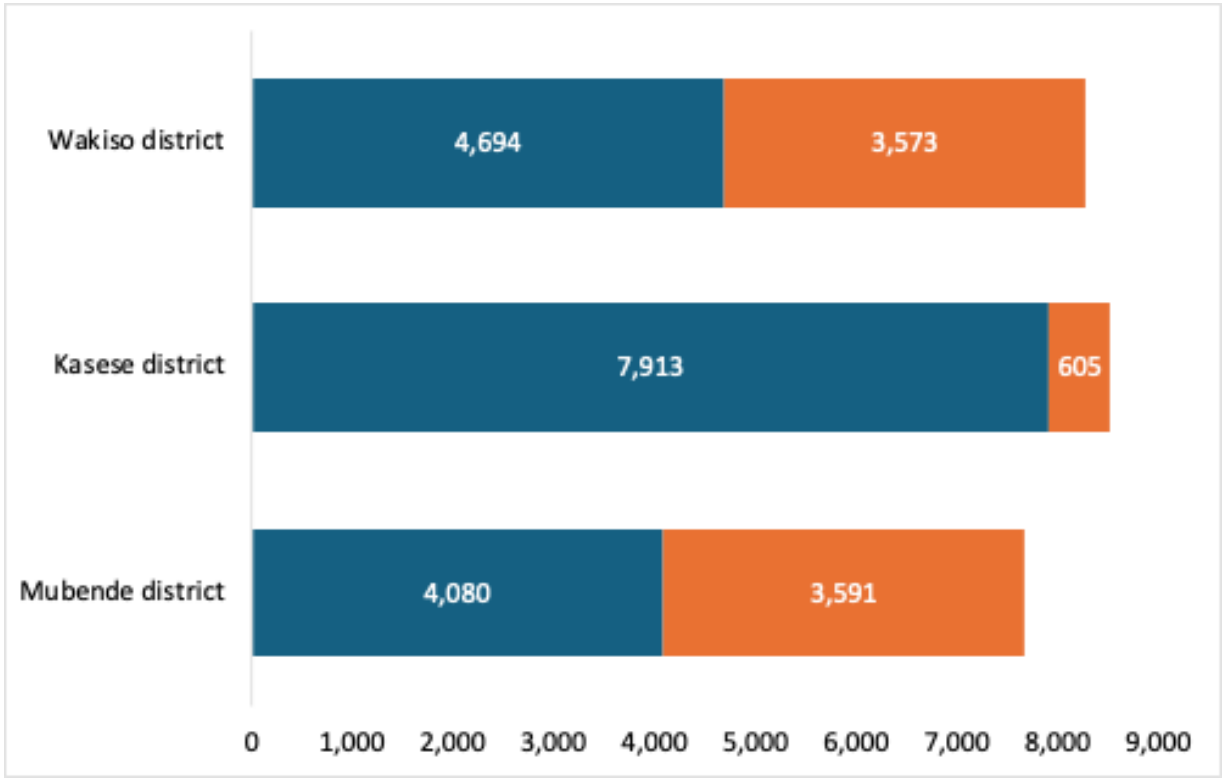
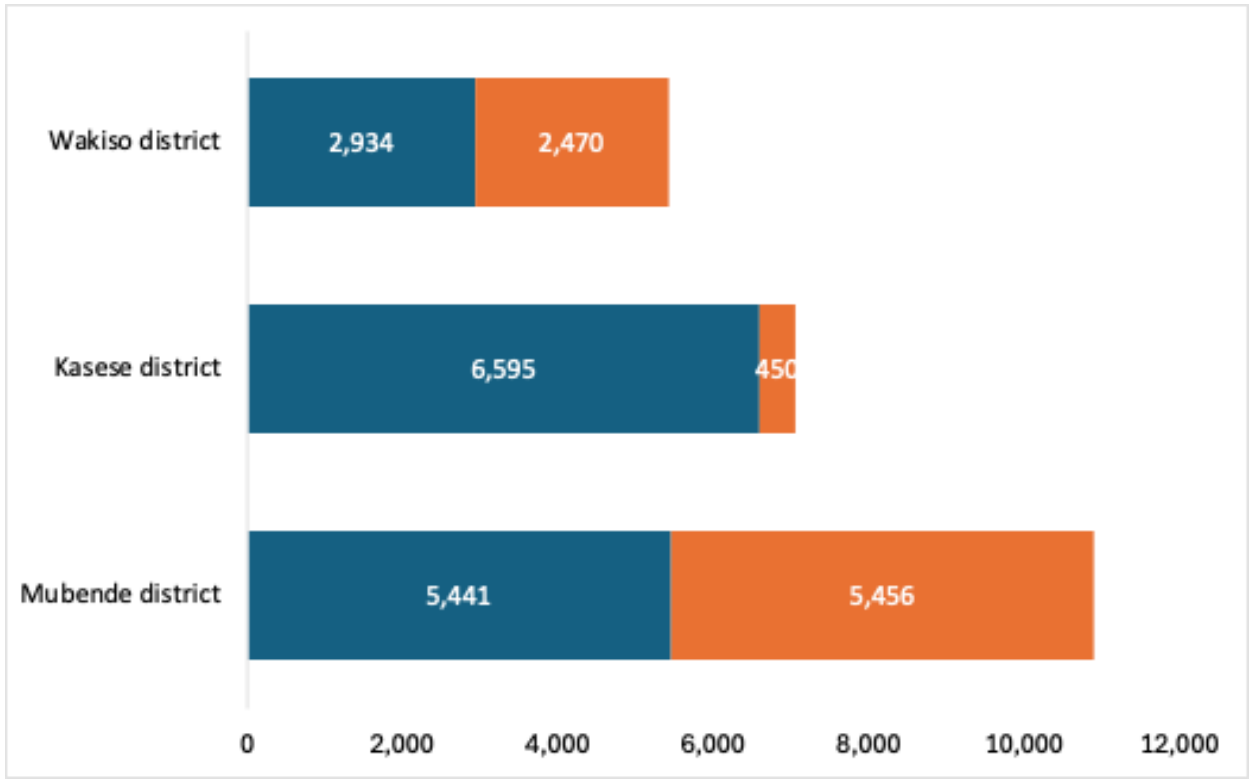
Vaccination related costs

DPT1



DPT3



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Cost per child vaccinated

	Mubende	Kasese	Wakiso	Total
Total costs attributed to DPT1 vaccination	8,031	8,518	8,267	24,816
Number of children vaccinated with DPT1	966	124	889	1,979
Cost per child vaccinated with DPT1	**$8.3**	**$68.7**	**$9.3**	
Total costs attributed to DPT3 vaccination	10,897	7,045	5,404	23,346
Number of children vaccinated with DPT3	1,334	110	604	2,048
Costs per child vaccinated with DPT3	**$8.2**	**$64.0**	**$8.9**	

$12.53 ($8.3-$68.7) Cost per ZD child vaccinated

$11.4 ($8.2-$64) Cost per UI child vaccinated

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Implementation challenges

House to house Registration

- Increased workload for VHTs with insufficient incentives or rewards, affecting their motivation and overall effectiveness
- Inadequate training of VHTs, which led to confusion about their tasks and a rushed implementation
- Inadequate logistics, such as registration forms.
- Only one VHT was involved per village (some villages have >2 VHTs)

Vaccination

- Vaccination was not linked to registration due to short timelines for implementation.
- Staffing shortages affected outreach efforts
- Resistance towards vaccination. (Myths and misconceptions, Knowledge gaps about immunisation)

Discussion

- Considerable financial investment is required to identify and reach ZD children
  - Additional resources are invested in identifying these children for purposes of targeting.
- Costs are dynamic and responsive to changes in: i) the number of ZD children identified and vaccinated, and ii) the number of administrative units.
- Integrating additional antigens into campaign-based outreaches can offer significant cost-saving opportunities.
- House-to-house registration identified ZD and UI children; its sustainability and cost-effectiveness are unclear.

Learnings

1. Village Health Teams/Community Health workers are key players in the identification of ZDC and UIC at community level. (Many caregivers give birth at home or with TBAs)
2. Identifying ZD, UI children and missed communities requires a data capture system that collects data at the community level and facilitates real-time data use at all levels.
3. The ZD burden is a moving target that requires routine assessments to align interventions as the situation changes. The health system must be adaptable to changing situations to reach ZDC.
4. Barriers to uptake of immunisation services differ by context and therefore require tailored approaches to address them.

What does this mean for policy?

1. Leverage localised data and accelerate the digitisation of immunisation systems to identify and reach ZD children
   - Reduce data processing costs, improve data quality and enhance use (data-driven outreaches, sustain the identification of ZD and UI children)

2. Leverage Existing Health Platforms for Integrated Identification and Vaccination Efforts
   - Other immunisation programs include Child Health Days, the introduction of new vaccines, and other campaigns.
   - Malaria, HIV and TB programs

3. For future efforts, it is necessary to allocate resources based on local district-specific challenges and involve local stakeholders in the planning process.
   - Planning and budgeting should account for context-specific challenges such as geographic barriers and high travel costs.

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