

# Measuring the impact of health facility reinforcement and EID/EPI integration on testing and immunization services in Southern Province, Zambia

*Initial findings*

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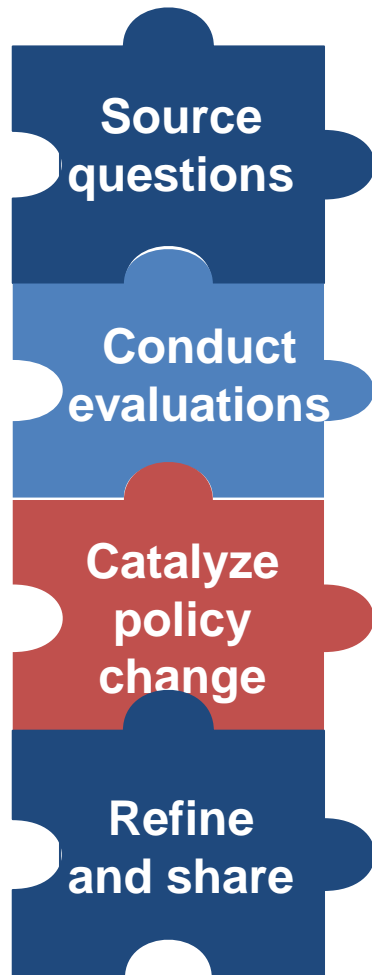
**Melbourne**

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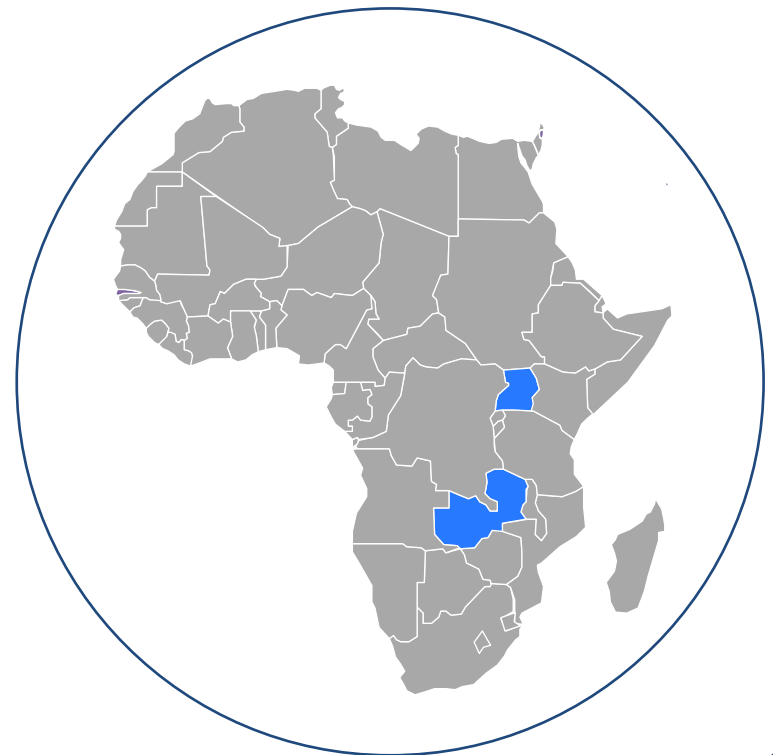
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# What is 3DE (Demand-Driven Evaluation for Decisions)?

**Objective:** Conduct rigorous evaluations to inform national policy decisions and catalyze evidence-based action at national scale



Pilot started in 2012 in Zambia and Uganda



# EID / EPI integration

## MOH used 3DE to investigate EPI/ EID service integration

Testing guidelines in Zambia:

- Infants receive DPT1 and other immunizations at 6 weeks
- HIV-exposed infants should be tested at 6 weeks
- Mothers with a previous negative or unknown status should be tested for HIV when their infant is 6 weeks old

### National Rates

EID uptake  
~ 25-30%

DPT1  
uptake  
86%

Postpartum  
testing  
~ 10%

↓  
Missed  
opportunity



# Research Question

## **Research Question:**

Can interventions that guarantee the supply of HIV test commodities and integration of HIV services with immunization services improve rates of EID and postpartum HIV testing?

## **Policy Constraint:**

To change policy, it is critical that improving HIV services does not come at the expense of decreased immunization uptake

# Evaluation used a cluster randomized design

## Study sample: 60 health facilities in Southern Province

Catchment Population ~ 500,000 people • 75% Rural, 25% Urban

1

Control  
*20 clinics*

2

Simple  
*20 clinics*

3

Comprehensive  
*20 clinics*

### Outcome indicators

#### 1. HIV indicators

- # DBS tests conducted
- # mothers postpartum rapid tests (PRTs) for HIV

#### 2. Immunization indicators

- # DPT1 doses administered

### Study details

- 2 years of administrative baseline data used
- 6 weeks to pilot interventions
- 6 month intervention period

**Qualitative research** – focus groups, patient interviews, and staff interviews were conducted in all intervention arms to supplement primary analysis

# Evaluation tested two interventions

| Intervention Components   | Interventions |               |
|---|---------------|---------------|
|   | Simple        | Comprehensive |
| <b>Resupply facilities</b> w/HIV test kits and DBS bundle when stock-outs are imminent                                | ✓             | ✓             |
| <b>“Pep talk”</b> by the district health office to reinforce existing HIV testing guidelines with facility in-charges | ✓             | ✓             |
| <b>On-site workshops</b> to optimize HIV / EPI operations at U-5 clinic using specified triage approach               |               | ✓             |
| <b>Opt-out testing at 6-week U-5 visit</b> for all mothers w/prior unknown or prior HIV- status                       |               | ✓             |

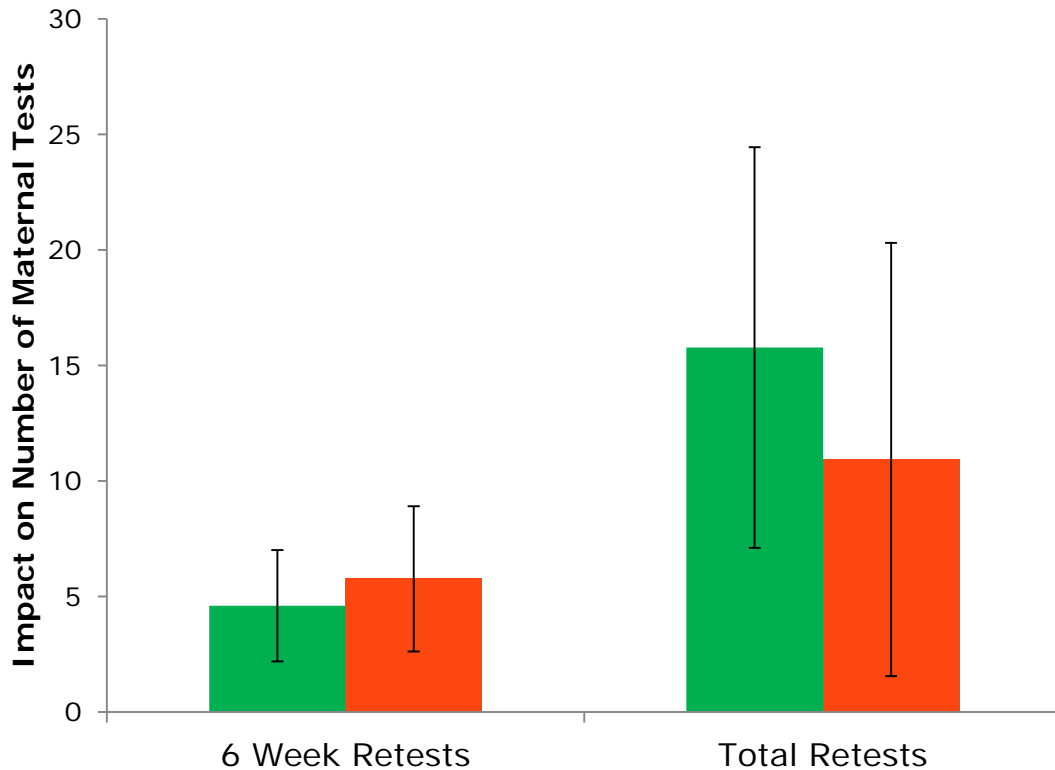
# Intervention arms balanced at baseline

| Monthly Facility Characteristics<br>(# tests or doses / facility / month) | Control | Simple | Comprehensive |
|---|---------|--------|---------------|
| First ANC   | 30.7    | 29.3   | 29.9          |
| DPT1  | 28.7    | 27.3   | 26.2          |
| DBS Tests   | 4.0     | 3.7    | 4.3           |
| Postpartum rapid tests (PRTs) (6 weeks)                                   | 3.3     | 1.2    | 3.0           |
| Postpartum rapid tests (PRTs) (any time)                                  | 14.2    | 6.7    | 15.2          |

None of these differences were statistically significant (DBS : p-value = 0.89, 6 wk PRTs: p-value = 0.14; total PRTs: p-value = 0.19)

# Both interventions produced large, significant increases in maternal testing

## Estimated Impact on Change in # of Postpartum Rapid Tests



- **Baseline average was 12.0 tests per facility per month**
- **Controlled for facility-level characteristics (size, urban / rural, and district)**
- **Large, statistically significant effects on total # of retests**
- **1.1% of tests were positive**

┆ 90% confidence interval

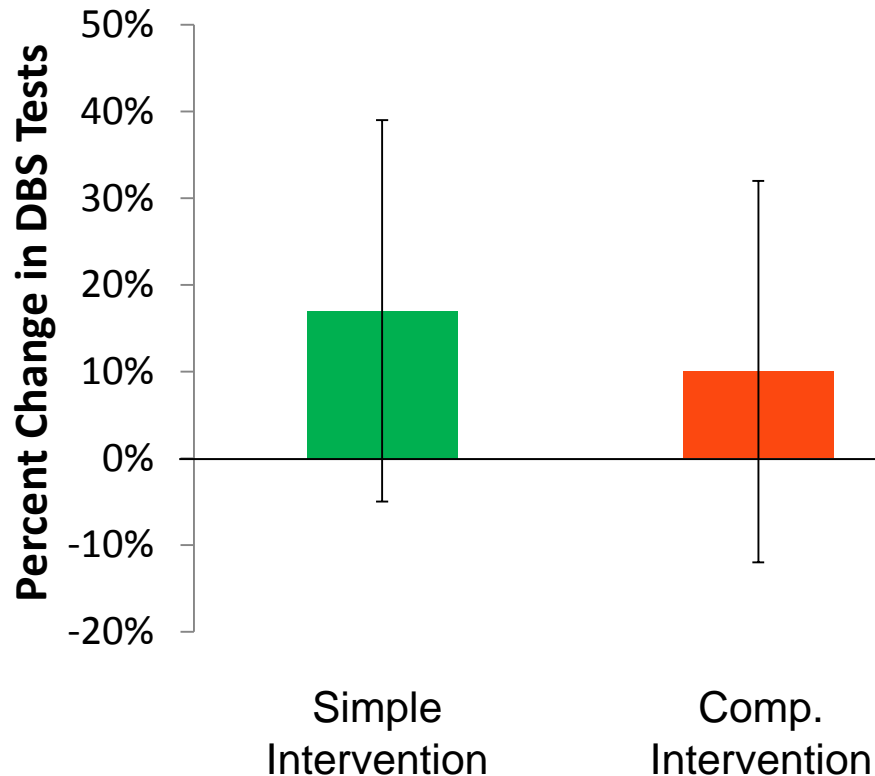
■ Simple Intervention impact

■ Comprehensive Intervention impact



# Modest, non-significant increases in DBS testing were detected

## Changes in DBS Testing



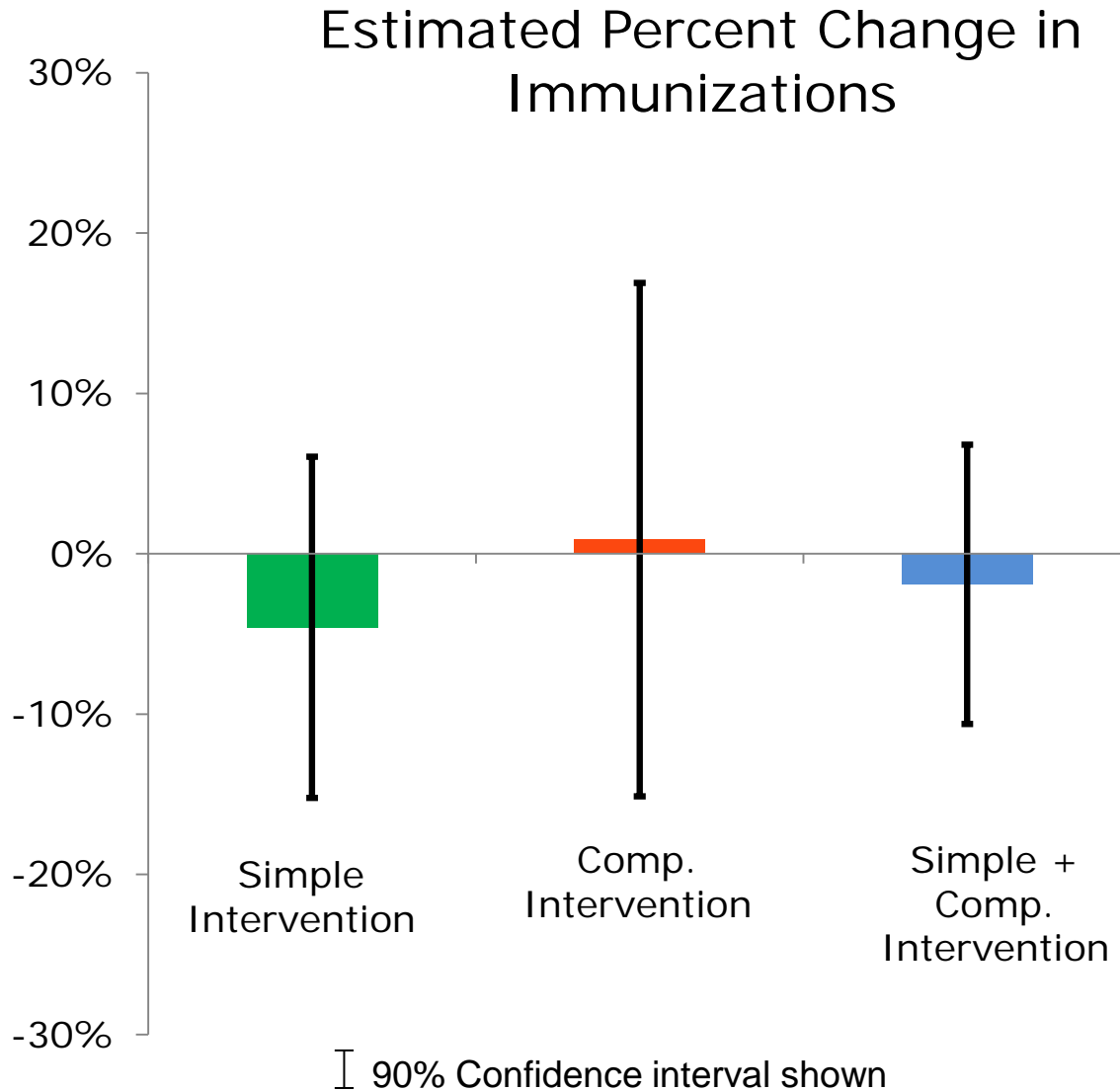
- **Baseline average was 4.0 tests per facility per month**
- **Potential explanations for smaller impact include:**
  - Higher DBS testing rates in Southern Province than national
  - Spillover of test supplies across evaluation arms



I 90% confidence interval

\*Linear regression with log transformation of the outcome variable (# DBS tests) used to reduce influence of outliers

# No evidence of deleterious effect on immunization detected



- **Baseline average** for all facilities was 27.4 DPT1 doses per month
- **Controlled for** facility-level characteristics (size, urban / rural, and district)
- The **combined impact** of both intervention arms (simple + comprehensive vs. control) was a -0.5% change in DPT1 doses



# Summary of Results



*Integration of HIV & EPI services were feasible and acceptable*



*Significant increases in postpartum HIV testing*



*No deleterious effects on immunization uptake*



*Modest, non-significant increase to infant DBS testing*



*Study not powered to detect the small differences observed between the estimated effect sizes of the two different interventions*

# Study Limitations

- **Reliance on administrative data –**
  - However, most primary data sources were cross validated between two or more data sources
- **Spillovers**
  - Supply interventions increased the overall HIV test kits and bundles supply pool that could have disproportionately been allocated to Control facilities
  - Transfer of test kits from one facility to another may have occurred
- Study sites were supported by **an active implementing partner** which could reduce generalizability

# Conclusions & recommendations

- 1. The simple intervention showed promise in increasing postpartum retests, and not effecting immunizations.** Scaling up these activities could play a critical role in working towards the goal of ending Mother to Child Transmission of HIV.
- 2. The HIV test kits and bundles supply chain is not running optimally.** Improving the HIV supply chain for rapid tests and DBS bundles should be a Ministry priority going forward
- 3. Integration of HIV and EPI services is feasible.** This integration can be extended to include other overlapping activities such as data collection, strategic planning, and program operations.

# Discussion – Any questions?



The Zambian  
**Ministry of  
Health**



The Zambian  
**Ministry of Community  
Development, Mother  
and Child Health**

