



Recalibrating the EID Cascade in Zimbabwe

True outcomes among a sample of HIV-exposed infants with no documented EID

Karen Webb¹, Vivian Chitiyo¹, Theresa Ndoro¹, Paul Nesara¹, Simukai Zizhou², Nyika Mahachi², Barbara Engelsmann¹, Elvin Geng³

¹*Organisation for Public Health Interventions and Development Trust, Harare, Zimbabwe*

²*Ministry of Health and Child Care, Zimbabwe,*

³*University of California San Francisco, San Francisco, US*

Session C/11: Towards eliminating mother to child transmission of HIV
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Background: **Early Infant Diagnosis (EID)**

In absence of timely EID and treatment:

- 1/3 of infants living with HIV die before 1st birthday
- 1/2 die before age of two.¹

HIV tests for **HIV-exposed infants** recommended at 6 weeks after delivery (DNA PCR)²

EID by 6 weeks among HIV-exposed infants estimated as low as 45%³



¹WHO/UNAIDS/UNICEF (2011) ' Global HIV/AIDS Response: Epidemic update and health sector progress towards Universal Access 2011).

²MOHCC (2014).Zimbabwe National Guidelines for HIV Testing and Counselling in Children and Adolescents.

³Zinyowera, S et al. The Zimbabwe HIV Early Infant Diagnosis (EID) Program for the period 2007-2012 Zimbabwe Ministry of Health and Child Care.

Background: Documenting EID in Zimbabwe

- **Multiple paper-based registers** = reporting individual outcomes over time laborious and error prone – timely EID not routinely reported
- Evaluating **individual outcomes** across facilities is almost impossible
- Challenges to collection of individual-level information over time on HIV-infected mother-HIV exposed baby pairs **undermines our understanding of PMTCT program effectiveness**

OBJECTIVES

1. Estimate proportion of mother-baby pairs in Mashonaland East Province **with documented uptake of EID within 3 months of birth.**
2. Trace randomly selected sample with no documented EID to **determine whether they had HIV testing.**
3. Establish **reasons for no EID.**

METHODS

Province-wide, multi-stage survey sampling approach:

- 1. Facility:** Offering ANC care in Mashonaland East Province selected with probability proportional to size (45/193)
- 2. Documented EID:** for HIV-exposed infants among all HIV infected women who accessed ANC services at selected sites from April 2012 – May 2013
- 3. Community tracing:** random sample of HIV-infected women no documented EID

PROCEDURES

PHASE I: Register Tracing (Sept – Nov 2014)

- Routinely collected programmatic and health facility data
- HIV positive women accessing ANC April 2012 – May 2013
- Individuals traced through multiple registers to establish documented uptake of timely EID < 3 months for HIV exposed infant



Registers used to trace mother-baby pairs through PMTCT cascade

PROCEDURES

PHASE II: Community Tracing (March – May 2015)

- **Random selection women with no EID traced**
- **Village Health Workers** at selected sites trained in tracking methodology and PMTCT by OPHID and MOHCC
- **Household-level tracing of women by VHWs**
- **Structured questionnaire collected data on:**
 - Patient characteristics
 - Health service uptake
 - Reasons for non-use of services
 - Process data on tracking



VHWs being trained in LTFU methods

RESULTS

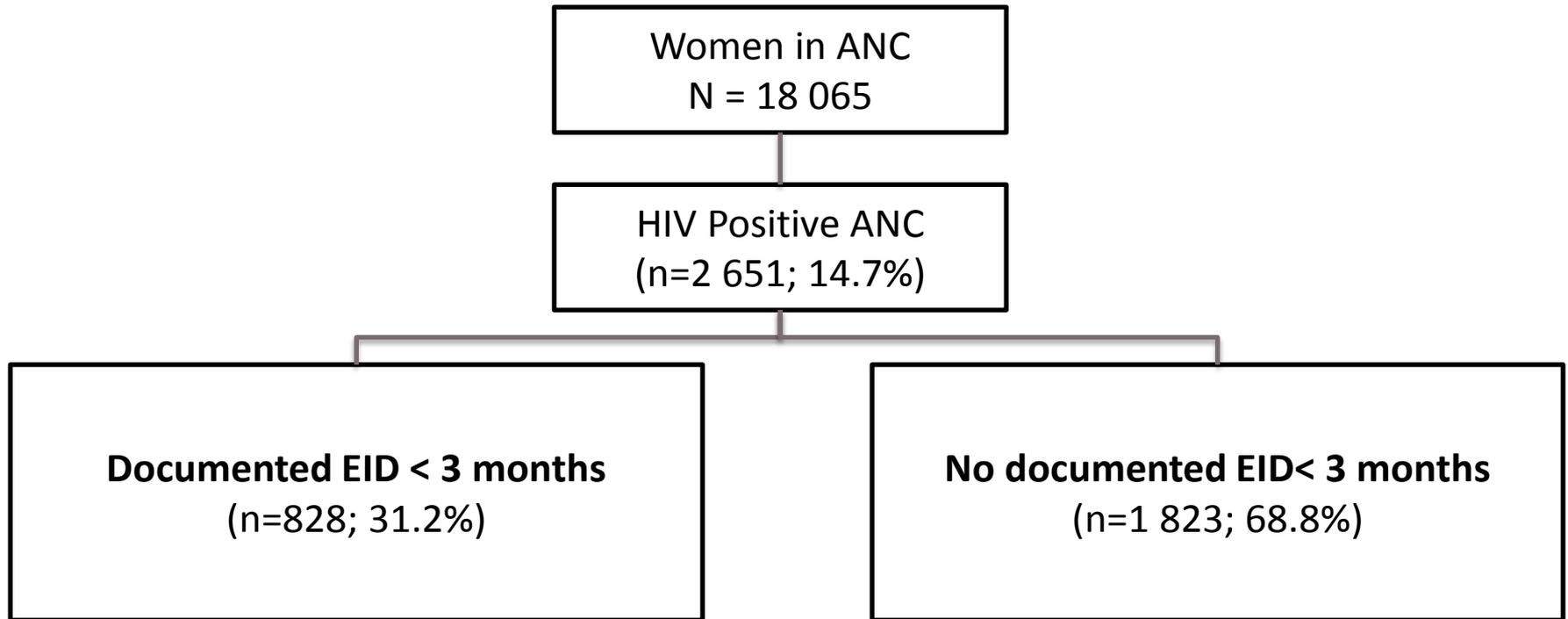
PHASE I: Register Tracing

Objective 1:

Proportion mother-baby pairs with documented EID

Phase I: Documented uptake EID

Figure 1: Proportion HIV positive women with documented uptake EID



- Overall, 31.2% (n=828) HIV-exposed infants had documented uptake of EID < 3 months

Phase I: Factors associated EID completion

- **Earlier gestational age at presentation** (Risk Ratio[RR]: 0.97 per two weeks; 95%CI:0.95-0.99; $p < 0.01$)
- **Later calendar time of ANC presentation** (RR: 1.04 per 30 days; 95%CI:1.02-1.06, $p < 0.01$)* proxy of PMTCT program maturity
- **Smaller site volume** (Table)

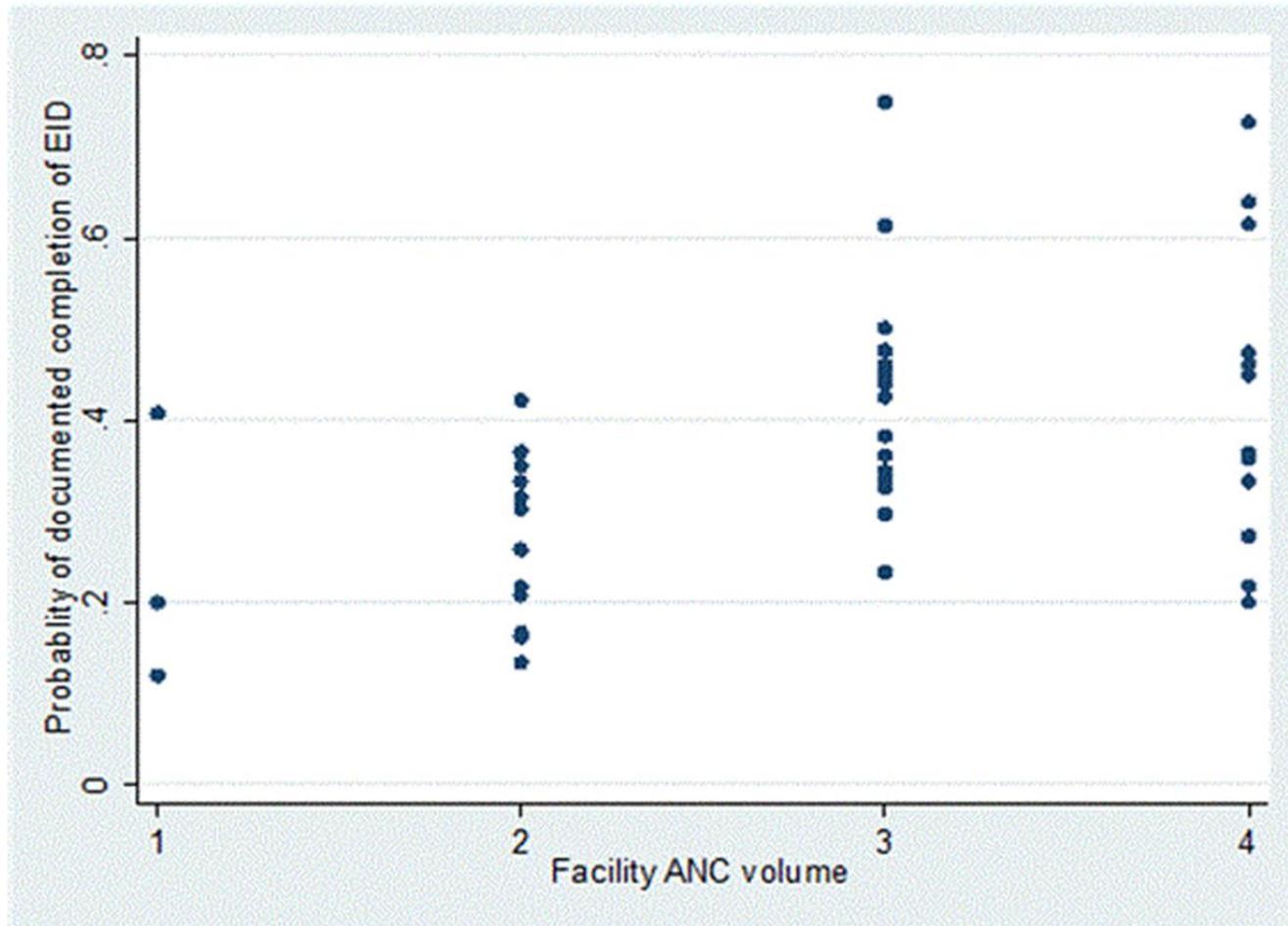
Table 1: Documented EID Completion

| Variable | Risk Ratio | p-value | 95% CI |
|--------------------------------------|------------|----------|--------------|
| ANC Volume | | | |
| High: 1001-1500 (referent) | 1 | - | - |
| Med-High: 501 - 1000 | 1.23 | 0.05 | (1.00, 1.52) |
| Med-Low: 201 – 500 | 1.78 | > 0.0001 | (1.45, 2.19) |
| Low: 0 - 200 | 1.85 | > 0.0001 | (1.44, 2.38) |

Poisson regression showing association of site ANC volume on the probability of documented EID completion. Association is adjusted for gestational age at presentation and calendar time.

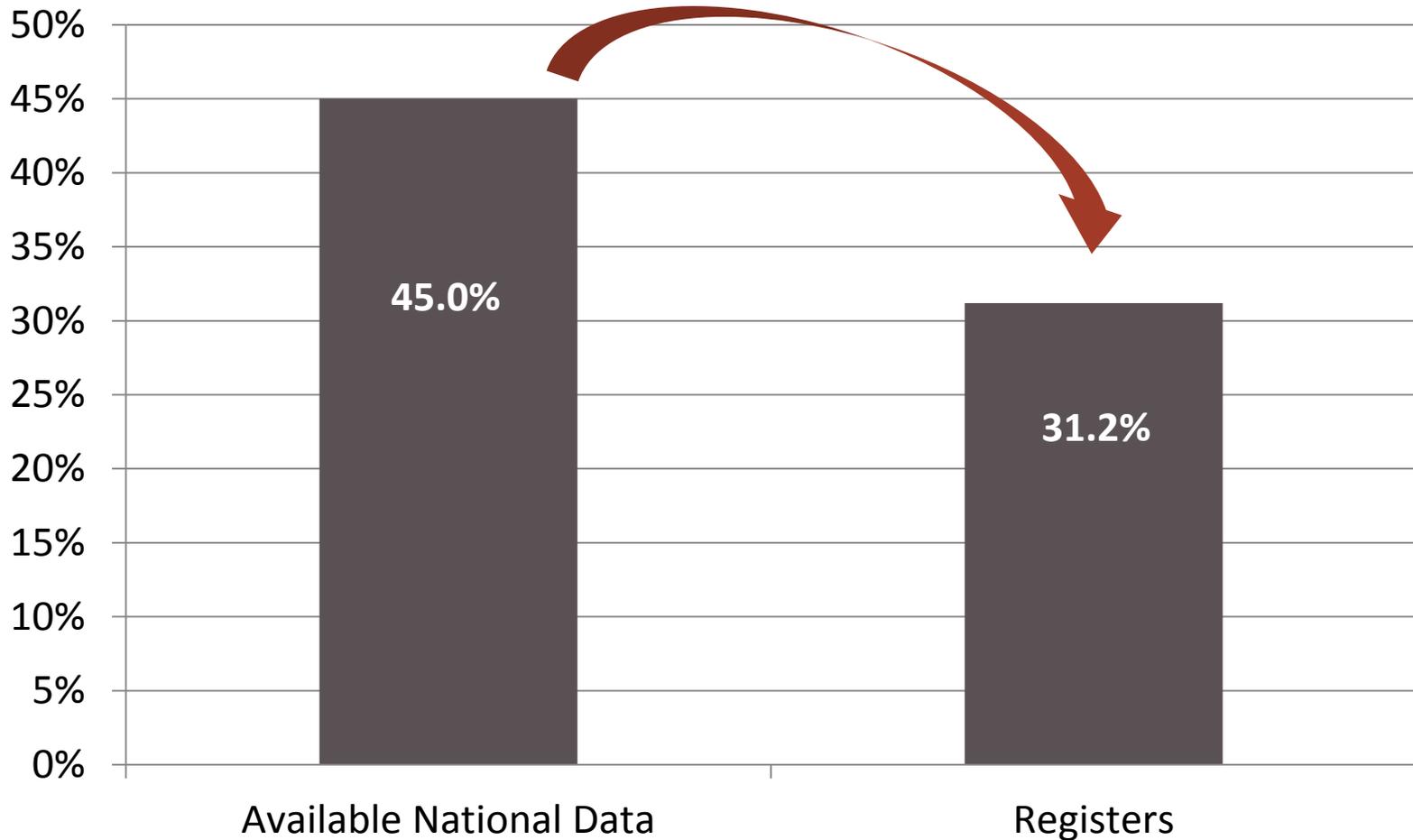
Phase I: EID by ANC site volume

Figure 2: Probability of documented EID completion by patient volume in ANC



Volume categories women in ANC April 2012-May 2013:
1 = 1001-1500; 2 = 501-1000; 3 = 201-500; 4 = 0-200

Phase I: How is our Timely EID completion rate looking?



RESULTS

PHASE II: Community Tracing

Objective 2:

True EID status among those with no documented EID

Figure 3. Tracing outcomes LTFU for EID group

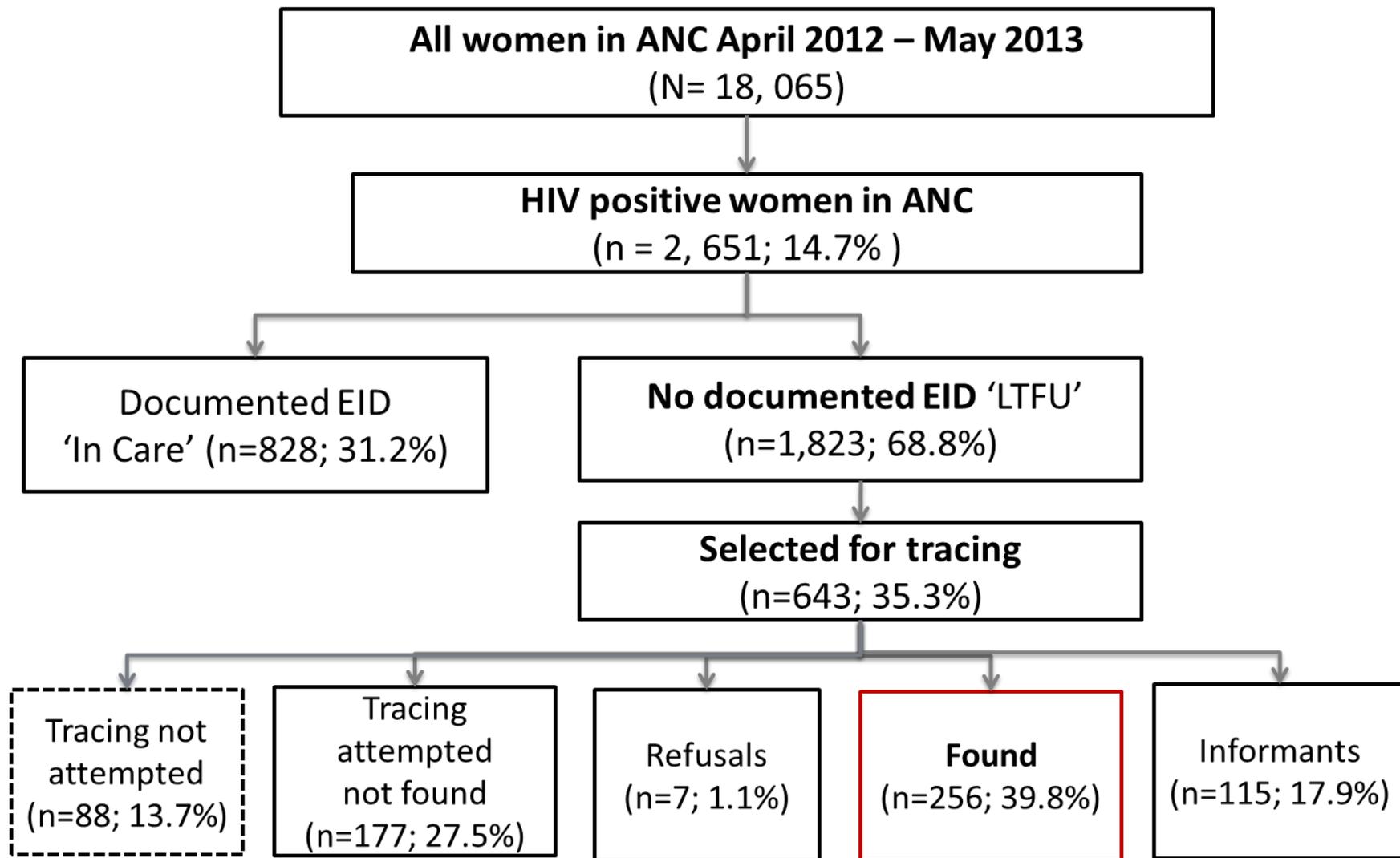


Figure 4. Vital status outcomes mother-baby pairs traced

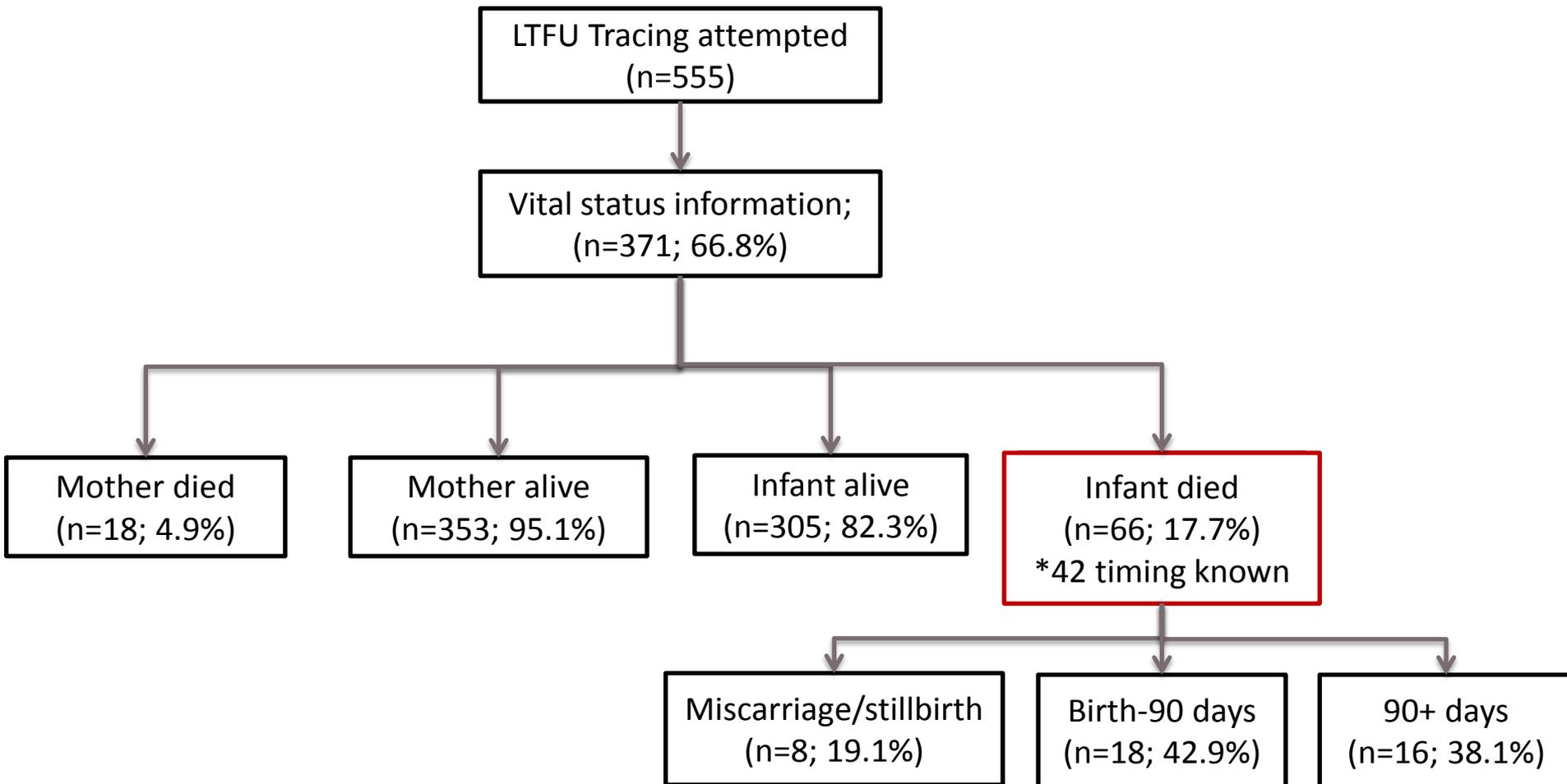
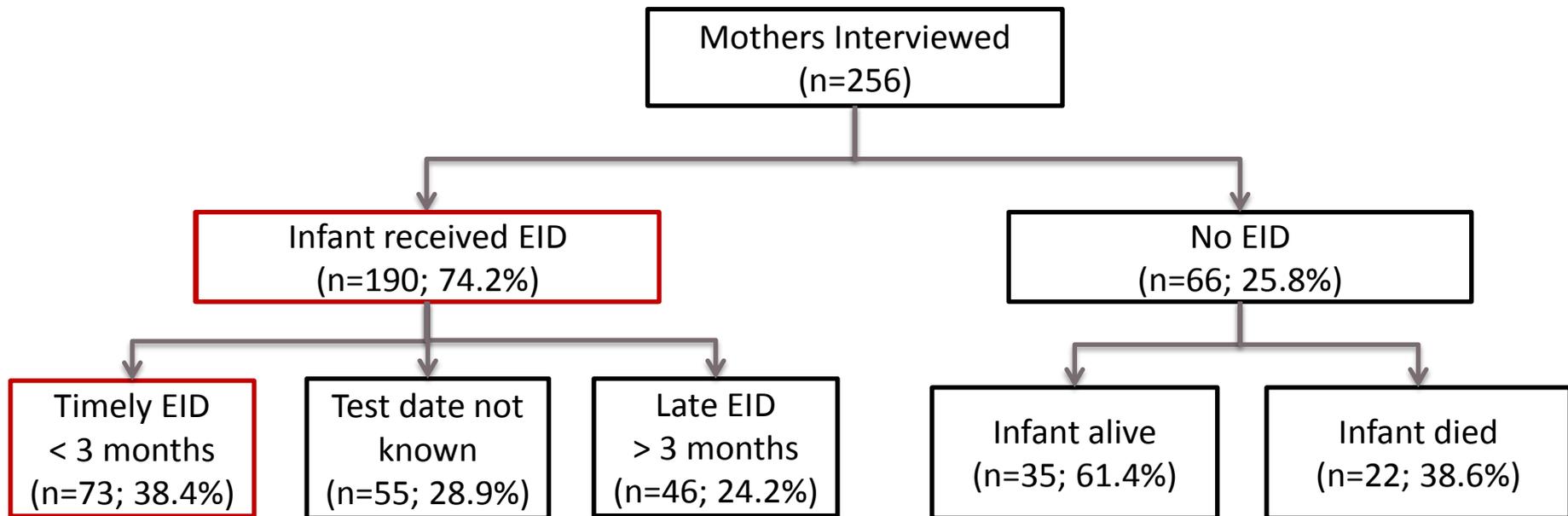
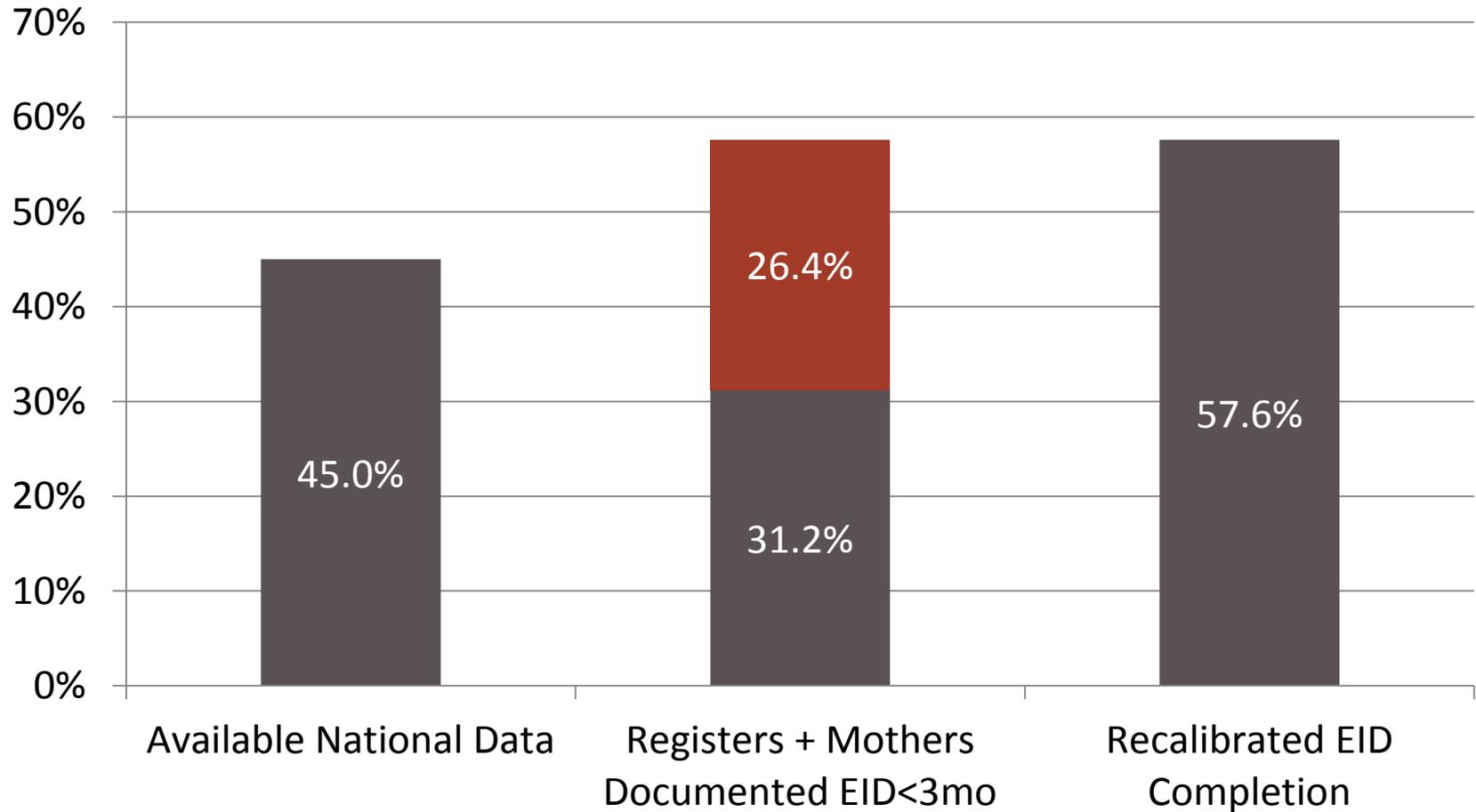


Figure 4. Early Infant Diagnosis among HIV positive mothers traced

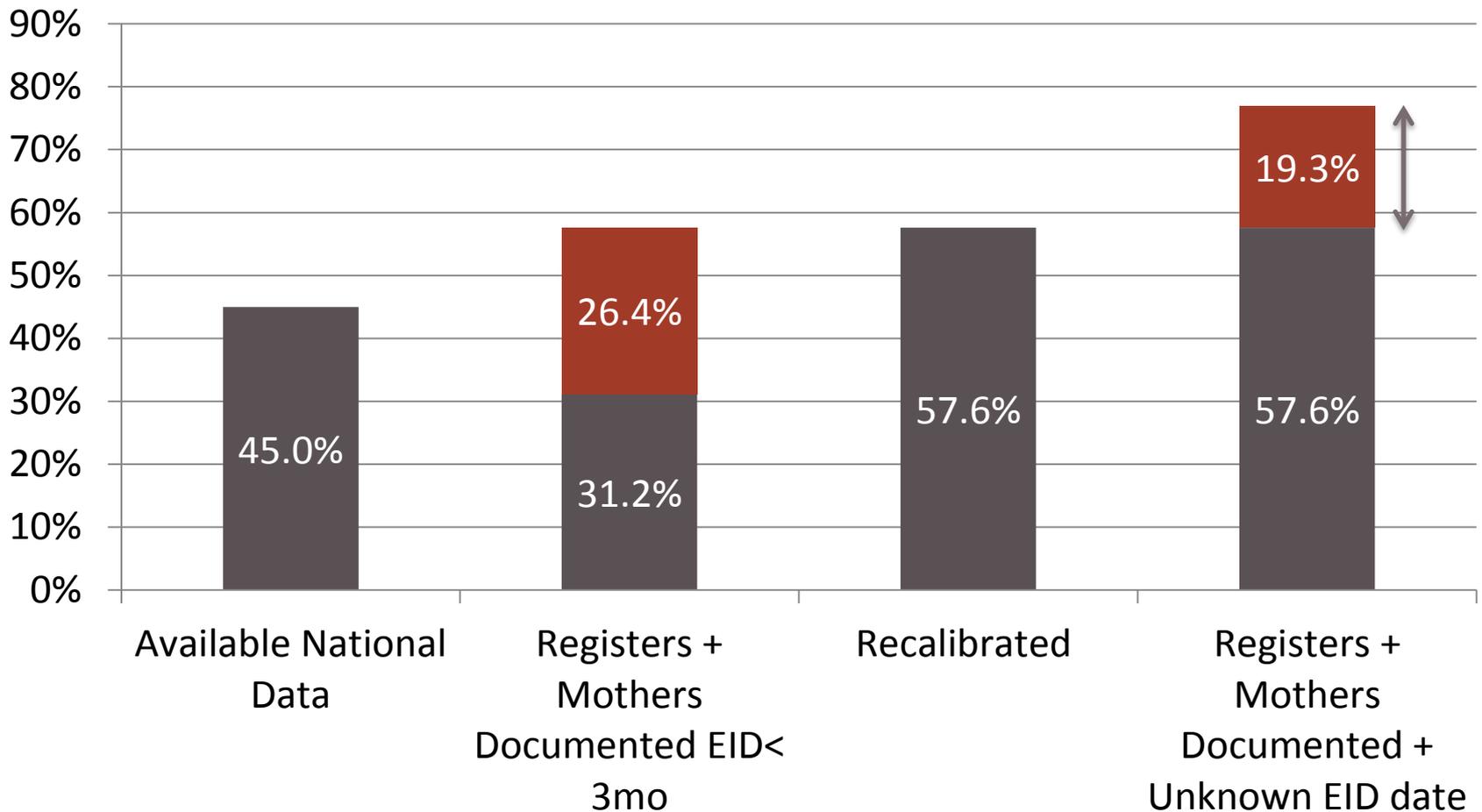


- Almost $\frac{3}{4}$ mothers traced- infant received EID
- However, only 38.4% had timely EID
- 28.9% of mothers did not know when EID was done

Phase II: Recalibrated Timely EID Completion



Phase II: Recalibrated Timely EID Completion



Tracing sample of HIV positive mothers with no documented EID indicates range of timely EID: 57.6% - 76.9%

RESULTS

PHASE II: LTFU Tracing

Objective 3:

Reasons no EID

Why no EID?

Table 3. Top 5 reasons for no EID among HIV-exposed infants (N=76)

| Rank | Reason no EID | n | % |
|------|---|----|------|
| 1 | Child died | 25 | 32.9 |
| 2 | I didn't know I should bring my child in for EID | 15 | 19.7 |
| 3 | Declines to answer | 6 | 7.9 |
| 4 | Husband/other family member knows my HIV status but would not allow me to have child tested | 5 | 6.6 |
| 5 | I didn't have enough money to access care | 4 | 5.3 |

DISCUSSION

EID rates under-estimated by
facility registers



...but some **major caveats**

DISCUSSION

- High infant mortality
- Late EID in $\frac{1}{4}$ = missed opportunities
- “I didn’t know” in no EID group
- Where and who are the untraceable?

Conclusions

- **Underestimation of true proportion** of HIV-exposed infants receiving timely EID
- High mortality among HIV-exposed infants = urgency to identify **risk factors for both mortality and failure to uptake timely EID** among HIV positive pregnant women
- Huge and discrepant range in EID values by source indicates urgent need to **strengthen health information systems for reporting outcomes**
- Value of **sampling-based approaches** to provide better picture of PMTCT program effectiveness

Thank You – Tatenda – Siyabonga



***FACE pediatric HIV:
Towards elimination of new HIV
infections in Zimbabwe***

Ministry of Health and Child Care

President's Emergency Plan for AIDS Relief (PEPFAR)
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A-12-00003, FACE Pediatric HIV)

Dr. Elvin Geng, USCF

Health care workers and Village Health Workers at
participating sites

HIV positive mothers who participated in the study



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