USAID
FROM THE AMERICAN PEOPLE

Post-partum mother-infant retention in PMTCT

CCABA Meeting
9 May, 2011

Ryan Phelps MD, MPH

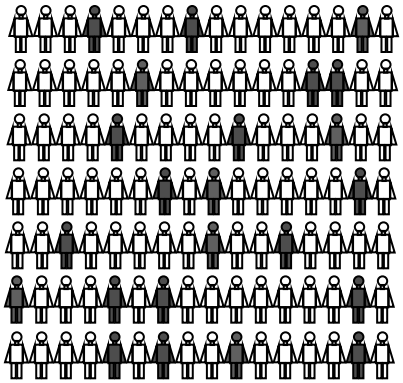
Objectives

- Selected findings from review on postpartum LTFU of mothers-baby pairs
- 3 LTFU lessons from treatment program data
- LTFU: What it means for PMTCT M&E
- My three wishes

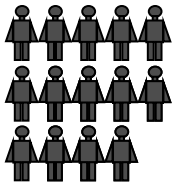
PMTCT Care Spectrum

Losing children: The HIV Care Continuum

PMTCT Programmes & ANC



All pregnant mothers



HIV positive mothers

~ ½ have no PMTCT access

Attrition of mothers from PMTCT programs

Paediatric HIV Care

HIV exposed Infants

EID

<1 in 10 HIV-exposed infants tested in first 2mo

HIV-infected children

Entry into care

Attrition of children during pre-ART process

Initiate ART

Most attrition on ART in the first year

Adolescent/Adult Care

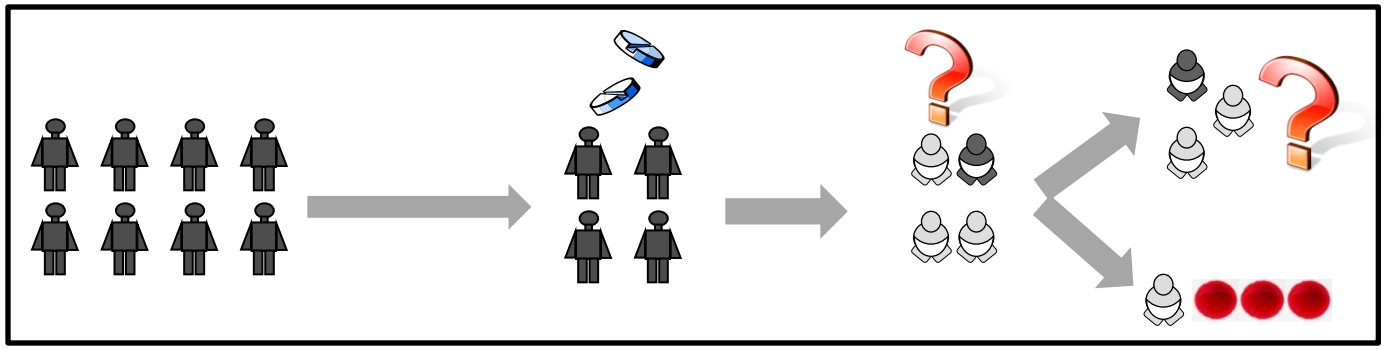
Transition into adolescent & adult life-long treatment and care

Substantial attrition with transitioning to adult care

Parameters for review of postpartum LTFU of mothers-baby pairs

- Literature on the infant retention in PMTCT and early infant diagnosis programs was reviewed via PubMed from 1990 to the present.
- Abstracts were narrowed by relevance, focusing on manuscripts describing retention rates and loss to follow-up of mother-infant pairs.

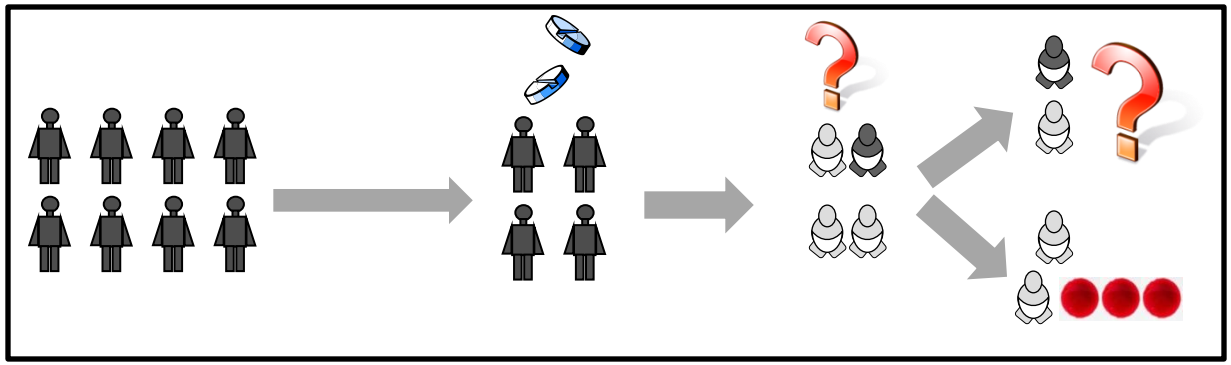
Zambezia, Mozambique



- 1 of 2 HIV+ women enrolled in ART
- 1 of 4 brought child in for EID
- Predictors of retention:
  - TBA

(Cook, Ciampa et al. 2011)

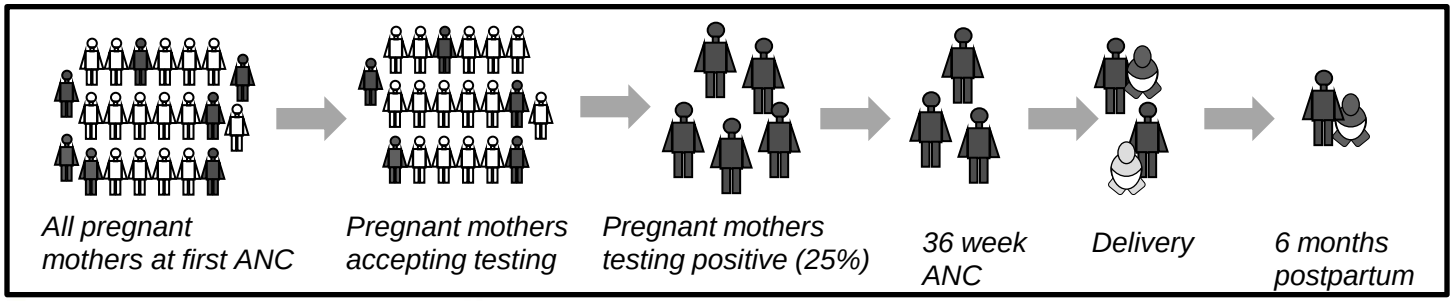
Northern Uganda



- 1 of 2 seropositive enrolled in PMTCT
- Half of those were LTFU before infant status known
- Predictors of retention:
  - TBA

Ahoua, Ayikoru et al. 2010

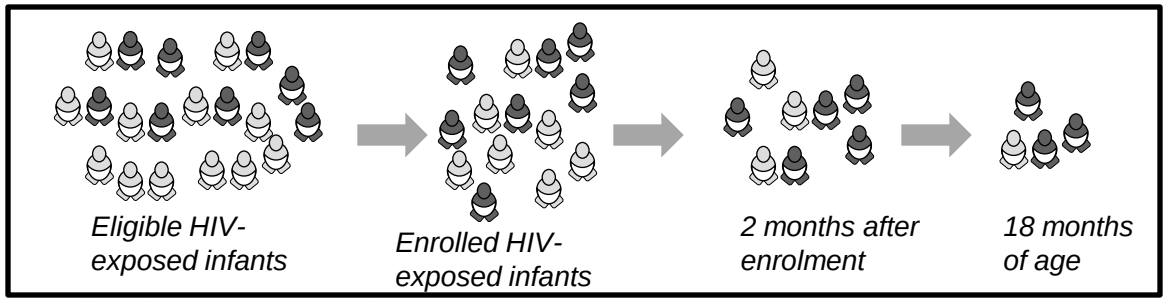
Rural Malawi



- 9 of 10 mothers accepted testing
- Cumulative loss to follow up:
  - 55% at 36-week ANC visit,
  - 68% by delivery
  - 81% by the 6-month postnatal visit

(Manzi, Zachariah et al. 2005)

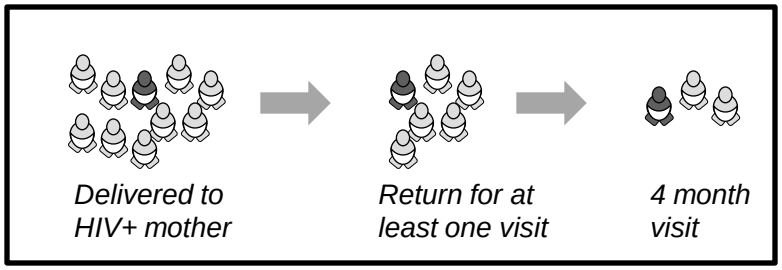
Rural Kenya



- 65% of infants dropped out of EID program before 18 months
- 43% dropped out within 2 months of enrollment.
- Most at risk for LTFU:
  - Young mothers (P<0.001)
  - Mothers themselves LTFU (p< 0.033)

(Hassan, Sakwa et al. 2011)

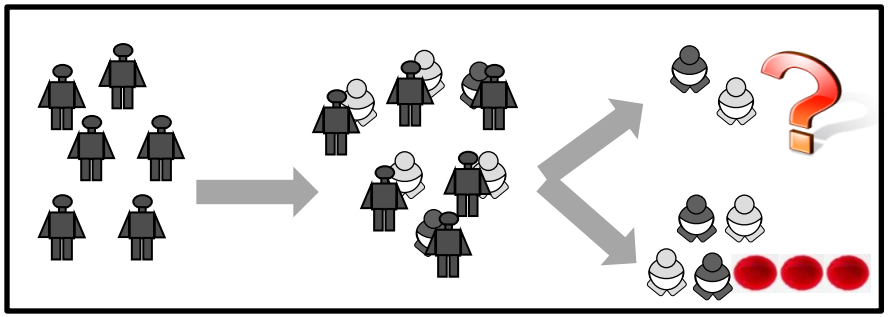
Urban South Africa



- Transmission rate about 9% among women known to be HIV+ (15% in this population)
- More than one-third of infants never return for follow-up
- More than 70% are lost to follow-up by 4 months of age

(Sherman, Jones et al. 2004)

Urban Malawi



- The HIV status unknown for 36.9% of infants born to HIV-infected mothers.
- Parental risk of loss to follow-up:
  - Less education ($P < 0.001$)
  - Farming occupation
  - Teachers and students

(Ioannidis, Taha et al. 1999)

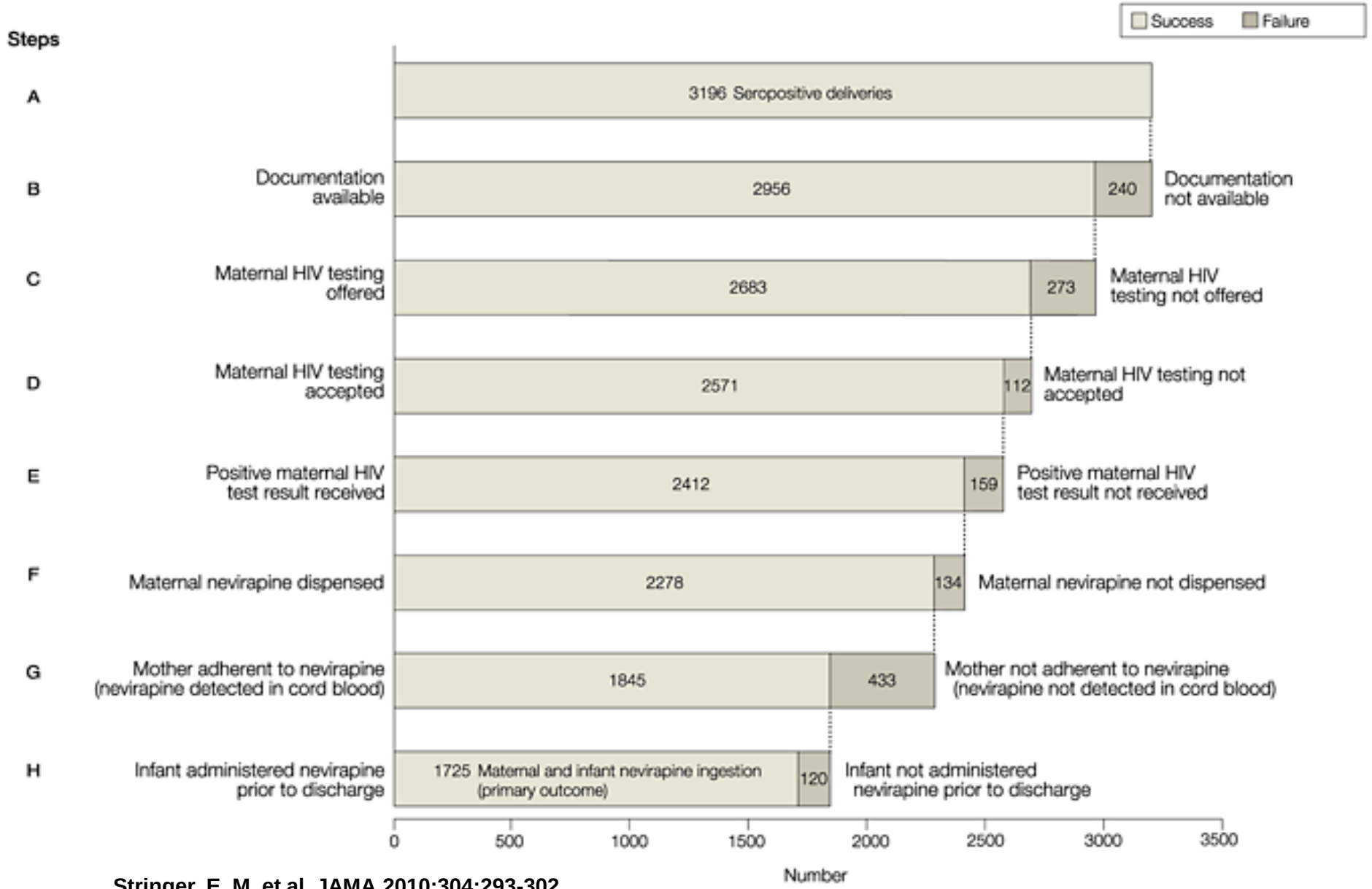
Multi-country data: The PEARL* Study

* The **P**MTCT **E**ffectiveness in **A**frica: **R**esearch and **L**inkages to Care (PEARL) Study

The PEARL Study

- Introduction:
  - "What many believed at the outset would be a relatively simple matter of incorporating antenatal HIV diagnosis and maternal-infant antiretroviral prophylaxis into routine pregnancy and newborn care has in practice been frustratingly difficult to bring to scale."

-Authors



Stringer, E. M. et al. JAMA 2010;304:293-302

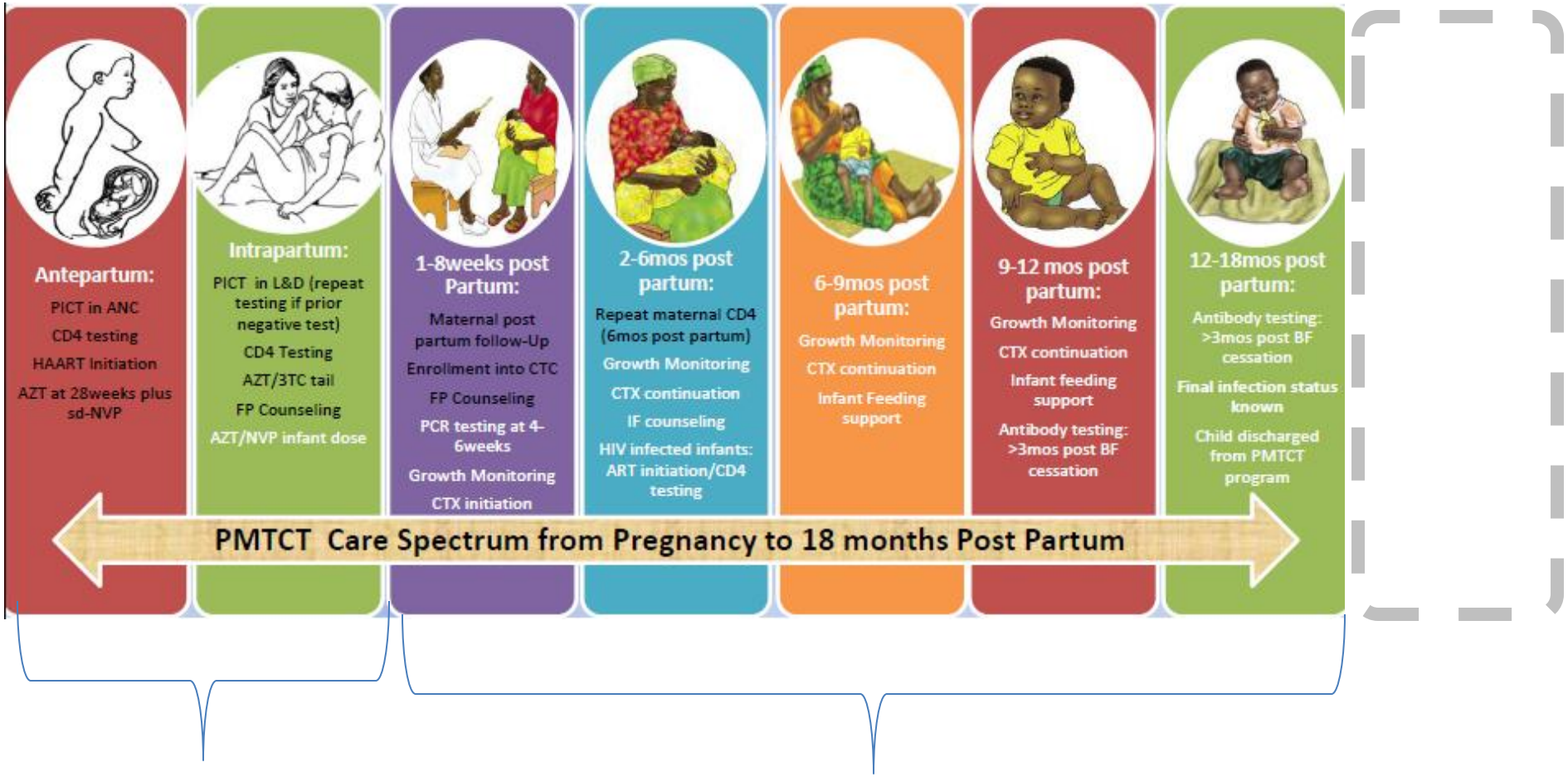
The PEARL Study

- Overall rate of prophylactic coverage of 51% for HIV infected women and exposed infants
- Failed coverage significantly associated with:
  - Maternal age <20 yrs vs >30yrs (AOR: 1.44)
  - Maternal age 20-25 yrsvs >30yrs (AOR: 1.28)
  - 1 or fewer ANC visits vs 6+ (AOR: 2.91)
  - 2 or 3 ANC visits vs 6+ (AOR: 1.93)
  - 4 or 5 ANC visits vs 6+ (AOR:1.56)
  - Vaginal delivery vs C/S (AOR, 1.22)
  - Infant birth weight <2500 g (AOR, 1.34) vs >3500g

The PEARL Study

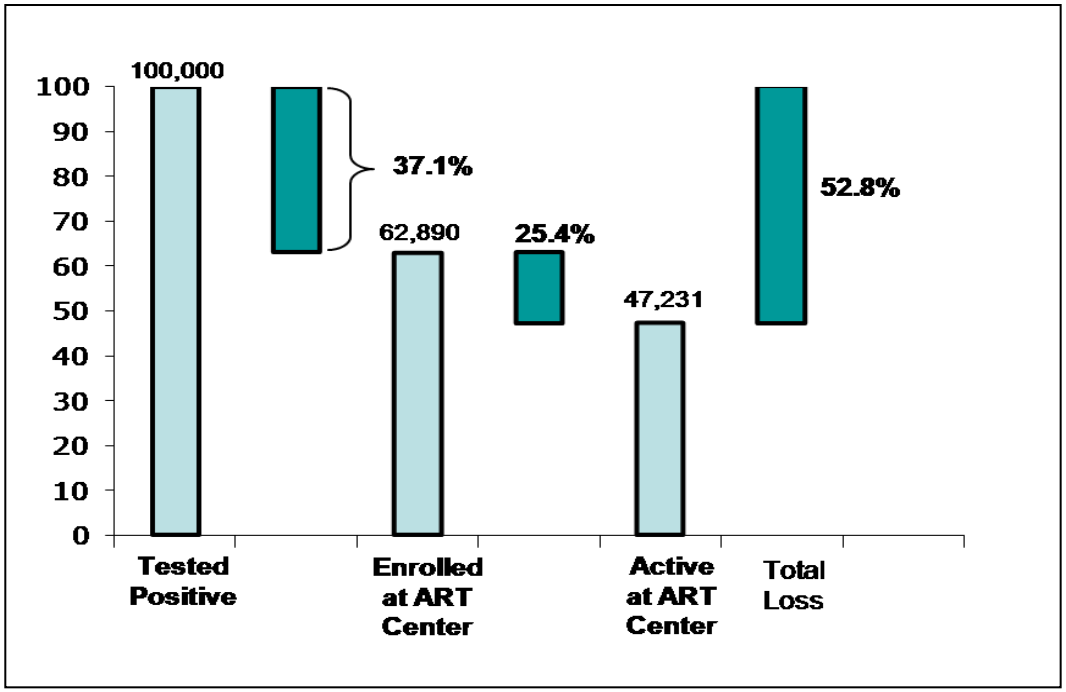
- Demonstrated variable, substantial and diverse programmatic dysfunction in 43 facilities in 4 countries
- Called attention to the lack of program effectiveness data relating to the PMTCT cascade
  - Emphasis on efficacy data and “simple process tallies”
  - Exceptions: Rollins N et al (KZN); Plipat Y et al (Thailiand)
  - True coverage data also lacking

PMTCT Care Spectrum



Multi-country data (2): Clinton Heath Access Initiative

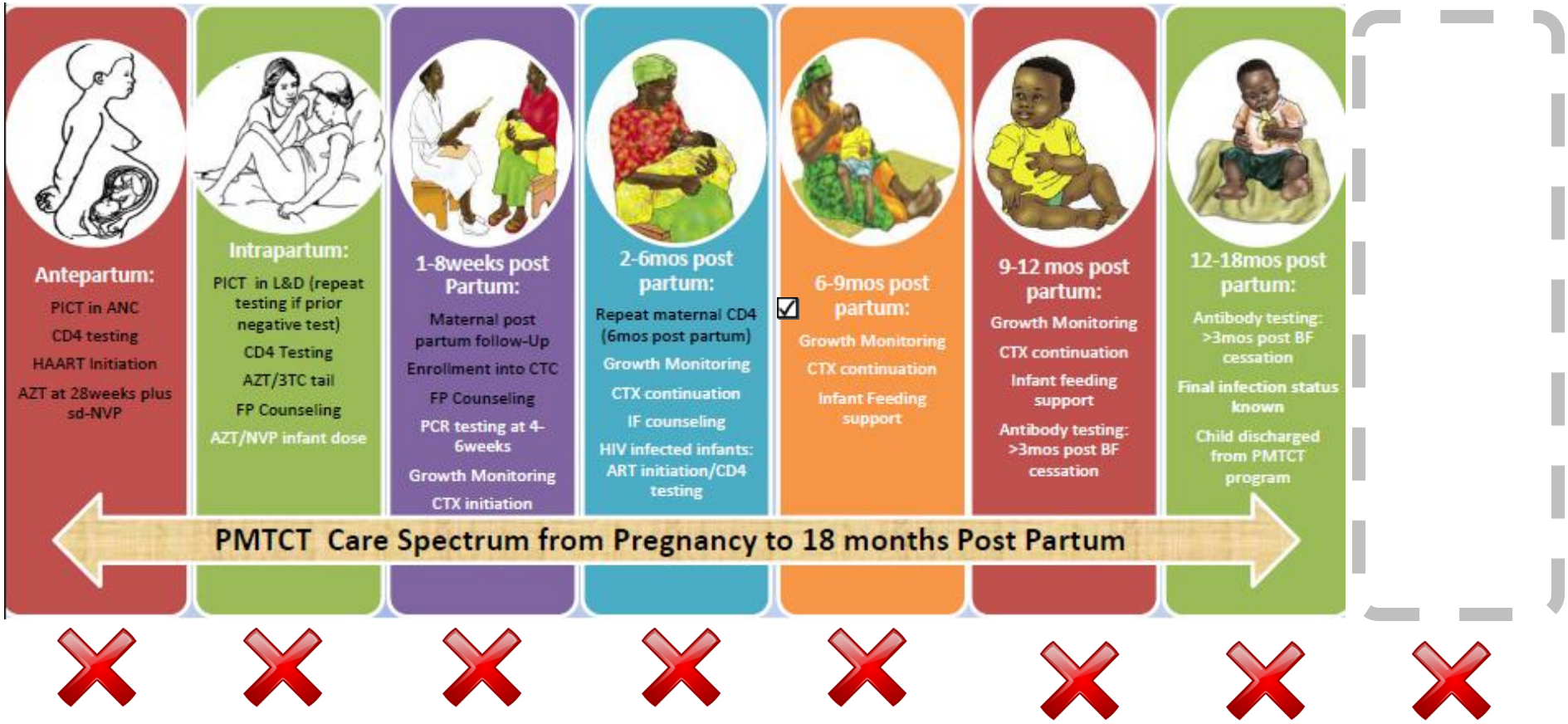
Rates of attrition in infants from PCR testing to Initiating ART



70% of total loss occurs between testing and enrolment at ART centre

(Unpublished CHAI data , 2009)

PMTCT Care Spectrum



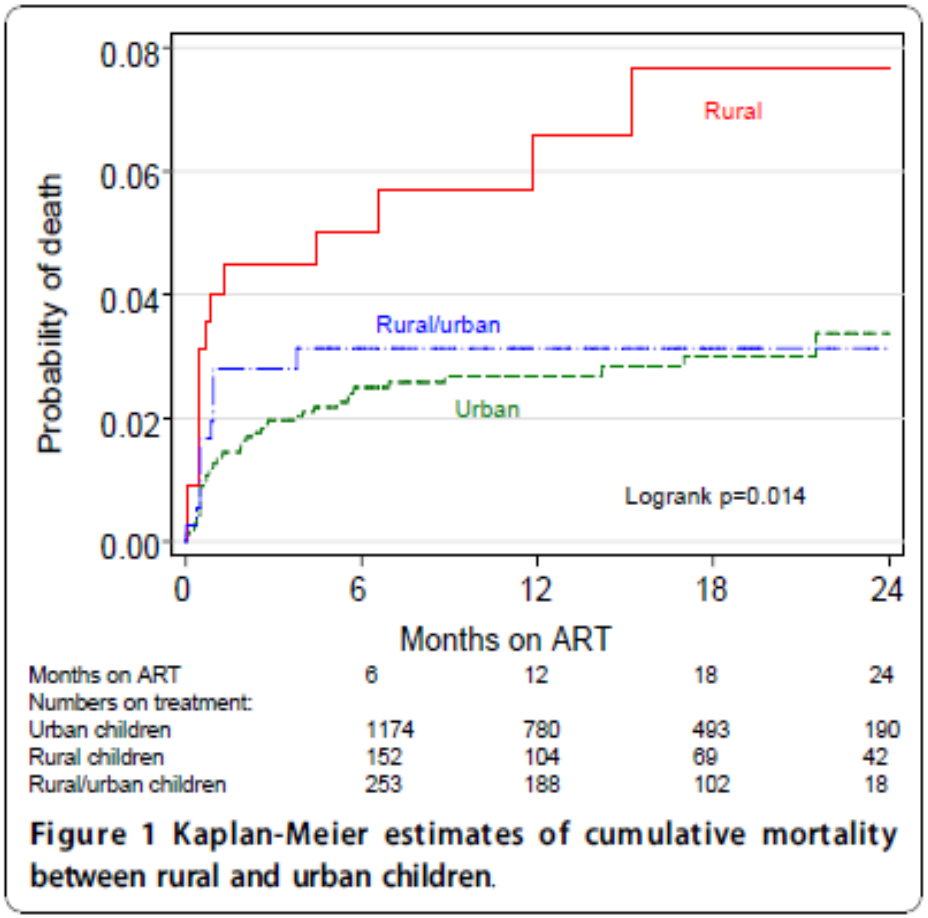
Objectives

- Selected findings from review on postpartum LTFU of mothers-baby pairs
- **3 LTFU lessons from treatment program data**
- LTFU: What it means for PMTCT M&E
- My three wishes

Lession #1: Rural challenges

PMTCT programs in rural areas are arguably more challenging than those managed in a clinical trial context or “model program” setting, but little comparative data exists to show this.

Rural challenges (cont.)



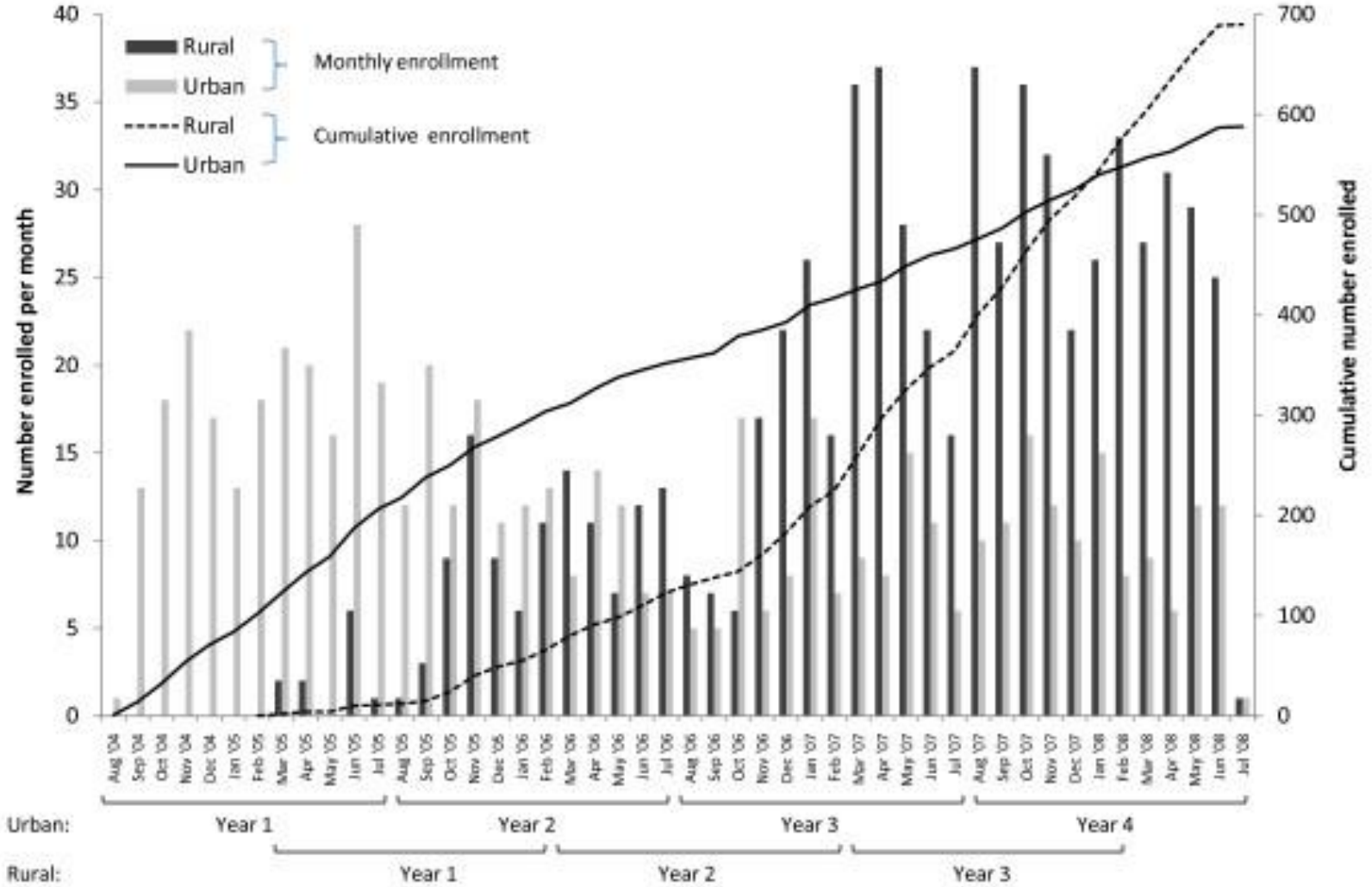
Months on ART	6	12	18	24
Numbers on treatment:				
Urban children	1174	780	493	190
Rural children	152	104	69	42
Rural/urban children	253	188	102	18

Figure 1 Kaplan-Meier estimates of cumulative mortality between rural and urban children.

- Children starting ART in the rural group were older; median 6.7 yrs vs 5.6 years in urban group: (p = 0.0001)
- Rural group with lowest median baseline CD4 cell percentage (10.0%) compared with 12.8% in the urban (p = 0.0003)
- Rural group had highest proportion with severe immunodeficiency (p = 0.043)

(Fatti, Bock et al. 2010)

Lession #2: LTFU can show paradoxical increase over time



In rural clinics, the proportion of children defaulting increased with program duration. (Sutcliffe, Bolton-Moore et al. 2010)

LTFU increase with time (cont.)

- After 4 and 3 years on ART respectively, 72.0% of adults and 81.5% of children remained in care.
- Mortality at 6 months fell from 12.7% to 6.6%,
- BUT…increasing loss to follow-up, reaching 4.7% at 6 months toward end of 2 ½ year study period

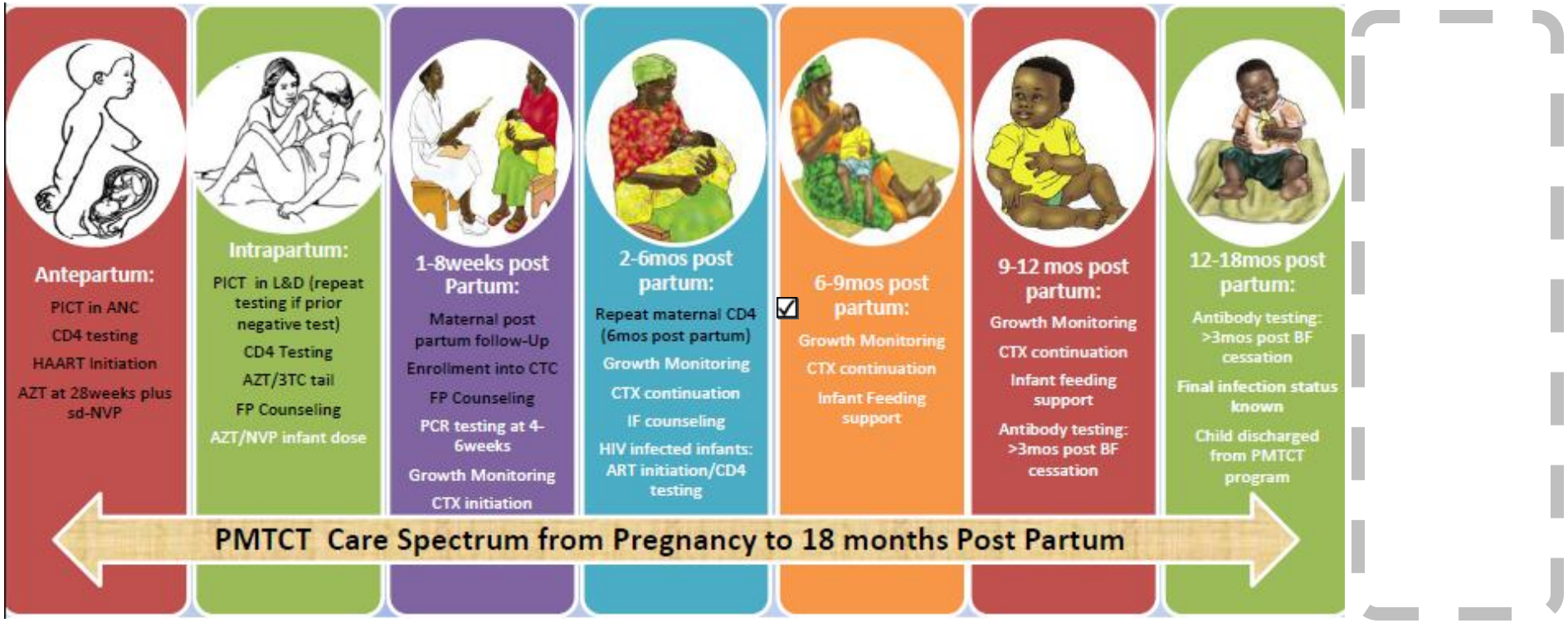
(Boulle, Bock et al. 2008)

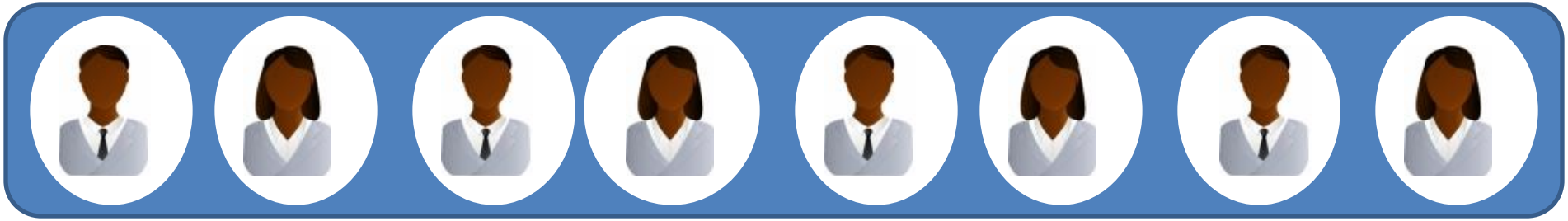
LTFU increase with time (cont.)

- 5000+ adult patients from 15 treatment programs in Africa, Asia and South America, looking at risk factors for LTFU during first 6 months of treatment.
- LTFU (HR: 7.62) was higher in 2003-2004 than in 2000 or earlier.

(Brinkhof, Dabis et al. 2008)

PMTCT Care Spectrum





Lesson #3: Coverage and health-seeking behavior go together

Typology A

> 80% ARV coverage

Botswana – 99%
South Africa – 88%
Namibia – 88%
Swaziland -88%

Typology B

60-79% ARV coverage

Kenya – 73%
Tanzania – 70%
Mozambique – 70%
Zambia – 69%
Lesotho – 64%

Typology C

30-59% ARV coverage

Malawi – 58%
Zimbabwe – 56%
Cote d'Ivoire – 54%
Uganda – 53%

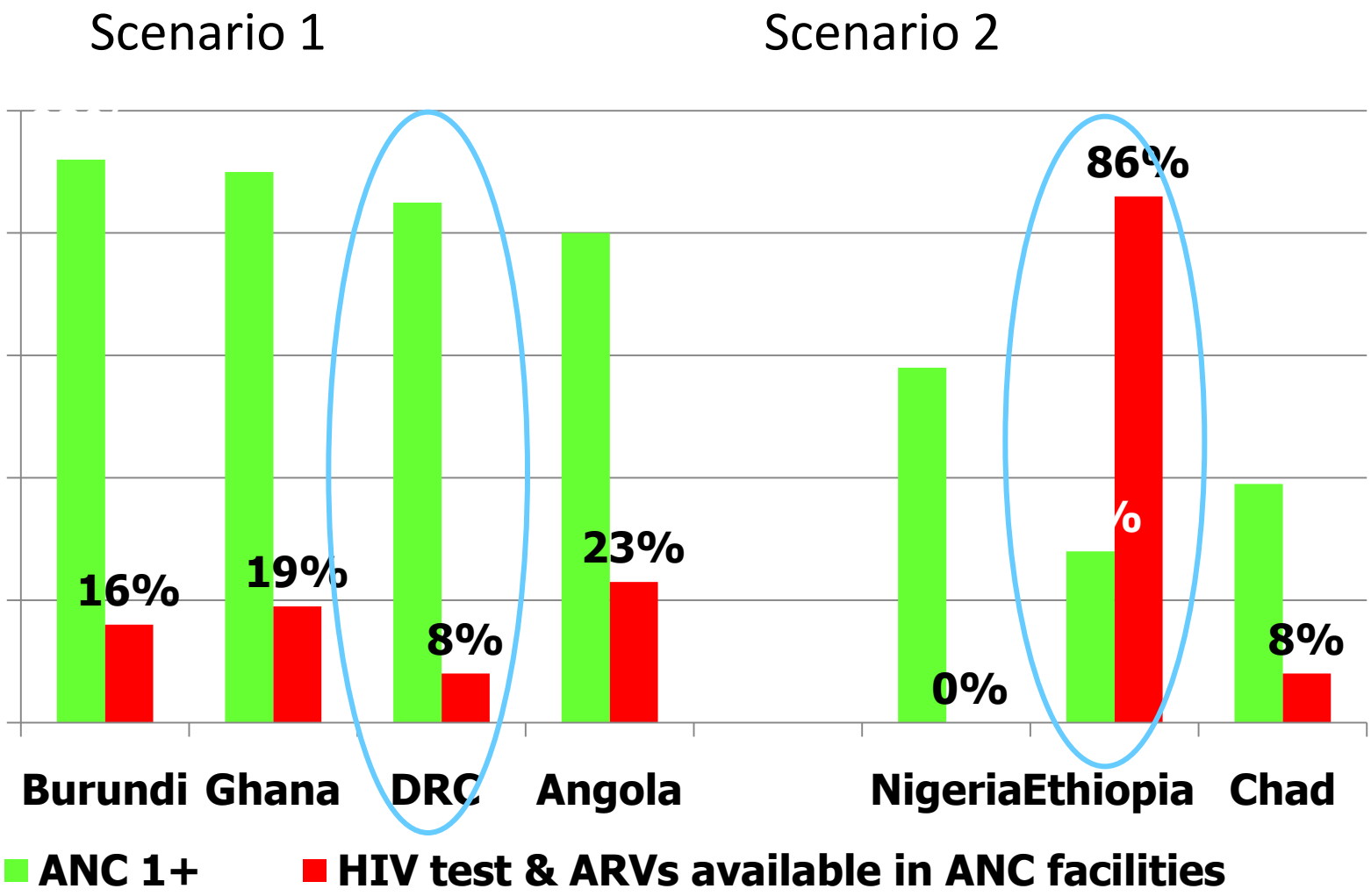
Typology D

<30% ARV coverage

Ghana - 27%
Cameroon - 27%
India – 26%
Ethiopia – 20%
Angola – 19%
Nigeria – 13%
Burundi – 12%
Chad – 6%
DRC – 6%

ARV coverage (2009) . **Slide courtesy of Chewe Luo.**

Coverage and health-seeking behavior



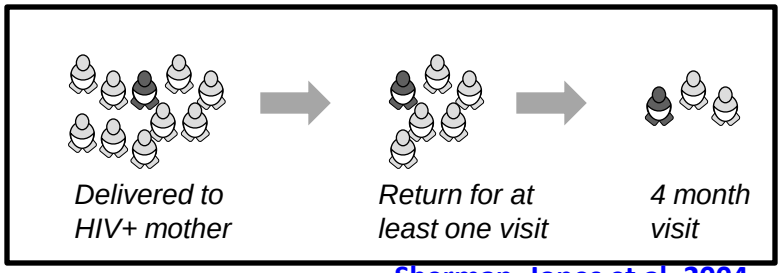
ource: DHS, MICS and MIS, 2004-2008; UNAIDS and UNICEF, Towards universal access: scaling up priority HIV/AIDS terventions in the health sector: progress report, 2010. **Slide courtesy of Chewe Luo.**

Objectives

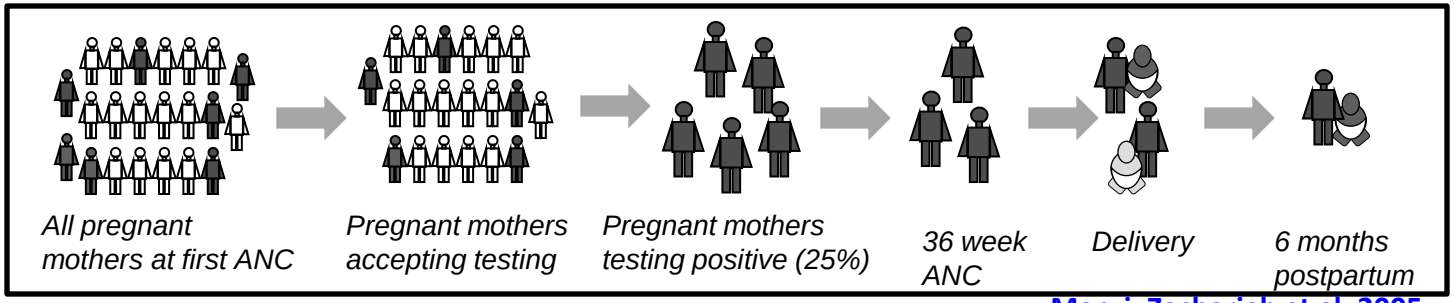
- Selected findings from review on postpartum LTFU of mothers-baby pairs
- 2 LTFU lessons from treatment program data
- **LTFU: What it means for PMTCT M&E**
- My three wishes

LTFU: What it means for PMTCT M&E

- **Effectiveness overestimated when we do not account for LTFU**
  - Example: Mother-to-child HIV cumulative transmission rate up from 8.3% to 15.5% when HIV-related deaths were considered. (Ahoua, Ayikoru et al. 2010)



Sherman, Jones et al. 2004



Manzi, Zachariah et al. 2005

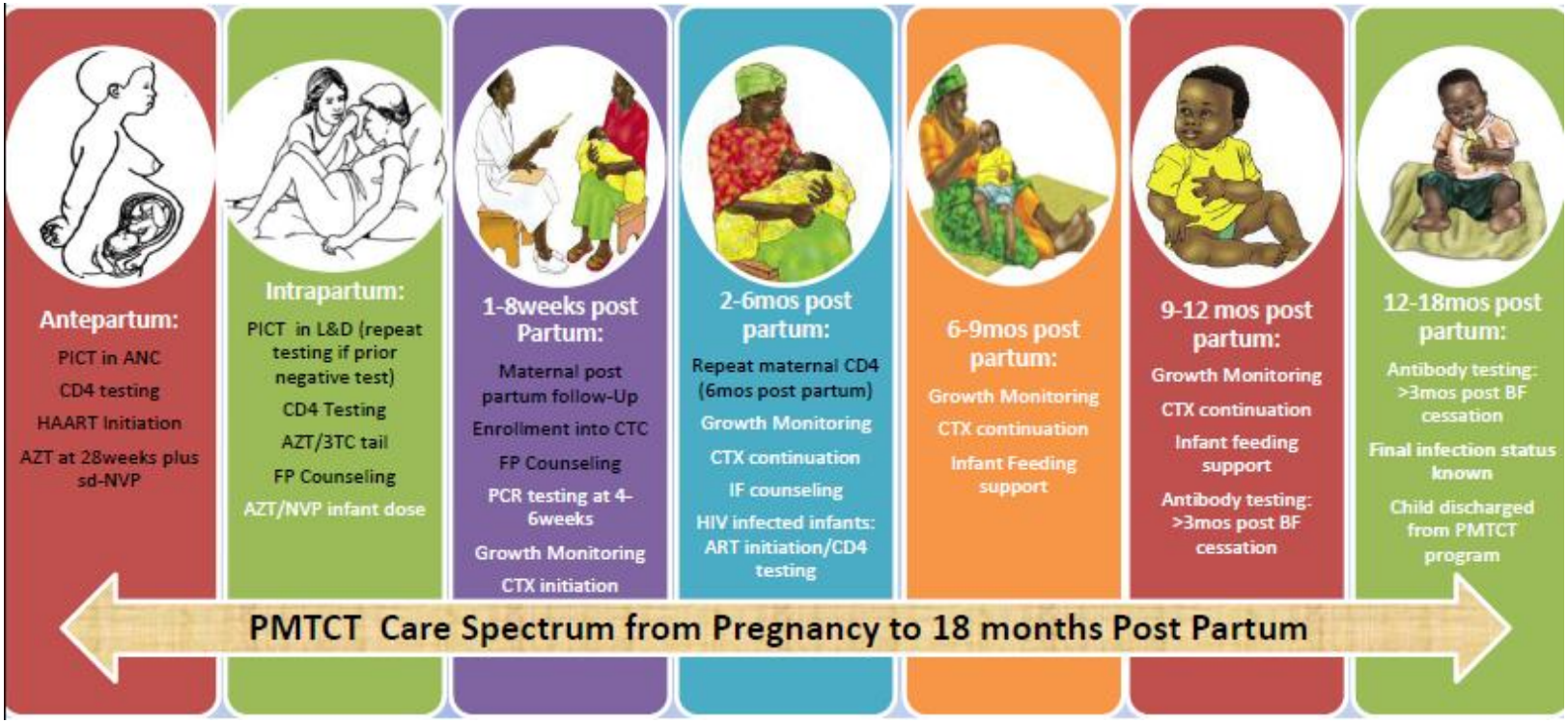
Objectives

- Selected findings from review on postpartum LTFU of mothers-baby pairs
- 2 LTFU lessons from treatment program data
- LTFU: What it means for PMTCT M&E
- **My three wishes**

My three wishes

“If you had a genie, what would you ask be available to a woman and young child at the community level to ensure her and her child's health and wellbeing”

My three wishes



Next up: Demand-side barriers to retention and related opportunities