

PMTCT: Setting the scene

Louise Kuhn

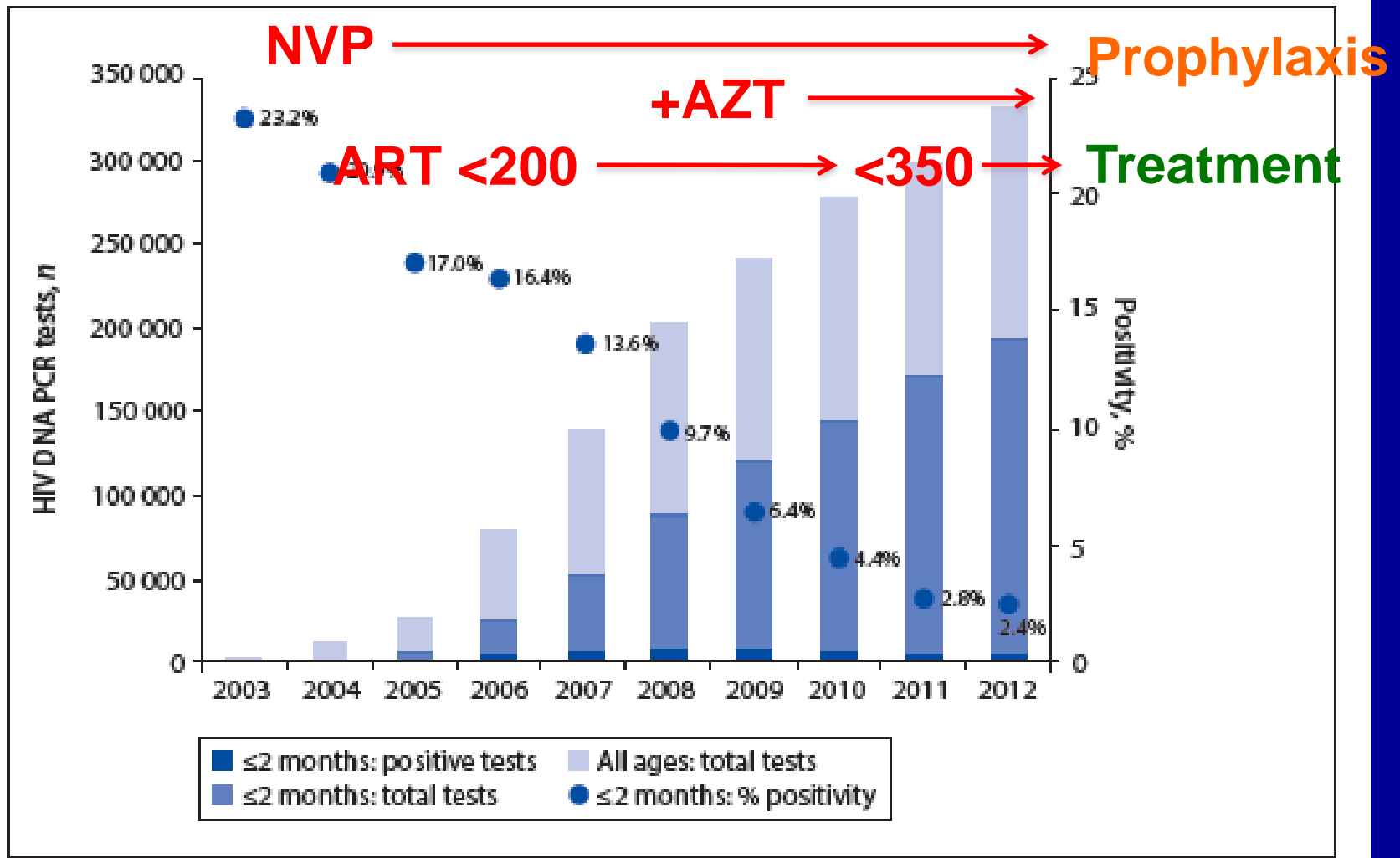
Gertrude H. Sergievsky Center, College of
Physicians and Surgeons

& Department of Epidemiology, Mailman
School of Public Health,

Columbia University, New York, NY



South African PMTCT success



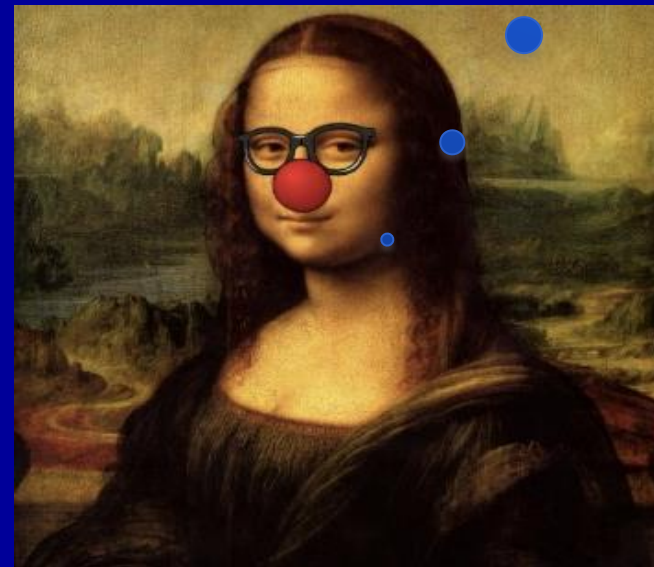
Sherman et al. S Afr Med J 2014

Is PMTCT ART?

ARP?



Antiretroviral THERAPY



Antiretroviral PROPHYLAXIS

Prevention [-ven'shən]

Etymology: L, praevenire, to anticipate
the keeping of something (such as an illness or injury)
from happening.

Prophylaxis [prō'filak'sis]

Etymology: Gk, prophylaxis, advance guard
Prevention of or protection against disease

Treatment [tri'ti:mənt]

Etymology: Fr, traitement

1. the management and care of a patient; see also care.
2. the combating of a disease or disorder; called also therapy.

Therapy /ther·a·py/ (-pe) the treatment of disease; see
also treatment

Intention/Purpose

Objective of ART (therapy)

- Slow disease progression
- Recover health
- Prevent death
- Reduce illness

- **TARGET: HIV-infected individual**

Objective of AR P(revention)

- Stop acquisition of HIV infection
- **TARGET: HIV UNinfected individual**

ART vs ARP: what's the difference? Regimen

- **Triple drug regimen**

- Increasing number of drugs to choose from
- Increasing standardization of regimens

- **Evolving regimens**

- Single drugs AZT
→ NVP
- Dual e.g.
AZT+NVP
- Triple e.g.
AZT,3TC,NVP

Indistinguishable

ART vs ARP: what's the difference?

Duration

- **Lifetime**

- **Evolving**

- Single dose
- Pregnancy
- Varying durations after delivery
- Lifetime

Indistinguishable

ART vs ARP: what's the difference?

Who

- **Single individual
adult or child**
- **Two individuals
mother and child**
 - **Maternal
components**
 - **Child components**

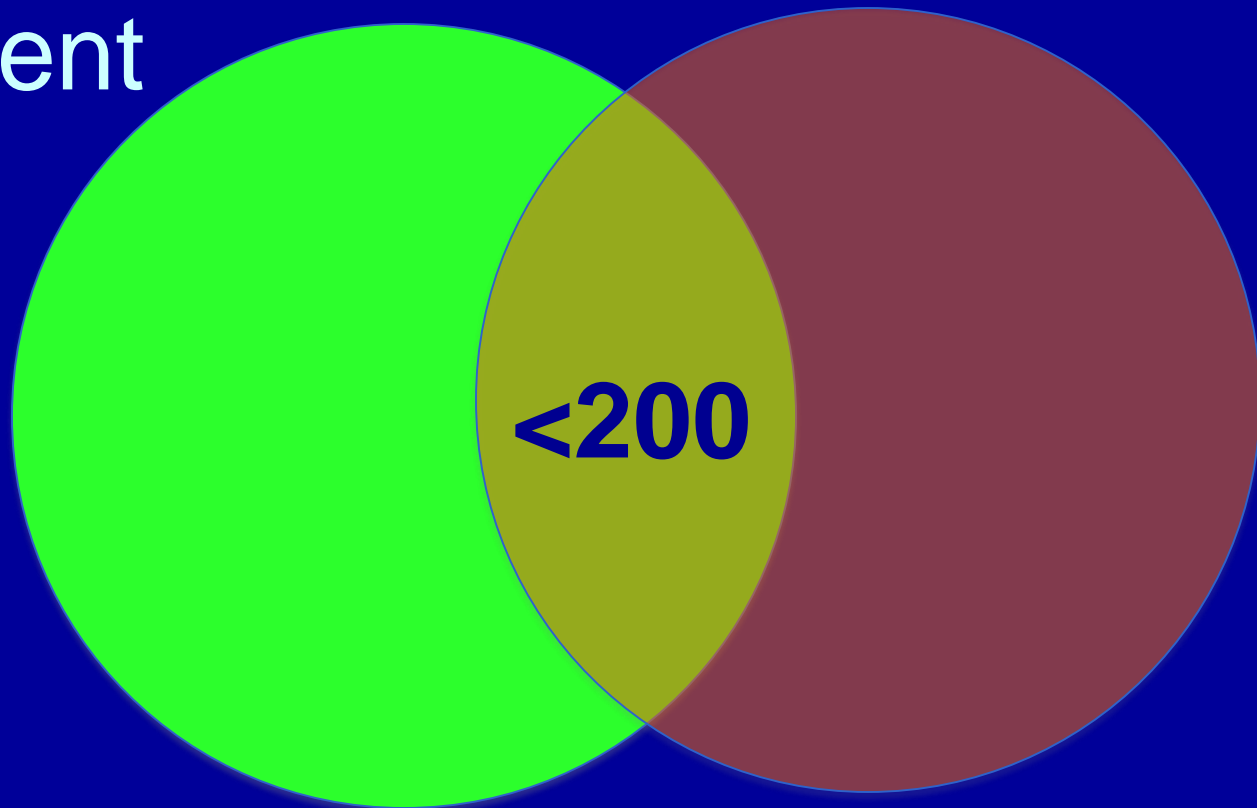
Distinct

ART vs ARP: Mother's point of view

- Protect my child (ARP)
 - All
- Protect me (ART)
 - Those in need (CD4 criteria)

ART/ARP positive synergy

Treatment



Prevention

ART/ARP positive synergy

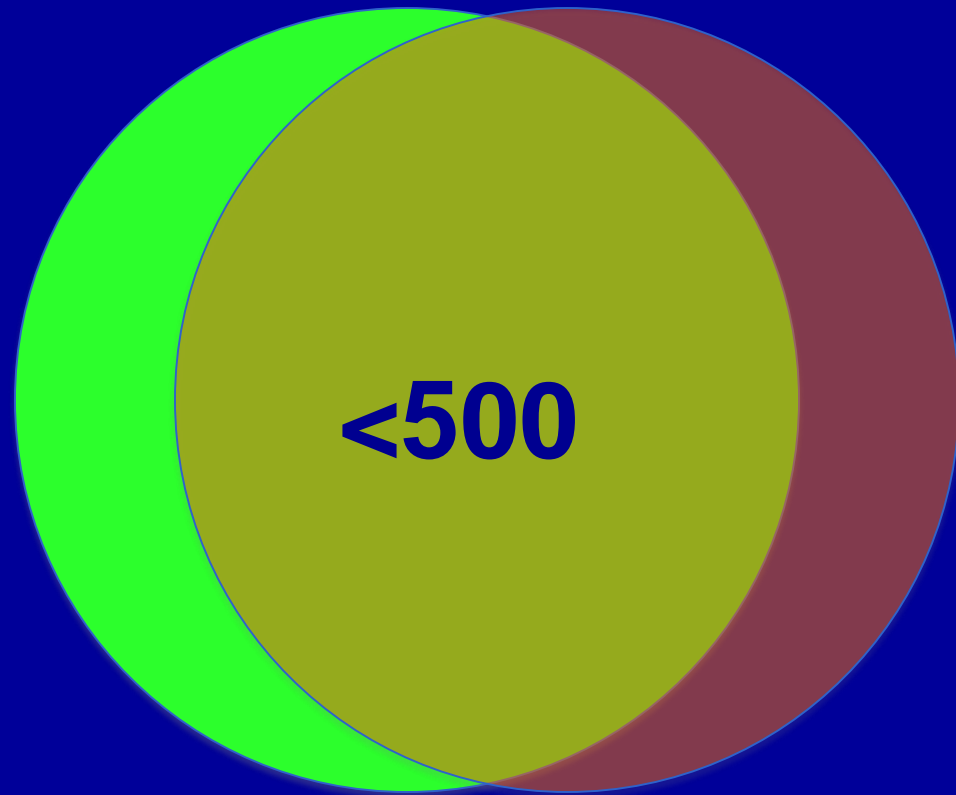
Treatment



Prevention

ART/ARP positive synergy

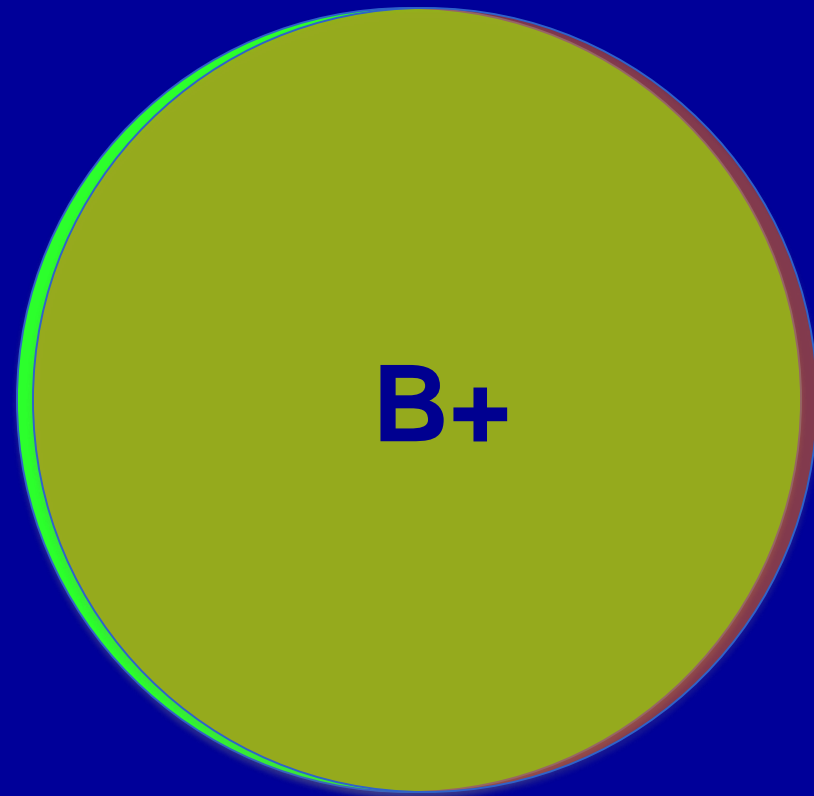
Treatment



Prevention

ART/ARP positive synergy

Treatment



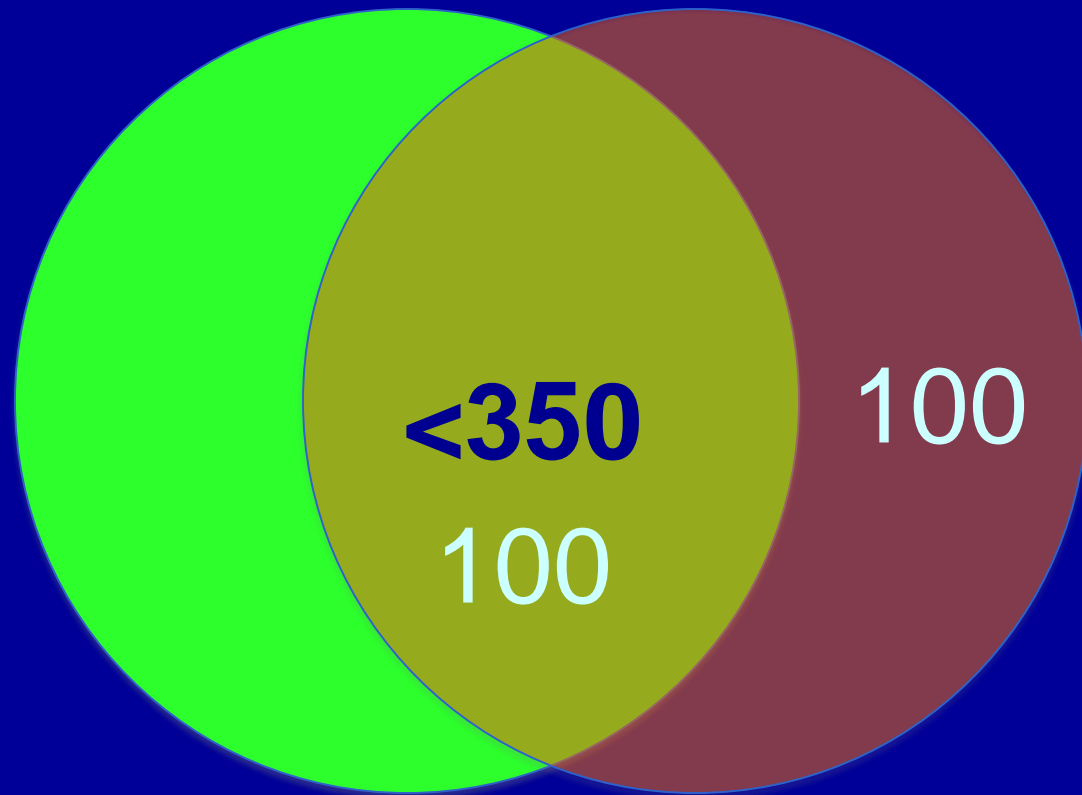
Prevention

Questions raised by the B+ approach

- Is ARP ART for mothers with higher CD4 counts?
 - Women with CD4 >500 worse outcomes than HIV-negative
 - Benefits of ART in this group?
- Will ARP for more mean ART for fewer?

B+ Zero-sum gain approach

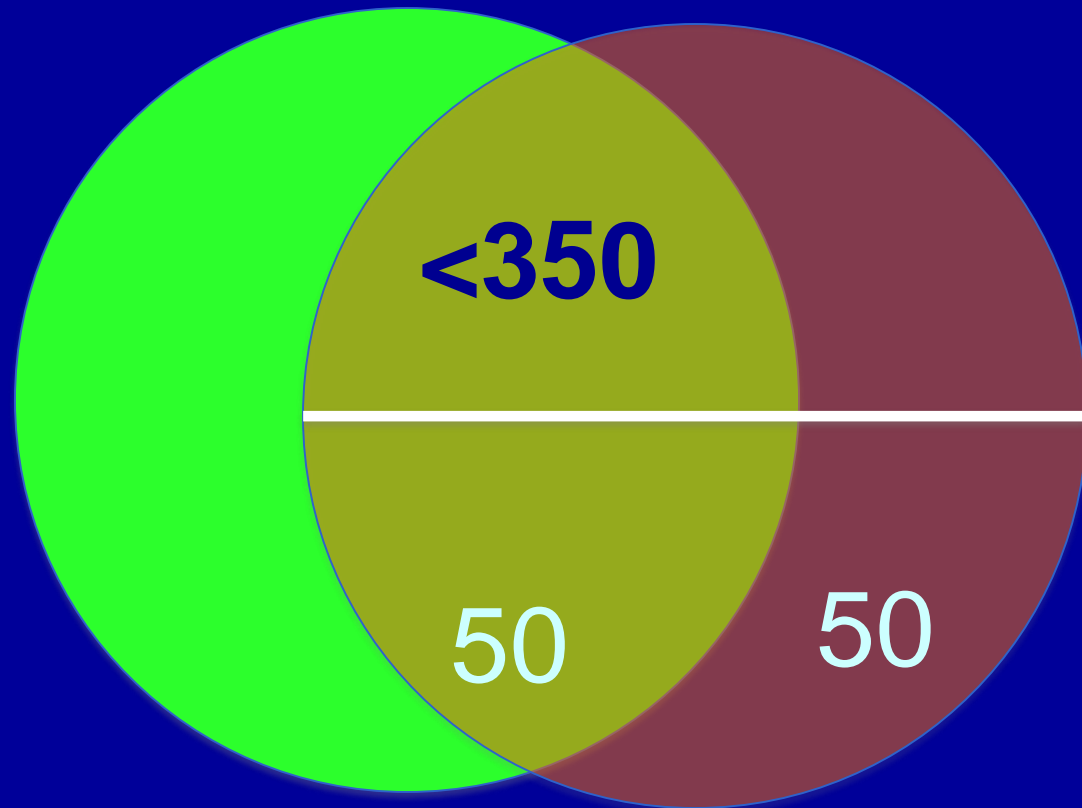
Treatment



Prevention

B+ Zero-sum gain approach

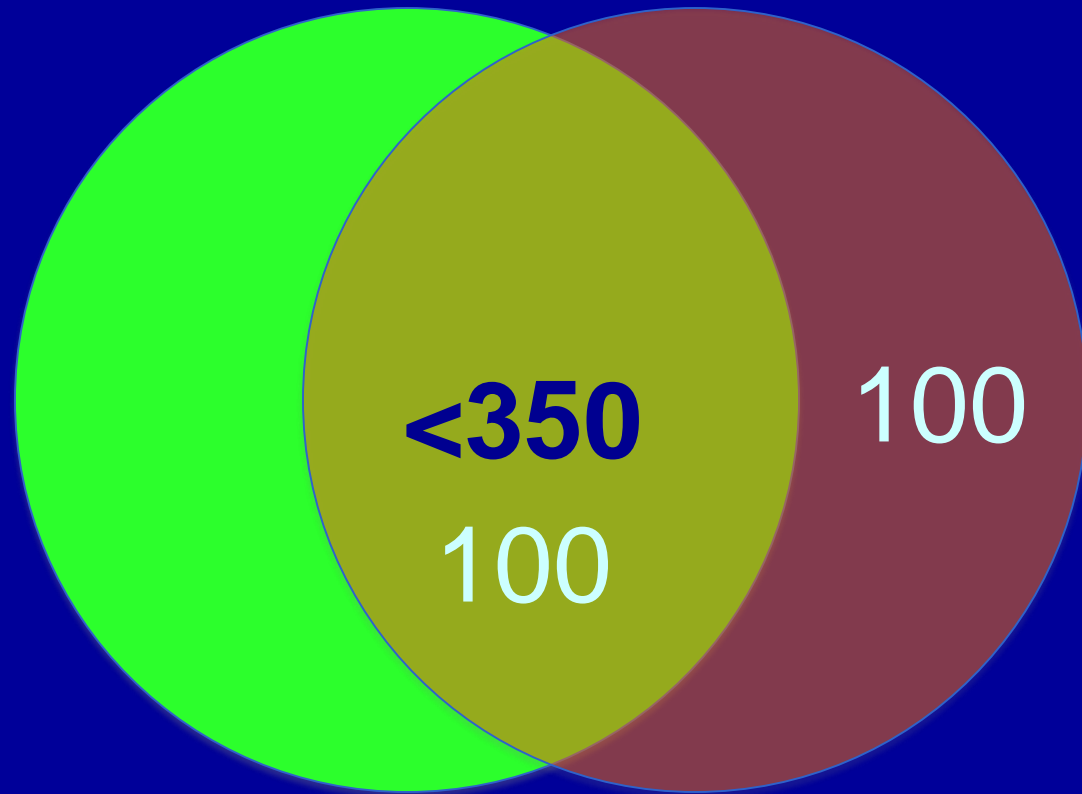
Treatment



Prevention

B+ Operational benefits

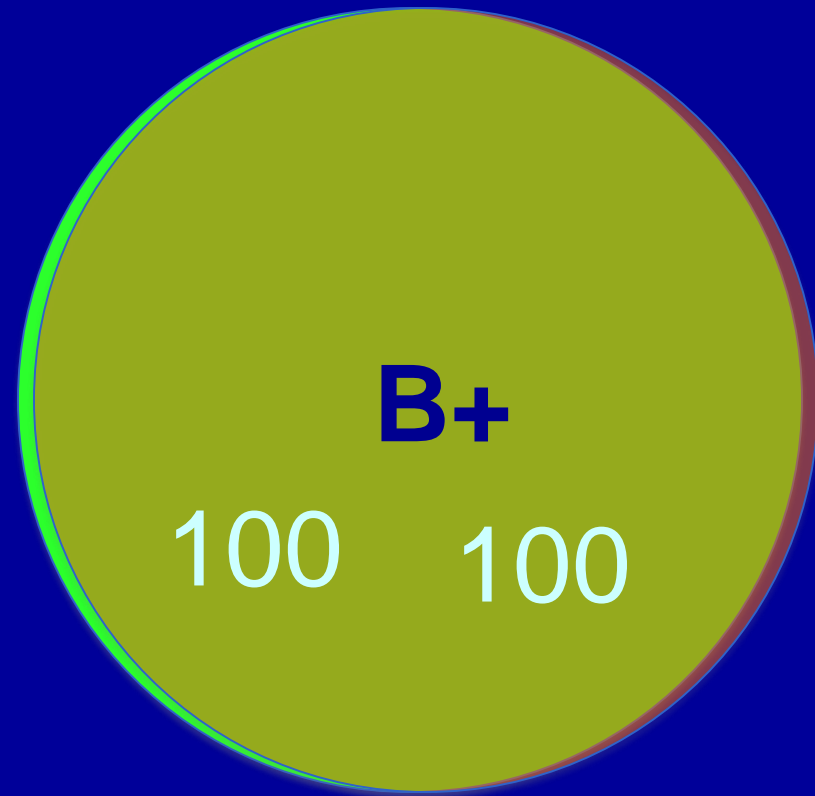
Treatment



Prevention

Simplification leads to increased coverage

Treatment



Prevention

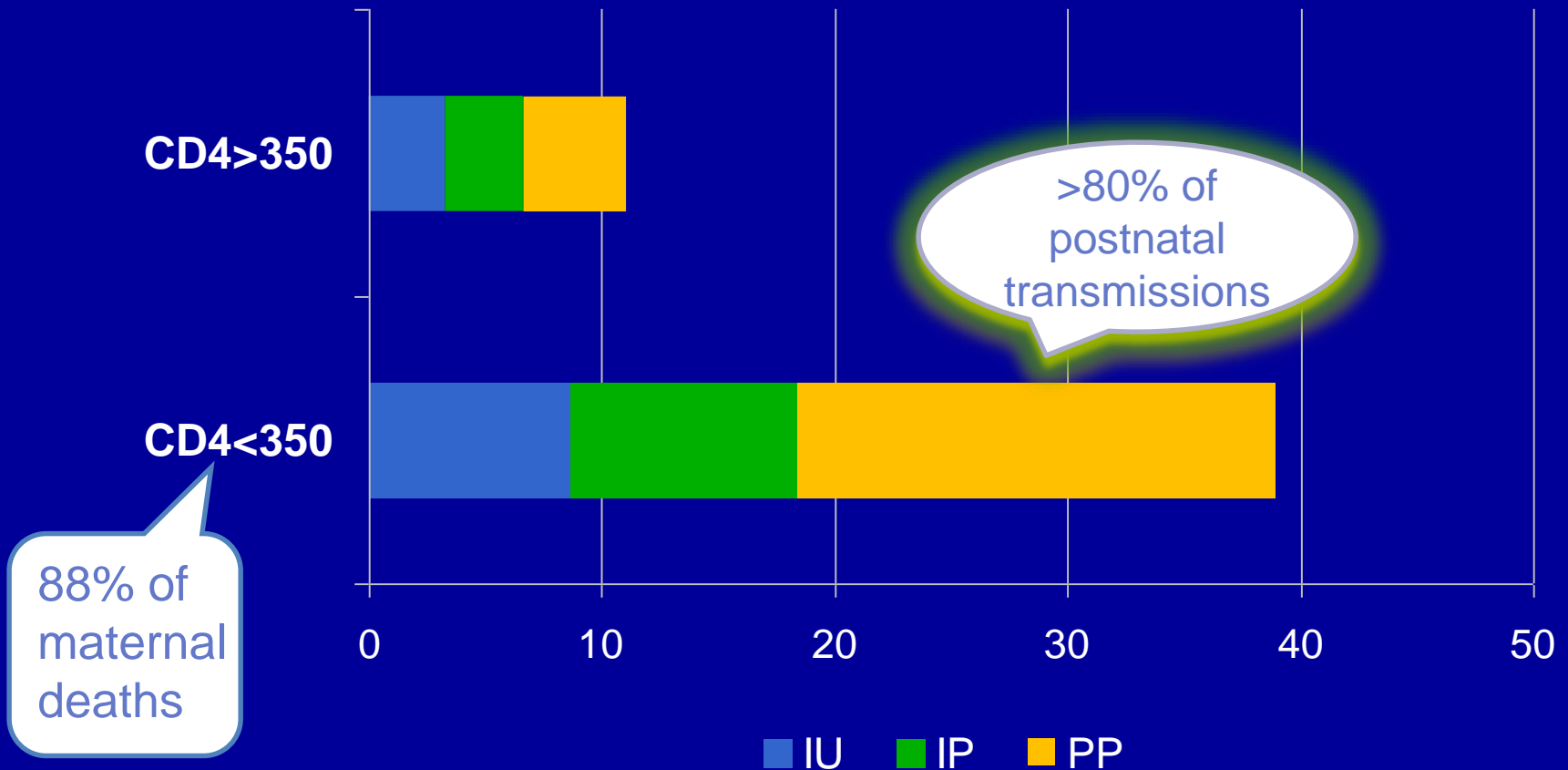
Critical question for implementation science:

Will B+ increase or decrease coverage of
ART for women with low CD4 counts?

ART vs ARP: Child's point of view

- Protect my mother (ART)
 - All
- Protect me (ARP)
 - All

Value of integrating treatment and prevention



Critical question for implementation science in PMTCT:

Will B+ increase or decrease coverage of
ART for women with low CD4 counts?

ART vs ARP: Child's point of view

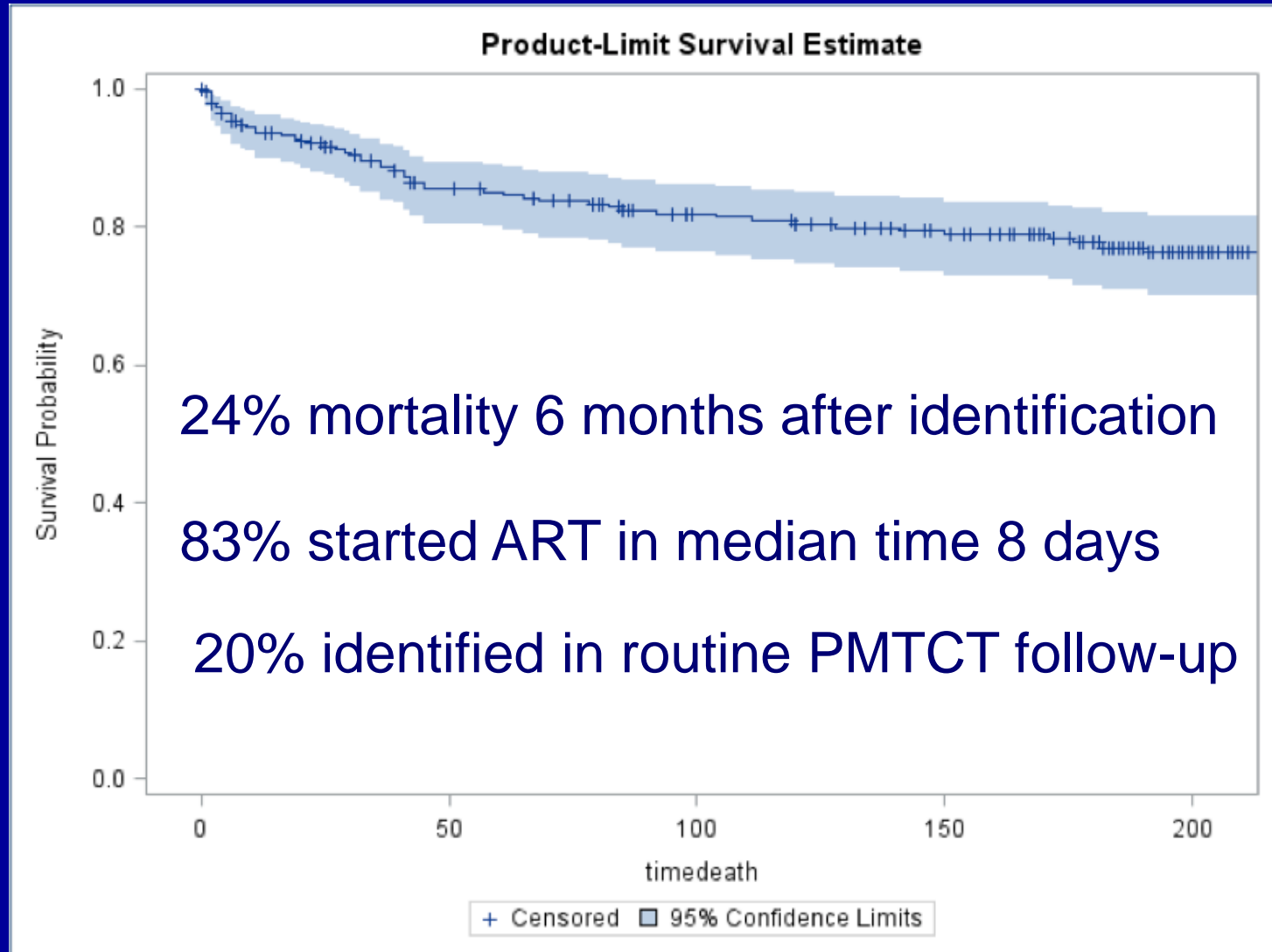
- Protect my mother (ART)
 - All (esp if my mom has low CD4 counts)
- Protect me (ARP)
 - All (esp. if my mom has low CD4 counts)
- Protect me if I get HIV
 - ART
 - Find me



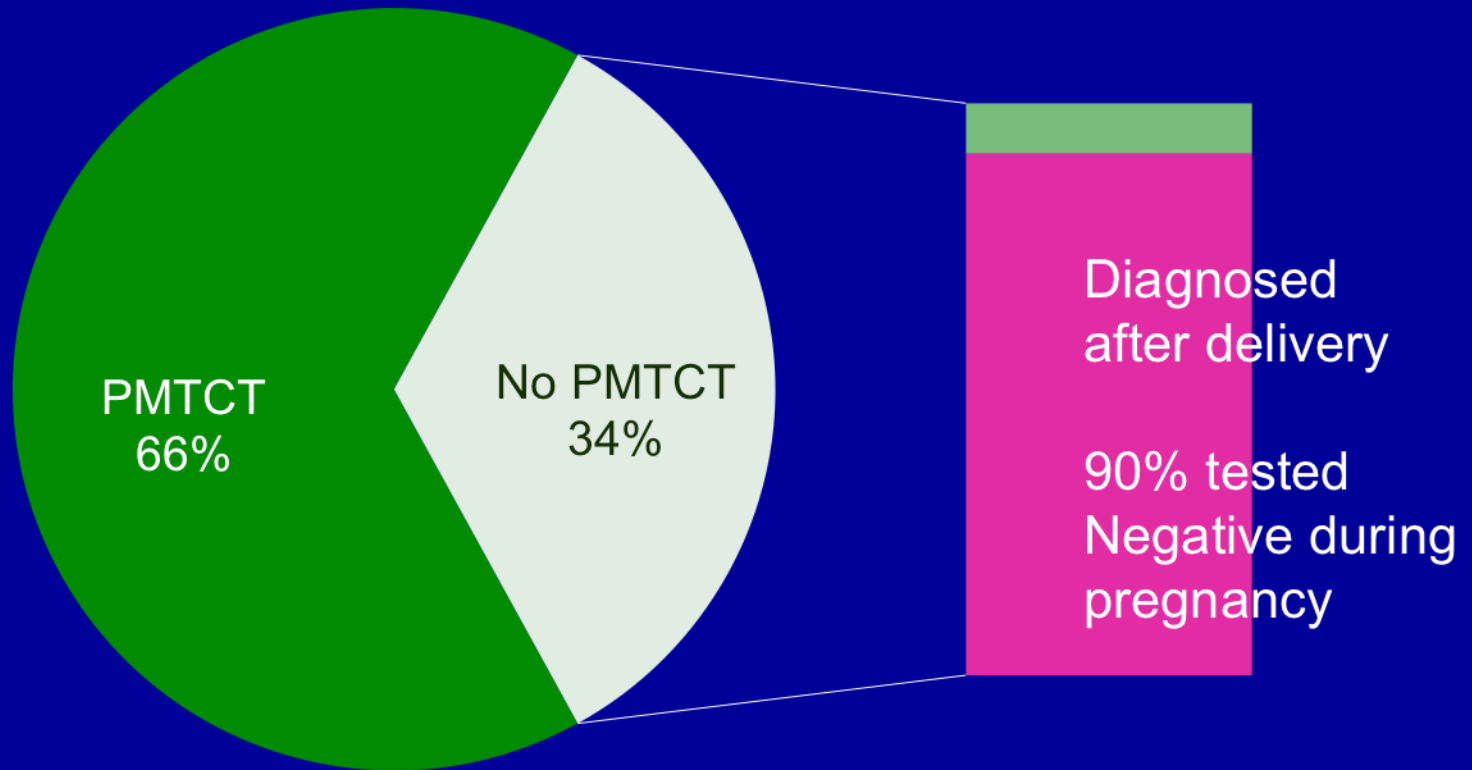
Finding Infants with HIV Disease and Evaluating Resistance (FINHDER)

Karl Technau Ashraf Coovadia
Elaine Abrams Gayle Sherman
Lynn Morris Gillian Hunt

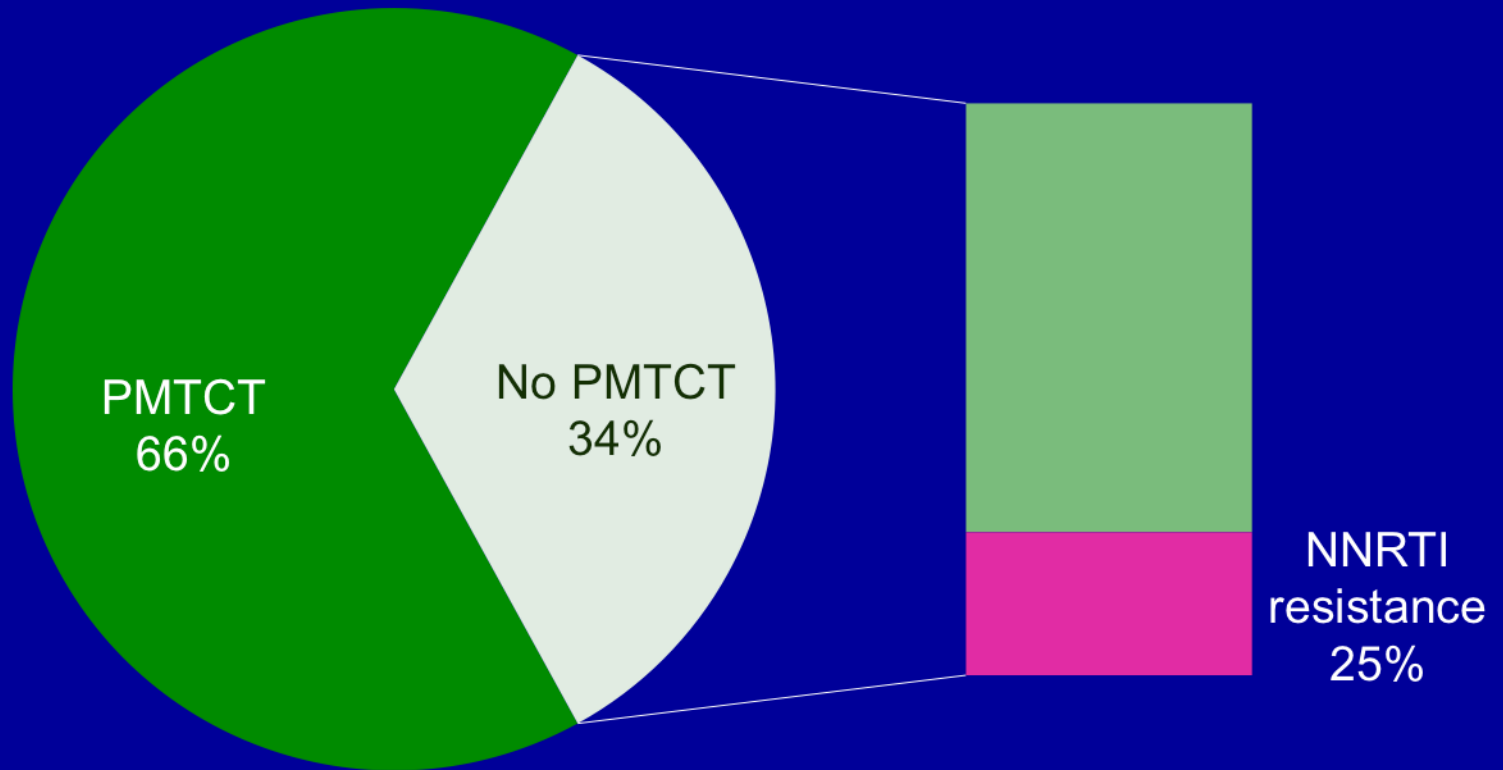
High mortality in HIV-infected infants and young children under 24 months of age in Johannesburg, 2011



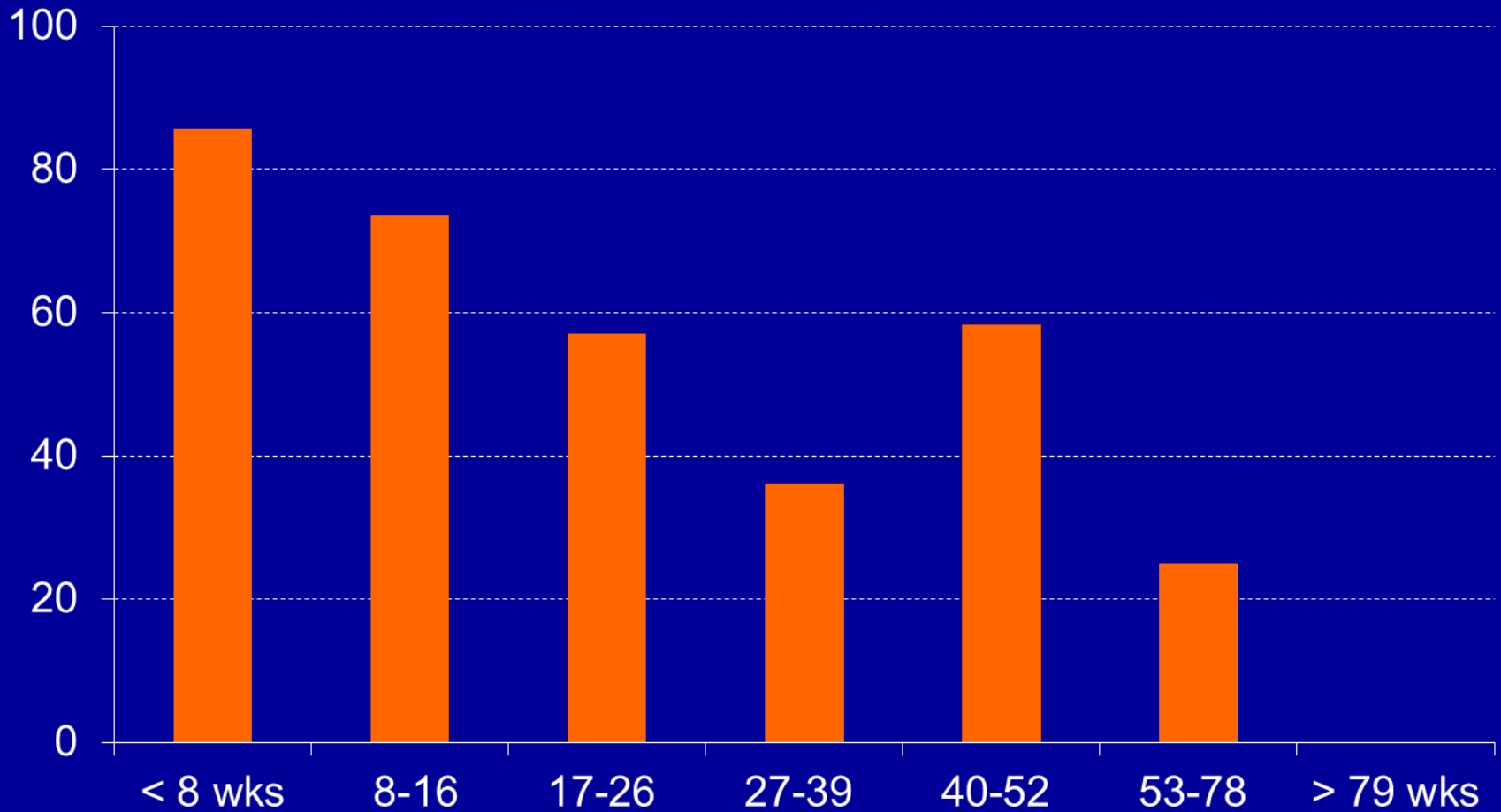
PMTCT exposure is common among newly-diagnosed HIV infected infants in Johannesburg



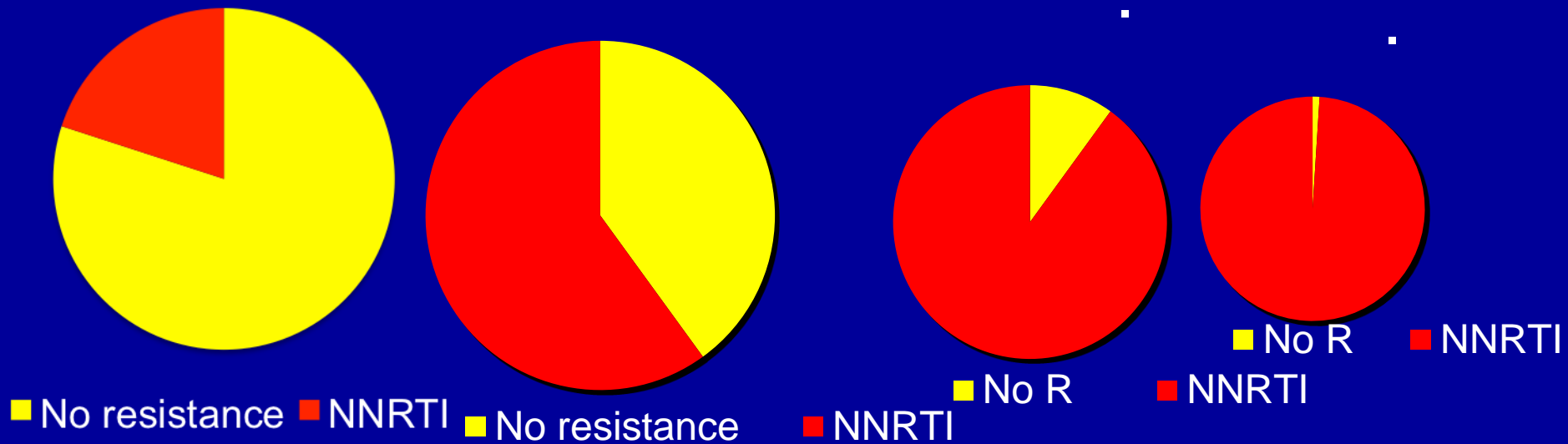
PMTCT exposure is common among newly-diagnosed HIV infected infants in Johannesburg



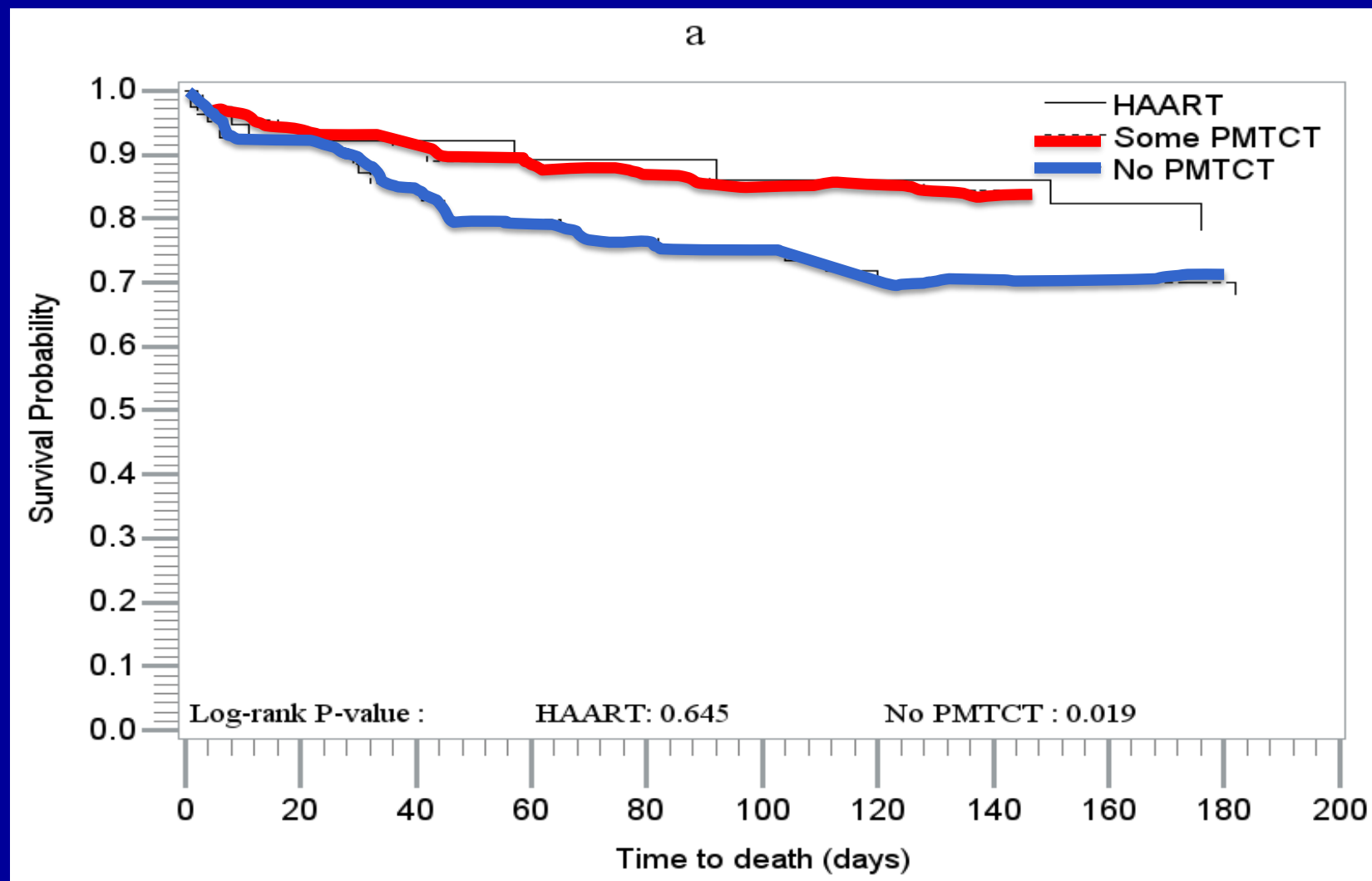
Prevalence of NNRTI mutations among 155 PMTCT-exposed newly-diagnosed HIV-infected infants in 2011 by age when tested



Drug resistance in infants is a marker of good coverage of PMTCT



Better outcomes in HIV-infected infants exposed to PMTCT



Bright future of PMTCT

- Expanding understanding of the role of ARV in ART and ARP
- Impressive uptake of ART for ARP
- Not perfect
- Weak link is infant diagnosis
- Need to ensure greater access of children to ART