

Education and counseling make a difference to  
infant feeding practices and those feeding  
practices make a difference to infant mortality

Naume Tavengwa

Ellen Piwoz

Lorrie Gavin

Clare Zunguza

Edmore Marinda

Peter Iliff

Jean Humphrey

and the ZVITAMBO Study Group

# ZVITAMBO



Zimbabwe Vitamin A for Mothers and Babies PrOject

# Acknowledgements

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- Academy for Educational Development (USAID)
  - Linkages Project
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- Harare City Health Department
- Harare Central Hospital
- Chitungwiza Hospital
- Epworth Clinic, Mashonaland East Province
  
- Johns Hopkins University
- McGill University

Every Year  
Breast Feeding

Prevents 6 million infant deaths

Causes  $\frac{1}{4}$  million infant HIV infections

15% get infected through  
breast feeding

85% DO NOT

## Methods

Placebo-controlled clinical trial

- 14,110 mother/baby pairs
- efficacy of immediate post partum maternal and/or neonatal vitamin A supplementation on
- infant mortality,
- breast feeding-associated infant HIV infection
- incident sexually-acquired HIV infections among post partum women.

Pairs recruited within 96 hours of delivery at maternity clinics and hospitals in Harare, Chitungwiza and Epworth

## Eligibility

- neither mother nor baby seriously ill
- singleton,
- birth weight >1500 g
- Written informed consent

## Baseline (delivery)

- demographic and obstetric details
- maternal arm circumference
- Mothers and babies randomised:

400,000	400,000
50,000	Placebo
Placebo	Placebo
50,000	Placebo

IU Vitamin A

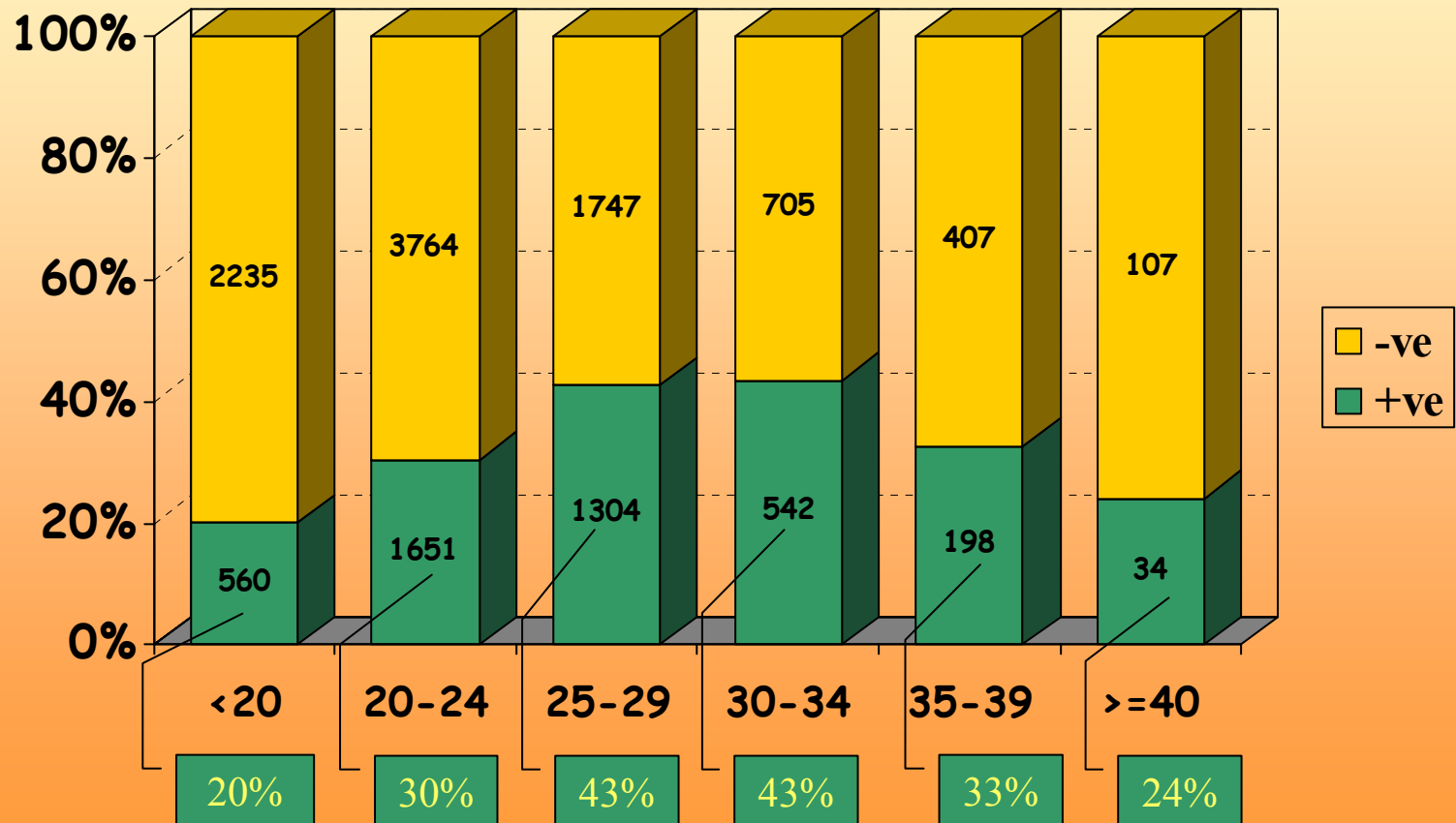
Maternal samples  
run in parallel - two ELISAs.

Persistently discordant samples  
run by Western blot.

HIV positivity  
confirmed by repeated ELISA at next visit.

Mother-baby pairs followed up in study clinic  
6 weeks  
3 months,  
3-monthly until 12-24 months.

# Mothers HIV status by age group



# Seroconversion rates

At one year: 4-5%

Straight line

# Duration of Breast feeding

## ZVITAMBO cohort

Age of baby	% still breast feeding
6 weeks	99.7
3 months	99.4
6 months	99.0
9 months	98.1
1 year	93.9
15 months	85.7
18 months	63.0
21 months	31.5
2 years	17.0

# Feeding practice

- Exclusive breast feeding (EBF)
  - nothing except breast milk,
  - western-type medicines and vaccines allowed
- Predominant breast feeding (PBF)
  - breast milk + other non-milk containing liquids eg water, fruit juice, tea without milk
- Mixed milk feeding (MMF)
  - breast milk + other animal milk including commercial formula, with or without other liquids
- Complementary (Comp)
  - breast milk + solid food, with or without other liquids or other milk

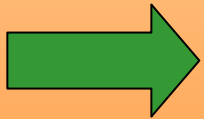
# Definitions

- 24 hour history
- 7 day history
- Ever
- "Conditional ever"
  - All previous data present and consistent

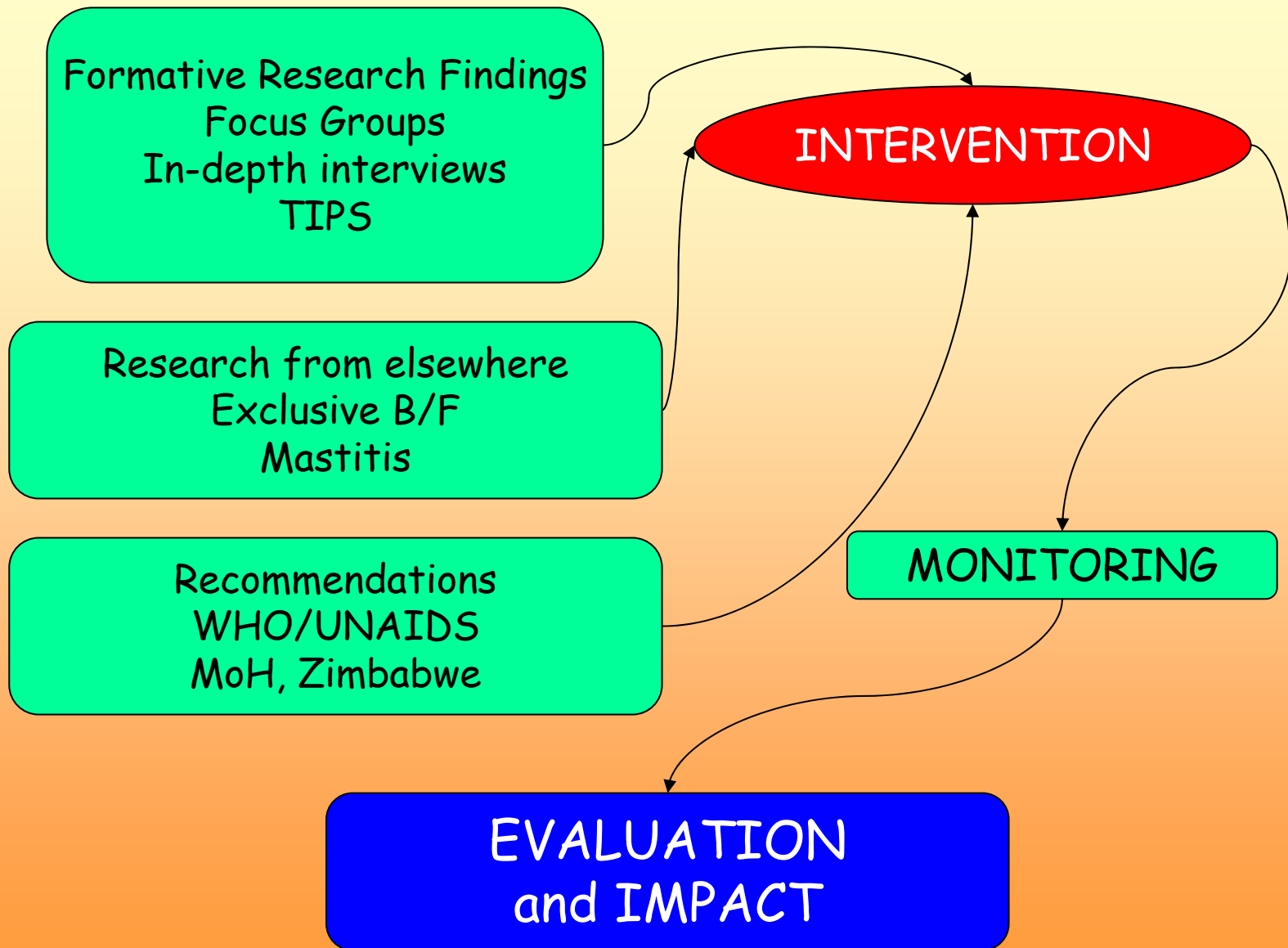
# ZVITAMBO TRIAL

- 3 clinical trial questions

## 4th Question



- How can these mothers (and fathers) be counselled about HIV and infant feeding?



# FORMATIVE RESEARCH

## SELECTED FINDINGS

### Misconceptions

- every baby of an HIV+ mother gets infected
- mixing feeds → ↓ risk of transmission

### Ignorance

- infection during lactation → ↑ risk of breast milk transmission

### Gender

- Men understand their role in decreasing transmission during lactation
- Men and women see the man as decision maker
  - including about infant feeding
- Men want to learn about MTCT **directly**, not via the wife

### Fear

- Mothers are fearful of getting tested, especially without their partners

### Cost

- cost of infant formula is for many prohibitive

## RESEARCH FINDINGS FROM ELSEWHERE

- Exclusive breast feeding (compared to mixed feeding) protective of MTCT of HIV in breast milk
- Mastitis, including subclinical mastitis, a risk factor for MTCT

## RECOMMENDATIONS FROM UN AGENCIES AND MoH ZIMBABWE

- Women should be empowered to make their best personal choice

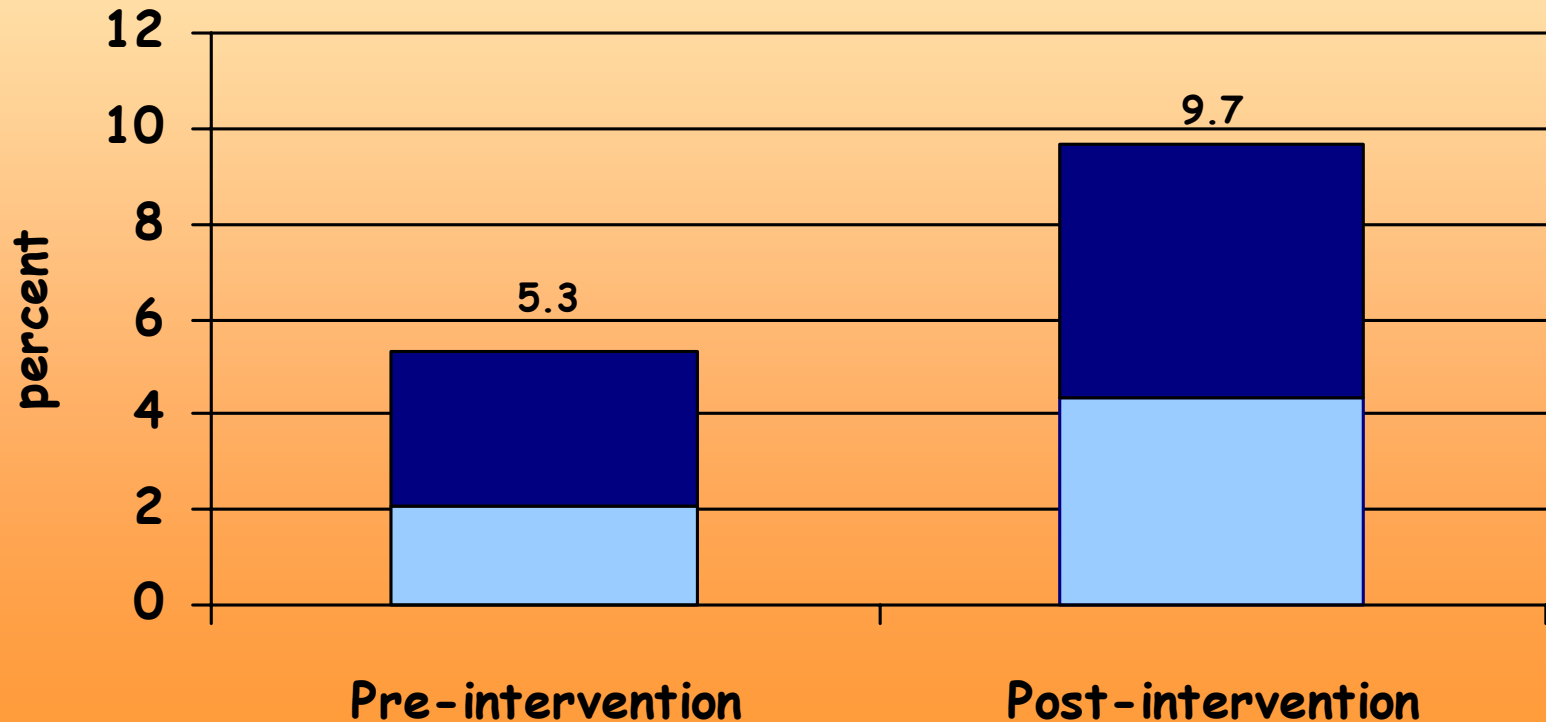
# INTERVENTION

- Antenatal sensitization
- Male outreach
- Integration of infant feeding counseling into HIV pre- and post-test counseling
- Supportive counseling
- Referral

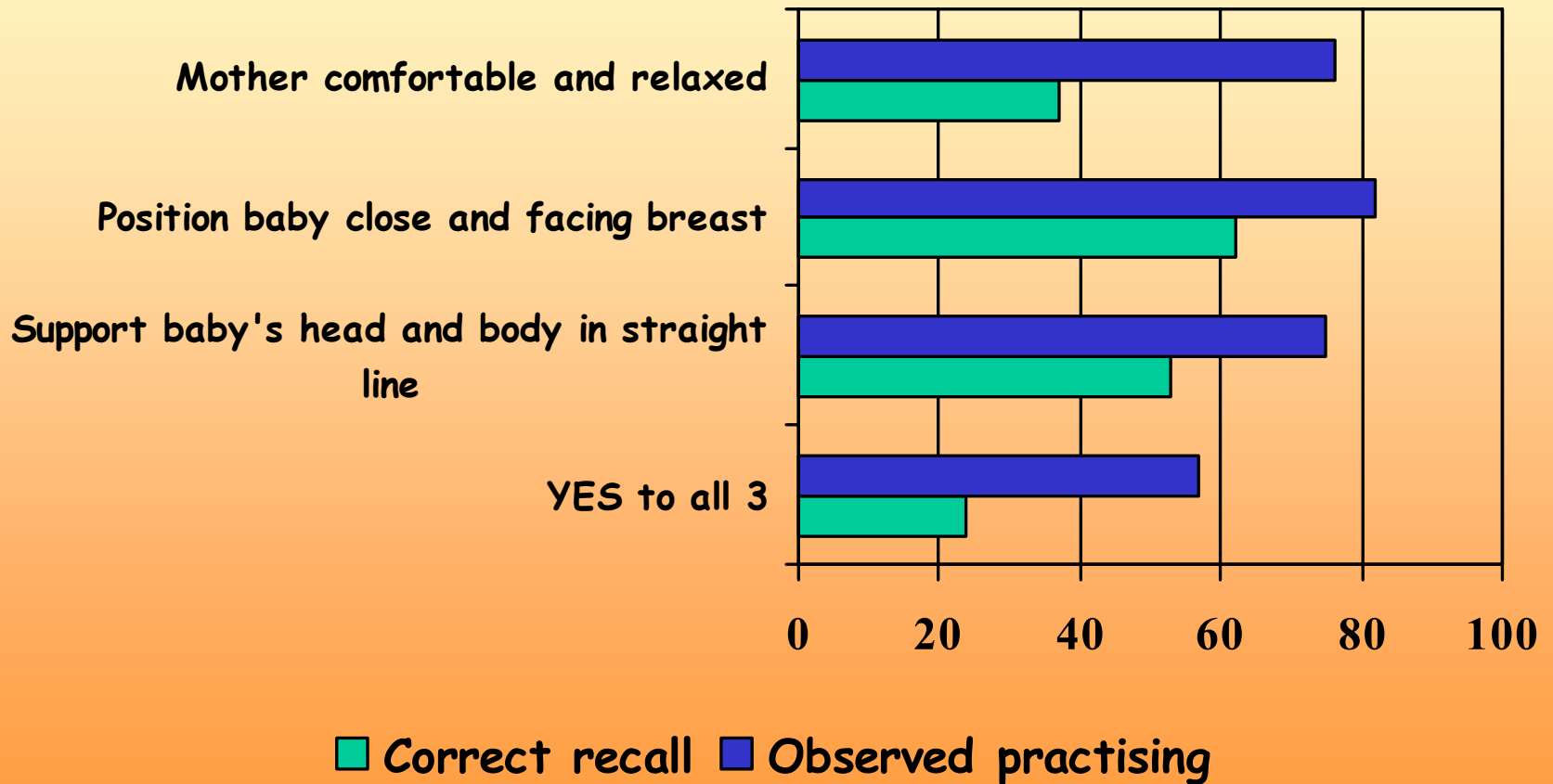
# male or female condom use (assessed at 6 months, if sexually active)

Always used since last visit ■

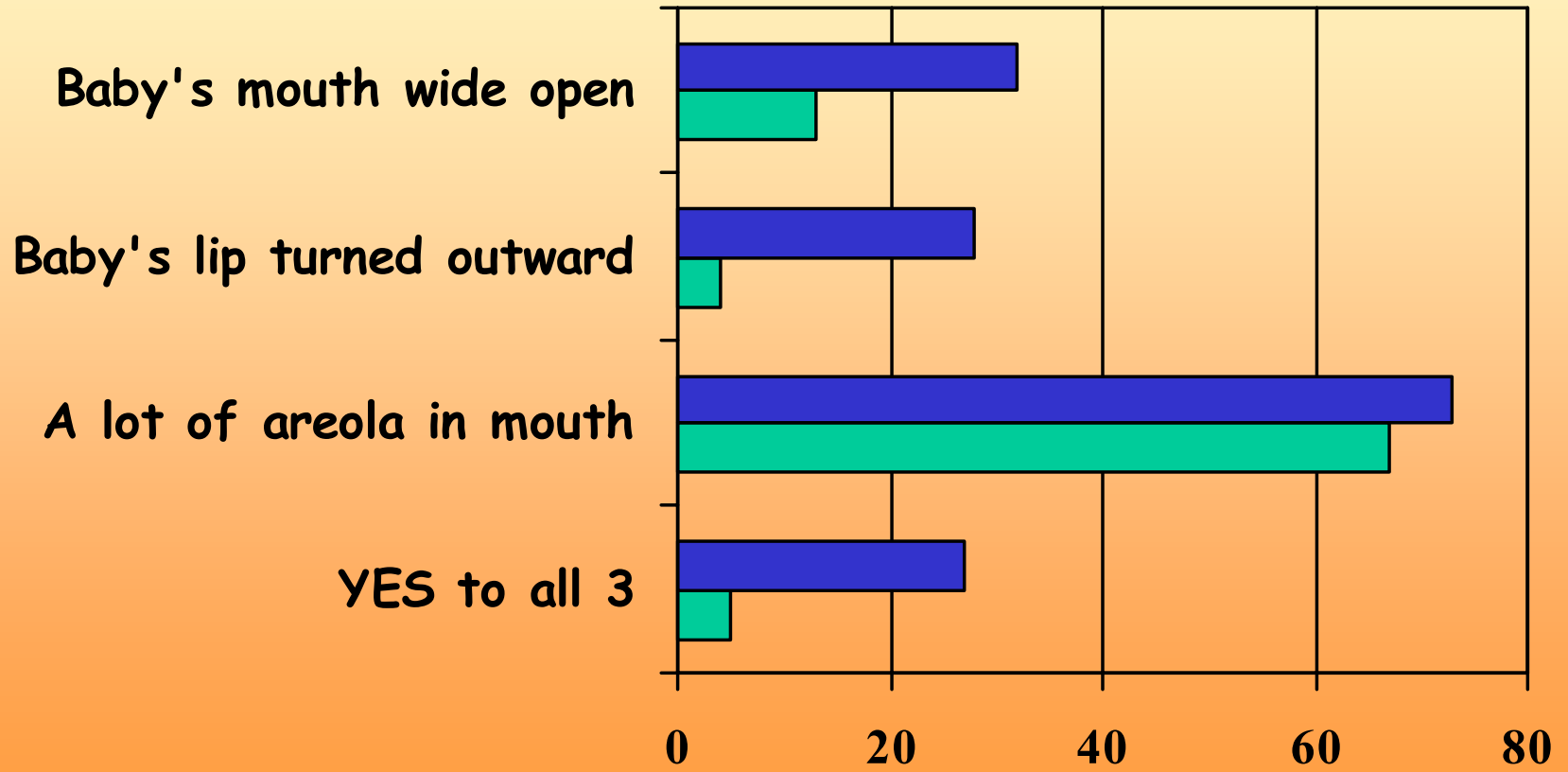
Sometimes or mostly used since last visit □



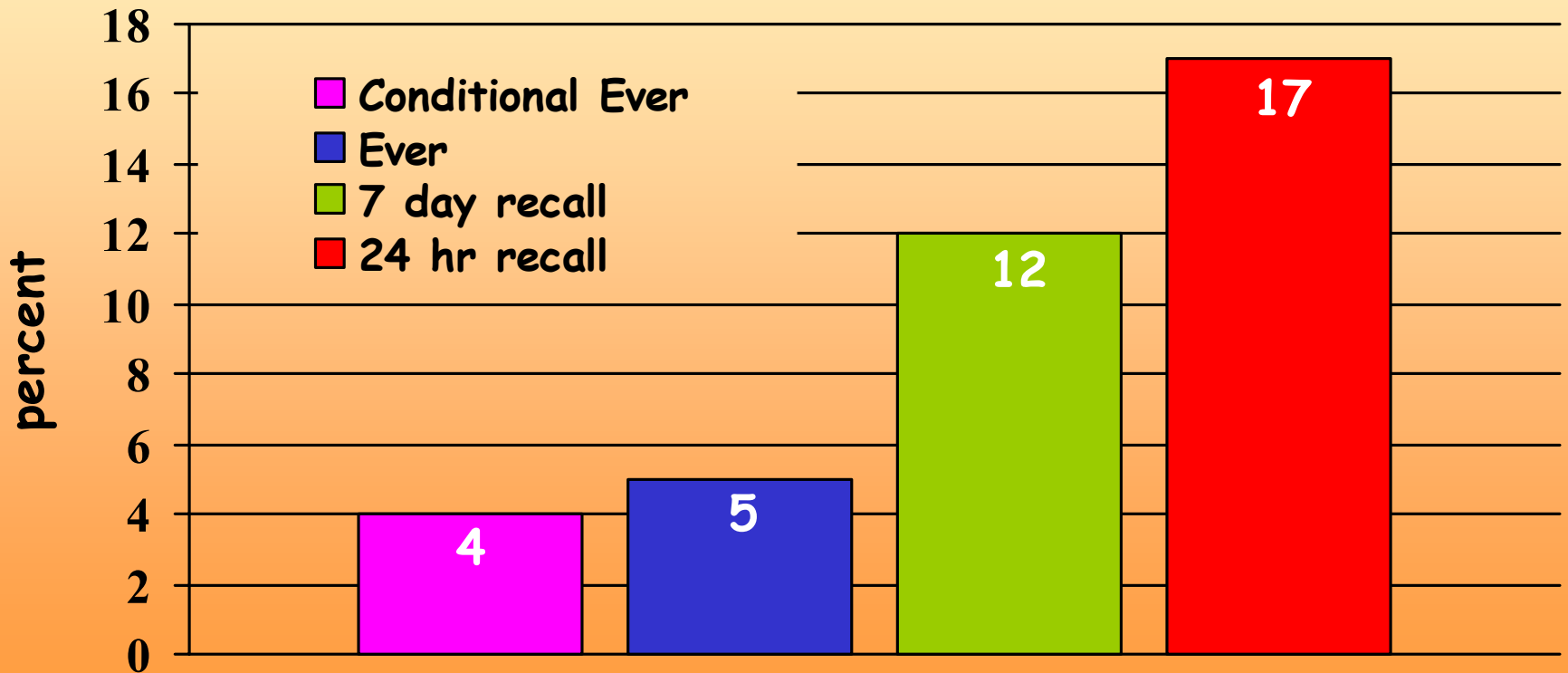
# Mothers' recall and observed practice of infant positioning and attachment (1)



# Mothers' recall and observed practice of infant positioning and attachment (2)

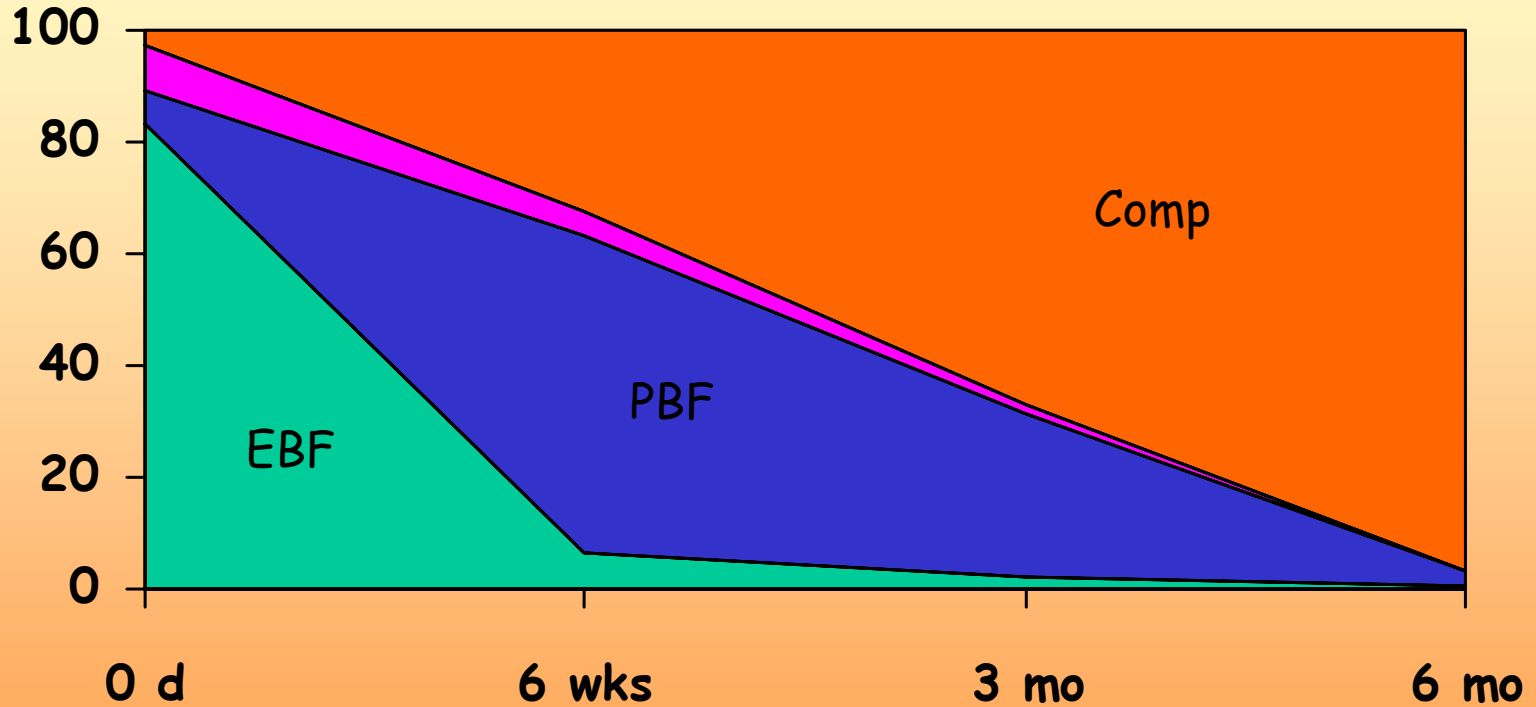


# Rates of Exclusive Breast feeding at 3/12 by method of classification (total cohort)



# Pre-intervention

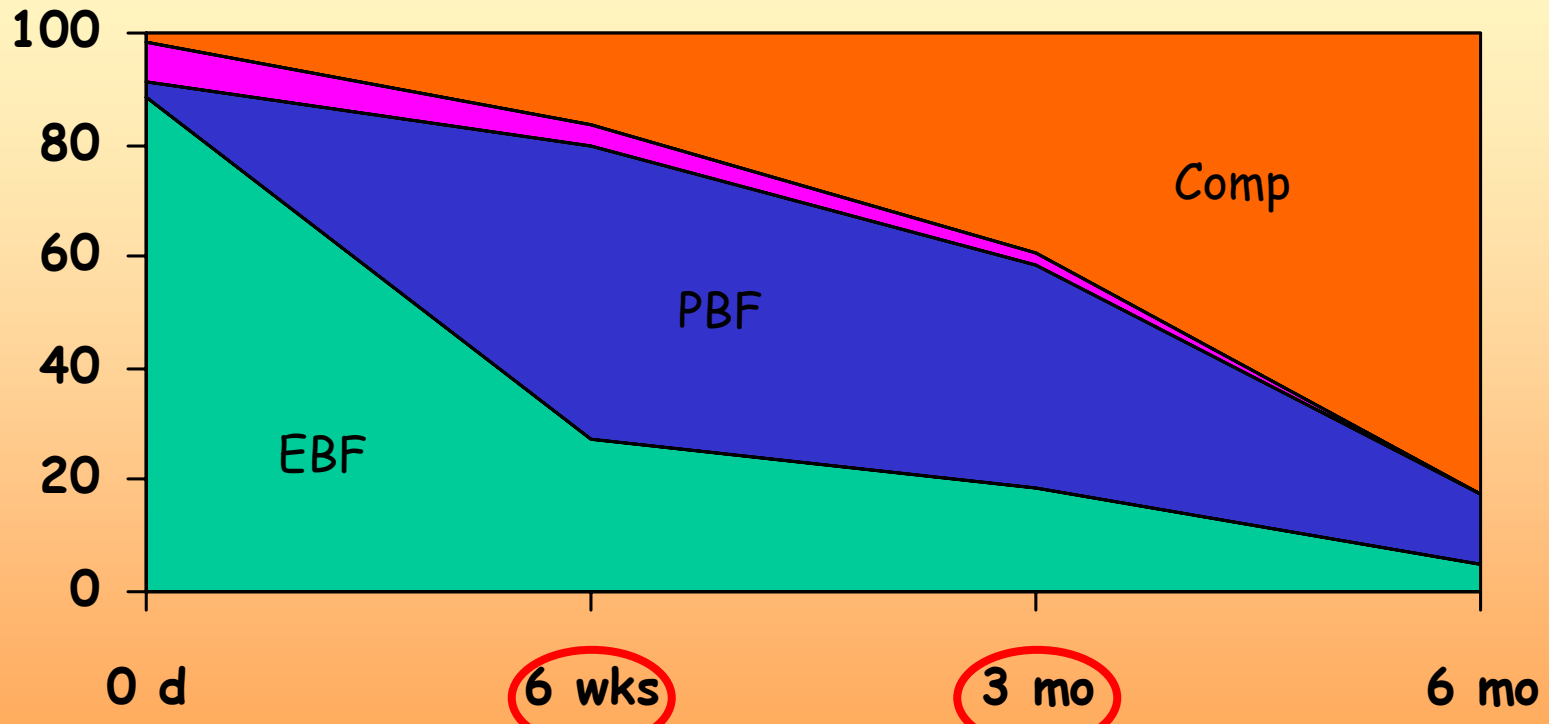
(n = 4,984 - 11,135)



"Ever" definition

# Post-intervention

(n = 492-1,402)

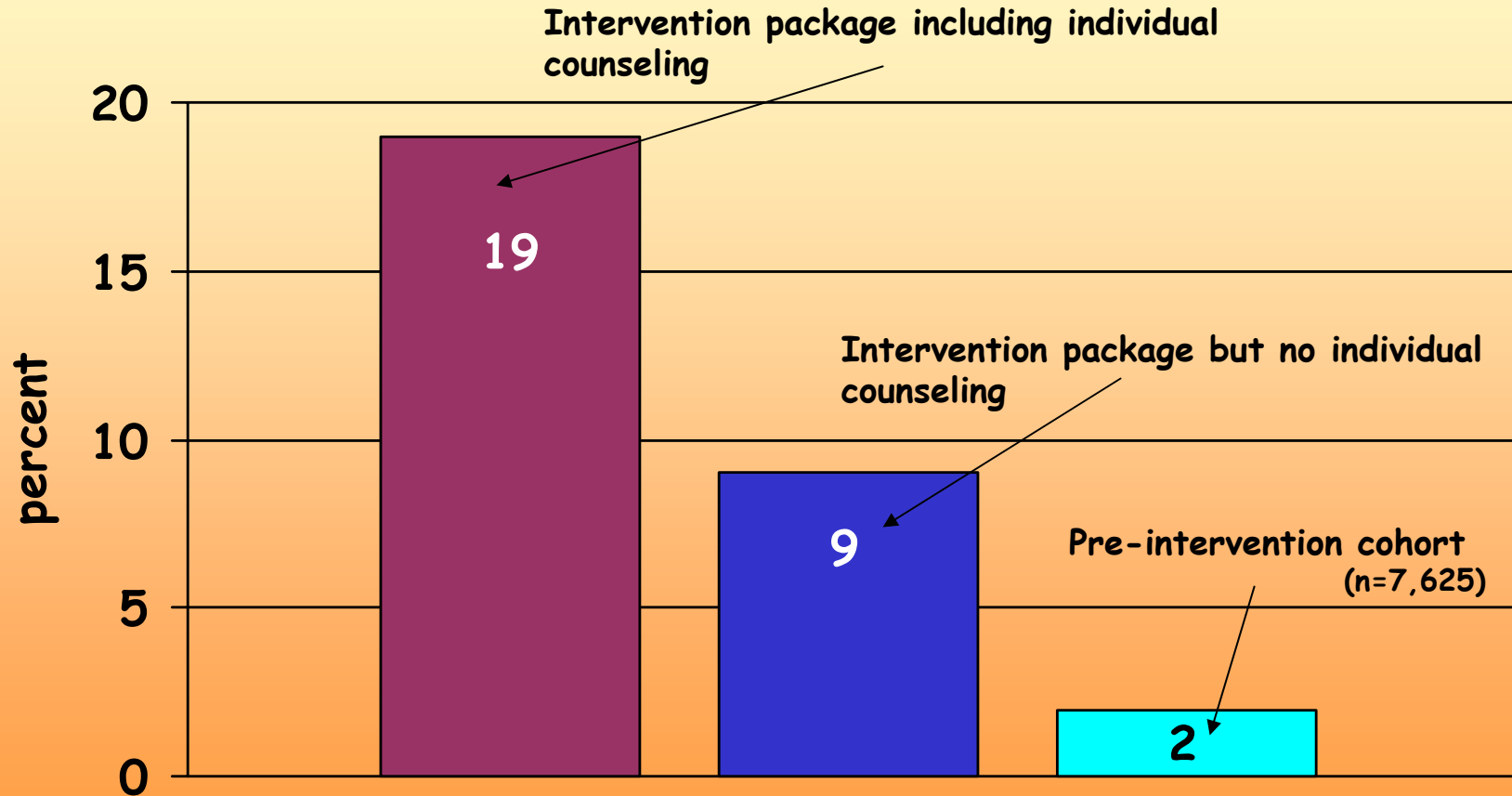


$p < 0.01$ , controlled for maternal age, parity, mother's or father's education, and birth weight

"Ever" definition

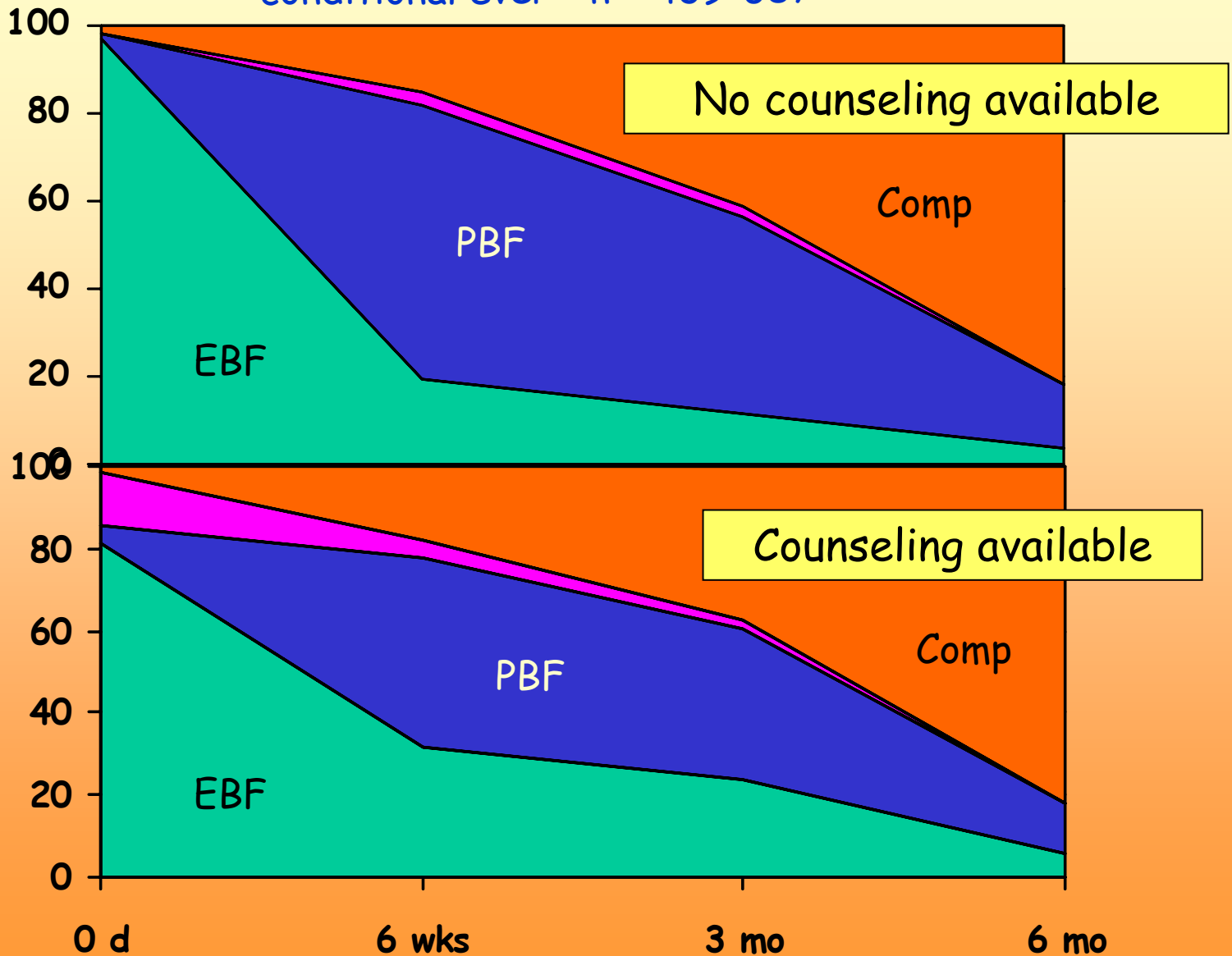
# Exclusive breast feeding rates at 3/12

("conditional ever" method, n=732)



# Recruitment site

"conditional ever" n = 439-687



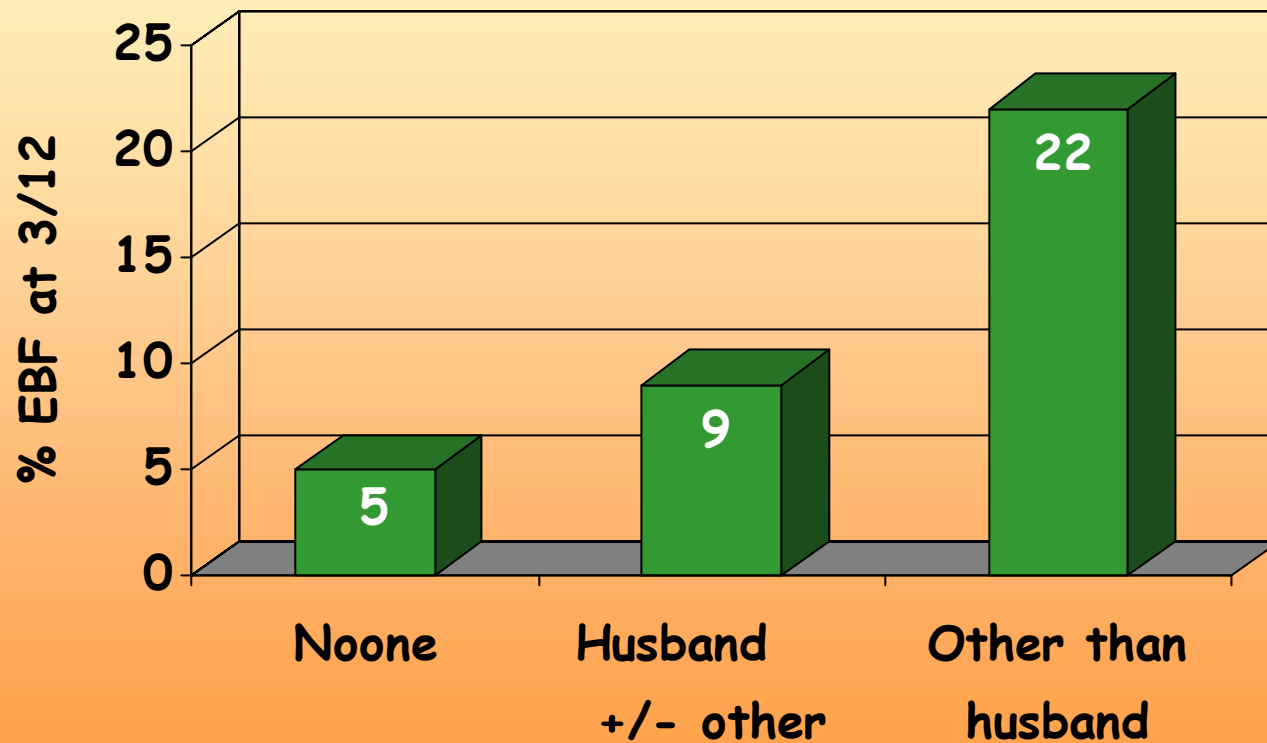
# Counseling

- Mostly (73%) 'one off'
- Duration 30-40 minutes

# Disclosure

- Disclosure rate for HIV+
    - Pre-intervention 52%
    - Post-intervention 64%
  
  - Disclosure rate for HIV-
    - Pre-intervention 80%
    - Post-intervention 89%
- } p<0.05

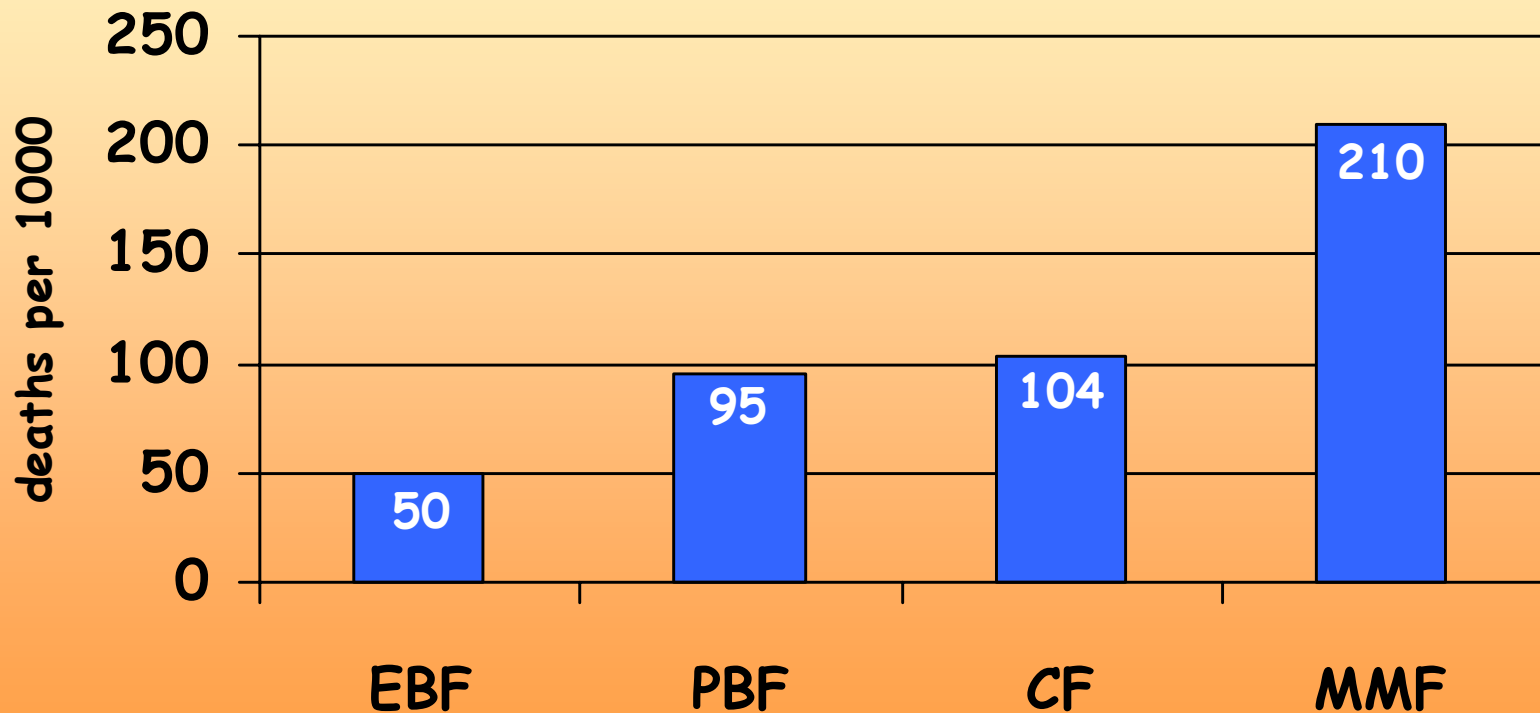
# Feeding and disclosure



"Conditional ever" n=160

# 1<sup>st</sup> year mortality of babies of HIV + mothers by feeding pattern to 3/12

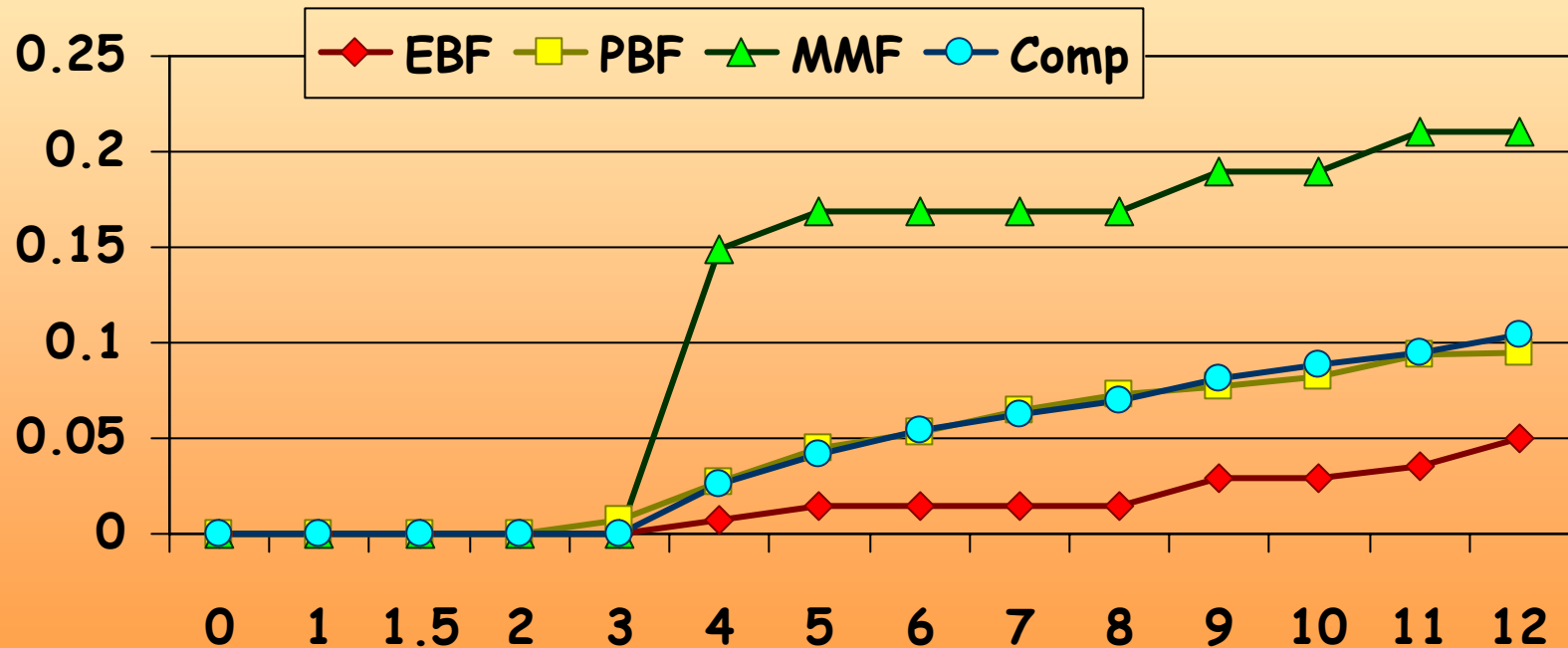
("ever", n=2892)



Compare with mortality rate of **22/1000** for babies of HIV-  
mothers, and **170/1000** for all babies of HIV+ mothers

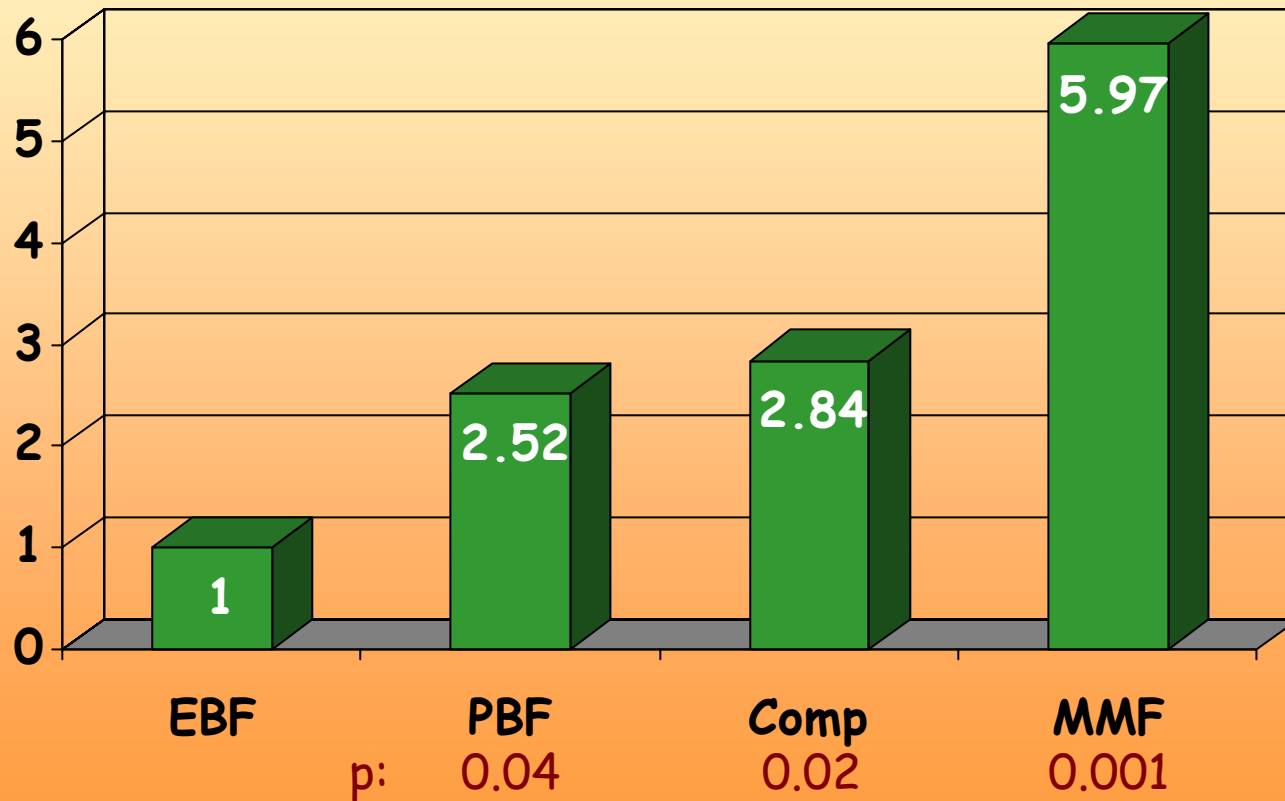
# Kaplan-Meier survival estimates

(babies of HIV+ mothers, "ever")



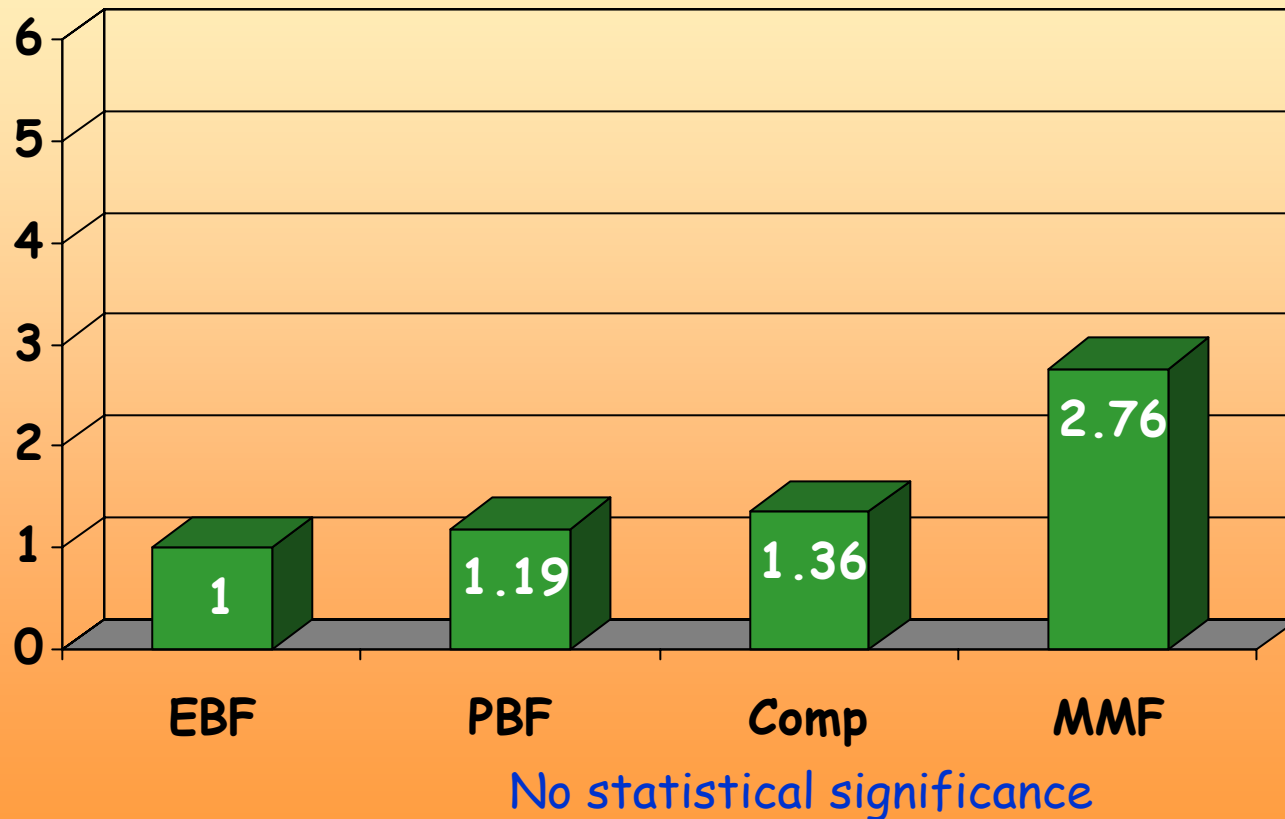
# Hazard Ratios

(babies of HIV+ mothers, adjusting for birth weight, CD4, arm circumference, "ever")



# Hazard Ratios

(babies of HIV- mothers, adjusting for birth weight, "ever")



# Conclusions

- The dilemma over breast or formula is difficult
- There is scope and possibility to substantially increase exclusive breast feeding rates
- Exclusive breast feeding is associated with lower mortality than mixed feeding