

Infant Feeding in the Context of HIV Infection

When breastfeeding is the only option



ICAP

International Center for AIDS
Care and Treatment Programs

MAILMAN SCHOOL OF PUBLIC HEALTH
Columbia University

Overview

- Breast is best
- Formula feeding is dangerous in most of our settings
- Risks of postnatal transmission through breastfeeding
- What to recommend?

Breast milk is best for babies

- Breastfeeding provides optimal nutrition for first 6-12 months of life
- Breastfeeding protects children against mortality: (*WHO Collaborative Study, Lancet 2000*)

Age	OR
< 2m	5.8
2-3m	4.1
4-5m	2.6



Photo from Kenya - IBFAN-Africa

Breast milk is best for babies

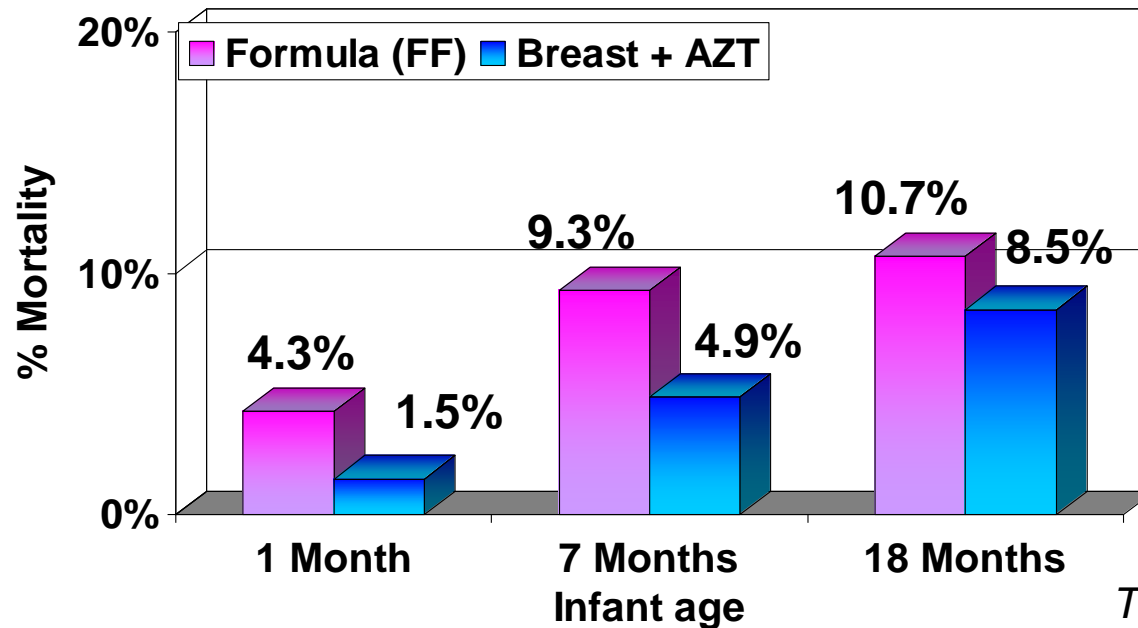
- Children who receive replacement feeds and do not breastfeed are at increased risk of mortality
 - Risk is highest in the youngest infant
 - Also at increased risk for respiratory infections and diarrhea
- An estimated 1,300,000 deaths in children U5 could be prevented if all children were breastfed (*Jones et al., Lancet 2003*)

Replacement feeding is not safe

Replacement feeding is associated with a high risk of serious diarrheal infections and malnutrition

- Formula is often unsafe having been diluted, improperly mixed, given inconsistently or prepared with unclean water
- Babies miss out on the general health benefits of breast milk

Formula Feeding is associated with less HIV transmission but higher rates of early death in Mashi Study (Botswana)



- HIV transmission was **higher** in the breast fed (BF) group
- **Early mortality** was **higher** in the **formula fed (FF)** group
- Overall, no difference in 18 month HIV-free survival:
HIV or death at 18 months: 14.2% in FF vs. 15.6% in BF

CDC case study of diarrhea outbreak in Botswana, Feb-Mar 2006

N	153
Age	97% < 2 years

Not breastfeeding was associated with 8.5-fold increased risk of mortality

100% infected	100%
Death	22% (33/153)

Breastfeeding Poses a Substantial Risk for MTCT

- While breast milk contains all of the elements needed for perfect infant nutrition, it is also contains the HIV virus
 - When a mother breastfeeds, her baby is exposed to HIV
- Transmission can occur throughout the entire time that a child breastfeeds
- Absolute risk of a mother transmitting HIV via breastfeeding is 9.3% (18 months)
- Absolute risk per month = 0.8%

Several factors can increase the risk of MTCT during breastfeeding (1)

- Longer duration of feeding
 - Infants can acquire infection at any time during breastfeeding. The longer a child breastfeeds, the higher the risk.
- Mixed Feeding
 - Giving a baby food or drink while breastfeeding increases the risk of transmission
 - BF and solids (soft porridge – traditional or commercial) at any age HR 10.9
 - BF and Formula HR 1.8

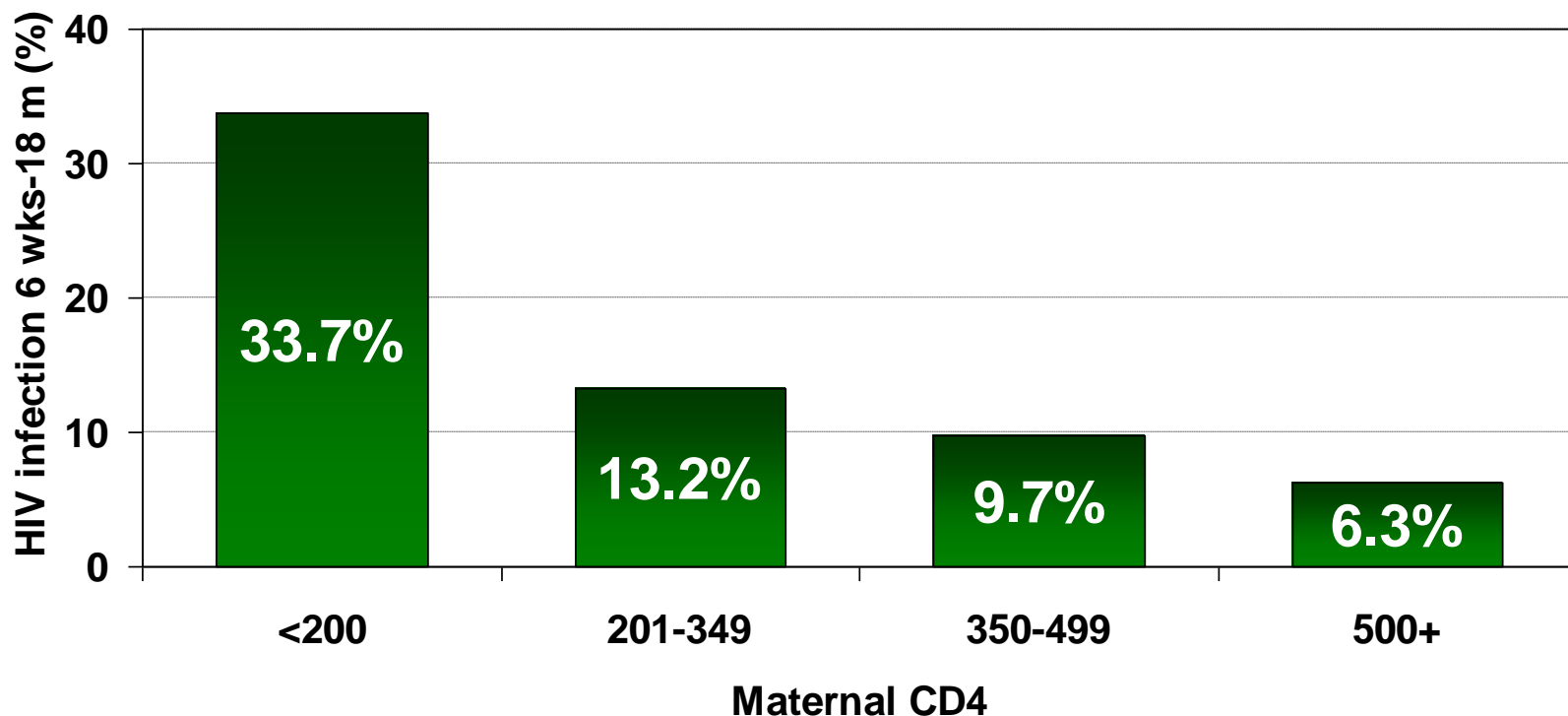
Coovadia et al., Lancet, 2007

Several factors can increase the risk of MTCT during breastfeeding (2)

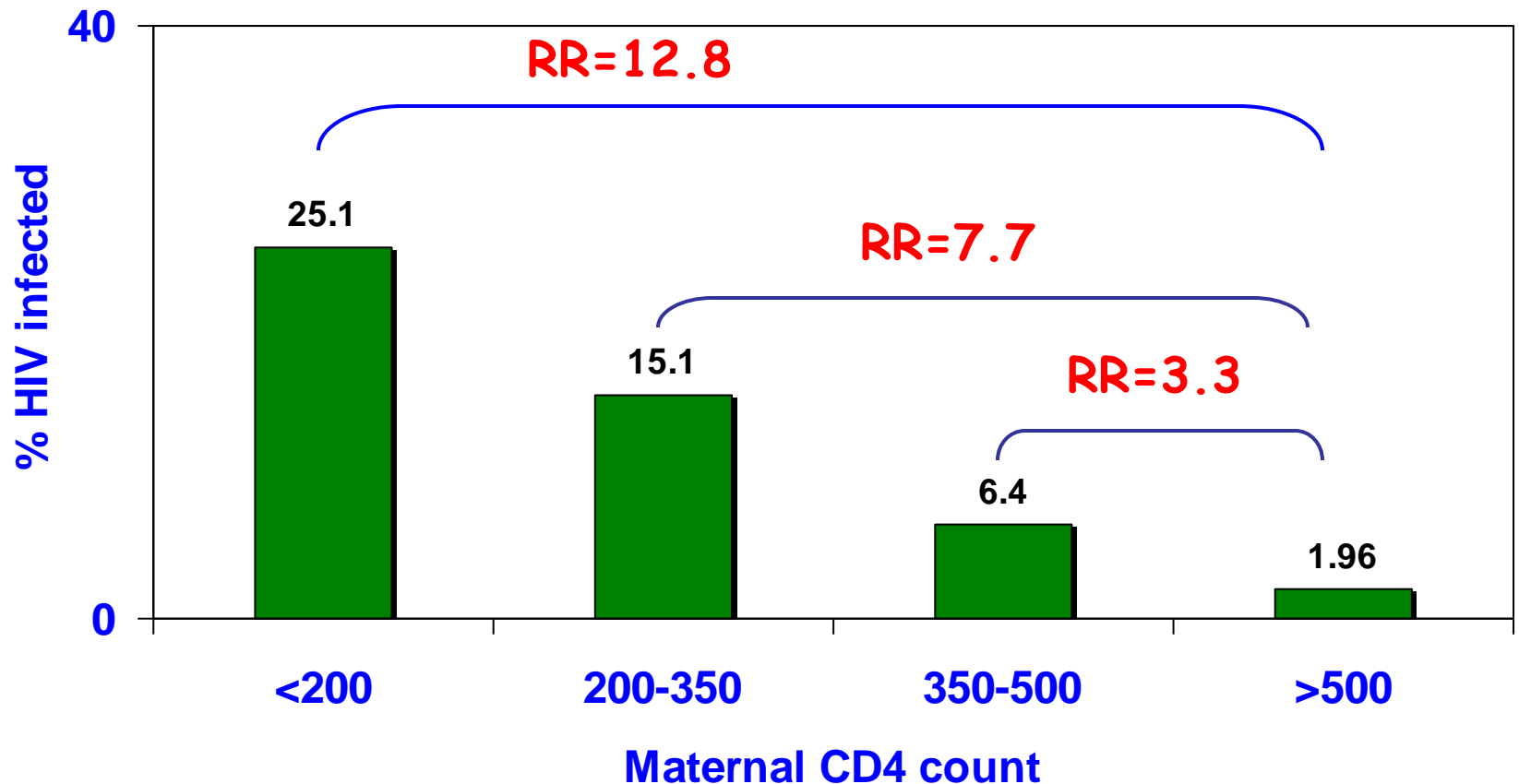
- More advanced maternal disease
 - Women with high viral load and low CD4 are more likely to transmit HIV during pregnancy and *during breastfeeding*
- Breast problems like mastitis, cracked nipples
- Acute maternal infection
 - If an uninfected woman becomes infected during pregnancy or lactation the risk of MTCT is dramatically increased

Women with Advanced HIV Disease are at Higher Risk of Infecting Their Infants through Breastfeeding

Rate of Postnatal HIV Infection from Age 6 Weeks - 18 Months by Maternal Baseline CD4 Count: ZVITAMBO Study (N=2,055)



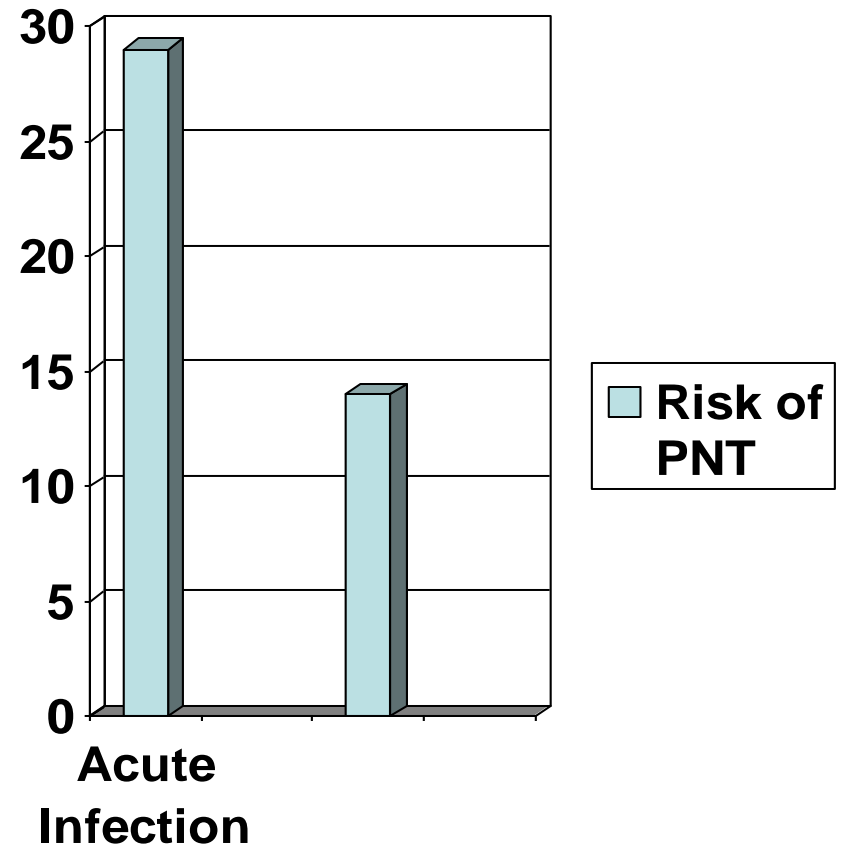
Postnatal HIV Transmission is Strongly Related to Maternal CD4 count, ZEBs



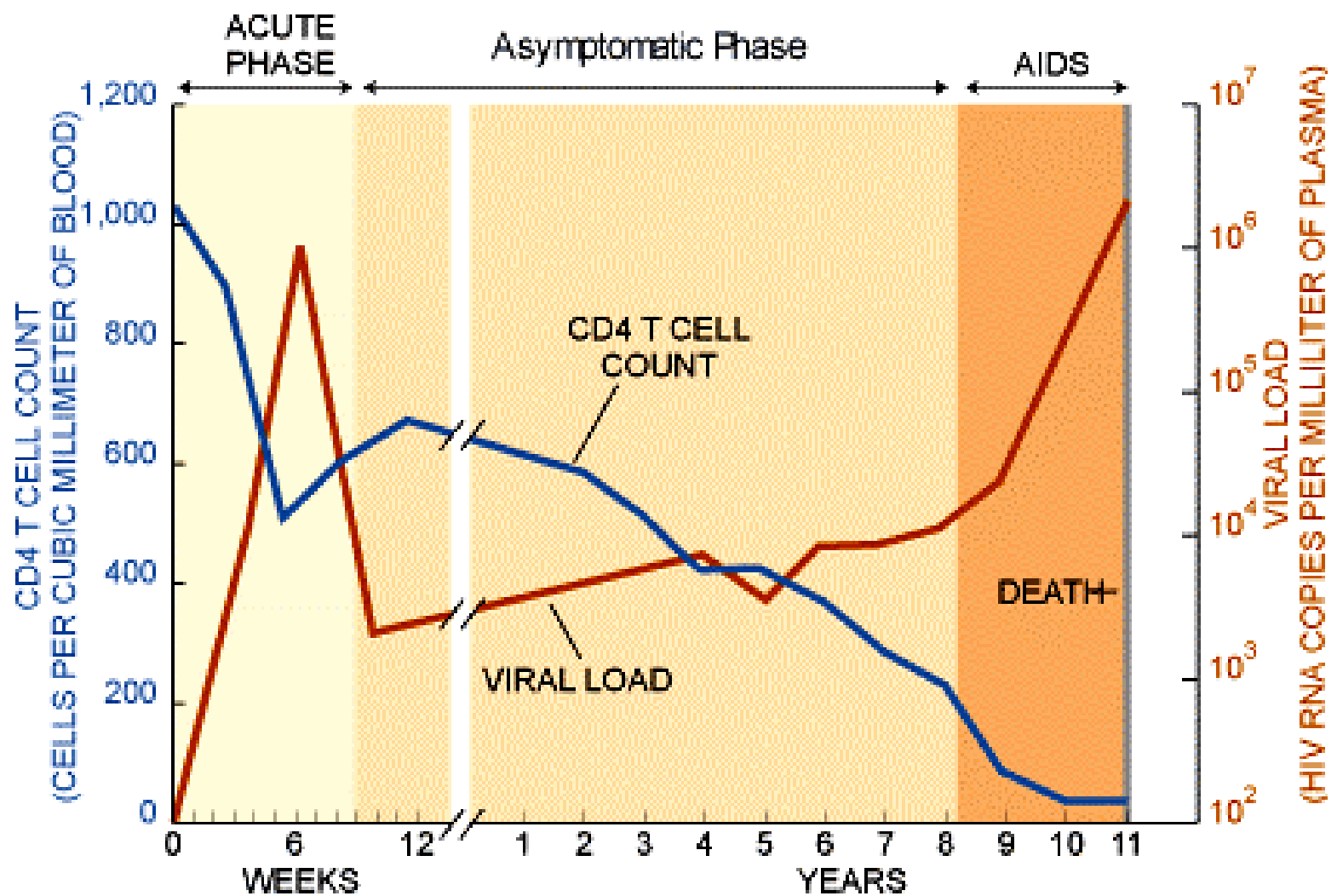
- < 200: 45% of postnatal infections
- < 350: 83% of postnatal infections

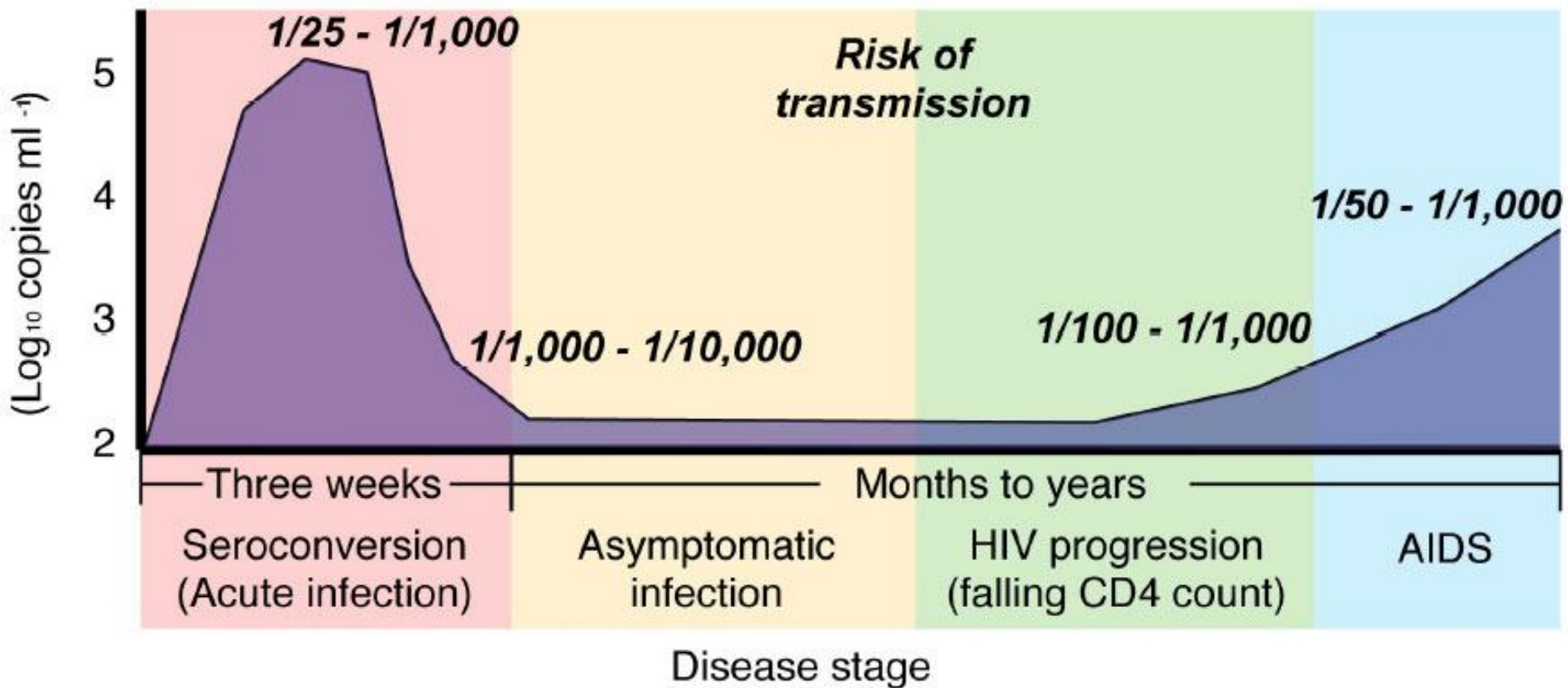
Seroconversion during breastfeeding increases postnatal transmission

- In a meta analysis of 4 studies from Zambia, Rwanda, Zaire and Australia, the risk of breast milk transmission from a mother who became infected during pregnancy was 29% compared to 14% in women with chronic infection.



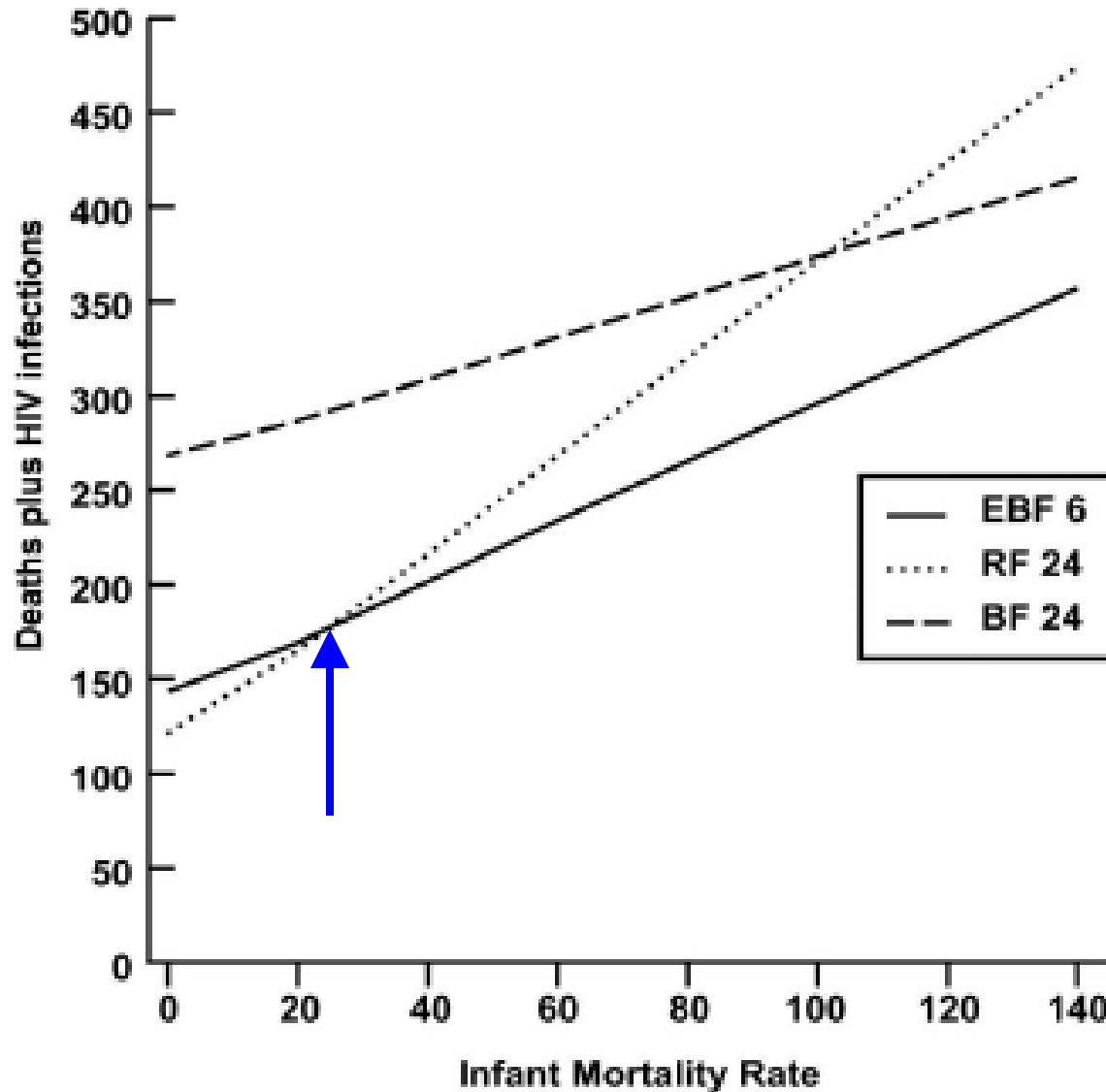
Dunn DT et al, Lancet 1992





Source: Galvin, S.R. & Cohen, M.S. (2004) The role of sexually transmitted diseases in HIV infection. *Nature Reviews Microbiology*, 2(1).

Guidance for national level



IMR > 25/1000:
EBF

Infant Mortality rates in selected countries

IMR in selected countries¹

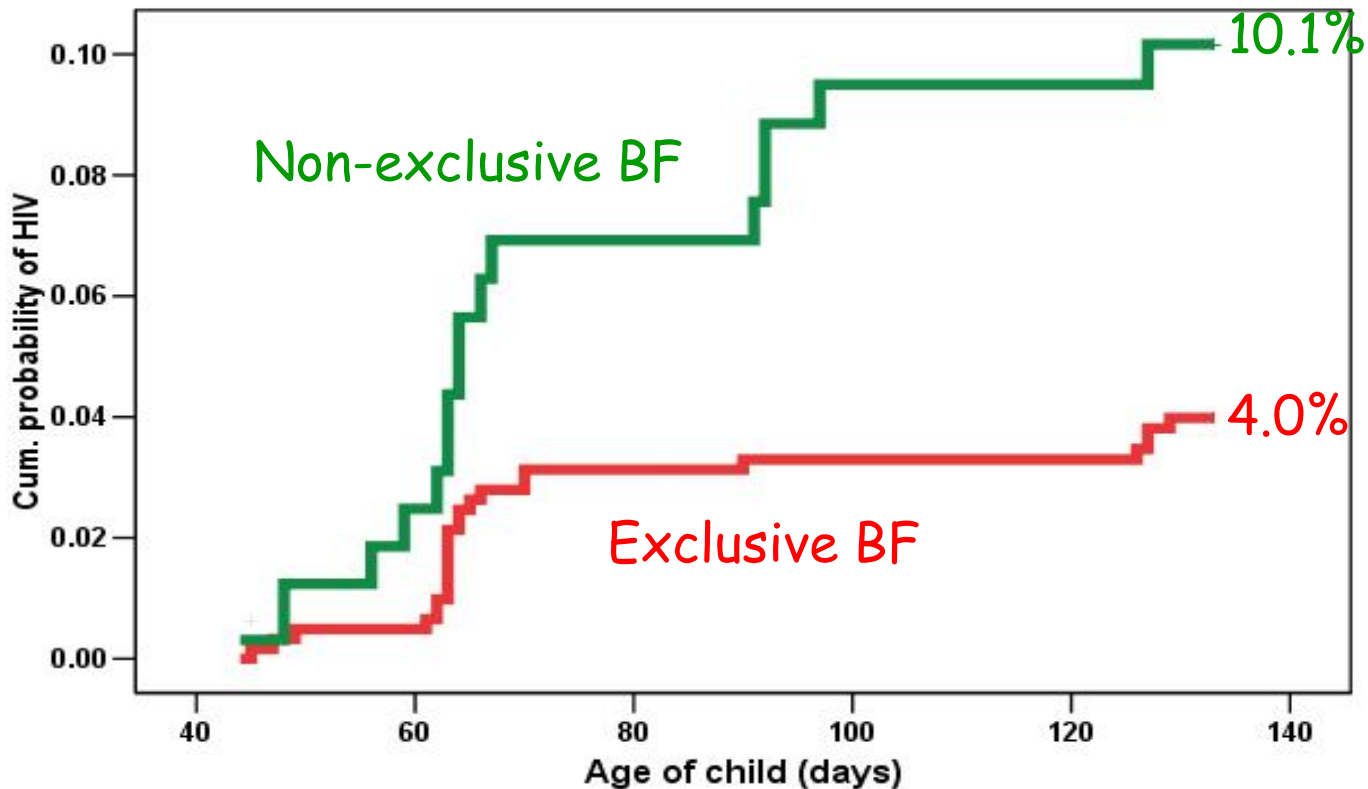
IMR 25–43		IMR 44–100		IMR \geq 101	
Country	IMR	Country	IMR	Country	IMR
Honduras	32	Guyana	54	Zambia	102
Brazil	33	Namibia	55	Tanzania	104
El Salvador	33	Ghana	60	Ethiopia	113
South Africa	52	India	65	Malawi	113
		Kenya	78	Côte d'Ivoire	116
		Haiti	79	Rwanda	118
		Botswana	80	Mali	122
		Uganda	83	Mozambique	128
		Nigeria	100	DR Congo	129
				Angola	154

Recommendations

- In the countries where we work: strong recommendation to advise
 - exclusive breastfeeding for ALL mothers (both HIV positive and negative) for the first 6 months
 - Complimentary feeding introduced at 6 months with continued breastfeeding up to 12 – 18 months
- We should strive to make breastfeeding safer for mothers and children:
 - Exclusive Breastfeeding
 - HAART for mothers who qualify

Promote and support Exclusive
Breastfeeding

Exclusive Breastfeeding is associated with Decreased Early Postnatal Transmission



Only including postnatal transmission rates

Infant feeding in Africa

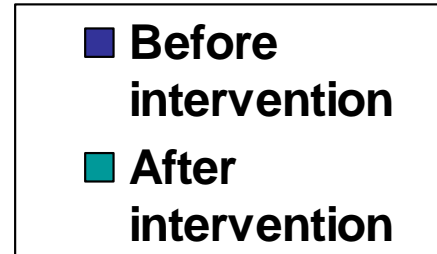
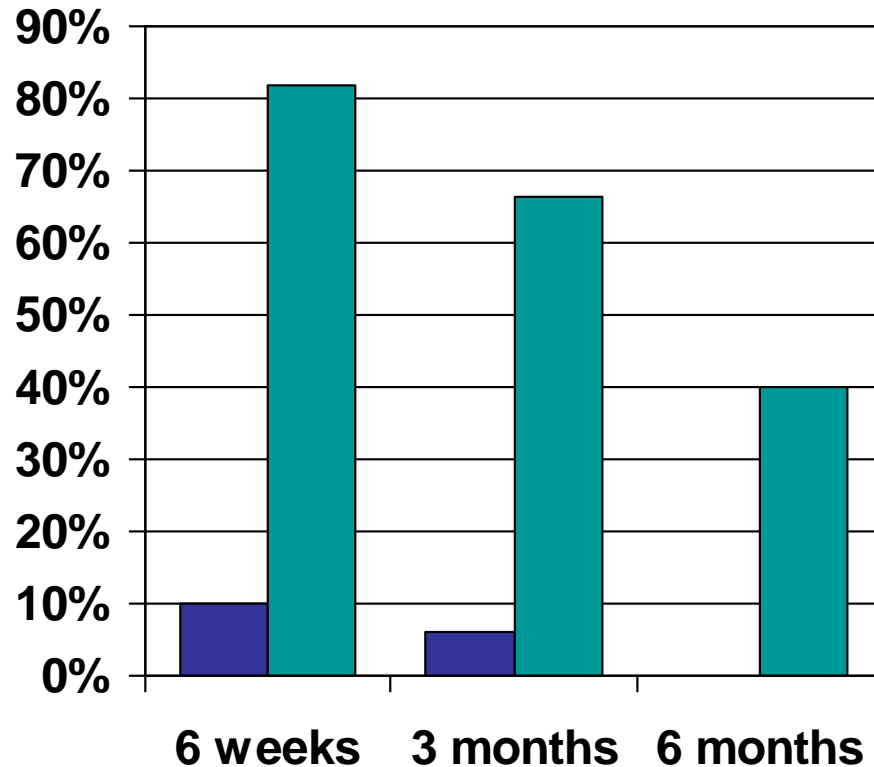
- Majority of women in Africa breastfeed their infants
 - However, exclusive breastfeeding is not very common for of a variety of reasons
 - Can you list some of the reasons why women may not exclusively breastfeed?
- Majority of women in Africa breastfeed until the child is 18-24 months old



Photo from TZ - IBFAN-Africa

We can change breastfeeding behaviour

Duration of EBF



Intervention: 3- 4 home visits by feeding counselors first 2 weeks of life and then bi-weekly visits up to 6 months

We can change breastfeeding behaviour

Singapore (450 women): RCT

Intervention:

- Group A: none
- Group B: 1 session on EBF during ANC visit, plus IEC materials
- Group C: 1 post natal EBF counseling session in hospital after delivery plus 1 counseling session during first PNC visit, plus IEC materials

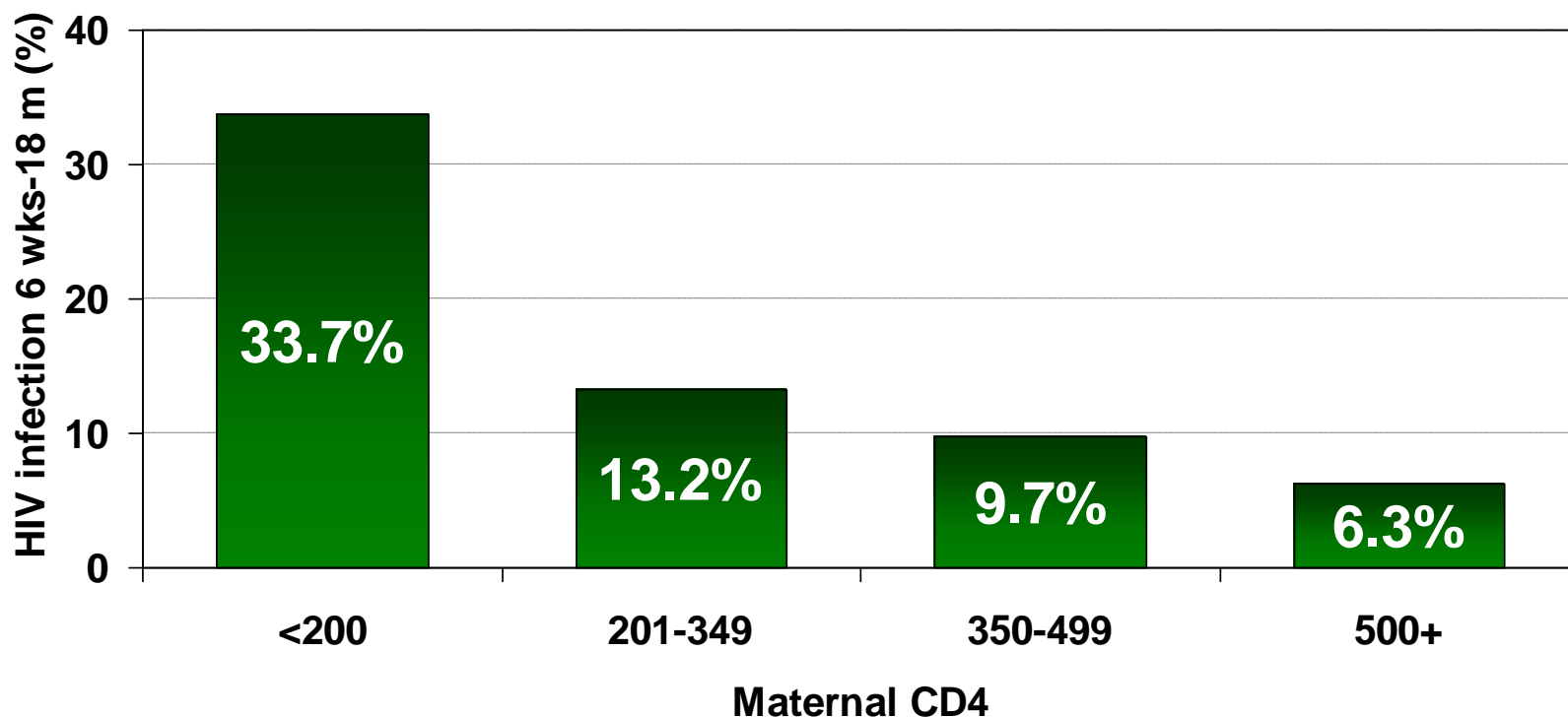
Results:

Both interventions doubled EBF rates at 6 months

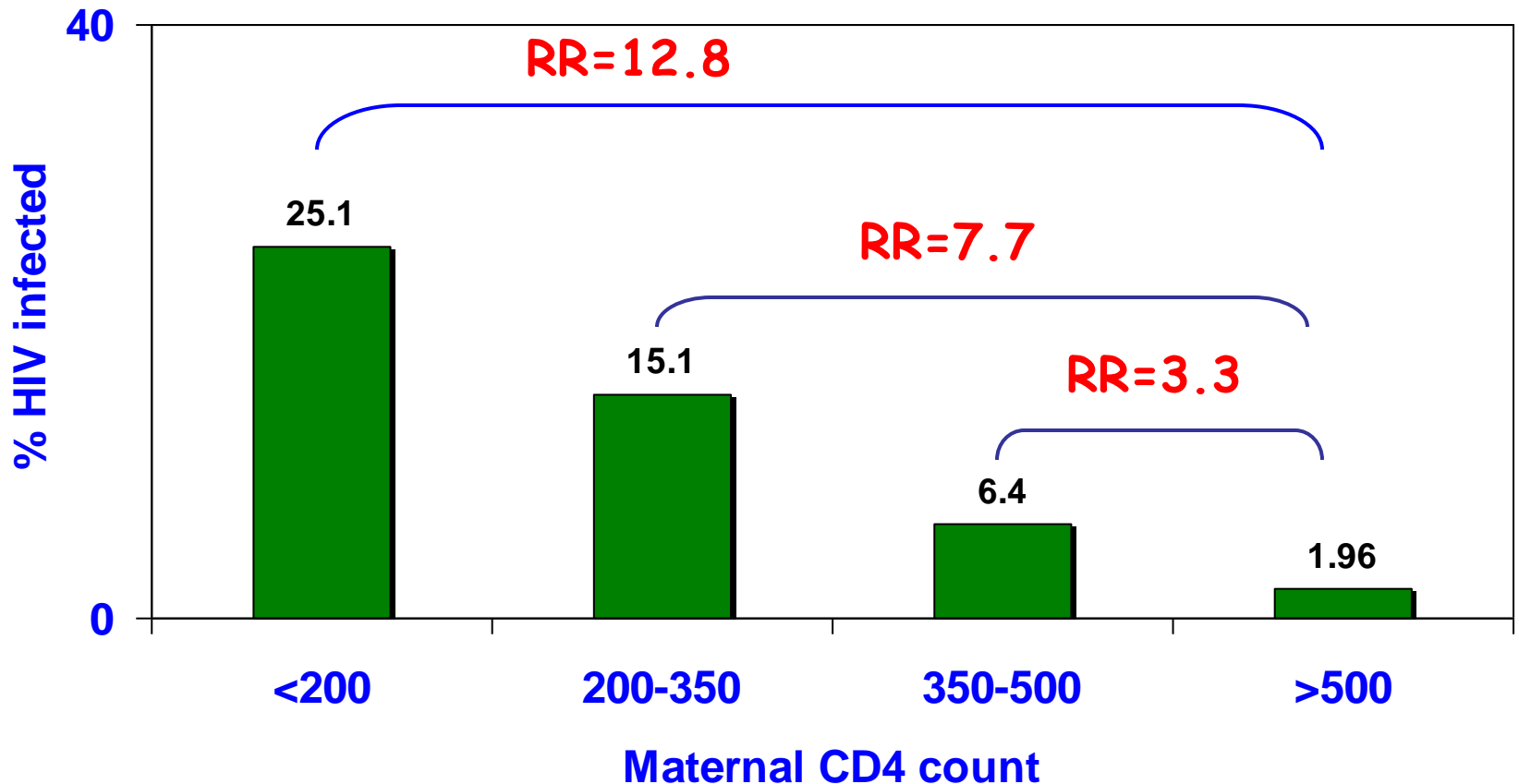
Initiate pregnant and lactating
women on HAART

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How can we decrease postnatal transmission?

- **S**creen mothers for treatment eligibility
- **T**reat sick mothers
 - Treat pregnant and lactating HIV-infected women with low CD4 and advanced disease
- **A**ctively support Exclusive Breastfeeding for as long as possible until 6 months
 - Avoid mixed feeding
 - Avoid early weaning
 - Avoid abrupt weaning
- **C**omplementary feeding should be initiated after 6 months and breastfeeding should continue until 12-18 months.
- **K**eep mothers and infants engaged in care