Vote YES for

BREAST FEEDING

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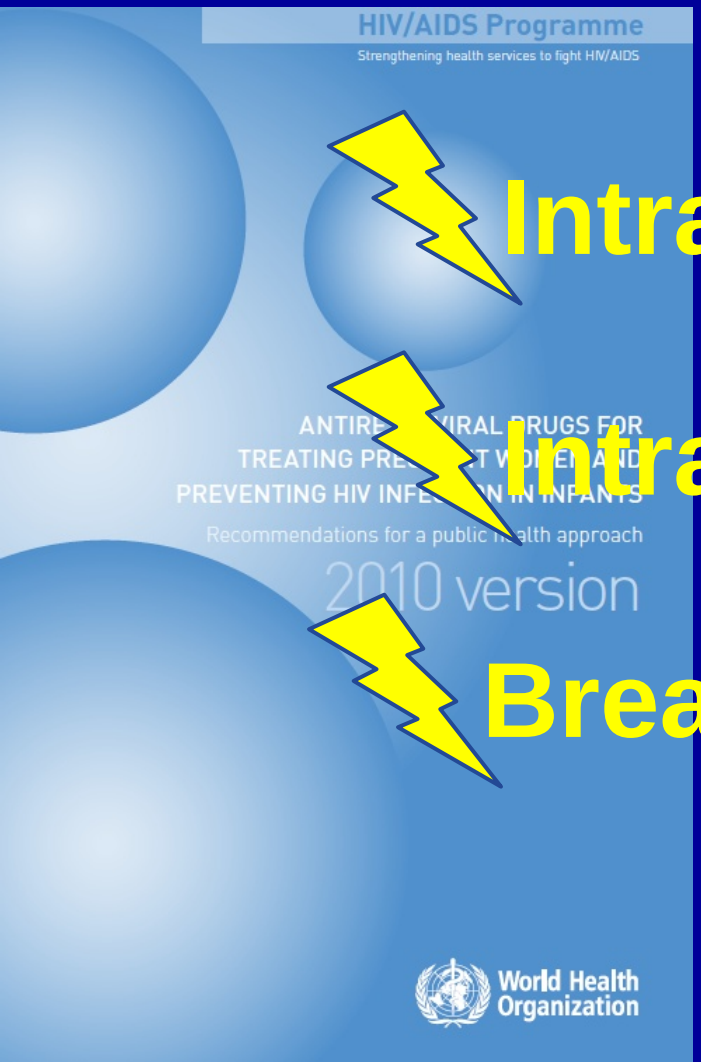
The 2010 Revolution:

Antiretroviral drugs work to prevent mother-to-child HIV transmission



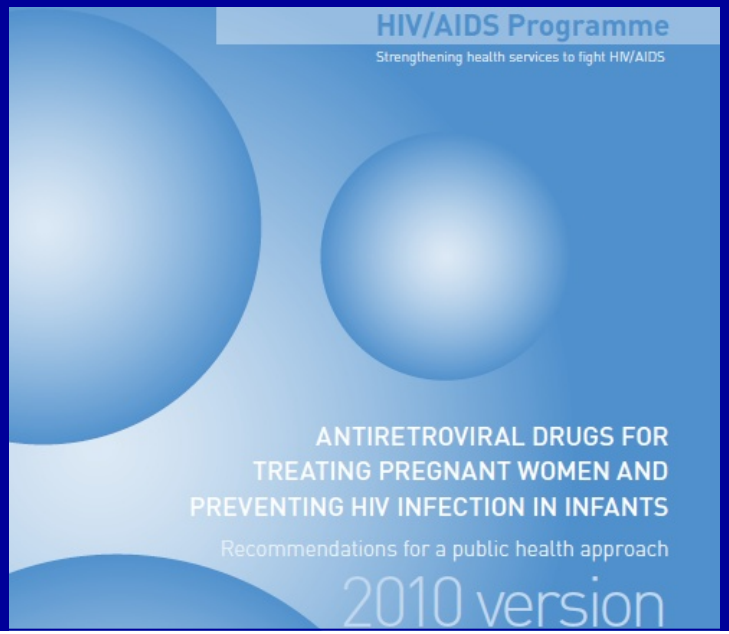
Intrauterine transmission

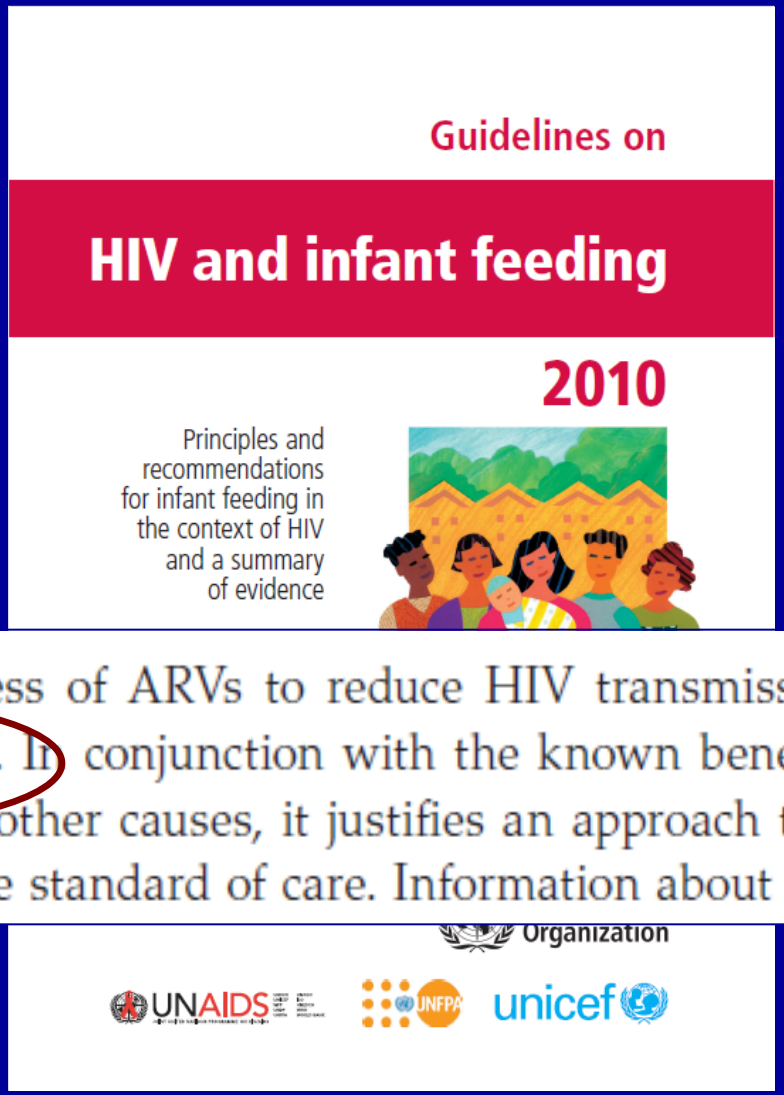
Intrapartum transmission

Breastfeeding transmission

The 2010 Revolution Continues:

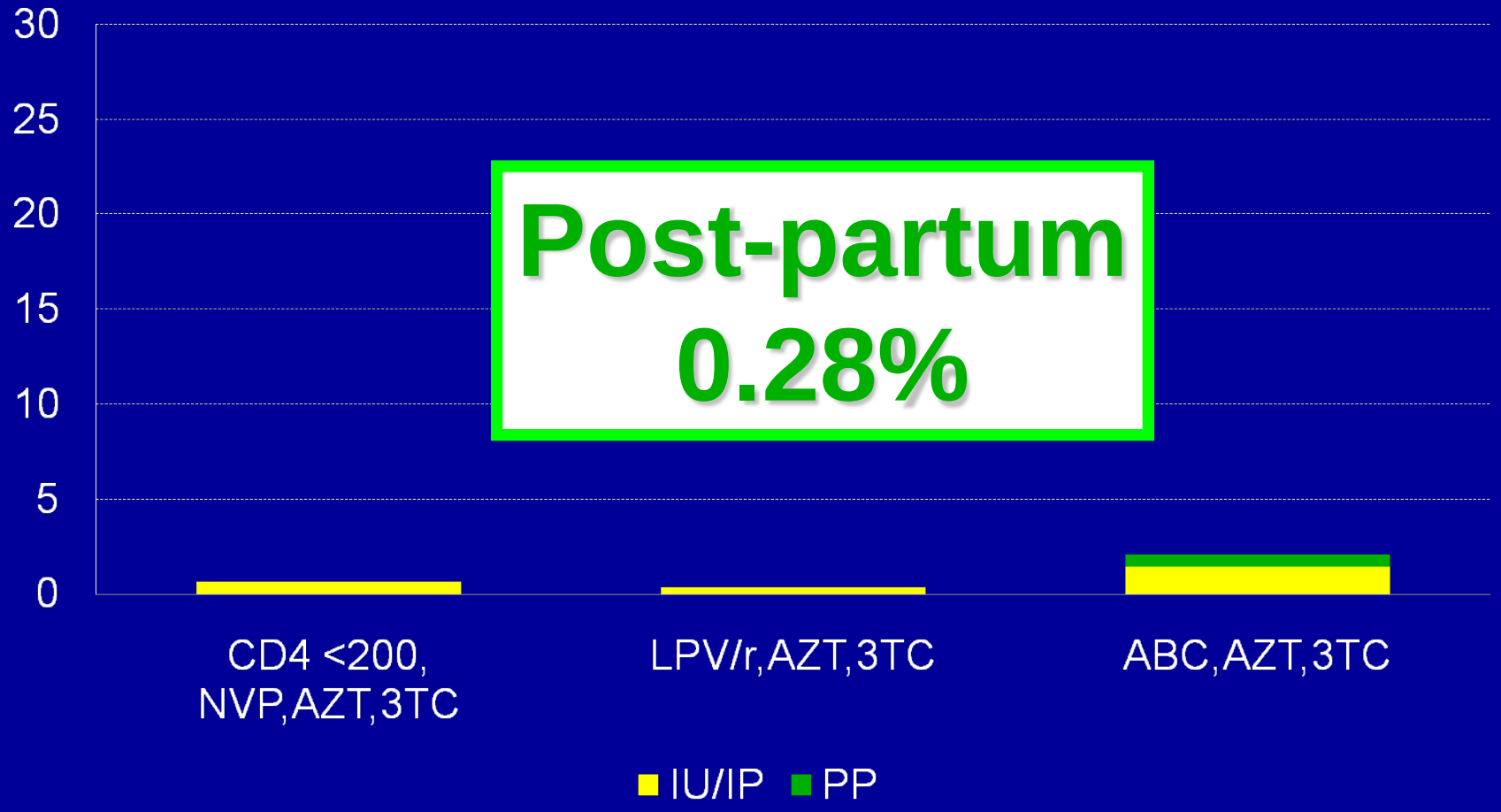
Win-Win Breastfeeding + ARVs





The group considered that the effectiveness of ARVs to reduce HIV transmission through breastfeeding[1] is transformational. In conjunction with the known benefits of breastfeeding to reduce mortality from other causes, it justifies an approach that strongly recommends a single option as the standard of care. Information about op-

Transmission rates among women breastfeeding to 6 months in MmaBana Study, Botswana

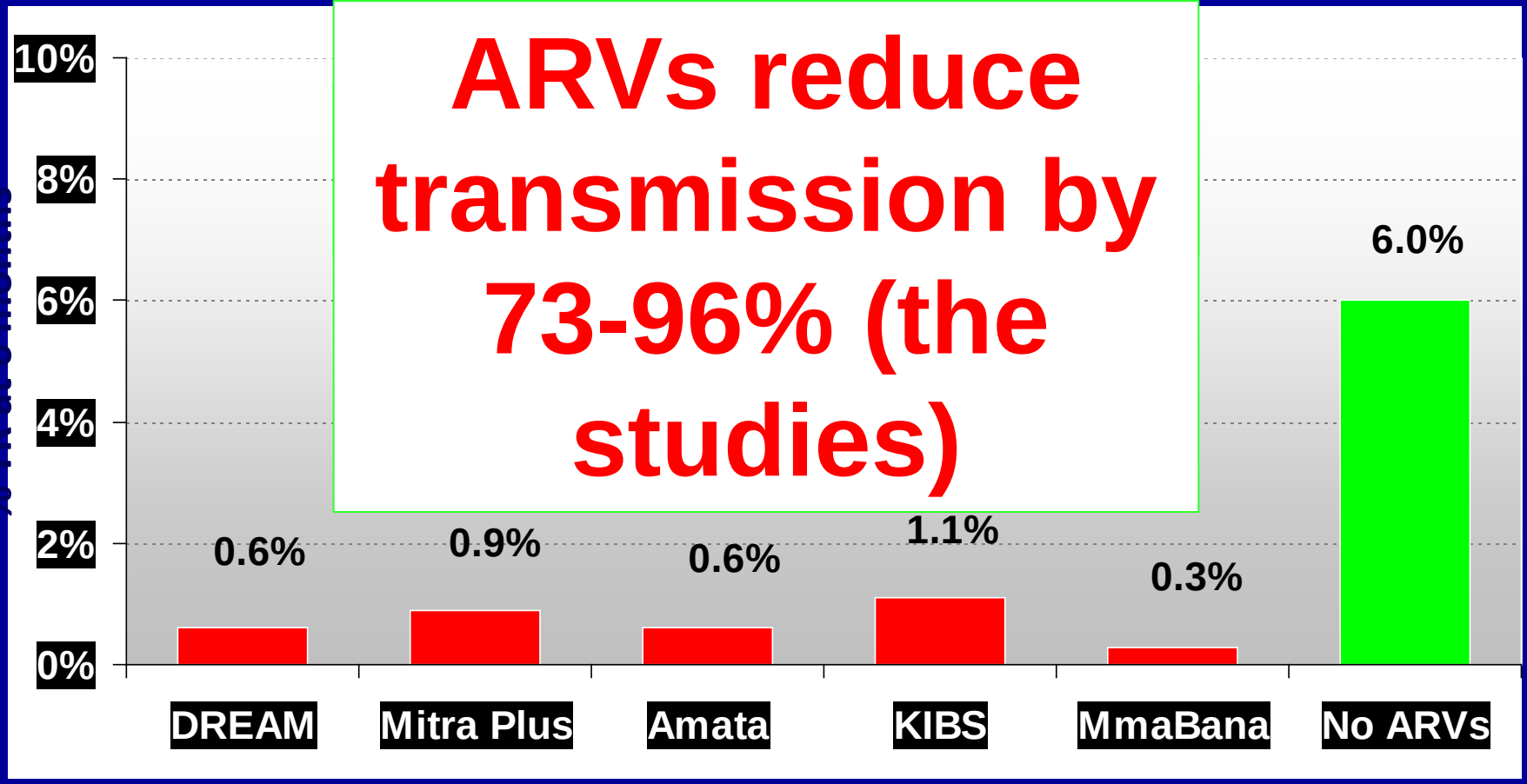


Shapiro et al. NEJM 2010; 362: 2282-2294

The future's so bright … I've gotta wear shades

ARVs work to prevent breastfeeding transmission

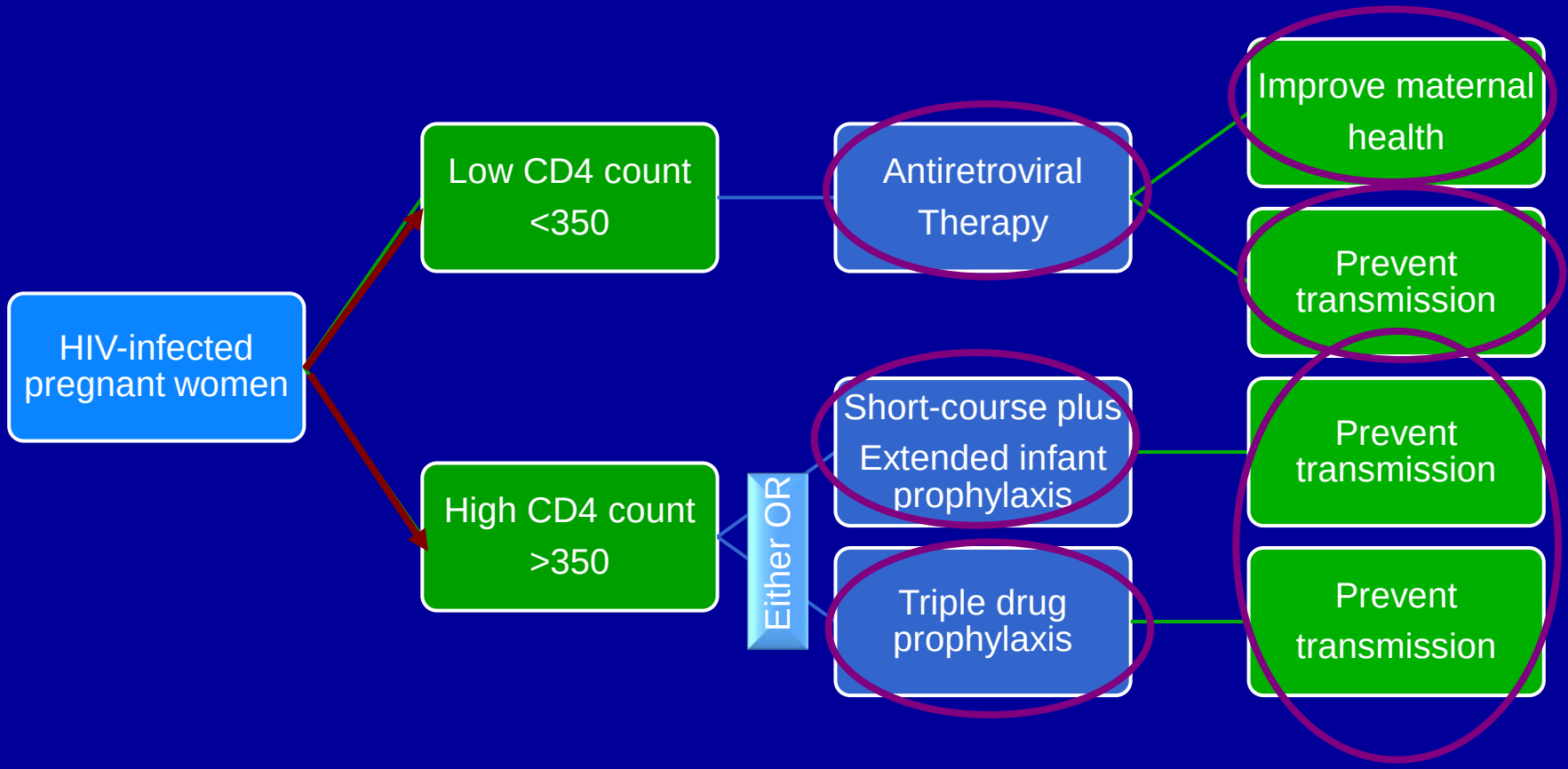
Breastfeeding transmission rates by 6 months



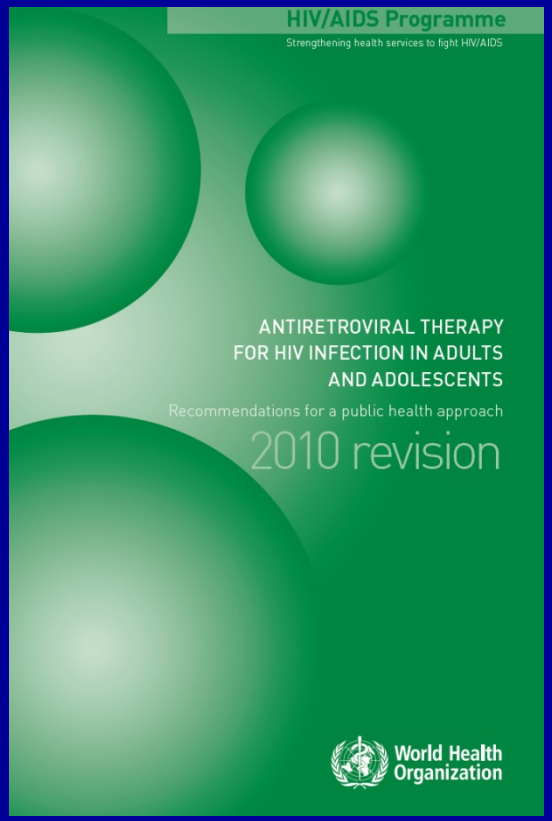
Courtesy: Lynne Mofenson

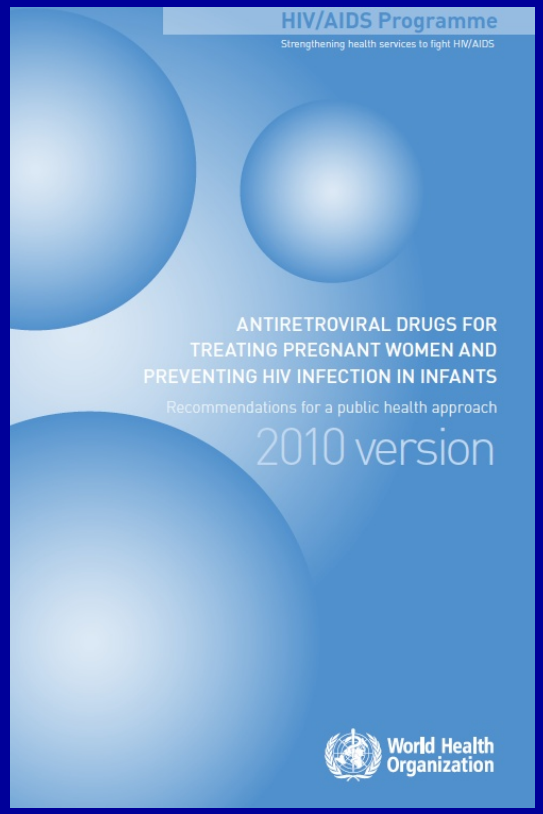

Look carefully at the numbers
they matter
ARVs work to prevent breastfeeding transmission
and save their mothers' lives

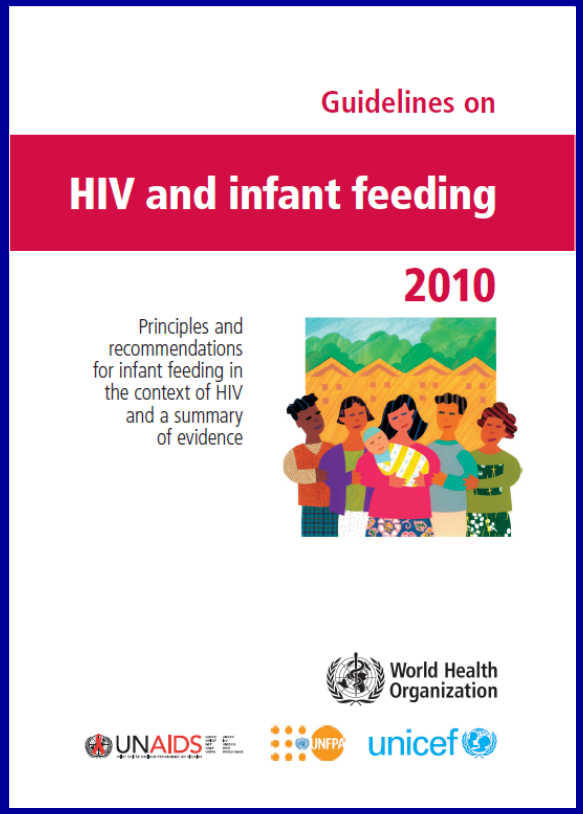
New guidelines for prevention of mother-to-child HIV transmission with antiretroviral drugs



The 2010 revolution had three parts



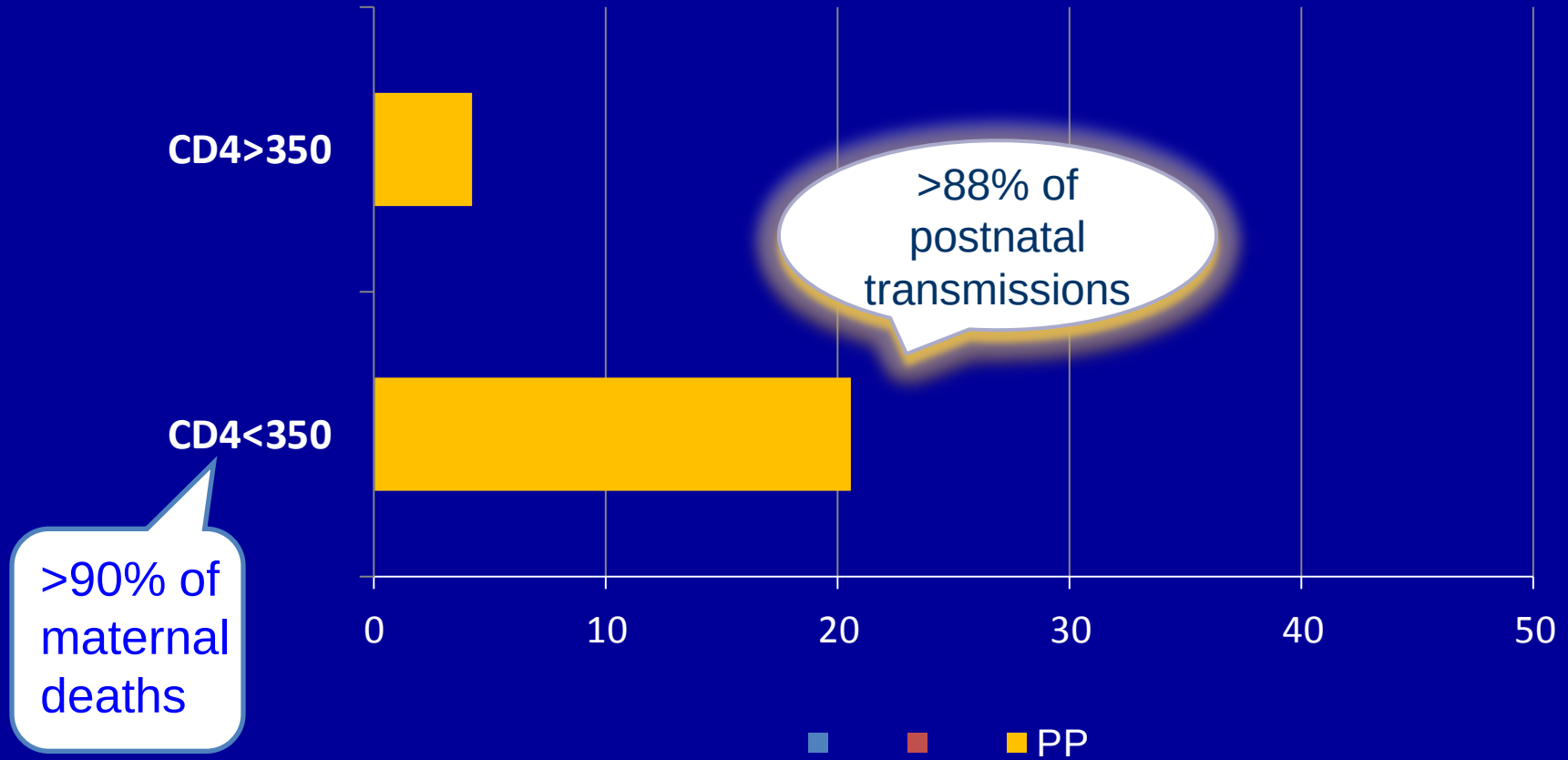




New recommendations available at:
http://www.who.int/hiv/en/

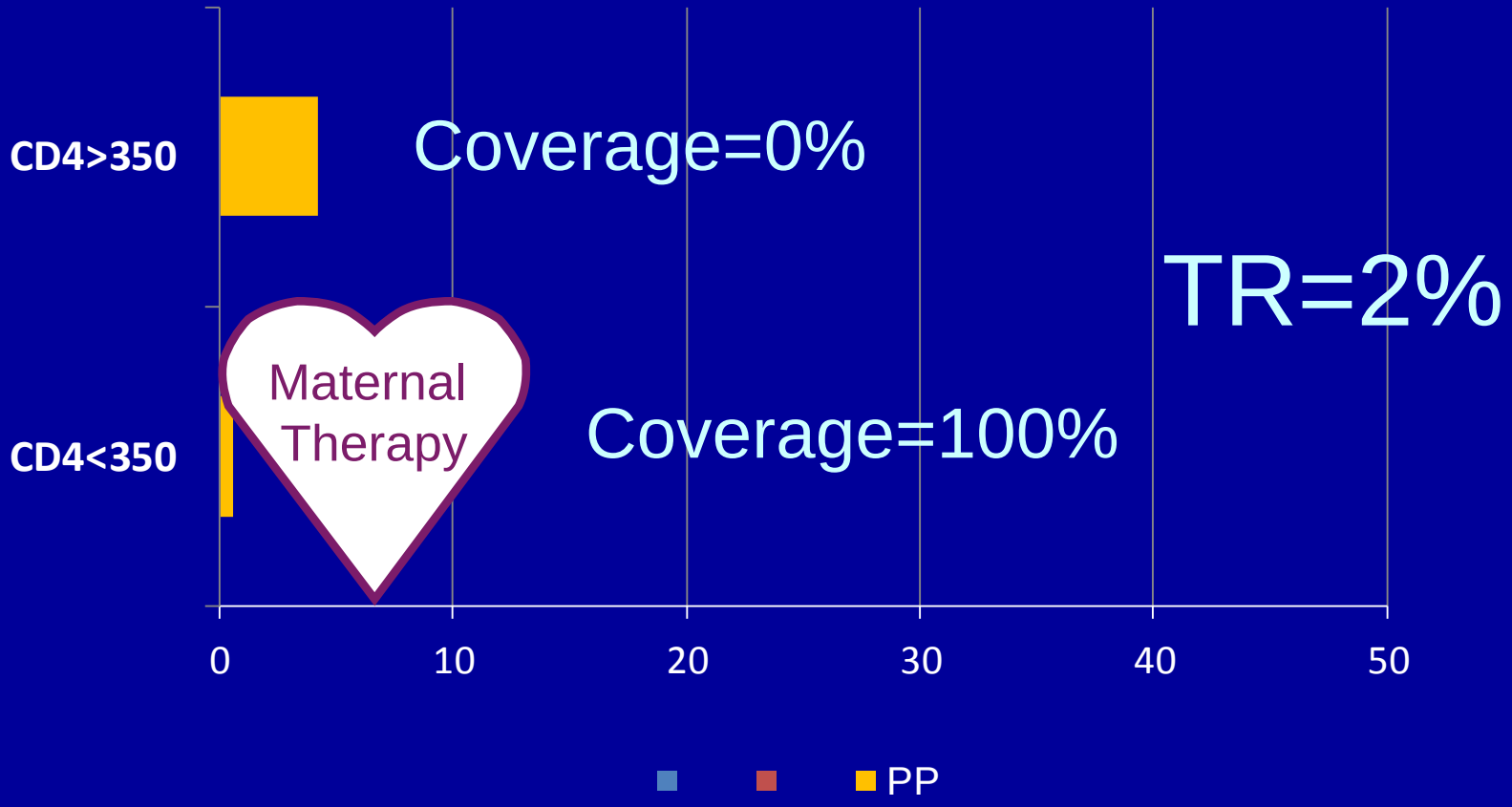
PMTCT requires coordinated efforts across the health service

CD4 count strongly predicts which children will acquire HIV via breastfeeding



Kuhn et al. AIDS 2010; 4:1374-7.

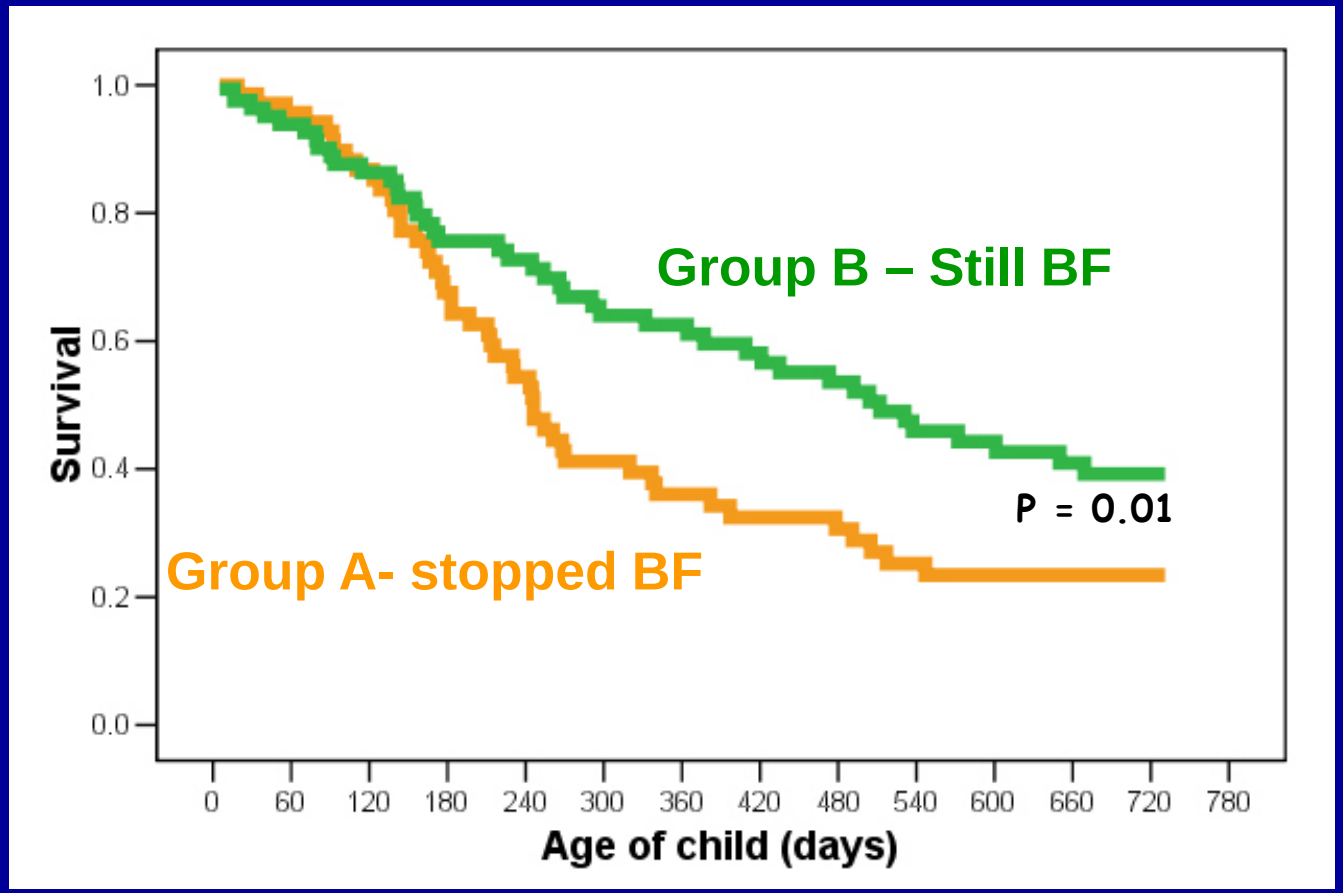
What would happen if only those running adult treatment services did their job properly



I'D LIKE TO BE AN
OPTIMIST BUT
I DON'T THINK
IT'LL WORK OUT

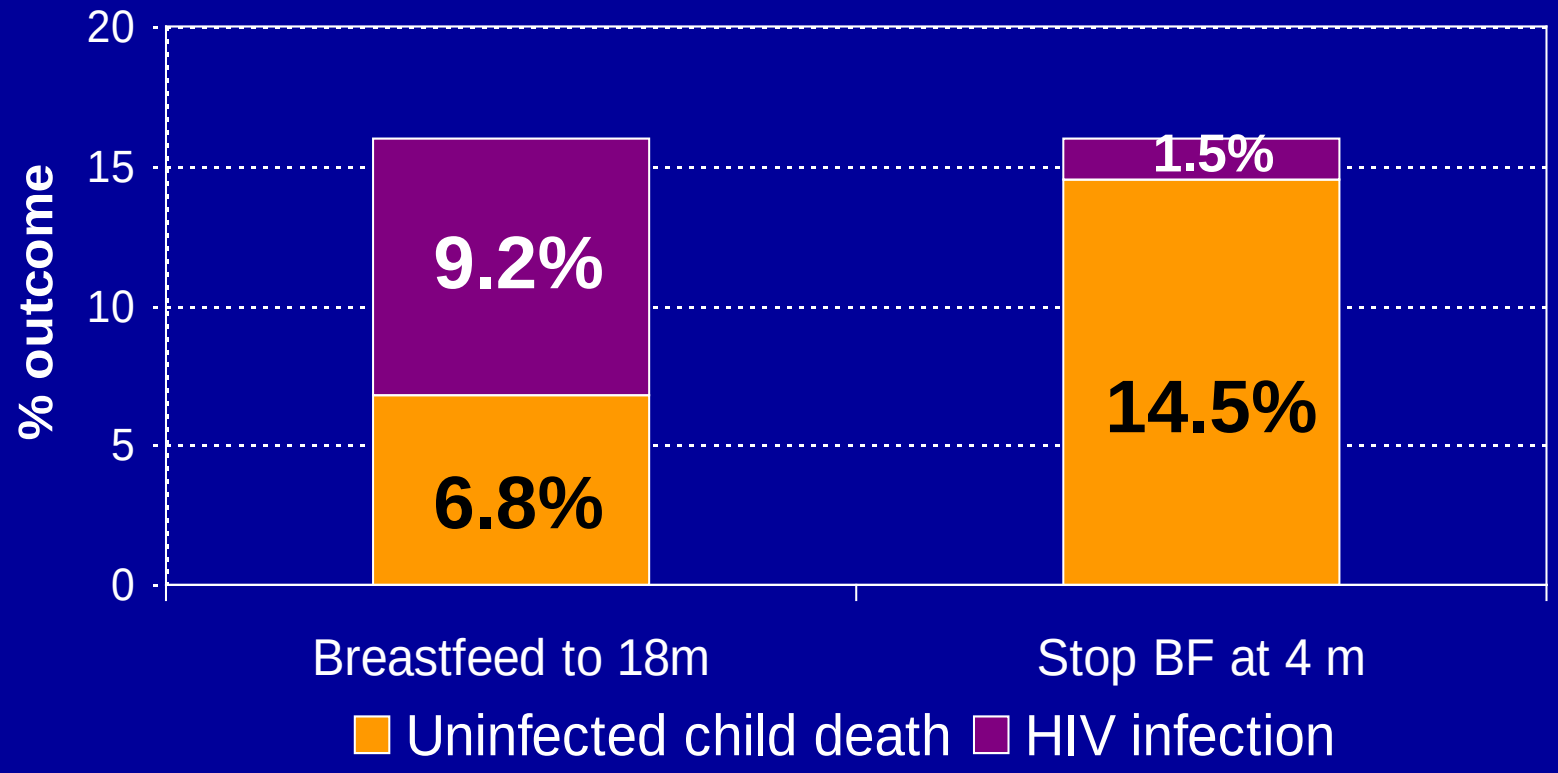
Early cessation of breastfeeding is harmful to HIV-infected children

Survival of HIV-infected Children with Positive Results before 4 Months of Age by Group Assignment



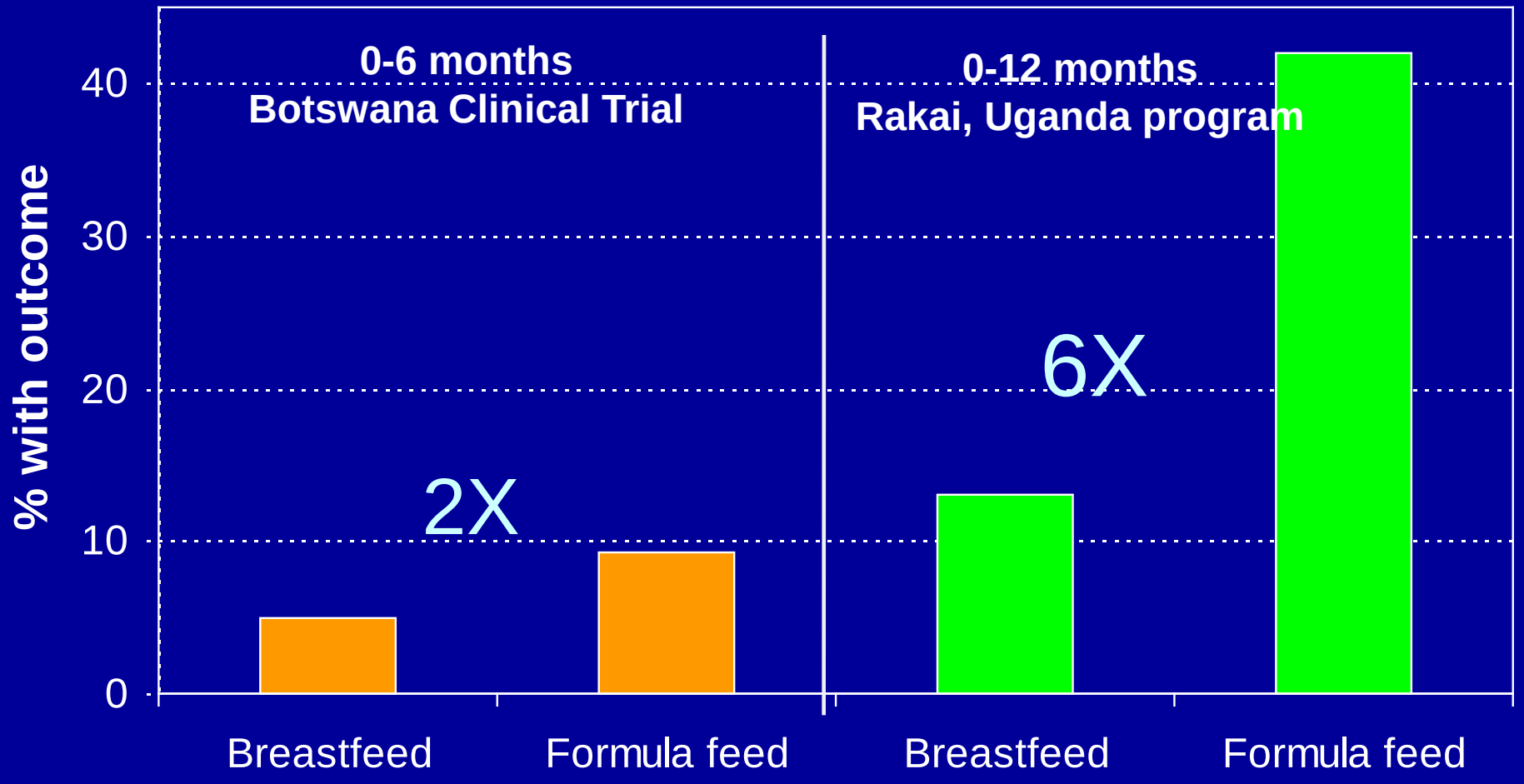
Kuhn Aldrovandi, Sinkala et al. ***N Engl J Med*** 2008; 359:130-41

Mortality caused by early weaning canceled out HIV transmission prevented



Kuhn L, Aldrovandi G, Sinkala M et al. ***PLoS One*** 2009; June 4: e6059

Clean water, good sanitation, education and health services reduce but do not eliminate adverse effects of abstinence from breastfeeding



Thior I, Lockman S, Smeaton LM et al. ***JAMA*** 2006; 296: 794-805

Kagaayi J, Gray RH, Brahmbhatt H. et al. **PLoS ONE** 2008; Dec 3: e3877

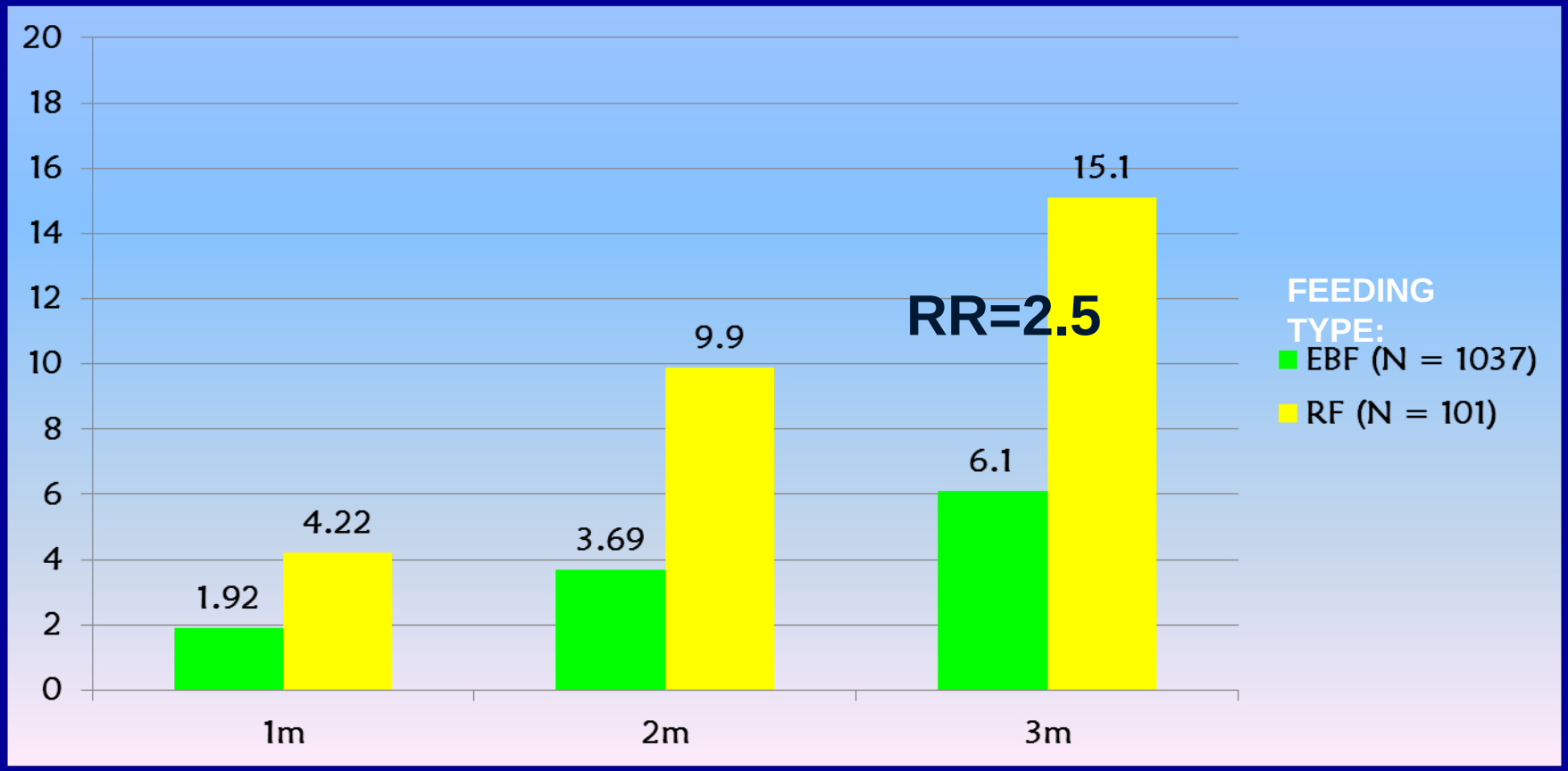
Increas… in HI… … 2 Years …alawi

Exclusive is better than Mixed but …. Mixed is better than NO breastfeeding

	…ty(95%CI)
Not BF vs. Exclusive breastfeeding	9.09 (2.94-25.0)
Not BF vs. Mixed breastfeeding	2.70 (1.45-5.0)

Taha TE *et al*. Bull WHO 2006; 84:546-54; Taha TE *et al*. Clinical Infectious Disease 2011; 53:388-395

Survival in the First 6 Months of Life Vertical Transmission Study, South Africa



Cumulative mortality according to initial infant feeding type (%)

Coovadia H *et al*. Lancet 2007


Face Facts:
Avoiding breastfeeding is dangerous

Netherlands Birth Cohort: Generation R Study: 4164 births 2002-06

Breastfeeding protects against infectious diseases

Duration of Breastfeeding	≤6 mo, OR (95% CI)		
	URTI	LRTI	GI
Never breastfed	1.00	1.00	1.00
Exclusively for 4 mo, partially breastfed thereafter	0.65 (0.51–0.83)[a]	0.50 (0.32–0.79)[a]	0.41 (0.26–0.64)[a]
Exclusively breastfed for 6 mo	0.37 (0.18–0.74)[a]	0.33 (0.08–1.40)	0.46 (0.14–1.59)
P	<.01	<.01	<.01

Duijts et al. Pediatrics 2010; 126: e18

United Kingdom Millennium Cohort Study: 15890 births 2000-02

Breastfeeding protects against infectious disease hospital admissions during the first 8 months after birth

Infant Feeding	Monthly Prevalence, % (*n*/*N*)	Crude OR (95% CI)
Diarrhea		
Not breastfed	0.18 (158/86 648)	1.00
Partially breastfed	0.08 (17/19 887)	0.46 (0.24–0.88)
Exclusively breastfed	0.05 (11/20 352)	0.28 (0.14–0.58)
LRTI		
Not breastfed	0.49 (429/86 648)	1.00
Partially breastfed	0.25 (50/19 888)	0.50 (0.36–0.71)
Exclusively breastfed	0.30 (60/20 352)	0.60 (0.44–0.81)

Pediatrics 119(4):e837, 2007

US Agency for Healthcare Research & Quality (AHRQ), 2007

•Breastfeeding and Maternal and Infant Health Consequences in Developed countries

http://www.ahrq.gov/downloads/pub/evidence/pdf/brfout/brfout.pdf

	Exposure	Effect in full term infants
Lower Respiratory Tract Infection	Risk of hospitalization in < 1yr if EBF ≥4m	72% (95% CI 46% to 86%)
Diarrhea	Ever BF vs never BF	64% (95% CI 62% to 68%)
Acute Otitis Media	Ever BF vs no BF	23% (95% CI 9% to 36%)
Asthma- w FH	BF ≥3m; risk of asthma ≤ 10yr	40% (95% CI 18% to 57%)
Atopic Dermatitis	BF ≥3m	42% (95% CI 8% to 59%)
Childhood Obesity	Various BF exposures	24% (95% CI 14% to 33%)
SIDS	Ever vs. Never	36% (95% CI 19% to 49%)

US National Maternal and Infant Health Survey (n=8944)

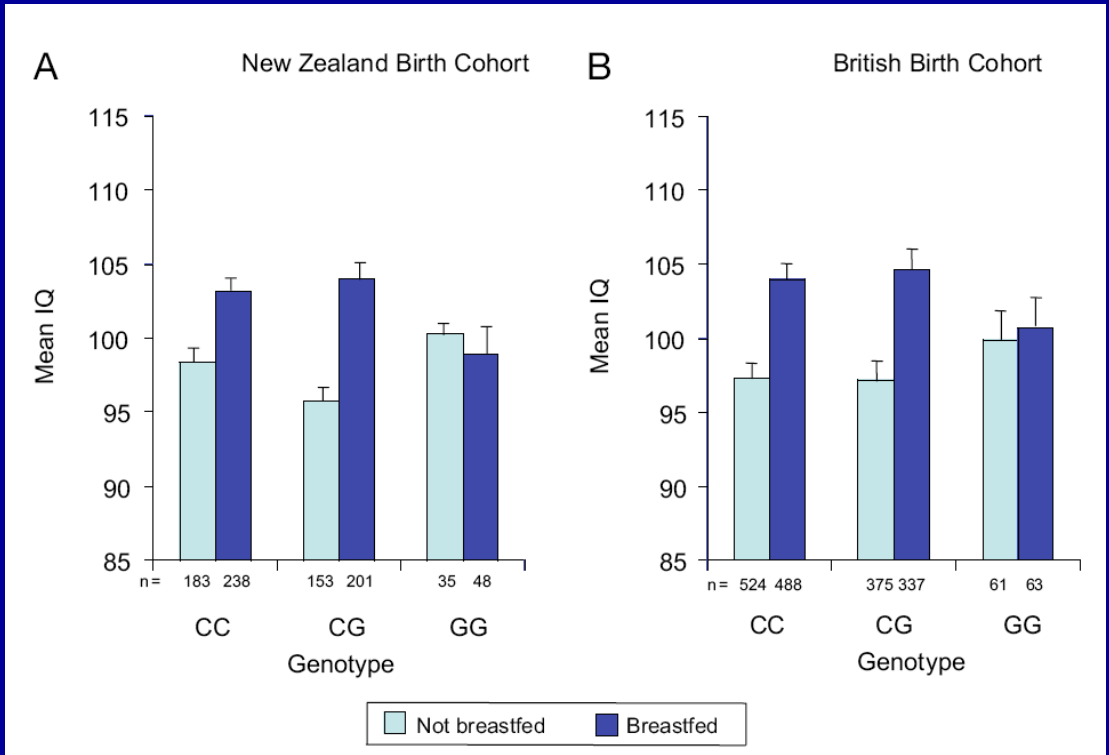
- Ever BF ⇓ postnatal deaths by 21% (RR 0.79, 95%CI: 0.67,0.93)
- If BF > 3m: postnatal deaths ⇓ by 38%
- Low uptake of BF among African Americans is one of the reasons for racial disparities in infant mortality in the US

Chen & Rogan. Pediatrics 113: 435-9, 2004

Moderation of breastfeeding effects on the IQ by genetic variation in fatty acid metabolism

Avshalom Caspi*†‡, Benjamin Williams*, Julia Kim-Cohen§, Ian W. Craig*, Barry J. Milne*, Richie Poulton¶, Leonard C. Schalkwyk*, Alan Taylor*, Helen Werts*, and Terrie E. Moffitt*†

PNAS:2007(104):47;18861

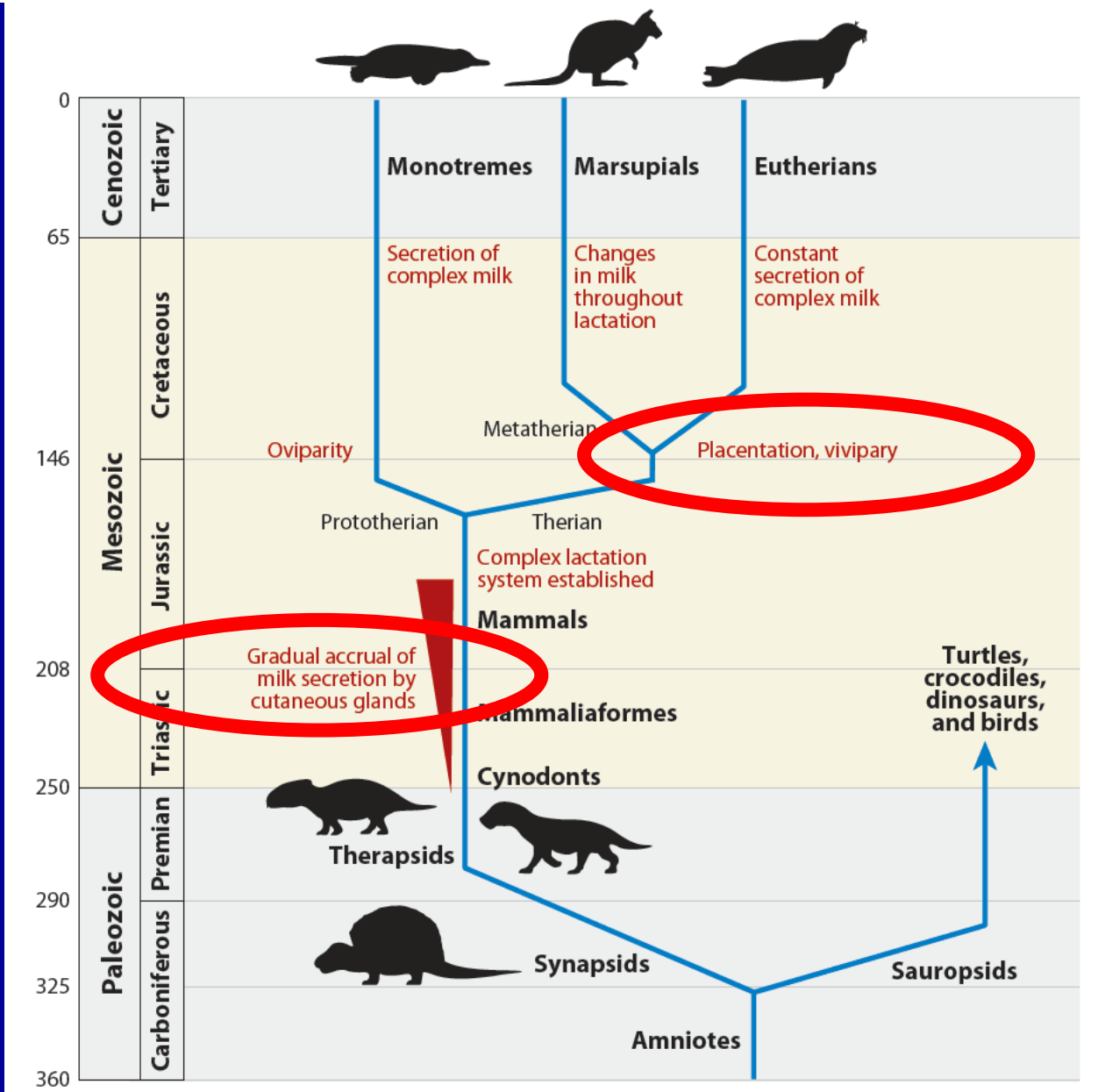


IQ difference in C allele significant if control for SES, mom IQ, birth wt.

G allele no effect of BF on IQ

Association between BF and IQ moderated by genetic variant in FADS2 (gene encoding the rate limiting enzyme in metabolic pathway leading to AA and DHA production).

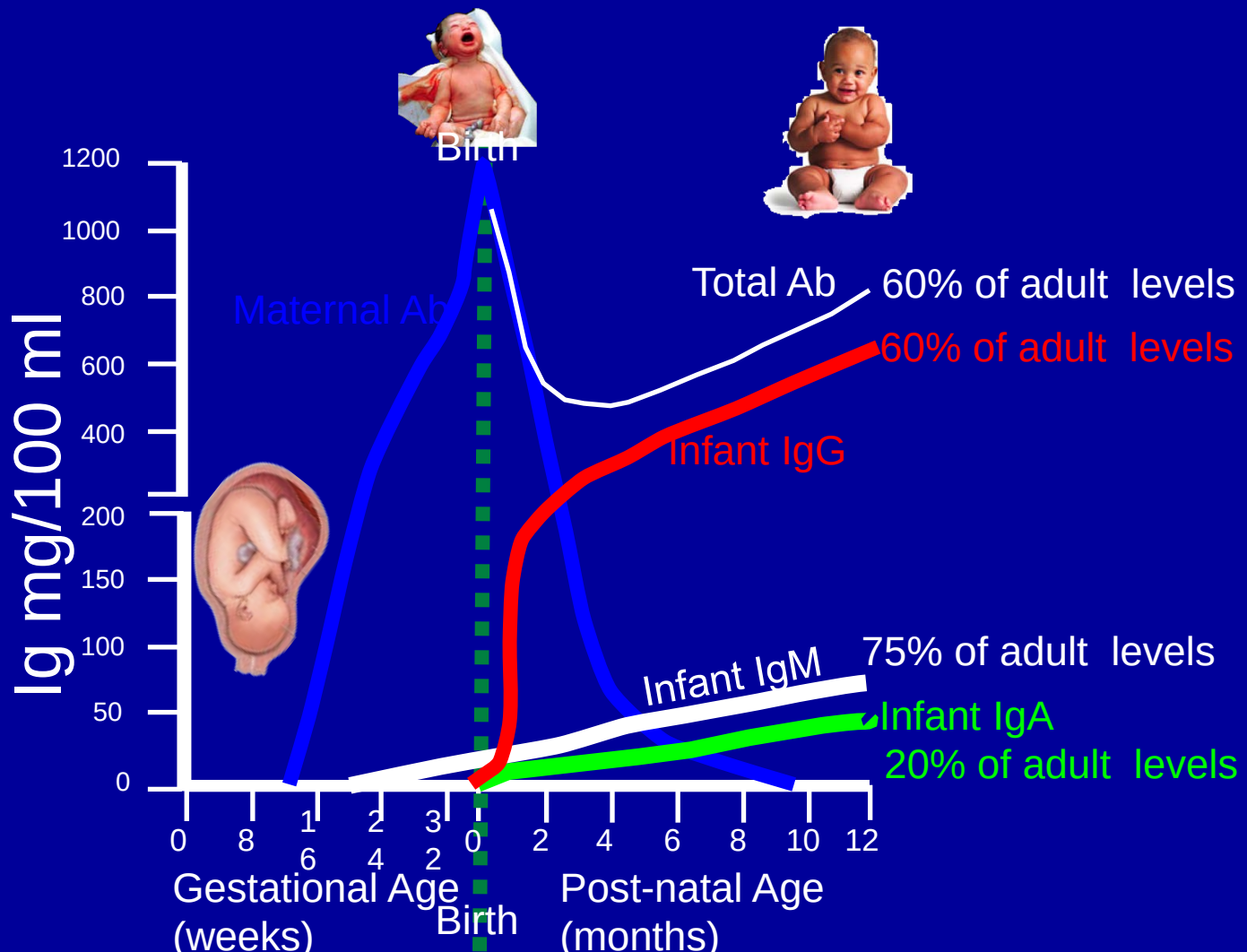
Evolution of lactation



Milk: 200 million years of evolution can't be wrong

Breast milk is not just food
Developmental Changes in Immunoglobulin levels

Adapted from Stiehm [ed]
Immunologic Disorders of Infants and Children, 1989



Just because it's expensive doesn't mean it's good for you

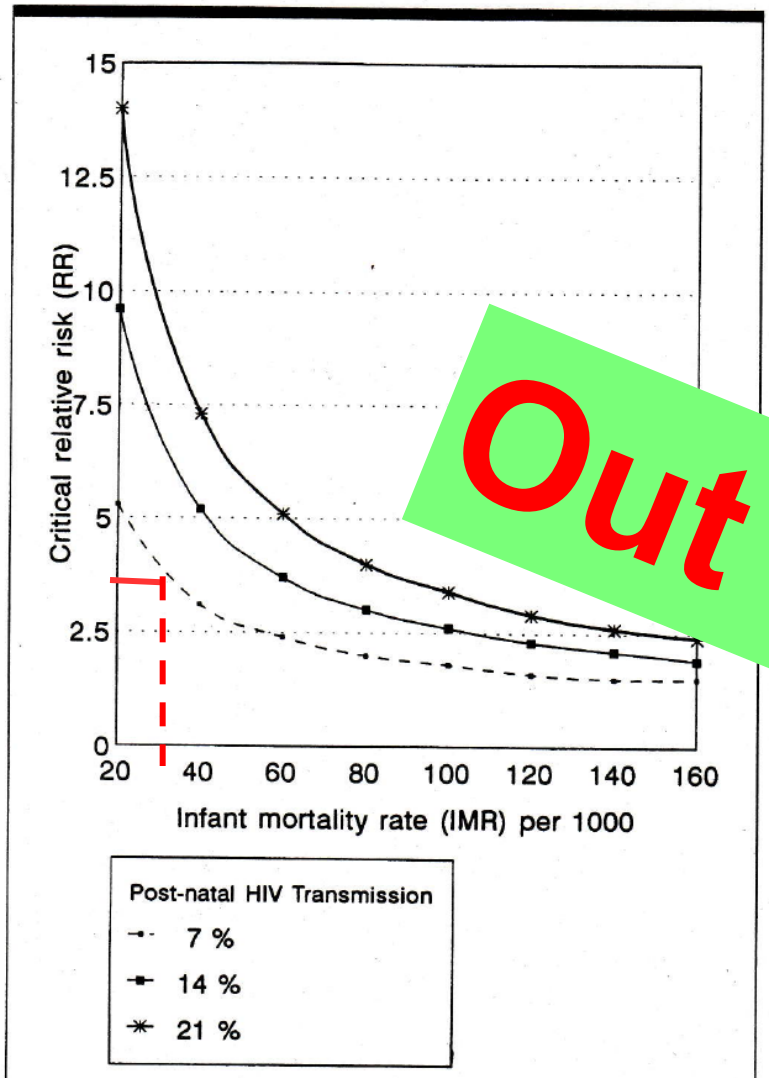

2010 was a good year
ARVs work to prevent mother to child HIV transmission
Type equation here.

What's the catch with antiretrovirals?

- ……
- ……
- ……

You gotta take 'em

Kuhn & Stein. *American Journal of Public Health* **1997**; 87:926-931.



Out of date

Note. If the setting-specific relative risk (RR) is greater than the ...ical value shown, then breast-feeding results in fewer ...utcomes; if the relative risk is less than the critical ...hen artificial feeding results in fewer adverse

$$\text{RR} = \frac{\text{IMR} - \text{TR}_1 - \text{TR}_2)\text{IMR}}{\text{...)IMR}}$$

FIGURE 1 ...**east and artificial feed... ...ropositive women, given din... ...ostnatal HIV transmission r...es (TR) and infant mortality rates (IMR): the graph shows critical relative risks values due to artificial feeding for different levels of infant mortality.**

Is an IMR below 25/1000 a ”safe” threshold for formula?

A numerical example using current transmission rates with ARVs

HIV + Uninfected deaths among formula feeders =

$TR_{IUIP} + (1-TR_{IUIP})*IMR*RR$

HIV + Uninfected deaths among breast feeders =

$TR_{IUIP} + TR_{PP} + (1-TR_{IUIP}-TR_{PP})*IMR$

TR_{IUIP}=2% TR_{PP}=1% IMR=10/1000 RR=2

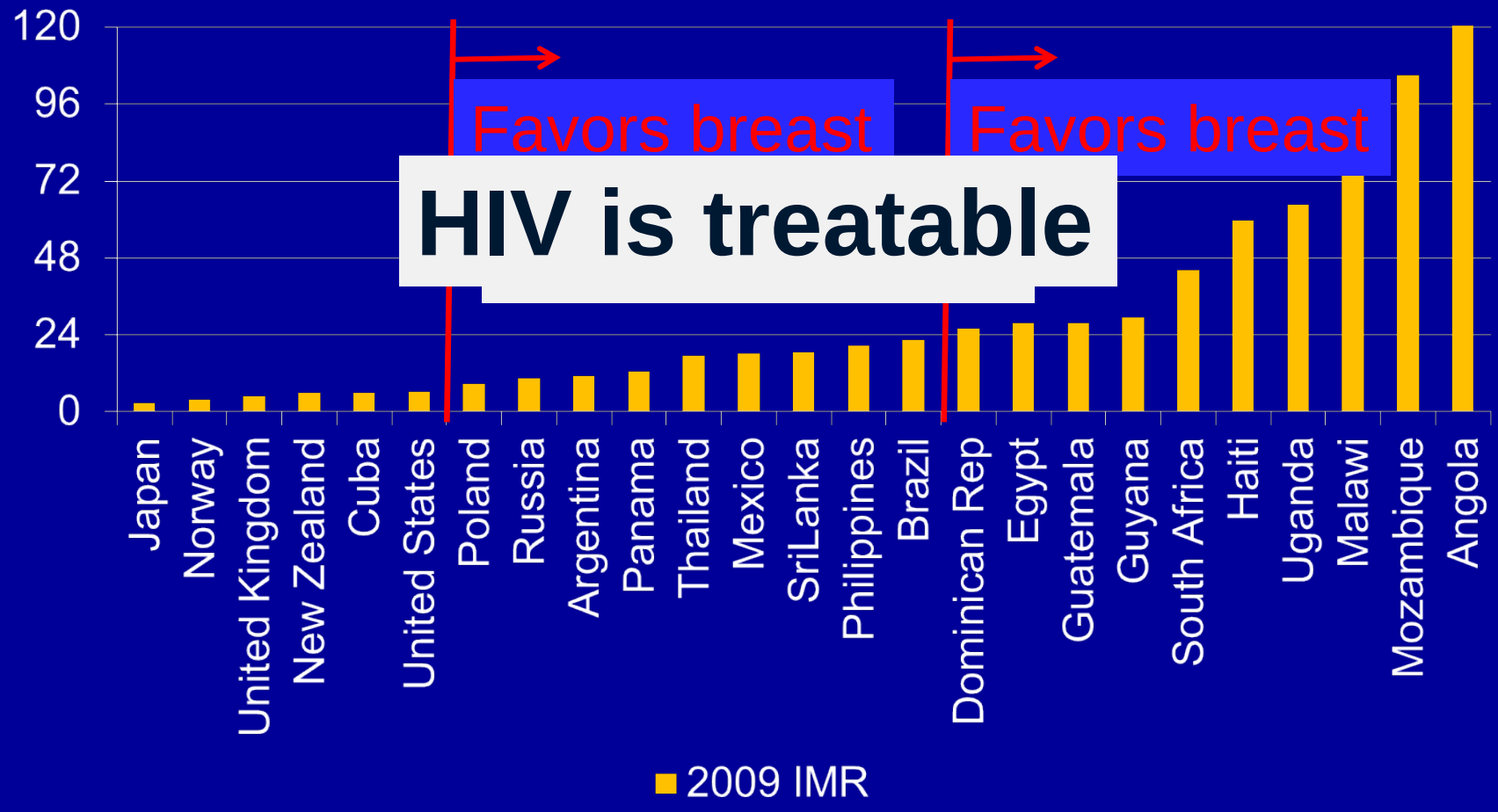
For every 1000 Formula feeders

20 HIV infections + 20 Uninfected deaths

For every 1000 Breast feeders

30 HIV infections + 10 uninfected deaths

The risk-benefit balance of artificial feeding vs. breastfeeding is shifted with ARVs




Not false hopes about safety of formula
Not pessimism about benefits of ARVs
Unbiased information
You need balance

Just say YES to …

… drugs and breastfeeding

Yes to health CARE
No to unhealthy commodities

It’s not funny