

Achieving NSP targets on PMTCT: lessons learnt from 7 years of experience

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History

- 2000 - National Department of Health decided to implement two pilot PMTCT sites per Province
- 2001 – PMTCT programme launched
- 2002 – Interim evaluation
- 2003 – Follow-up evaluation
- 2005 – Launch of National ART programme
- 2006 – Scaling up of ART programme
- 2007 – National Strategic Plan

Programme characteristics and elements

- Implemented as a vertical programme (justifiably)
 - Implemented by Provincial PMTCT teams
 - Separate budgets
 - Large numbers of additional dedicated staff (esp. lay counsellors) placed after recruitment and training
- Protocol outlined details of healthworker: mother/child interactions
 - Counselling and testing
 - Infant feeding counselling
 - Dispensing of single dose nevirapine
- PMTCT often established VCT service
 - Various approaches to cryptic coding of maternal HIV status +/-

Programme characteristics and elements

- Free commercial infant formula provided for 6 months to mothers stating preferred intention
- District PMTCT supervisors became general HIV coordinators and part responsible for ART roll-out
- Monitoring (routine)
 - Although national minimum dataset, often complex sets of registers difficult to reliably track outcomes
 - Reports rarely fed back to local clinics (districts)
 - Need for lay counsellor debriefing and support recognised but hard to provide
- Pilot sites and protocol rolled-out to gain coverage

Consequences

- Wide range of uptake and delivery of services
- As a 'PMTCT' service, its primary focus was 'preventing HIV transmission' to infants
- Compartmentalisation of services
 - Nurses and midwives do not, in general, regard PMTCT activities as part of their job description
 - Lay counsellors and nurse supervisor run programme
 - PMTCT marginalised into clinic corners and huts
- Little connection between ANC and postnatal services (ANC cards vs. Road to Health Cards)
 - Postnatal maternal checks
 - ART services
 - IMCI

Consequences

- Uptake of infant feeding options has been highly variable between Provinces, often reflecting positions of local advocates
- sdNVP delivery has been poor to modest (<10-60%)
- Low follow-up of PMTCT exposed infants for 6 week testing
- Few women with low CD4 counts starting ARVs whilst pregnant
- Poor coordination and even polarisation between health professionals
- Staff have switched focus to ARV delivery and care
- Lack of belief
- 'PMTCT fatigue'

Impact on Infant and Child Survival

Indicator	1998 SA Demographic and Health survey	2000 MRC Burden of disease study
Infant mortality rate	45/1000	60/1000
Under-5 mortality rate	59/1000	95/1000

Impact on Infant and Child mortality in KZN

<u>Child DOB</u>	'IMR' /1000 live births	'CMR' /1000 live births
2000 -05	99.4	100.3
1995 -99	50.2	69.9
1990-94	31.5	42.9
<1990	48.3	69.8

Impact on maternal mortality in SA

HIV/AIDS accounts for more than 50% of non-obstetric causes of maternal deaths

Single most important factor

Infant HIV prevalence rates at 6 wk immunisation clinics in KZN

N=2,473	Exposed	Infected	Transmission rate (%)	CI
Total	907	189	20.8	18.2 – 23.6

7.6% of all infants (189/2473) attending for immunisations were already infected with HIV by 6 weeks of age

Does not include infants that would become infected through poor infant feeding practices

Infants and children needing ARVs

- In KZN alone, 20-30,000 new infections each year
- Half needing ARVs by 12 months of age
- More infections and deaths via poor infant feeding choices and practices

The SA National Strategic Plan

Key priority area 1: Prevention

‘Reduce by 50% the rate of new infections by 2011’

- Reduce MTCT
 - **Broaden existing MTCT services to include other related services and target groups**
 - **Scale up coverage and improve the quality of PMTCT to reduce MTCT to less than 5%**

Key priority area 2: Treatment, Care and support

- Increase access and uptake of VCT
- Strengthen health system and remove barriers to access
- Address special needs of pregnant women and children

The SA National Strategic Plan

Key priority area 3: Research, monitoring and surveillance

- Develop and implement a M&E framework
- Create an enabling environment for research in support of the NSP
- Develop and support a comprehensive research agenda

Key priority area 4: Human rights and access to justice

- Ensure laws, policies and customs ... do not discriminate against ... children

What the NSP 2007-2011 says about the past and the future ...

- The 2000-2005 NSP gave rise to the establishment and expansion of PMTCT.
 - The implementation tended to be vertical with capacity deficits in the implementation.
 - The lack of a clear M&E framework and clear targets and responsibilities was a major weakness
- The NSP 2007-2011, however, is not a plan for the health sector alone. It ... seeks to be relevant to all agencies working on HIV/AIDS in South Africa, within and working outside the government

Evidence to guide the NSP

- Interventions with established evidence base that can reduce MTCT and moreover, maternal and child survival, if implemented effectively
- Endorse many of the other related NSP targets
 - Increasing access to testing
 - Roll-out prevention services to high risk groups
 - HIV prevention programmes for uninfected women
- Several other intuitive interventions may be worth exploring but evidence base lacking
 - Community mobilisation

Increase the number of women knowing their HIV status

- Current approaches for VCT based on US and European models
- Regarded choice as the primary consideration
- Imposed many obstacles that hindered testing
- Opt-out counselling/ Provider-initiated counselling of all pregnant women attending ANC
 - **If implemented correctly does not preclude choice and removes some of the barriers to testing**

High acceptance rate of opt-out model (both women who tested and not tested before)

Opt-Out in Botswana (Rennie and Behets, 2006)

- 75.3% tested in last 4 months
- 90.5% tested in 1st 3 months

Possible model of implementation

Pre-test Group Prevention Education

- all women in ANC settings
 - 20 minutes
 - Content
 - Risk assessment
- Risk reduction strategies
- HIV testing and Opt-Out Approach

Post Test Negative Session

- 10-20 minutes
 - Content
- Staying Negative
- Risk Reduction

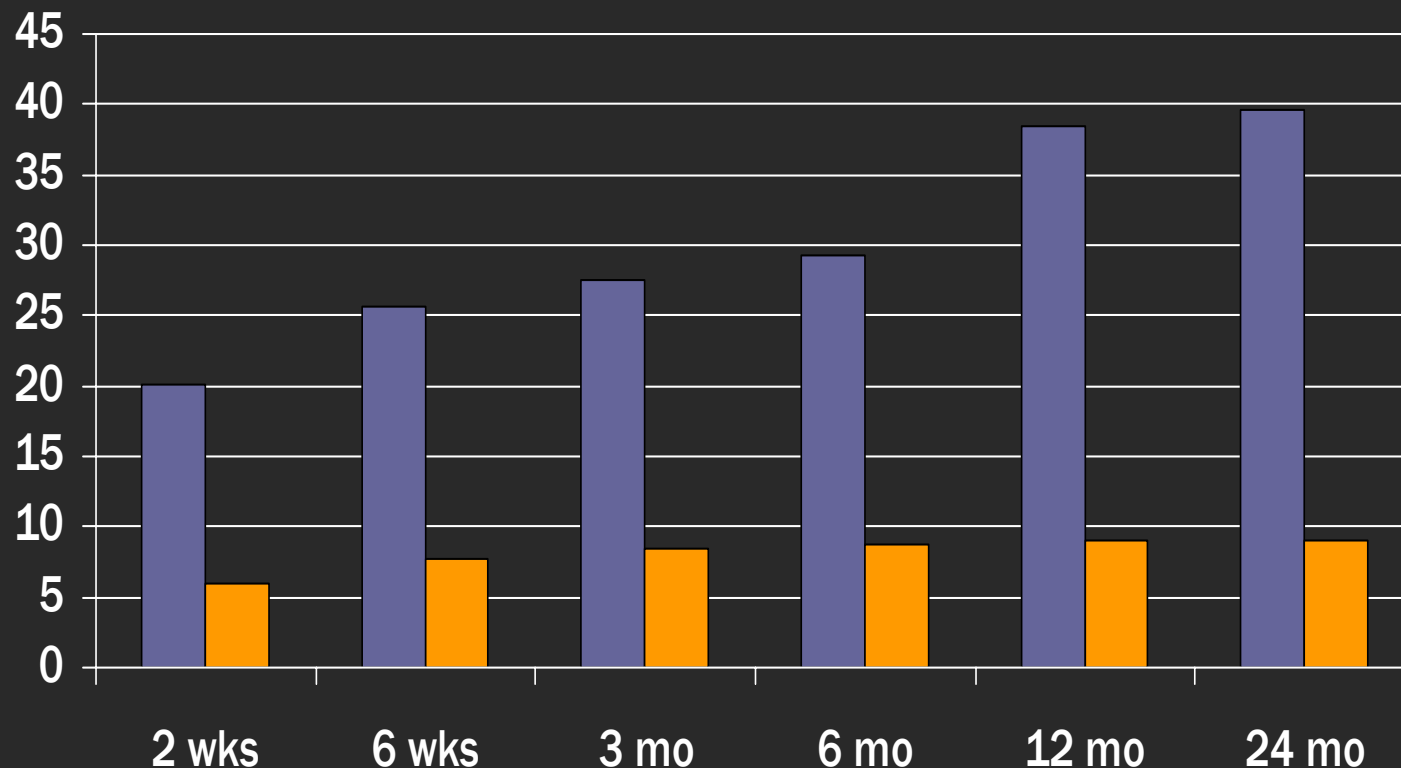
Post Test Positive Session

- 20-30 minutes
 - Content
 - Support
- Risk Reduction
- Disclosure

QA/QC of New Counselling Model

Cumulative HIV transmission risk in women with CD4 below and above 500/ml receiving AZT prophylaxis (West Africa)

■ CD4 < 500/ml ■ CD 4 >/=500/ml

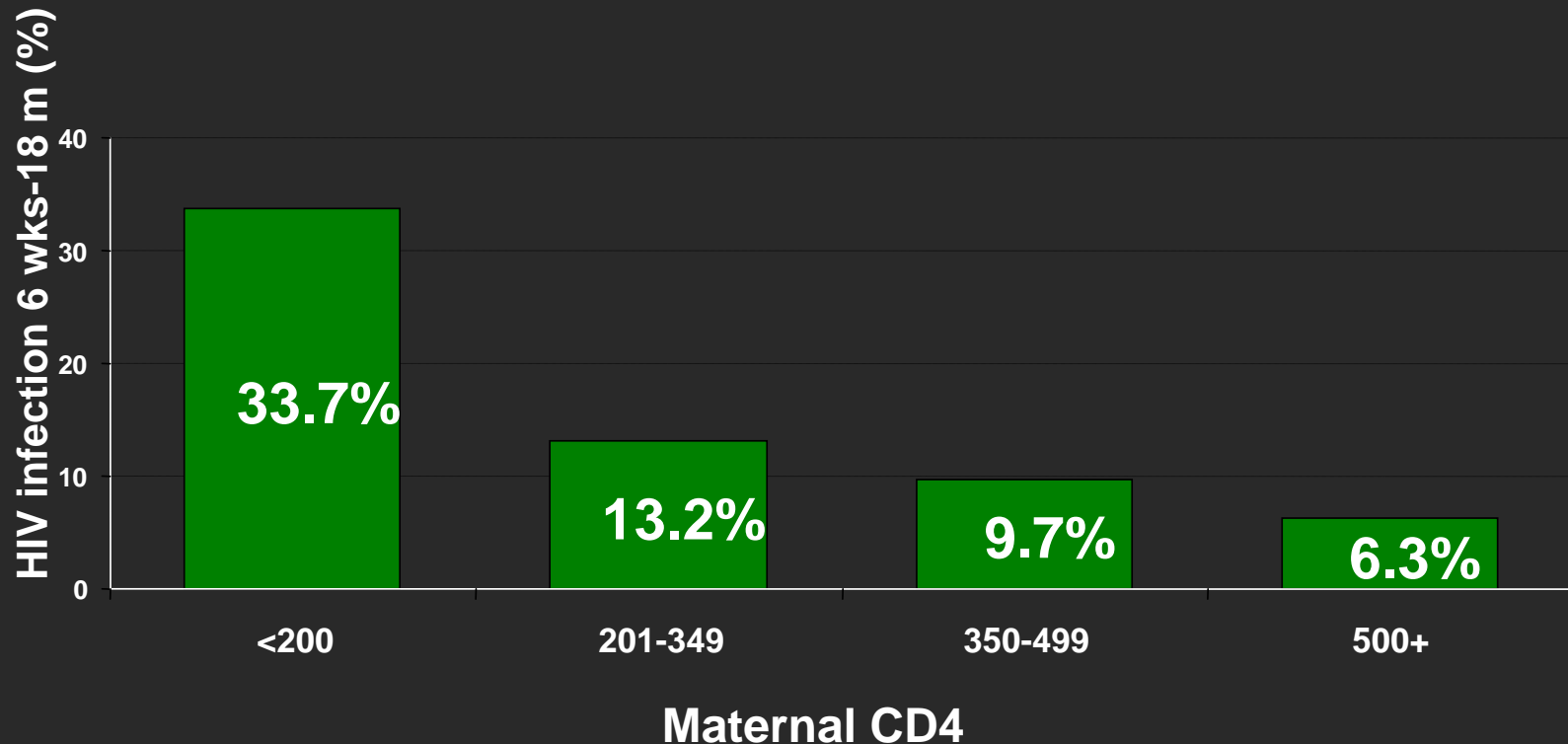


- **CD4 < 500** increases risk by about x3
- **CD4 < 200** increases risk by about x8

Women Eligible for ARV Treatment Also At Most Risk of Infecting Their Infants

Piwoz E et al. XV Internat AIDS Conf, Thailand, 2004 (Abs. MoPpB2008)

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



Risk factors for HIV transmission other than feeding mode (VTS-KZN)

- In Cox uni- and multivariable regression analyses, conditional on EBF, risk of transmission overall was strongly associated with:

- maternal CD4 cell counts

6m transmission in EBF infants

Maternal CD4 count

<200	34.1%
>200	17.0%

and less strongly with

- maternal age,
- birth weight below 2500 gm,
- vaginal delivery, and
- prolonged duration of ruptured membranes

Infant HIV Mortality and Acquisition study (IHMA)

Mortality rate per 1000 child-years of follow-up

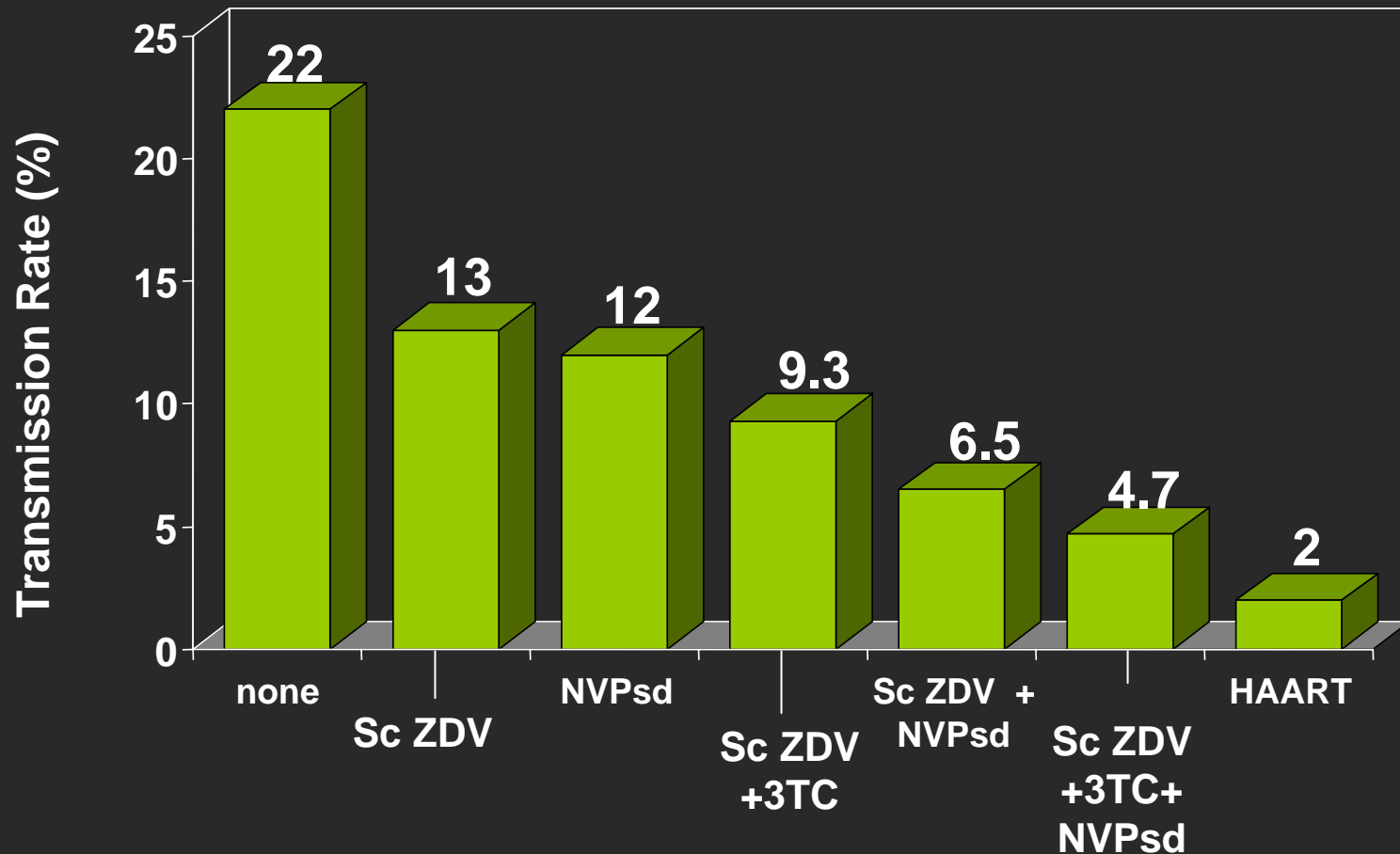
Variable	Rate	Unadj OR	P-value
CD4 \geq 500 (1259)	65.2	1.0	
200-499 (1304)	108.5	1.63	<0.001
< 200 (290)	243.5	3.51	<0.001
Mum alive (3316)	90.0	1.0	
Mum dead (106)	389.8	4.15	<0.001

IHMA working group.
Lancet 2004

Active identification of HIV infected pregnant women with CD4 counts <200 and initiation of HAART for life

- About 12-15% of all HIV-infected pregnant women have CD4 counts less than 200
- Account for 40-50% of all mother to child transmissions
- Account for ~50% non-obstetric maternal deaths
- Children of these mothers have a 3-4 fold increased risk of death

To reduce MTCT <5% requires effective drug prophylaxis



Why not ... dual prophylaxis for women with CD4 counts >200

‘If we cannot deliver on sdNVP, how can we expect the system to deliver AZT’

- SdNVP offers one chance only at receiving benefit
- AZT for 6 weeks or more offers multiple opportunities for intake and benefit, in addition to sdNVP
- Proven possible in W. Cape
- Providing TB treatment (3 drugs with changes mid-course) is more complicated
- Providing free commercial infant formula is more complicated for the health system and mother with more possibility of harm

Normal nutrient needs during lactation

Energy needs: 500+ kcal/day more

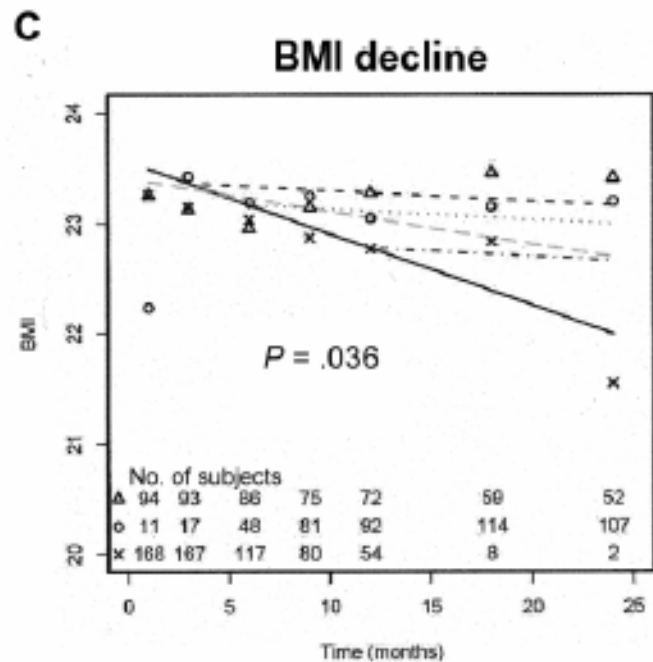
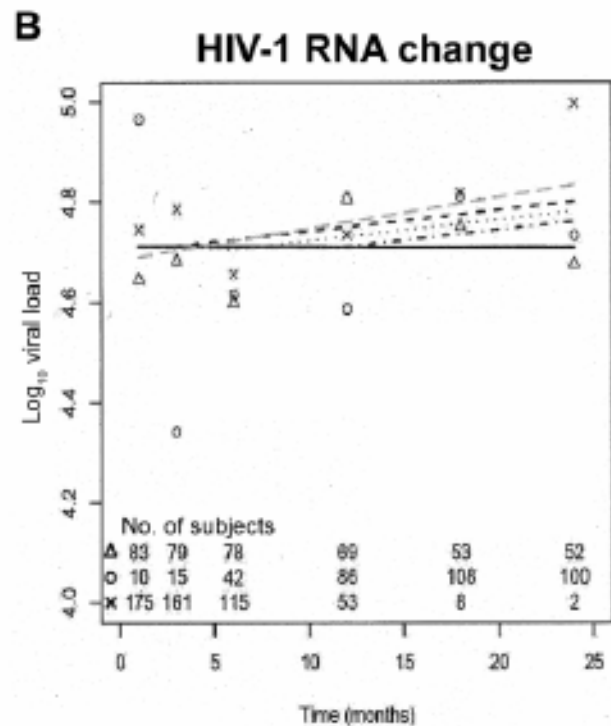
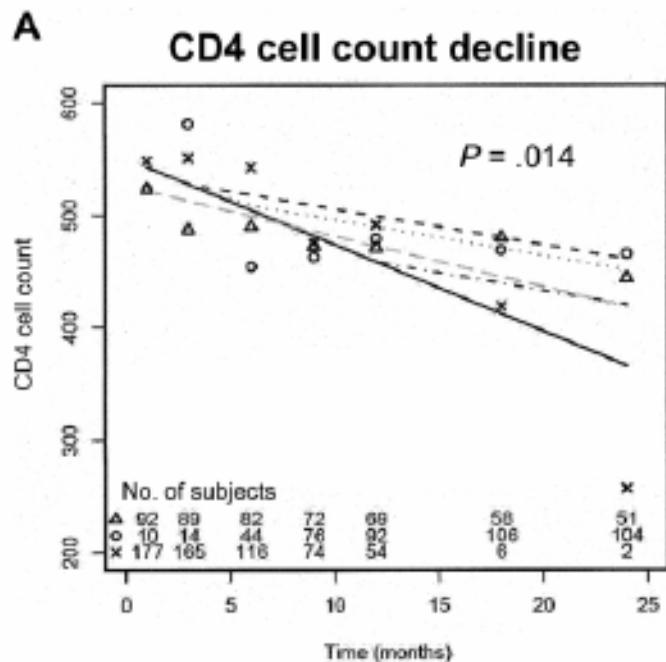
Protein, vitamins A, B6, C, riboflavin,
pantothenic, zinc needs: 40–90% higher

Thiamine, niacin, folate, vitamin E and
selenium needs: 25% higher



HIV infected breastfeeding mothers lost more weight and fat mass than HIV uninfected breastfeeding mothers

	Change between 8 and 24 weeks postpartum		p
	HIV positive	HIV negative	
	n=65	n=41	
Weight Kg (SD)	-1.4 (3.1)	0.4 (3.3)	0.004
BMI Kg/m ² (SD)	-0.54 (2.0)	0.15 (1.3)	0.005



Model-based estimates

- Never breast-feeds
- - - Breast-feeds 3 months
- Breast-feeds 6 months
- · - · Breast-feeds 1 year
- Breast-feeds 2 years

Empirical estimates

- × Current breast-feeder
- Former breast-feeder
- △ Never breast-fed

Breastfeeding HIV infected women warrant nutrition support

- HIV infected women tend to lose more weight while BF than HIV uninfected – lean body tissue maintained
 - Papathakis JAIDS 2006
 - Otienno JID 2007
- But no increase in mortality in mothers
- May remove financial incentive for poor women to opt for infant formula even when household circumstances are not favourable



Replacement feeding in PMTCT sites

- Sample of milk collected from bottles (n=94) being offered to infants brought by mothers to PMTCT clinic follow-up visits
 - **63% heavily contaminated with E.coli**
 - **28% diluted (based on protein concentration)**

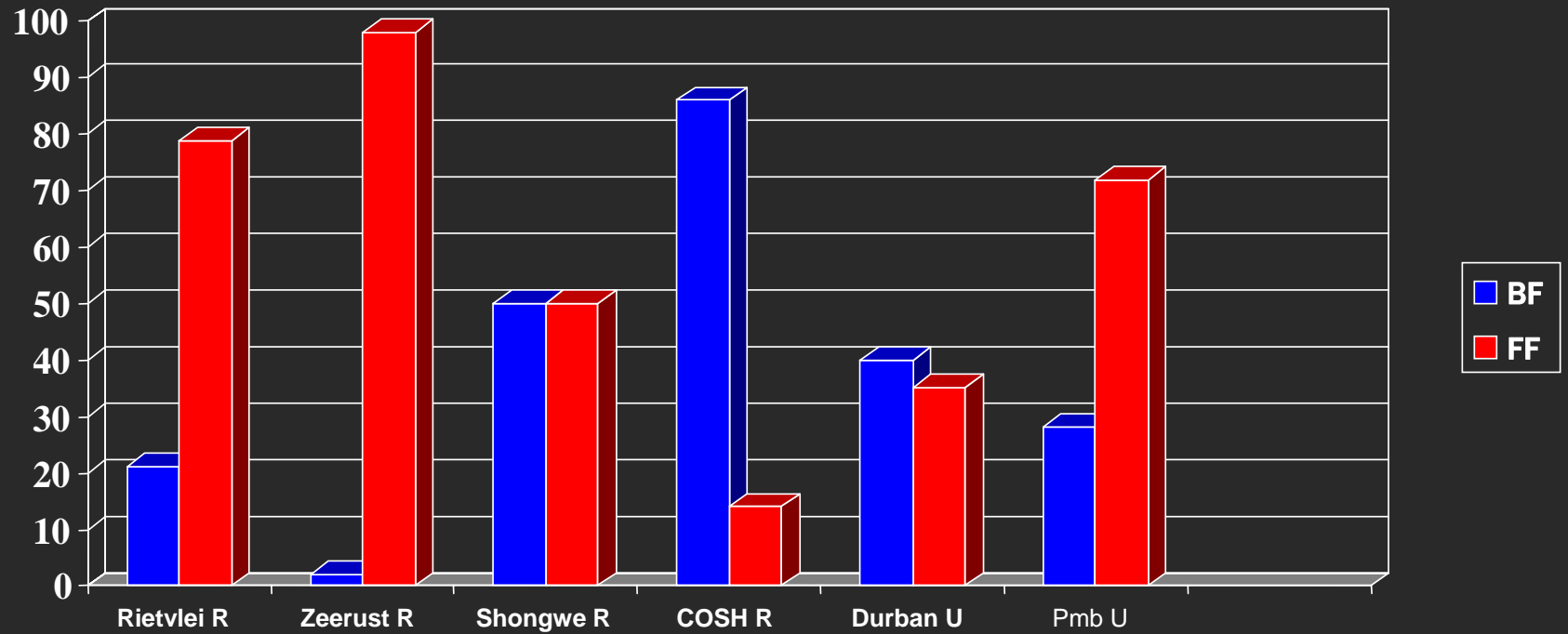
In spite of

- All mothers having completed 12 years of education
- 72% having fridges
- All received good counselling on IFP

RF, family and health infrastructure

- 15-20% mothers reported free FF being used for something other than index child
 - Sold
 - Exchanged
- 50-75% reported running out
 - Mainly because of clinic supply

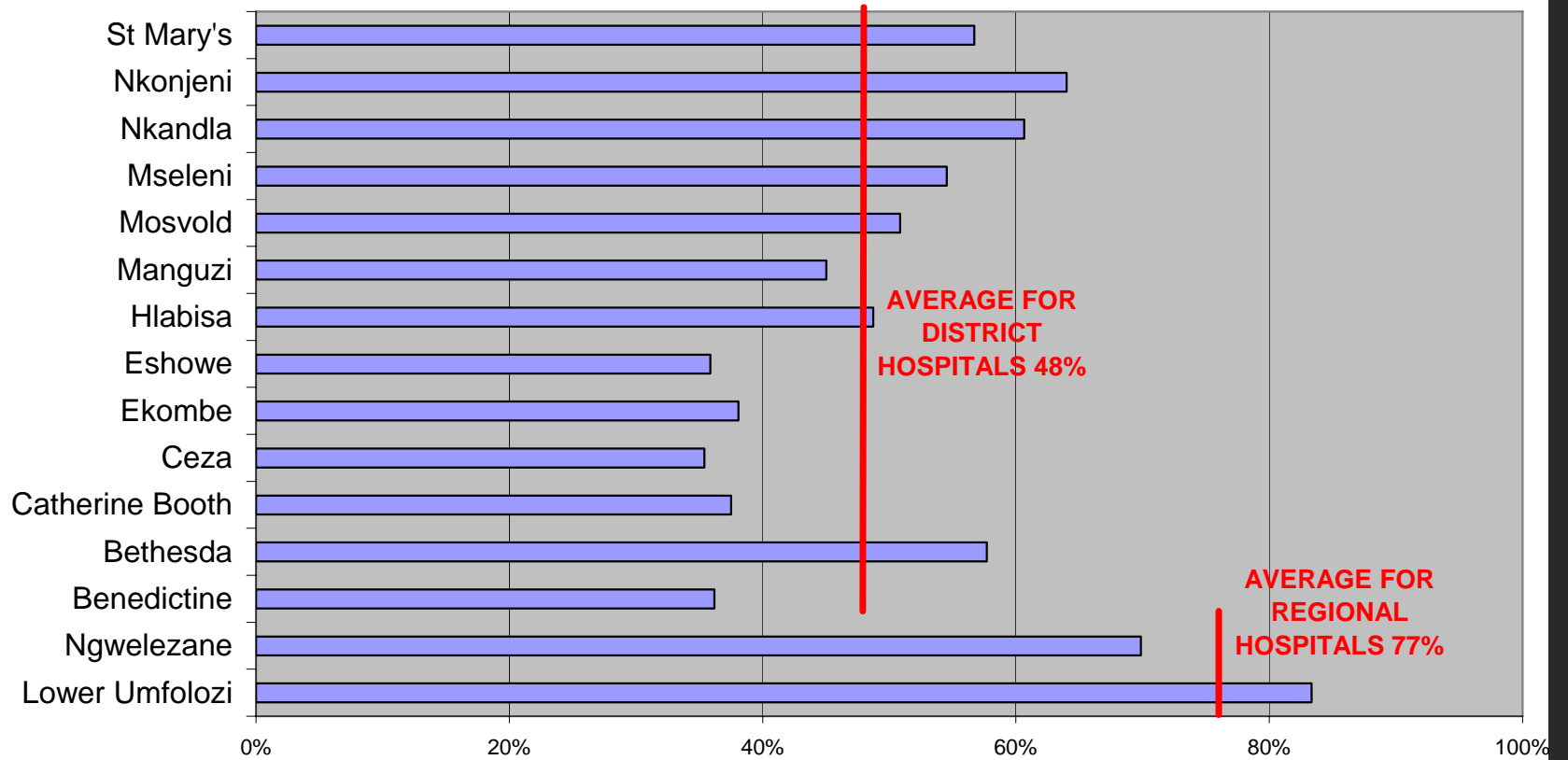
Feeding at some PMTCT sites



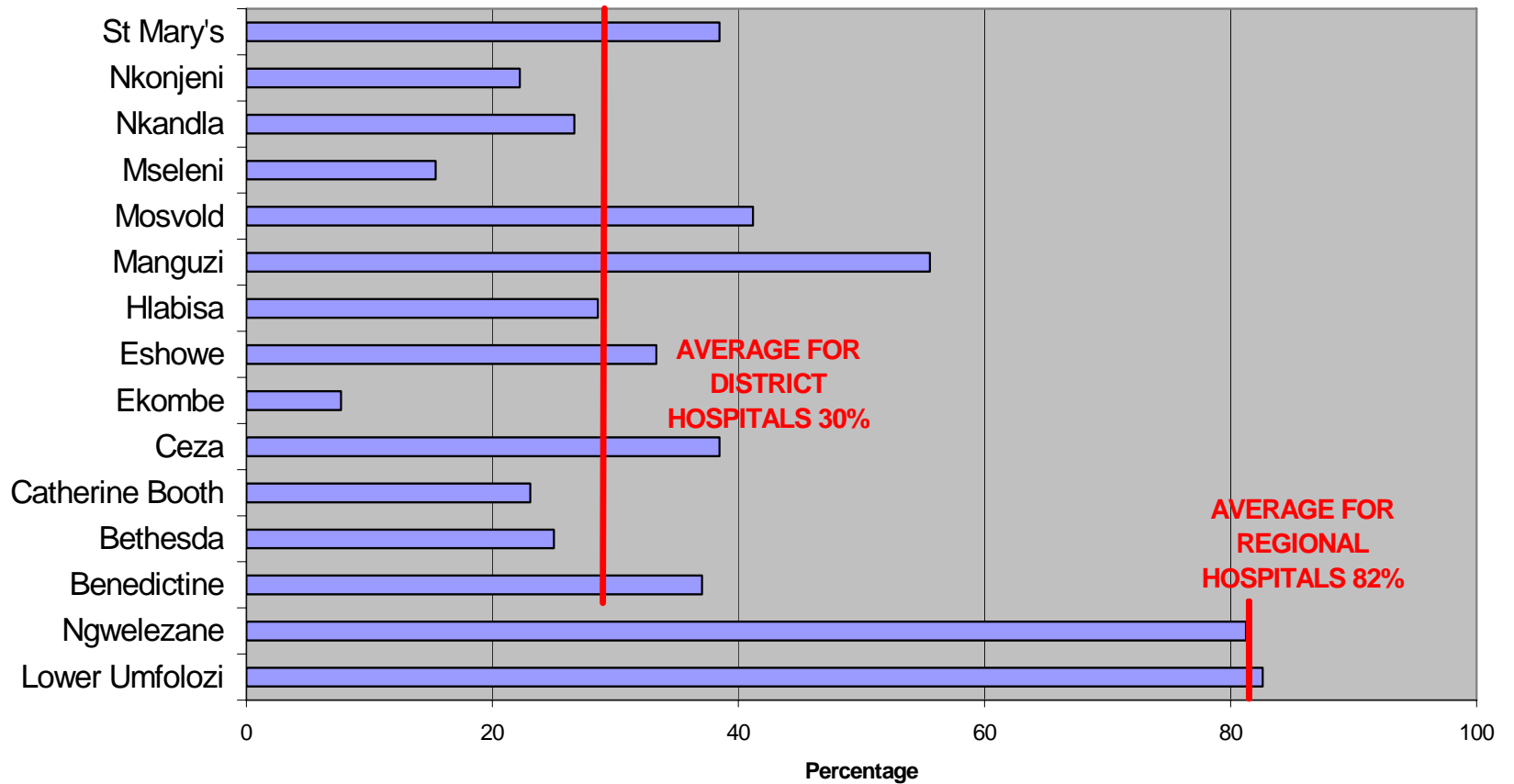
Good start mortality data

Constraints

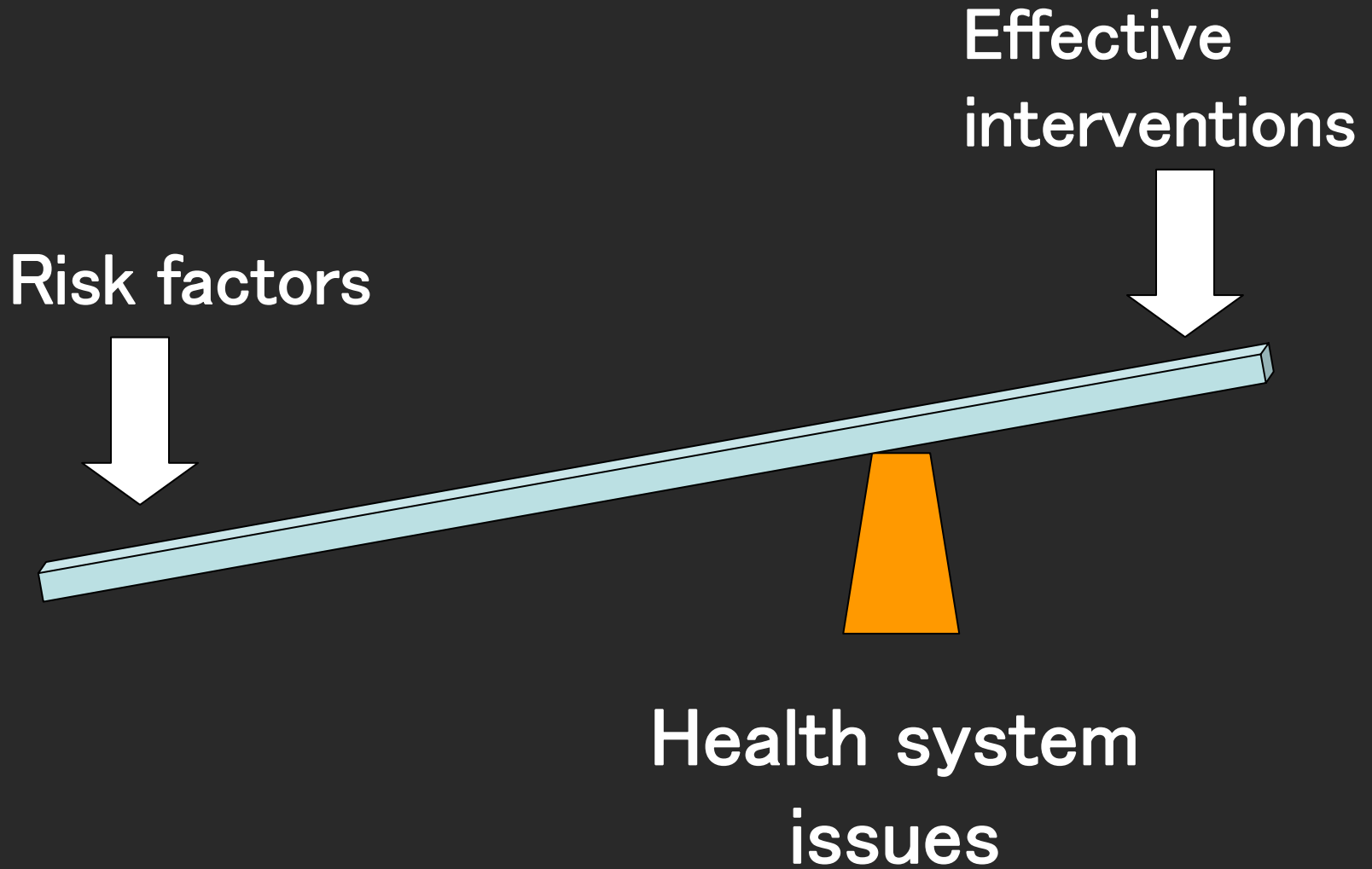
Percentage of Professional Nurses posts filled, by hospital



Percentage of Senior, Principal and Chief Medical Officer posts filled, by hospital



What wins?



Priority interventions

Identify HIV infected pregnant women

Identify those with CD4 counts <200 and start on HAART for life

Counsel on infant feeding practices

Effective drug prophylaxis

Safe obstetric practices

Support appropriate feeding practices

Early identification of HIV infected infants

Nutrition support to HIV breastfeeding mothers

Antenatal care

Peripartum care

Postnatal care

Priority activities

	Opt-out / Provider initiated counselling	Active case finding and Rx. of CD4<200	AZT + sdNVP dual prophylaxis	Infant feeding counselling and support	Nutritional support for BF women
Integrated district implementation plans					
Training and Supervision					
Monitoring and reporting					
Operational research					

The missing interventions

- District level management
 - Protocols vs. Implementation plans
- Models for implementation that integrate rather than compartmentalise programmes
- Audit as a tool for change
 - Local reports and data flow but ... one way only
 - Building local capacity to use data effectively
- Staff selection, retention and support strategies
- Implementation research
 - To examine health system support interventions to improve the quality of services

South African NSP

Comprehensive, ambitious ... full of potential

- If PMTCT targets are to be met, with all the additional gains ...
- Child survival must be the overall aim and measure of success or failure
- Dedicated resources – human and financial
- Creative and flexible
- Reduced child mortality and reduced transmission are achievable