



Getting to zero new infections in children: what will it take?

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27 September 2014

Content

- What will it take from us individually?
- Back to basics
- Pressure points for PMTCT
- What else do we need?
- Conclusions

What will it take from us???

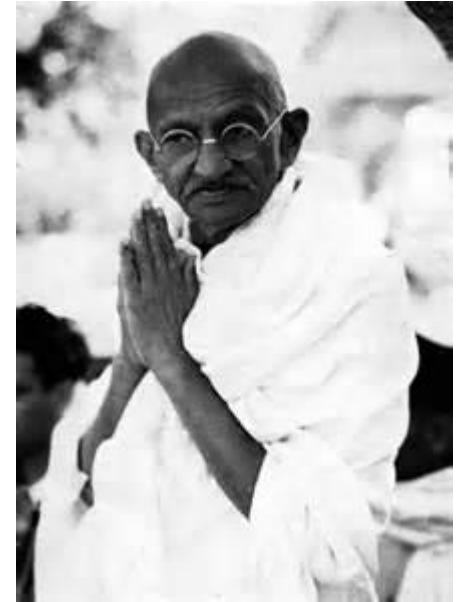
- A good attitude
- Hard work
- Dedication
- An ongoing effort to teach and a desire to learn
- Change management processes
- Commitment to strengthen the health system
1 person at a time



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“You must be the change
you wish to see in the
world.”

Mahatma Gandhi

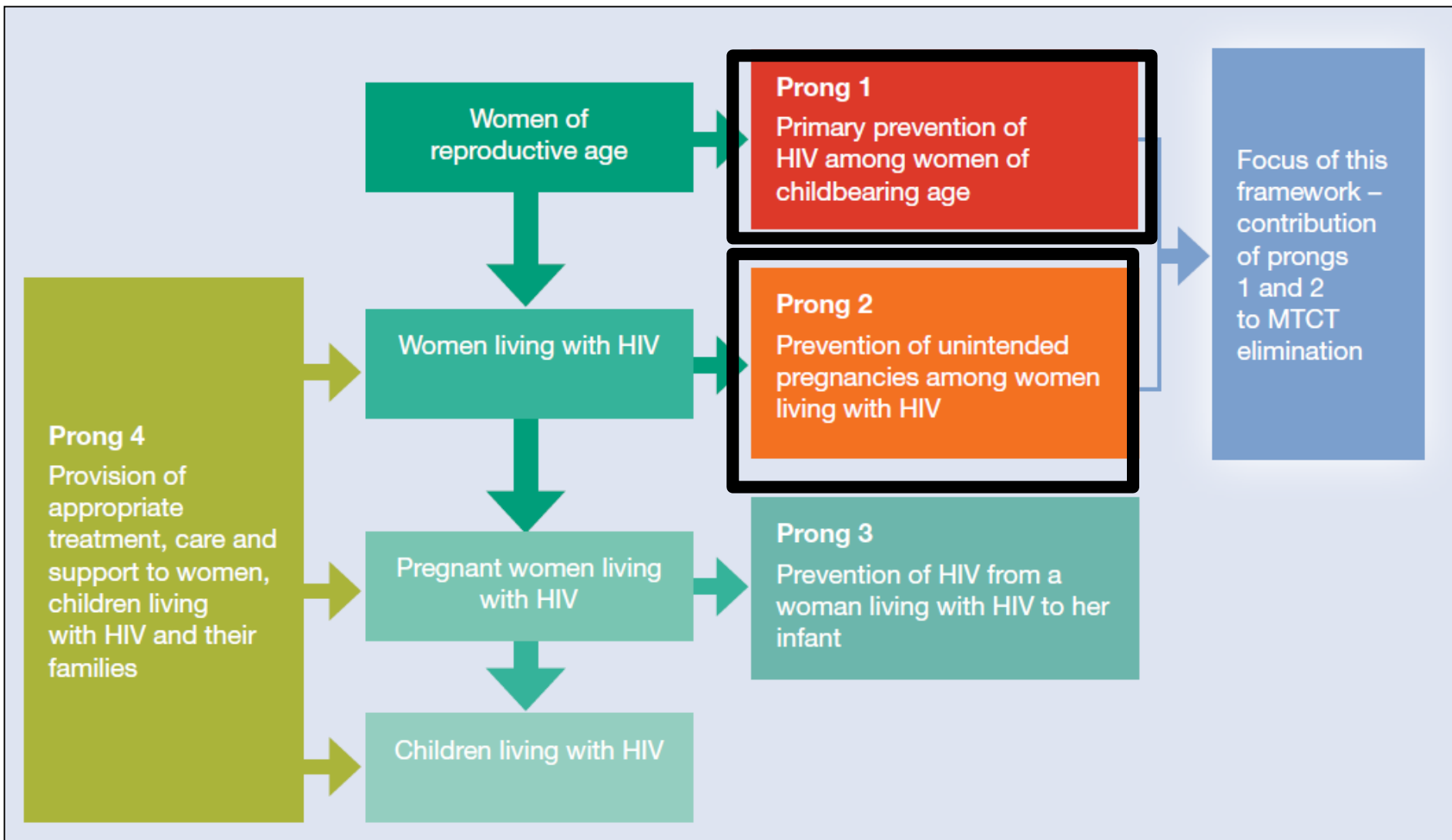


START WITH THE BASICS...



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FIGURE 1: FOUR PRONGS TO ELIMINATE MOTHER-TO-CHILD TRANSMISSION OF HIV AND IMPROVE MATERNAL HEALTH



HIV Incidence 2012 by age and sex

Age groups (years)	Sex	HIV incidence % (95% CI)	Estimated number of new infections (95% CI)
2+	Total	1.07 (0.87–1.27)	469,000 (381,000–557,000)
	Male	0.71 (0.57–0.85)	151,000 (121,000–181,000)
	Female	1.46 (1.18–1.84)	318,000 (257,000–401,000)
2–14	Total	0.25 (0.21–0.29)	29,000 (24,000–34,000)
	Male	No incident cases found	
	Female	0.49 (0.39–0.59)	29,000 (23,000–35,000)
15–24	Total	1.49 (1.21–1.88)	139,000 (113,000–175,000)
	Male	0.55 (0.45–0.65)	26,000 (21,000–31,000)
	Female	2.54 (2.04–3.04)	113,000 (91,000–135,000)
25+	Total	1.41 (1.15–1.67)	300,000 (245,000–355,000)

A quarter of all new HIV infections in this age group
Incidence 4 times higher in females than in males 15-24y

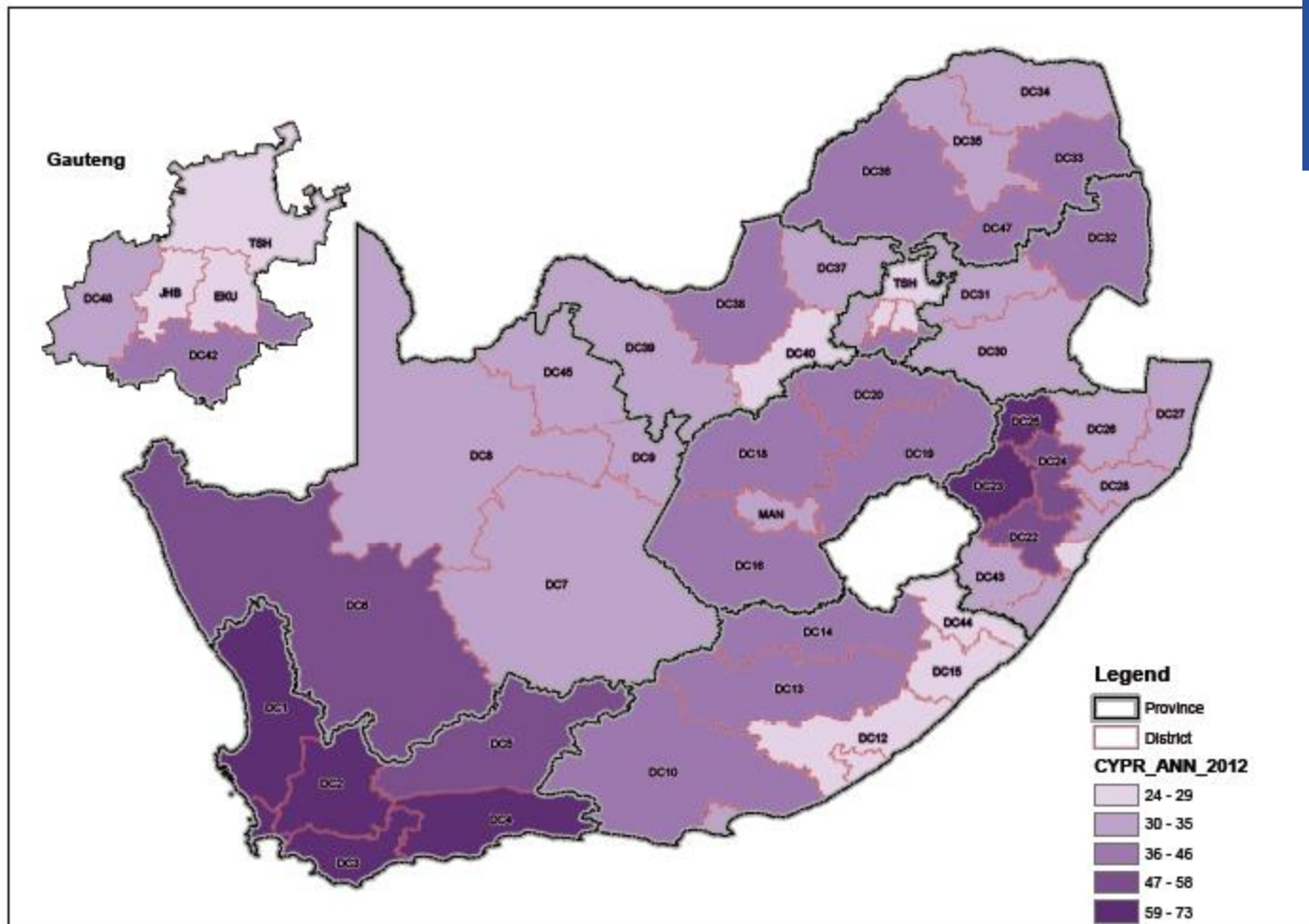
	Male	1.21 (0.97–1.45)	145,000 (116,000–174,000)
	Female	2.28 (1.84–2.74)	251,000 (203,000–302,000)

Maternal SRH

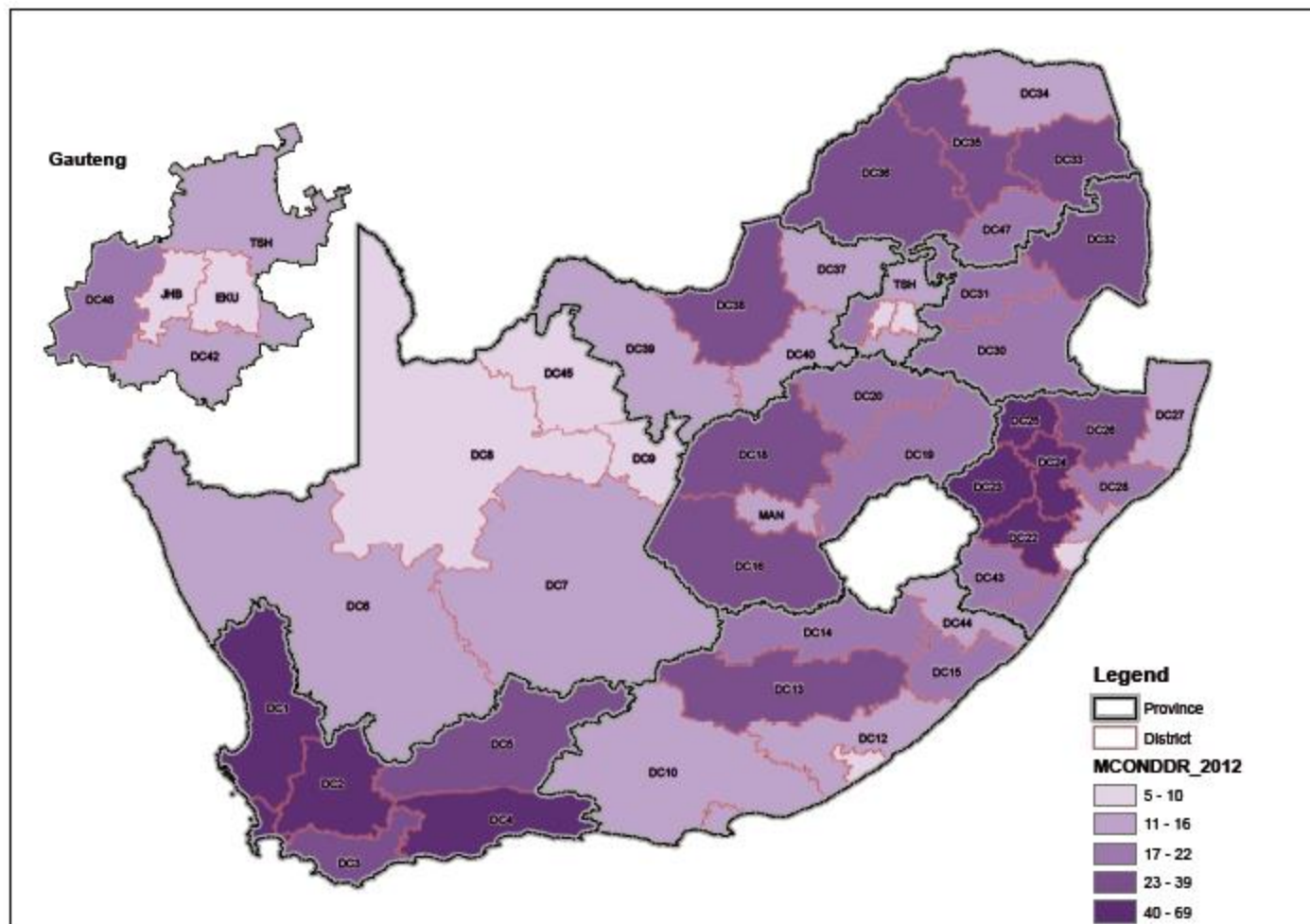
- Overall the couple year protection rate has increased from 26.3% (2002/3) to 37.8% (2013/4)
- Injectables account for about 47% of the couple year protection rate
- Cervical screening rate in 2012/2013 55.4% (> National target of 54%)



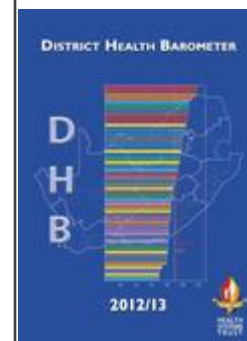
Map 1: Couple year protection rate by district, 2012/13



Map 1: Male condom distribution coverage by district, 2012/13



Male condom distribution rate: Number of condoms/male > 15 years



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REGARDING EMTCT PRACTICES.....



HIV testing in pregnancy

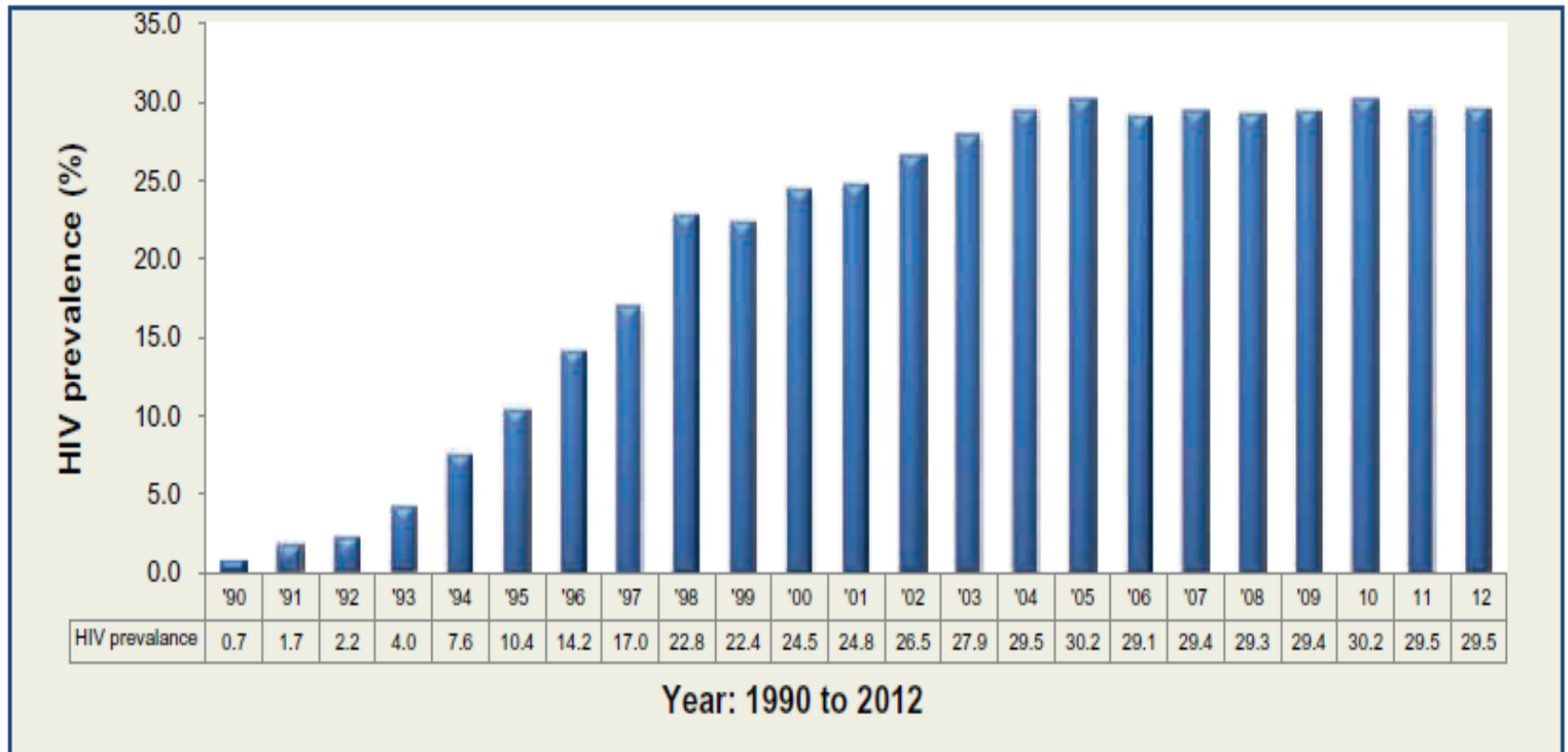


Figure 2: HIV prevalence trends among antenatal women, South Africa, 1990 to 2012. (Source: NDoH, 2013)

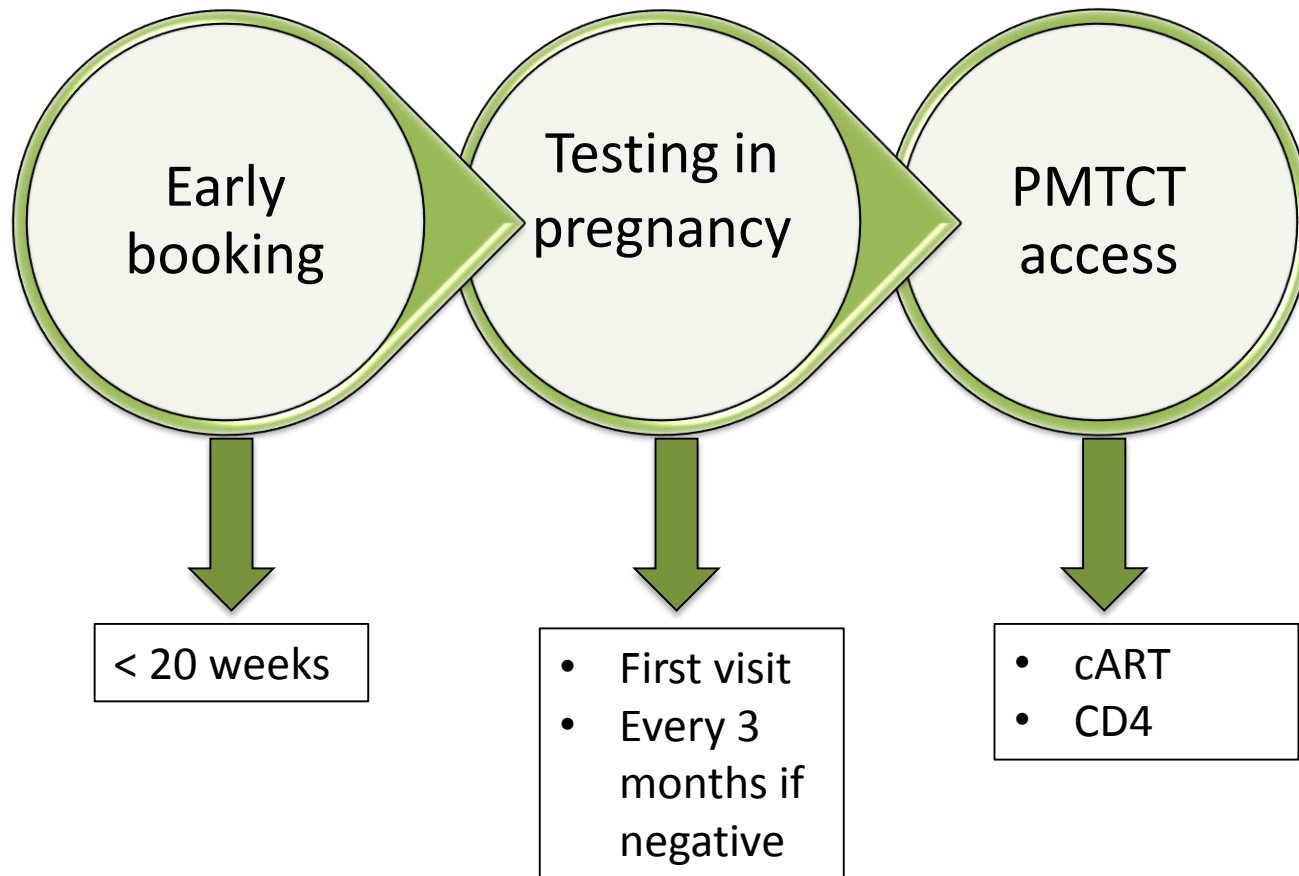
We have excellent guidelines

- BUT.....
- They need to be followed closely
- They are sometimes complicated and misunderstood
- There needs to be ongoing training with reinforcement and evaluation to ensure that they are understood
- Numerous pressure points that require focus to eliminate MTCT

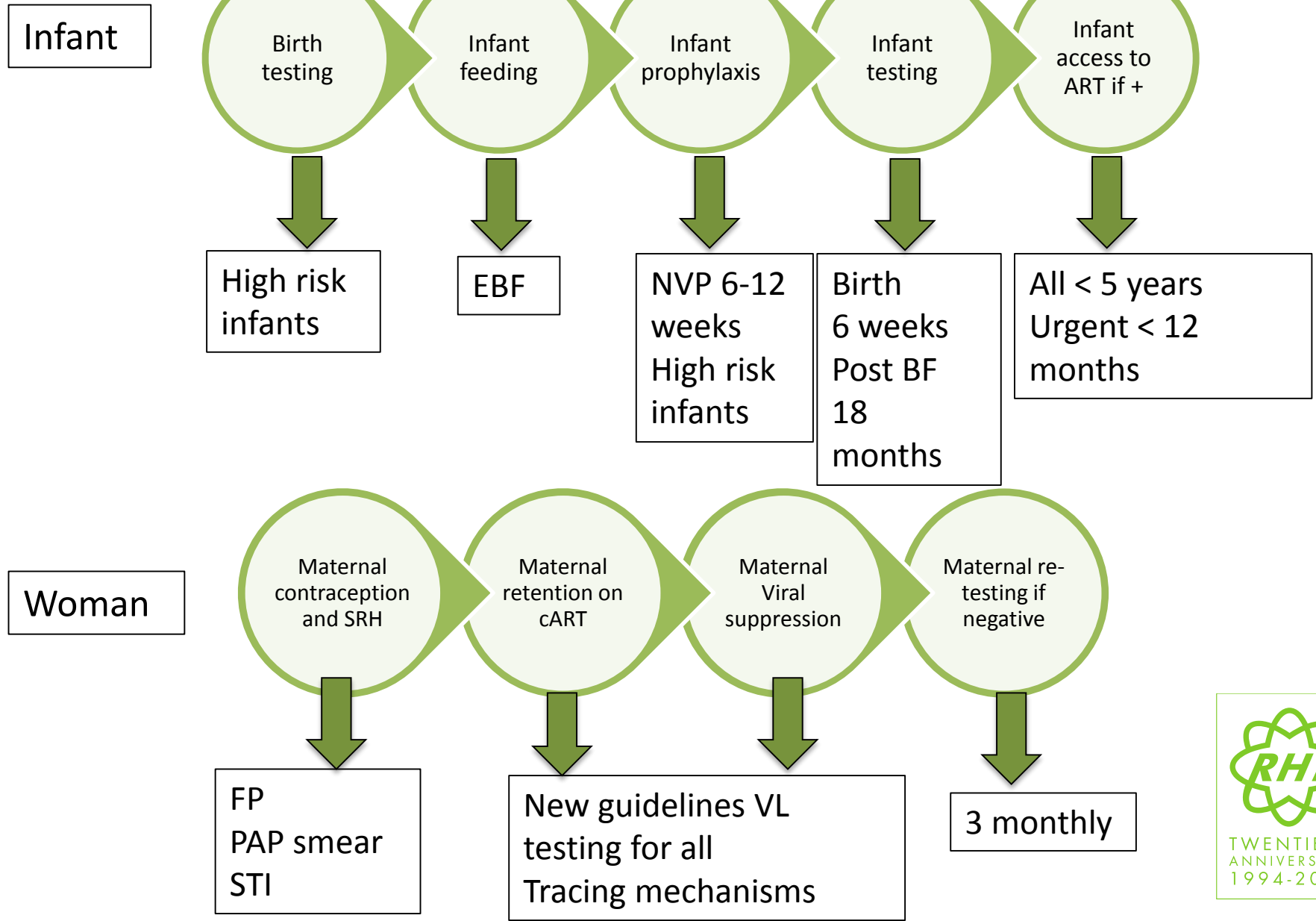


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Where are the pressure points antenatally??



What are the pressure points postnatally??



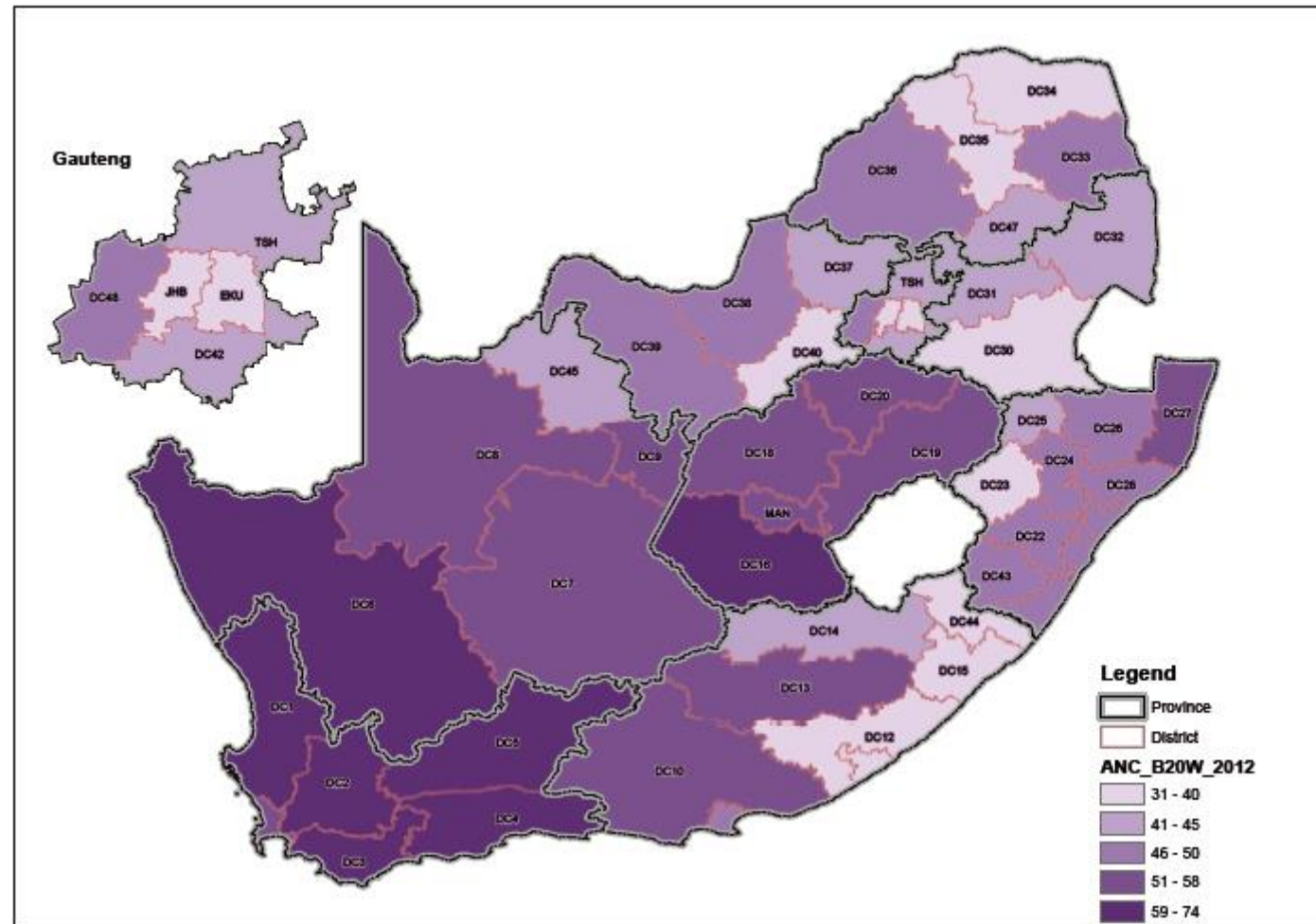
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Early bookings

Issues:

- Booking at GPs -> Unclear if HIV testing and full PMTCT package offered
- Poor referral mechanisms between GPs and ANC
- Some facilities turn clients away without offering HIV testing and FDC where appropriate
- Lack of resources at facilities
- Cultural reasons for late booking
- Data recording- PMTCT policy requires HIV-positive pregnant women book before 14 wks gestation- yet DHIS data records booking before 20 weeks

Map 1: Antenatal visits before 20 weeks rate by district, 2012/13



1/3 of districts reach National average of 44%
19/52 districts below 50 % (National target)



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Interventions for Early Booking

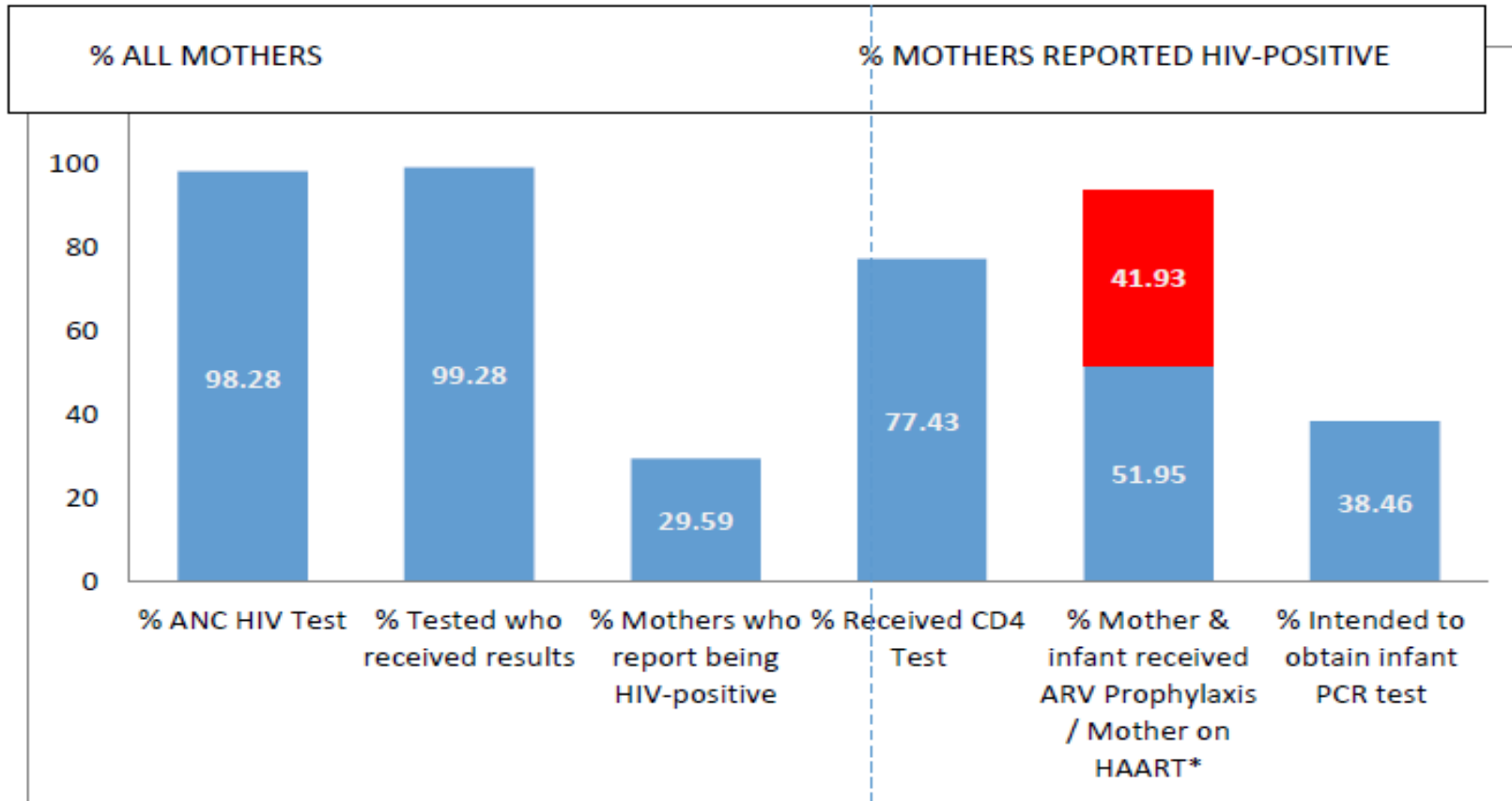
- Increasing early attendance requires interventions at both the individual and community levels to raise demand for services
- Changes in attitudes towards health-care services
- Changes in organization of ANC services to boost early uptake
 - e.g. CHWs to recruit women in the community



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HIV Testing in Pregnancy

Figure 5 PMTCT service uptake (PMTCT cascade) in South Africa



Access to PMTCT

TABLE 3.1

Coverage of antiretroviral prevention services for pregnant women living with generalized epidemic countries, 2012

Less than 50%



Angola
Benin
Chad
Congo
Democratic Republic of the Congo
Djibouti
Eritrea
Ethiopia
Guinea
Guinea-Bissau
Nigeria
Papua New Guinea
South Sudan

50–79%



Burkina Faso
Burundi
Cameroon
Côte d'Ivoire
Gabon
Kenya
Lesotho
Malawi
Uganda
United Republic of Tanzania

80% and above



Botswana
Ghana
Haiti
Liberia
Mozambique
Namibia
Rwanda
Sierra Leone
South Africa
Swaziland
Togo
Zambia
Zimbabwe

- UNAIDS: 234 955 pregnant women received ART for PMTCT 2012
- 83% [75%-90%] need met

UNAIDS Global report 2013

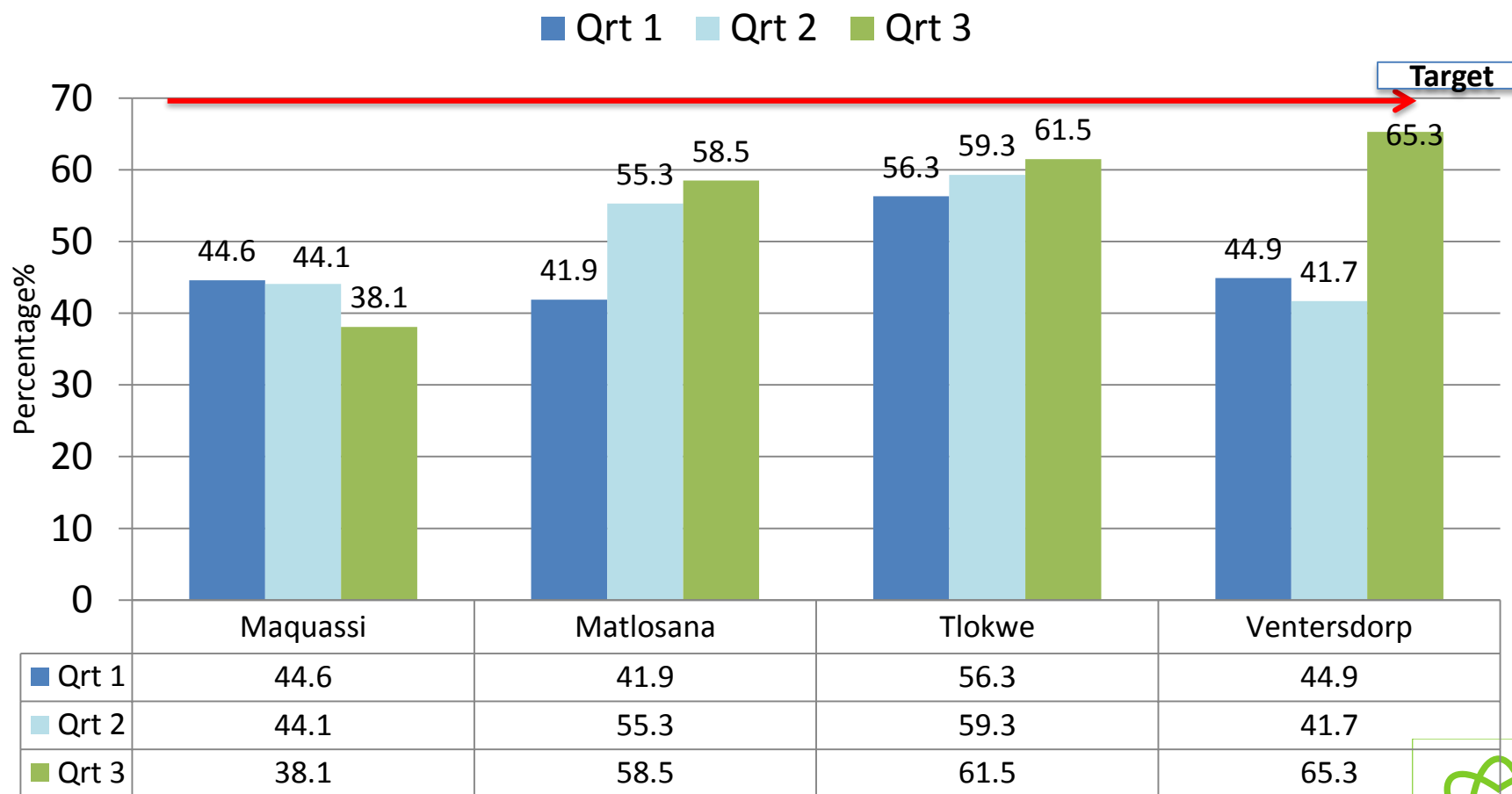


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HIV re-testing during pregnancy 3 monthly

- National target 70 %
- Generally falling below this
- Increases risks for MTCT

DKK ANC HIV Retest Rate Oct 13 – June 14



Matlosana has improved from 41.9% in Q1 to 58.5% in Q3.

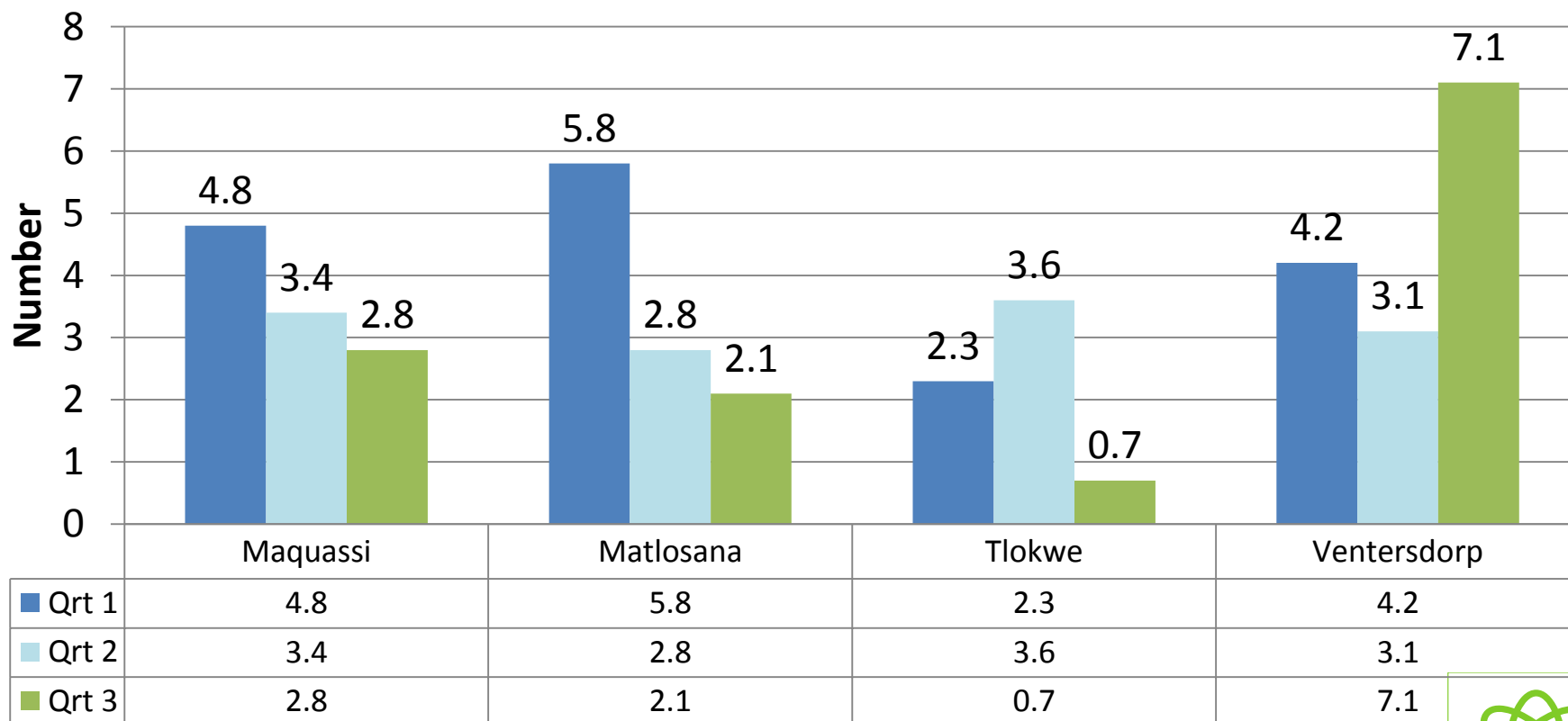
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DKK ANC HIV retest positivity rate Oct 13 – June 14

■ Qrt 1 ■ Qrt 2 ■ Qrt 3



Source: DHIS June 2014

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Infant feeding

- 89% of women receive feeding counselling
- 4-8 weeks: 35.5% exclusive breastfeeding
significant increase from 20.4% reported in 2010
- 47.1% reported avoiding breastmilk (reduction from the 61.5% in 2010)
- Horwood: 58.9% adult and 50% adolescent women EBF

SAPMTCT 2012
Horwood. *PLoS ONE*. 2012



Birth testing

Perform DNA PCR testing on all HIV-exposed low birth weight infants (< 2.5 kg) at birth and if positive, start cART. If negative, repeat DNA PCR at 6 weeks, and if negative again, perform an ELISA/rapid test on HIV at 18 months of age.

- Need to consider birth PCR in other high risk newborns such as where mother unbooked/presented late/in labour or has an elevated VL/ low CD4 count

Infant prophylaxis

- Daily NVP for 6-12 weeks
- BUT the question is around high risk infants:

Kaletra:

- Black box warning in under 14 days of age (post conception)
- Premis need to wait until term + 14 days before starting Kaletra according to FDA
- 42.4% (v/v) alcohol and 15.3% (w/v) propylene glycol, risk multi-organ toxicity

NVP:

- Potential resistance issues; decreased effectiveness in young children regardless of exposure

NRTIs

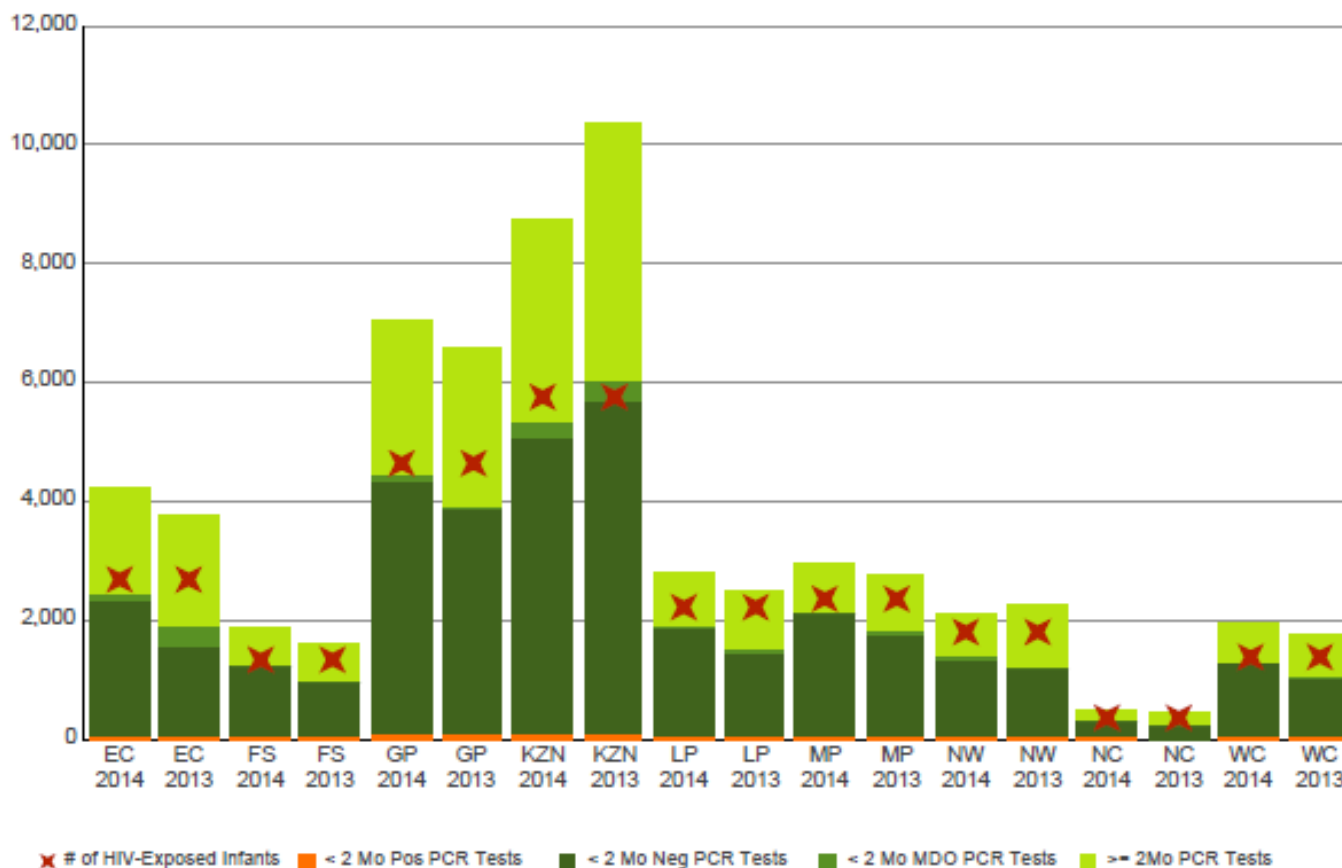
- No dose for ABC in < 3 months
- Should use AZT/3TC as backbone



Early diagnosis of HIV-infection in infants at 6 weeks of age by province for the month of Jul 2014 vs Jul 2013 (LY)

1. Province data

Run Date: 27/08/2014 16:00:27



NHLS July 2014



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		< 2 Mo Pos PCR Tests				Estimated Coverage for Early Diagnosis (%)			
Province		Current	YTD	LY	LY YTD	Current	YTD	LY	LY YTD
Eastern Cape	EC	40	258	23	270	91.2	78.3	71.3	68.0
Free State	FS	13	107	19	153	92.0	80.4	72.5	77.9
Gauteng	GP	73	442	63	482	95.2	85.1	83.6	79.4
KwaZulu-Natal	KZN	89	472	95	613	92.3	85.8	104.4	82.8
Limpopo	LP	45	259	38	301	84.0	73.2	67.9	68.1
Mpumalanga	MP	43	261	36	276	91.4	82.8	77.0	76.2
North West	NW	30	154	27	197	74.3	66.1	66.3	62.7
Northern Cape	NC	12	47	7	36	89.3	80.2	64.6	65.3
Western Cape	WC	28	148	26	129	91.1	85.5	73.4	71.4
Total		353	2,146	334	2,457	90.3	81.2	82.2	75.3

YTD - Year to Date

LY - Last Year

NHLS data July 2014

Infant testing: 6 week transmission

- 6 weeks: NHLS data shows that PMTCT practices successful provided HIV infected mothers access and are retained in care
- BUT need to be aware of high risk populations such as adolescents
- Horwood 2008/9 et al: Infants infected with HIV higher amongst adolescent mothers (35/325, 10.8%) compared to adult mothers (185/2800, 6.6%)

Horwood et al. *PLoS ONE*. 2013



Map 5: Percentage PCR tests under 2 months positive by district (NHLS data), 2012/13

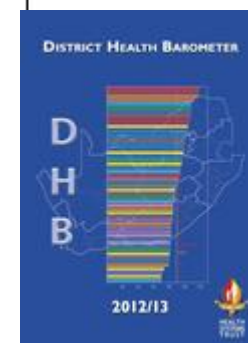
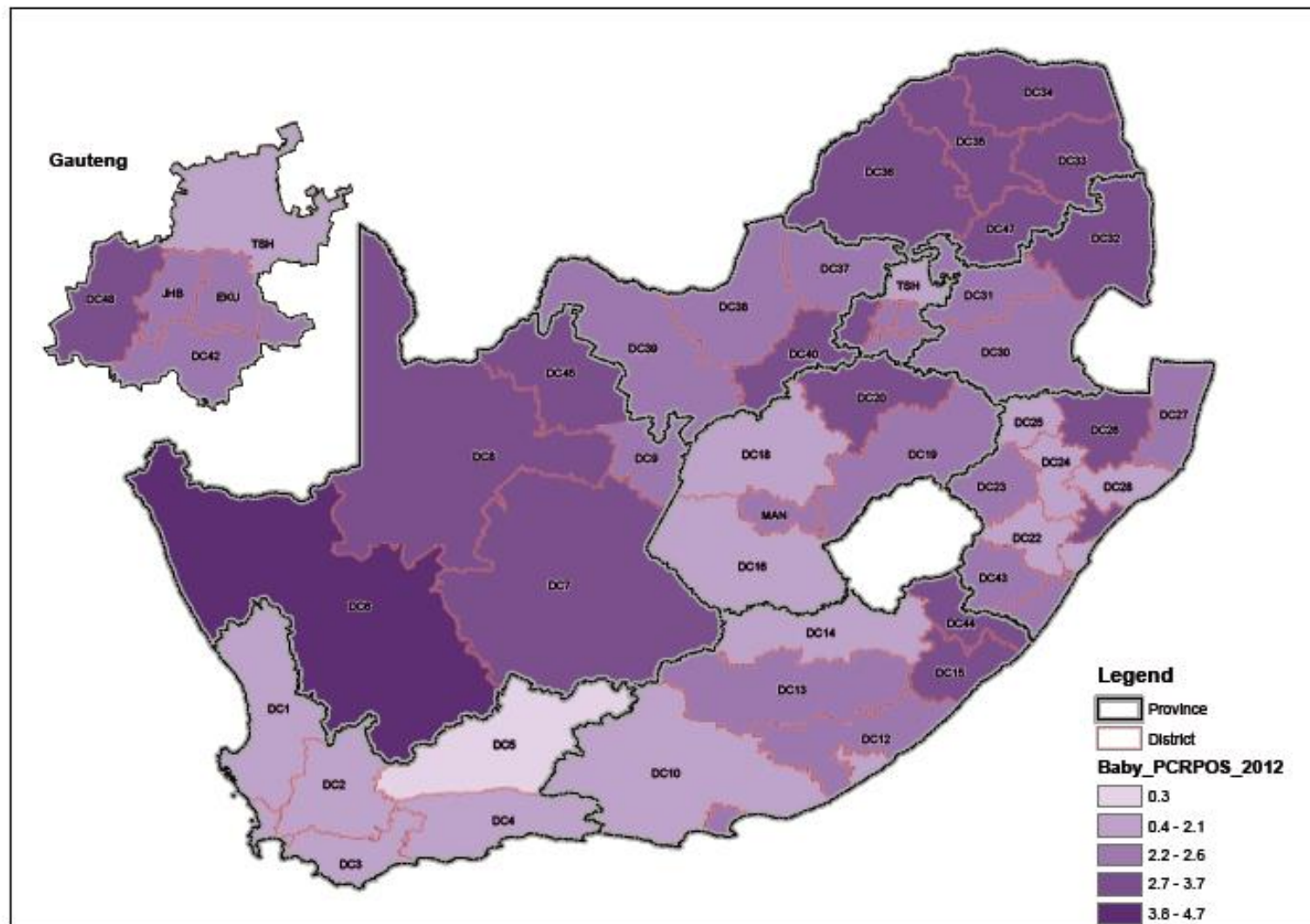


Table 4: HIV prevalence estimates among antenatal women by province, 2010 to 2012. (Source: NDoH, 2013)

	2010			2011			2012		
	N	% Prev.	95% CI	N	% Prev.	95% CI	N	% Prev.	95% CI
South Africa	32 225	30.2	29.4 – 30.9	33 326	29.5	28.7 – 30.2	33 865	29.5	28.8 – 30.2
Eastern Cape	3 994	29.9	28.2 – 31.7	4 099	29.3	27.5 – 31.1	4 552	29.1	27.3 - 30.9
Free State	2 223	30.6	28.3 – 33.0	2 292	32.5	30.5 – 34.5	2 309	32.0	29.8 - 34.3
Gauteng	6 714	30.4	29.1 – 31.8	6 948	28.7	27.3 – 30.1	6 755	29.9	28.3 - 31.5
KwaZulu-Natal	6 887	39.5	38.0 – 41.0	6 714	37.4	35.8 - 39.0	6 990	37.4	36.0 - 38.7
Limpopo	3 117	21.9	20.3 – 23.6	3 651	22.1	20.6 – 23.7	3 553	22.3	20.7 - 23.9
Mpumalanga	2 202	35.1	32.6 – 37.7	2 116	36.7	34.3 – 39.2	2 182	35.6	33.3 - 37.9
North-West	1 963	29.6	27.3 – 31.9	2 352	30.2	28.2 – 32.4	2 443	29.7	27.5 - 32.0
Northern Cape	1 144	18.4	16.1 – 21.1	1 125	17.0	14.3 – 20.0	1 173	17.8	15.3 - 20.7
Western Cape	3 981	18.5	15.1 – 22.5	4 029	18.2	14.3 – 22.8	3 908	16.9	13.8 – 20.5

Note: The area with the 2nd lowest ANC prevalence has the highest HIV PCR + rate: We must beware of complacency in these areas!!!

18 month testing

- Kheth'Impilo(KI): KwaZulu-Natal, Mpumalanga and the Eastern Cape
- 64.5% reduction in 18-month HIV test positivity declining from 10.7% to 3.8%
- Relative proportion of children receiving 18-month HIV tests versus 6-week PCR tests was low, but improved during the last quarter from 19.1% to 24.4%
- HPTN 046: 18 month transmission 2.2% in 6m NVP arm; 3.1% 6 week NVP arm
- 9 month testing: WHO guidelines, not yet SA

Grimwood. *SAMJ*. 2012

Fowler. *JAIDS*. 2014



18 month testing

Table: 3.22: HIV sero-discordance between mother-and-child pairs for children in 0–2 age group, South Africa 2012

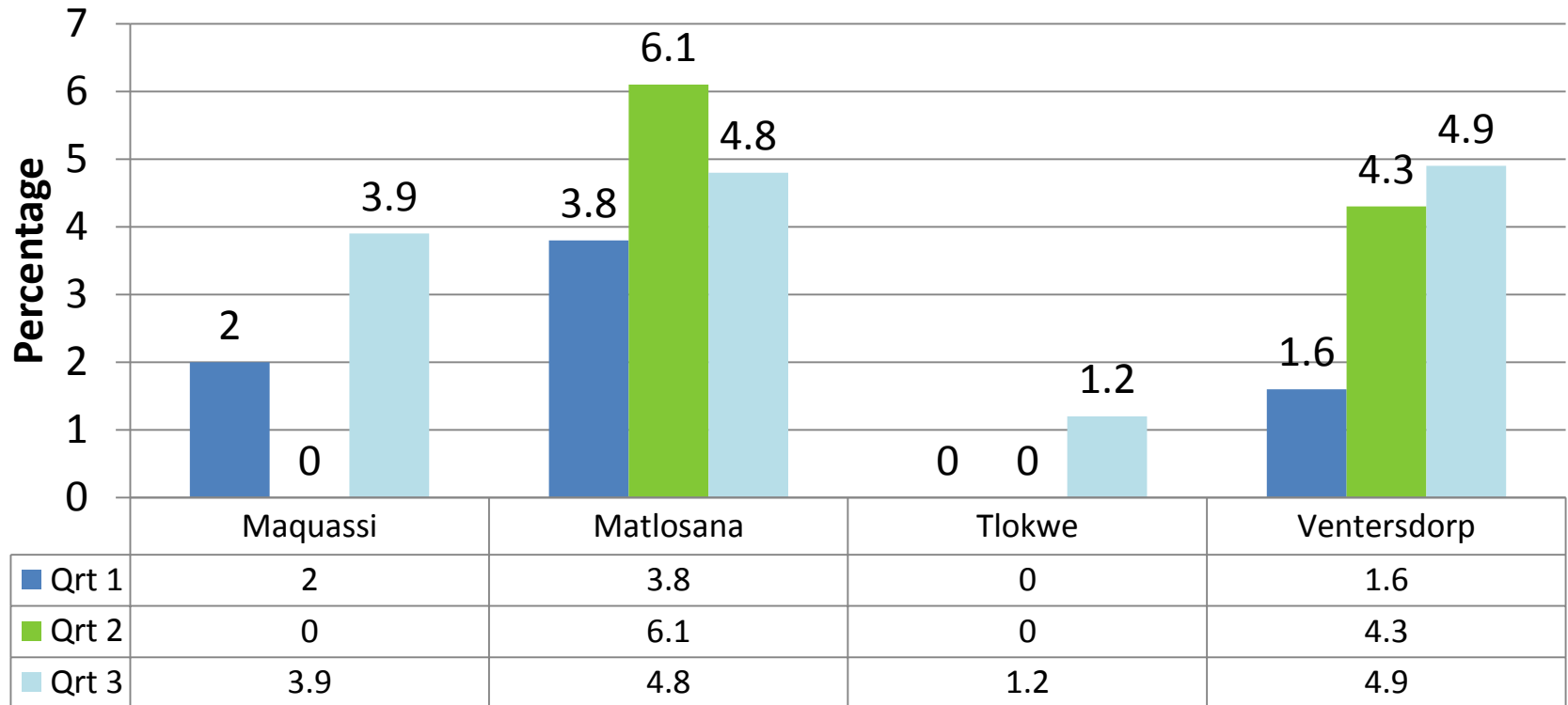
HIV status	Mother HIV positive	Mother HIV negative	Total
Child HIV positive	4.3% (1.7–7.0) n=10	0.2% n=1	11
Child HIV negative	95.7% (93–98.3) n=220	99.8% (99.5–1) n=624	844
Total	230	625	855

Table 3.23: HIV sero-discordancy between mother-and-child pairs in which children were younger than 10 years old, South Africa 2012

HIV status	Mother HIV positive	Mother HIV negative	Total
Child HIV positive	6.2% (4.5–7.9) n=47	0.2% n=5	52
Child HIV negative	93.8% (92.1–95.5) n=712	99.8% (99.5–100) n=2,060	2,772
Total	759	2,065	2,824

DKK Infant Antibody HIV test around 18 months positive rate Oct 13 – June 14

■ Qrt 1 ■ Qrt 2 ■ Qrt 3



Source: DHIS June 2014

Wits RHI DKK team



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Infant access to cART if +

- 148 342 children were on cART 2012/3
- Estimated need is 220 000 (UNAIDS 2012)
- 63% of children needing cART access it

Outcomes of Infants starting ART in SA 2004-2012

Baseline Characteristics (n=4945)

Characteristics	Overall	2004-2009	2010-2012	p value
Age (months), median (IQR)	5.9 (3.7; 8.7)	6.1 (3.8; 8.9)	5.4 (3.4; 8.4)	0.0000
WHO stage 3 or 4, n (%)	3327 (76.5%)	2605 (81.2%)	722 (63.4%)	0.0000
CD4 Percentage, median (IQR)	18.5 (12; 26)	18 (11.5; 24.9)	20.7 (13.6; 28.4)	0.0000
Severe Immunosuppression (WHO 2006), n (%)	3063 (87.2%)	2336 (89.2%)	727 (81.3%)	0.0000
WAZ category ≤ -3 (severely underweight), n (%)	1586 (41.8%)	1242 (44.5%)	344 (34.2%)	0.0000
First ART Drug, n (%)				
Stavudine	3242 (69.7%)			
Zidovudine	705 (15.2%)			
Abacavir	693 (14.9%)			
3rd ART drug, n (%)				
Protease Inhibitor	3171 (68.1%)			
PMTCT exposed, n (%)	948 (57.9%)			

Maternal retention in care and VL suppression

- High loss to follow up rate post delivery and breastfeeding with option B
- A pooled analysis, estimate of 73.5% of pregnant women with adequate (>80%) ART adherence
- Proportion higher during the antepartum (75.7%) compared to postpartum (53.0%) Need to address these issues before introducing option B+
- Programmatically in SA: VL suppression rates not known as currently not part of guidelines-> cART as prophylaxis only

Maternal 3 monthly HIV testing

- Mozambique: Post partum HIV acquisition: incidence 3.2/100 woman years
- Highest incidence 4.9/100 woman-years in 18-19 year olds
- In newly infected, transmission rate 21%
- EPI visits ideal time for retesting but not routine currently

WHAT ELSE DO WE NEED???



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- Good data
- Need to evaluate our progress critically and not get to zero just because we have no stats available!
- Need to document best practices especially with implementing:
 - option B+
 - 9 month testing in infants
 - Adherence tools and aids
- Probably need increased resources such as counsellors to ensure that HIV testing is done during ANC and PNC for both women and child; data capturers etc.

Conclusions

- Getting to zero will need a combined effort but also each person realizing their part
- We need to remember basics and primarily intensify efforts around preventing HIV infection and unintended pregnancy
- We need to intensify our efforts around the poor performing areas of the programme
- We need to plan ahead for B+
- We need to think creatively about adherence in pregnant and breastfeeding women
- The guidelines are excellent BUT they need to be implemented (and understood) and we need data to evaluate them!



Acknowledgements

- NHLS for the EID data
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- Dr G Kgosana

