8 Reproductive Health

Nienke van Schaik and Candy Day

This chapter covers two indicators related to reproductive health, namely 'couple year protection rate' and 'cervical screening coverage'.

8.1 Couple Year Protection Rate

The couple year protection rate (CYPR) indicator measures the percentage of women 15 to 49 years who are protected against unplanned pregnancies for a year using modern contraceptive methods, including sterilisation. The volume of all contraceptives dispensed to clients over a specified period of time is used to estimate the protection provided by family planning services during that particular period. Each type of contraceptive method is adjusted by a conversion factor (country-specific)[a] to yield an estimate of the duration of contraceptive protection. In South Africa it is calculated automatically by the DHIS as follows:

- Oral pill cycle * 0.077 (one pack lasts 28 days = 13 per year)
- Medroxyprogesterone injection * 0.25 (administered every three months)
- Norethisterone enanthate injection * 0.1666 (administered every two months)
- IUCD inserted * 4 (estimated to provide effective contraception for four years)
- Male condoms distributed * 0.005 (estimated that they are used 200 times per year)
- Male sterilisation * 20 (estimated number of years of protection against pregnancy post-procedure based on median age at sterilisation)
- Female sterilisation * 10 (estimated number of years of protection against pregnancy post-procedure based on median age at sterilisation)

This estimate is called the 'Contraceptive years equivalent' and is the numerator for the couple year protection rate indicator. The denominator is the 'Female Target population 15-49 years' where females are used as a proxy for couples. Although this indicator is expressed as a percentage, the calculation methodology is very different from surveys, where the numerator (women using a contraceptive method) is a subset of the total number of women surveyed. The DHIS numerator is however based on assumptions of the duration for which couples would be protected according to the number of methods provided if only one method was used per couple. It does not adjust for methods dispensed but not used (such as condoms or oral pills), removed early (such as IUCDs), or dual use of barrier and hormonal methods as advocated by the guidelines. For these reasons, it is quite possible for the calculated contraceptive year equivalents to exceed the target population, resulting in a rate exceeding 100% even though not every couple is protected in reality. The couple year protection rate is thus a crude proxy, although it is the best available measure in the absence of regular, disaggregated survey data.

The sub-dermal implant, although rolled out from March 2014, has not been used in the calculation of this indicator, but will be included in the 2015/16 analysis. The 2013 NIDS requires that all facilities (including hospitals) should report on each contraceptive method. In the past, reporting was only required by primary healthcare (PHC) facilities, although certain hospitals were also reporting on the data elements as can be seen in Table 1.

a MEASURE Evaluation PRH. Couple-years of protection (CYP). http://www.cpc.unc.edu/measure/prh/rh_indicators/specific/fp/cyp

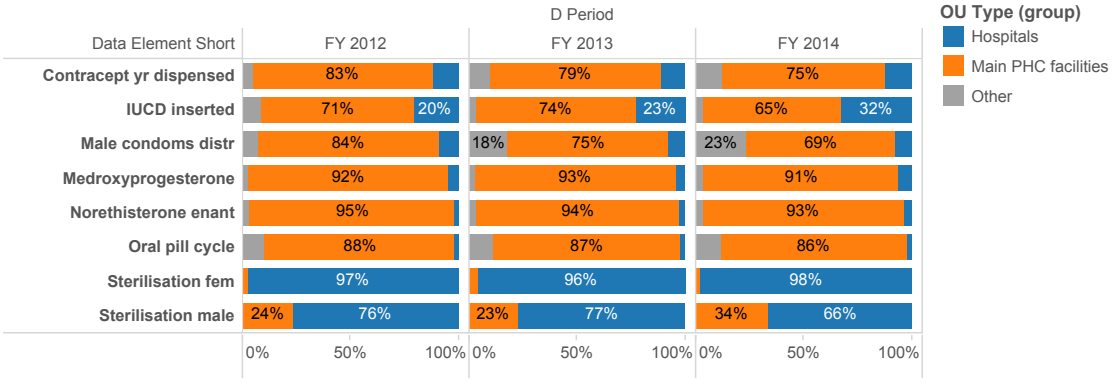
Table 1: Data elements by facility type (hospitals, main PHC facilities and other facilities)

Data Element Short	Year	Hospitals	Main PHC facilities	Other	Grand Total
Contraceptive years dispensed	FY 2012	473 687	3 434 175	205 398	4 113 261
	FY 2013	529 260	3 777 647	449 156	4 756 064
	FY 2014	681 759	4 103 993	700 366	5 486 117
IUCD inserted	FY 2012	2 067	7 159	927	10 153
	FY 2013	4 051	13 210	635	17 896
	FY 2014	13 456	26 971	1 386	41 813
Male condoms distributed	FY 2012	24 263 947	228 102 928	20 741 652	273 108 527
	FY 2013	29 213 718	288 685 507	69 561 574	387 460 799
	FY 2014	38 014 451	350 360 982	118 002 791	506 378 224
Medroxyprogesterone	FY 2012	260 644	5 134 286	166 675	5 561 605
	FY 2013	242 666	5 239 722	159 728	5 642 116
	FY 2014	331 656	5 254 998	180 282	5 766 936
Norethisterone enanthate	FY 2012	76 471	4 061 330	135 552	4 273 353
	FY 2013	101 361	4 021 007	143 057	4 265 425
	FY 2014	144 559	3 982 342	154 819	4 281 720
Oral pill cycle	FY 2012	72 966	3 821 502	435 199	4 329 667
	FY 2013	81 876	3 711 293	455 103	4 248 272
	FY 2014	84 095	3 293 067	440 834	3 817 996
Sterilisation female	FY 2012	24 688	630	22	25 340
	FY 2013	26 981	1,184		28 165
	FY 2014	30 955	597		31 552
Sterilisation male	FY 2012	685	214		899
	FY 2013	666	197		863
	FY 2014	742	378		1 120

* other includes all other organisational units that are not clearly hospitals or clinics/CHCs/mobiles

Figure 1 shows that the majority of contraceptive methods (75%) are dispensed at PHC facilities, with the exception of the surgical procedures.

Figure 1: Data elements relating to couple year protection, % supplied by hospitals, main PHC facilities and other facilities, 2011/12 – 2013/14



The new National Contraception and Fertility Planning Policy and Service Delivery guidelines[b] and the new National Contraception Clinical Guidelines[c,d] have been implemented.

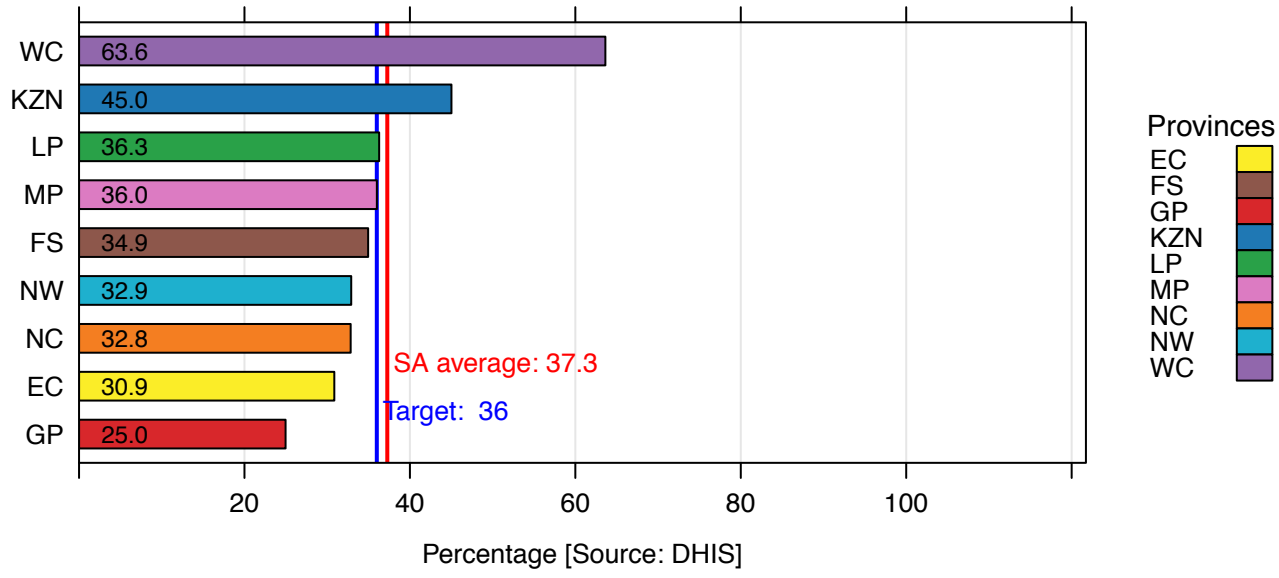
The Health Minister, Dr Aaron Motsoaledi, is continuing to place emphasis on his "Dual Protection" campaign whereby consistent use of a condom together with another form of contraceptive device is promoted. On 17 February 2014 the National Department of Health (NDoH) launched a new National Family Planning Campaign together with the roll-out of the sub-dermal implant which is being provided free of charge in all public health facilities to any woman regardless of her socio-economic status. Nurses have been trained in all public health facilities and are proficient in inserting the implant, which provides three years of protection. In the first four months of 2014, 362 000 implants were inserted, far exceeding the annual target of 320 000. The Ministry expects an additional 600 000 implants to be inserted by April 2015.[e] Assuming that this target is reached, and that a factor of three is used (given that it is effective for three years), implants will contribute approximately 2.9 million contraceptive year equivalents in 2014/15, more than half the value from all methods combined in 2013/14. The roll-out of sub-dermal implants[f] has been particularly successful in the Western Cape and Mpumalanga.[g,h]

The impact of introduction of the implant will be interesting to observe, especially to see if the number of injectable contraceptives issued will decline or if it will be used primarily by women not already using a contraceptive method.

The Integrated School Health Programme (ISHP) is being supported by various programmes and organisations to promote family planning among youth and to address teenage pregnancy. This is being achieved through supporting peer education and health promotion in schools.[i] The proxy for the teenage pregnancy rate (delivery rate in facility under 18 years) is discussed in the Delivery chapter.

The couple year protection rate in South Africa remains low although it has increased from 26.3% in 2002/03 to 32.7% in 2012/13[j] and to 37.3% in 2013/14. The couple year protection rate for SA is now above the target of 36.0%. The couple year protection rate (CYPR) by province is shown in Figure 2. After being fairly static for a number of years, the couple year protection rate increased in all provinces from 2011/12 to 2012/13. This increase continued in 2013/14 for all provinces with the exception of the Free State where it declined from 36.6% in 2012/13 to 34.9% in 2013/2014. The greatest increase was seen in KwaZulu-Natal, where the rate increased by 9.2 percentage points to 45.0%. This was followed by Mpumalanga (6.1 percentage point increase) and Western Cape (5.9 percentage point increase). There was a more than two-fold difference in the CYPR between the Western Cape, which had the highest rate of 63.6%, and Gauteng which had the lowest rate, 25.0%, for the second consecutive year.

Figure 2: Couple year protection rate by province, 2013/14



b http://www.doh.gov.za/docs/policy/2013/contraception_fertility_planning.pdf

c http://www.doh.gov.za/docs/policy/2013/Contraception_Clinical_Guidelines_28jan2013-2.pdf

d http://www.rmchsa.org/promoting-family-planning-to-reduce-maternal-deaths/

e http://www.pmg.org.za/briefing/20140723-minister-health-budget-vote-speech

f http://www.bdlive.co.za/national/health/2014/02/20/new-contraceptive-implant-free-to-women-in-sa-says-motsoaledi

g http://www.timeslive.co.za/thetimes/2014/07/22/women-flock-to-arm-themselves-against-pregnancy

h http://www.health-e.org.za/2014/05/15/new-birth-control-hits-mark-mpumalanga-women/

i http://www.rmchsa.org/wp-content/uploads/2013/08/Fact-sheet-Status-of-Family-Planning-in-South-Africa.pdf.

j The figures for 2011/12 and 2012/13 were revised following adjustment of the population estimates, which impacts the denominator for this indicator, hence figures for the latter two years are different to those reported in the previous DHB.

The variation in the couple year protection rate across the districts for 2013/14 is shown in Figure 3. The CYPR doubled in uMgungundlovu (KZN) from 53.8% to 110.7%, placing it as the best performing district in the country (see Figure 3). This is due to an increase in the contraceptive methods dispensed (nearly three times more IUCDs inserted and condoms distributed) as the population estimates for this district did not decrease. However, the quality of the data should be verified before this can be regarded as a true reflection.

Cape Town (WC) is now the second best performing district with Eden (WC) moving into third place. All six districts in the Western Cape were within the top 10 performing districts.

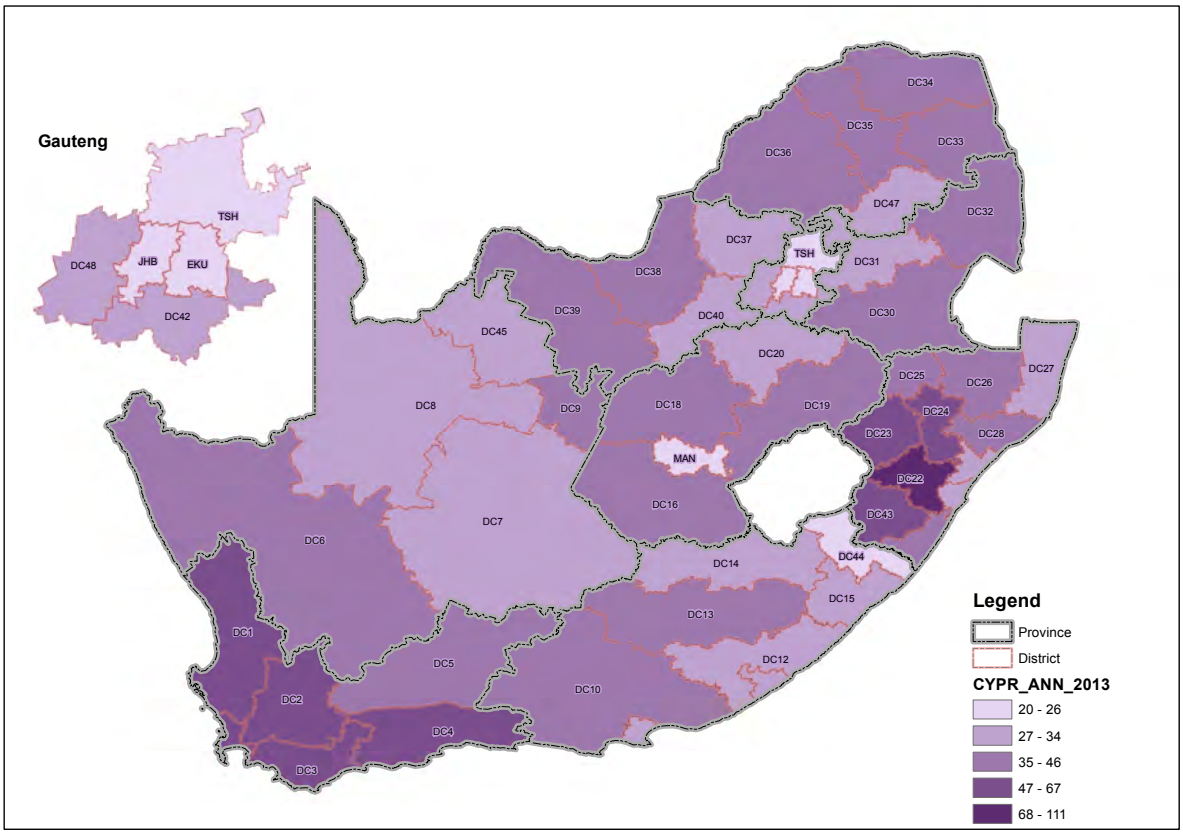
The CYPR increased by 19.4 percentage points in Harry Gwala (KZN) and by 16.6 percentage points in uMzinyathi (KZN) in the last year.

The CYPR in Amajuba (KZN) decreased from 62.6% to 34.9%, a decrease of 27.7 percentage points which resulted in a drop from being ranked first to being ranked 29th. This decrease was due to a massive decrease in condom distribution, although it appears that the high value in 2012/13 may be the outlier. The CYPR in Namakwa (NC) and Xhariep (FS) dropped by 10.0 and 9.4 percentage points respectively.

The performance in the NHI districts was highly variable, and included the best and worst performing districts in the country, with uMgungundlovu at 110.7% and Tshwane the lowest at 20.2%.

In four of the five districts with the highest population of females aged 15-49 years, the couple year protection rate was low. In Johannesburg (GP), eThekwini (KZN), Ekurhuleni (GP) and Tshwane (GP) the rates were well below the national average. Tshwane (GP) was the poorest performing district overall. Cape Town (WC) was the only metro with a rate above the national average. The CYPR in these districts should be urgently addressed. This may be a data quality issue in Gauteng as data elements which make up the CYPR have not been activated at all hospitals as is discussed next.[k]

Map 1: Couple year protection rate by district, 2013/14



k van Schaik N, Madale R, Massyn N, Day C, English R. DHIS Data Quality Assessment Gauteng Province Hospital Indicators 2008/09 to 2012/13 Durban: Health Systems Trust; 2014.

Figure 3: Couple year protection rate by district, 2013/14

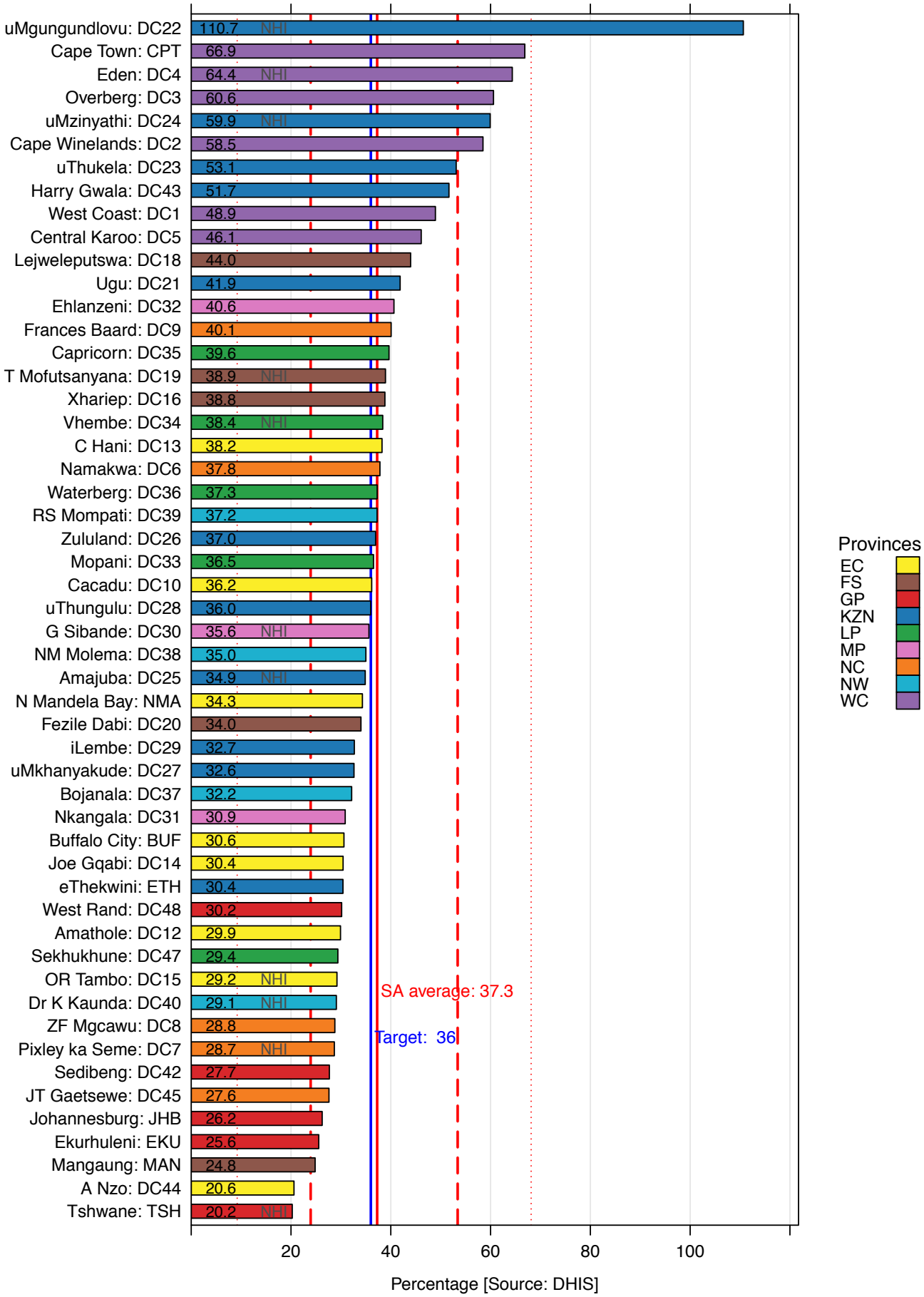


Figure 4: Annual trends: Couple year protection rate

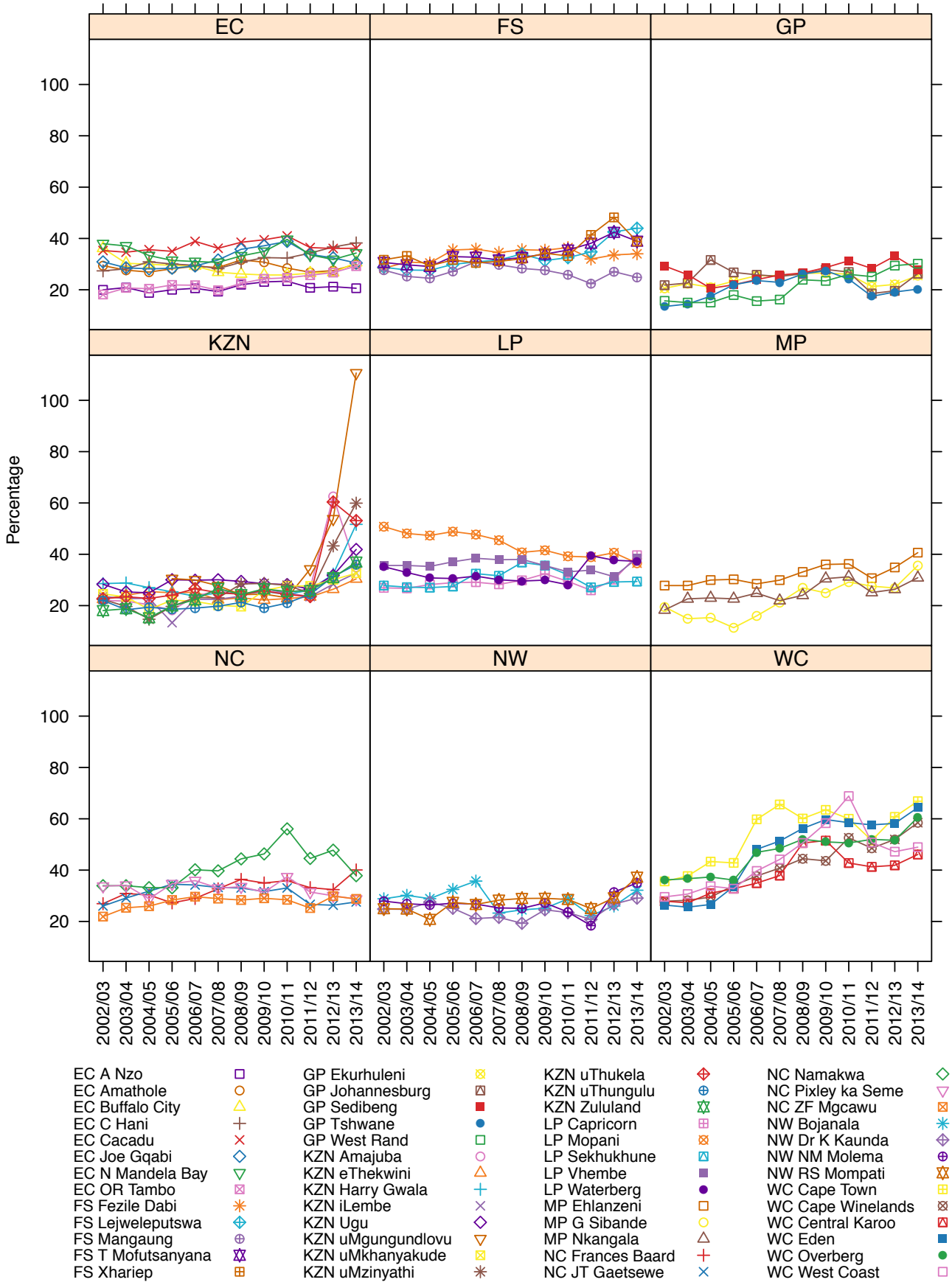
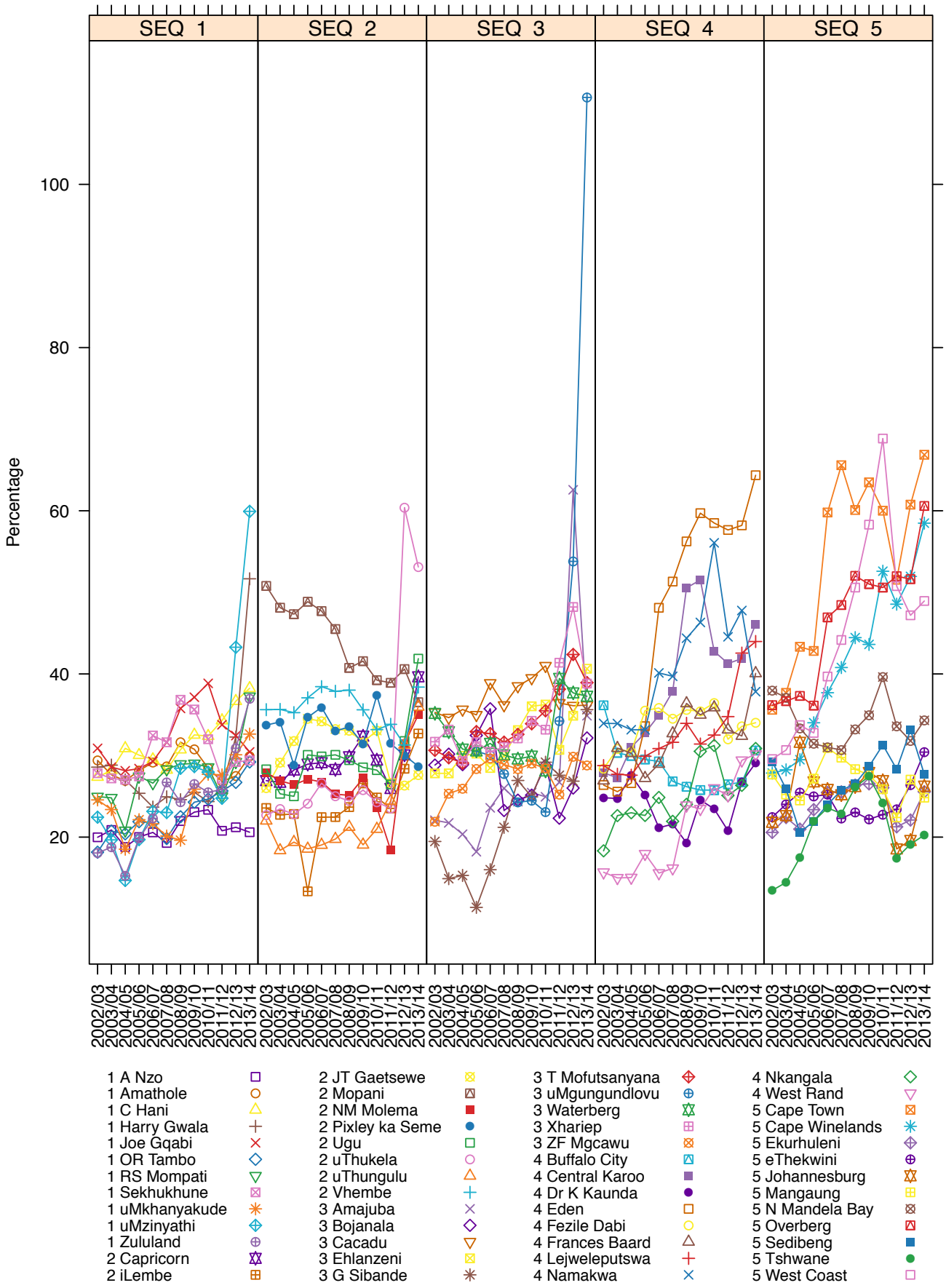


Figure 5: Couple year protection rate by SEQ



The medroxyprogesterone injection, which is administered intramuscularly, is currently the contraceptive of choice for South African women (See Table 1 and Table 2) and contributes the most contraceptive years after male condoms. Medroxyprogesterone data were, however, not complete for all months for all facilities. It is unlikely that zero doses were administered as this was the most popular contraceptive method used in South Africa unless stock-outs occurred. In Gauteng, five of the nine regional hospitals, none of the three tertiary hospitals and only two of the four central hospitals had the data element activated on the DHIS and so did not report on it. It is very likely that there are also hospitals in other provinces that did not have the elements activated, as there are a number of data discrepancies in the database.

Table 2: Data elements contributing to the CYPR

Data Element	FY 2012	FY 2013	FY 2014	Percentage change*
IUCD inserted	10 153	17 896	41 813	311.8
Male condoms distributed	273 108 527	387 460 799	506 378 224	85.4
Medroxyprogesterone	5 561 605	5 642 116	5 766 936	3.7
Norethisterone enanthate	4 273 353	4 265 425	4 281 720	0.2
Oral pill cycle	4 329 667	4 248 272	3 817 996	-11.8
Sterilisation female	25 340	28 165	31 552	24.5
Sterilisation male	899	863	1 120	24.6
Contraceptive years dispensed	4 113 261	4 756 064	5 486 117	33.4
Contraceptive years equivalent				**Factor**
IUCD inserted	40 612	71 584	167 252	4
Male condoms distributed	1 365 543	1 937 304	2 531 891	0.005
Medroxyprogesterone	1 390 401	1 410 529	1 441 734	0.25
Norethisterone enanthate	711 941	710 620	713 335	0.1666
Oral pill cycle	333 384	327 117	293 986	0.077
Sterilisation female	253 400	281 650	315 520	10
Sterilisation male	17 980	17 260	22 400	20

* the percentage change from FY2012 to FY2014

The number of IUCDs inserted was on the increase which is promising. The number of condoms distributed has also increased substantially. The injectable contraceptives have shown a small increase since 2012/13, as have the number of sterilisations performed. The number of terminations of pregnancy performed continued to rise (Table 3). Although access to this service is important, the increasing demand for the service implies that access to contraceptives is lacking for these women.

Table 3: Trends in terminations of pregnancy, illustrating the unmet need for contraception

Data Element	FY 2012	FY 2013	FY 2014	Percentage change
Termination of pregnancy performed	77 693	82 910	90 160	16.0

At DHB workshops conducted in 2013 and 2014, poor recordkeeping and poor data quality were mentioned as the main reasons for poor performance. As mentioned previously, there are hospitals that do not submit data for family planning methods. When checking the data more closely, it appears that not all facilities are reporting monthly.

Other reasons for poor performance include:

- The staff do not follow the data element definitions: IUCDs provided by the facility but inserted by general practitioners should be counted by the facility. An oral pill cycle is a packet of oral contraceptives issued to a woman aged 15-49 years. However, these are often issued for three months at a time. Some staff incorrectly count this as one cycle instead of three.
- Sterilisation is not promoted as a family planning method and thus few male and female sterilisations are done at hospitals.
- A negative attitude of staff members deters women from returning to the facilities for their contraception.
- There are persistent complaints that facilities are not youth-friendly.
- There are also no fast queues for family planning patients. The provision of this service could increase the uptake of family planning methods.

The CYPR is most likely higher than reported for the data quality reasons mentioned. However, the CYPR remained low in a number of districts and provinces. Facilities could focus on promoting long-acting reversible contraception such as the implant and IUCD or sterilisations in order to improve the CYPR in their districts and nationally, in addition to condom distribution.

Urgent attention should be given to data quality issues. All facilities should have the data element activated on the DHIS and data should be collected accordingly. The sub-dermal implant should be added to data collected to allow this to contribute to the CYPR for the country.

8.2 Cervical cancer screening 30 years and older

The cervical screening coverage numerator is the number of cervical (Papanicolaou) smears or visual inspections with acetic acid (VIA) for women 30 years and older for screening purposes. Diagnostic smears or repeat smears are not included. The smear must also be of sufficient quality to enable screening (e.g. include endo-cervical cells). It includes smears done in antenatal clinics or postnatally or for HIV-positive women, but only if they fall within the definition and are counted once within the 10-year interval.

The denominator is 10 per cent of the female target population 30 years and older. Screening coverage of 100% per year means that every woman in the eligible age group is screened once in 10 years. This is in keeping with the national policy which states that women older than 30 should have three cervical smears done at 10-yearly intervals.[l]

Cervical cancer is the second most frequent cancer among women in South Africa and is the most frequent cancer among women between 15 and 44 years of age. South Africa has a population of 19.43 million women aged 15 years and older who are at risk of developing cervical cancer. It is estimated that every year, 7 735 women are diagnosed with cervical cancer and 4 248 die from the disease. Using data from studies where human papilloma virus (HPV) detection tests were done for cervical samples, about 21.0% of women in the general population are estimated to have cervical HPV infection at a given time. The vast majority of invasive cervical cancers (62.8%) are attributed to HPVs 16 or 18.[m]

HPV vaccination of girls before their sexual debut is the best primary prevention method for cervical cancer currently available.[n] In March 2014, the NDoH, together with the Department of Basic Education, launched the HPV vaccine programme for Grade 4 girls, since HPV has been identified as one of the major causes of cervical cancer. Over 2 000 vaccination teams were trained and visited over 90% of all public schools with Grade 4 learners. In March and April 2014, these teams immunised 345 377 (87%) of the eligible Grade 4 girls. The final dose of the vaccine (given six months after the initial dose) is planned for September and October 2014. The vaccination programme will continue for all new Grade 4 girls every year. The girls who have not yet turned nine years of age during the year that they are in Grade 4 will be vaccinated the following year even if they leave the Grade 4 class.[o]

Uganda has adopted a similar strategy of vaccinating girls in one particular grade to address the greatest challenge for this vaccine, which is the fact that it consists of three doses given at 0, 1 and 6 months.[p] South Africa has chosen to give only two doses of the vaccine based on evidence that two doses are sufficient.[q]

Overall, the cervical cancer screening coverage in South Africa in 2013/14 was 54.1%, an increase from 50.3% in 2012/13.[r] This was lower than the NDoH target for cervical cancer screening coverage of 56.0%, as shown in the NDoH Annual Performance Plan for 2013/14. However, this target was set based on previous population estimates.

Provincial cervical cancer screening coverage are shown in Figure 6. The increase in cervical cancer screening coverage in KwaZulu-Natal (KZN) which was seen over the past few years appears to have peaked and there was a small reduction in the cervical cancer screening coverage from 78.2% in 2012/13 to 75.3% in 2013/14. However, KZN remained the best performing province. All other provinces showed an increase, with the North West showing a substantial increase of 13.1 percentage points from 46.5% in 2012/13 to 59.6% in 2013/14. It is now the second best performing province. The Western Cape was third at 57.2%. The Northern Cape remained the worst performing province at 31.6%.

l South African Department of Health. National guideline on cervical cancer screening programme. http://www.doh.gov.za/docs/factsheets/guidelines/cancer.pdf

m http://www.hpvcentre.net/summaryreport.php

n Richter K. Cervical cancer screening – a new viral paradigm. CME. 2012 Jan;30(1):25-28.

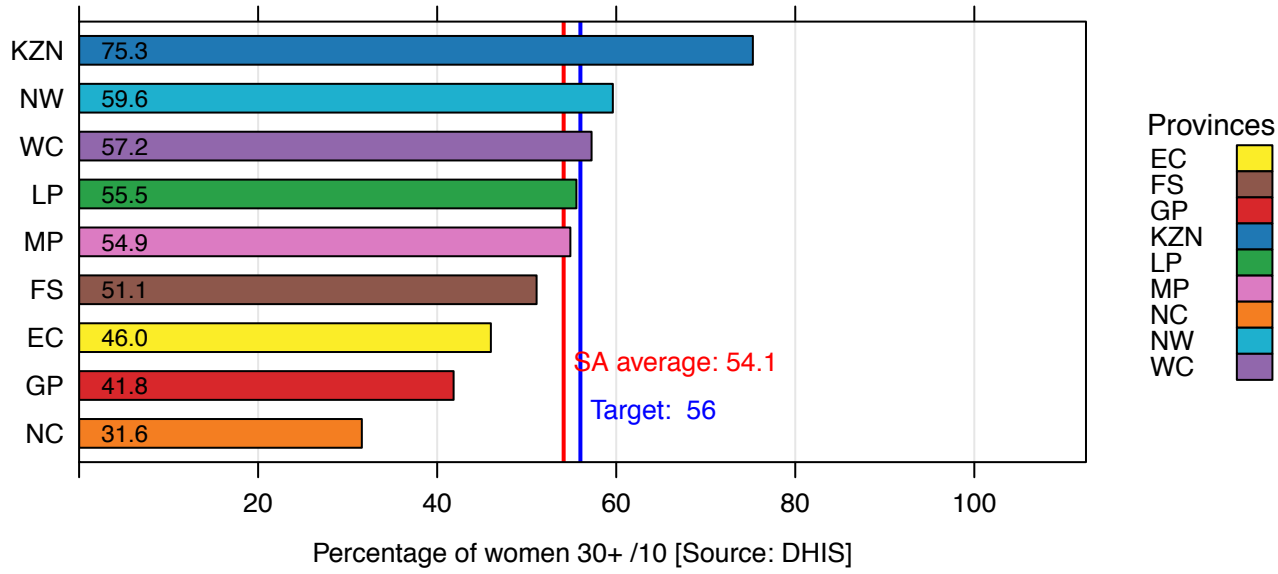
o http://www.pmg.org.za/briefing/20140723-minister-health-budget-vote-speech

p http://www.who.int/bulletin/volumes/90/12/12-021212/en/index.html

q http://mg.co.za/article/2014-03-12-motsoaledi-launches-free-hpv-vaccine-for-school-girls

r The figures for 2011/12 and 2012/13 were revised following adjustment of the population estimates, which impacts the denominator for this indicator, hence figures for the latter two years are different to that reported in the previous DHB.

Figure 6: Cervical cancer screening coverage by province, 2013/14



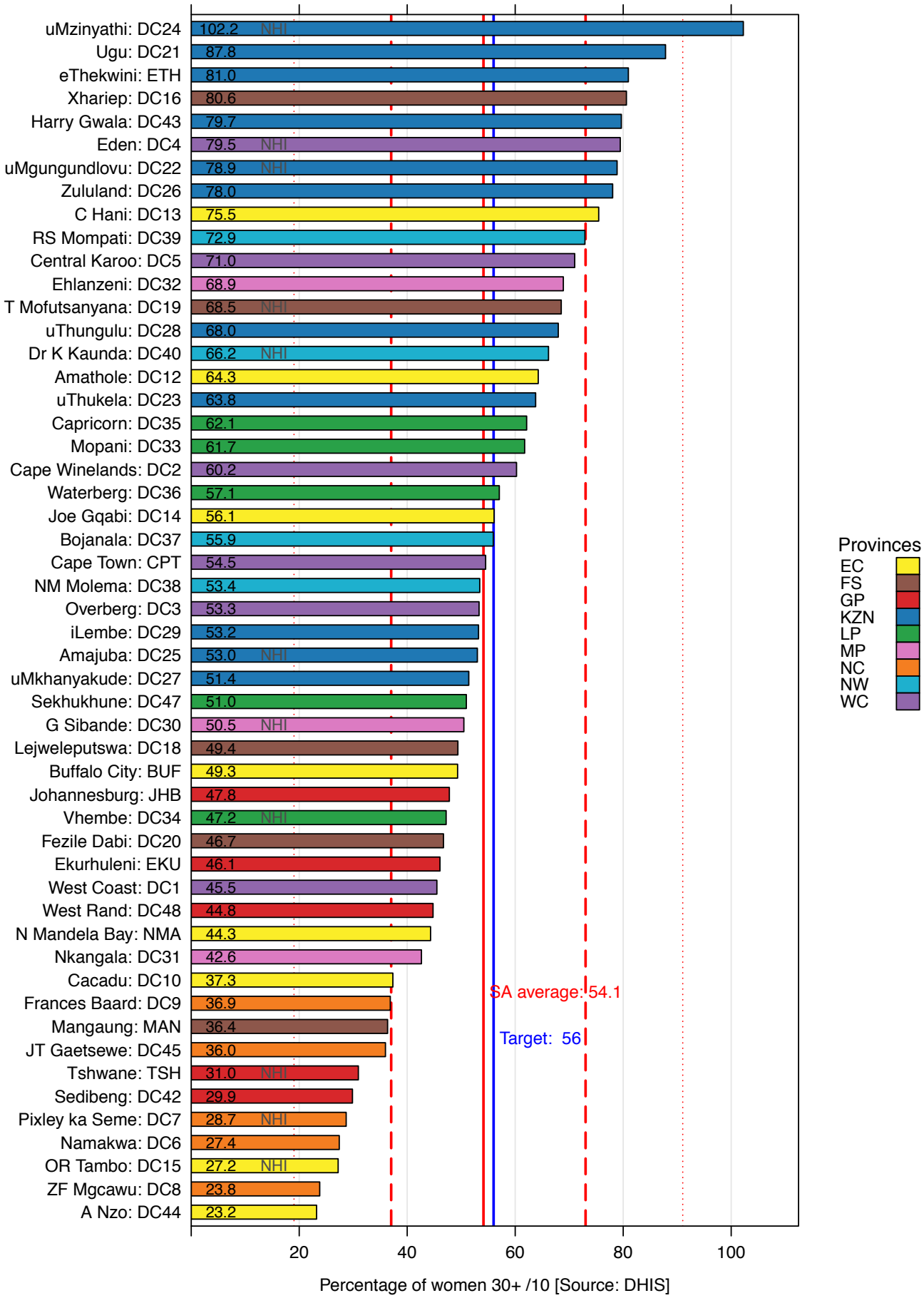
At a district level, uMzinyathi (KZN) had the highest cervical cancer screening coverage in 2013/14 at 102.2% (see Figure 7). This coverage has been over 100% since 2009/10. The National Department of Health Clinical guidelines for HIV and AIDS management advise cervical cancer screening for all HIV-positive women on HIV diagnosis and, if normal, every three years.[s] The high rates in uMzinyathi (KZN) may be due to Papanicolaou smears being done according to these guidelines for HIV-positive women and women being counted more than once in 10 years.

Although the 10 districts with the highest cervical cancer screening coverage include several districts that also have the highest antenatal HIV prevalence (Ugu, uMgungundlovu, eThekwini, Zululand, and Harry Gwala – all in KZN), the list also contains uMzinyathi (KZN), Xhariep (FS), Chris Hani (EC) and Ruth Segomotsi Mompati (NW) that have a fairly average HIV prevalence, and Eden (WC) which has a low antenatal HIV prevalence rate. For the latter districts, it is likely that the high coverage rates reflect a high uptake of cervical smears in all women, regardless of HIV status.

The most improved districts in terms of the cervical cancer screening rate over the past year were Amathole (EC) (22.1 percentage points), Bojanala (NW) (20.2 percentage points) and Buffalo City (EC) (18.0 percentage points). The coverage continued to decrease in iLembe (KZN) (from 81.9% in 2011/12 to 62.2% in 2012/13 and 53.2 in 2013/14). The rate also declined in uMkhanyakude (KZN) by 20.5 percentage points and uMzinyathi (KZN) by 10.9 percentage points. The worst performing district was Alfred Nzo (EC) where the coverage was 23.2%, having declined from 25.4% in 2012/13. There was considerable variation in the NHI districts, as this profile included the best performing district, uMzinyathi (KZN), as well as OR Tambo (EC) which was the third lowest district overall.

s South African National Department of Health. Clinical guidelines for the management of HIV & AIDS in adults and adolescents 2010. http://www.doh.gov.za/docs/factsheets/guidelines/adult_art.pdf

Figure 7: Cervical cancer screening coverage by district, 2013/14



Map 2: Cervical cancer screening coverage by district, 2013/14

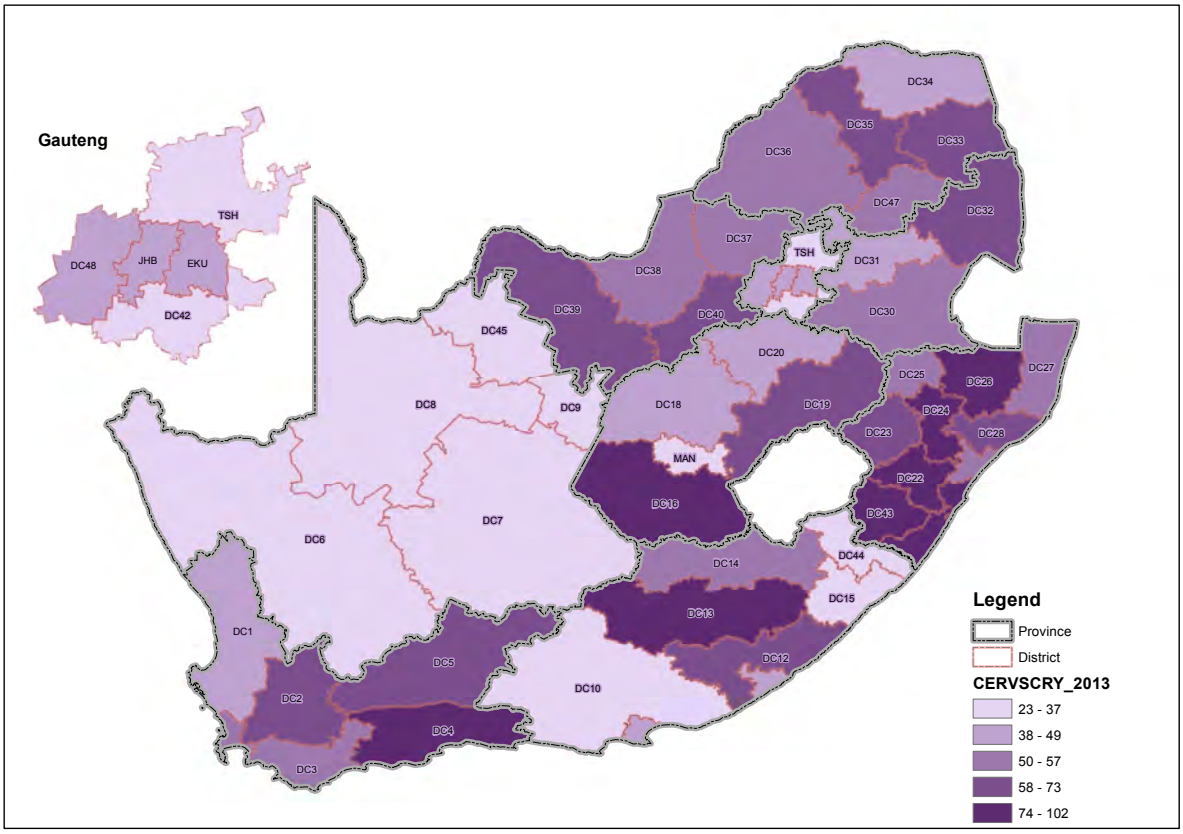
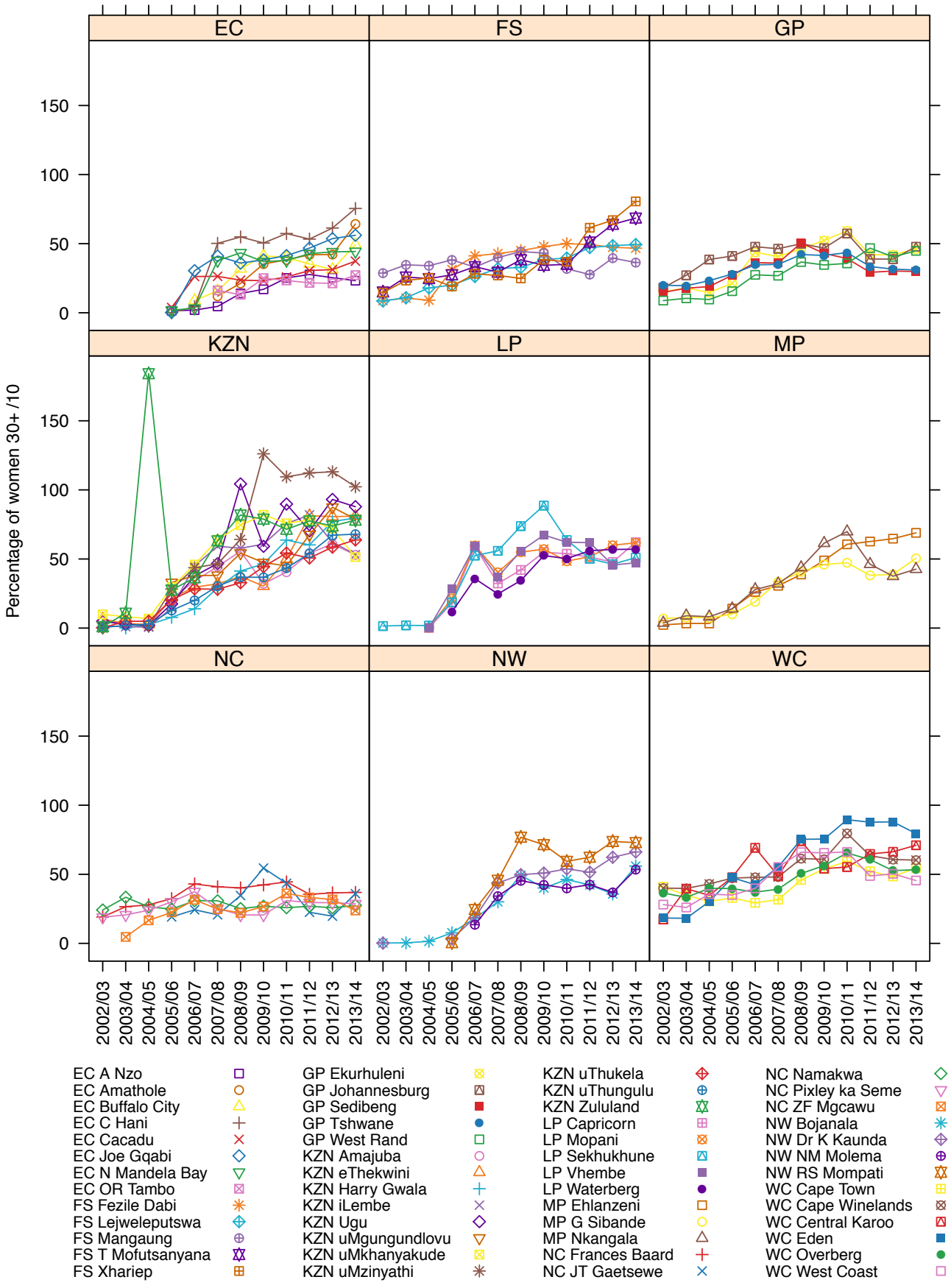
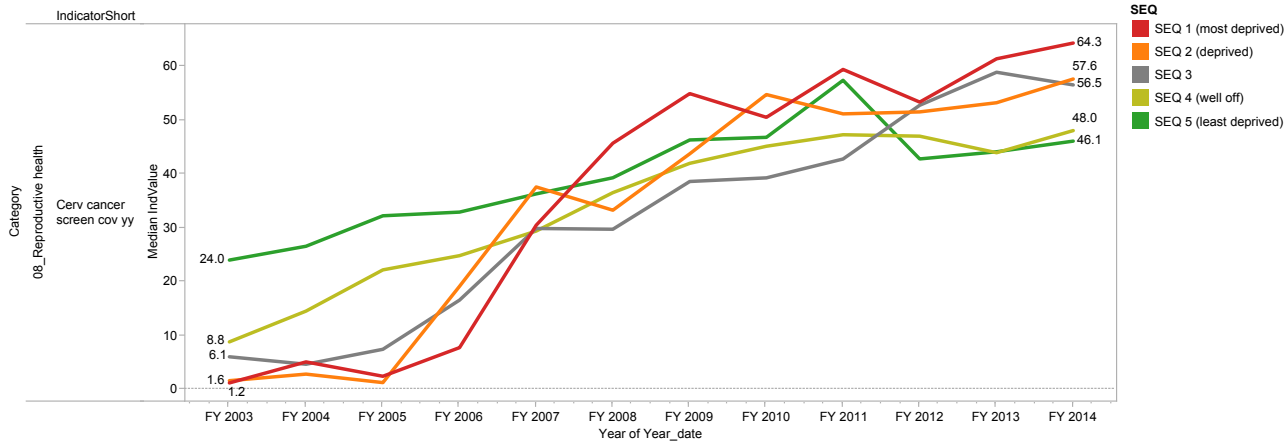


Figure 8: Annual trends: cervical cancer screening coverage



Cervical cancer screening services have become more equitably provided over the past 10 years, when virtually no services were provided in the poorest districts (socio-economic Quintile 1). By 2013/14, the median cervical screening coverage ranged from 64.3% (SEQ 1 districts) to 46.1% in the wealthiest districts (SEQ 5) (see Figure 9).

Figure 9: Trends in median district values for cervical cancer screening coverage by SEQ



At DHB workshops conducted in 2013 and 2014, it was mentioned that there are many missed opportunities for doing cervical cancer screening. Women could be asked at each visit to the facility when last they have had a Papanicolaou smear. Papanicolaou smear drives could be considered for improving the cervical cancer screening in particular areas.

Other reasons cited for poor performance were that:

- clinics do not always have equipment available to do Papanicolaou smears. Speculums need to be sterilised, and
- there have also been instances when the incorrect equipment has been delivered.

The data elements are also not correctly understood. This could lead to false high coverage rates if women are counted more than once in 10 years, if smears done for women under the age of 30 are counted, and if repeat smears and diagnostic smears are included in the totals.

The cervical cancer screening coverage remained inappropriately low and should be urgently addressed as cervical cancer remains the second most commonly occurring cancer in women in South Africa after breast cancer.[t] The impact of the roll-out of the HPV vaccine will not be discernible for many years. In the interim, focused attention should be given to performing cervical screening on all eligible women.

t WHO/ICO Information Centre on HPV and Cervical Cancer (HPV Information Centre). Human Papillomavirus and Related Cancers in South Africa. Summary Report 2010. c2010 [cited 2013 July 05]; Available from: http://www.hpvcentre.net/statistics/reports/ZAF.pdf

Figure 10: Cervical cancer screening coverage by SEQ