8 Reproductive health

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

8.1 Couple year protection rate

Over the last five years there have been concerted efforts to improve access to contraception among women in South Africa, and a number of policy initiatives have been introduced in this regard. In February 2012, the National Contraception and Fertility Planning Policy and Service Delivery Guidelines was introduced and in 2014 the National Contraception Clinical Guidelines. One of the key intentions of these guidelines was to give all public sector patients access to additional methods of contraception, in particular, to the long-acting hormonal contraceptive subdermal implant. This implant provides contraceptive cover for three years. The couple year protection rate (CYPR) indicator measures the proportion of women aged from 15 to 49 years who are protected against unplanned pregnancies for a year using modern contraceptive methods, including sterilisation. The volume and type of all contraceptives dispensed to clients during a specified period of time (a year) is used to estimate the amount of protection against pregnancy during that particular period. This estimate of protection, the 'contraceptive years dispensed' forms the numerator for the CYPR indicator. Each type of contraceptive method that is distributed is adjusted by a conversion factor (country-specific)[a] to yield an estimate of the duration of contraceptive protection. In South Africa, this is calculated automatically in the District Health Information Software (DHIS) as follows:

- oral pill cycle divided by a factor of 13 (one pack lasts 28 days = 13 per year);
- medroxyprogesterone injection divided by a factor of 4 (administered every three months);
- norethisterone enanthate injection divided by a factor of 6 (administered every two months);
- intrauterine contraceptive device (IUCD) inserted multiplied by a factor of 4 (estimated to provide effective contraception for four years);
- male condoms distributed divided by a factor of 200 (estimated that they are used 200 times per year);
- female condoms distributed divided by a factor of 200 (estimated that they are used 200 times per year);
- male sterilisation multiplied by a factor of 20 (estimated number of years of protection against pregnancy post procedure based on median age at sterilisation);
- female sterilisation multiplied by a factor of 10 (estimated number of years of protection against pregnancy post procedure based on median age at sterilisation);
- subdermal implants multiplied by a factor of 3 (estimated to provide effective contraception for three years).

In 2015, the CYP conversion factors were aligned to the international conversion factors. However, the chapter reports on the CYPR as in the DHIS.

The denominator for the CYPR is the 'female target population 15–49 years', where females are used as a proxy for couples. The numerator ('contraceptive years dispensed') is therefore based on an estimation of the extent to which couples would be protected if only one method was used per couple. It does not adjust for methods dispensed but not used (such as condoms or oral pills), methods removed early (such as IUCDs or subdermal implants), or 'dual protection' (the simultaneous use of condoms and hormonal methods). The CYPR is therefore a crude proxy, although it is the best available measure in the absence of regular, disaggregated survey data, which could measure the proportion of women using a modern contraceptive method.

All provinces are now reporting on subdermal implants and female condoms distributed. This is in contrast to the 2014/15 year when only Gauteng (GP), KwaZulu-Natal (KZN), Limpopo (LP) and the Northern Cape (NC) reported on this distribution. However, all three districts in Mpumalanga (MP) did not report data on subdermal implants for the entire 2015/16 year.

Contraception data elements

Table 1 presents the individual contraceptive data elements and total contraceptive years dispensed over the last three years. The total number of contraceptive years dispensed increased by 4.4% from 6.98 million in 2014/15 to 7.28 million in 2015/16. There were some fluctuations in specific data elements. The number of female condoms distributed increased by 28.0% from 2014/15. The number of male condoms distributed increased by 17.9% from 2014/15, and by 40.7% from 2013/14 to 2014/15. Female sterilisations and medroxyprogesterone use showed marginal increases. The most significant

a MEASURE Evaluation. Family planning and reproductive health indicators database. Couple-years of protection (CYP). Available from: http://www.cpc.unc.edu/measure/prh/rh_indicators/specific/fp/cyp [Accessed 24 August 2016].

decline was in the number of IUCDs inserted, a 61.3% decrease from 2014/15. This may have been due to women choosing alternative contraceptive methods such as subdermal implants. The subdermal implant introduced in 2014 also declined, by 50.4%. This could have been due to the fact that it is a long-lasting (three-year) method with trends in utilisation more readily assessed over three-year cycles. There has been a steady decline (31.1%) in the number of male sterilisations over the last three years.

Table 1: Number of contraception methods dispensed, 2013/14–2015/16

Type of contraceptive dispensed	2013/14 Number	2013/14 Contraceptive years dispensed	2014/15 Number	2014/15 Contraceptive years dispensed	2015/16 Number	2015/16 Contraceptive years dispensed	Change 2014/15 to 2015/16 %
Female condoms	13 254 328	66 271	21 099 517	105 497	27 005 805	135 029	28.0
IUCD inserted	41 817	167 268	39 168	156 672	15 150	60 600	-61.3
Male condoms	506 431 299	2 532 156	712 387 234	3 561 936	839 874 751	4 199 373	17.9
Medroxyprogesterone	5 762 721	1 440 680	5 510 430	1 377 607	5 578 228	1 394 557	1.2
Norethisterone enanthate	4 277 194	712 865	3 834 005	639 000	3 676 445	621 740	-4.1
Oral pill cycles	3 815 539	293 503	3 560 421	273 878	3 591 382	276 260	0.9
Sterilisation female	31 551	631020	32 074	641 480	33 134	662681	3.3
Sterilisation male	1 120	11 200	877	8 770	772	7 720	-12
Sub-dermal implant inserted			175 948	527 844	87 189*	261 567	-50.4
		5 854 963		7 292 684		7 619 527	4.4

* Sub dermal implants for 2015/16 were reported by only four provinces.

Source: DHIS.

Table 2 shows the contribution of individual contraceptives to total contraceptive years dispensed. Male condom use continued to dominate proportionately (57.6%), up from 45.6% in 2013/14. Although the relative proportion of the medroxyprogesterone injection decreased slightly from 26.0% in 2013/14 to 19.1% in 2015/16, it remained the second leading contributor to total contraceptive years. The newly introduced subdermal implants contributed 3.6%, down from 7.6% in the previous year.

Table 2: Contribution of individual contraceptive methods to total contraceptive years dispensed, 2013/14–2015/16 (%)

Data element	% of contraceptive years dispensed 2013/14	2014/15	2015/16
Female condoms	1.2	1.5	1.9
IUCD inserted	3.0	2.2	0.8
Male condoms	45.6	51.0	57.6
Medroxyprogesterone	26.0	19.7	19.1
Norethisterone enanthate	12.8	9.2	8.4
Oral pill cycle	5.3	3.9	3.8
Sterilisation female	5.7	4.6	4.5
Sterilisation male	0.4	0.3	0.2
Subdermal implant	0.0	7.6	3.6
Contraceptive years dispensed	100.0	100.0	100.0

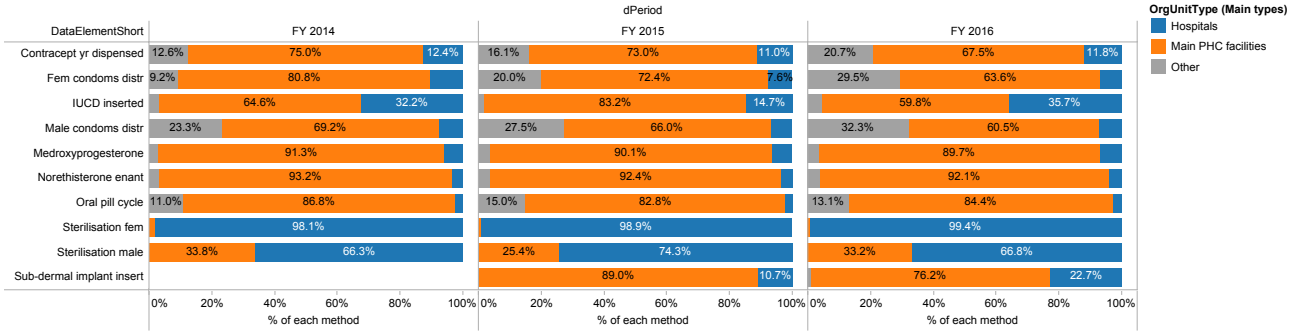
Source: DHIS.

Contraceptive method by facility type

The majority of non-surgical contraceptive methods (67.5%) continue to be dispensed at primary health care (PHC) facilities. However, this proportion decreased from 73.0% in 2014/15. This was matched by an increase in the proportion of contraceptives dispensed by facilities designated as 'other'[b] (Figure 1 and Table 3). Interestingly, the proportion of IUCDs inserted in hospitals increased from 14.7% in 2014/15 to 35.7% in 2015/16. This was primarily due to the fact that the number of IUCDs inserted in PHC facilities dropped dramatically, from 32 592 in 2014/15 to 9 060 in 2015/16 (a 72% decrease), although the reason for this is not clear.

b 'Other' includes all other facility types not clearly hospitals, clinics, community health centres or mobile units.

Figure 1: Contraception methods dispensed in hospitals, main primary healthcare facilities and other facilities, 2013/14–2015/16 (%)



Source: DHIS.

Table 3: Methods of contraception by facility type, 2013/14–2015/16 (Number)

Data element	Year	Facility type			
		Hospitals	Main PHC facilities	Other	Grand total
Female condoms distributed	2013/14	1 323 337	10 714 517	1 216 474	13 254 328
	2014/15	1 595 465	15 282 984	4 221 068	21 099 517
	2015/16	1 880 173	17 169 774	7 955 858	27 005 805
IUCD inserted	2013/14	13 456	27 018	1 343	41 817
	2014/15	5 754	32 592	822	39 168
	2015/16	5 403	9 060	687	15 150
Male condoms distributed	2013/14	37 992 451	350 627 661	117 811 187	506 431 299
	2014/15	46 801 575	469 895 456	195 690 203	712 387 234
	2015/16	60 704 778	508 212 961	270 957 012	839 874 751
Medroxyprogesterone	2013/14	331 269	5 262 531	168 921	5 762 721
	2014/15	340 458	4 966 752	203 220	5 510 430
	2015/16	374 442	5 002 741	201 045	5 578 228
Norethisterone enanthate	2013/14	144 439	3 987 169	145 586	4 277 194
	2014/15	137 527	3 541 535	154 943	3 834 005
	2015/16	147 202	3 387 231	142 012	3 676 445
Oral pill cycle	2013/14	82 906	3 312 228	420 405	3 815 539
	2014/15	78 001	2 948 379	534 041	3 560 421
	2015/16	89 890	3 030 352	471 140	3 591 382
Sterilisation female	2013/14	30 942	609		31 551
	2014/15	31 709	346	19	32 074
	2015/16	32 924	198	12	33 134
Sterilisation male	2013/14	742	378		1 120
	2014/15	652	223	2	877
	2015/16	516	256		772
Subdermal implant inserted	2014/15	18 899	156 616	433	175 948
	2015/16	19 750	66 455	984	87 189

Source: DHIS.

The national CYPR for 2015/16 was 48.2%, only marginally higher than the rate in the previous year (46.8%). This was again below the national target of 60%. Figure 2 shows the CYPR by province which ranged from 35.1% in North West (NW) to 58.6% in the Western Cape (WC). The Eastern Cape (EC) and Free State (FS) showed notable increases since 2014/15, namely 14.1 and 13.7 percentage points respectively. Conversely, North West, the Northern Cape and KwaZulu-Natal showed decreases in the CYPR of 7.6, 6.6 and 5.7 percentage points respectively.

Figure 2: Couple year protection rate by province, 2015/16

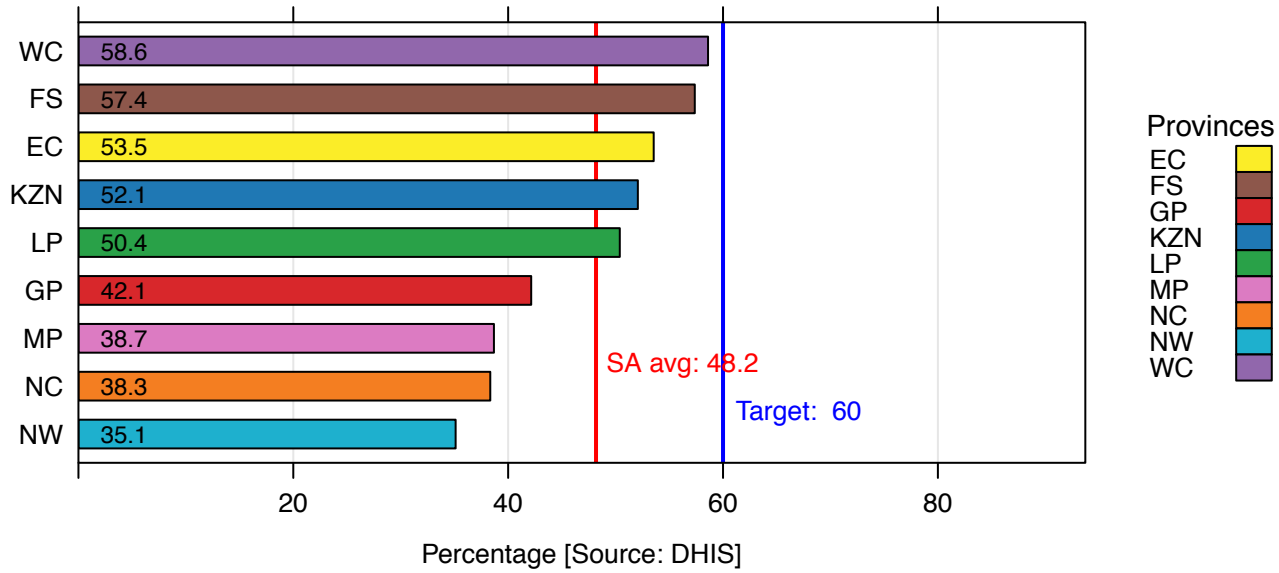
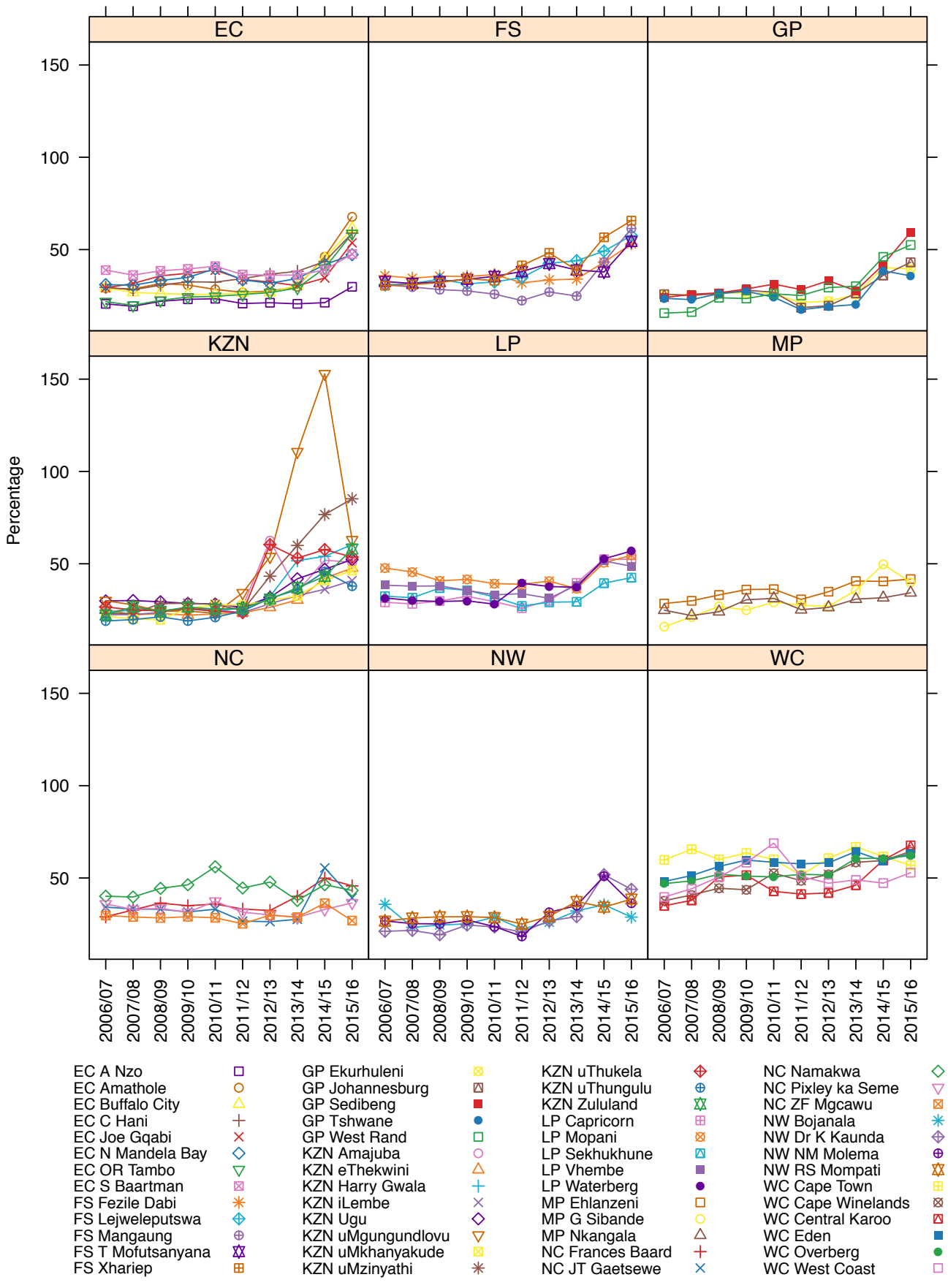


Figure 3 shows the annual trends in CYPR by province.

Figure 3: Annual trends for couple year protection rate



Map 1 and Figure 4 show the CYPR by district. The rate ranged from 26.9% in ZF Mgcawu (NC) to 85.2% in uMzinyathi (KZN). Only 11 of the 52 districts attained the target CYPR of 60%. Most districts (35 of 52) showed an increase in CYPR. The largest increases were seen in Amathole (EC) (21.6 percentage points), Joe Gqabi (EC) (19.0 percentage points), OR Tambo (EC) (18.7 percentage points), Mangaung (FS) (18.1 percentage points), Sedibeng (GP) (17.5 percentage points), T Mofutsanyana (FS) (16.5 percentage points) and Buffalo City (EC) (16.2 percentage points). All districts in the Eastern Cape and Free State showed notable increases in CYPR. Seventeen of the 52 districts showed decreases in CYPR, with the biggest decrease being in uMgungundlovu (KZN) (89.9 percentage points), largely due to the male condoms dropping from 76 million to 26 million. This may have been due to poor data. Other districts with significant decreases included JT Gaetsewe (NC) (16.2 percentage point decrease), NM Molema (NW) (14.6 percentage points), G Sibande (MP) (9.9 percentage points) and ZF Mgcawu (NC) (9.4 percentage points). All three metro districts in Gauteng were below the national average, namely Johannesburg (43.1%), Ekurhuleni (39.5%) and Tshwane (35.8%). However, Johannesburg showed an increase of 7.1 percentage points from 2014/15 (Figure 3).

The CYPR varied widely in the National Health Insurance (NHI) districts, ranging from 35.8% in Tshwane (GP), the fifth-worst performing district in the country, to 85.2% in uMzinyathi (KZN), the best-performing district in the country. Only three of the 11 NHI districts reached the CYPR target of 60%. These were uMzinyathi (KZN), Eden (WC) and uMgungundlovu (KZN).

Map 1: Couple year protection rate by sub-district, 2015/16

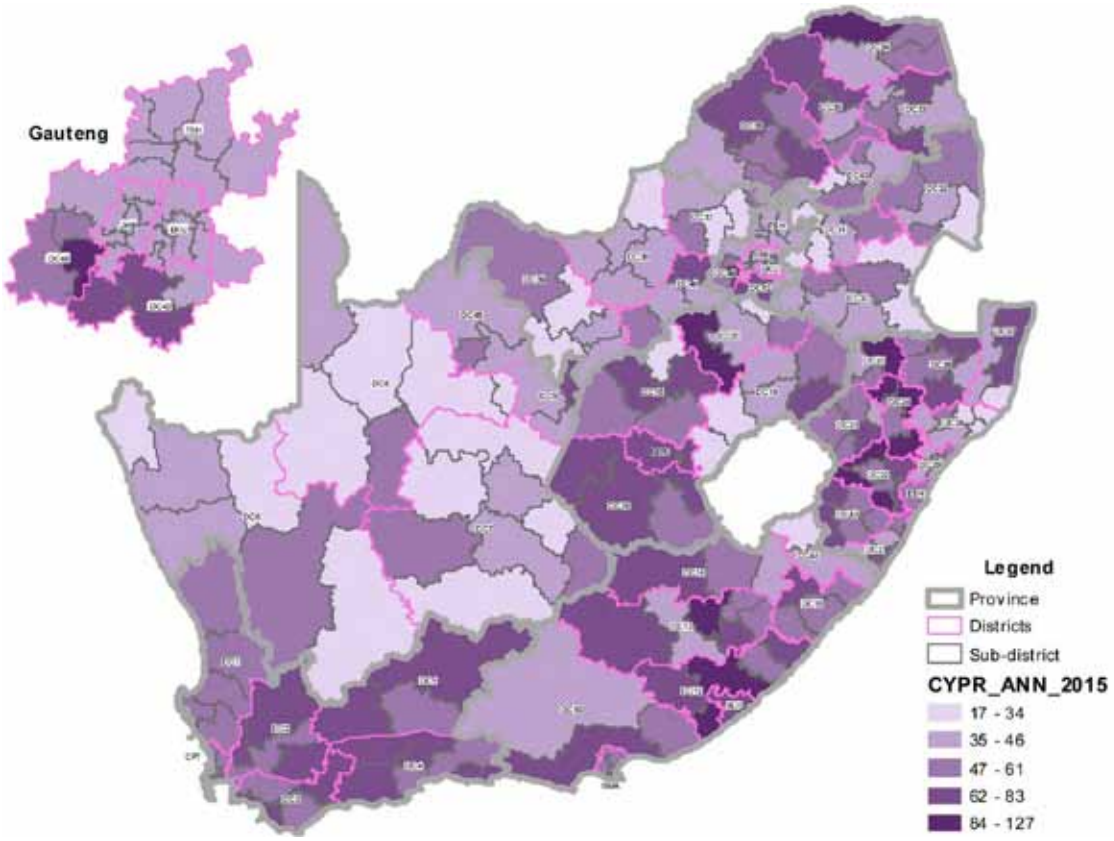
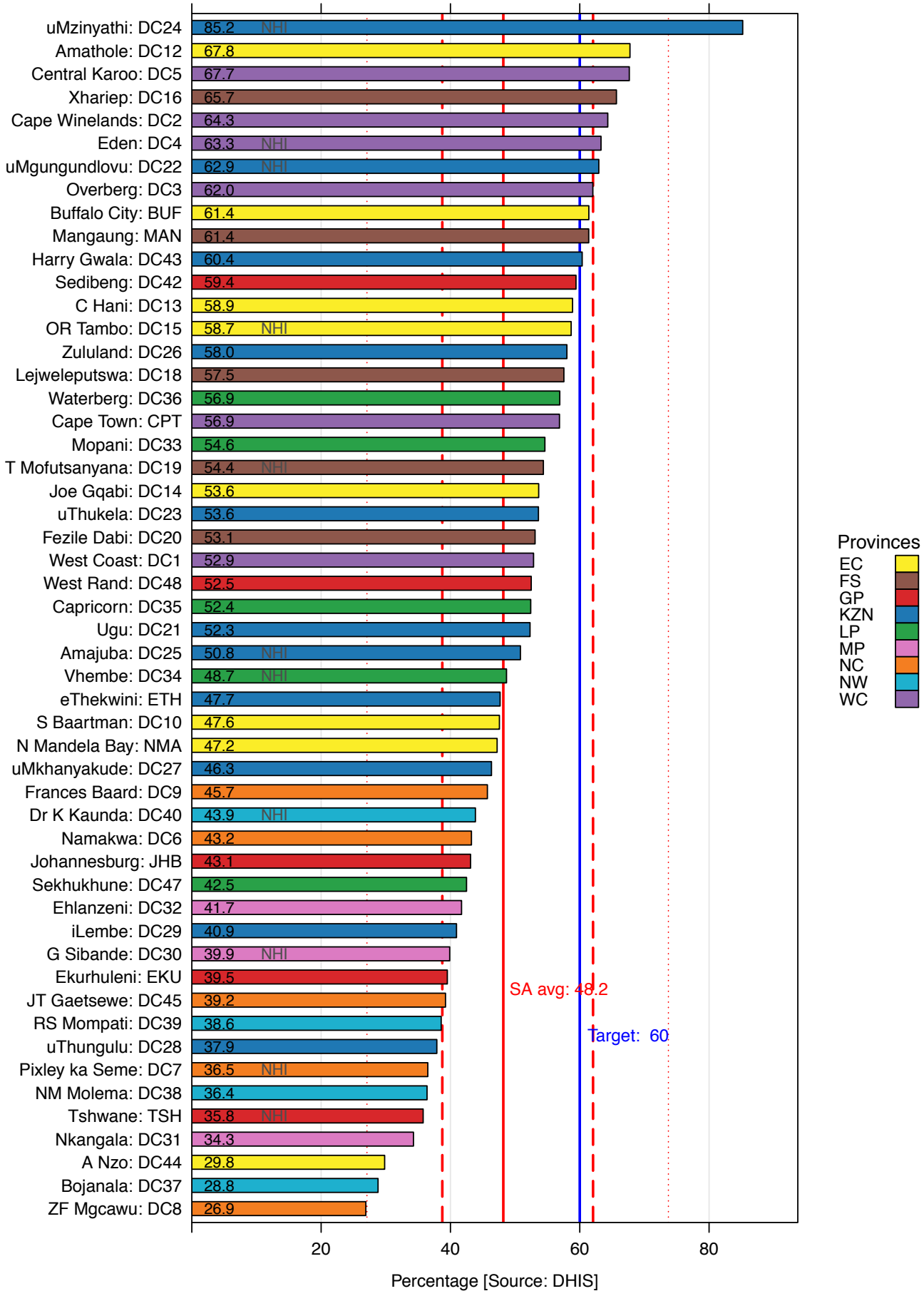
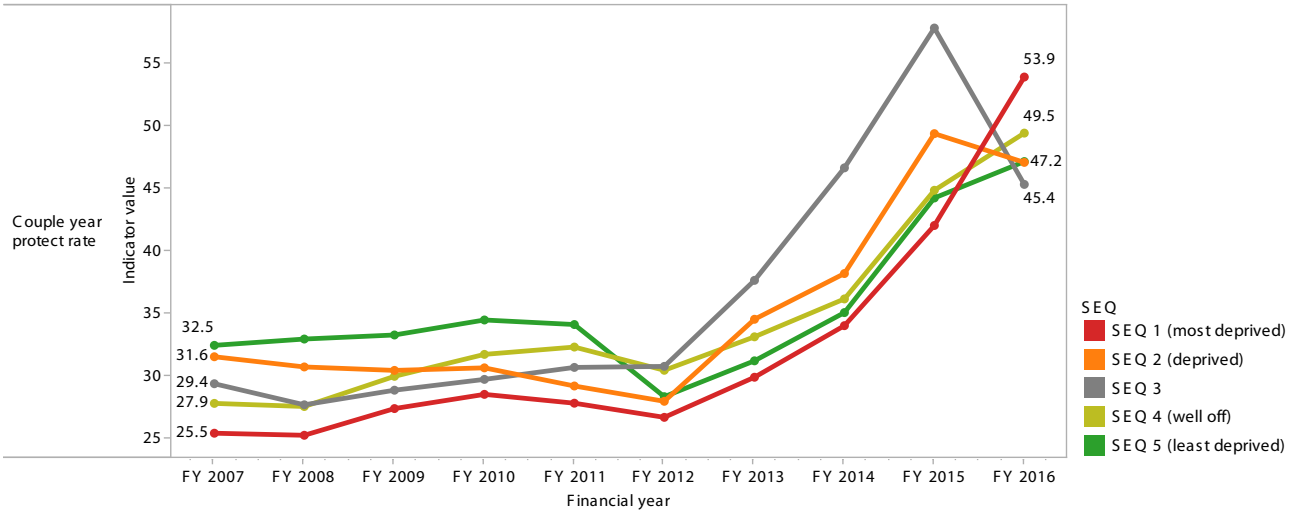


Figure 4: Couple year protection rate by district, 2015/16



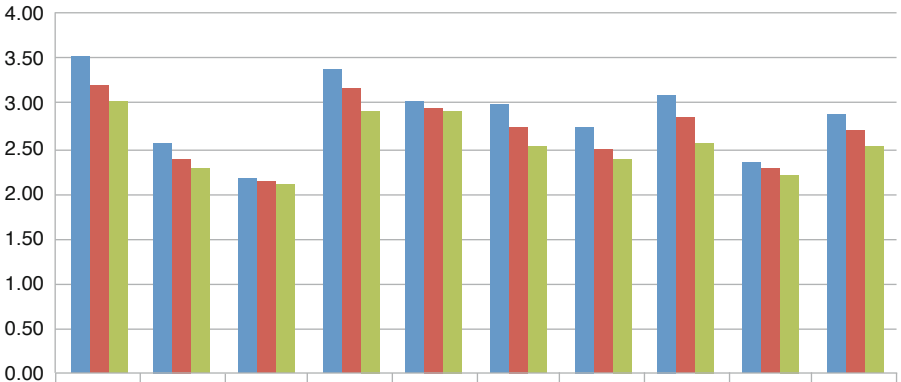
The CYPR fluctuated according to socio-economic quintile (SEQ) (Figure 5). In previous years the weighted average of the CYPR was lowest in SEQ1 and highest in SEQ3; however, in 2015/16 the CYPR was highest in SEQ1 (53.9%) and lowest in SEQ3 (45.4%). Figure 5 shows a constant CYPR from 2007/08 to 2012/13, at around 30%. However, after a slight dip in 2012/13, it increased strikingly year on year, possibly because of the increase in number of condoms distributed over this period.

Figure 5: Trends in average district values by socio-economic quintile for couple year protection rate



Statistics South Africa (StatsSA) data show that total fertility rates in the country have declined consistently, with trend data decreasing from 2.87 children per woman in the 2001–2006 series to 2.53 children per woman in the 2011–2016 series (Figure 6). This is probably due to a decline in the infant and child mortality rates, improved education of women, as well as better access to contraceptives. In 2011–2016, Gauteng had the lowest total fertility rate at 2.08 children per woman, and Eastern Cape the highest at 3.00 children per woman.

Figure 6: Total fertility rates by province, 2001–2016



	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA
2001–2006	3.52	2.57	2.15	3.38	3.03	2.97	2.73	3.10	2.36	2.87
2006–2011	3.18	2.39	2.13	3.15	2.93	2.73	2.48	2.84	2.27	2.68
2011–2016	3.00	2.26	2.08	2.90	2.89	2.53	2.39	2.57	2.19	2.53

Source: Statistics South Africa. Mid-year population estimates 2015.[c]

c Statistics South Africa. Mid-year population estimates 2015. Pretoria: StatsSA; 2015. Available from: https://www.statssa.gov.za/publications/P0302/P03022015.pdf [Accessed 21 November 2016].

8.2 Cervical screening coverage

In 2014, malignant neoplasms of the female genital organs were ranked the 10th leading cause of death among females in South Africa based on cause of death notifications, accounting for 2.3% of all deaths.[d] This was the first time since 1997 that malignant neoplasms were in the top 10 causes of death. Cervical cancer is the second most common cancer in women and the most common cancer in women aged 15–44 years in South Africa.[e] Persistent or chronic infection with certain high-risk genotypes of the human papillomavirus (HPV), which is sexually transmitted, has been established as an important causative agent for a significant proportion of cervical cancer.[f]

Cervical cancer screening programmes aim to decrease morbidity and mortality through early detection of precursors of cervical cancer in asymptomatic women, with subsequent appropriate timely referral and treatment.[g] In South Africa, this is primarily done through Pap smear screening (cytology), which has been shown to reduce occurrence of cervical cancer if coverage is adequate.[i] The national policy on cervical cancer screening states that women should have three cervical smears done at 10-yearly intervals starting at the age of 30 years. However, in HIV-positive women, the National Department of Health (NDoH) clinical guidelines for management of HIV and AIDS[h] recommend more frequent screening, namely on diagnosis and three-yearly thereafter if normal.

The indicator 'cervical cancer screening coverage' measures the annual number of cervical smears taken in women 30 years and older as a proportion of the female population 30 years and older, factored for one smear every 10 years. The denominator used to calculate the coverage for a particular year is therefore 10% of the female population aged 30 years and older. The numerator is the number of cervical (Pap) smears or visual inspections with acetic acid (VIA) for women 30 years and older conducted for screening purposes. Diagnostic smears or repeat smears are not included in the estimate of the numerator. The smears include those 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.

Inclusion of smears done more than once in 10 years for the same woman; smears done for women under the age of 30; repeat smears (e.g. when the original smear was of insufficient quality); and diagnostic smears in the numerator can result in falsely high estimates of the numerator and coverages. Therefore, a screening coverage of 100% in a particular year means that 10% of women aged 30 and older were screened in that year.

In April 2014, the NDoH started the roll-out of the HPV vaccine in the public sector. This public school-based campaign targets Grade 4 girls, aged nine years and older, who receive two doses of the vaccine six months apart.[i] The vaccination is a form of primary prevention that aims to reduce the risk of cervical cancer by reducing the likelihood of infection with high-risk HPV types (types 16 and 18 in particular).[h] The impact of this programme in reducing the incidence of cervical cancer will therefore only become evident in the next 20–30 years.

The national cervical screening coverage has increased steadily over the last 10 years, from 32.0% in 2006/07 to 56.6% in 2015/16, although this remains slightly lower than the national target of 60% set for 2015/16.

Provincial coverage ranged from 34.8% in the Northern Cape to 72.7% in KwaZulu-Natal (Figure 7). Three of the nine provinces reached the national target of 60%, namely KwaZulu-Natal, Mpumalanga and North West. The Northern Cape was the worst-performing province; it has had a relatively low cervical cancer screening coverage over the last 10 years, with a low of 30.0% in 2014/15 and a peak of 37.9% in 2010/11. Further exploration is needed to establish reasons for this poor performance. Coverage in KwaZulu-Natal, the best-performing province, has improved markedly over the last decade, from 32.4% in 2006/07 to 72.7% in 2015/16. Reasons for this marked increase in performance should be explored so that the good practices in this province can be identified and shared.

d Statistics South Africa. Mortality and causes of death in South Africa: Findings from death notification, 2014. Pretoria: StatsSA; 2015. Available from: http://www.statssa.gov.za/?page_id=1854&PPN=P0309.3&SCH=6377 [Accessed 24 August 2016].

e Bruni L, Barrionuevo-Rosas L, Albero G, Aldea M, Serrano B, Valencia S, et al. ICO Information Centre on HPV and Cancer (HPV Information Centre). Human Papillomavirus and Related Diseases in South Africa. Summary Report 2016-02-26. Available from: http://www.hpvcentre.net/statistics/reports/XWX.pdf [Accessed 29 August 2016].

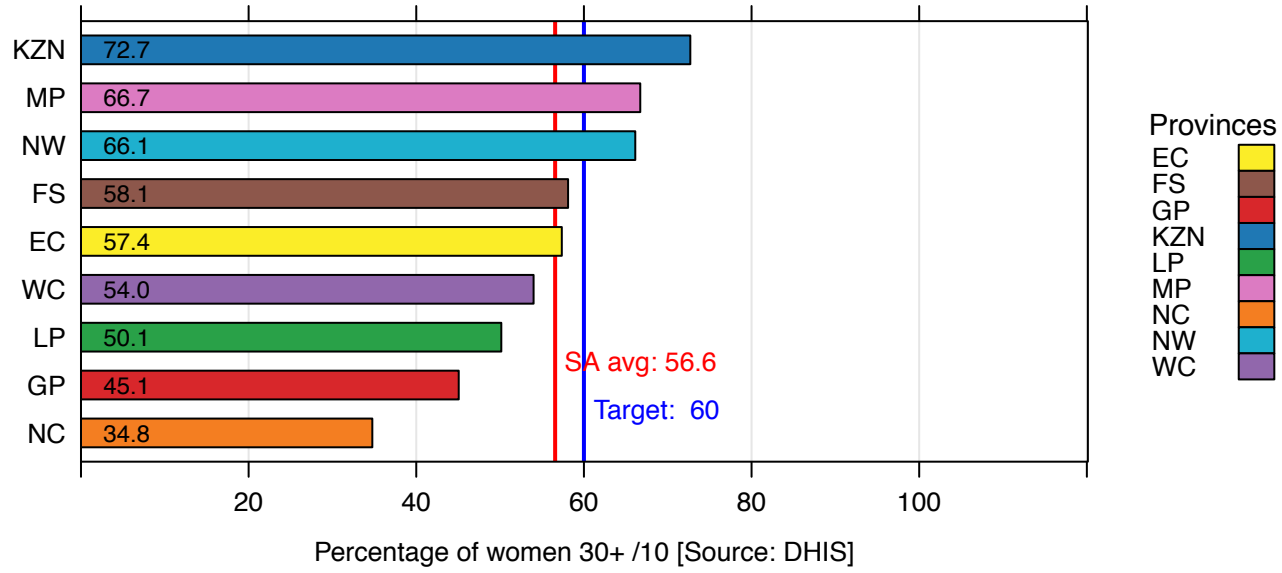
f World Health Organization. Human papillomavirus and cervical cancer fact sheet, 2016. Available from: http://www.who.int/mediacentre/factsheets/fs380/en/ [Accessed 29 August 2016].

g South African HPV Advisory Board. Cervical cancer and human papillomavirus: South African guidelines for screening and testing. South African Journal of Gynaecological Oncology. 2010; 2(1):23–6. Available from: http://www.sasog.co.za/images/Guidelines.pdf [Accessed 24 August 2016].

h South African National Department of Health. National Consolidated Guidelines for the Prevention of Mother-to-child Transmission of HIV (PMTCT) and the Management of HIV in Children, Adolescents and Adults. Pretoria: NDoH; April 2015.

i Botha MH, Richter KL. Cervical cancer prevention in South Africa: HPV vaccination and screening both essential to achieve and maintain a reduction in incidence. S Afr Med J. 2015 Jan; 105(1):33–4.

Figure 7: Cervical cancer screening coverage by province, 2015/16

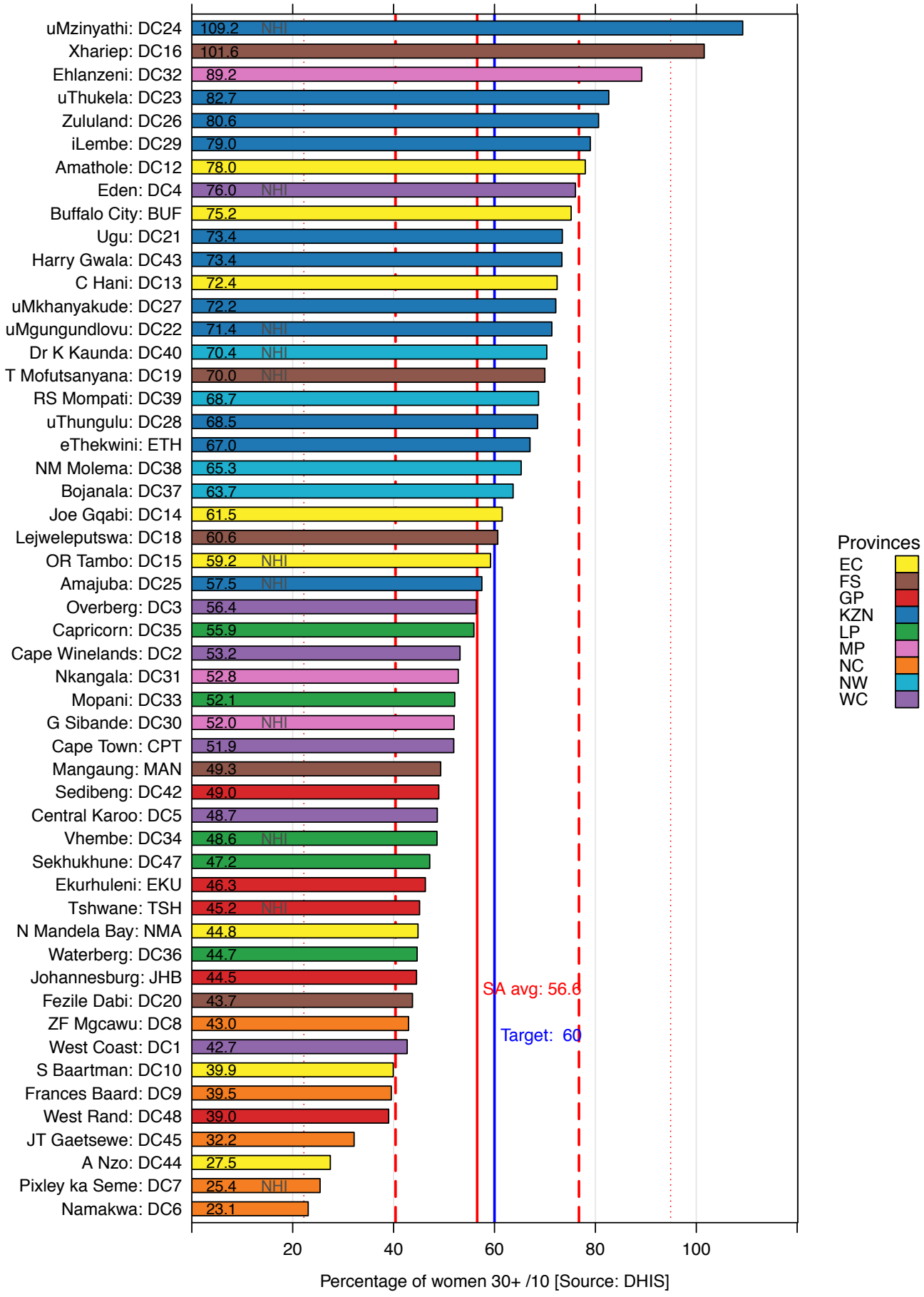


District cervical cancer screening coverage ranged from 23.1% in Namakwa (NC) to 109.2% in uMzinyathi (KZN) (Figure 8 and Map 2). Twenty-three of the 52 districts achieved the target of 60% coverage. Two districts, uMzinyathi (KZN) and Xhariep (FS), had coverage above 100%. This may have been due to Pap smears done more than once every 10 years, as is recommended for HIV-positive women. All districts in the Northern Cape and Gauteng (the second worst-performing province) had coverages below the national average of 56.6%.

Over half of all districts (30 of 52) showed increases in coverage compared with the previous year. The largest increases were seen in uMzinyathi (KZN) (37.6 percentage points), uMkhanyakude (KZN) (28.3 percentage points) and T Mofutsanyana (FS) (26.6 percentage points). Twenty-two of 52 districts showed decreases in coverage from the previous year. The largest decreases were seen in G Sibande (MP) (12.9 percentage points), Amathole (EC) (11.5 percentage points) and eThekwini (KZN) (9.7 percentage points).

Coverage varied notably among the NHI districts, from 25.4% in Pixley ka Seme (NC) to 109.2% in uMzinyathi (KZN). However, five of the NHI districts exceeded the target coverage of 60%, namely uMzinyathi (KZN), Eden (WC), uMgungundlovu (KZN), Dr K Kaunda (NW) and T Mofutsanyana (FS).

Figure 8: Cervical cancer screening coverage by district, 2015/16



Map 2: Cervical cancer screening coverage by sub-district, 2015/16

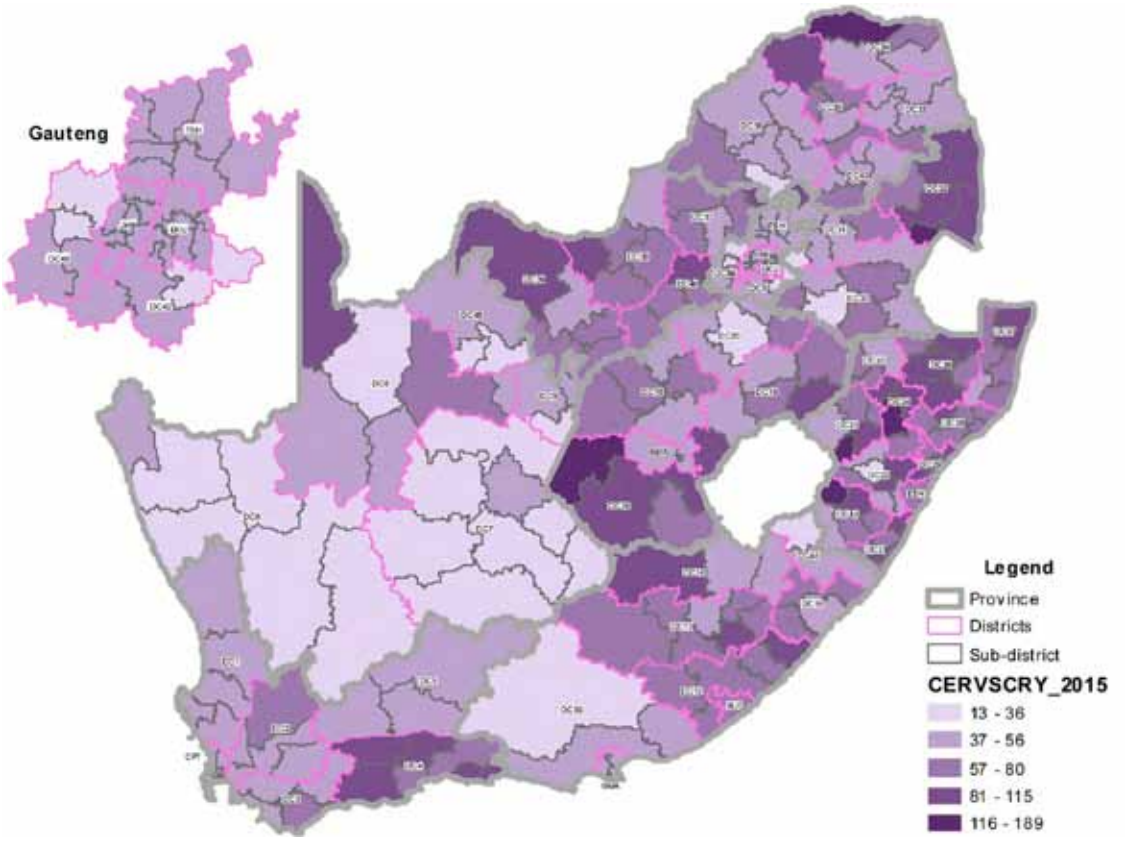
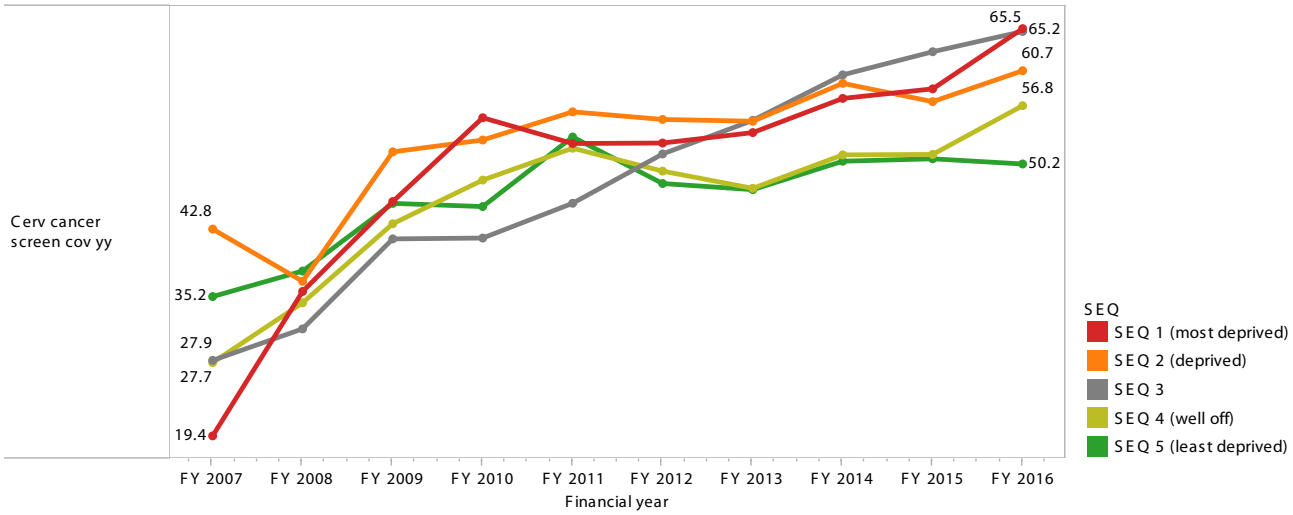


Figure 9 shows cervical cancer screening coverage by socio-economic quintile. It is evident that there have been remarkable gains in coverage, particularly in the most deprived districts. The weighted average of coverage in SEQ1 districts increased from 19.4% in 2007/08 to 65.2% in 2015/16. Overall, there has been an upward trend in coverage in all SEQs. However, coverage in the least-deprived districts (SEQ5) appears to have plateaued over the last four years. It is difficult to say whether this is indicative of an actual decrease in screening as these data exclude private health sector data.

Figure 9: Trends in average district values by socio-economic quintile for cervical cancer screening coverage



The most recent World Health Organization guidelines on cervical cancer control highlight a number of important issues for consideration in the prevention and control of cervical cancer. Firstly, there is a need to take a systems approach to prevention. Secondly, a comprehensive approach needs to include primary, secondary and tertiary prevention. And lastly, it is important to link screening with appropriate treatment and follow-up.[j] South Africa has made great strides towards primary prevention through successful implementation of school-based HPV vaccination. However, much more needs to be done to improve screening coverage. Some sources have advocated for future introduction of HPV DNA testing (as a primary screening method) as it is more sensitive than cytology (Pap smear).[i,k] However, an evaluation of health system and cost implications would need to be done to inform such considerations.

j World Health Organization. Comprehensive cervical cancer control: A guide to essential practice. 3rd ed. Geneva: WHO; 2014. Available from: http://www.who.int/reproductivehealth/publications/cancers/cervical-cancer-guide/en/ [Accessed 29 August 2016].

Key findings for couple year protection rate and cervical screening coverage

- Overall, the CYPR has shown a gradual upward trend, but it is still below the recommended target rate. With time, it is hoped that provision of a wider range of contraceptive methods for women, such as subdermal implants and female condoms, will increase the CYPR and prevent more unplanned pregnancies.
- The ongoing issues with data quality in a number of districts need to be addressed if uptake of this indicator is to be monitored effectively. It is of importance as family planning is one of the most important public health interventions available. These data provide information that policymakers can use to determine how best to influence family planning policies.
- Overall, there has been marked improvement in cervical cancer screening coverage over the last decade. However, coverage still remains below levels required to achieve intended impact in terms of decreasing mortality and morbidity through early detection. This is evidenced by the continuing high incidence of late presentation among women with invasive cervical cancer.[k]

Recommendations for couple year protection rate and cervical screening coverage

- Data quality needs to be assessed to address possible under- and over-reporting of both CYPR and cervical screening coverage at district level.
- Private sector data must be included.
- The National Contraception and Fertility Planning Policy and Service Delivery Guidelines[a] and the National Contraception Clinical Guidelines[b] should be followed to improve reproductive services at all facilities.