11 HIV and AIDS

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This chapter covers three indicators, namely: (i) male condom distribution coverage (ii) HIV testing coverage and (iii) clients remaining on ART rate.

11.1 Male condom distribution coverage

South Africa (SA) has the largest HIV epidemic in the world with an estimated 7.1 million people living with HIV in 2016.[a]

The SA HIV and TB investment case report[b] indicated that in order to maximise allocative efficiency, for the HIV response in the country, it is necessary to firstly scale up prevention interventions that include condom distribution to prevent HIV infections and reduce future need for antiretroviral therapy (ART).

A systematic meta-analysis of 13 trials[b] proved that availability and accessibility of both male and female condoms could lead to increased consistent use. When used consistently and correctly, condoms are highly effective in preventing the sexual transmission of HIV and are considered to be one of the cornerstones to any response to HIV given their low cost and strong prevention efficacy.[c] The National Department of Health (NDoH) procures and distributes both female and male condoms in the country. Furthermore, condoms are distributed in public health facilities, identified outlets and non-medical sites.

The male condom distribution coverage measures the male condoms distributed from health facilities, identified outlets and non-medical sites in a given 12-month period per male 15 years and older. The numerator is the number of male condoms distributed and the denominator the male population 15 years and older. It monitors the distribution of male condoms for prevention of HIV and other sexually transmitted infections, and for contraceptive purposes. The NDoH's Annual Performance Plan (APP) target for 2016/17 is that 750 million male condoms should be distributed in the period. The midyear male population 15 years and older estimates for 2016 according to the District Health Information Software (DHIS) was 19 201 092. Expressed as male condoms distributed per male 15 years and older, the NDoH target was 39 condoms.

National and provincial overview

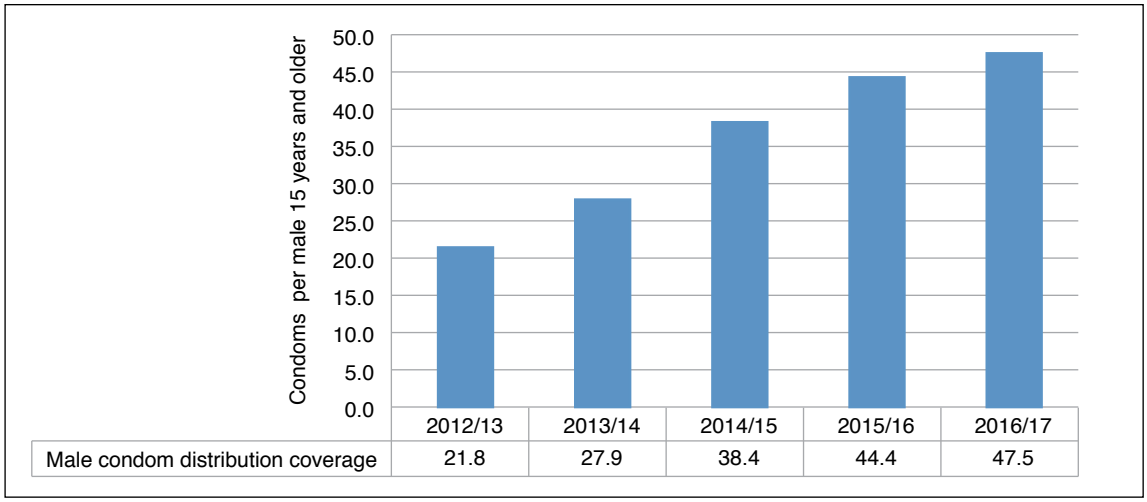
Male condom distribution has significantly increased over the years, with 712 387 234 male condoms distributed in the financial year 2014/15, subsequently 839 874 751 in 2015/16 and 917 253 117 in 2016/17. This is equivalent to giving an average of 47.5 condoms per man aged 15 years and older in 2016/17 when compared to 44.4 in 2015/16. This increase was expected as the NDoH has increased the expansion of its public sector condom programme making male condoms freely and widely available in its rapid response to the HIV epidemic.

a Johnson LF, et al. Prospects for HIV control in South Africa: a model-based analysis. Global Health Action. 9: 30314. https://www.ncbi.nlm.nih.gov/pubmed/27282146. [Accessed 24 July 2017].

b Department of Health, South Africa, and South African National AIDS Council: South African HIV and TB Investment Case – Summary Report Phase 1. March, 2016.

c Ashmore J, Henwood R. (2015). Choice or no choice? The need for better branded public sector condoms in South Africa. S Afr J HIV Med. 16(1), Art. #353, 3 pages. http://dx.doi.org/10.4102/sajhivmed.v16i1.353.

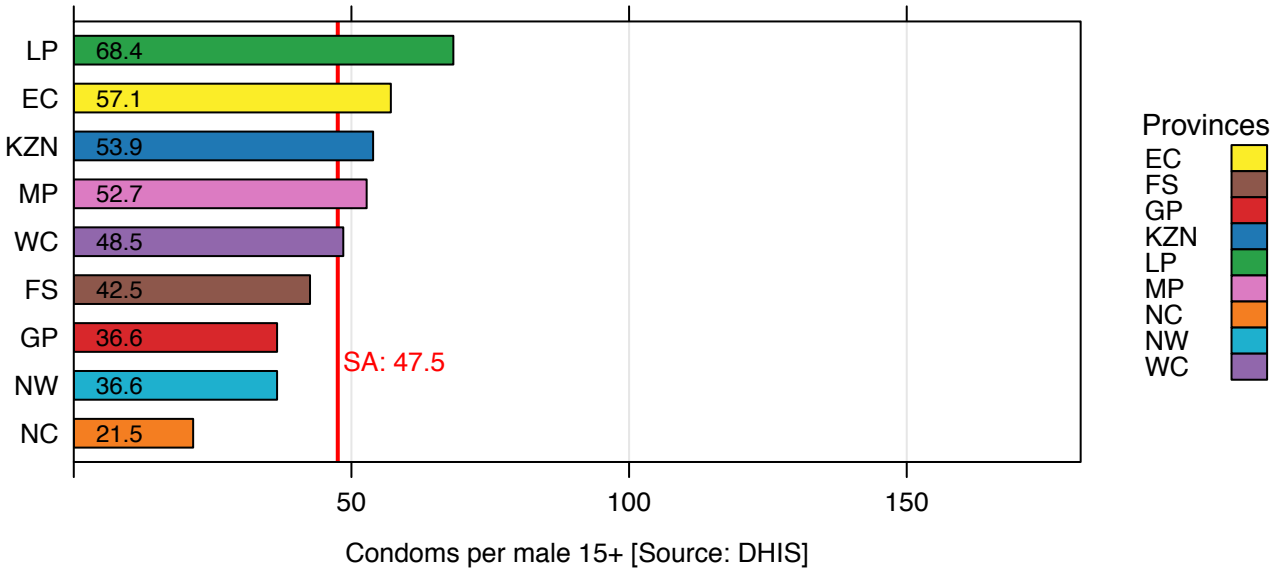
Figure 1: National male condom distribution coverage trends, 2012/13–2016/17



	2012/13	2013/14	2014/15	2015/16	2016/17
Male condom distribution coverage	21.8	27.9	38.4	44.4	47.5

Source: DHIS.

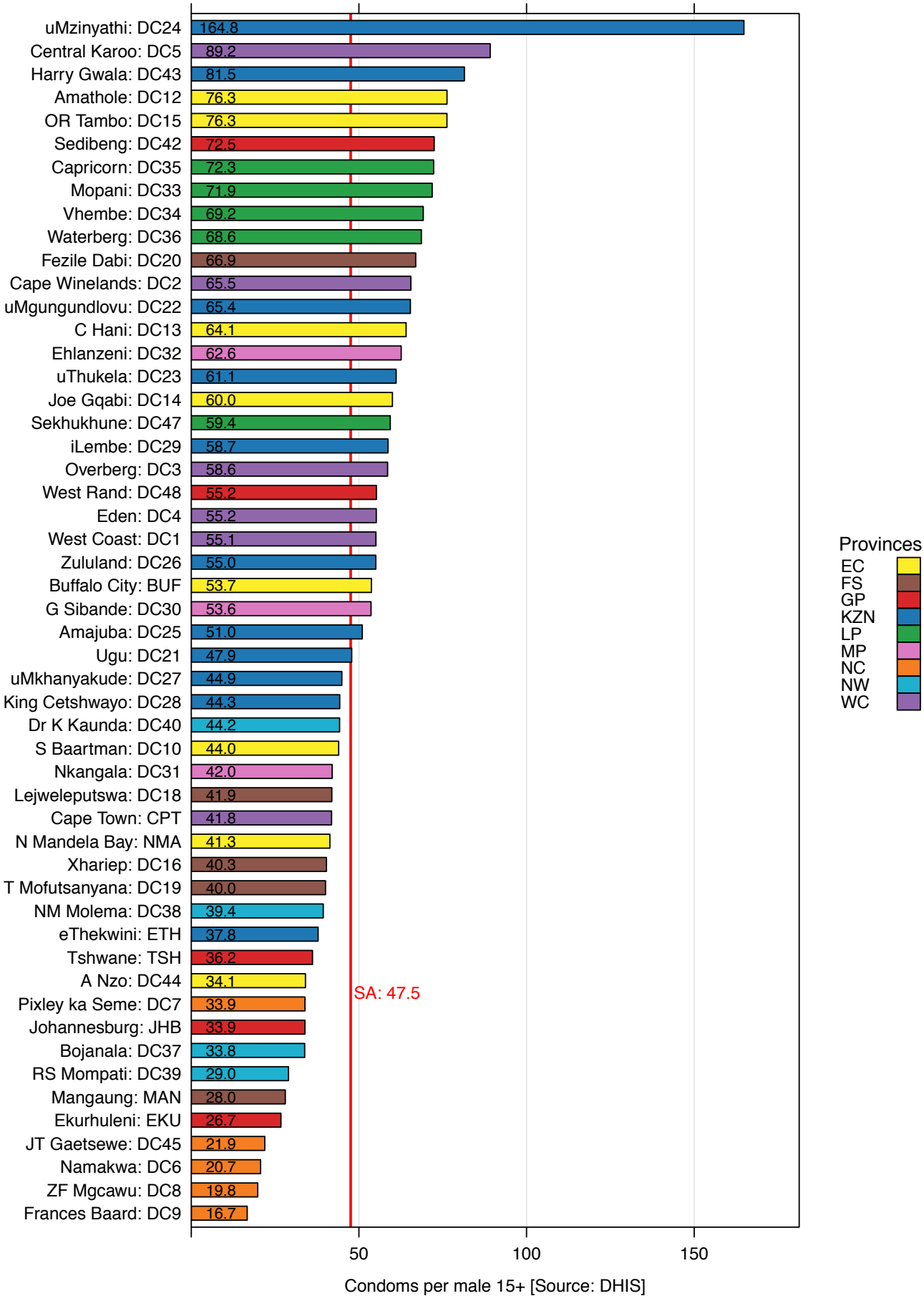
Figure 2: Male condom distribution coverage by province, 2016/17



District overview

Only 27 districts reported male condom distribution coverage above the national average of 47.5 condoms per male 15 years and older (Figure 3).

Figure 3: Male condom distribution coverage by district, 2016/17



The majority of the sub-districts in Northern Cape (NC) reported male condom distribution coverage below 33 condoms per male 15 years and older (Map 1).

Map 1: Male condom distribution coverage by sub-district, 2016/17

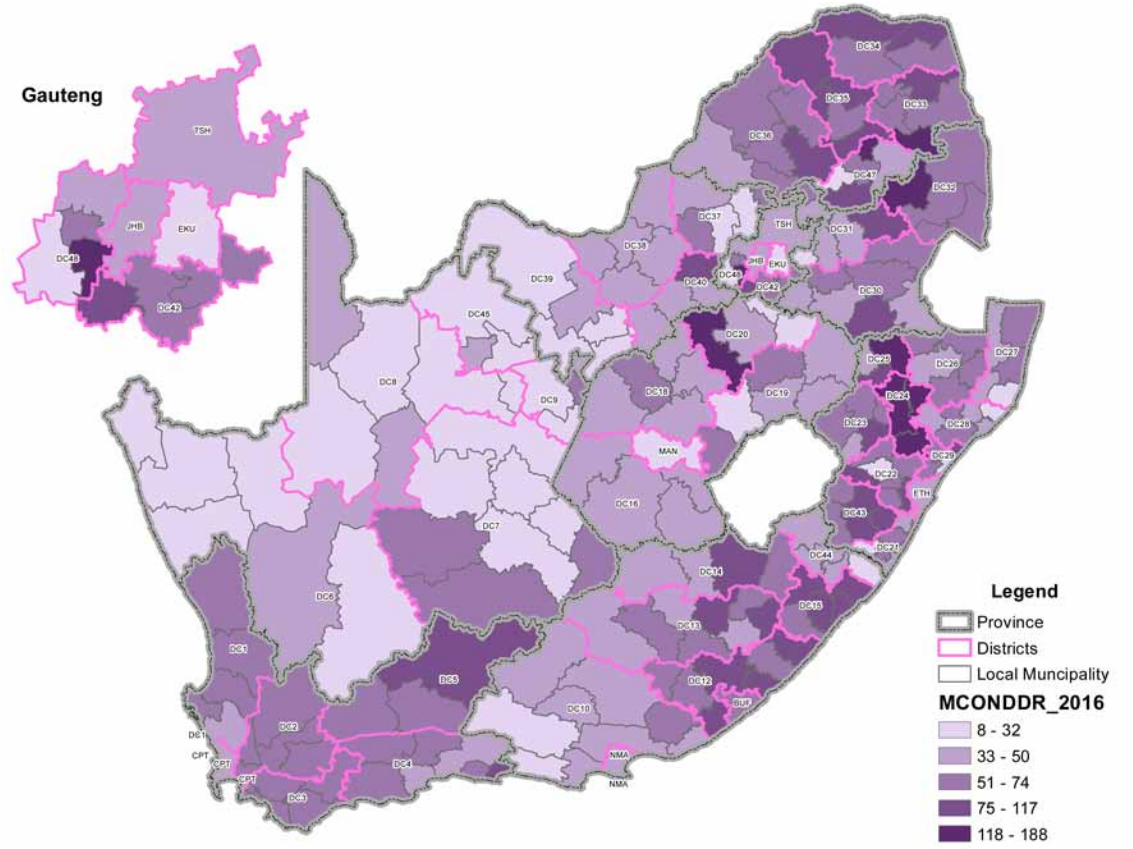
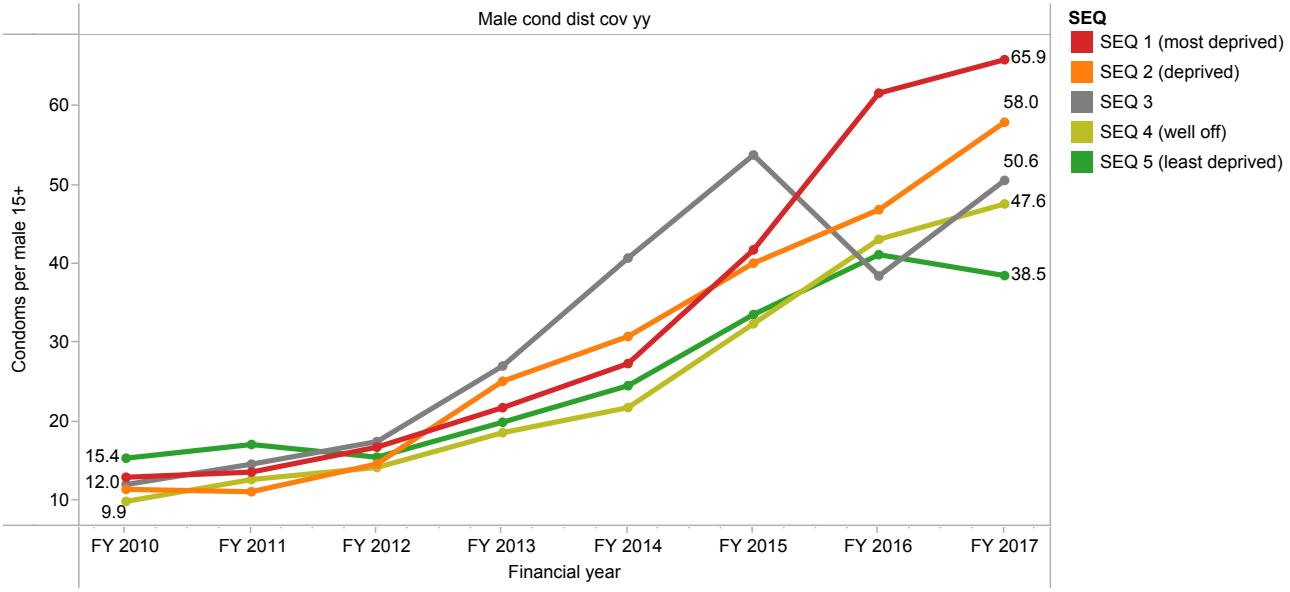


Figure 4 shows the average male condom distribution coverage by socio-economic quintile (SEQ). The deprived SEQs had the highest coverage since 2015/16.

Figure 4: Trends in average district values by socio-economic quintile for male condom distribution coverage, 2009/10–2016/17



Key findings

- The national average male condom distribution coverage of 47.5 condoms per male 15 years and older for 2016/17 exceeded the NDoH target of 39 condoms.
- There was a significant increase in the male condom distribution coverage for 2016/17 when compared to 2015/16 in Mpumalanga (MP) (59.7%), North West (NW) (53.3%) and Limpopo (LP) (33.6%). Despite the increase in the condom distribution coverage in abovementioned provinces, there was a significant decrease of 21.2% in Free State (FS).
- Five provinces exceeded the national average male condom distribution coverage in 2016/17. Limpopo Province reported the highest male condom distribution coverage, whilst the lowest coverage of 21.5 condoms per male 15 years and older was noted in Northern Cape.
- In 2016/17, twenty-seven districts exceeded the national coverage of 47.5 condoms and included all the districts in Limpopo. The top-performing districts were uMzinyathi (KwaZulu-Natal (KZN)), Central Karoo (Western Cape (WC)), Harry Gwala (KZN), Amathole (Eastern Cape (EC)), OR Tambo (EC), Sedibeng (Gauteng (GP)), and Capricorn, Mopani, Vhembe and Waterberg (all LP).
- The majority of the sub-districts in Northern Cape reported male condom distribution coverage between 8 and 32 condoms per male 15 years and older (Map 1) in 2016/17.
- The most deprived districts (socio-economic quintiles 1 and 2) had the highest male condom distribution coverage since 2015/16.

Recommendations

- There is a need to fast-track performance in the majority of districts and especially in metros which would result in a greater impact, since metros are highly resourced with dense populations.
- Facility, sub-district and district data analysis and data use should be implemented for timely corrective measures.

11.2 HIV testing coverage

Reporting on HIV testing coverage was introduced in the 2014/15 *District Health Barometer* (DHB) in order to monitor the progress of HIV testing, which aims to ensure that 90% of persons living with HIV know their HIV status. HIV testing coverage measures all people aged from 15 to 49 years who were tested for HIV during the year as a proportion of the total population in this age group. The numerator is 'HIV test client 15–49 years' plus 'antenatal client (ANC) HIV 1st test' and the denominator is the population 15–49 years.

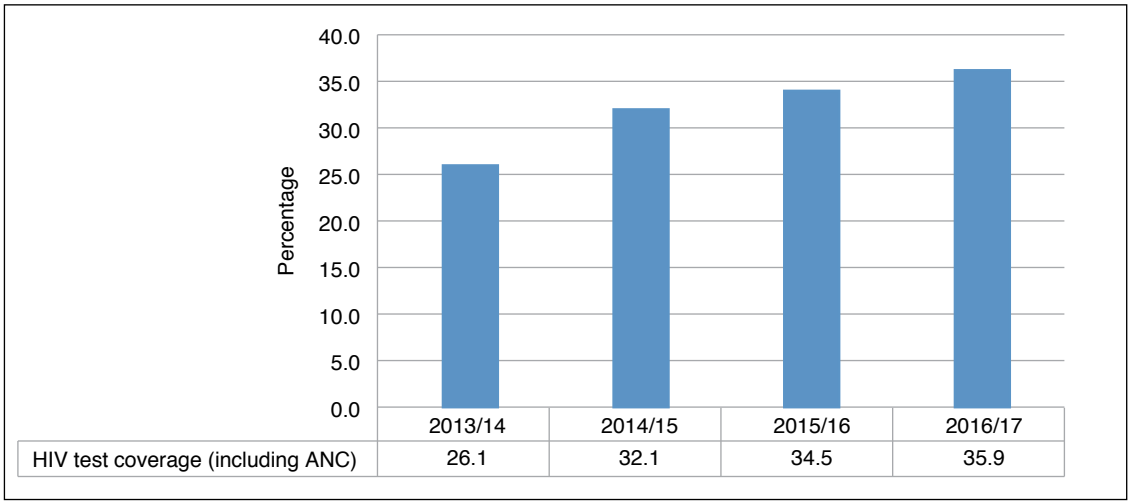
HIV testing coverage reports on testing done within public health facilities and those in non-medical sites that report data to the DHIS. This includes antenatal clients. Equally important is the need to increase value for each HIV test through the provision of targeted HIV testing for high-risk populations that can improve HIV positivity yield and case finding. A high HIV positivity yield is an important process input for fast-tracking universal ART coverage and reaching community viral load suppression.

HIV testing is a key entry point intervention for increasing access to an HIV prevention package of services, treatment of HIV-related disease, ART initiation and psychosocial support. South Africa provides mixed model HIV testing services, which include provider-initiated testing, community-based testing for reaching large numbers of first-time testers, diagnosing people living with HIV at earlier stages of their HIV infection, and linking those who test positive to care, workplace and home-based (door-to-door) testing. South Africa has also introduced self-screening as part of a community-based approach. Self-screening can increase the uptake of testing services (including men and adolescents) and it facilitates linkages to care, especially among individuals who are at high risk of HIV infection.

HIV testing services include pre-test counselling, HIV testing, post-test counselling, TB, sexual transmitted infections and non-communicable disease screening, referral and linkages.

National overview

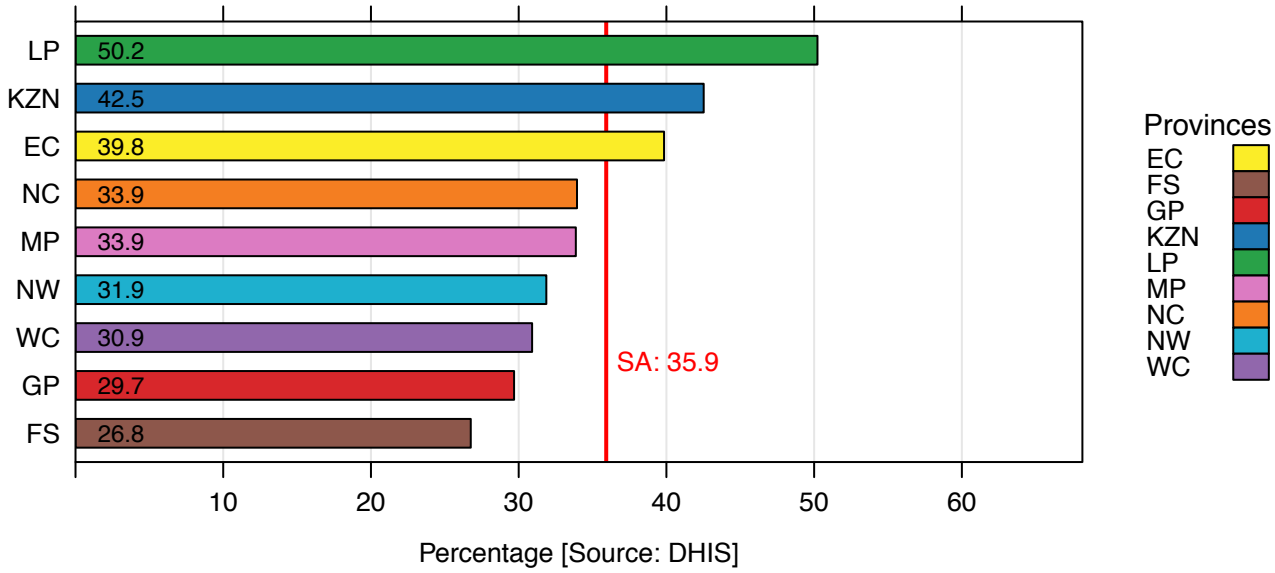
Figure 5: National HIV testing coverage (including ANC) trends, 2013/14–2016/17



	2013/14	2014/15	2015/16	2016/17
HIV test coverage (including ANC)	26.1	32.1	34.5	35.9

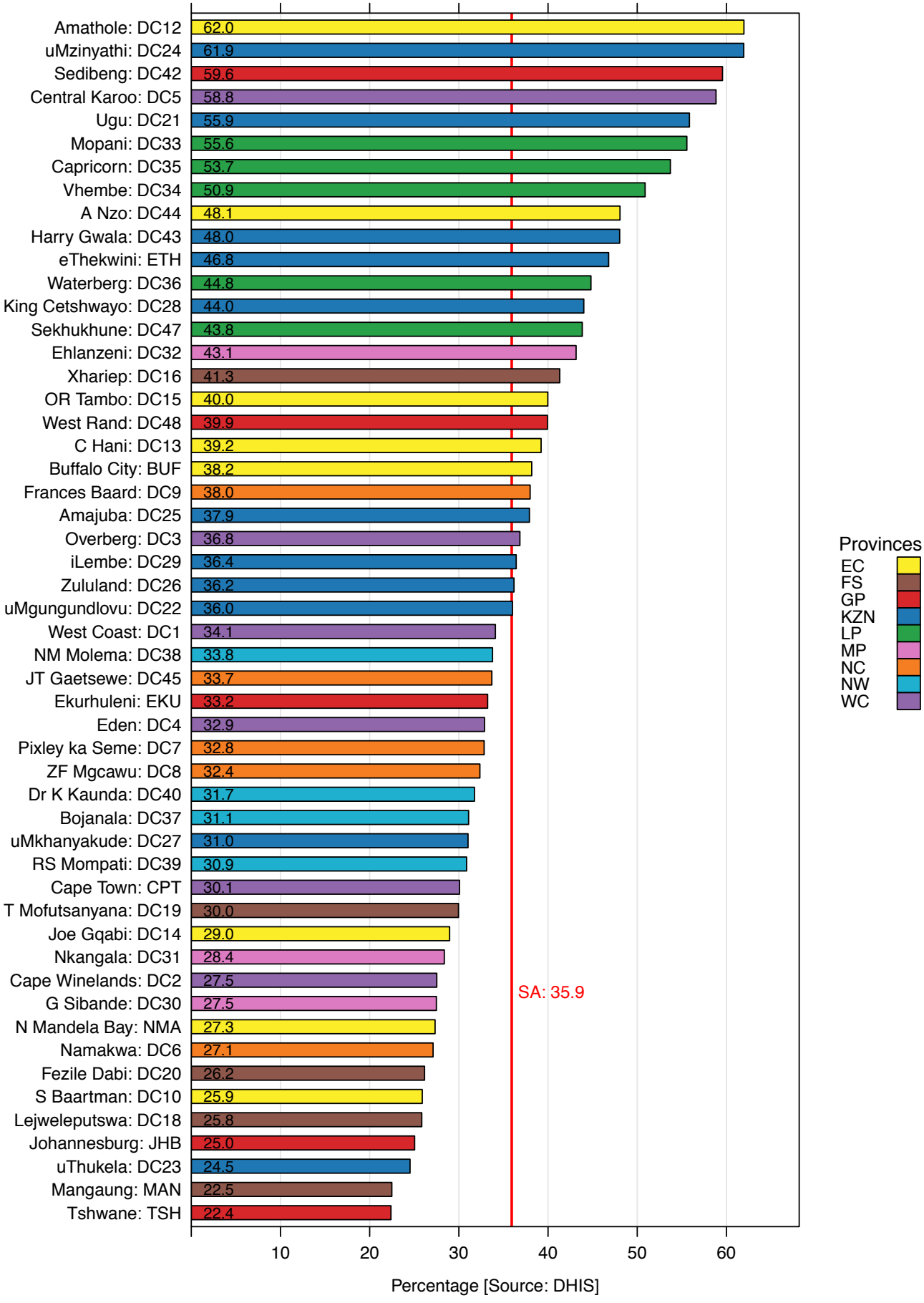
Provincial overview

Figure 6: HIV testing coverage (including ANC) by province, 2016/17



District overview

Figure 7: HIV testing coverage (including ANC) by district, 2016/17



Northern Cape had the most sub-districts with HIV testing coverage (including ANC) of less than 25% (Map 2).

Map 2: HIV testing coverage by sub-district, 2016/17

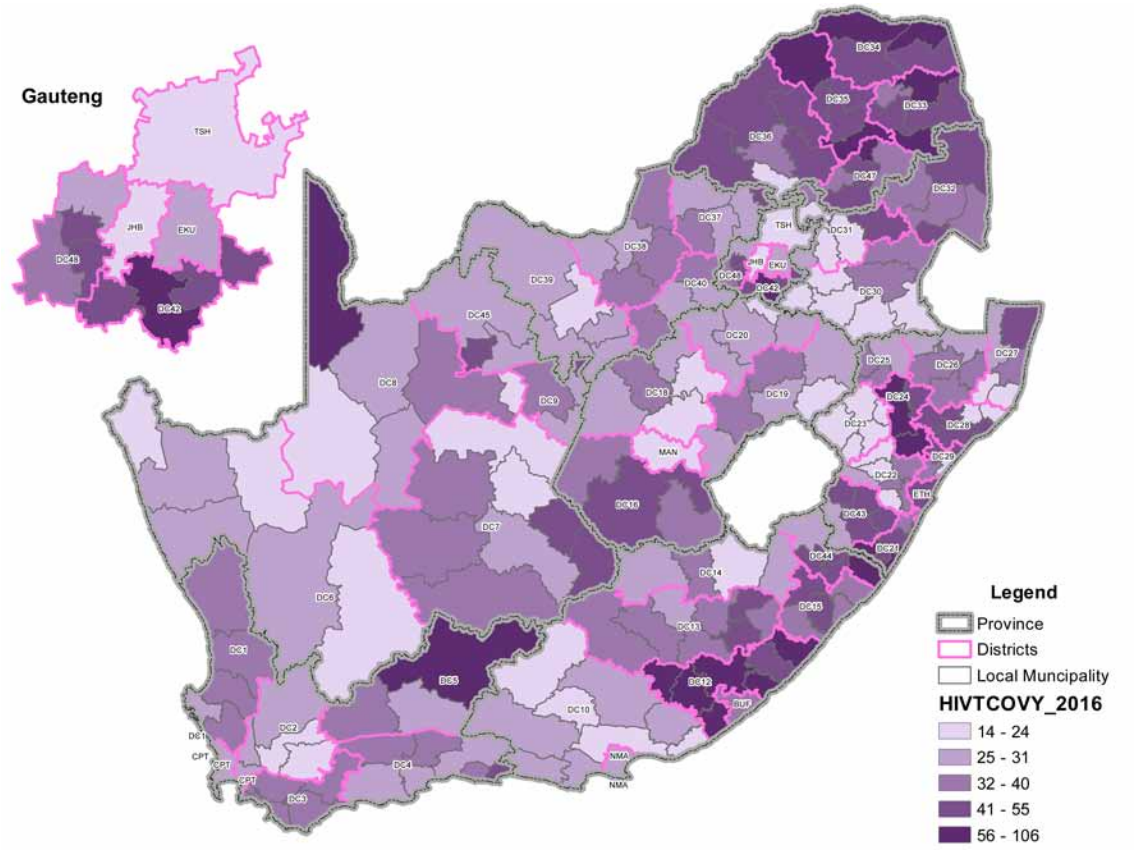
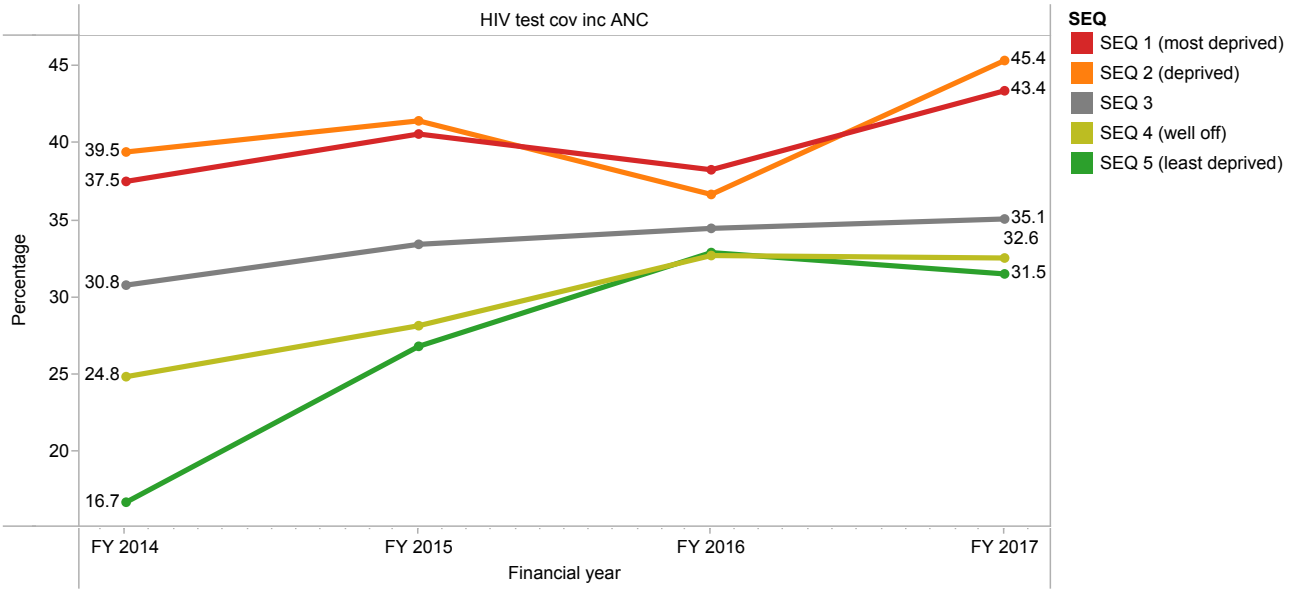


Figure 8 shows the average HIV testing coverage (including ANC) by SEQ. The deprived SEQs had the highest coverage since 2013/14.

Figure 8: Trends in average district values by socio-economic quintile for HIV testing coverage (including ANC), 2013/14–2016/17



Key findings

- The average HIV testing coverage rate (including ANC) for the country has been increasing steadily, from 26.1% in 2013/14 to 35.9% in 2016/17. This translates to more than 10 million HIV tests annually.
- In 2016/17 the districts with the highest increase in the HIV testing coverage (including ANC) were Alfred Nzo (EC) (58.3%), Sedibeng (GP) (47.6%) and King Cetshwayo (KZN) (51.0%).
- The deprived districts (SEQ 1 and 2) had the highest HIV testing coverage (including ANC) in 2016/17.

Recommendations

- Reviews of the HIV testing coverage rate should be cross-tabulated with the HIV positivity rate to assess whether HIV testing improves HIV case finding.
- District Improvement Plans and HIV/AIDS Dashboard indicators should be reviewed by district management teams to strengthen DHB total clients remaining on ART (TROA) indicator analysis.
- In line with HIV testing, emphasis should be placed on targeted testing and early linkage to treatment in order to reduce early loss to follow-up with delayed initiation.
- Facility, sub-district and district data analysis and data usage should be implemented for timely corrective measures.

11.3 Clients remaining on antiretroviral therapy rate

The clients remaining on ART rate indicator monitors the total number of clients started on lifelong ART during a specific period. The numerator for clients remaining on ART rate is 'total clients remaining on ART at end of the month' and the denominator 'estimated number of people living with HIV (PLHIV)'.

Total clients remaining on ART includes the sum of all clients on treatment including newly initiated patients and patients already on treatment. Specifically, clients remaining on ART equals the total of 'naive clients', that includes [PMTCT plus Experienced (Exp) plus Transfer in (TFI) plus Restart] minus [Died (RIP) plus Lost to follow-up (LTF) plus Transfer out (TFO)].

The methodology to determine the estimated number of people living with HIV at district level was based by averaging three methods, namely antenatal care (ANC), Human Sciences Research Council (HSRC) and TROA, as recommended by a Strategic Information team on district level PLHIV estimates, since there is no model for district estimates (Table 1).

Box 1: Methods used to calculate the percentage of people living with HIV

ANC method: The proportion of HIV positive pregnant women in a district out of all HIV-positive pregnant women in the province is multiplied by the total HIV infections in the province in 2016 according to Thembisa. [Note that this approach assumes that the ANC prevalence is a proxy for the total population prevalence.]
The proportion of HIV-positive pregnant women in a district out of all HIV-positive pregnant women in the province is estimated by multiplying the ANC district prevalence 2014 (report d.d. 8/7/16)[e] by the number of women 15–49 in the district and this is divided by the product of the ANC provincial prevalence 2014 and the number of women aged 15–49 in the province.
HSRC method: The proportion of PLHIV in the district out of all PLHIV in the province (based on HSRC 2012) is multiplied by the total HIV infections in the province in 2016 according to Thembisa. [Note that although district estimates are available from the HSRC; this data is from 2012 and has large confidence intervals.]
The proportion of PLHIV in the district out of all PLHIV in the province is calculated by multiplying the HSRC 2012 district prevalence by the number of people in the district and this is divided by the product of the HSRC 2012 provincial prevalence and the number of people in the province.
TROA method: The proportion of people remaining on ART in a district out of all people remaining on ART in the province (December 2016) is multiplied by the total HIV infections in the province in 2016 according to Thembisa. [Note that this approach assumes that ART coverage is similar in the districts.]
Finally the average of the results of the above three methods is taken and the range presented as a proxy for a uncertainty range around the average.

d National Department of Health. The 2012 National Antenatal Sentinel HIV and Syphilis Prevalence Survey in South Africa. National Department of Health. Pretoria. 2014.

e Shisana O, Rehle T, Simbayi LC, Zuma K, Jooste S, Zungu N, Labadarios D, Onoya D et al. (2014) South African National HIV Prevalence, Incidence and Behaviour Survey, 2012. Cape Town. HSRC Press.

Table 1: Methodology to determine the estimated number of people living with HIV

Province	District	Total population	People living with HIV	Low	High	Prevalence (%)
Eastern Cape	Oliver Tambo	1 457 386	178 204	172 063	188 270	12.2
	Chris Hani	840 055	100 575	93 276	113 230	12.0
	Buffalo City	834 998	103 173	94 679	113 369	12.4
	Alfred Nzo	867 863	103 224	91 899	111 042	11.9
	Amathole	880 790	96 786	92 491	102 543	11.0
	Nelson Mandela Bay	1 263 049	106 070	95 685	116 830	8.4
	Joe Gqabi	372 913	42 641	38 891	44 784	11.4
	Sarah Baartman	479 920	40 030	35 413	44 939	8.3
Free State	Lejweleputswa	646 920	102 689	86 810	128 771	15.9
	Thabo Mofutsanyane	779 328	114 722	106 467	122 551	14.7
	Mangaung	787 803	80 226	59 589	93 880	10.2
	Fezile Dabi	494 778	53 436	43 827	59 122	10.8
	Xhariep	125 883	14 063	10 399	16 847	11.2
Gauteng	Johannesburg	4 949 348	638 683	602 583	663 821	12.9
	Ekurhuleni	3 379 105	507 096	499 884	518 729	15.0
	Tshwane	3 275 152	380 703	360 128	395 282	11.6
	Sedibeng	957 529	168 672	126 297	227 076	17.6
	West Rand	838 592	110 662	62 147	143 516	13.2
KwaZulu-Natal	eThekwini	3 702 232	621 411	562 438	675 258	16.8
	uMgungundlovu	1 095 861	226 236	219 752	239 108	20.6
	Zululand	892 309	171 640	158 074	194 695	19.2
	King Cetshwayo	971 133	172 960	168 007	176 248	17.8
	Ugu	753 337	139 233	119 950	154 387	18.5
	uThukela	706 589	118 150	115 112	123 194	16.7
	Harry Gwala	510 868	87 579	75 678	107 821	17.1
	uMzinyathi	554 883	93 166	87 107	102 967	16.8
	uMkhanyakude	689 086	115 688	98 362	137 816	16.8
	Amajuba	531 325	86 354	82 524	89 928	16.3
	iLembe	657 611	105 906	89 176	115 910	16.1
Limpopo	Mopani	1 159 188	114 449	101 152	123 686	9.9
	Capricorn	1 330 436	107 728	93 792	114 872	8.1
	Sekhukhune	1 169 761	81 708	77 616	88 394	7.0
	Waterberg	745 758	66 508	65 531	67 049	8.9
	Vhembe	1 393 952	74 704	63 744	86 739	5.4
Mpumalanga	Ehlanzeni	1 754 930	307 654	294 929	331 594	17.5
	Gert Sibande	1 135 410	196 950	179 219	229 690	17.3
	Nkangala	1 445 624	160 437	138 912	190 893	11.1
North West	Bojanala	1 657 147	219 823	204 206	242 592	13.3
	NM Molema	889 106	105 640	97 732	114 104	11.9
	Dr K Kaunda	742 820	95 770	92 416	101 685	12.9
	RS Mompati	459 360	53 515	42 008	72 249	11.6
Northern Cape	Frances Baard	387 743	33 351	30 460	39 131	8.6
	JT Gaetsewe	242 266	20 328	18 745	22 767	8.4
	ZF Mgcawu	252 692	13 165	11 263	16 196	5.2
	Pixley Ka Seme	195 595	10 191	7 896	11 805	5.2
	Namakwa	115 487	2 622	1 724	3 519	2.3
Western Cape	Cape Town	4 005 016	300 424	297 566	303 669	7.5
	Cape Winelands	866 001	48 348	45 868	49 960	5.6
	Eden	611 282	38 886	36 824	41 311	6.4
	West Coast	436 400	19 683	16 708	21 479	4.5
	Central Karoo	74 245	1 842	1 224	2 972	2.5
	Overberg	286 785	12 569	4 727	18 465	4.4

The adoption of the Treat All approach,[f] along with increasing government investment in simplified patient-centred ART delivery through the scaling up of differentiated care strategies for stable adult patients such as Central Chronic Dispensing and Distribution (CCMDD), the Central Dispensing Unit (CDU) and Adherence Clubs (AC), has been critical to expanding ART access to communities and decongesting facilities.

f World Health Organization. Consolidated Guidelines on the use of Antiretroviral Drugs for Treating and Preventing HIV Infections Recommendations for a Public Health Approach, Second Edition. World Health Organization. 2016.

However, to achieve the ambitious national targets going forward, additional measures will be needed. Testing yield must increase by targeting testing to high-risk populations and communities. Linkage from testing to treatment must be strengthened and appropriate monitoring tools documenting linkage developed. Twelve month retention on ART must be improved from 73.7% in 2015/16 (DHIS Quarterly ART Data 2015).

The 'clients remaining on ART rate' is a new indicator to the 2016/17 DHB and therefore there is no comparison with previous years' indicators. There have also been changes in South Africa's ART guidelines for ART initiation criteria from CD4 350 (in 2010) to CD4 500 (in 2015) and currently treatment for all regardless of CD4 count.

National and provincial overview

South Africa has the largest ART programme in the world. According to the DHIS data of March 2017, over 3.8 million South Africans living with HIV have remained on ART which is an increase from 3.1 million in 2015 (Table 2). Despite this 23.4% increase in TROA over two years, the achievement is below the 2016/17 NDoH APP target of 4.3 million.

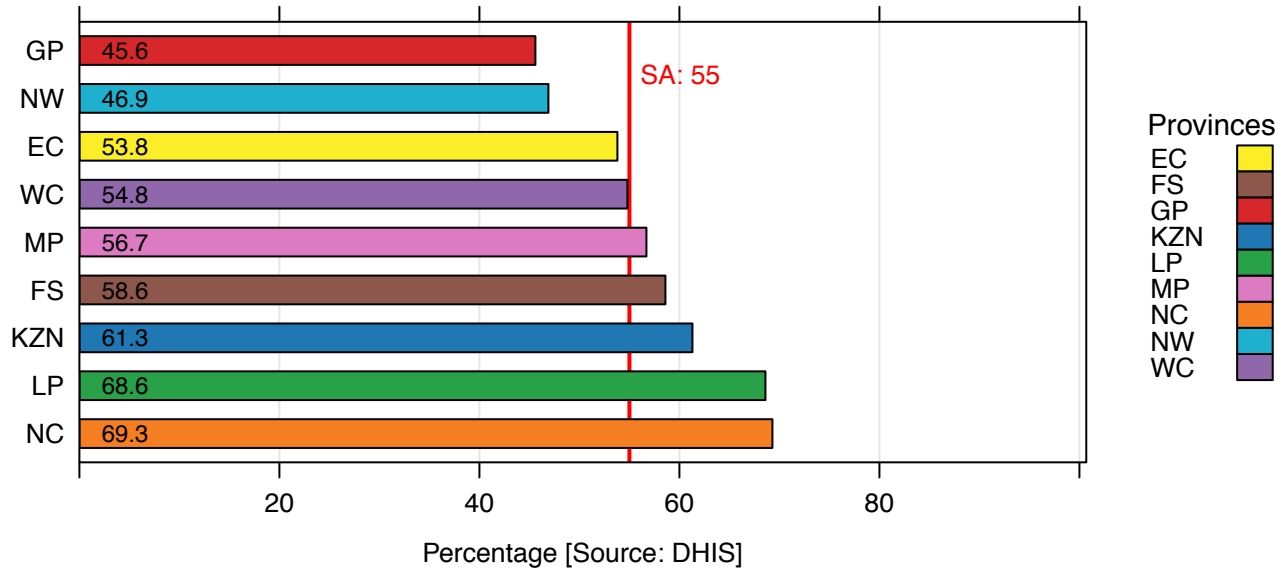
The highest increase in TROA was reported in Mpumalanga and Limpopo provinces. Despite a significant increase in the TROA in the majority of the districts, Table 3 reflects a minimal increase in North West and Gauteng districts.

Table 2: Total clients remaining on ART by province, March 2015 and March 2017

Province	Total clients remaining on ART March 2015	Total clients remaining on ART March 2017	Change (%)
Eastern Cape	320 062	414 733	29.6
Free State	168 877	214 151	26.8
Gauteng	730 576	823 170	12.7
KwaZulu-Natal	951 462	1 187 999	24.9
Limpopo	232 506	305 421	31.4
Mpumalanga	284 984	377 288	32.4
Northern Cape	43 054	55 181	28.2
North West	191 612	222 856	16.3
Western Cape	180 769	230 931	27.7
South Africa	3 103 902	3 831 730	23.4

Gauteng, North West, Eastern Cape and Western Cape had clients remaining on ART rates below the national average of 55.0% (Figure 13).

Figure 9: Clients remaining on ART rate by province, 2016/17



District overview

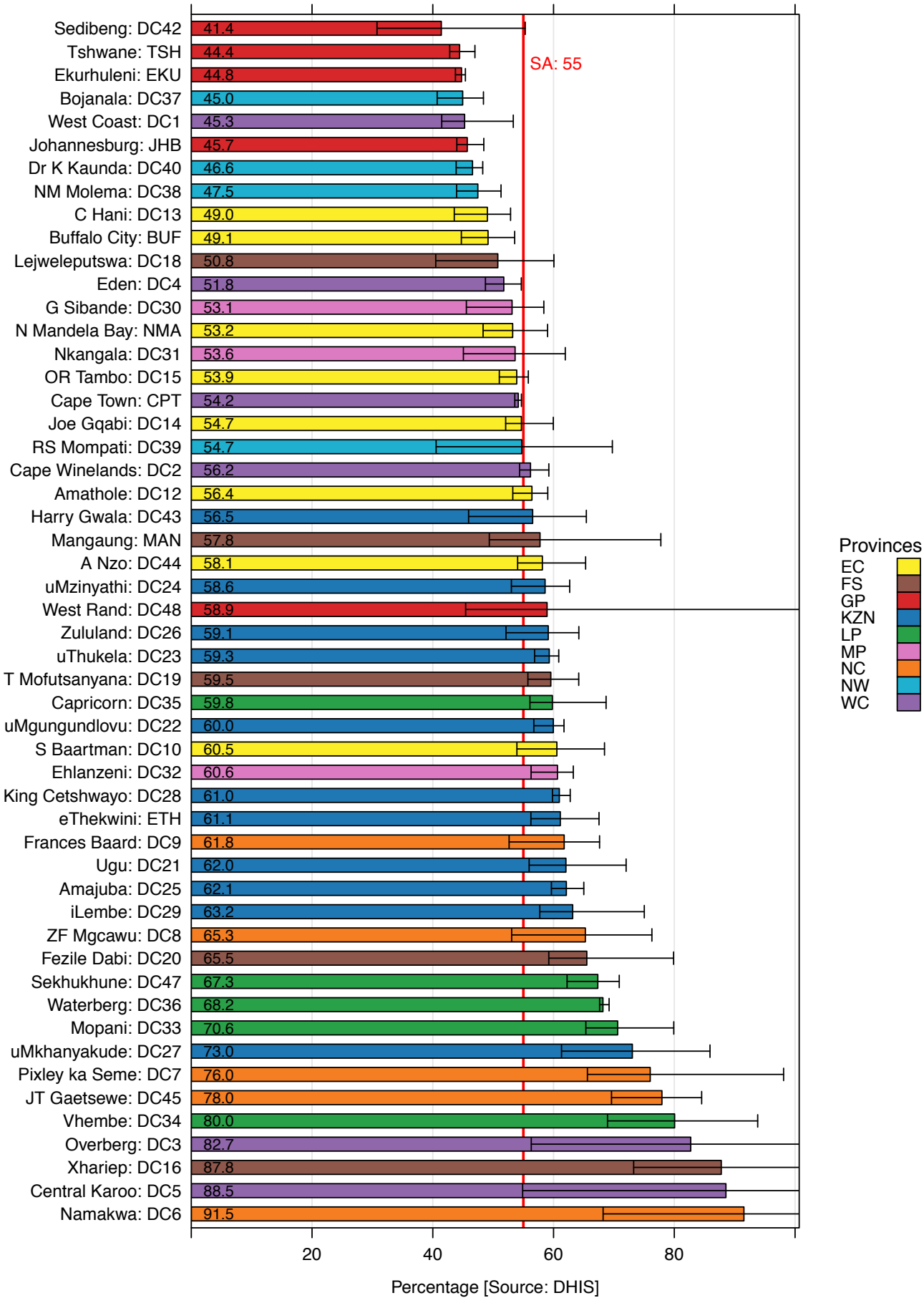
Table 3 shows the TROA and the clients remaining on ART rate by district.

Table 3: Total clients remaining on ART by district, March 2015 and March 2017

Province	District	Total clients remaining on ART March 2015	Total clients remaining on ART March 2017	Change (%)
Eastern Cape	Buffalo City	40 359	50 707	25.6
	Sarah Baartman	19 341	24 237	25.3
	Amathole	40 281	54 608	35.6
	Chris Hani	39 436	49 327	25.1
	Joe Gqabi	17 805	23 317	31.0
	OR Tambo	76 645	96 052	25.3
	Alfred Nzo	41 591	60 023	44.3
	Nelson Mandela Bay	44 604	56 462	26.6
Free State	Xhariep	9 731	12 344	26.9
	Lejweleputswa	44 841	52 136	16.3
	Thabo Mofutsanyane	45 870	68 322	48.9
	Fezile Dabi	27 355	35 007	28.0
	Mangaung	41 080	46 342	12.8
Gauteng	Sedibeng	53 036	69 854	31.7
	West Rand	63 590	65 210	2.5
	Ekurhuleni	182 092	226 955	24.6
	Johannesburg	288 361	291 965	1.2
	Tshwane	143 497	169 186	17.9
KwaZulu-Natal	Ugu	67 432	86 388	28.1
	uMgungundlovu	109 066	135 654	24.4
	uThukela	55 767	70 052	25.6
	uMzinyathi	44 602	54 593	22.4
	Amajuba	41 272	53 646	30.0
	Zululand	77 411	101 471	31.1
	uMkhanyakude	66 386	84 506	27.3
	King Cetshwayo	91 013	105 433	15.8
	iLembe	51 406	66 904	30.1
	Harry Gwala	41 540	49 519	19.2
	eThekwini	305 567	379 833	24.3
Limpopo	Mopani	67 908	80 829	19.0
	Vhembe	47 188	59 800	26.7
	Capricorn	44 194	64 432	45.8
	Waterberg	32 587	45 346	39.2
	Sekhukhune	40 629	55 014	35.4
Mpumalanga	Gert Sibande	77 411	104 641	35.2
	Nkangala	63 294	86 041	35.9
	Ehlanzeni	144 279	186 606	29.3
Northern Cape	JT Gaetsewe	11 324	15 845	39.9
	Namakwa	1 839	2 400	30.5
	Pixley Ka Seme	6 130	7 746	26.4
	ZF Mgcawu	6363	8 593	35.0
	Frances Baard	17 398	20 597	18.4
North West	Bojanala	72 692	98 816	35.9
	NM Molema	48 895	50 137	2.5
	RS Mompati	28 532	29 295	2.7
	Dr K Kaunda	41 493	44 608	7.5
Western Cape	Cape Town	131 177	162 704	24.0
	West Coast	6 521	8 910	36.6
	Cape Winelands	19 615	27 162	38.5
	Overberg	7 233	10 397	43.7
	Eden	14 805	20 127	35.9
	Central Karoo	1 418	1 631	15.0

Three of the Gauteng districts reported the lowest rate when compared to all districts and national average.

Figure 10: Clients remaining on ART rate by district, 2016/17



Key findings

- Overall, the clients remaining on ART rate indicates continued efforts to achieve the 90-90-90 targets by 2020. However continued efforts ensure that prevention is on the agenda must persist.
- The national average for clients remaining on ART rate in 2016/17 was 55.0% with a low of 45.6% in Gauteng and a high of 69.3% in Northern Cape.
- District clients remaining on ART rates varied from 41.4% in Sedibeng (GP) to 91.5% in Namakwa (NC) (note wide confidence intervals for small districts). The 2020 treatment coverage target remains 90% for all districts. Only Namakwa reached the 2020 target in 2016/17.
- In 2016/17 all five districts in Limpopo exceeded the national average of 55.0% and the three metropolitan districts in Gauteng had the lowest rates in the country.

Recommendations

- There is a need to prioritise the performance of metros for greater impact, since the majority of resources and population are located in these areas.
- There is a need to expand indicators included in the DHB to include total clients started on treatment, total number lost to follow-up (including deaths), total number of persons known virologically suppressed to better understand performance trends and 'leaks' throughout the care cascade.
- District Improvement Plans and HIV/AIDS Dashboard indicators should be reviewed by district management teams to strengthen DHB TROA indicator analysis.
- In line with HIV testing, emphasis should be directed at targeted testing and early linkage to treatment to reduce early loss to follow-up with delayed initiation.
- Facility, sub-district and district data analysis and data use should be implemented for timely corrective measures.
- Data quality measures such as data mopping to prevent delayed reporting or non-reporting by facilities, assuring that all facilities achieve phase 6 of Tier. Net, and data and clinical audits, should be prioritised especially in poor performing districts.
- District and facility staff should be oriented on CCMDD Standard Operating Procedure on capturing of patients on Tier.Net to reduce false lost to follow up cases.
- Post-test counselling, ongoing care, and adherence support should be intensified for continued patient support.
- Continued supply chain management should be maintained to reduce stock outs.
- Medicine pick-up points such as external CCMDD and Community Adherence Clubs must have a feedback mechanism to facilities to ensure that patients receive their correct medications on time.