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2008 National Antenatal Sentinel HIV & Syphilis Prevalence Survey

SOUTH AFRICA REPORT

National Department of Health

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2008 NATIONAL ANTENATAL SENTINEL HIV & SYPHILIS PREVALENCE SURVEY

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National Department of Health

September 2009

EXECUTIVE SUMMARY

South Africa has almost two decades (1990–2008) of good sentinel surveillance data that assists in monitoring the HIV epidemic trends in the 15–49 years old female population. At the end of 2007, the estimated prevalence of HIV in the general adult population was 17.5 %. The Government has responded to the HIV and AIDS epidemic by facilitating a multi-sectoral approach to implement and monitor appropriate treatment, prevention, care and support interventions. The Ministry of Health has played a leading role in these efforts, including the provision of strategic information for monitoring the magnitude of the HIV and AIDS epidemic. South Africa has one of the largest HIV sentinel surveillance systems in the world. Since 1990, the Department of Health has monitored the HIV epidemic using this surveillance system. Currently the HIV sentinel survey is carried out in 1 457 sentinel sites strategically located in all the 52 Health Districts targeting 36 000 pregnant women seeking antenatal care for the first time during the current pregnancy within the survey period.

The HIV sentinel surveillance data has helped to map the epidemic and monitor HIV infection trends in the country and has served as an advocacy tool, resulting in the mobilization of partners, resources and development of innovative approaches by the national response to HIV and AIDS. The 2008 HIV survey was the 19th round to be conducted in the country.

The South African antenatal clinic survey is done annually in October to obtain an estimate of the point prevalence for that year. The estimated prevalence of HIV infections among pregnant women aged 15–49 and seeking care in public health clinics in South Africa has been stable over the last 3 years. The information from this survey was used to estimate the rate of new HIV infections (incidence) and HIV-associated deaths are derived through mathematical models applied to HIV prevalence estimates.

Methodology

The 2008 Survey was conducted in 52 health districts. Antenatal HIV sentinel surveillance involved collection of 33 927 intravenous blood samples from pregnant women at their first antenatal visit served in 1 457 public health clinics over a 4-week period. The blood samples were screened using the Enzyme Linked Immuno Sorbent Assay (ELISA) test and the Rapid Plasma Reagin (RPR) card test.

Given that the sentinel sites were chosen on a probability proportional to size basis, the districts were self-weighting and the estimates of provincial level prevalence were simply calculated as the total of the results from the districts in the provinces. The national prevalence was then estimated as a weighted average of the provincial prevalence estimates weighted according to the total number of women aged 15–49 years in each province using the 2008 mid-year population estimates.

Findings

The overall national HIV prevalence among ante-natal women aged 15–49 years in the 2008 ANC survey, measured using the parallel test algorithm, was 29.3% (95% CI: 28.5%–30.1%). The occurrence of the HIV infection nationally has stabilized at around 29.0% from 2006. In 2007, the HIV prevalence estimate among first visit antenatal attendees was 29.4% (95% CI: 28.5–30.1).

Nationally, women in the age group 30–34 years still have the highest prevalence, with a prevalence of 40.4% in 2008 compared to 39.6% in 2007. The HIV prevalence among the 15–24 years old (which is the Millennium Development Goal 6, Target 7 indicator 18) was 21.7% in 2008 compared to 22.1 % in 2007 a decline of 0.4%. There is a slight increase in HIV prevalence among young women in the age group 15–19 years from 13.1% in 2007 to 14.1% in 2008. The HIV prevalence has remained stable among women aged 25 years and above.

The highest HIV prevalence of 38.7% (CI: 37.2%–40.1%) in 2008 was seen in the province of KwaZulu-Natal and the lowest estimate of 16.1% (CI: 12.6%–20.2%) was noted in the Western Cape Province. Free State, Mpumalanga and the Western Cape provinces showed a slight increase in HIV prevalence, while KwaZulu-Natal, North West (which had prevalence above 30%) Northern Cape and Limpopo provinces remained static. Gauteng province is showing a tendency towards a decrease, although this is not statistically significant. Mpumalanga province is the only province in the country that continues to show some evidence of an increase in HIV infection from 32.1% in 2006 to 34.6% in 2007 to 35.5% in 2008.

District HIV prevalence has only been reported since 2006 when the geographic coverage of sentinel sites was increased and the sample size doubled. There was a considerable variation in HIV prevalence between the 52 health districts observed over the three year period 2006-2008, particularly where the sample size in a district is small, making it difficult to discern any trends. However, the following inferences can be made viz: Fezile Dabi and Xhariep districts in the Free State are showing an increase, whereas Amajuba in KwaZulu-Natal is showing a decrease in HIV prevalence over the past three years, Dr Ruth S. Mompati in North West, Sekhukhune in Limpopo, Sisonke and uThukela in KwaZulu-Natal showed a slight increase, while Bojanala in North West, Waterberg in Limpopo and West rand in Gauteng showed a slight decrease over the last three years.

In addition the districts are clearly heterogeneous with respect to the epidemic, with prevalence ranging from a high of over 45% to a low of around 5%. When data are pooled over the three years this heterogeneity persists.

A regression analysis of determinants of HIV positive status in the survey participants using the demographic and laboratory information showed that the most significant determinant factor was age. Splitting the sample at an age of 21 years, the women less or equal to 21 years have HIV prevalence of 16.8% compared the 34.8% of women 22 years and older. This split of the overall group with prevalence of 29.2% has identified a younger subgroup that has a much lower prevalence. No further splits were identified in this group of young women. In the older age-group the next split was on race. An African subgroup (37.6%) is identified versus the rest (6.8%) of White, Asian and Coloured women which has a low prevalence and no further splits were identified in this subgroup of participants. One important observation from the regression analysis was that women having a syphilis co-infection is not a strong predictor for HIV status.

Conclusion

The HIV prevalence of 29.3% in 2008 is in line with the prevalence observed in the two previous years. To avoid a resurgence of the HIV and AIDS epidemic in South Africa, HIV prevention efforts need to be urgently strengthened and sustained. Furthermore, ecological correlations between the trends in HIV prevalence and behavioural changes that will focus on reducing the incidence of infection exposure factors, especially in districts that record more than 30% HIV prevalence, is warranted. Further in-depth epidemiological investigations on what could be causing the interjectory between the districts and between provinces in the identified epicentres could assist in understanding the different patterns of the transmission potential of the virus.

FOREWORD

One of the greatest health challenges threatening the human race in our time is the HIV and AIDS pandemic. The UNAIDS, estimates that in 2008 there were 5,3 million South Africans infected with the virus, of which 3 million were women above 15 years and 220 000 were children. The impact of deaths due to AIDS-related illnesses is a tragic reality experienced by families, communities and the nation at large. It is for this reason that government has prioritized strengthening HIV prevention interventions to curb incidence and morbidity and is committed to providing universal access to treatment for all those affected, in order to reduce premature deaths due to AIDS.

South Africa with so many millions of people living with the HI virus, face both institutional and human resource capacity challenges to provide treatment, care and support. This is compounded by the simultaneous resurgence of the TB epidemic and Drug Resistant pathogens. There is however, a high level of political commitment and will to ensure that we realize the implementation of the National Comprehensive HIV and AIDS Care, Management and Treatment Plan (2003), but this will require additional public health technical capacity to address the capacity shortfall that continues to hamper acceleration of the public sector efforts to mitigate the HIV and AIDS epidemic.

The antenatal HIV and syphilis prevalence survey is one of the epidemiological tools used by the Department of Health to monitor the epidemic trend. This survey has been conducted annually in South Africa since 1990. It is one of most robust HIV surveillance methods that target the 15 to 49 year old antenatal women who come for a first booking at an antenatal care facility in the public health sector.

The findings from the 2008 survey supports observations that the HIV prevalence is stabilizing in the general adult population when comparing the South African profile to other countries considered to have a generalized epidemic. This survey, further provides evidence that South African women are at highest risk of contracting the HI virus, for a number of reasons, including gender inequality, high geographic mobility and extensive migrant labour. These require further epidemiological in-depth investigation, but can easily be shown when one looks at the location of the HIV epi-centres and the distribution of HIV by health districts (provided in this report).

Furthermore, the results show that there is wide variation in HIV prevalences between provinces, in the age groups over 19 years, from 16.1 % in the Western Cape to 38.7% in KwaZulu-Natal. There is significant variation in HIV prevalences by district over the past 3 year period. For the first time HIV prevalence trends have been reported down to the district level in South Africa. District HIV prevalence results show heterogeneity with respect to the spread of the epidemic, with prevalences ranging from 2.2% in Namakwa (NC) to 45.7% in uMgungundlovu (KZN).

This 2008 report is recommended for use in monitoring progress towards achieving the Health related MDG Goals and providing data for policy planning for strategic HIV and AIDS intervention programmes. National and international stakeholders can use the 2008 antenatal survey data in developing relevant strategies based on evidence provided herein. We acknowledge the complex responsibility of continuing to provide this important data as we strive to improve our efficiency in providing appropriate interventions, strategies for HIV prevention, management and control of AIDS related morbidity and prevention of premature AIDS related deaths in our country.

DR. A. MOTSOALEDI (MP)
MINISTER OF HEALTH

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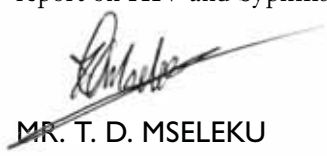

MR. T. D. MSELEKU

DIRECTOR-GENERAL: HEALTH

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ACRONYMS

AIDS	Acquired Immuno Deficiency Syndrome
ANC	Antenatal Care
ART	Anti-retroviral Therapy
ASSA	Actuarial Society of South Africa
BSS	Behavioural Surveillance Survey
CCMT	Comprehensive Care Management and Treatment
CI	95% Confidence Interval
DHIS	District Health Information System
ELISA	Enzyme Linked Immuno Sorbet Assay
EPP	Estimation and Projection Package
HAART	Highly Active Anti-retroviral Therapy
HIV	Human Immunodeficiency Virus
HSRC	Human Science Research Council
JSI	John Snow Research and Training Institute inc
NDOH	National Department of Health
MDG	Millennium Development Goals
MEDUNSA	Medical University of South Africa
NICD	National Institute for Communicable Diseases
NHLS	National Health Laboratory Service
PMTCT	Prevention of Mother-to-Child Transmission
PPS	Probability Proportional to Size
QA	Quality Assurance
RPR	Rapid Plasma Reagin (A screening test for syphilis)
SA	South Africa
SACEMA	South African Centre of Excellence in Epidemiological Modelling and Analysis
Stats	Statistics South Africa
STI	Sexually Transmitted Infection
TB	Tuberculosis
UCT	University of Cape Town
UKZN	University of KwaZulu-Natal
UNAIDS	United Nations Joint Program on HIV & AIDS
UNGASS	United Nations General Assembly Special Session on HIV & AIDS
UNICEF	United Nations Children's Fund
VCT	Voluntary Counselling and Testing
WHO	World Health Organisation

1. INTRODUCTION

There are an estimated 33 million people living with the HI virus worldwide. Of these, two-thirds live in countries south of the Sub-Saharan Africa. In addition, out of the estimated 2.5 million new infections occurring globally, two thirds are also in sub-Saharan Africa (UNAIDS, 2007).

It is estimated that South Africa is one of the countries with the largest number of HIV infections in the world. In 2008, UNAIDS estimated that there were 5.3 million (4.7 million–5.7 million) people living with HIV. The HIV prevalence data collected from the latest round of antenatal clinic surveillance suggests that HIV infection levels among the adult female population might be leveling off, with prevalences among pregnant women at 29.1% in 2006 and 29.4% in 2007.

It is for this reason, that the Department of Health (DoH) strategic focus to strengthen HIV prevention and AIDS related disease management and control remains one of the priorities of the South African government. The country has adopted a multi-sectoral strategic approach in dealing with the spread of HIV and mitigating the impact of AIDS related morbidity and mortality. This approach ensures that all relevant stakeholders play an active role in combating HIV and AIDS in their areas of comparative advantage, with the DoH providing a lead role.

1.1 GENERAL OBJECTIVE

The general objective of the 2008 National HIV and Syphilis Prevalence Survey is to monitor the epidemic and provide HIV prevalence data for planning, monitoring and evaluation of HIV and AIDS response activities.

1.2 SPECIFIC OBJECTIVES

The specific objectives are:

1. To determine the National HIV and Syphilis prevalence among the female population of 15–49 years in the country using pregnant women attending antenatal clinics in public health institutions as proxy.
2. To determine the distribution of HIV and syphilis infection among pregnant women attending antenatal clinics by province, district and age.
3. To monitor the trend of HIV and syphilis infection in the country over time.
4. To project and extrapolate HIV prevalence in the 15–49 year old female to the general population e.g. children, men and those who need treatment.
5. To make information available for policy-planning, focused strategic programmes, advocacy, and evaluation of impact of ongoing interventions.

This report presents the results of the 2008 National Antenatal Sentinel HIV and Syphilis Prevalence Survey and trends in HIV and syphilis over the years. The results will provide a basis for the projection, estimation of the epidemic and measurement of HIV and AIDS impact in the general population.

2. METHODOLOGY

The 19th National Antenatal HIV and Syphilis Prevalence Survey was conducted in all the nine provinces of the country using the standard unlinked and anonymous methodology (WHO/UNAIDS) in October 2008. The survey is used as a proxy to estimate the trend in the prevalence of HIV and syphilis among pregnant first bookers aged 15–49 years served in public health facilities. A total of 33 927 pregnant women participated in 2008 compared to 33 685 in 2007. The women were recruited from 1 457 sentinel sites.

2.1 SURVEY DESIGN

The South African annual antenatal HIV surveillance survey is an anonymous, unlinked, cross-sectional survey targeting 15–49 year old pregnant women attending antenatal clinics in the public health sector. Only first-time attendees were recruited, to minimize the chances of any woman being included more than once. Since 2006, this survey has expanded its sample population to target 36 000 pregnant women from 1 457 clinics compared to 16 510 women recruited from 339 clinics in 2005. This has expanded geographic coverage considerably to include representativity in all 52 health districts in all the nine provinces.

2.2 PREPARATORY PHASE

The protocol and methodology were reviewed with all provincial survey coordinators. In addition, pre-2008 survey workshops were held at the National Department of Health as well as in all nine Provincial Health offices before the scheduled commencement date of the survey. Participants in these workshops included provincial and laboratory coordinators, health information officers, data capturers, and facility nurses. The training covered criteria for selection of the sites, recruitment of pregnant women, data administration, blood sample collection, labelling, coding, storage of samples, sample transportation, syphilis and HIV testing, confidentiality and ethical issues, supervision and quality assurance procedures.

2.3 SAMPLING

2.3.1 Sentinel population

This study was conducted as an unlinked anonymous survey amongst pregnant women who attended public health antenatal clinic services for the first time during the current pregnancy. The demographic details of the participants, with the exception of any particulars from which it may be possible to ascertain the identity of a patient, were collected using a standardized collection form. A unique bar code was allocated to each of the participants and it is this number that was recorded on the form and also used for labelling the blood samples. The bar code was used to link the demographic information with the lab results while maintaining anonymity of the survey participant.

2.3.2 Sampling of sentinel sites

The selection of sites was based on: the geographical distribution taking into account all the nine provinces and 52 districts of the country, presence of antenatal care services, existence of facilities for storing of blood specimens, availability of transport to allow for samples to be taken to the

laboratory, the ability and willingness of antenatal care providers to cooperate and participate in the survey. The geographical location of the sentinel sites is shown in Figure1.

Overall a proportional sample by district was drawn using the first time antenatal clinic attendees as obtained from the District Health Information System (DHIS) as a measure of size. This allowed for establishing the plausibility of the number of proposed samples to be collected at facility level.

The selection of eligible sentinel sites within a district was based on the Probability Proportional to Size (PPS) sampling method. Since the sampling period in each facility was the same this produced a self-weighting sample for each district.

2.3.3 Sample size and sampling period

A total of 36 000 pregnant women were target in this survey. In order to obtain an estimate of the point prevalence and to assess trends over time, sample collection from all the sites started on 1st October 2008 and ended on 31st October 2008.

2.4 DATA AND SAMPLE COLLECTION

Participation in the survey was voluntary, with informed consent for answering the questions on the forms and for collecting the blood samples. For reasons of confidentiality, testing was done on anonymous unlinked samples, in large batches. Syphilis screening is routinely done in the ANC clinics. Hence, syphilis screening was used as an entry point for HIV testing using anonymous unlinked procedures. Two blood samples were taken by venous puncture. One sample was labelled in accordance with the routine syphilis test to enable results to be sent back to the facility and for the woman to be informed of her result. The second sample was labelled with a bar code number of the individual pregnant woman and stored at 4°C. The corresponding data collection form (Appendix A) with the woman's demographic details was labelled with the same bar code number. At the close of each day the supervisors checked the forms against the blood samples for any mistakes and for completeness. The samples, together with the forms, were transported in a cooler box to the participating provincial laboratory where HIV and syphilis testing was done.

2.5 LABORATORY METHODS

2.5.1 Laboratory techniques

In accordance with the recommendations of the WHO on HIV screening for surveillance purposes, blood samples were tested with one ELISA (Abbot Axysm System for HIV-1 HIV-2) assay. The samples were also screened for active syphilis using the RPR test. Participating laboratories included the NHLS laboratories in Bloemfontein, Johannesburg, Kimberley, Middleburg, Port Elizabeth and Stellenbosch, MEDUNSA, and the Virology laboratory of the University of KwaZulu-Natal.

2.5.2 Quality control

Several measures were put in place to ensure that the results were valid and reliable. Internal quality control for ELISA and RPR tests was the responsibility of each individual participating laboratory. The National Institute for Communicable Diseases (NICD) and the Medical University of Southern Africa (MEDUNSA) served as external quality control institutions for HIV and syphilis respectively.

2.6 DATA MANAGEMENT

Raw data was captured at provincial level, using Microsoft Excel. Data cleaning was done by running all frequencies, identifying missing and duplicate records, entering missing records, deleting duplicate records and filling in missing data. Records, for which the age, facility and district name

was not available, were removed from the dataset that was to be analyzed. Records, which did not have a confirmed HIV result, were also removed from the database and thus not analyzed. In this survey, 127 out of 33 927 samples were excluded from the analysis because of missing data. STATA statistical software package was used for validation and survey analysis. The analysis was mainly descriptive and focused on determining national, provincial, district and age group specific prevalence rates of HIV and syphilis. 95% confidence intervals were estimated for all the prevalence estimates and these estimates were adjusted for the complex survey design

2.6.1 Weighting

The national estimate was weighted using the same weighting procedure as previous years, i.e. according to the total number of women aged 15–49 years in the different provinces using the STATSSA mid-year population estimates for 2008. Given that the sentinel sites were chosen on a probability proportional to size basis by district, the sampling period was fixed and the districts are self-weighting, the provincial prevalence estimates were simply calculated as the total of the results from the districts in the provinces.

2.6.2 Calculation of confidence intervals and regression analysis

For the 95% confidence intervals, the normal approximation to the binomial distribution was used. In a few cases where the sample size or prevalence was small, the exact binomial calculation was used.

The classification tree regression model tries to find subgroups with similar HIV status – either positive or negative by splitting the original sample at an estimated cut point of the variable in the data that delivers the largest differential between the two new nodes in terms of HIV positive status. The process then continues in each new node until a stopping criterion is reached.

This model identifies interesting subgroups – interactions which cannot be spotted by other methods such as logistic regression. The sample size of 33 800 was ideal for this method.

The list of variables available from the survey was:

1. Age of participant (years)
2. Age of partner (years),
3. Age difference between partner and participant (years),
4. Age-group in 5 year intervals,
5. Educational level of participant (grade 0-12),
6. Gravidity (number of pregnancies),
7. Parity (number of live births),
8. Race (African, Coloured, Indian, White)
9. Syphylis RPR result (positive, negative)

As a first step the potential split for each variable was determined and the results are given in the table below. The variables are ranked from best to worst in terms of a splitting criterion to split the sample in a subgroups with high and low HIV prevalence.

2.7 MONITORING OF THE IMPLEMENTATION OF THE SURVEY

Monitoring of the implementation of the survey was conducted by technical teams from National, Provincial and District Health offices. This involved regular visits to sentinel sites, laboratories as well as addressing challenges arising during field execution.

3. RESULTS

3.1 DISTRIBUTION AND CHARACTERISTICS OF SURVEY PARTICIPANTS

3.1.1 Participation

Facility and individual level

A total of 33 927 out of the targeted 36 000 pregnant women attending antenatal care (ANC attendees) at selected public health facilities in the nine provinces in the country participated in survey during the month of October 2008. The sample population realization rate was 94.2 %. The analysis was done on 33 800 samples where 127 were excluded from the analysis because of missing data. The women were recruited from 1 408 in ANC clinics 2007 and 1 457 ANC clinics in 2008.

Table 1: Sample population distribution by age group, 2006 to 2008.

	2006		2007		2008	
Age in years	N	%	N	%	N	%
<15	***	***	***	***	138	0.4
15–19	6 299	19.1	6 377	19.0	6 589	19.4
20–24	10 478	31.7	10 616	31.5	10 539	31.1
25–29	7 661	23.2	7 912	23.5	8 082	23.8
30–34	5 018	15.2	5 091	15.1	4 966	14.6
35–39	2 531	7.7	2 722	8.1	2 717	8.0
40–44	735	2.2	702	2.1	707	2.1
45–49	95	0.3	82	0.2	82	0.2
>49	***	***	***	***	5	0.0001
Not specified	217	0.7	182	0.5	102	0.3
Total	**33 034**	**100.0**	**33 684**	**100**	**33 927**	**100**

Distribution by age group

Age is an important risk factor, because it is central to monitoring the epidemic among the high sexually active group. The outcome of HIV prevalence in the 15–24 years is crucial when reporting the outcome of the MDG 6, Target 7 Indicator 18. The age pattern of the women recruited in the survey was similar to the previous three surveys as shown in Table 1. About 50% of the respondents were young women aged 15–24 years.

Half of the participants were women between aged 15–24 years while 2.4% of the participants were women aged 35 years and above.

Distribution by race

Almost 90% of the survey participants were African women. However, in the Western Cape (WC), the race profile of participation in the survey was different from other provinces, the participation was almost equal between African and Coloureds. The race distribution in WC was as follows: 50.8% (1 896) were African; 48.6% (1 817) were Coloured; 1 (one) Asian and 21 Whites. This will be carefully considered when interpreting future Western Cape HIV results. The demographic characteristics of the survey participants and participation by province are presented in Tables 2, and 3.

Table 2: Sample population distribution by race, 2006 to 2008.

	2006		2007		2008	
Race	N	%	N	%	N	%
African	29 302	88.7	30 255	89.9	30 502	89.9
Asian	121	0.4	103	0.3	149	0.4
Coloured	3 045	9.2	3 010	8.9	2 930	8.7
White	172	0.5	151	0.4	140	0.4
Not specified	394	1.2	165	0.5	206	0.6

Table 3: Demographic characteristics of the sample population by province, 2006 to 2008.

	2006		2007		2008	
Province	N	%	N	%	N	%
Eastern Cape	4 074	12.3	4 118	12.23	4 220	12.4
Free State	2 225	6.7	2 169	6.44	2 016	5.9
Gauteng	6 145	18.6	7 024	20.8	7 500	22.1
KwaZulu-Natal	6 814	20.6	6 920	20.5	6 985	20.5
Limpopo	3 869	11.7	3 748	11.1	3 908	11.5
Mpumalanga	2 212	6.7	2 332	6.9	2 224	6.5
Northern Cape	1 087	3.3	1 191	3.5	1 113	3.2
North West	2742	8.3	2 353	6.9	2 113	6.2
Western Cape	3 866	11.7	3 830	11.3	3 848	11.3
Total	**33 034**	**100**	**33 685**	**100.0**	**33 927**	**100.00**

3.2 NATIONAL HIV PREVALENCE TRENDS (1990–2008)

In 2008 survey, the national overall HIV prevalence amongst 15–49 years old antenatal women served in the public health clinics was 29.3% (95% CI: 28.5%–30.1%). The estimated national HIV prevalence amongst the women surveyed has remained stable over the past three years: 29.1% in 2006; 29.4% in 2007 and 29.3% in 2008. This agrees with the recent projections by UNAIDS that the HIV epidemic curve is reaching a plateau. The HIV prevalence trend from 1990 to 2008 as shown in (Figure 1).

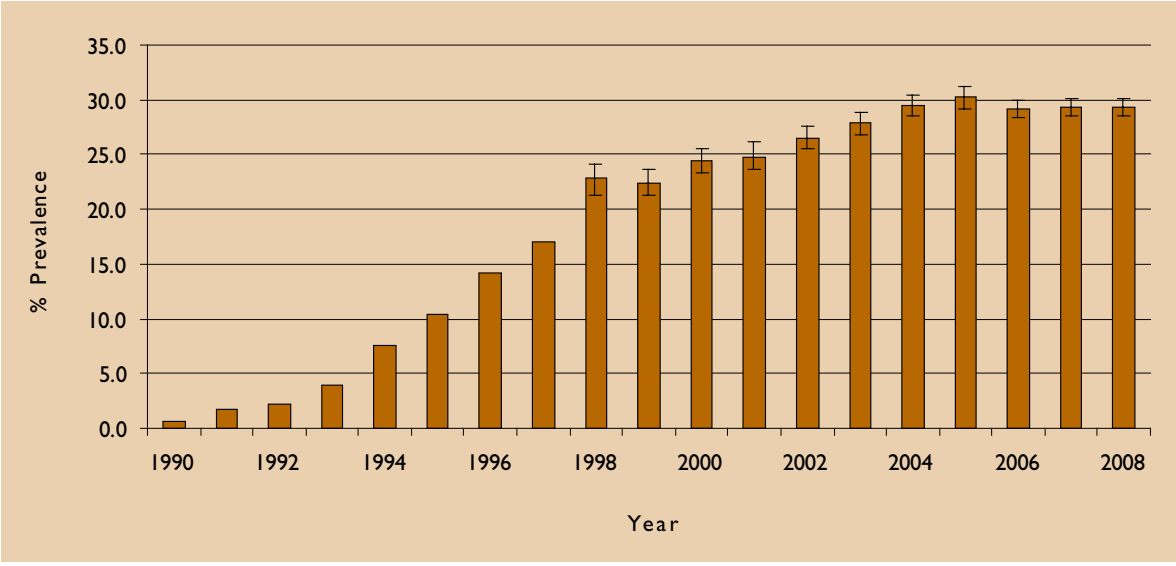


Figure 1: HIV prevalence trends among antenatal women, South Africa, 1990 to 2008.

There is no significant change in the overall national HIV prevalence amongst South African pregnant women between 2006 and 2008, when looking at temporal trends. Findings from last year's survey confirm this pattern of stabilization with regards to the overall number of persons living with HIV in South Africa (Figure 2).

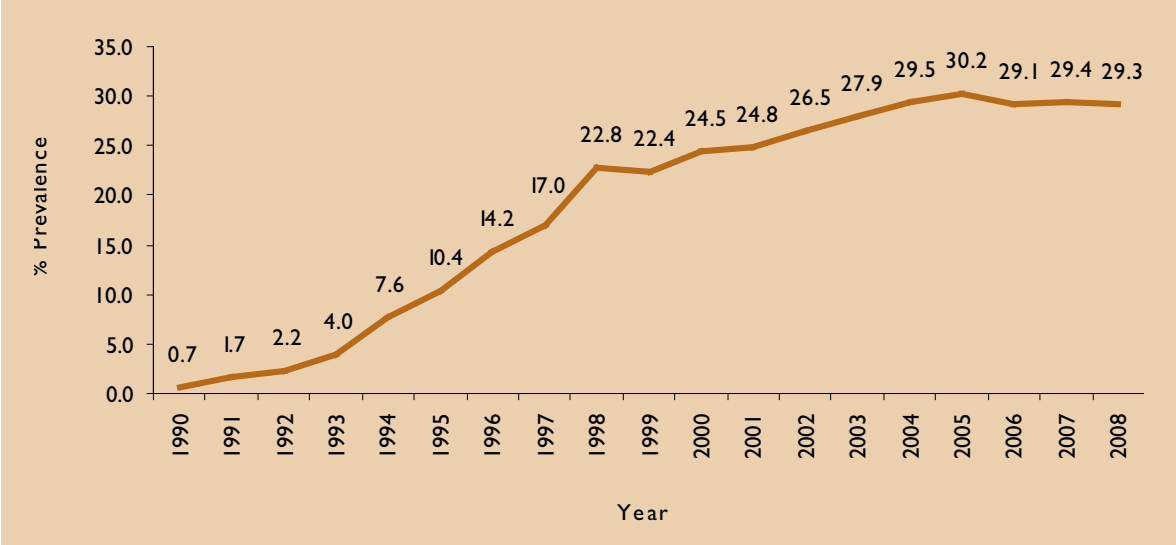


Figure 2: HIV prevalence epidemic curve among antenatal women, South Africa, 1990 to 2008.

It is important to note that there is no significant evidence of an increase in HIV prevalence in the past three (3) years in South Africa. The three data set points for 2006 (n = 33 034); 2007 (n = 33 684) and 2008 (n = 33 927) indicating the plateuing of the HIV epidemic curve in the adult population in South Africa is shown (Figure 3).

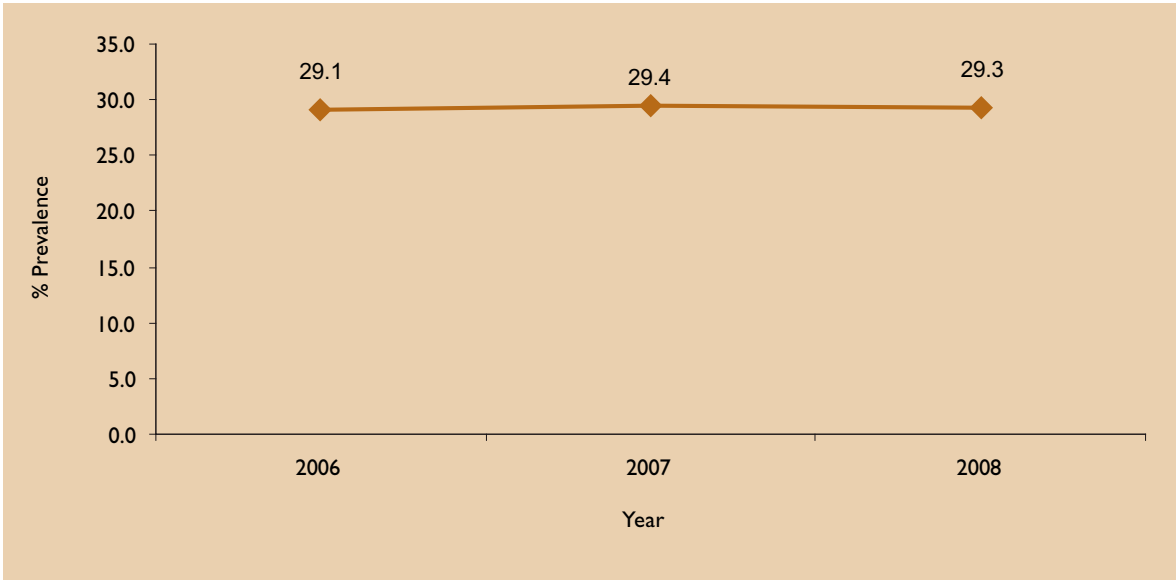


Figure 3: The three data set points that showing the plateuing of the HIV curve from 2006 to 2008.

3.3 HIV PREVALENCE BY AGE

The estimated national HIV prevalence by age group for 2008 and comparison with 2006 and 2007 is presented in Table 4. The HIV prevalence among women under the age of 25 years has remained stable over the past three years, this is in agreement with the total national HIV prevalence trend.

Table 4: HIV prevalence among antenatal women by age group, South Africa, 2006 to 2008.

Age Group (Years)	2006			2007			2008		
	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)
15–24	16 679	22.4	21.8–23.1	16 986	22.1	21.5–22.8	17 065	21.7	21.0–22.3
15–19	6 299	13.7	12.8–14.6	6 373	13.1	12.2–14.0	6 563	14.1	13.1–15.0
20–24	10 478	28.0	26.9–29.1	10 613	28.0	26.9–29.1	10 502	26.9	25.9–27.9
25–29	7661	38.7	37.3–40.2	7 907	37.5	36.2–38.8	8 051	37.9	36.4–39.3
30–34	4957	37.0	35.5–38.5	5 090	39.6	38.0–41.2	4 465	40.4	38.7– 42.0
35–39	2591	29.3	27.7–31.5	2 721	33.0	31.1–34.9	2 712	32.4	30.5–34.3
40–44	735	21.3	18.5–24.1	702	22.2	19.1–25.7	702	23.3	20.3–26.6
45–49	84	15.5	8.5–25.0	82	20.6	13.2–30.7	82	17.6	10.7–27.7

The HIV prevalence estimates in the older age groups above 30 years, are showing a tendency towards an increase as seen in Figure 4. This could be a reflection of AIDS related mortality beginning to relent in this particular age group due to the provision of ARV treatment. Proper triangulation of such trends with AIDS related mortality by age in South Africa is necessary at this juncture to ensure a correct reading of where the country is with regards to its disease burden and ascertain the extent of the impact of interventions alluded to above.

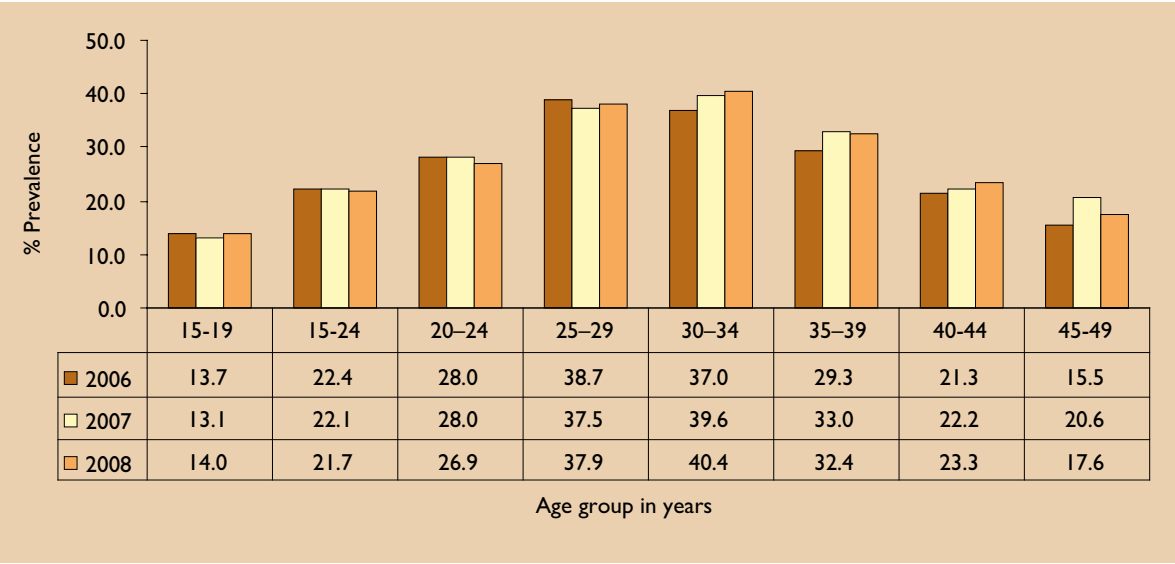


Figure 4: HIV prevalence trends among antenatal women by age group, SA, 2006 to 2008.

3.4 HIV PREVALENCE DISTRIBUTION BY PROVINCE

The distribution of HIV prevalence ranged from 16.1% in the Western Cape to 38.7% in KwaZulu-Natal as shown in Figure 5. The results show that the highest HIV prevalences are located on the North-Eastern side, and the lowest prevalences in the Western parts of South Africa. KwaZulu-Natal still has the highest HIV prevalence followed closely by Mpumalanga, Free State and North West with overall prevalences greater than 30.0%. Gauteng, Limpopo and the Eastern Cape have prevalences between 20.0% and 30.0% and Northern Cape and Western Cape provinces have the lowest prevalences of below 20.0%.

In 2008, Free State, North West, Limpopo and Western Cape provinces showed a slight increase in HIV prevalence when compared to 2007, while KwaZulu-Natal, which had prevalence above 30%, remained static. The Gauteng, Eastern Cape and Northern Cape provinces are showing a tendency towards a decrease, although this is not statistically significant. Mpumalanga is the only province in the country for which the estimates are increasing from 32.1% in 2006 to 34.6% in 2007 and 35.5% in 2008 (Table 5 and Figure 6).

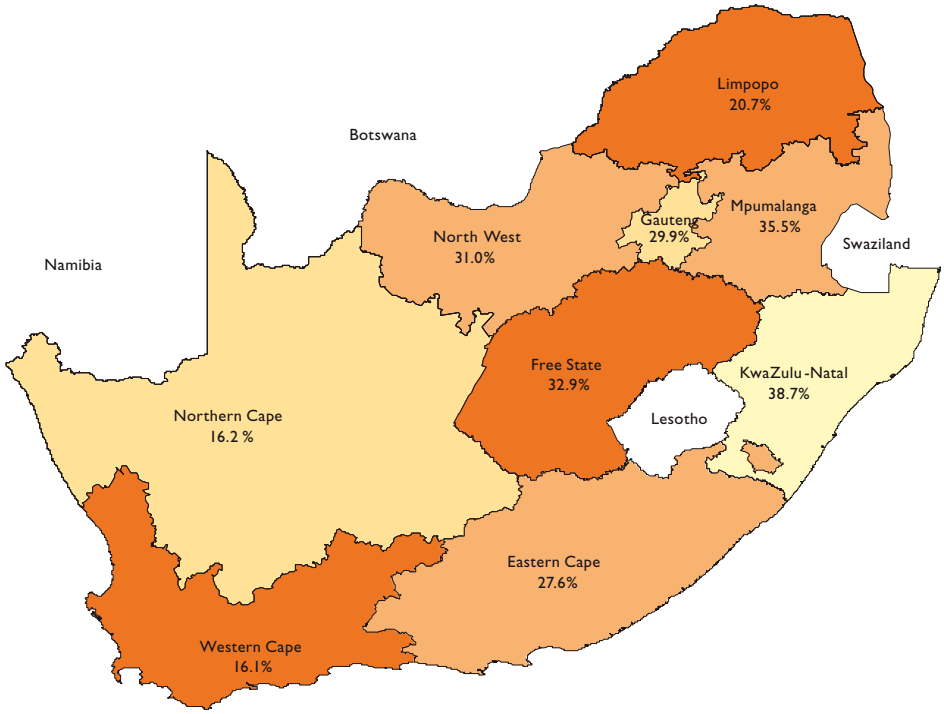


Figure 5: HIV prevalence distribution among antenatal women by province, South Africa 2008.

Table 5: HIV prevalence among antenatal women by province, South Africa, 2006 to 2008.

Province	2006		2007		2008	
	% HIV prev. 95% CI	* Female 15–49 years Population Estimate	% HIV prev. 95% CI	* Female 15–49 years Population Estimate	% HIV prev. 95% CI	Female 15–49 years Population Estimate
National	29.1 (28.3–29.9)	12 676400	29.4 (28.5–30.1)	12 783 455	29.3 (28.5–30.1)	13 464 800
KwaZulu-Natal	39.1 (37.5–40.7)	2 609 300	38.7 (37.2–40.2)	2 682 956	38.7 (37.2–40.1)	2 841 000
Mpumalanga	32.1 (29.8–34.4)	862 500	34.6 (32.1–37.1)	941 095	35.5 (33.1–37.8)	981 900
Free State	31.1 (29.2–33.1)	803 000	31.5 (29.1–34.1)	802 218	32.9 (30.5–35.3)	813 200
Gauteng	30.8 (29.6–32.1)	2 567 000	30.5 (29.2–31.9)	2 697 874	29.9 (28.4–31.2)	2 958 200
North West	29.0 (26.9–31.1)	986 000	30.6 (28.6–32.8)	856 138	31.0 (28.8–33.3)	924 600
Eastern Cape	28.6 (26.8–30.4)	1 808 300	28.8 (26.9–30.7)	1 769 496	27.6 (25.6–29.6)	1 737 200
Limpopo	20.6 (18.9–22.3)	1 503 100	20.4 (18.9–21.9)	1 429 822	20.7 (19.1–22.4)	1 403 900
Northern Cape	15.6 (12.7–18.5)	2 28 100	16.5 (13.9–19.6)	276 522	16.2 (13.7–18.9)	296 400
Western Cape	15.1 (11.6–18.7)	1 309 100	15.3 (12.2–18.9)	1 327 334	16.1 (12.6–20.2)	1 508 400

* Source: (StatsSA), 2008 Estimates.

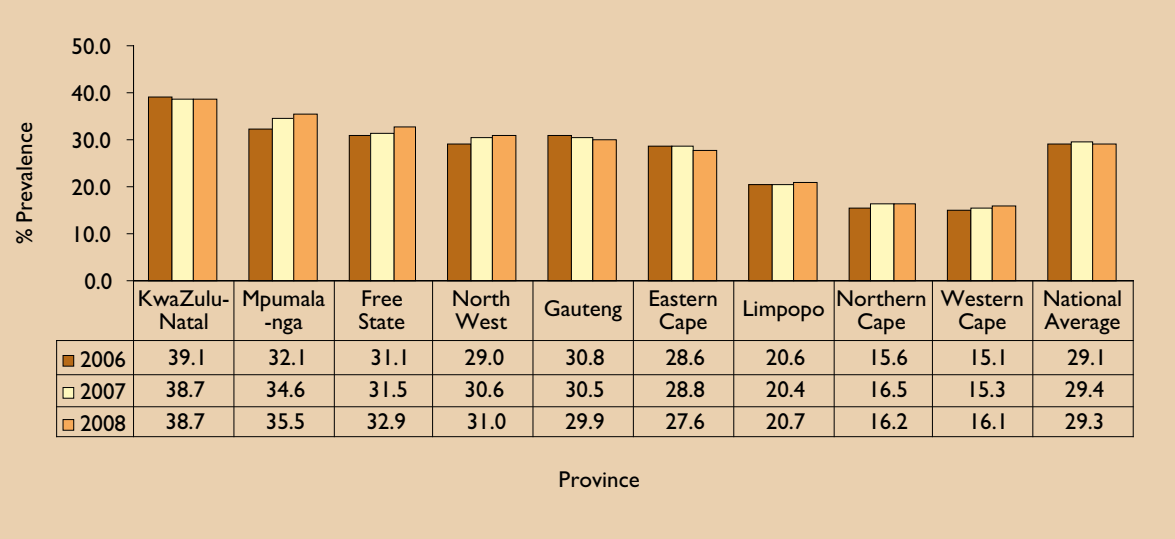


Figure 6: HIV prevalence trends among antenatal women by province, South Africa, 2006 to 2008.

3.5 HIV PREVALENCE DISTRIBUTION BY DISTRICT, 2008

District HIV prevalence has only been reported since 2006 when the geographic coverage of sentinel sites was increased and the sample size was doubled. There is a considerable variation in HIV prevalence between the 52 health districts observed over the three year period, particularly where the sample size is small, making it difficult to discern any trends.

However, the following inferences can be made viz: Fezile Dabi and Xhariep district in the Free State are showing an increase, whereas Amajuba in KwaZulu-Natal is showing a decrease in HIV prevalence over the past three years. Dr. Ruth S. Mompati in North West, Sekhukhune in Limpopo, Sisonke and uThukela in KwaZulu-Natal showed a slight increase, while Bojanala in North West, Waterberg in Limpopo and West-Rand in Gauteng showed a slight decrease over the last three years.

In addition the districts are clearly heterogeneous with respect to the epidemic, with prevalence ranging from a high of over 45.0% to a low of around 2.2%. When data are pooled over the three years, 17 districts have a prevalence significantly higher than the mean prevalence (29.3%), while 20 out of the 52 are significantly below average

The distribution of HIV prevalence by district in 2008, ranged from 2.2% in the district of Namakwa (Northern Cape) to 45.7% in uMgungundlovu (KwaZulu-Natal), recording the highest in the country. Out of the 52 health districts, 4 have prevalences above 40%, 18 have prevalences between 30% and 40%, 19 have prevalences between 20% and 30%, 9 have prevalences between 10% and 20% and 2 have prevalences below 10 %.

The least populated areas of South Africa and those most rural have recorded lower prevalences than the metropolitan areas. The HIV prevalence distribution among antenatal women by district, in 2006, 2007, 2008 and the average HIV distribution of the 3 years, is presented in Figure 7.

In Figure 7, the colour coding shown reflects the intensity of the HIV prevalence among the pregnant women in the 52 health districts: *Red* are districts recording HIV prevalence above 40%. *Orange* are districts recording HIV prevalence between 30% and 40%, *Mustard* are districts recording HIV prevalence between 20% and 30%. *Yellow* are districts recording HIV have a prevalence between 10% and 20%. *Light Yellow* are districts recording HIV prevalence below 10 %.

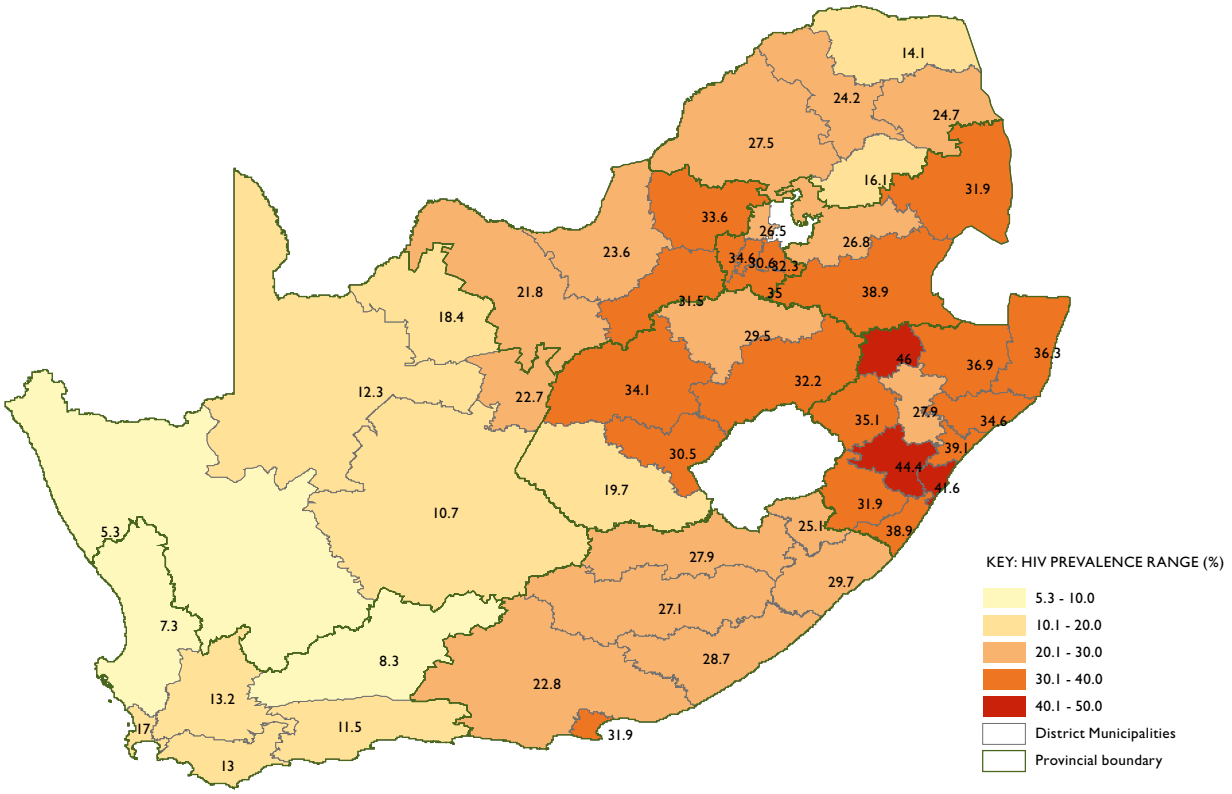


Figure 7a: HIV distribution by district among 15-49 year old pregnant women in South Africa, 2006

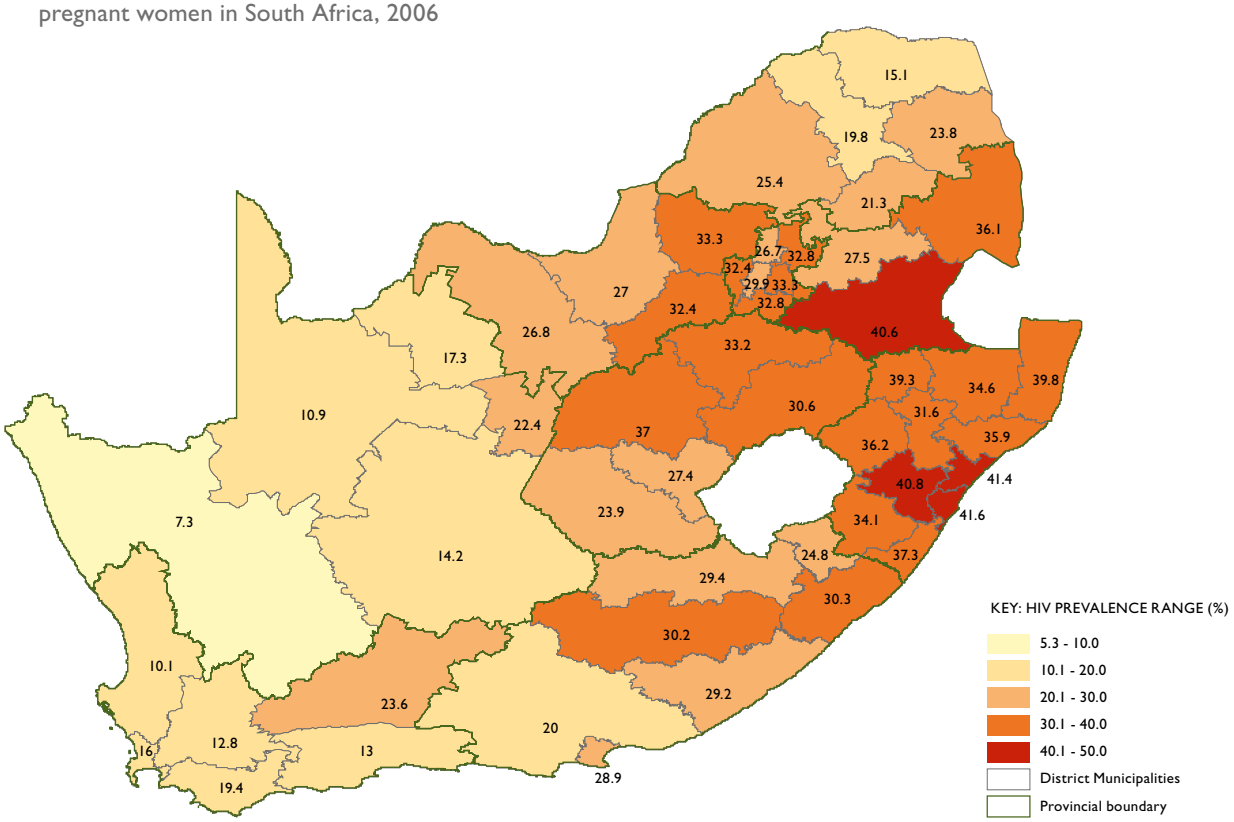


Figure 7b: HIV distribution by district among 15-49 year old pregnant women in South Africa, 2007

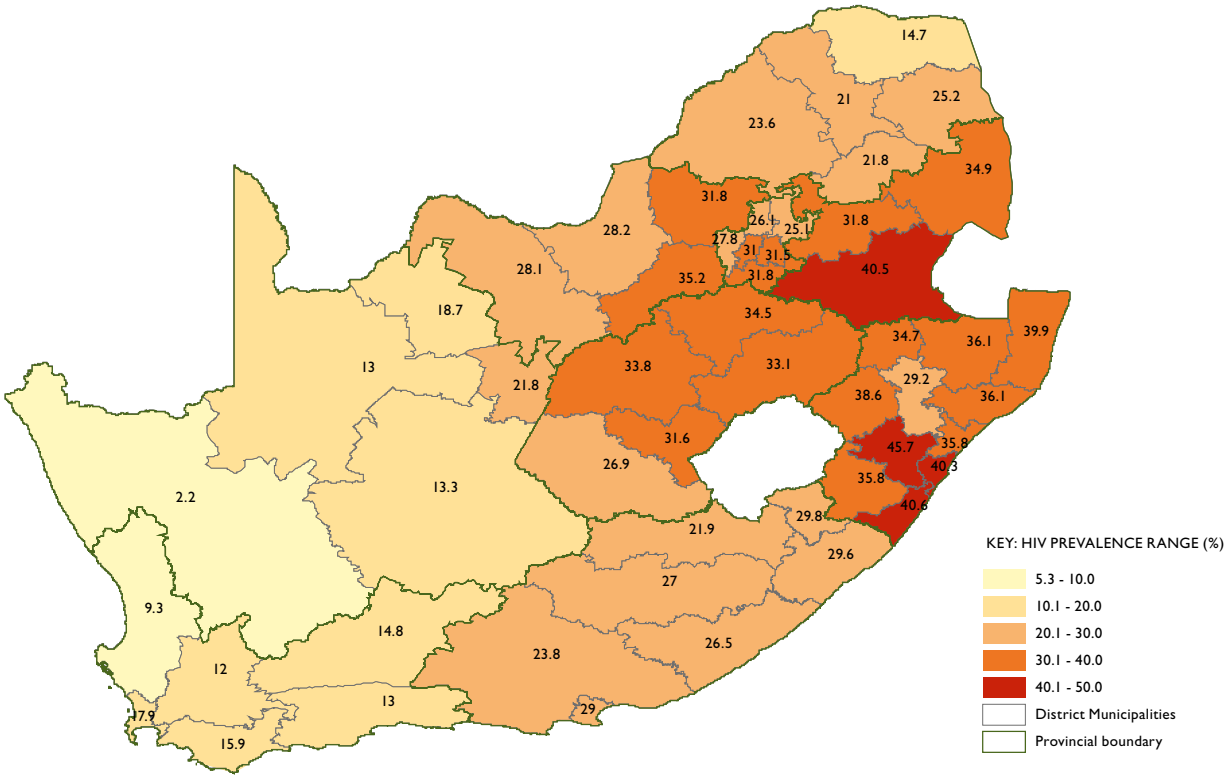


Figure 7c: HIV distribution by district among 15-49 year old pregnant women in South Africa, 2008

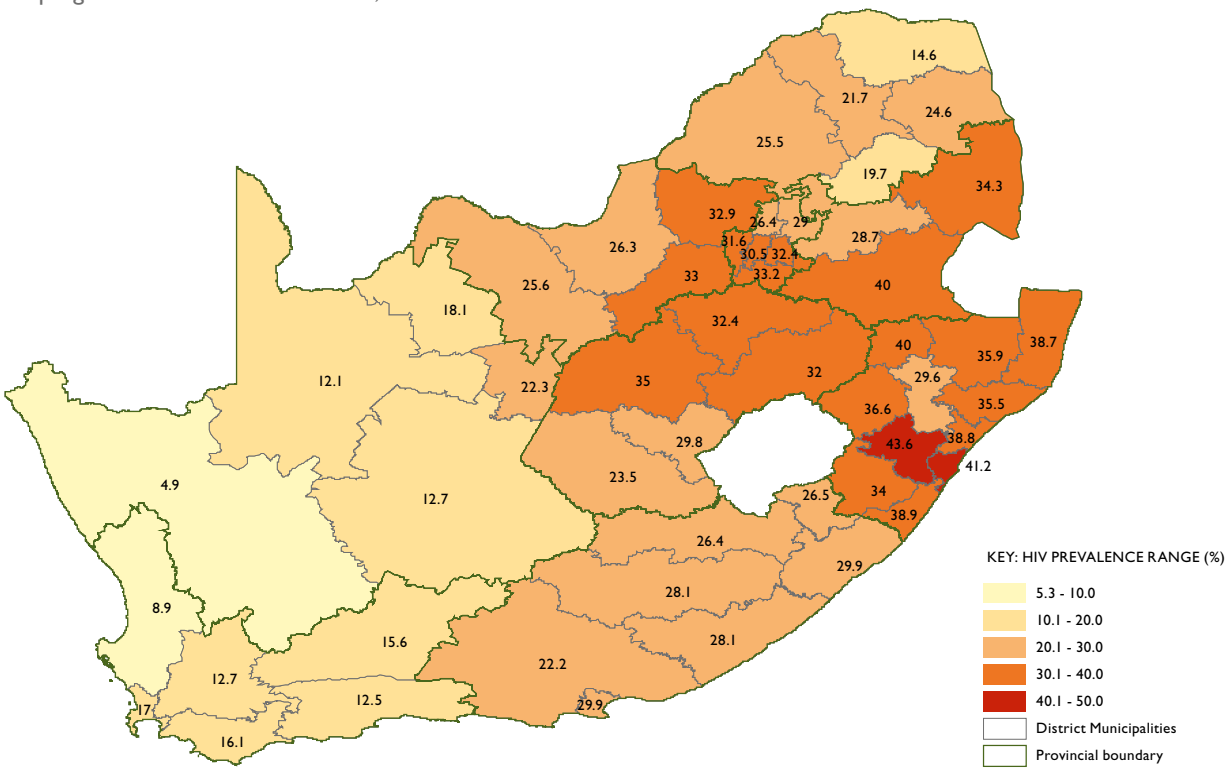


Figure 7d. HIV distribution by district among 15-49 year old pregnant women in South Africa, average HIV prevalence estimates for 2006, 2007 and 2008

3.6 HIV PREVALENCE TRENDS BY INDIVIDUAL PROVINCE

For each province, comparison of the provincial and district HIV prevalences are reported from 2006 to 2008. Due to the smaller sample size in some districts the sampling error is much larger than at the provincial level. Therefore changes of 2% in either direction between the years within a district can be expected due to chance, if the sample size was less than 500.

3.6.1 The Kwazulu-Natal Province

In 2008, the KwaZulu-Natal provincial HIV prevalence amongst 15-49 year antenatal women was 38.7% (95% CI: 37.2%–40.1%). KwaZulu-Natal has consistently recorded the highest prevalence since 1990. The epidemic curve shows evidence of stabilization in the past 3 years (Figure 8).

In 2008, three districts showed prevalences above 40% with uMgungundlovu recording an alarming 45.7%, *meaning almost every second pregnant woman in that district is HIV positive!* More than 50% (7/11) of the districts recorded prevalence above 30% (Figure 9 and Table 6). The distribution of HIV prevalence by district in KZN is shown in Figure 10.

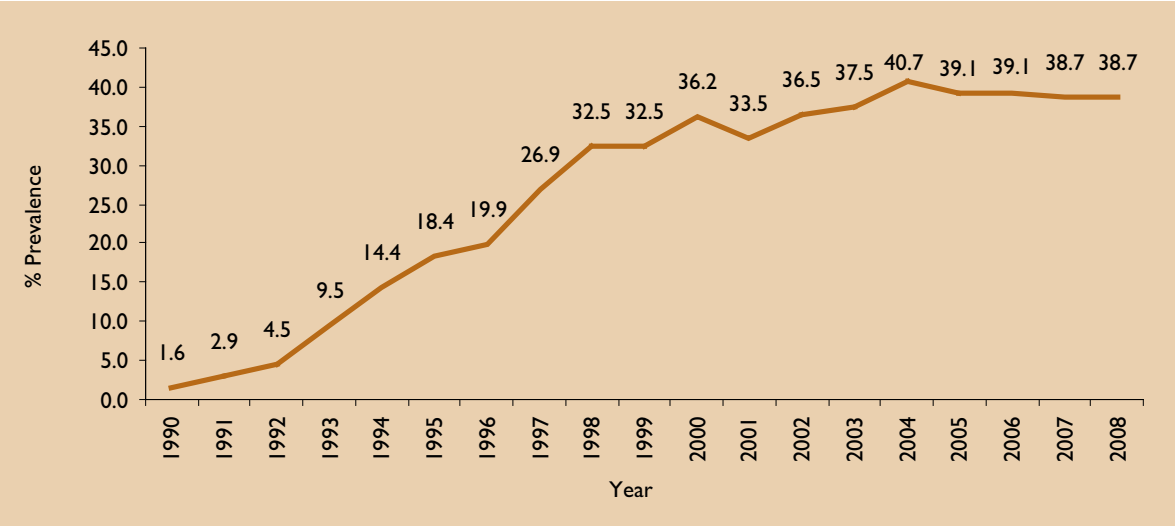
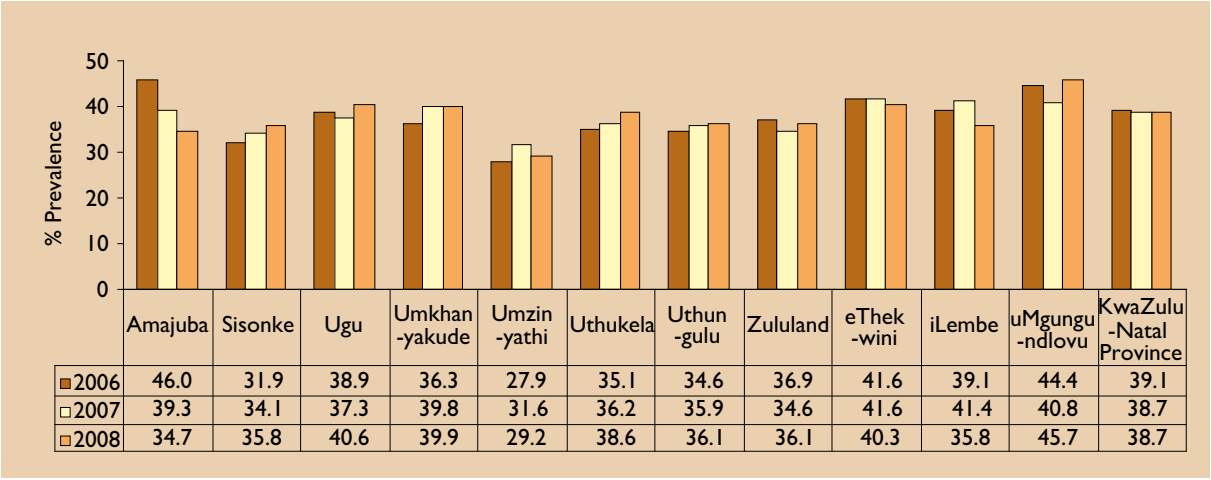


Figure 8: HIV prevalence epidemic curve among antenatal women, KwaZulu-Natal, 1990 to 2008.

Table 6: HIV prevalence among antenatal women by district, KwaZulu-Natal, 2006 to 2008.

District	2006			2007			2008		
	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)
Provincial	6 814	39.1	37.5–40.7	6 918	38.7	37.2–40.2	6 963	38.7	37.2–40.1
Amajuba	400	46.0	41.1–50.9	404	39.3	34.3–44.6	420	34.7	29.2–40.7
Sisonke	229	31.9	25.8–37.9	328	34.1	29.3–39.2	343	35.8	31.6–40.3
Ugu	504	38.9	34.6–43.1	512	37.3	32.1–42.7	507	40.6	36.9–44.3
Umkhanyakude	410	36.3	31.7–41.0	407	39.8	34.3–45.5	413	39.9	34.8–45.3
Umzinyathi	319	27.9	23.0–32.8	338	31.6	26.2–37.6	339	29.2	23.7–35.2
Uthukela	459	35.1	30.7–39.4	452	36.2	29.5–43.6	450	38.6	32.6–45.0
Uthungulu	566	34.6	30.7–38.5	567	35.9	31.0–41.2	641	36.1	31.4–41.2
Zululand	582	36.9	33.0–40.9	580	34.6	30.0–39.5	587	36.1	31.8–40.5
eThekwini	2 230	41.6	39.5–43.6	2 217	41.6	39.3–43.9	2 153	40.3	37.6–43.0
ILembe	419	39.1	34.5–43.8	417	41.4	34.8–48.4	424	35.8	30.7–41.3
uMgungundlovu	696	44.4	40.7–48.1	696	40.8	35.6–46.1	686	45.7	42.1–49.4



	Amajuba	Sisonke	Ugu	Umkhan-yakude	Umzin-yathi	Uthukela	Uthun-gulu	Zululand	eThek-wini	iLembe	uMgungu-ndlovu	KwaZulu-Natal Province
2006	46.0	31.9	38.9	36.3	27.9	35.1	34.6	36.9	41.6	39.1	44.4	39.1
2007	39.3	34.1	37.3	39.8	31.6	36.2	35.9	34.6	41.6	41.4	40.8	38.7
2008	34.7	35.8	40.6	39.9	29.2	38.6	36.1	36.1	40.3	35.8	45.7	38.7

Figure 9: HIV prevalence among antenatal women by district, KwaZulu-Natal, 2006–2008.

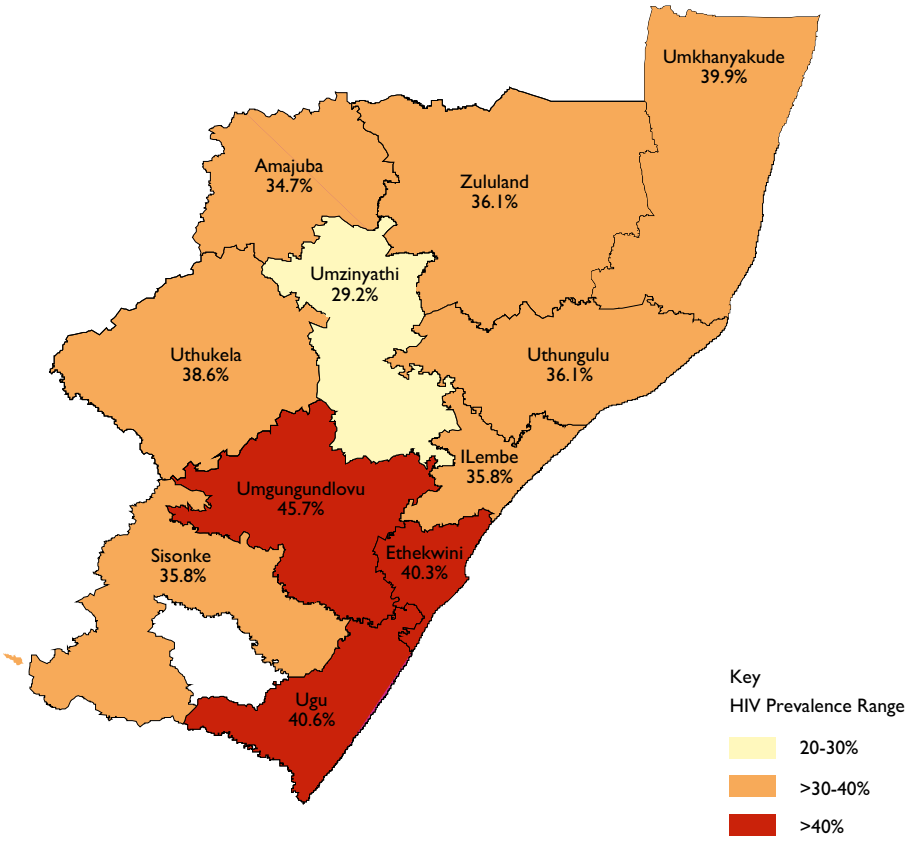


Figure 10: HIV prevalence distribution among antenatal women in KwaZulu-Natal by district, 2008.

3.6.2 The Mpumalanga Province

In 2008, the Mpumalanga provincial HIV prevalence amongst 15-49 year antenatal women was 35.5% (95% CI: 33.1%–37.9%). It is the only province that has shown an increase in the overall prevalence in the past three years from 32.1% in 2006 to 34.6% in 2007 and 35.5% in 2008, the highest it has recorded since the beginning of the epidemic (Figure 11).

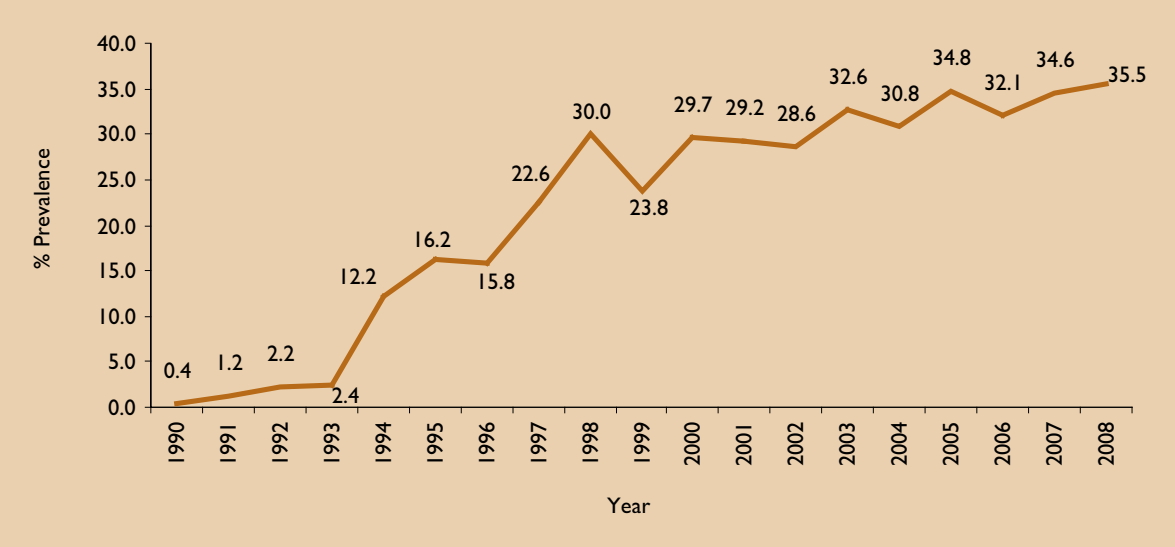


Figure 11: HIV prevalence epidemic curve among antenatal women, Mpumalanga, 1990–2008.

When district results are compared, only Ehlanzeni district has shown a decrease in HIV prevalence, while Gert Sibande HIV prevalence increased from 38.9 % in 2006 to 40.5% in 2008 and Nkangala from 26.8% in 2006 to 31.8% in 2008 (Table 7 and Figures 13 and14).

Table 7: HIV prevalence among antenatal women by district, Mpumalanga, 2006 to 2008.

District	2006			2007			2008		
	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)
Provincial	2 212	32.1	29.8–34.4	2 332	34.6	32.1–37.1	2 224	35.5	33.1–37.8
Ehlanzeni	1 040	31.9	29.1–34.8	1 061	36.1	32.5–39.9	1 027	34.9	31.4–38.6
Gert Sibande	530	38.9	34.7–43.0	564	40.6	37.3–43.9	560	40.5	36.4–44.8
Nkangala	642	26.8	23.4–30.2	707	27.5	24.0–31.4	637	31.8	27.7–36.2

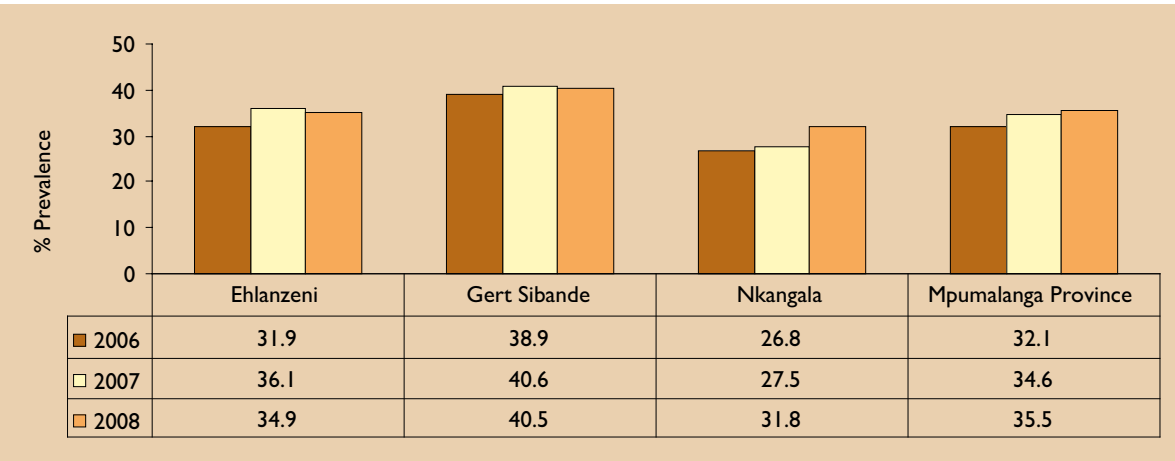


Figure 12: HIV prevalence trends among antenatal women by district, Mpumalanga, 2006 to 2008.

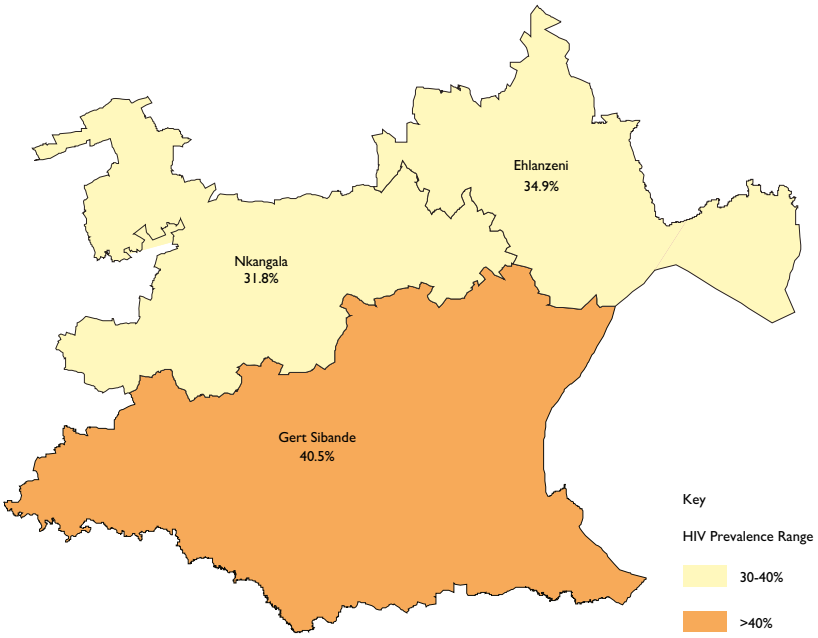


Figure 13: HIV prevalence distribution among antenatal women by district, Mpumalanga, 2008.

3.6.3 The Free State Province

In 2008, the Free State provincial HIV prevalence amongst 15-49 antenatal women was 32.9% (95% CI: 30.5%–35.4%), which is an increase of more than one per cent from the previous years (Figure 14).

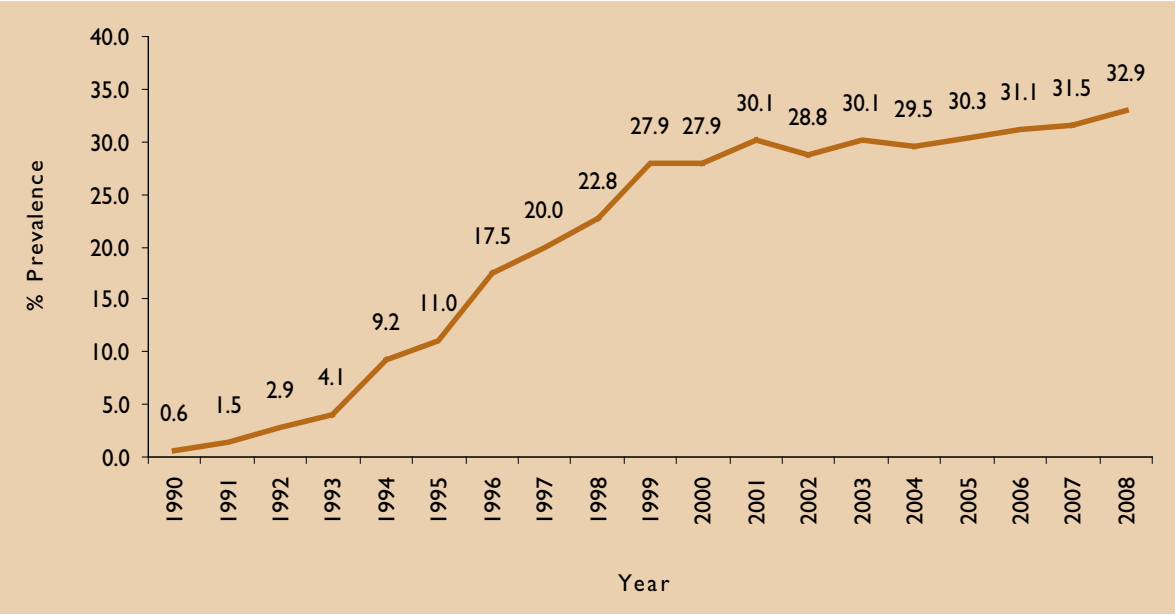


Figure 14: HIV prevalence epidemic curve among antenatal women, Free State, 1990–2008.

Four out of five (4/5) districts in the Free State recorded prevalence above 30% (Table 8 and Figure 15). All districts of the Free State province except Lejweleputswa which recorded a decrease in HIV prevalence from 37.0% in 2007 to 33.8% in 2008, have shown evidence of an increase from 2007 to 2008. Xhariep has increased from 19.7% in 2006 to 26.9% in 2008 (Figure 16).

Table 8: HIV prevalence among antenatal women by district, Free State, 2006 to 2008.

District	2006			2007			2008		
	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)
Provincial	2 225	31.1	29.2–33.1	2 167	31.5	29.1–34.1	2 016	32.9	30.5–35.4
Fezile Dabi	383	29.5	24.9–34.1	355	33.2	26.9–40.1	336	34.5	29.7–39.6
Lejweleputswa	583	34.1	30.3–38.0	578	37.0	32.5–41.7	571	33.8	29.2–38.6
Motheo	580	30.5	26.8–34.3	565	27.4	23.4–31.8	486	31.6	26.6–37.1
Thabo Mofutsanyane	562	32.2	28.3–36.1	548	30.6	25.9–35.8	519	33.1	28.9–37.6
Xhariep	117	19.7	12.4–26.9	121	23.9	16.9–32.7	104	26.9	16.8–40.0

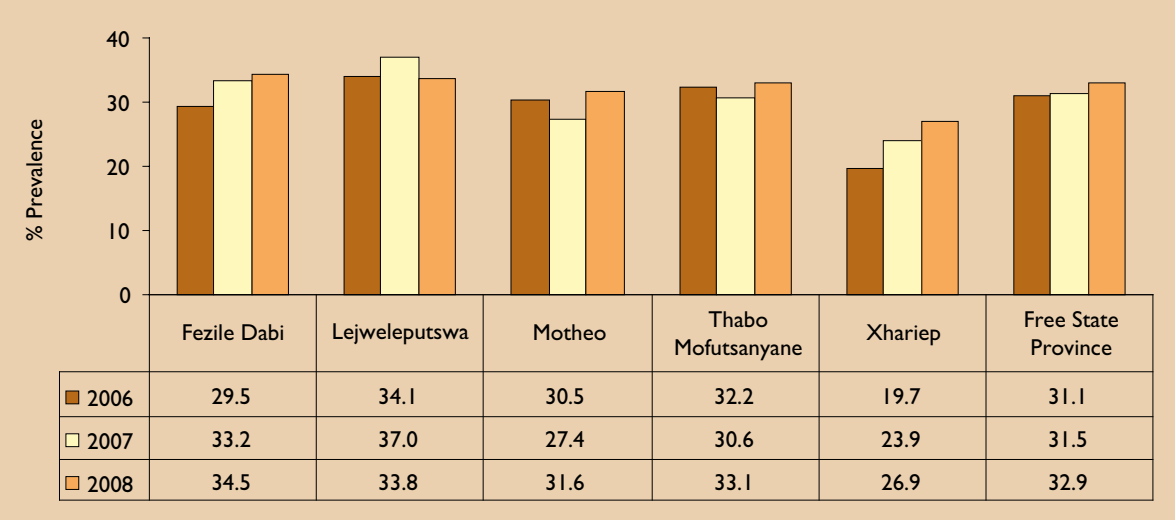


Figure 15: HIV prevalence trends among antenatal women by district, Free State, 2006 to 2008.

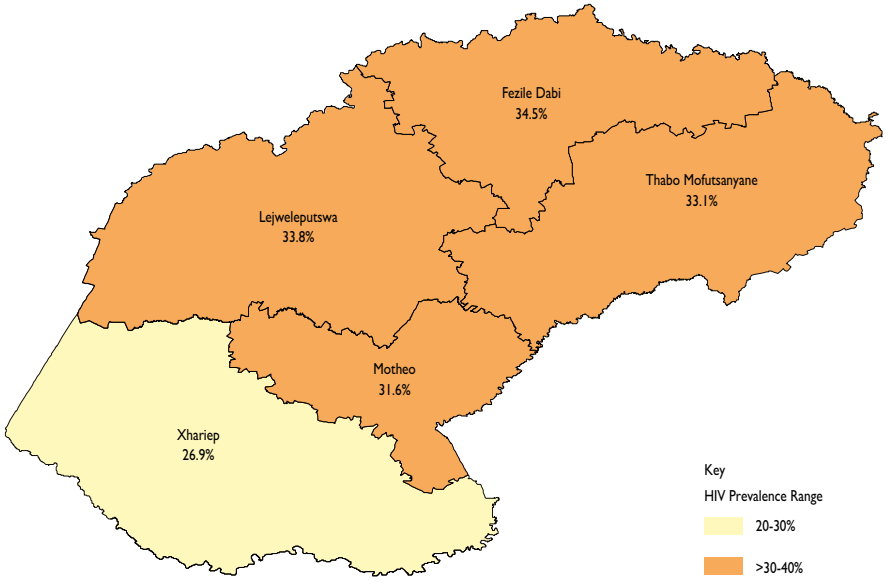


Figure 16: HIV prevalence distribution among antenatal women by district, Free State, 2008.

3.6.4 The Gauteng Province

In 2008, the Gauteng provincial HIV prevalence amongst 15-49 antenatal women was 29.9% (95% CI: 28.5%–31.3%). The overall prevalence in Gauteng is beginning to show a slight decline from 30.8% in 2006 to 29.9% in 2008 (Figure 17).

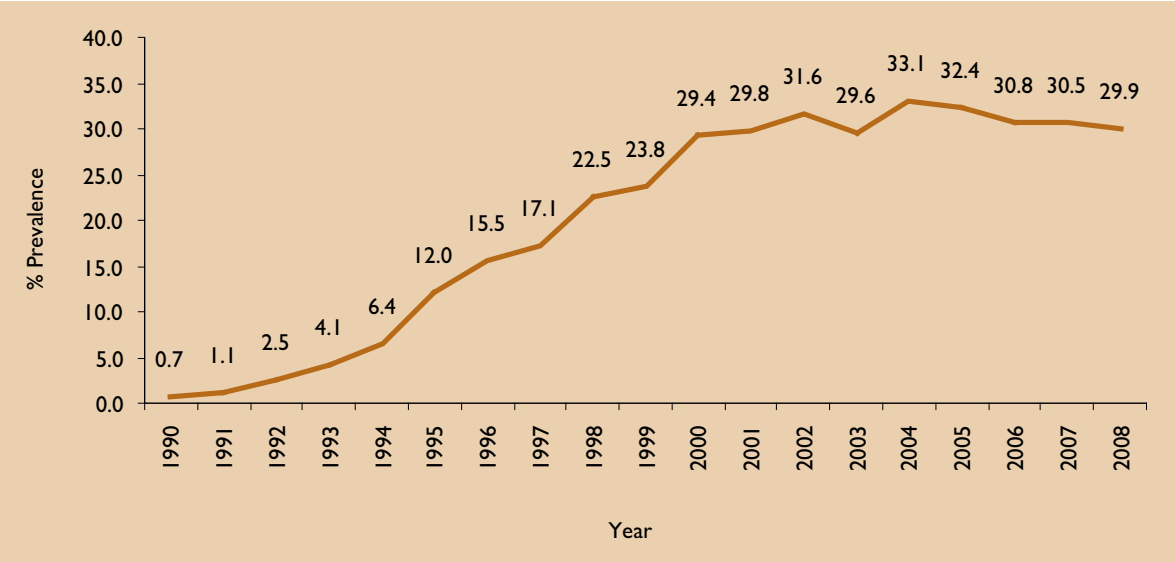


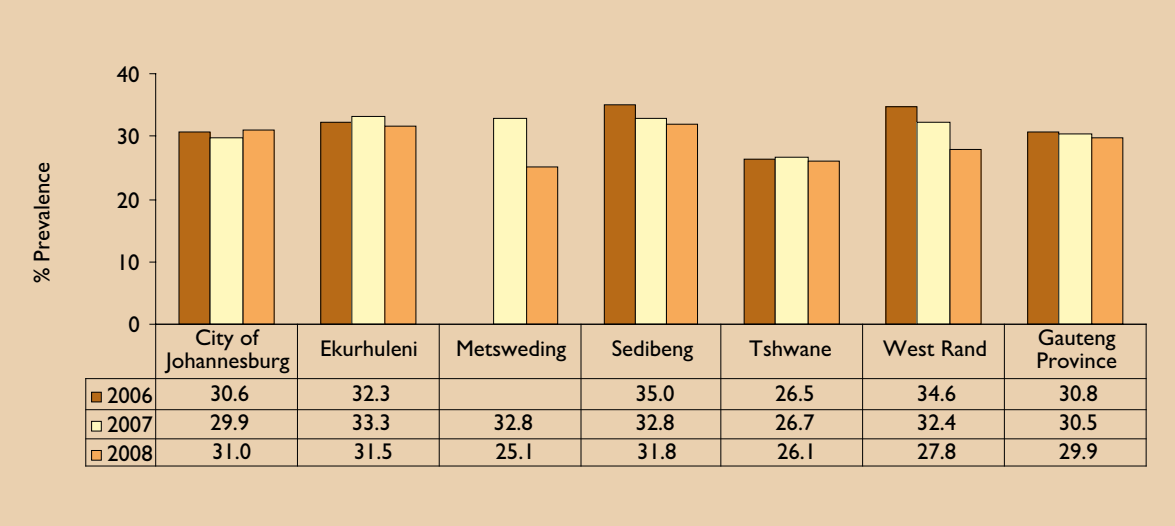
Figure 17: HIV prevalence epidemic curve among antenatal women, Gauteng, 1990 to 2008.

It is evident that the overall HIV prevalence in Gauteng province has remained constant, with all districts showing a decrease in HIV prevalence during 2007 and 2008, except for City of Johannesburg, which has shown a slight increase from 29.9% in 2007 to 31.0 % in 2008 (Table 9 and Figure 18). The distribution of HIV prevalence by district in Gauteng province is shown in Figure 19.

Table 9: HIV prevalence among antenatal women by district, Gauteng, 2006 to 2008.

District	2006			2007			2008		
	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)
Provincial	6 145	30.8	29.6–32.1	7 018	30.5	29.2–31.9	7 497	29.9	28.5–31.2
City of JHB	2 399	30.6	28.8–32.5	2 627	29.9	27.7–32.1	2425	31.0	28.7–33.4
Ekurhuleni	1 765	32.3	30.1–34.5	1 791	33.3	31.0–35.8	2006	31.5	28.7–34.7
Metsweding	***	***	***	70	32.8	20.1–48.7	131	25.1	16.9–35.6
Sedibeng	386	35.0	30.2–39.7	530	32.8	28.7–37.1	740	31.8	28.7–35.1
Tshwane	1 190	26.5	24.0–29.0	1 497	26.7	23.5–30.1	1639	26.1	23.2–29.2
West Rand	405	34.6	30.0–39.2	503	32.4	28.4–36.6	556	27.8	23.7– 32.4

*** Metsweding Health District was the only district not sampled in 2006 due to demarcation processes in North West Province. It was transferred to Gauteng Province in 2007.



	City of Johannesburg	Ekurhuleni	Metsweding	Sedibeng	Tshwane	West Rand	Gauteng Province
2006	30.6	32.3		35.0	26.5	34.6	30.8
2007	29.9	33.3	32.8	32.8	26.7	32.4	30.5
2008	31.0	31.5	25.1	31.8	26.1	27.8	29.9

Figure 18: HIV prevalence trends among antenatal women by district, Gauteng, 2006 to 2008.

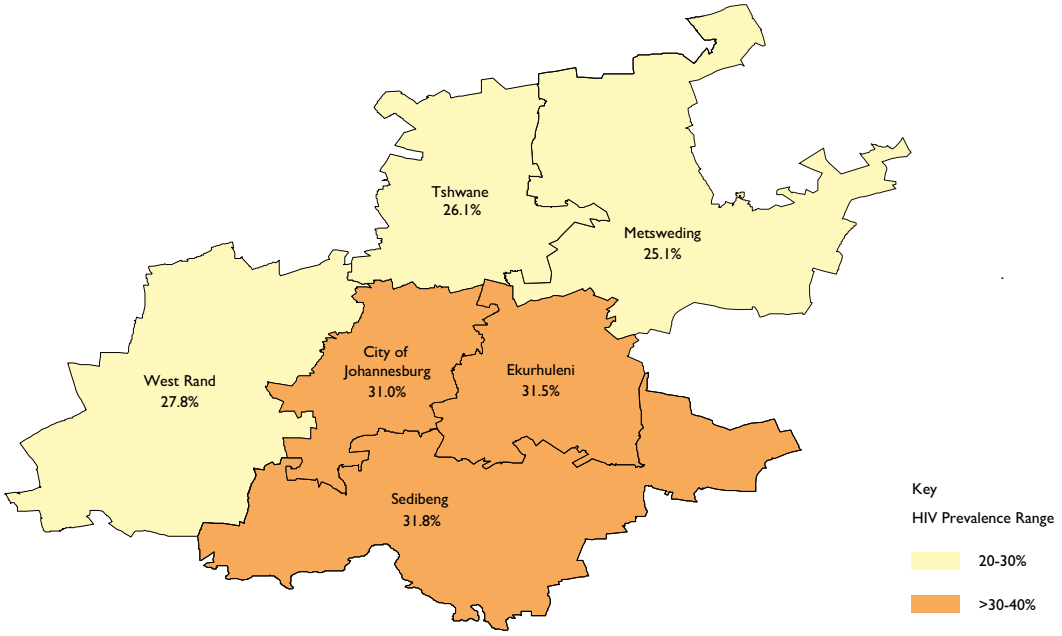


Figure 19: HIV prevalence distribution among antenatal women by district, Gauteng, 2008.

3.6.5 The North-West Province

In 2008, the North-West provincial HIV prevalence amongst 15-49 antenatal women was 31.0% (95% CI: 28.8%–33.3%). The HIV prevalence in this province appears to be increasing from 29.0% in 2006, 30.6% in 2007 and 31.0% in 2008 (Figure 20).

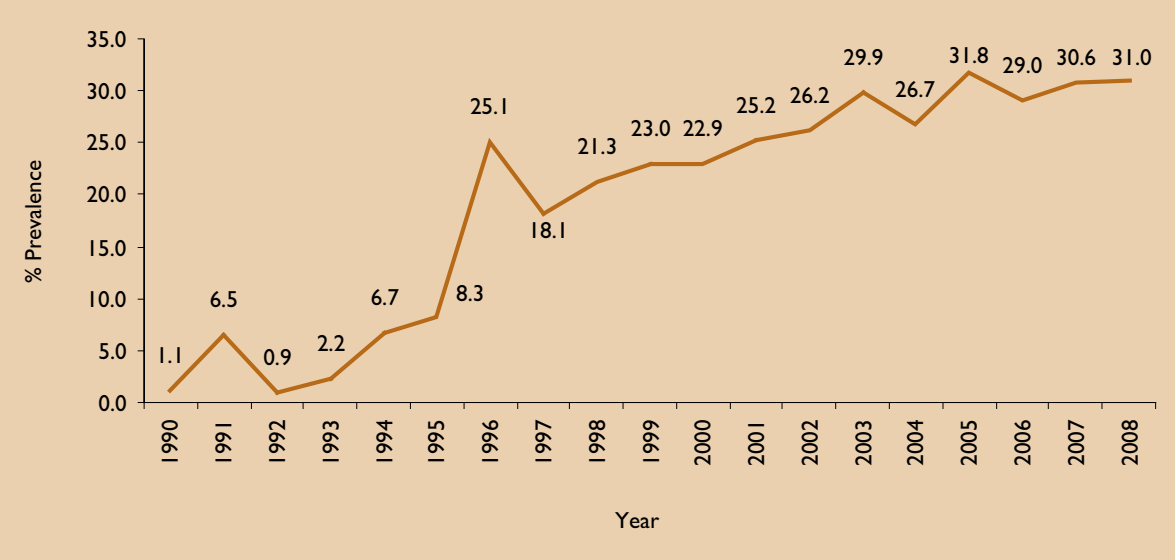
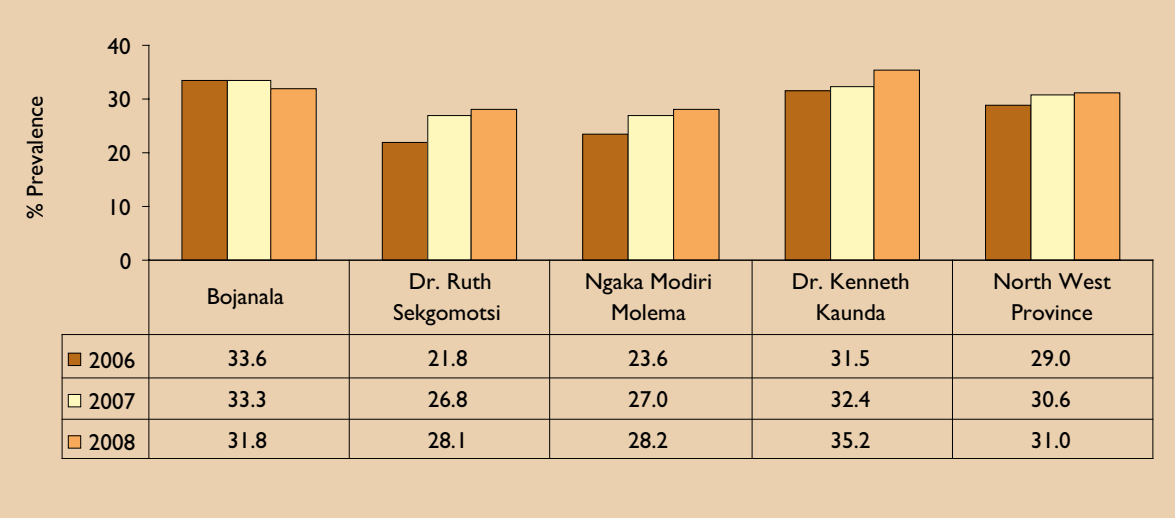


Figure 20: HIV prevalence epidemic curve among antenatal women, North West, 1990 to 2008.

Three out of the four (3/4) districts in the North West province have shown an increase in the past three years, except for Bojanala where the prevalence is beginning to show stabilization (Table 10 and Figure 21). In 2008 the highest HIV prevalence (35.2%) was recorded in the district of Dr. Kenneth Kaunda, while the lowest (28.1%) was seen in the district Dr. Ruth S. Mompati (see Figure 22).

Table 10: HIV prevalence among antenatal women by district, North West, 2006 to 2008.

District	2006			2007			2008		
	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)
Provincial	2 742	29.0	26.9–31.1	2 349	30.6	28.6–32.8	2112	31.0	28.8–33.3
Bojanala	1 191	33.6	30.9–36.3	903	33.3	30.1–36.6	810	31.8	28.2–35.6
Dr R.S. Mompati	495	21.8	18.2–25.5	357	26.8	21.4–33.1	337	28.1	23.5–33.3
Ngaka M Molema	564	23.6	20.1–27.1	544	27.0	24.3–29.9	539	28.2	24.0– 32.8
Dr. K. Kaunda	492	31.5	27.4–35.6	545	32.4	27.5–37.8	426	35.2	30.3–40.4



	Bojanala	Dr. Ruth Sekgomotsi	Ngaka Modiri Molema	Dr. Kenneth Kaunda	North West Province
2006	33.6	21.8	23.6	31.5	29.0
2007	33.3	26.8	27.0	32.4	30.6
2008	31.8	28.1	28.2	35.2	31.0

Figure 21: HIV prevalence trends among antenatal women by district, North West, 2006 to 2008.

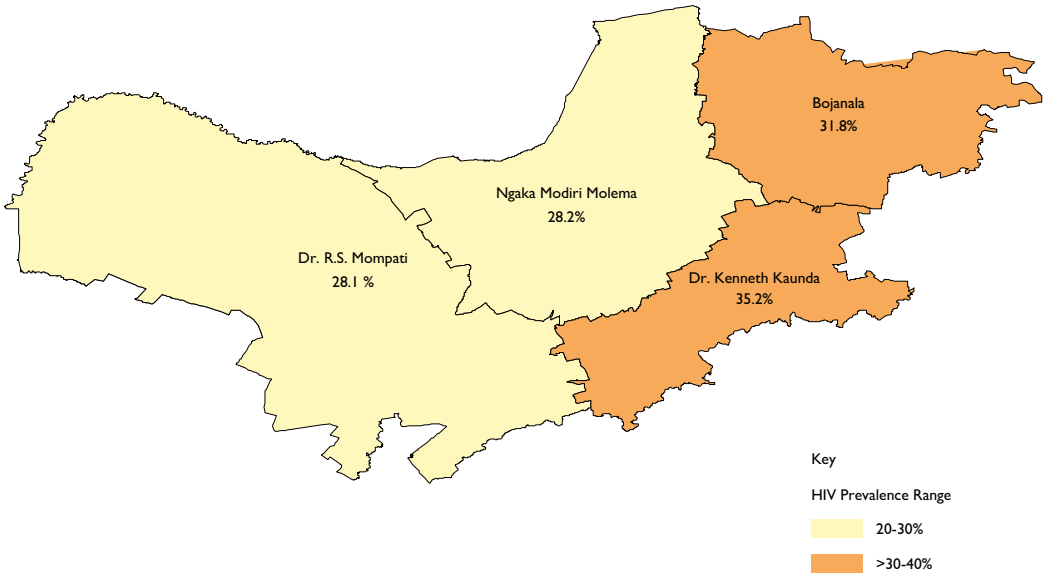


Figure 22: HIV prevalence distribution among antenatal women by district, North West, 2008.

3.6.6 The Eastern Cape Province

In 2008, the Eastern Cape provincial HIV prevalence amongst 15-49 antenatal women was 27.6% (95% CI: 25.6%–29.6%). The overall HIV provincial prevalence in this province has decreased from 28.6% in 2006 to 27.6% in 2008 (Figure 23).

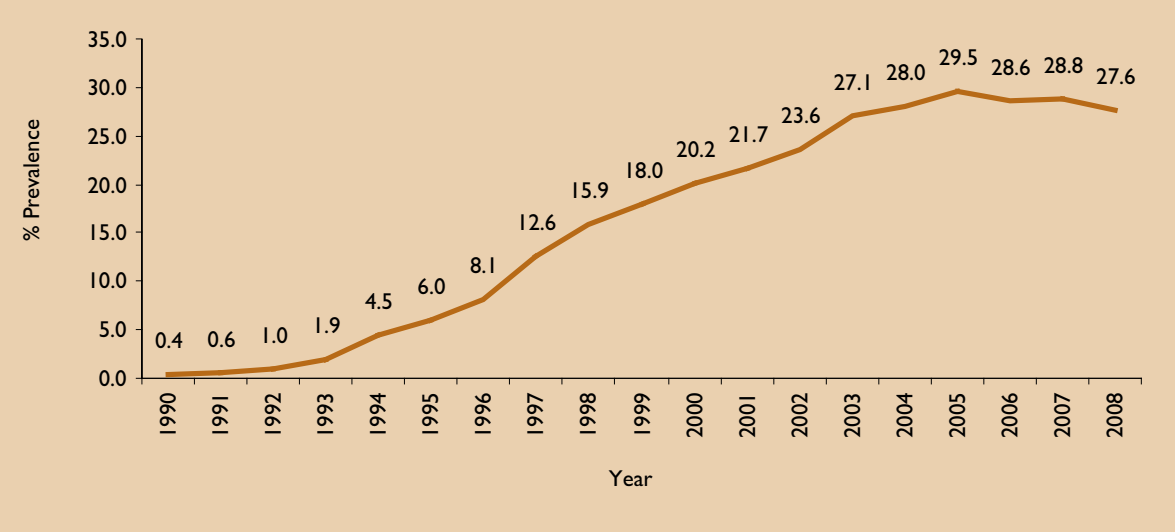


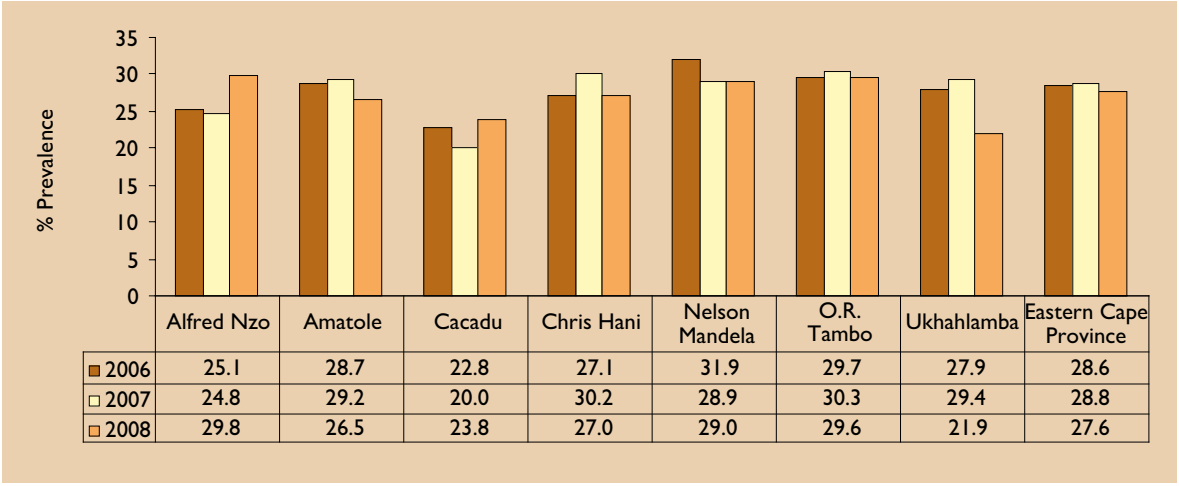
Figure 23: HIV prevalence epidemic curve among antenatal women, Eastern Cape, 1990 to 2008.

Ukhahlamba district prevalence has decreased significantly from 27.9% in 2006 to 21.9 % in 2008 (Table 11 and Figure 24). Only Alfred Nzo district showed an increase from 25.1% in 2006 to 29.8% in 2008. In 2007, Chris Hani and O.R. Tambo were the only districts recording prevalences above 30%. While in 2008 all districts recorded HIV prevalences below 30% (Figure 25).

Table 11: HIV prevalence among antenatal women by district, Eastern Cape, 2006 to 2008.

District	2006			2007			2008		
	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)
Provincial	4 074	28.6	26.8–30.4	4 118	28.8	26.9–30.7	4 216	27.6	25.6–29.6
Alfred Nzo	374	25.1	20.7–29.5	189	24.8	20.9–29.3	201	29.8	22.3–38.6
Amatole	1 061	28.7	26.0–31.5	1 058	29.2	26.5–32.0	1 128	26.5	23.0–30.3
Cacadu	254	22.8	17.7–28.0	269	20.0	15.2–26.0	281	23.8	17.7–31.2
Chris Hani	450	27.1	23.0–31.2	572	30.2	26.2–34.5	529	27.0	22.9–31.5
N.M.M.	748	31.9	28.6–35.3	770	28.9	22.8–35.9	795	29.0	23.4–35.4
O.R. Tambo	983	29.7	26.8–32.6	1 036	30.3	26.6–34.2	1 063	29.6	26.2–33.2
Ukhahlamba	204	27.9	21.8–34.1	224	29.4	24.3–35.1	219	21.9	15.2–30.5

Substantial year to year changes are observed in the districts with smaller sample sizes (Alfred Nzo, Cacadu, and Ukhahlamba).



	Alfred Nzo	Amatole	Cacadu	Chris Hani	Nelson Mandela	O.R. Tambo	Ukhahlamba	Eastern Cape Province
2006	25.1	28.7	22.8	27.1	31.9	29.7	27.9	28.6
2007	24.8	29.2	20.0	30.2	28.9	30.3	29.4	28.8
2008	29.8	26.5	23.8	27.0	29.0	29.6	21.9	27.6

Figure 24: HIV prevalence trends among antenatal women by district, Eastern Cape 2006 to 2008.

Figure 25: HIV prevalence distribution among antenatal women by district, Eastern Cape, 2008

3.6.7 The Limpopo Province

In 2008, the Limpopo provincial HIV prevalence amongst 15-49 antenatal women was 20.7% (95% CI: 19.1%–22.5%). The overall provincial HIV prevalence in Limpopo was between 20% and 21% from 2006 to 2008 (Figure 26).

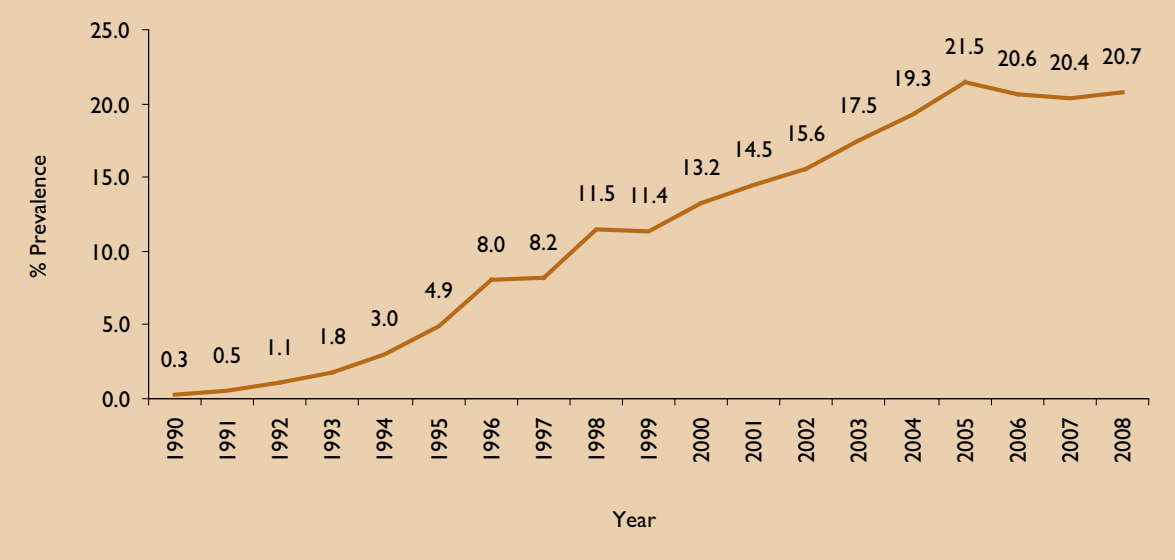
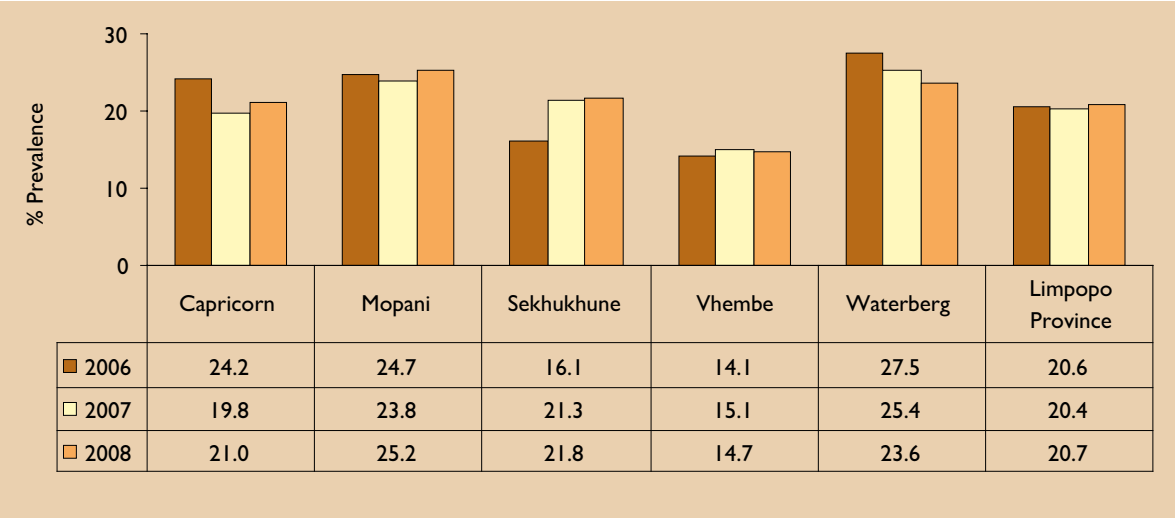


Figure 26: HIV prevalence epidemic curve among antenatal women, Limpopo, 1990 to 2008.

The HIV prevalence has remained relatively stable since 2006. Sekhukhune showed an increase of 5.7% from 16.1% in 2006 to 21.8% in 2008. Waterberg district has shown a slight decline from 27.5% in 2006 to 23.6% in 2008 (Table 12 and Figure 29). The HIV prevalence distribution by district in Limpopo is shown in Figure 29.

Table 12: HIV prevalence among antenatal women by district, Limpopo, 2006 to 2008.

District	2006			2007			2008		
	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)
Provincial	3 869	20.6	18.9–22.3	3 748	20.4	18.9–21.9	3 833	20.7	19.1–22.5
Capricorn	885	24.2	21.3–27.0	919	19.8	16.6–23.3	885	21.0	18.4–23.8
Mopani	723	24.7	21.6–27.9	655	23.8	20.4–27.6	710	25.2	21.2–29.6
Sekhukhune	772	16.1	13.5–18.6	772	21.3	18.8–24.2	788	21.8	18.4–25.6
Vhembe	954	14.1	11.9–16.4	922	15.1	13.2–17.4	951	14.7	12.5–17.2
Waterberg	535	27.5	23.7–31.3	480	25.4	21.3–29.9	499	23.6	18.2–30.1



	Capricorn	Mopani	Sekhukhune	Vhembe	Waterberg	Limpopo Province
2006	24.2	24.7	16.1	14.1	27.5	20.6
2007	19.8	23.8	21.3	15.1	25.4	20.4
2008	21.0	25.2	21.8	14.7	23.6	20.7

Figure 27: HIV prevalence trends among antenatal women by district, Limpopo, 2006 to 2008.

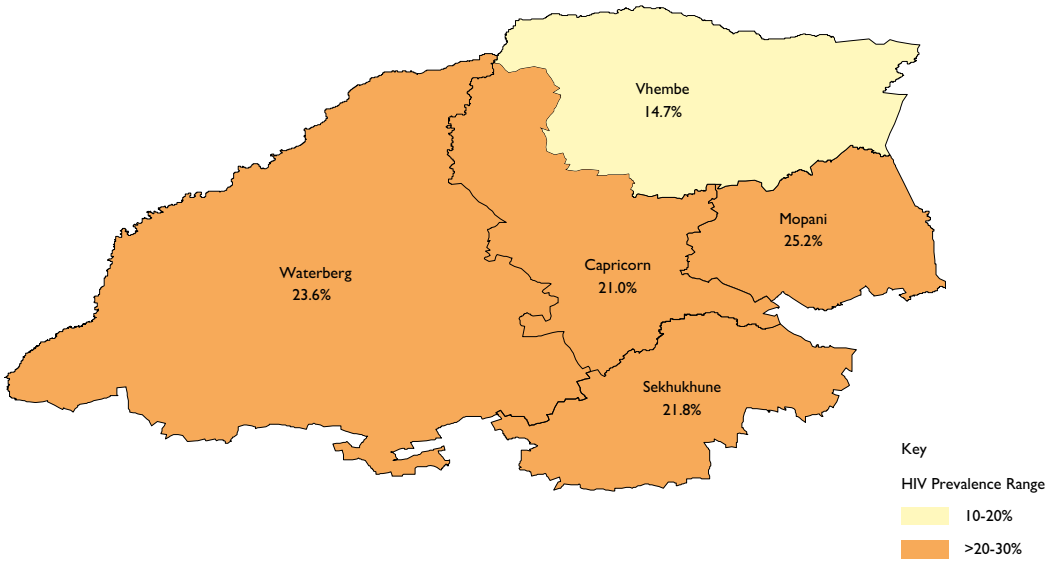


Figure 28: HIV prevalence distribution among antenatal women by district, Limpopo, 2008.

3.6.8 The Northern Cape Province

In 2008, the Northern Cape provincial HIV prevalence amongst 15-49 antenatal women was 16.2% (95% CI: 13.8%–18.9%). The prevalence has varied by less than 1% in the past 3 years, and has shown stabilization between 2007 and 2008 (Figure 29).

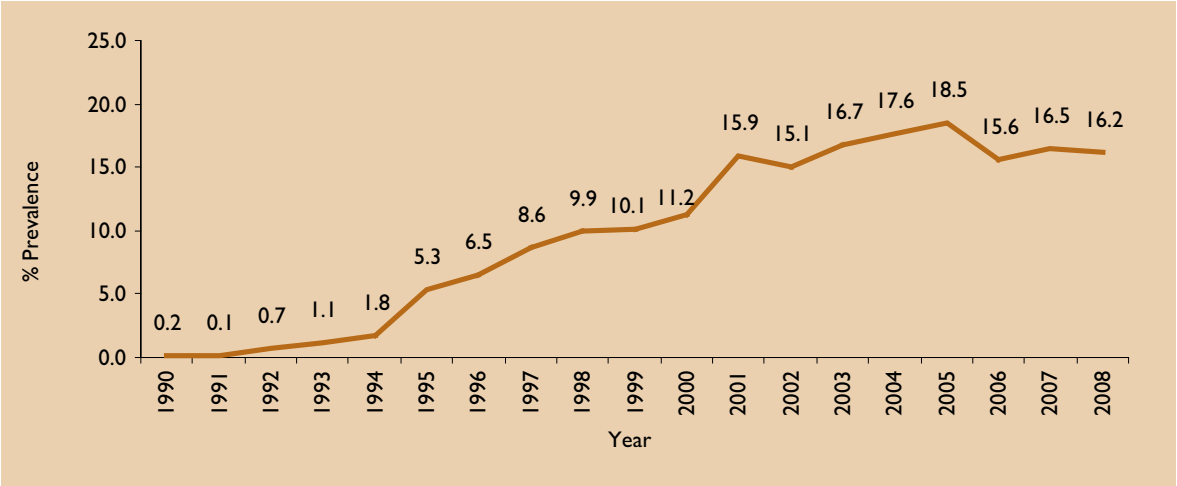


Figure 29: HIV prevalence epidemic curve among antenatal women, Northern Cape, 1990 to 2008.

Namakwa district has consistently recorded the lowest HIV prevalence (2.2% in 2008) in the whole country. Frances Baard recorded the highest HIV prevalence (21.8%) in the province in 2008 (Figure 30 and 31). Interestingly, this province has recorded the highest syphilis prevalence among all the other provinces in the past 3 years (see section on syphilis results). This requires further epidemiological investigation to determine the cause of this variation.

Table 13: HIV prevalence among antenatal women by district, Northern Cape, 2006 to 2008

District	2006			2007			2008		
	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)
Provincial	1087	15.6	12.7–18.5	1190	16.5	13.9–19.6	1111	16.2	13.8–18.9
F. Baard	422	22.7	18.7–26.7	442	22.4	18.3–27.0	389	21.8	18.2–26.0
J. T. Gaetsewe (Kgalagadi)	49	18.4	7.5–29.2	179	17.3	11.9–24.5	171	18.7	14.5–23.8
Namakwa	95	5.3	0.8–9.7	82	7.3	4.1–12.4	89	2.2	0.5–8.8
Pixley ka Seme	253	10.7	6.9–14.5	232	14.2	8.8–22.1	255	13.3	8.2–20.8
Siyanda	268	12.3	8.4–16.2	255	10.9	7.7–15.3	207	13.0	8.4–19.5

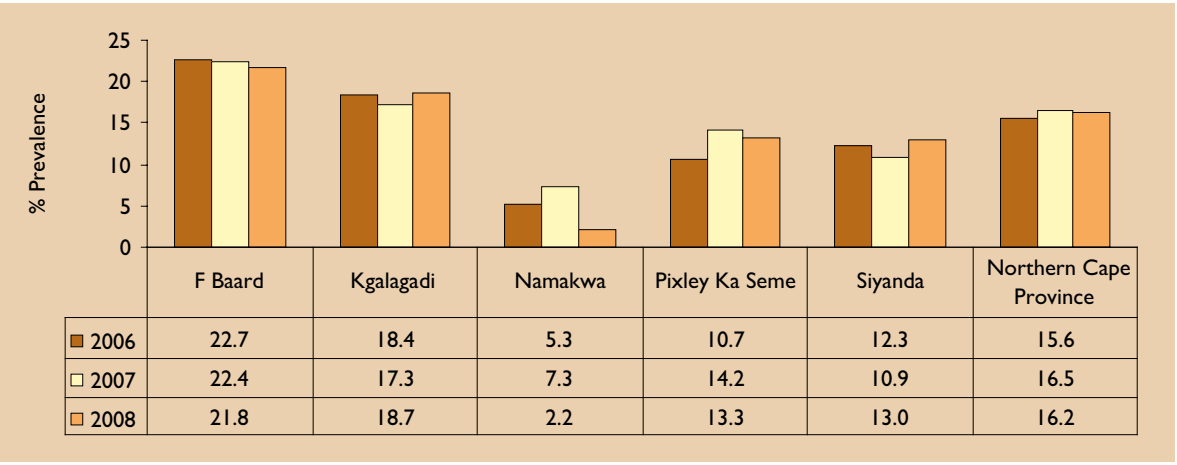


Figure 30: HIV prevalence trends among antenatal women by district, Northern Cape, 2006 to 2008.

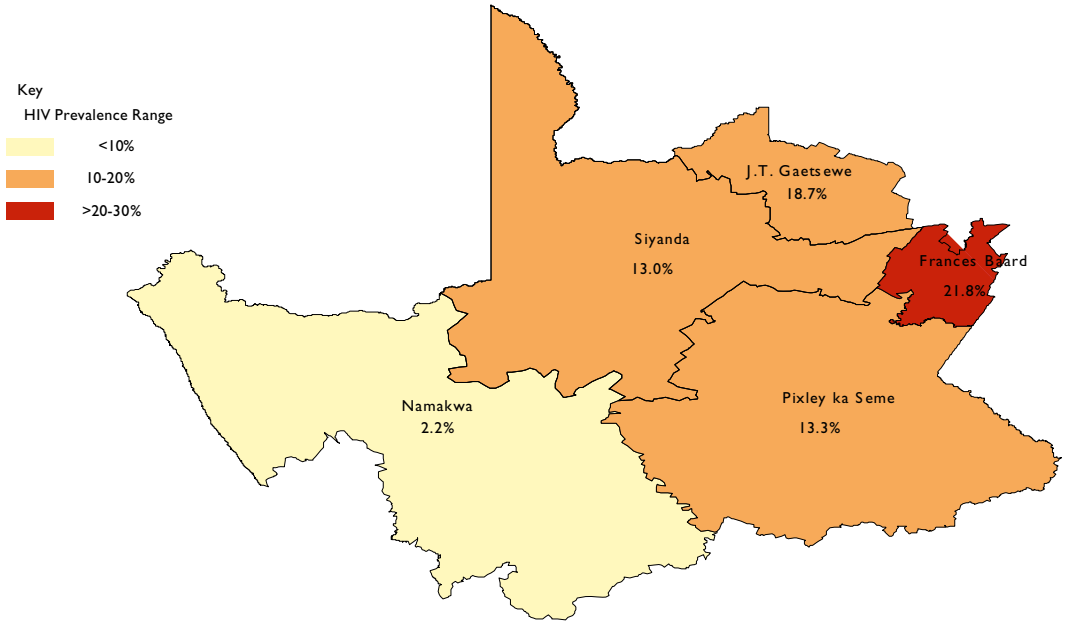


Figure 30: HIV prevalence distribution among antenatal women by district, Northern Cape, 2008.

3.6.9 The Western Cape Province

In 2008, the Western Cape provincial HIV prevalence amongst 15–49 antenatal women was 16.1% (95% CI: 12.6%–20.3%). The overall HIV prevalence has increased from 15.1% in 2006 to 16.1% in 2008, (Figure 32).

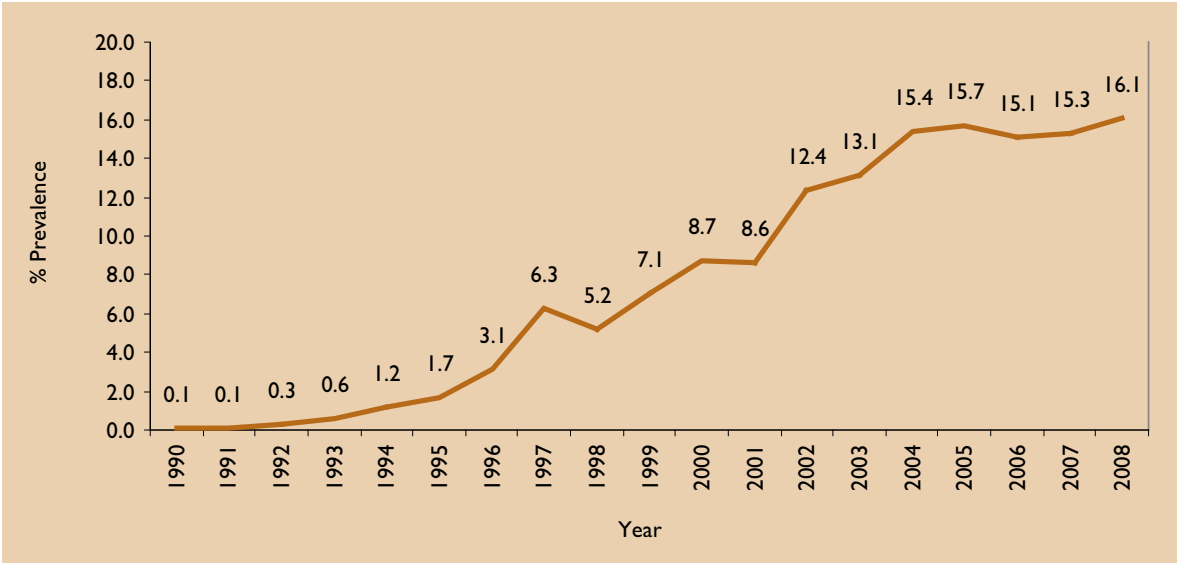


Figure 32: HIV prevalence epidemic curve among antenatal women, Western Cape, 1990 to 2008.

The Central Karoo district has shown a significant increase, from 8.3% in 2006 to 23.6% in 2007 (15.3%). However, there was a sudden 8.8% decrease in HIV prevalence in the same district in 2008 (Table 14 and Figure 33). The distribution of HIV prevalence by district (Figure 34) shows that West-Coast district has the lowest HIV prevalence in the Western Cape Province and it is the second lowest after Namakwa (Northern Cape) in the country.

Table 14: HIV prevalence among antenatal women by district, Western Cape, 2006 to 2008.

District	2006			2007			2008		
	N	% Prev	CI (95%)	N	% Prev.	CI (95%)	N	% Prev.	CI (95%)
Provincial	3 866	15.1	11.6–18.7	3 830	15.3	12.2–18.9	3 828	16.1	12.6–20.3
C. Winelands	528	13.2	10.4–16.1	514	12.8	8.1–19.7	539	12.0	8.2–17.3
Central Karoo	48	8.3	0.5–16.1	55	23.6	15.2–34.7	54	14.8	7.5–27.1
Eden	340	11.5	8.1–14.8	321	13.0	8.6–19.3	338	13.0	8.8–18.8
Metropole	2 572	17.0	15.5–18.4	2 590	16.0	11.9–21.3	2 536	17.9	13.2–23.9
Overberg	146	13.0	7.5–18.5	144	19.4	14.0–26.2	157	15.9	10.3–23.8
West Coast	232	7.3	4.0–10.7	206	10.1	7.2–14.2	204	9.3	6.2–13.6

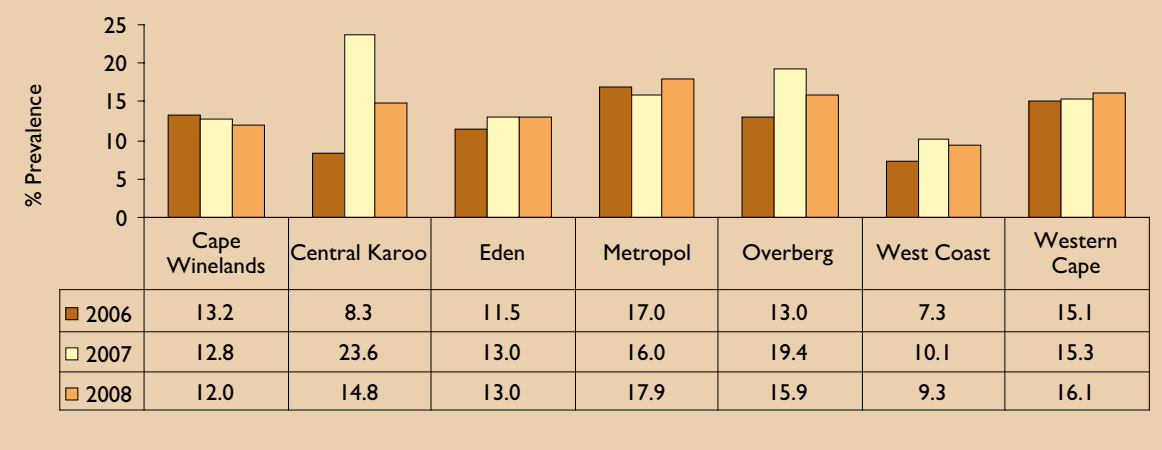


Figure 33: HIV prevalence trends among antenatal women by district, Western Cape, 2006 to 2008.

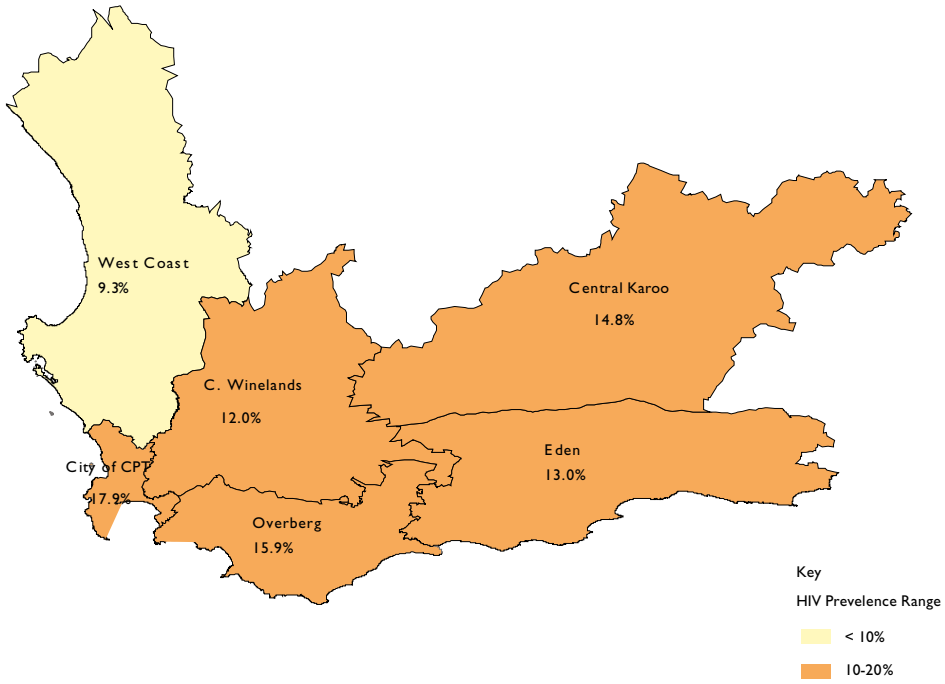


Figure 34: HIV prevalence distribution among antenatal women by district, Western Cape, 2008.

3.7 2008 HIV PREVALENCE DISTRIBUTION BY HEALTH DISTRICTS

Districts HIV prevalence is clearly heterogeneous, with prevalence ranging from a high of over 45% to a low of around 2.2%. When data are pooled over the three years, 17 districts have a prevalence significantly higher that the mean prevalence, while 20 out of the 52 are significantly below average.

Four districts (7.6%) recorded HIV prevalences above 40% in 2008. Thirty two per cent (17/52) of the districts recorded HIV prevalences between 30% and 40%. Six were located in KwaZulu-Natal, three in Gauteng, four in Free State, two in Mpumalanga and the remaining two in North West. Interestingly, no district in the Eastern Cape has recorded HIV prevalences above 30% in 2008 (Figure 38).

Nineteen (36%) out of 52 health districts in the country recorded district HIV prevalences between 20.0% and 30.0%. This included all districts (seven) in the Eastern Cape four in Limpopo, three in Gauteng, two in North West province and one in KwaZulu-Natal, Northern Cape and Free State provinces.

Only 17% (9/52) of the 52 health districts recorded prevalence between 10% and 20%. Five were districts located in Western Cape, three located in the Northern Cape and one in Limpopo. Namakwa district in the Northern Cape and West Coast district in the Western Cape recorded the lowest district HIV prevalence in the country. Appendix D and E provides the detail description of HIV prevalence distribution by districts in 2006 and 2007.

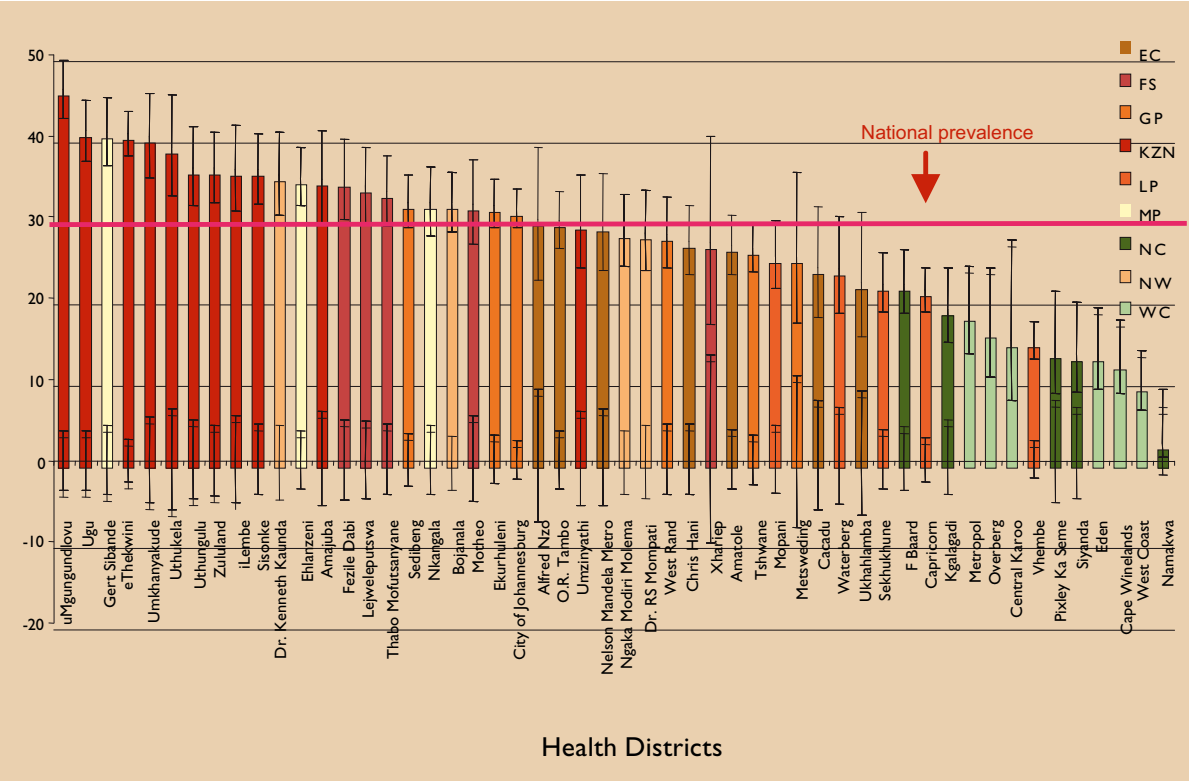


Figure 35: HIV prevalence among 15-49 antenatal women by districts, SA 2008.

4. NATIONAL SYPHILIS PREVALENCE TRENDS (1997–2008)

The 2008 survey found that 1.9% CI 95% (1.7–2.0) of pregnant women presenting at public antenatal care clinics were infected with syphilis. This is lower than the 2.8% CI 95% (2.6–3.0) recorded for 2007. The trend of syphilis prevalence among attendees of antenatal clinics from 1997 to 2007 is shown in Figure 36 below. Since 2003 the national estimate has been fluctuating between a prevalence of 1.6 and 2.8%.

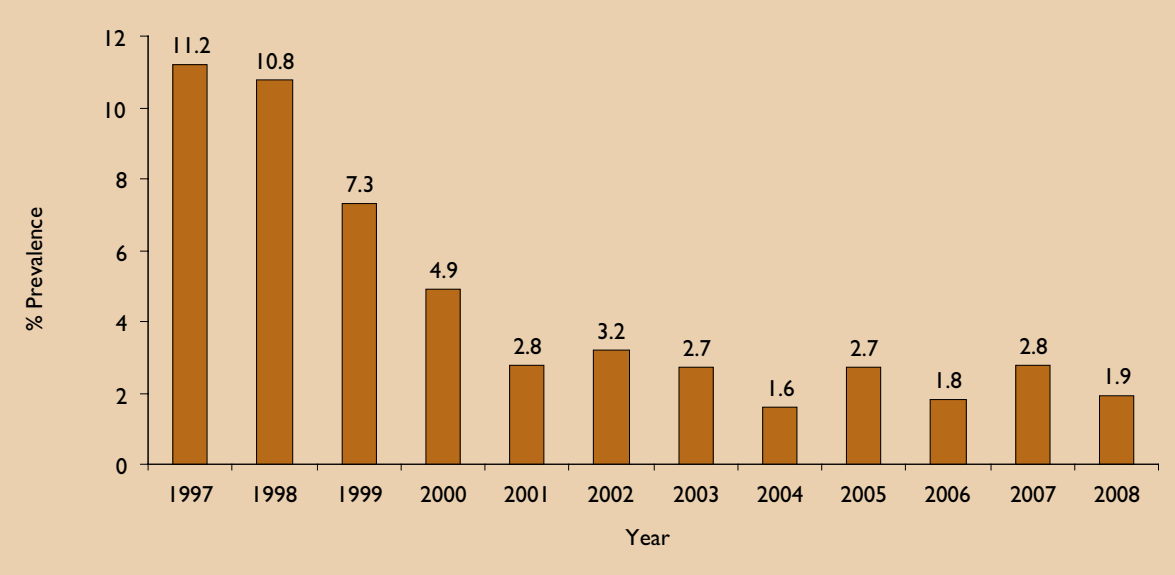


Figure 36: National syphilis prevalence trends among antenatal women, South Africa, 1997 to 2008

4.1 SYPHILIS PREVALENCE BY PROVINCE

Reading from Table 15, the estimated syphilis prevalence in the Northern Cape for 2008 is 6.8%. The Northern Cape is the province with the highest prevalence, this has been the case over the past 3 years with a prevalence of 6.9% in 2006, 5.4% in 2007, 6.8% in 2008.

There was a significant increase in syphilis prevalence in the Western Cape province from 1.9% in 2006 to 5.6 % in 2007, (more than double), but it dropped quite a bit in 2008 to 3.8%. Western Cape, Gauteng, Mpumalanga, Eastern Cape, North West and Limpopo all experienced an increase in syphilis prevalences from 2006 to 2007. However, in 2008, all of these provinces except Northern Cape showed reductions in prevalence. Mpumalanga syphilis prevalence has more than halved from 1.8 % in 2007 to 0.7% in 2008 (Figure 37)

Table 15: Syphilis prevalence by province among antenatal women, South Africa, 2006 to 2008.

Province	RPR prev. 95% CI 2006	RPR prev. 95% CI 2007	RPR prev. 95% CI 2008
National	1.8 (1.7–2.0)	2.8 (2.6–3.0)	1.9 (1.7–2.0)
Northern Cape	6.9 (5.0–8.9)	5.4 (4.2–6.9)	6.8 (5.2–8.7)
Western Cape	1.9 (1.4–2.4)	5.6 (4.9–6.3)	3.8 (3.1–4.6)
Gauteng	2.3 (1.9–2.7)	3.8 (3.3–4.3)	2.7 (2.3–3.1)
Free State	2.5 (1.8–3.1)	2.5 (1.9–3.0)	2.3 (1.7–3.1)
Mpumalanga	1.1 (0.7–1.5)	1.8 (1.3–2.4)	0.7 (0.4–1.2)
Eastern Cape	2.6 (2.0–3.1)	3.0 (2.5–3.6)	1.9 (1.5–2.4)
North West	1.8 (1.2–2.4)	2.7 (2.1–3.5)	1.5 (1.1–2.2)
KwaZulu-Natal	1.0 (0.8–1.4)	0.8 (0.6–1.1))	0.6 (0.4–0.8)
Limpopo	0.6 (0.4–0.9)	1.4 (1.1–1.9)	0.4 (0.3–0.7)

Provinces with high HIV prevalences show low syphilis prevalences and vice versa. Northern Cape still records the highest syphilis prevalence and the lowest HIV prevalence. KwaZulu-Natal, which has the highest HIV prevalence in the country, has the second lowest syphilis prevalence (Figure 37).

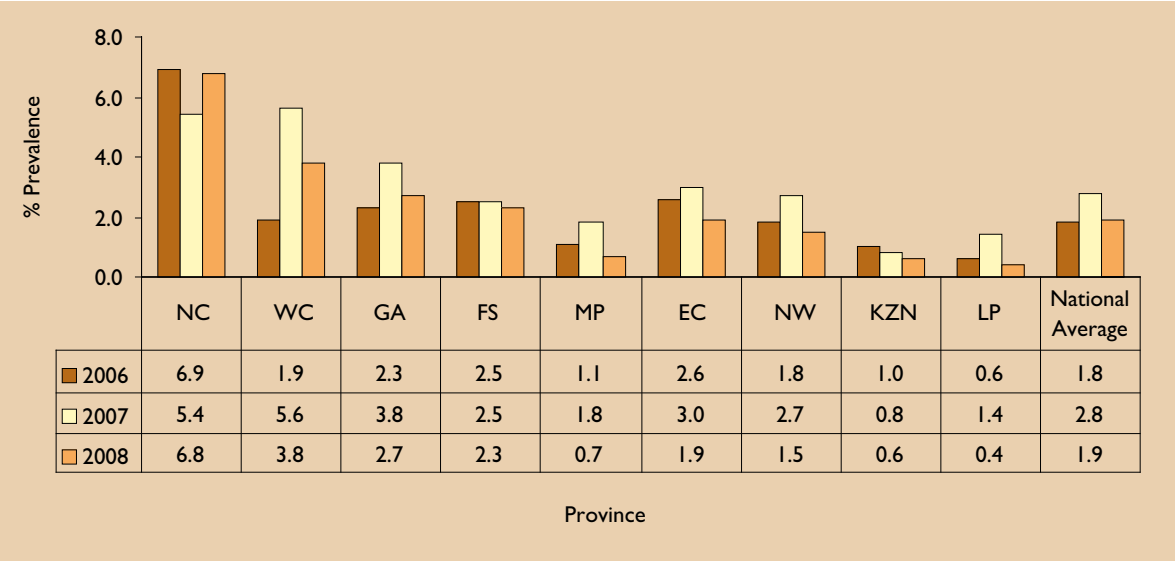
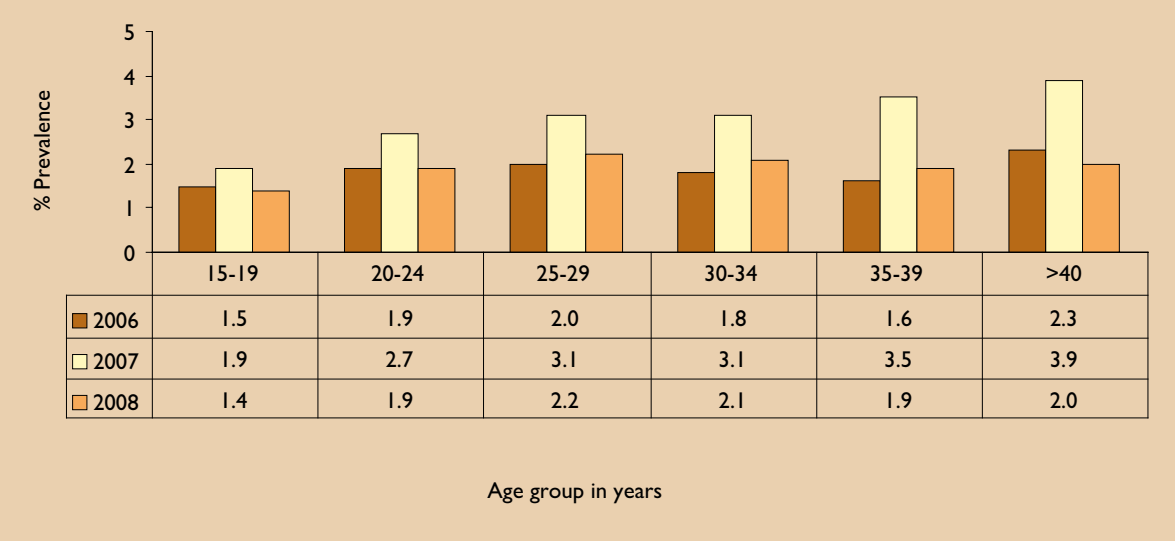


Figure 37: Syphilis prevalence trends among antenatal women by province, South Africa 2006 to 2008.

4.2 SYPHILIS PREVALENCE BY AGE

Figure 38 shows the syphilis prevalence by age group. There was an increase in prevalence in *every* age group in 2007 and this certainly warrants further investigation in order to answer two questions "Why the spike?" and "What could have been happening in the last 6 years?"



	15-19	20-24	25-29	30-34	35-39	>40
2006	1.5	1.9	2.0	1.8	1.6	2.3
2007	1.9	2.7	3.1	3.1	3.5	3.9
2008	1.4	1.9	2.2	2.1	1.9	2.0

Figure 38: National syphilis prevalence trends among antenatal women by age group, South Africa, 2006 to 2008.

4.3 REGRESSION ANALYSIS OF DETERMINANTS OF HIV INFECTION

Potential HIV risk factors may act independently or concurrently to drive the HIV epidemic. Identification of independent factors related to a positive HIV infection status was determined through classification tree regression.

The first and best split was on age at 21 years where women <=21 years had HIV prevalence of 16.8% compared to the 34.8% HIV prevalence among women 22 years and older. This split of the overall group with prevalence of 29.2% has identified a younger subgroup that has a much lower prevalence. No further splits were identified in this group of young women.

In the older group the next split was on race. An African subgroup (37.6%) is identified versus the rest (6.8%) of White, Asian and Coloured women which has a low prevalence and no further splits were identified.

The model then looks at African women >=22 years. Education was found to be the most important splitter for this subgroup at grade 11 or less versus grade 12 or more. Lower HIV prevalence was found in the higher education level.

The model does not show any 'startling' results – although the cut off points that come to the fore were interesting i.e. age 21 years. One important observation was the absence of syphilis infection in the model. Therefore, the joint outcome of HIV and RPR is not that important in the larger picture (in determining the HIV status of antenatal women). The performance of the prediction model is modest (slightly better than chance) with an overall correct classification of 60%, a sensitivity of 74% and specificity of 55%. The model did not incorporate any geographical information such as province or district. It can be seen as a model to classify any first time attendee walking through a clinic door as HIV positive or not given her basic demographicinformation.

5. EXTRAPOLATION OF HIV INFECTION TO THE GENERAL POPULATION

UNAIDS Uses EPP to estimate the HIV trends over time by fitting an epidemiological model to the surveillance data provided by HIV sentinel surveillance systems. Separate estimates and time trends are developed for each of the provinces, they are then combined within EPP to produce a national estimate for HIV prevalence and its trends over time. The HIV estimation of process through UNAIDS Spectrum and EPP Models is presented in Appendix E.

Sentinel surveillance and population-based surveys have strengths and weaknesses but taken together provide complementary information and can provide a clear picture of both overall trends and geographical distribution of HIV. Results from both population-based survey and antenatal sentinel surveillance are used to adjust estimates to bias identified in both surveys. The 2008 HIV prevalence estimates projected from the three mathematical models are shown in Figure 39 and Table 16. It is encouraging to see that the estimated number of adult new infections (incidence) are estimated to be 380 000 and paediatric HIV incidence 56 000 in 2008.

Figure 39: Comparison of the HIV prevalence estimates in the adult population, EPP< SPECTRUM; ASSA, and HSRC 2008.

Table 16: HIV Estimates for South Africa, UNAIDS (EPP & SPECTRUM), ASSA, HSRC models, 2008.

	UNAIDS		ASSA	HSRC	
	Estimate	(Low – High Estimate)	Estimate	Estimate	(Low – High Estimate)
HIV Adults + Children	5 300 000	(4 700 000–5 700 000)	5 600 000	5 200 000	4 600 000–5 700 000
HIV Adults 15+	5 000 000	(4 500 000–5 400 000)	5 300 000	4 700 000	(4 200 00–5 300 000)
Prevalence Adult (%)	17.5	(15.9–18.7)	18.8	16.9	(15.5-18.4)
HIV 15+ female	3 000 000	(2 500 000–3 200 000)	3 000 000	3 200 000	(2 800 000-3 600 000)
HIV population – Children	220 000	(130 000–300 000)	330 000	340 000	(230 000–450 000)
Annual AIDS deaths	310 000	(270 000–360 000)	370 000		
AIDS orphans	1 800 000	(1 500 000–2 100 000)	1 400 000		
Annual AIDS deaths – Adult	280 000	(240 000–320 000)	330 000		
New HIV infections – Adult	380 000	(350 000–390 000)	430 000	In progress*	
New HIV Infections – Children	56 000	(32 000–77 000)	61 000	In progress*	
Need for ART – Adult (15+)	1 400 000	(1 300 000–1 600 000)	500 000 (WHO stage 4)		
Need for ART – Children	91 000	(52 000–130 000)	27 000 (WHO stage 4)		
Mothers needing PMTCT	200 000	(110 000–280 000)			

* Epidemiological and laboratory-based HIV incidence estimation was still ongoing when this report went into print

6. DISCUSSION

This 19th national antenatal women HIV and syphilis sero-prevalence survey has provided further evidence that the national HIV prevalence in South Africa is stabilizing at around 29% since 2006. This is a trend observed in many countries with generalized epidemics, i.e. Africa, Asia and Latin America.

The results of this survey show that the HIV prevalence among women in the age group 15–19 years has increased from 13.1% in 2007 to 14.0% in 2008 (Table 3). The HIV prevalence estimate in the 20–24 year age group, the target age group for the MDG 6, stands at 28.0% in 2006 and 2007 compared to 26.9% in 2008. The HIV prevalence in the older age groups (30–34, 35-39; and above 40 years) remains high (above 30%) with a slight decrease from 20.6% in 2007 to 17.6 % in 2008 for the 45-49 year old. If data on age-distribution of women on CCMT was available, the data would give us an idea of whether the treatment programme has a positive impact on mortality rate of this age group. Triangulation of such data in South Africa is necessary to ensure correct reading with regards to the disease burden and ascertain of the impact of interventions alluded above.

It is the first time that we are noting a significant evidence of variations in HIV prevalence distribution between the 52 health districts. The findings show that there are different HIV determinants or risk factors that drive the epidemic in the different parts of the country. This is clearly shown in Figure 41, which indicates the different levels of prevalence and where the epidemic is localized. The distribution and demand for accredited ARV sites indicates that there is a direct correlation between HIV prevalence and the distribution of the number of people on HAART (by district).

The National Comprehensive HIV and AIDS Plan figures show that since 2005 to date, Eastern Cape had 82 919; Free State, 42 871; Gauteng, 197 030, KwaZulu-Natal, 242 406, Limpopo, 53 919; Mpumalanga, 50 972; North West, 66 891; Northern Cape, 12 660; Western Cape, 58 828 persons living with HIV and AIDS on the ARV treatment programme. The results in this report have clearly shown the foci areas (Figure 7) for HIV infection from 2006 to 2008, this should significantly impact on policy implementation of how to direct resources to scale up interventions in the targeted populations.

What is markedly evident is a significant decrease in HIV prevalence in those districts, which had very high prevalence rate of above 40% in 2006 and 2007 i.e. eThekwini, Amajuba, iLembe and uMgungundlovu districts in KwaZulu-Natal.

recorded the highest HIV prevalence in the whole country in 2008. Furthermore, in the past three years the findings indicate that there are districts, which have repeatedly recorded HIV prevalences above 40% and those that have recorded figures below 10.0%. It will be useful to conduct separate in-depth analytical epidemiological studies that can focus on the high risk and low risk areas to determine what could be the main drivers of the infection rate between the two groups. In addition, it will be useful for us to begin to standardize ways of categorizing levels of HIV infection within countries with generalized HIV epidemics and it will be important to recommend urgent action for those areas with very high prevalence levels.

The distribution of HIV prevalence by province ranged from 16.0% in the Western Cape to 38.6% in KwaZulu-Natal. The results show that the highest HIV prevalences were located on the North-Eastern side, and the lowest numbers in the Western parts of South Africa. KwaZulu-Natal still has

the highest HIV infection rate, followed closely by the Mpumalanga, Free State and North West with prevalences greater than 30%.

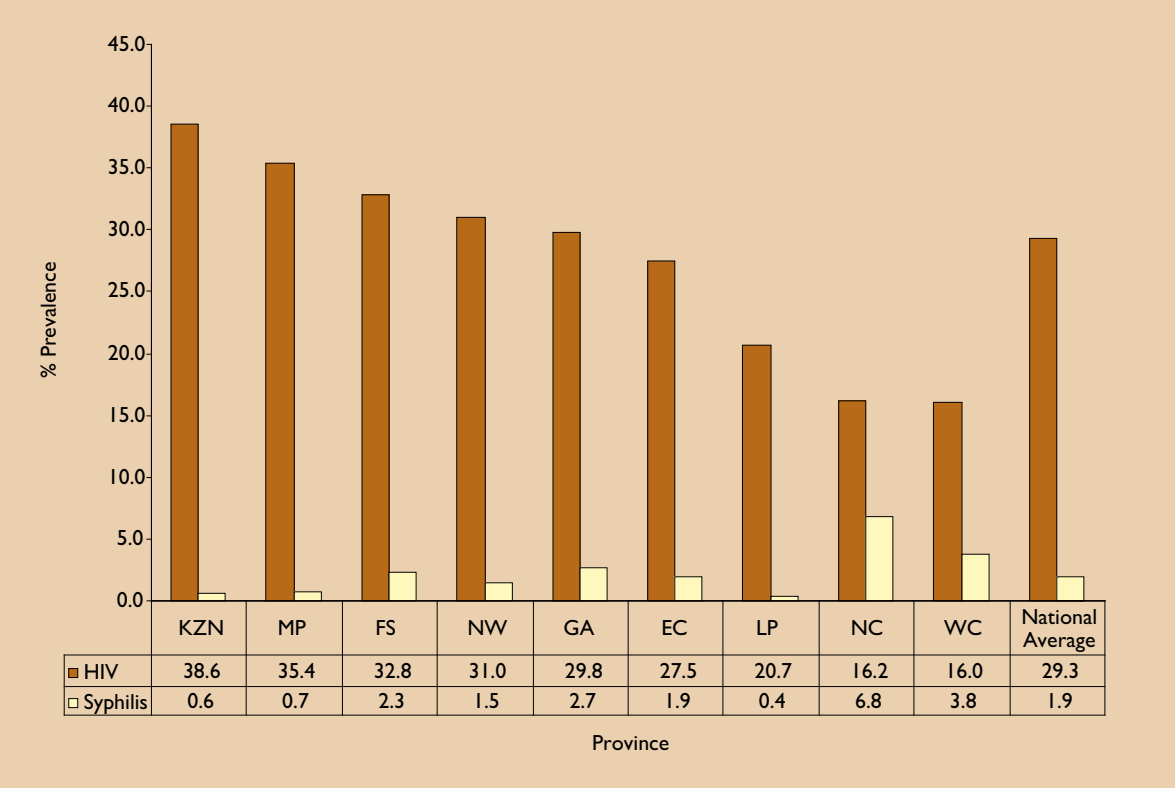
This survey found that 1.9% of pregnant women presenting at public antenatal care clinics were infected with syphilis. This is lower than the 2.8 % recorded for 2007.

The tree regression model does not show any 'startling' results – although the cut-off points that come to the fore were interesting i.e. age 21 years. The level of Education (Grade 11) was found to be an important feature with race not appearing to be a factor amongst young women aged 21 or less (< = 21) group. Also important was the seemingly little influence of syphilis infection in determining the HIV outcome of the antenatal women. It is important however to note that the choice of syphilis as a marker for STI infection needs to be reviewed as it appears that other types of STIs may have positive correlation with HIV infection (Figure 40).

The scale and trends of the HIV epidemics in Africa vary considerably, with southern Africa most seriously affected. This sub region accounts for 35% of all people living with HIV and almost one third (32%) of all new HIV infections and AIDS deaths globally. National adult HIV prevalence exceeded 15% in seven countries (Botswana, Lesotho, Namibia, South Africa, Swaziland, Zambia and Zimbabwe). While there is evidence of a significant decline in the national HIV prevalence in Zimbabwe and a slow but continuous decline in prevalence in Botswana, the epidemics in most of the rest of the sub region have either reached or are approaching a plateau. Only Mozambique has shown a slight but steady increase in prevalence over the previous surveillance periods (Figure 41) (UNAIDS, 2007). In most of the comparatively smaller epidemics in West

and Central Africa, adult national HIV prevalence has remained stable overall. However, signs of declining HIV prevalence are evident in an increasing number of countries, notably Côte d'Ivoire, Mali and urban Burkina Faso. In these countries, as well as in Benin, there is evidence of a shift towards safer behaviour.

This report provides a wealth of data and information on the HIV epidemic in South Africa for even further analysis. All stakeholders – government departments, non-governmental organisations, the private sector, community based organisations and international development partners are encouraged to use the information contained in this report to collectively accelerate efforts aimed at prevention and control of HIV and AIDS in South Africa.



	KZN	MP	FS	NW	GA	EC	LP	NC	WC	National Average
HIV	38.6	35.4	32.8	31.0	29.8	27.5	20.7	16.2	16.0	29.3
Syphilis	0.6	0.7	2.3	1.5	2.7	1.9	0.4	6.8	3.8	1.9

Figure 40: Provincial comparison of HIV and syphilis prevalence, South Africa 2008.

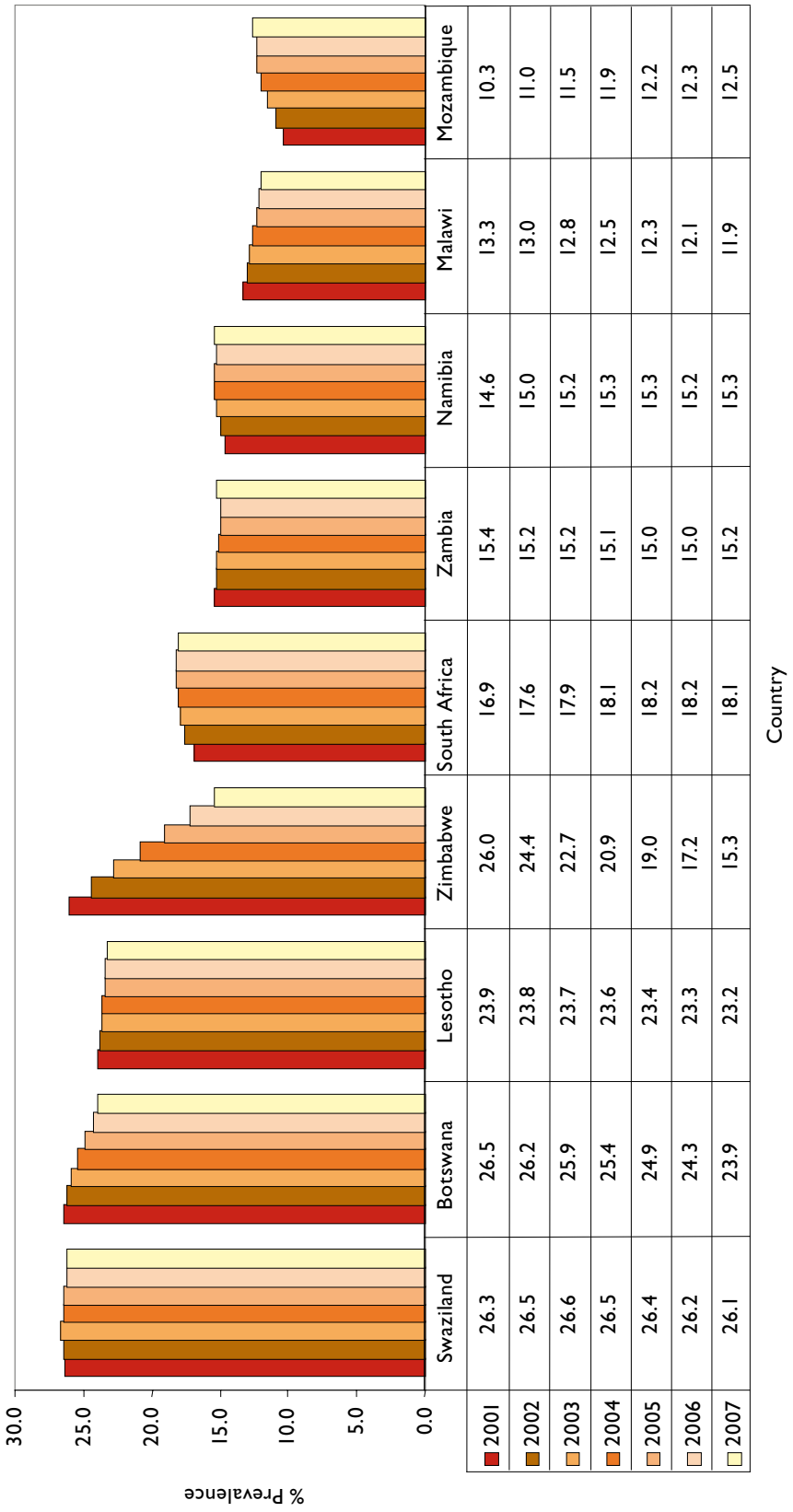


Figure 41: Comparison of HIV prevalence trend from 2001 to 2007 in the general popluation among SADAC countries.

7. CONCLUSION AND RECOMMENDATIONS

The result from the 2008 report on antenatal HIV and syphilis prevalence survey, can be used to observe trends, to reinforce or increase the commitment for policy development, provide feed back to health workers, local and international groups and all sectors involved in AIDS prevention and care programs. The antenatal sentinel surveillance programme remains a good indicator of prevalence in the total population and one of the most robust/appropriate HIV surveillance methods to monitor the HIV epidemic trends in countries with a generalized epidemic.

For the first time, we are able to observe the transmission potential of the virus at district level whereas it was previously limited to provincial level.

Conclusions that can be drawn from the 2008 findings are as follows:

1. South Africa has an established generalized HIV epidemic with and estimated 17.5% prevalence in the general population and an estimated prevalence of 29.3% in the antenatal population.
2. The HIV prevalence has remained stable among women aged 25 years and above, although the 15-24 Millennium Development Goal 6, Target 7, indicator 18 states that countries should aim to half the HIV prevalence among pregnant women in the 15-24 year age group. The HIV prevalence in this age group has decrease by 0.4% from 2007 to 2008.
3. It is crucial that the department conduct pilot analytical (in-depth), epidemiological surveys in high prevalence (>40%) and low prevalence districts (below 10%), in order to investigate potential risk factors that drive the epidemic and determine the type of HIV strains (sub types) that could be circulating in these districts.
4. A regression analysis of determinants of HIV positive status in the survey participants using the demographic and laboratory information showed that the most significant determinant factor was age. Women less or equal to 21 years have HIV prevalence of 16.8% compared the 34.8% of women 22 years and older. In the older age-group the next split was on race. An African subgroup (37.6%) is identified versus the rest (6.8%) of White, Asian and Coloured women.
5. One important observation from the regression analysis was that having a syphilis co-infection is not a strong predictor for HIV status.
6. An in-depth analysis of the 2008 data for the Western Cape confirms the differential in HIV prevalence by race. The overall HIV prevalence in this province is 16.1% with the distribution of participants as follow: 50.8% (1896) Africans; 48.6% (1817); 0.6 (21) Whites and one Asian. The HIV results in this province show that 29.4% of Africans and only 3.0% of Coloureds were infected.

The following recommendations can be made from the implications of the findings:

Further research and triangulation of other HIV surveillance data within the public health sector is needed to further understand the potential risk factors for high risk groups in this country and to improve the department-focused targeted interventions in its attempt to mitigate the burden of the disease.

- To report on HIV prevalence distribution by geotype (rural vs. semi-rural vs. urban), because in generalized heterosexual epidemics the standard practise is to categorise populations by geographic subdivisions.

- To publish a separate scientific paper on the risk factors associated with HIV status of pregnant women, and to do multiple regression analysis of the relationship between risk factors and HIV outcome.
- To capture the marital status of the participants so that it could be estimated how many orphans will have a single parent or no parents.
- To find out if the pregnant woman ever participated in the PMTCT; are aware of their HIV status, or have participated in this survey before.
- To establish an ART (Anti Retroviral Treatment Site) Surveillance System within the ARV Sites Information System. This will assist to track measures such as AIDS-related mortality by age, sex, genotype, district, province, monitor loss to follow-up, number of patients on different regimes, pharmocovigilance, drug resistance patterns, AIDS incidence rate etc.

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APPENDIX A: DATA COLLECTION FORM

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

NATIONAL ANTENATAL SENTINEL HIV & SYPHILIS PREVALENCE SURVEY 2008

DATA COLLECTION FORM

PROVINCE: _____ DISTRICT: _____

HEALTH FACILITY: _____ CLINIC COORDINATOR: _____

CONTACT TELEPHONE: _____ DATE SPECIMEN TAKEN:_____ (DD/MM/2008)

DATE SPECIMEN REACHED LABORATORY_____ (DD/MM/2008)

Bar code label	Lab. number	Age	* Race	* Level of education	Gravidity (No of pregnancies)	Parity (No of children)	Age of partner	* For Laboratory use only	
								HIV results	RPR results

NB: * Race: AF = African, AS = Asian, CO= Coloured, WH = White, UN =Unknown

* Education: please specify last grade completed.

* Last Column reserved for data entry at laboratory only: HIV and RPR RESULT: 0=negative, 1= positive Non-participation P.T.O.

Non participation: record only the age of the participant

Age:
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APPENDIX B

NATIONAL ANTENATAL SENTINEL HIV & SYPHILIS PREVALENCE SURVEY 2008

CHECKLIST FOR THE MONITORING OF SENTINEL SITES DURING THE NATIONAL HIV AND SYPHILIS SURVEY

Facility name: _____

Name of survey coordinator: _____

District: _____

Province: _____

Date survey started: _____

1. Did you or a representative of your clinic /sentinel site attend the survey preparation workshop? _____ If not, what was the reason for not attending? _____ _____
2. Were you provided with a copy of the Standard Operation Procedures or a manual explaining the procedures for the survey? _____
   Is everything clear for you to feel comfortable with running the survey? _____ _____
3. Did you receive all necessary equipment (vacutainers, data capture forms, etc) in time? _____
4. How many 1st ANC clients/patients do you normally see in a month? _____
5. On which day/s of the week do you see 1st time antenatal care patients/clients? _____
6. Actual number of specimens collected to date by the facility? _____ Target _____
7. Are the blood samples stored in a fridge? _____ Fridge temperature _____
8. How many refusals have you had since the beginning of the survey? _____
9. How do you inform and request clients to participate in the survey? _____ _____
10. Do you know which laboratory you are supposed to send the specimen to?_____
    Name_____
11. Are transport arrangements for the specimens to the laboratory adequate? _____
12. How often are the specimens collected? _____
13. Does this facility have VCT/PMTCT programmes? _____
14. Any other problems encountered? _____ _____ _____
15. Any recommendations for the survey? _____ _____

Interviewer: _____ Today's date _____

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Department:
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REPUBLIC OF SOUTH AFRICA

APPENDIX C

NATIONAL ANTENATAL SENTINEL HIV & SYPHILIS PREVALENCE

SURVEY 2008

LABORATORY SPECIMEN TRACKING TOOL

Province	Week 1	Week 2	Week 3	Week 4	Week 5	Total collected	Target	% Total
Gauteng	784	2763	2352	1219	382	7500	7330	102.32
KZN	825	1846	2576	962	776	6985	7160	97.56
EC	261	890	1208	1006	855	4220	4860	86.83
Limpopo	115	1669	1370	474	280	3908	3990	97.94
WC Cape	591	1025	962	696	574	3848	3995	96.32
North West	29	322	890	323	549	2113	2500	84.52
Mpumalanga	185	776	435	649	179	2224	2410	92.28
Free State	388	682	618	312	16	2016	2410	83.65
NC	94	300	213	137	369	1113	1345	82.75
Totals	**3272**	**10273**	**10624**	**5778**	**3980**	**33927**	**36000**	**94.24**

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Health
REPUBLIC OF SOUTH AFRICA

APPENDIX D

HIV PREVALENCE DISTRIBUTION BY DISTRICT, 2006

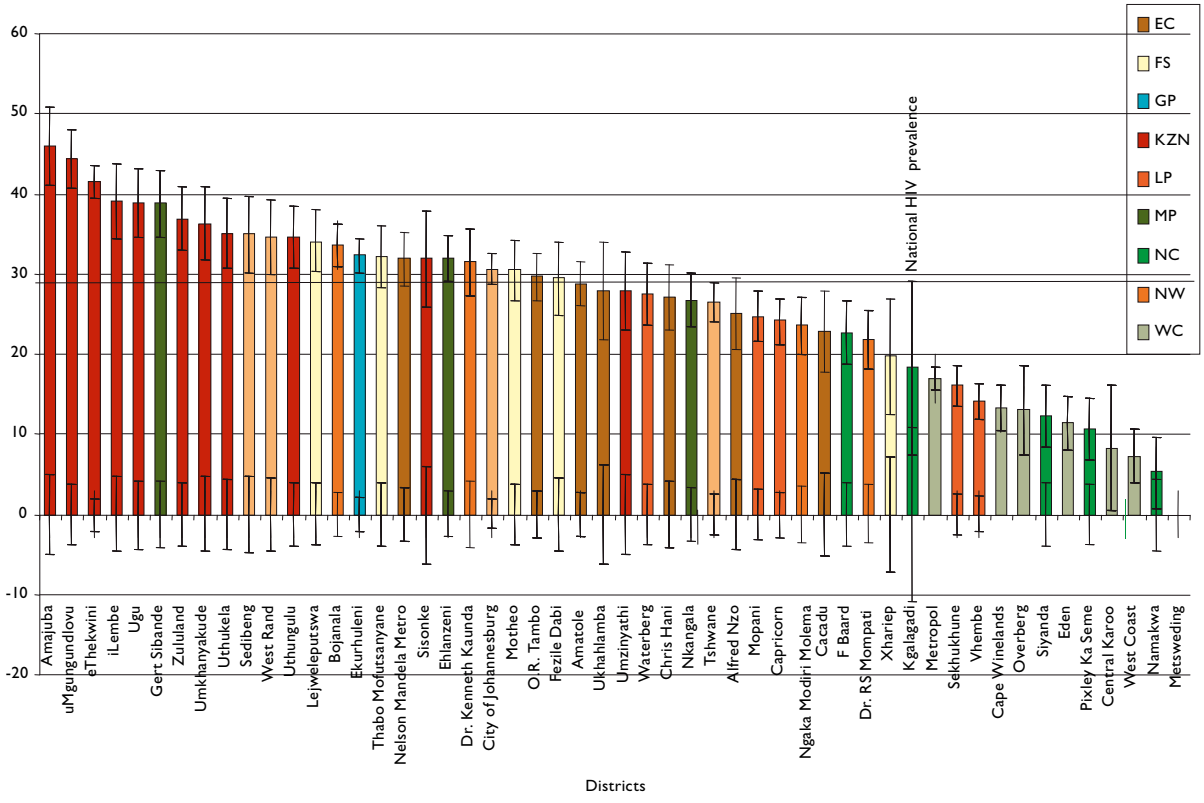
In 2006, three districts namely: Amajuba, uMgungundlovu and eThekwini all located in KwaZulu-Natal recorded district HIV prevalences of 46.0%, 44.4% and 41.6% respectively, meaning that every second pregnant women was HIV positive (Figure 35).

Thirty seven per cent (37%) i.e. 19/51 districts sampled recorded HIV prevalences between 30% and 40%. Seven of these districts in KwaZulu-Natal, four in Gauteng, three in the Free State, two in Mpumalanga and North West and one in the Eastern Cape.

Thirty one per cent (31%) i.e. 16/51 districts recorded HIV prevalences between 20.0% and 30.0%, of which six districts were located in the Eastern Cape, three in Limpopo, two in North West and Gauteng. Mpumalanga, KwaZulu-Natal, Northern Cape and Free State had one district each in this prevalence range.

Only 19% (10/52) of the 51 health districts recorded prevalence between 10% and 20%. Four of these districts were located in the Western Cape (HIV prevalences of 17.0% in the Cape Metropole, 13.2% in the Cape Winelands, 13.0% in Overberg and 11.5% in Eden), three in Northern Cape, two in Limpopo (Sekhukhune at 16.1% and Vhembe at 14.1%) and one in Free State (Xhariep district recording the lowest HIV prevalence at 19.7%).

Three districts out of the 51 health districts sampled (excluding Metsweding which was not included in the survey due to the demarcation disputes in the North West province) in the country had HIV prevalence of less than 10%. Two were in the Western Cape (West Coast at 7.3%), and one in the Northern Cape (Namakwa recording the lowest prevalence of 5.3% in the country).



HIV prevalence trends among antenatal women by district, South Africa, 2006

HIV PREVALENCE DISTRIBUTION BY DISTRICT, 2007

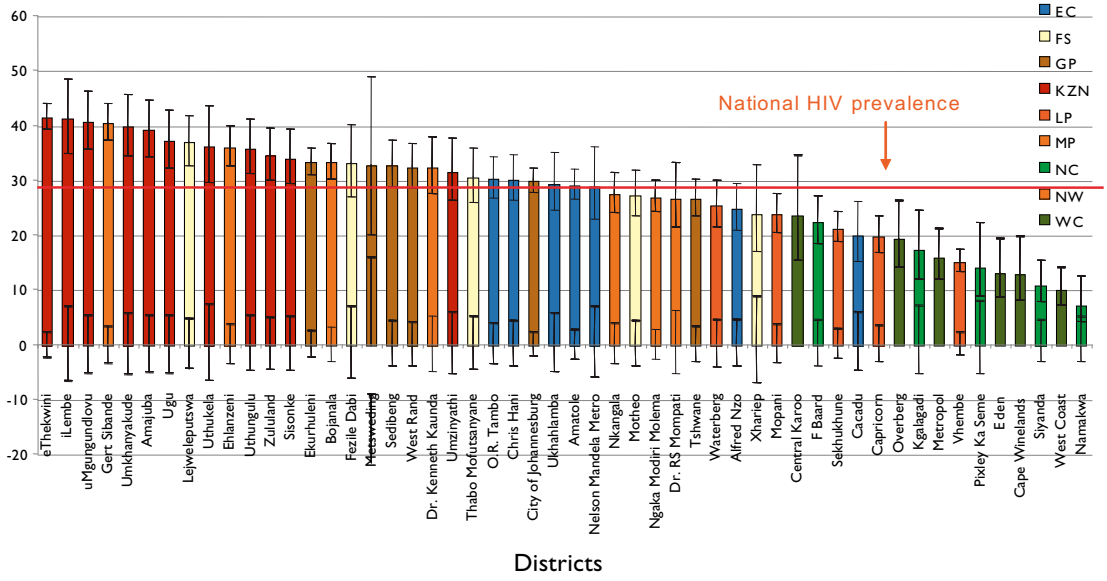
The number of districts recording HIV prevalences above 40% has increased from three in 2006 to four in 2007. Three of these districts were located in KwaZulu-Natal (eThekwini: 41.6%, Ilembe: 41.4% and uMgungundlovu: 40.8%) and one in Mpumalanga (Gert Sibande district recording for the first time an HIV prevalence of 40.6%) (Figure 37).

Thirty eight per cent (38%) of the 52 districts recorded HIV prevalences between 30% and 40% of which eight were in KwaZulu-Natal, four in Gauteng, three in the Free State, two in North West and Eastern Cape and one in Mpumalanga.

Thirty two per cent (17/52) of the health districts recorded HIV prevalences of between 20.0% and 30.0%. Five of these districts were located in the Eastern Cape, three in Limpopo, two in Free State, North West and Gauteng and one in Northern Cape, Mpumalanga and Western Cape provinces.

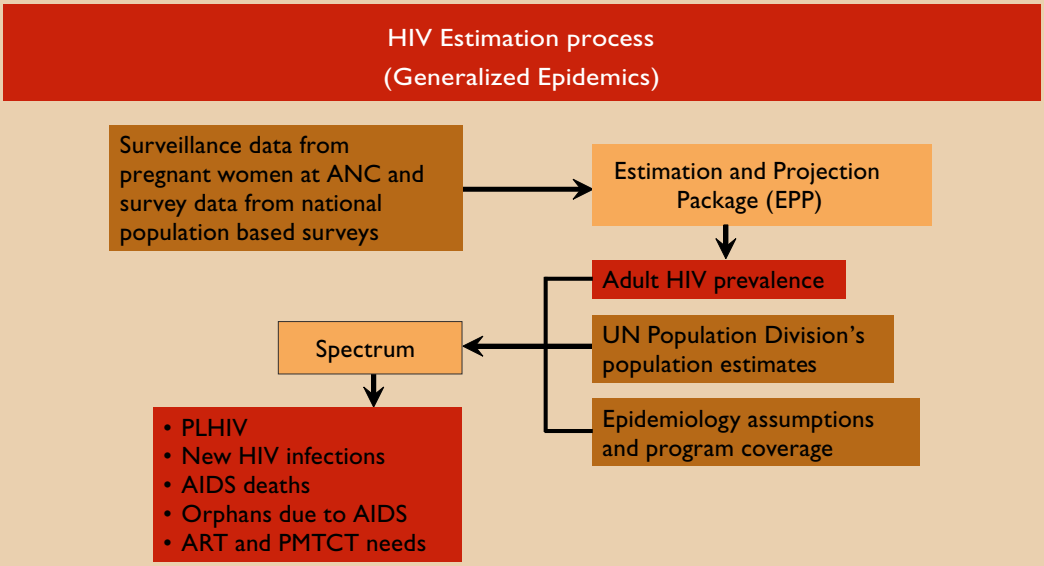
Still only 19% (10/52) of the 52 health districts recorded prevalence between 10% and 20%. Five were located in the Western Cape Province, three in Northern Cape and two in Limpopo (the HIV prevalence in Capricorn district significantly decreased from 24.2% in 2006 to 19.8% in 2007).

Namakwa district in the Northern Cape recorded the lowest HIV prevalence in the country, although the HIV prevalence in this district increased from 5.3% in 2006 to 7.3% in 2007.



HIV prevalence rates among antenatal women by district, South Africa, 2007

APPENDIX E



February 2009