



Boland/Overberg Region Annual Health Status Report 2007/08

Report compiled by

Dr René English

&

The Information Management Office

Boland/Overberg Regional Office

Worcester

BOLAND/OVERBERG REGION

ANNUAL HEALTH STATUS
REPORT
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Foreword

This report may be the last in a series of reports which were first published in 2001. In that year, Dr Pam Groenewald was asked to use all the available information from the Information Management Department of the Boland/Overberg office, compile it in an easily readable report, and provide a deeper analysis with recommendations. We were fortunate to get Dr René English involved when Dr Groenewald was no longer available after 6 years.

This report targets grassroots health workers, middle management and interested community members. I hope that you, as the reader, will understand the health issues much better and that it will inspire you to do what you can to make things better for the community out there.

I want to use the opportunity to thank Dr René English, the final author, Mrs Wilna Van Der Merwe and her Information Management team, the Health Programme staff of the Worcester office, and those in the services who have to collect and manage the data on a daily basis. This is the feedback that we owe you!

Dr Frans Krige

Director of the Boland/Overberg Region

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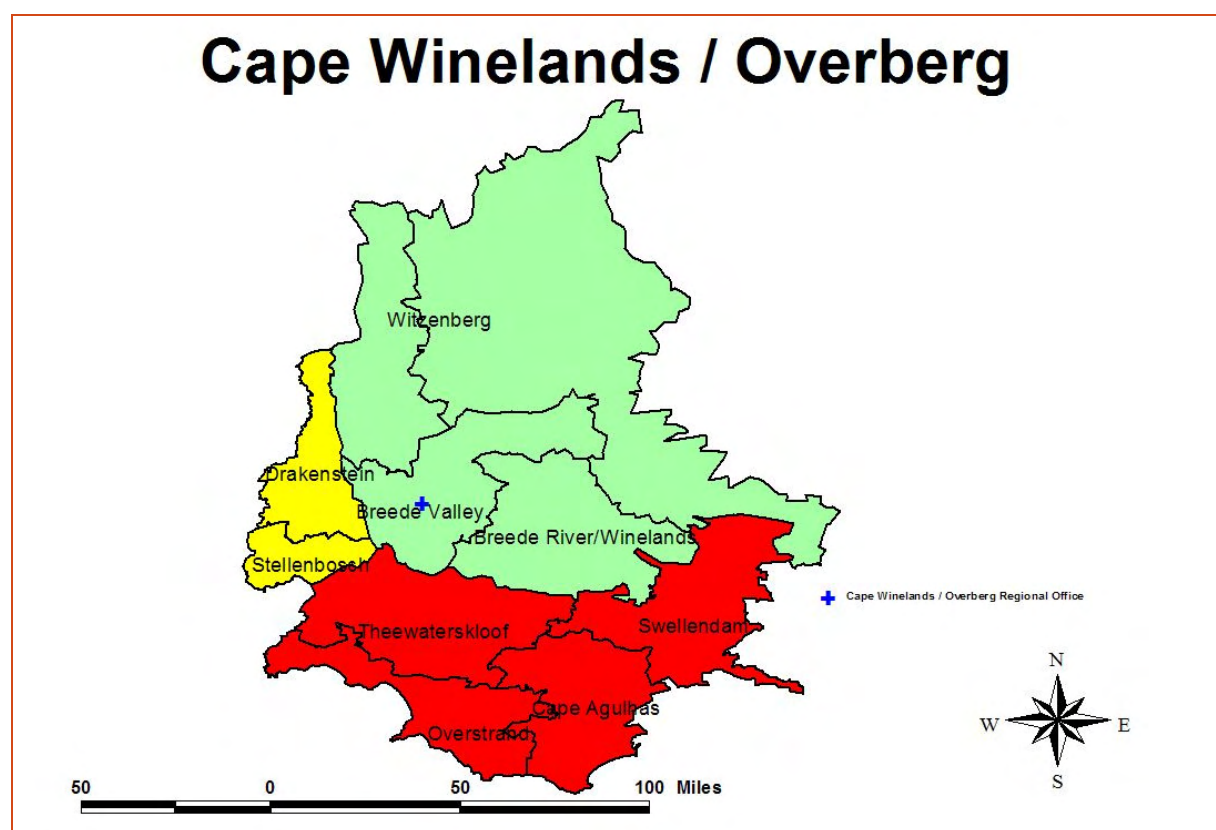
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1. Demography

The administrative entity, which prior to the 2007/08 financial year was known as the Boland/Overberg Health Region, is situated in the Western Cape Province of South Africa. The region was comprised of what is now called the Overberg Health District and three sub-districts with similar demarcations as the Overberg Municipal Area (Figure 1), as well as the three local municipalities of the eastern part of the Cape Winelands district municipal area (Cape Winelands East).

Figure 1: Map depicting the Boland/Overberg Region*



* The green area represents the Cape Winelands East. The red area represents the Overberg Health District. The green and red shaded areas represent the Boland/Overberg region. The yellow area represents the Cape Winelands West.

The local municipalities that comprised the Boland/Overberg Region are as follows (refer to Figure 1):

Cape Winelands East District Municipality (DC 2)

- Witzenberg (WC022)
- Breede Valley (Worcester) (WC025)
- Breede River/Winelands (WC026)

Overberg District Municipality (DC3)

- Theewaterskloof (WC031)
- Overstrand (Hermanus) (WC032)
- Cape Agulhas (WC033)
- Swellendam (WC034)

The Boland/Overberg Region was managed by the Worcester Regional Office. The Stellenbosch and Drakenstein local municipalities formed part of the Cape Winelands West area (Figure 1) and were managed by the West Coast/Winelands Regional Office in Malmesbury. In 2008, the three Cape Winelands East (CWE) sub-districts were merged with Drakenstein and Stellenbosch to form the Cape Winelands District and a dedicated District Director was appointed. The structure of the Overberg District has remained unchanged, and a District Director was also appointed in 2008.

1.1 Overberg District

The Overberg is a large district with a population of 205 910, as reported by Statistics South Africa (Stats SA) for 2006/07 (Table 1). It is primarily an agricultural area and contributes 11.6% to all agricultural production in the Western Cape.¹ It is the fourth largest hub of economic activity in the Western Cape, and contributes 2.4% to the GDP. The largest economic contributions are made by the Theewaterskloof and Overstrand areas, followed by Swellendam and Cape Agulhas. The population is young with just under half (43.3%) reported to be under the age of 25 years. A population survey conducted in 2006 revealed that about a third of the population had some form of secondary school education. Only 16% completed matric and about 13% had no formal schooling. Access to basic services is relatively good with about 76% of residents receiving piped tap water in their homes. Most people live in a dwelling or house on a separate stand or in a town/cluster/semi-detached house. The greatest number of indigent households is located in the Theewaterskloof area followed by the Overstrand. The deprivation index, which is a measure of relative deprivation across districts within South Africa, is 1.13.² The poverty rates (the percentage of households with expenditures < R800) in 2005/06, was estimated to be 31%.³

1.2 Cape Winelands District

The Cape Winelands (CW) is the second most populous District in the Western Cape with a population of just over 652 298 people (Table 1). Compared to the Overberg, more people (21.7% vs 16.5%) have medical aid coverage.¹ About 95% of people have access to piped water in their dwellings, compared to 98% in the Western Cape and 99% in the Overberg. The deprivation index was 1.23 in 2007 which is higher than the average for the Western Cape.² The District scored 5 on the socioeconomic quintile scale, which means that it is among the 20% least deprived districts in South Africa. The poverty rate was 21%.³ Actual figures for CWE may be masked, as the data presented in Table 1 are for the entire CW District. It is known that the Stellenbosch/Paarl areas are much wealthier than the CWE areas.

Table 1: Overberg and Cape Winelands District overview.*

Demographic and socioeconomic indicators	Overberg	Cape Winelands	City of Cape Town	Central Karoo	Eden	West Coast	Western Cape
Population (2007/08)	205,910	652,298	3,179,237	63,289	464,491	285,099	4,850,324
Population under 1 (2007/08)**	4,046	11,392	61,578	1,267	8,069	4,943	91,295
Medical aid coverage (%) (2007/08)	17.3	23.3	23.6	14.1	14.9	24.8	22.4
Access to piped water (%) – 2005/06***	98.5	97.8	99.4	94.7	97.7	98.7	98.9
Deprivation index (high value=most deprived) (2005/06)	1.00	1.09	1.23	1.32	1.31	0.88	-
Socio-economic quintile (1=poor, 5=best) (2005/06)	5	5	5	5	5	5	-
Poverty rate (% households with expenditure <R800pm) (2005/06)****	31	21	21	41	26	13	22

*Source, unless otherwise stated: Day C, Barron P, Monticelli F, Sello E, eds. The District Health Barometer 2007/09. Durban: Health Systems Trust; June 2009.

**Official 2007 figures from Stat SA

***2005-2006 GHS, 2007 Community Survey

****Source: Barron P, Day C, Monticelli F, eds. The District Health Barometer 2006/07. Durban: Health Systems Trust; December 2007.

1.3 Population distribution by local municipality

Table 2 lists the estimated population breakdown by local municipality for the Boland/Overberg region. In the Overberg District, the most populous area is Theewaterskloof and the least dense area is Cape Agulhas. This is to be expected given that these areas vary geographically and that the Cape Agulhas is primarily a wheat producing area. In the CWE, the largest population is in the Breede Valley (Worcester) area, which is the centre of the Region, and is one of the most economically active areas in the Boland/Overberg region.

Table 2: Population distribution for the Cape Winelands and Overberg District Municipalities

Local Municipality	Estimated Population		
Year	2005	2006	2007
CWE (CD2)	315,480	312,771	327,822
Breede River/Winelands	81,415	83,089	84,700
Breede Valley (Worcester)	146,101	149,016	151,806
Witzenberg	87,964	89,666	91,316
Drakenstein (Paarl)	193,185	197,086	200,797
Stellenbosch	118,445	120,898	123,178
Overberg (DC3)	194,698	200,626	205,961
Cape Agulhas	25,797	26,799	27,538
Overstrand (Hermanus)	52,872	54,560	56,106
Swellendam	27,045	27,872	28,611
Theewaterskloof	88,802	91,395	93,706
Total	510,178	522,397	533,783

Source: Boland/Overberg Report 2006

1.4 Mortality Profile

Mortality is considered to be the 'foundation measure' for the assessment of the burden of disease,⁴ and is a useful measure for the identification of major causes of death. It is used to assess the health status of a population and is a useful tool for health services planning and for targeting public health interventions such as health promotion and preventive strategies. Furthermore, mortality data also provides information on health differences between groups, based on gender, age, and geographical distribution.

In the Boland/Overberg Region, cause of death data has been collected since January 2004 from the Department of Home Affairs and local mortuaries.⁵ Since 2006, death data were also collected from the Paarl Home Affairs Office, thereby making data available for Drakenstein and Stellenbosch local municipalities for that year. Thus, the 2006 death data also includes deaths recorded in Stellenbosch and Drakenstein. Table 3 lists the number of recorded deaths since 2004.

Table 3: Number of deaths by sub-district, Cape Winelands and Overberg 2004-2006

Local Municipality	2004*	2005*	2006**
CWE (CD2)			
Breede River/Winelands	675	744	665
Breede Valley (Worcester)	1,253	1,292	1,368
<i>Drakenstein (Paarl)</i>	-	-	1,630
<i>Stellenbosch</i>	-	-	929
Witzenberg	713	803	784
Overberg (DC3)			
Cape Agulhas	215	238	242
Overstrand (Hermanus)	370	426	484
Swellendam	225	243	237
Theewaterskloof	780	557	621
Total	4,231	4,303	6,960

*Data for CWE and Overberg excludes deaths for Stellenbosch and Drakenstein.

**Data for CWE and Overberg includes deaths reported for Stellenbosch and Drakenstein.

The data for the section below have been reported in two previous region-specific reports.^{5 6} Using the death data, a cause of death profile for the Boland/Overberg was produced. The death data have been coded and analysed according to the Burden of Disease classification:

Group I: Pre-transitional or poverty-related causes: Communicable diseases, maternal causes, perinatal conditions, nutritional deficiencies. HIV/AIDS is not included in this group, due to the large burden that it contributes in South Africa; therefore HIV/AIDS is reported separately.

Group II: Non-communicable causes: (e.g. stroke, chronic obstructive pulmonary disease)

Group III: Injuries: Intentional and unintentional

1.4.1 Causes of Death

Analysis of the causes of death (Table 4) according to the Burden of Disease classification shows that half (50%) of the deaths were due to non-communicable disease, followed by pre-transitional diseases (23%) (Table 13). About 15% of deaths were classified as ill-defined, which is not satisfactory as the ideal value should be lower than 5%.⁵ A report reviewing death and mortality data for 2005 reported that in the Boland a larger proportion of deaths were due to pre-transitional causes compared to the Overberg.⁶ In contrast, a lower proportion of deaths due to non-communicable diseases were reported in the Boland compared to the Overberg. These differences were explained by the different age structures between the populations of the two districts. Boland has a younger population, whereas the Overberg has an ageing population and therefore a higher burden of communicable diseases.

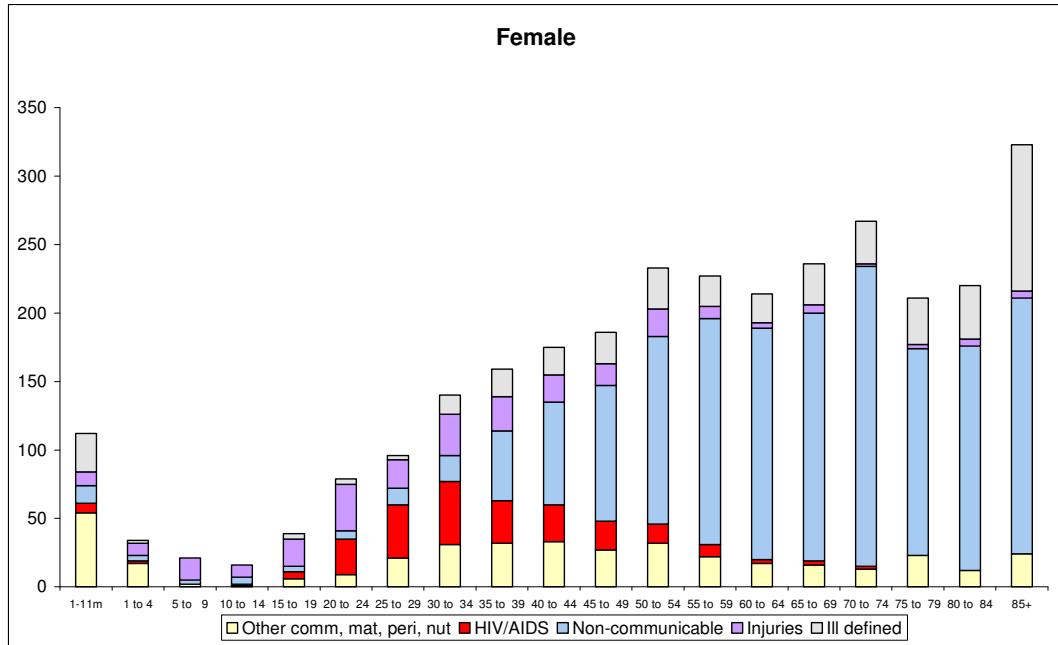
Table 4: Distribution of the causes of death, according to the Burden of Disease categorisation

Cause	2005	2006
Non-communicable	47.2%	50%
Pre-transitional causes	25.6%	23%
Injuries	15.4%	15%
Ill-defined	11.8%	12%

1.4.2 Age patterns of death by sex and age group

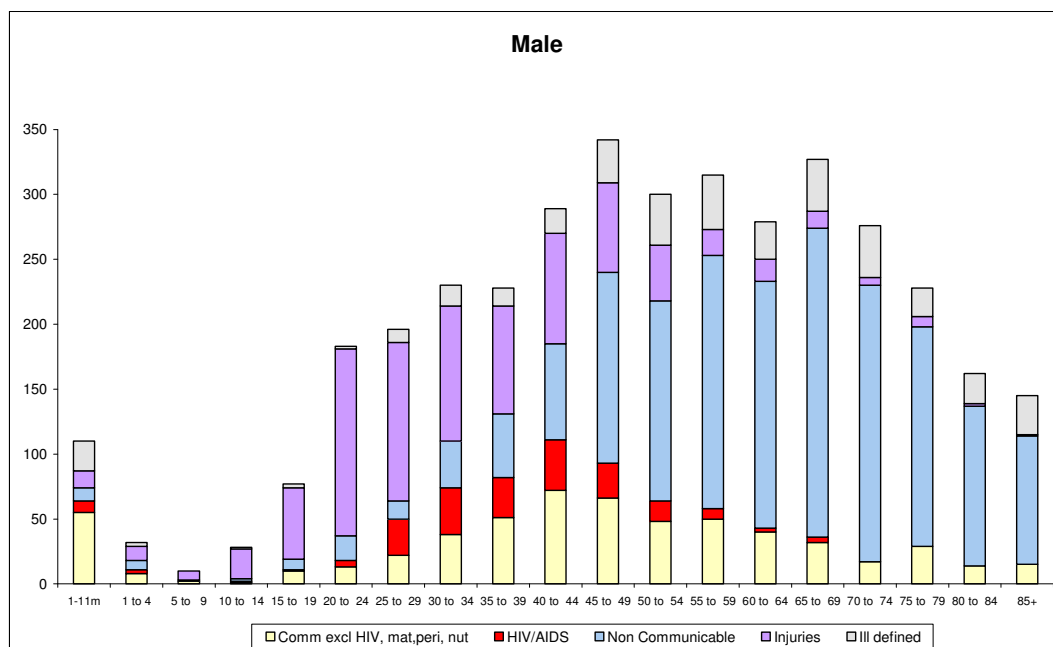
Figure 2 shows the distribution of deaths according to the Burden of Disease classification, by sex and age group. Notably, more deaths are observed among young adult males than females. Males die of injuries, with most deaths affecting the age groups 20-24 years to 45-49 years. Females, however, tend to more frequently die of HIV/AIDS, particularly those females aged between 20 and 34 years. Older people tend to more frequently die of non-communicable diseases, which is an expected finding in populations that are ageing. For both males and females the primary cause of death during infancy is communicable disease. HIV-related deaths affect all ages over 15 years, and are most pronounced in the ages 30 to 55 years for both sexes.

Figure 2: Age distribution of deaths by cause group for females, 2006.



Source: Boland/Overberg Report 2006

Figure 3: Age distribution of deaths by cause group for males, 2006.



Source: Boland/Overberg Report 2006

1.4.3 Years of Life Lost (Premature mortality)

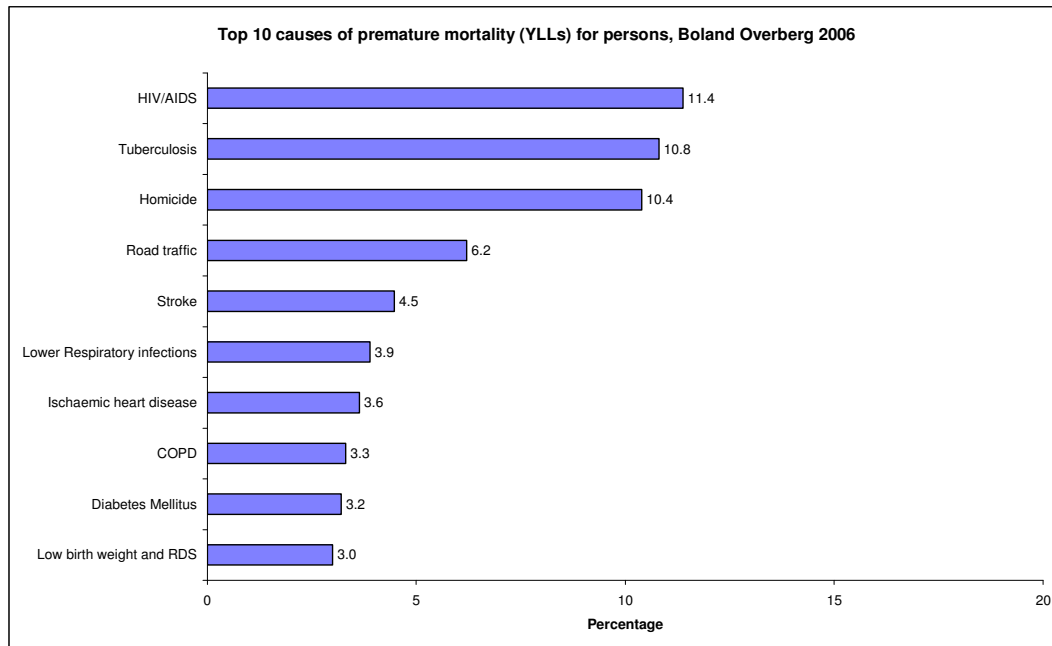
Years of life lost (YLL) is a measure of premature mortality, and provides a way of weighting preventable deaths that occur at younger ages.⁷ This summary measure of health takes into account age weighting, time discounting of 3% per annum and standard life expectancy.⁶ Thus, the younger the age at death, the greater are the YLL.

1.4.4 Years of Life Lost (all persons)

In the Boland/Overberg regions, the primary causes for YLL in 2006 are presented in Figure 4. Overall, the leading cause of YLL is HIV/AIDS, followed by TB, homicide and road traffic accidents. Non-communicable diseases occupy four of the top ten places, and contribute 14.6% to the total YLL. Lower respiratory tract infection is ranked sixth. Low birth weight and respiratory distress syndrome are important identified primary causes that affect infants. If

Drakenstein and Stellenbosch were excluded from the analysis, then the ranking would be as follows: TB, HIV/AIDS, homicide, and road traffic accidents.

Figure 4: Top causes* of premature mortality (YLLs), 2006



Source: Boland/Overberg Report 2006

*Ill-defined causes have been allocated proportionately to specified natural causes by age and sex.

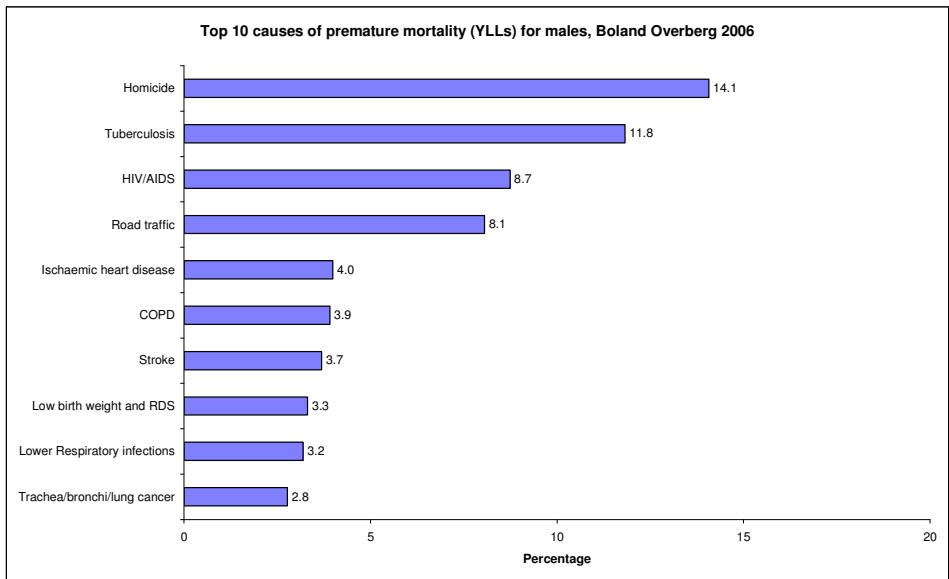
1.4.5 Years of Life Lost (males and females)

Source: Boland/Overberg Report 2006

*Ill-defined causes have been allocated proportionately to specified natural causes by age and sex.

Figure 6 lists the major causes of premature mortality for males and females, respectively. What is most striking about the results presented in these figures is that the major causes of premature mortality for both males and females are preventable. Tuberculosis and HIV/AIDS are major causes of YLL for both males and females. For males, homicide is the primary cause and for females it is ranked fourth. Non-communicable diseases, most of which can be prevented or controlled through public health measures comprise about a third of the causes for both males and females. Of concern is the contribution made to the overall burden by low birth weight and respiratory distress syndrome in infants.

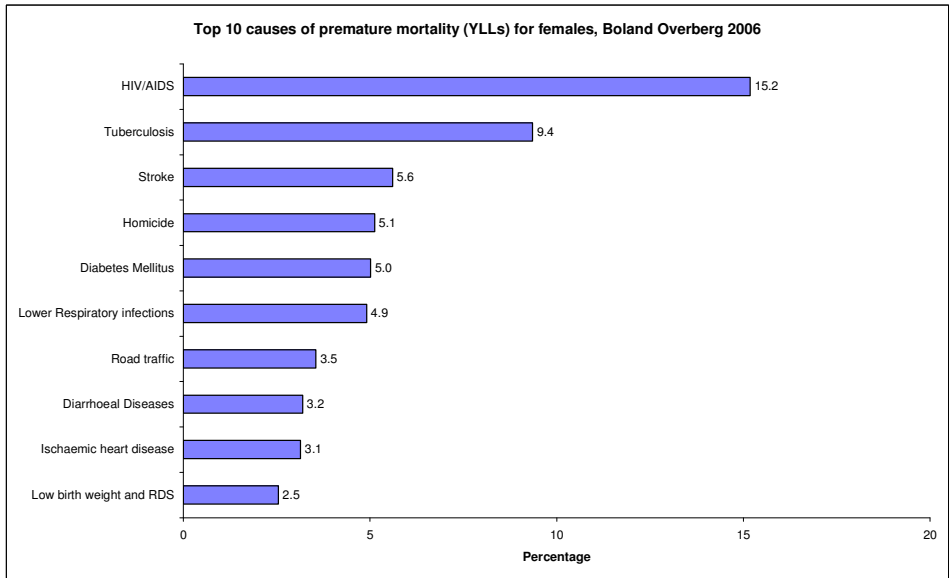
Figure 5: Top causes* of premature mortality (YLLs) for males, Cape Winelands and Overberg, 2006



Source: Boland/Overberg Report 2006

*Ill-defined causes have been allocated proportionately to specified natural causes by age and sex.

Figure 6: Top causes* of premature mortality (YLLs) for females, Cape Winelands and Overberg, 2006



Source: Boland/Overberg Report 2006

*Ill-defined causes have been allocated proportionately to specified natural causes by age and sex.

1.4.6 Years of Life Lost (all persons) by local municipality

Figure 7 lists the top 10 causes of premature mortality of persons by local municipality for the Boland/Overberg Region. For CW and Overberg, HIV/AIDS and TB are the top two causes of death. Homicide ranks within the top three in all local municipalities. Road traffic accidents are among the top three causes for many of the local areas (Figure 7).

For the CW, TB is the main cause of premature mortality in Breede River and Witzenberg. HIV/AIDS is in the top two causes for all, except for the Breede River local municipality. For the Overberg, TB is ranked first in Cape Agulhas, with homicide ranked first for Swellendam and Theewaterskloof. As with CW, HIV/AIDS is a major contributor to premature mortality across the entire District.

Figure 7: Top 10 causes of premature mortality (YLL) in persons by local municipality, Cape Winelands and Overberg, 2006 (Source: Boland/Overberg Report 2006)

Rank	CAPE WINELANDS	Breede River	Breede Valley	Drakenstein	Stellenbosch	Witzenberg	OVERBERG	Cape Agulhas	Overstrand	Swellendam	Theewaterskloof	BOLAND OVERBERG
1	HIV/AIDS (11.6%)	Tuberculosis (12.32%)	HIV/AIDS (12.4%)	HIV/AIDS (11.6%)	HIV/AIDS (13.5%)	Tuberculosis (14.9%)	Homicide (12.9%)	Tuberculosis (14.0%)	HIV/AIDSs (13.3%)	Homicide (12.7%)	Homicide (13.5%)	HIV/AIDS (11.4%)
2	Tuberculosis (10.9%)	Homicide (10.2%)	Tuberculosis (11.9%)	Homicide (11.2%)	Homicide (11.1%)	HIV/AIDS (11.5%)	HIV/AIDS (10.7%)	Homicide (11.6%)	Homicide (12.6%)	Tuberculosis (10.6%)	HIV/AIDS (11.5%)	Tuberculosis (10.8%)
3	Homicide (9.7%)	Road Traffic (7.1%)	Homicide (7.2%)	Tuberculosis (9.8%)	Road Traffic (9.3%)	Homicide (9.1%)	Tuberculosis (10.4%)	HIV/AIDS (5.9%)	Tuberculosis (7.3%)	Road Traffic (8.4%)	Tuberculosis (11.0%)	Homicide (10.4%)
4	Road traffic (6.3%)	Stroke (5.8%)	Road traffic (6.1%)	Road traffic (5.5%)	Tuberculosis (7.3%)	Stroke (4.6%)	Road traffic (5.8%)	Fires (5.9%)	Fires (4.9%)	HIV/AIDS (7.2%)	Road traffic (6.5%)	Road traffic (6.2%)
5	Stroke (4.7%)	Pneumonia (5.5%)	Pneumonia (4.0%)	Stroke (4.9%)	Stroke (4.7%)	Pneumonia (4.6%)	Ischaemic heart disease (4.3%)	Stroke (4.5%)	Pneumonia (4.5%)	Ischaemic heart disease (6.0%)	Drowning (4.2%)	Stroke (4.5%)
6	Pneumonia (4.1%)	HIV/AIDS (5.4%)	COPD (4.0%)	COPD (4.7%)	Pneumonia (3.9%)	Low birth weight & RDS (4.4%)	Fires (3.8%)	Asthma (4.1%)	Ischaemic heart disease (4.3%)	Low birth weight & RDS (5.2%)	Stroke (4.1%)	Pneumonia (3.9%)
7	COPD (3.8%)	Ischaemic heart disease (4.24%)	Stroke (3.9%)	Diabetes mellitus (4.0%)	Diarrhoea (3.8%)	Road Traffic (4.3%)	Stroke (3.7%)	Suicide (3.5%)	Road Traffic (4.2%)	Pneumonia (5.0%)	Ischaemic heart disease (3.7%)	Ischaemic heart disease (3.6%)
8	Ischaemic heart disease (3.4%)	Diarrhoea (3.6%)	Low birth weight (3.9%)	Ischaemic heart disease (4.0%)	Ischaemic heart disease (3.8%)	COPD (3.6%)	Pneumonia (3.2%)	Road Traffic (3.8%)	Suicide (3.1%)	Stroke (3.8%)	Fires (3.2%)	COPD (3.3%)
9	Diabetes mellitus (3.4%)	Lung cancer (3.1%)	Diabetes mellitus (3.5%)	Pneumonia (3.9%)	Diabetes mellitus (3.4%)	Diarrhoea (3.0%)	Drowning (3.2%)	Pneumonia (3.2%)	Pulmonary heart disease (2.9%)	Suicide (3.3%)	Pneumonia (2.8%)	Diabetes Mellitus (3.2%)
10	Low birth weight & RDS (3.2%)	Diabetes mellitus (3.0%)	Ischaemic heart disease (2.7%)	Lung cancer (3.0%)	Drowning (3.2%)	Asthma (2.6%)	Suicide (2.9%)	Ischaemic heart disease (3.2%)	Cot death (2.9%)	Pulmonary heart disease (3.0%)	Asthma (2.8%)	Low birth weight & RDS (3.0%)

1.5 Summary

- The primary cause of premature death among males is homicide/injuries. For females, it is HIV/AIDS. Tuberculosis is among the top three causes of premature deaths for both males and females.
- HIV/AIDS, TB and injuries contribute the most to premature mortality in the Boland/Overberg region. These are all preventable through addressing upstream factors, such as the socioeconomic status of the population and environmental health. TB and HIV/AIDS in particular place a huge burden on the health services, and require a well-planned and functioning integrated health care service.
- Witzenberg reports the highest rates of premature mortality, with high rates of communicable, non-communicable and HIV/AIDS.

1.6 Recommendations

- Prevention strategies for HIV (e.g. PMTCT, condom distribution, STI treatment) have to be reviewed and strengthened, where necessary.
- ART treatment roll-out is to be reviewed and strengthened.
- TB case detection and case management, as well as active case finding is to be strengthened.
- The effect of in-migration on TB and HIV prevalences are to be examined.
- VCT services are to be promoted, adequately resourced, and expanded.
- Access to health services must be improved, particularly for people living on farms and remote places.
- Delaying the age of sexual debut should be promoted, as well as limiting the number of sexual partners and sexual partnerships.
- HIV and TB 'hotspots' are to be targeted.
- Intersectoral collaboration (poverty alleviation, addressing TB) are to be prioritised.

- Road traffic accidents – intersectoral approach needed. Should be regional-specific and requires engagement with Law Enforcement agencies. Identification of traffic injury/accident 'hotspots' and further identification of the common causes of accidents is required.

2 Tuberculosis

Tuberculosis is a serious cause of morbidity and mortality in South Africa.⁸ In 2007, South Africa was ranked fourth among the 22 high-burden TB countries in the world which collectively accounts for 80% of TB cases globally.⁹ Furthermore the increased number of cases of TB has paralleled the dramatic rise in the incidence of HIV and AIDS, which has further strained health services in the country. The Western Cape is reported to have the highest incidence of new-smear positive cases (518 per 100 000) of TB in South Africa, and most (90%) patients with TB fall into the economically active age group. The TB cure rate for 2007 for the Western Cape was 77.3%, which is just short of the national target of 78%. The TB success rate was 81.9% (national and global target >85%), and the defaulter rate was 9.7% (Western Cape target <9%). The TB and HIV coinfection rate in the Western Cape is estimated to be about 30%.

The Western Cape Department of Health has accelerated their response to TB control since 2006, with the introduction of the Enhanced TB Response strategy.¹⁰ A specific aim is to pursue high-quality DOTS, with enhancement and strengthening of the DOTS strategy in 11 of the 32 sub-districts in the Province. The Breede Valley sub-district of the CWE is one of these priority areas.

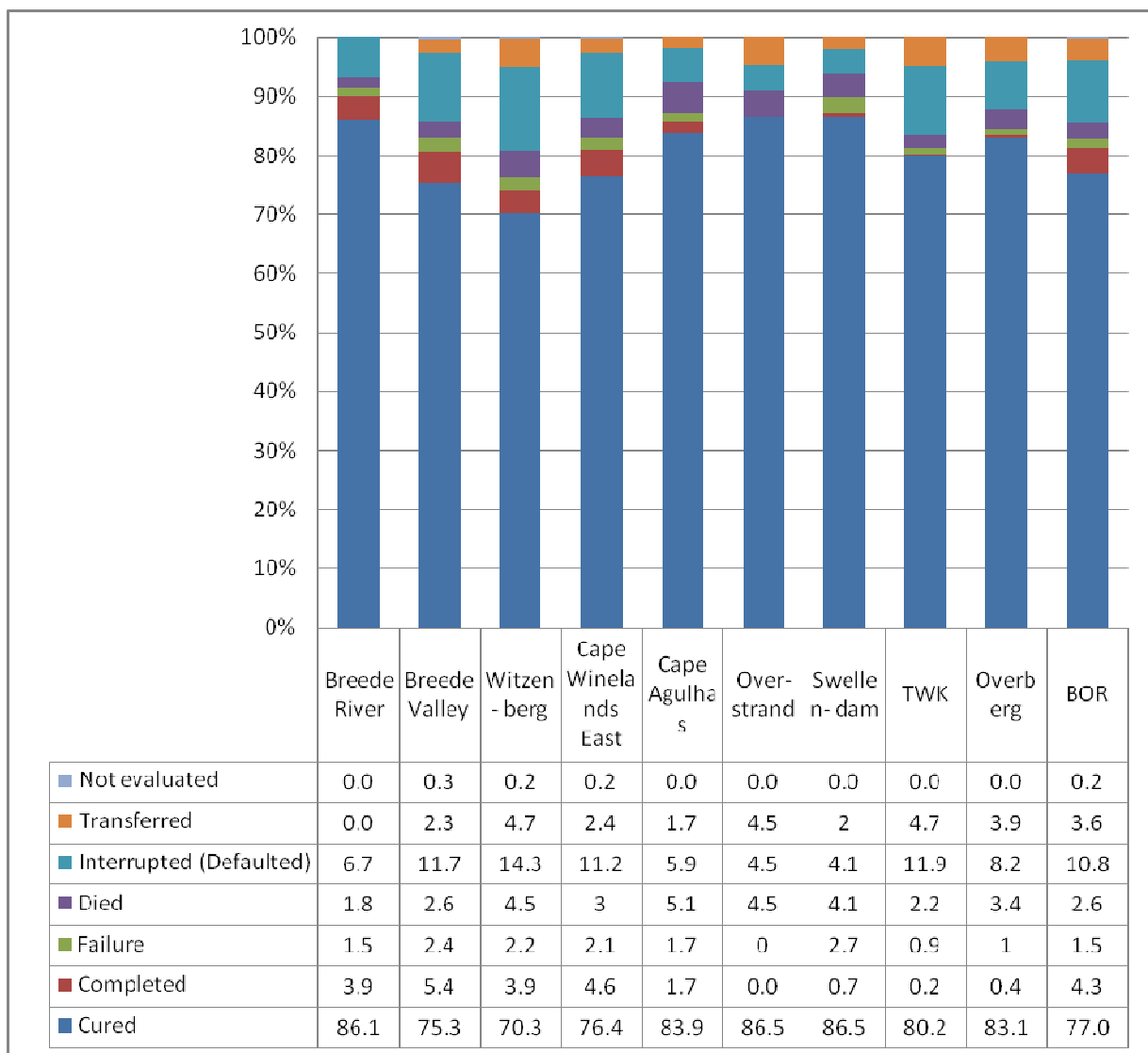
2.1 TB monitoring

According to the National TB Control Programme, patients with smear-positive pulmonary TB are monitored by sputum examination to assess their response to treatment.¹¹ Sputum smears are performed at the end of the second month (intensive phase) of treatment, and again in the final (sixth) month. During mid-2007, the timeline for sputum monitoring was changed from the third to the second month.

2.2 Treatment Outcomes

Figure 8 presents the treatment outcomes for the new cohort of smear-positives for the calendar year 2006.* Each outcome will be discussed in more detail in the section below.

Figure 8: Treatment Outcomes - New smear positive (%) 2006 (Calendar year)



* TB treatment outcome data are reported for the calendar (January-December) and not the financial year (April-March).

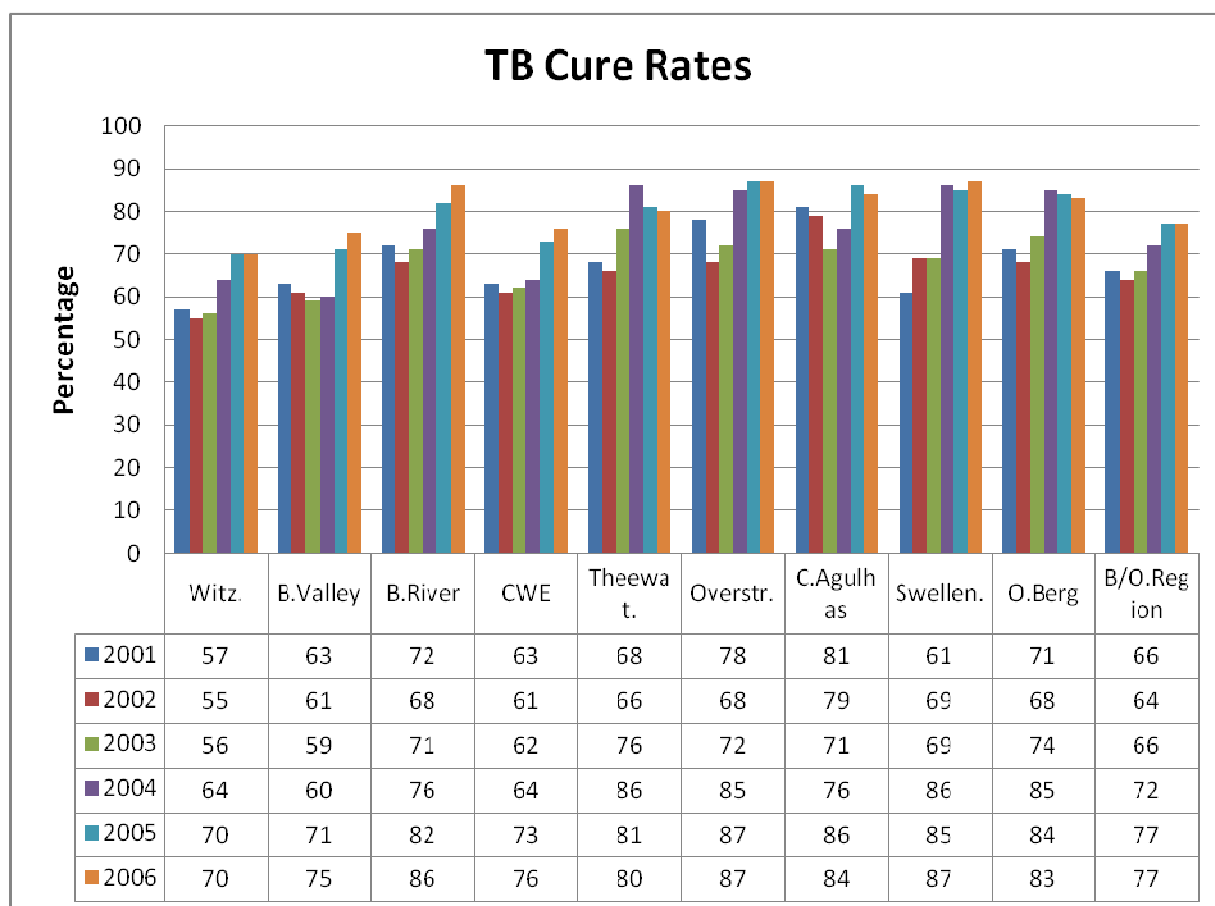
2.2.1 Cure Rates

The treatment outcome *cured* is assigned to a patient who is smear-negative at, or one month prior to, the completion of TB treatment; and also on at least one previous occasion.

The overall cure rate for the BO region was 77%, with the highest rate reported for the Overberg region (83.1%) (Figure 9). The Overstrand, Swellendam and Breede River were the best performing sub-districts, whereas Witzenberg and Breede Valley in the CWE attained cure rates of 75.4% and 70.3%, respectively. It is however important to note that cure rates may mask a certain proportion of sputum-negative cases which may in fact be culture positive, particularly if Rifampicin is used throughout the continuation phase as it is in South Africa.

Furthermore, in areas where TB death rates are high, cure rates are often reported as being low, as patients who have died are no longer included in the cohort. The HIV prevalence in Witzenberg and Breede Valley is high, and this could explain the lower cure rates in those areas, particularly if there are higher rates of deaths and higher rates of smear-negative TB amongst newly-diagnosed patients.

Figure 9: TB cure rates by local municipality, 2000-2006



2.2.2 Treatment Completed

Treatment completed refers to patients who have completed a full course of treatment but with no bacteriological proof of cure. This means that smear results were not available on at least two occasions prior to the completion of the treatment.

This indicator measures the TB programme’s success at ensuring that TB patients who cannot be classified as cured actually complete the full course of treatment. A limitation of this measure however is that patients for whom there are no sputum results (due to non-adherence to the protocol or poor programmatic management) may still be sputum-positive. The latter outcome should actually be recorded as treatment failure.

Furthermore, these results may imply that:

- Data were not adequately recorded.
- Possible laboratory failures or poor communication of results.

The treatment completion rate (i.e. without bacteriological cure) for the BO region was 4.3% (Figure 8) with CWE reporting a high completion rate of 4.6%. This contrasts with the very low rate of 0.4% for the Overberg regions. The treatment completion rate for Breede Valley was the highest, at 5.4%, as indicated in the section above.

High treatment completion rates thus imply that although certain patients received a full course of treatment, their smear results were not available for whatever reason. There is therefore no evidence as to whether the full course of treatment was successful in curing the TB, namely treatment failure. Not making this distinction has implications for future treatment outcomes and the risk of disease transmission and MDR TB development. In the BO Region it is unclear what the reasons for the high treatment completion rates are.

2.2.3 Treatment Success Rates

The *treatment success rate* is the percentage of TB cases registered over a specified period who successfully completed treatment, regardless of whether there was bacteriologic evidence of success (“cured”) or no success (“treatment completed”).¹² The denominator is the total number of new smear-positive pulmonary TB cases registered in the same period. It is heartening to see that the treatment success rate for the CW as a whole was 81.6% and for the Overberg it was 83.5%, which is above the rate for the Western Cape, which was 77.3%.

Treatment success measures the capacity of a programme to retain patients throughout the course of treatment and quite clearly demonstrates the impact of treatment on TB mortality. If outcomes such as death, treatment failure or default rates are high, as may be the case in high HIV prevalence populations, there is a possibility that the WHO target of 85% for treatment success may not be met. Thus, there is a need to strengthen HIV and AIDS treatment and care programmes.

2.2.4 Died

Died refers to the number of patients who died for any reason during the course of TB treatment regardless of the underlying cause.

Overall, high death outcomes could be linked to factors such as poor access to facilities, late diagnosis of patients, and inadequate in-patient care. Furthermore, the death rate has to be interpreted in the light of the HIV prevalence. More HIV-associated TB deaths would be expected in higher HIV prevalence areas. High death rates could also imply that patients present with advanced disease, receive ineffective treatment, or that detection in the region is poor. For both the CWE and Overberg the high death rates need to be interrogated (Figure 8). High death rates in the Breede Valley were said to be attributed to patients from other areas who died in Brewelskloof Hospital, as patients who are managed at Brewelskloof Hospital come from the entire region.

2.2.5 Treatment Failure

Treatment failure is recorded when a patient remains, or is proven to once again be smear-positive, 5 months after starting treatment.

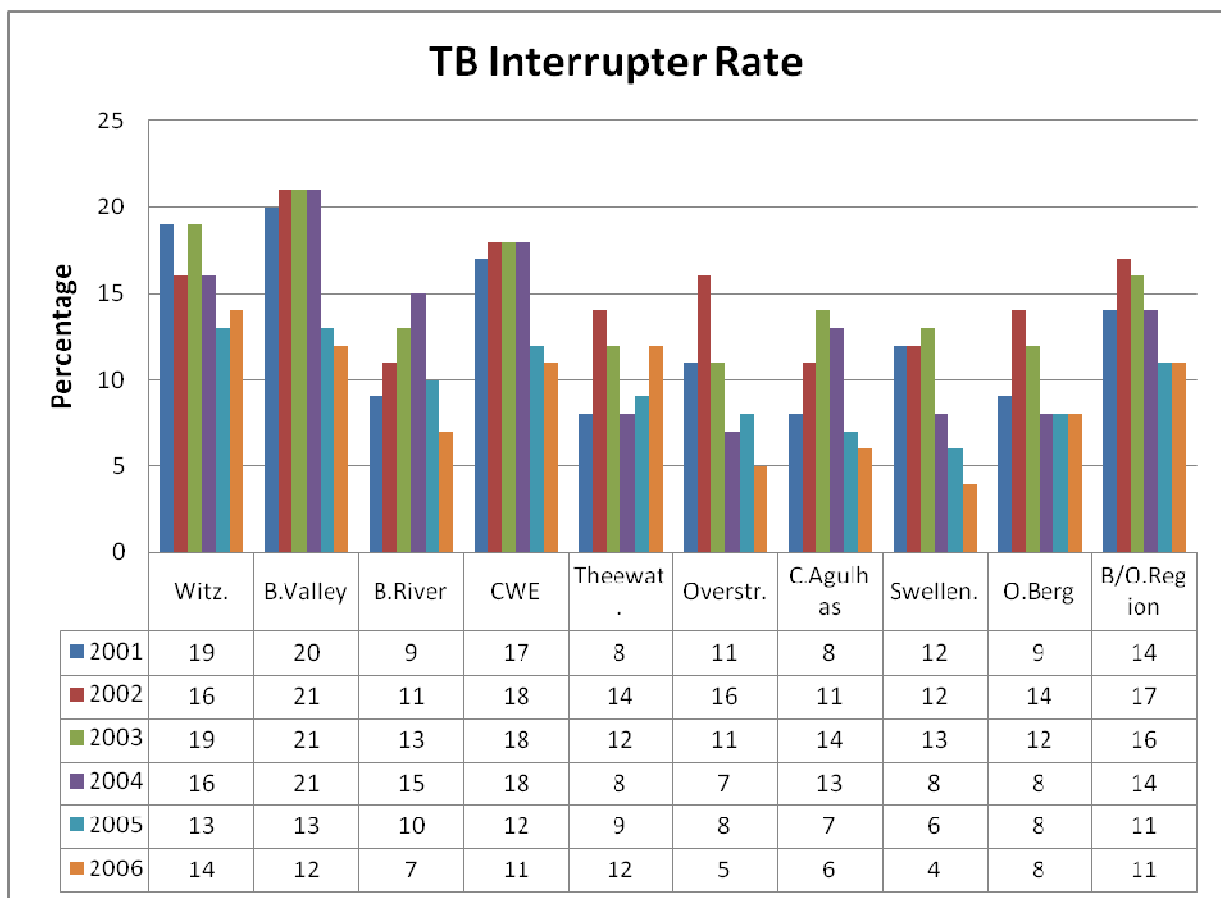
High treatment failure rates usually imply ineffective or inappropriate treatment regimens or underlying primary resistance to treatment medication. A failure rate of >3% may suggest that case management be reviewed. The Overstrand reported a failure rate of 0% (Figure 8) - and may reflect dedication on behalf of staff who work in that area, given the small numbers of patients.

2.2.6 Treatment Interrupted (Defaulted) – new smear-positive

A *treatment interruptor or defaulter* refers to a patient whose treatment was interrupted for more than 2 consecutive months before the end of the treatment period.

High defaulter rates directly impact treatment success rates and increase the patient’s risk of developing MDR. Furthermore, increased defaulter rates also impact on treatment failure rates. It is therefore important to determine why patients default from treatment, as the success of the TB treatment programme is directly influenced by this indicator. The rate for the BO region is 10.8%, with the highest rates reported for CWE: Witzenberg (14.3%), Breede Valley (11.7%), and Theewaterskloof in the Overberg (Figure 10). The high defaulter rates in the region have been ascribed to high rates of migrancy in the area.

Figure 10: TB interrupter rate by local municipality, 2001-2006



2.2.7 Transfer Out

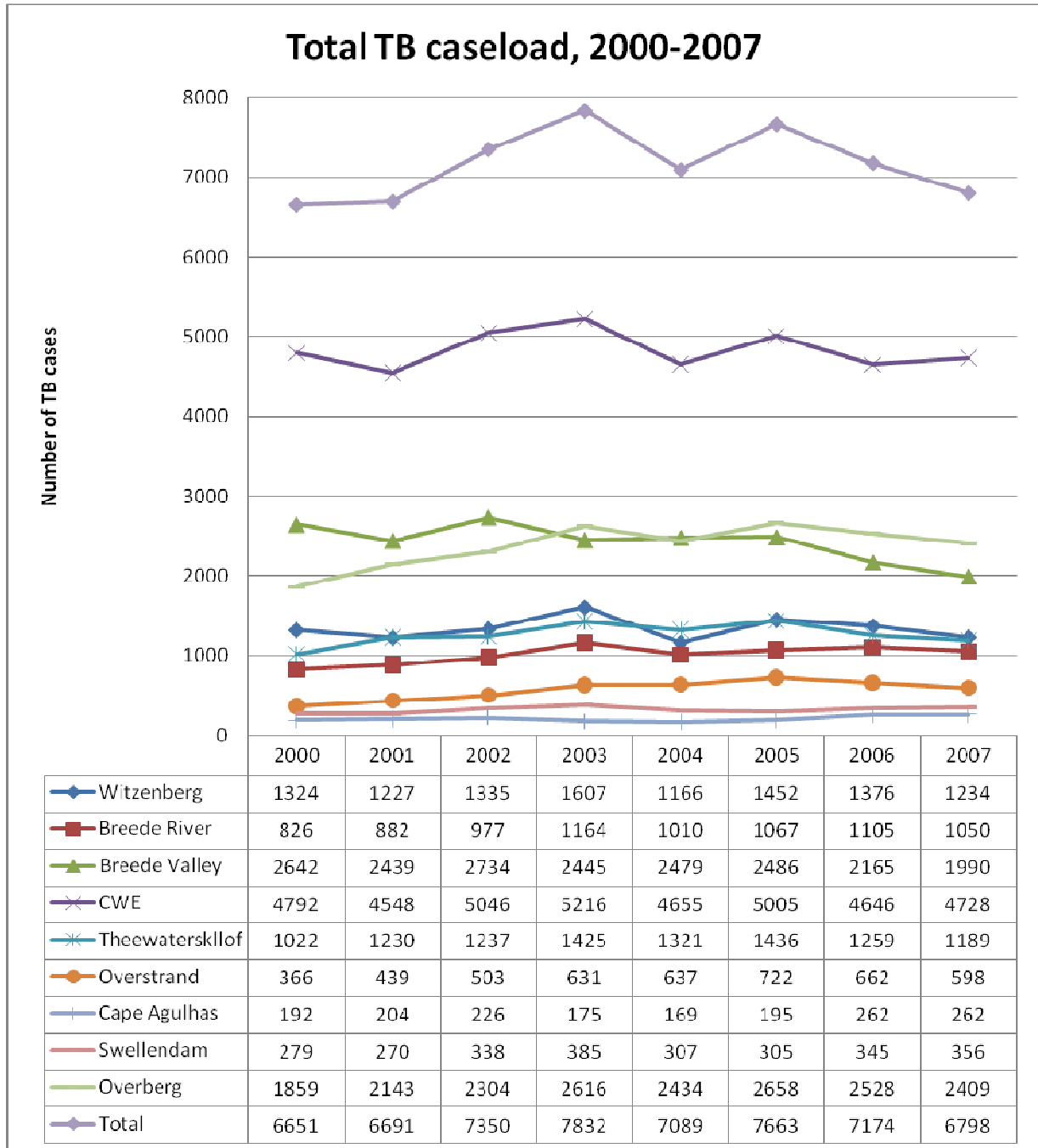
Transfer out is reported when a patient has been transferred to another reporting unit (district) and when the treatment outcome for the patient is not known.

Not knowing the treatment outcomes for TB patients may impact on the evaluation of the programme. Overall, the transfer out rates for the BOR is 3.6%. The largest numbers of transfers were reported for Witzenberg (4.7%), Overstrand (4.5%) and Theewaterskloof (4.7%) (Figure 8). It is therefore important to determine why the transfer out rates for certain municipalities are so high. Staff have attributed these rates to migrancy due to seasonal work on the farms.

2.3 Tuberculosis case (casefinding) - 2007

The total TB caseload for 2007 was 6798 (Figure 11). For CWE, 4728 (69.54%) cases were reported and for Overberg 2409 (35.44%) cases were reported. CWE reported a slightly higher incidence (680/1000) compared to the Overberg (600/1000). Overall, the percentage decrease was 5.5% between 2006 and 2007.

Figure 11: Total TB Caseload 2000-2007



2.3.1 Smear Conversion

Smear-conversion rates indicate how effective treatment is at rendering patients smear-negative after 2 and 3 months of treatment.

The smear-conversion rates for the BO region were 72.5% and 85.4% for 2 and 3 months, respectively (Table 5). The lowest conversion rates at 2 months were reported for the Witzenberg and Breede Valley municipalities. Smear conversion rates at 3 months was 85.4% but was lowest in Witzenberg at 77.2%.

Table 5: New Smear Positive PTB Smear Conversion at 2 and 3 months (%) 2007 (Calendar year)

Treatment month	Breed e River	Breed e Valley	Witze n- berg	Cape Winelan ds East	Cape Agulh as	Over - strand	Swelle n- dam	TWK	Over - berg	BOR
2 months	71.2	67.5	51.9	63.7	82.6	92.8	93.2	85.7	88.2	72.5
3 months	85.3	82.1	77.2	81.4	87.2	94.7	95.8	91.5	92.5	85.4

2.4 MDR TB

Multidrug-resistant tuberculosis (MDR TB) is defined as tuberculosis disease where there is resistance to both isoniazid and rifampicin, with or without resistance to other anti-tuberculosis drugs, as demonstrated by laboratory tests. The Western Cape is one of the provinces with the highest burden of MDR TB.

Table 6 lists the number of MDR cases for the CWE and Overberg regions for 2007/08. Five XDR cases were reported for 2007.

Table 6: MDR cases, Cape Winelands East and Overberg, 2007 and 2008

Year	Q1	Q2	Q3	Q4	Total
2006	15	17	18	18	68
2007	23	47	18	27	115

2.5 Discussion

TB is a major public health challenge in the BO region. There has however been an overall improvement in the TB treatment outcomes, particularly the cure rates in all sub-districts. The poorest performing sub-districts are: Witzenberg, Breede Valley, and Theewaterskloof. It is however important to recognise that the baseline for these sub-districts were much lower than for the others.

In the Breede Valley the HAST coordinator left, resulting in a 6-month period in which there was no coordinator, and this most likely influenced the poorer outcomes reported for this area. Discussions with staff suggested that high completion rates were most likely attributed to non-adherence to the treatment guidelines. Furthermore, the timelines for 'closing' the ETR.net database are tight, which influences the reported smear conversion rates. Thus, there are logistical reasons for the smear conversion rates appearing as they are. Furthermore, the testing timelines were changed from 3 to 2 months in mid-2007. Witzenberg and Theewaterskloof are also affected by seasonal workers and this may affect the default rates.

The Overberg sub-district won the national prize for the best management of TB. This has been attributed to:

- Dedicated management
- Strict adherence to protocols
- Manageable numbers
- Good feedback of statistical data

2.6 Recommendations

- What is needed?
 - NGOs to get more involved, particularly with providing support in the poorer performing sub-districts.
 - Mid-level workers to have improved employment options.
 - Proactive case-finding – finding innovative ways of early detection of symptomatic patients and review of models that have been shown to be effective in other countries.
 - Shorten the time from diagnosis to commencement of treatment.
 - Patients with uncomplicated pulmonary TB should not be eligible for grants.
 - Review the reporting timelines for sputum conversion on the ETR.net.
 - In areas where the outcomes are poorer, improved management and more resources are required and successes need to be exported and replicated from other areas in the region.
 - A new prevention plan needs to be considered and implemented in the region and throughout the entire province.

3. HIV and AIDS

The HIV epidemic is a major public health problem globally, with the burden being greatest in sub-Saharan Africa. South Africa is estimated to have one of the highest incidences of cases in the world,¹³ and is said to have the fastest growing epidemic in Southern Africa. The Millennium Development Goal 6 is to halt and reverse the spread of HIV and AIDS and other infectious diseases by 2015. Since 1990, the South African Department of Health has been conducting anonymous annual HIV antenatal surveys amongst a sample of pregnant women attending public health facilities.^{14 15 16 17 18 19 20 21} The primary aim of this survey is to estimate the HIV prevalence amongst young, sexually active, heterosexual adults at national, provincial and district level. Since 2001, the Western Cape Department of Health has conducted area level surveys (ALS) with the aim of obtaining more accurate estimates of HIV prevalence amongst pregnant women residing within a specified health care area.^{22 23 24 25 26 27} Twenty-five health districts in the Western Cape are included in the ALS. In 2006, the national survey was expanded to provide district level estimates, but the national survey remains a subset of the area-level survey suggesting that the estimates approximate each other.

In 2007, the National HIV survey reported an estimated HIV prevalence of 12.6% (95% CI: 10.1%-15.6%) for the Western Cape. The Western Cape HIV survey estimates the HIV prevalence to be 16.2% (95% CI: 15.4%-17.0%). The difference in the estimates can be ascribed to the larger sample size used in the Western Cape ANC survey, compared to the national survey. It is also important to note that the national survey results lies within the confidence interval of the Western Cape survey.

3.1 Antenatal Prevalence

Table 7 shows the HIV prevalence results for the years 2005 to 2007 for the Province. The ALS results show an increase in the prevalence in the Overberg and Cape Winelands districts.

Table 7: HIV prevalence in Western Cape Districts 2005-2007

District	2005 HIV Prevalence (95% CI)	2006 HIV Prevalence (95% CI)	2007 HIV Prevalence (95% CI)	
	Area Level Survey	Area Level Survey	Area Level Survey	National Survey
Cape Winelands	11.4% (9.7 – 13.1)	12.6% (10.9 – 14.3)	12.6% (10.6 -14.6)	12.8% (10.1 – 16.1)
Central Karoo	8.9% (3.8 – 14.1)	6.5% (3.7 – 10.3)	14.3% (8.8 -19.8)	23.6% (13.2 – 37.0)
Eden	12.3% (10.7– 14.6)	13.8% (11.3 – 14.9)	13.8% (11.6 -16.0)	13.1% (9.7 – 17.4)
Metropole	17.0% (16.0 – 18.1)	18.2% (17.2 – 19.3)	18.0% (16.9 -19.1)	16.1% (14.7 – 17.5)
Overberg	13.2% (10.6 – 16.1)	14.1% (11.5 – 17.1)	21.2% (17.2 -25.2)	19.4% (13.3 – 26.9)
West Coast	8.5% (6.9 – 11.1)	9.1% (8.3 – 9.8)	8.7% (6.6 -10.9)	10.2% (6.4 – 15.2)
Western Cape	15.0% (14.3– 15.7)	14.5% (13.7 – 15.3)	16.2% (15.4- 17.0)	12.6% (10.1 – 15.6)*

* 15.3% (12.2 – 18.5) if analysed by method used in previous years

Courtesy of the Western Cape Department of Health

Table 8 shows sub-district level HIV prevalence estimates for the Overberg and Cape Winelands districts. The Overstrand and Theewaterskloof were identified as two of five sub-districts that consistently showed high prevalence rates. The results however should be interpreted with caution as the actual numbers of women sampled were small. Small numbers may incorrectly inflate the estimates and make the prevalence appear higher than it actually is. Breede River (10.9% (95% CI: 5.8%-16.0%)) and Witzenberg (13.9% (95% CI: 9.4%-18.5%)) report the highest prevalences of HIV.

Table 8: HIV Prevalence for the Western Cape by Subdistrict 2007 based on ALS

Overberg	Cape Agulhas	6.5 (0*-14.5)
	Overstrand	25.1 (18.8-31.4)
	Swellendam	1.8 (0*-5.2)
	Theewaterskloof	26.6 (19.8-33.3)
Overberg Total		21.2 (17.2-25.2)
Cape Winelands	Breede Valley	7.7 (4.2-11.2)
	Breede river	10.9 (5.8-16.0)
	<i>Drakenstein</i>	<i>12.3 (8.5-16.1)</i>
	<i>Stellenbosch</i>	<i>20.5 (16.5-24.5)</i>
	Witzenberg	13.9 (9.4-18.5)
Cape Winelands		12.6 (10.6-14.6)

* Confidence interval crosses zero due to weighted estimation procedures, hence zero is reported for the lower confidence interval.
Courtesy of the Western Cape Department of Health

Evaluating the change in the trend of HIV prevalence, according to the National dataset, from 2005 to 2006 is influenced by a change in methodology. In 2006, the sample size and number of facilities differed from those included in the 2005 survey, thus affecting the interpretation of the trend analysis data when comparing 2006 to previous years.²⁸

3.2 Prevention Programmes

3.2.1 Voluntary Counselling and Testing (VCT)

The Voluntary Counselling and Testing (VCT) programme serves to increase the detection of HIV positive cases. The identification of HIV positive individuals is important for early anti-retroviral treatment initiation, the prevention of opportunistic infections, and the institution of behavioural change strategies to prevent the further spread of HIV. Overall, testing has improved with the expansion of the Prevention of Mother-to-Child Transmission of HIV (PMTCT) programme.

VCT is offered as part of routine services, and is actively encouraged for those who attend TB and STI services. For the BO Region, uptake is high for those who present for investigation and treatment of TB, but the numbers agreeing to be tested are slightly lower in the Overstrand (Table 9). Uptake rates are lower for people presenting with STIs. The HIV prevalence is higher in the Breede Valley (12.5%), Witzenberg (13.6%), Overstrand (11.4%) and Theewaterskloof

(10.4%) local municipalities. The latter data also reflects higher positivity rates in these areas, which is in keeping with the higher estimates determined by the antenatal survey. The BO Region has exceeded its target for VCT, which was 12 772 for the CWE, and 13 700 for the Overberg.

Table 9: VCT testing

Sub-district facilities	Service			Accept Testing			Total tested	TB +	STI +	Other +	Positive	TOTAL POSITIVE
	TB	STI	Other	TB	STI	Other						
Breede Valley	875	346	4594	874	339	4591	5804	81	77	567	725	12.5%
Breeriver/Winelands	682	767	3736	659	753	3599	5011	55	64	244	363	7.2%
Witzenberg	787	566	5070	778	566	4933	6277	104	97	651	852	13.6%
CAPE WINELANDS EAST TOTAL	2344	1679	13400	2311	1658	13123	17092	240	238	1462	1940	11.4%
Cape Aghulhas	122	146	2811	122	146	2812	3080	4	16	100	120	3.9%
Overstrand	713	1272	3924	664	1059	3769	5492	123	160	342	625	11.4%
Swellendam	499	406	3567	495	409	3567	4471	25	28	163	216	4.8%
Theewaterskloof	639	319	4260	629	323	3862	4814	64	37	399	500	10.4%
OVERBERG TOTAL	1973	2143	14562	1910	1937	14010	17857	216	241	1004	1461	8.2%
TOTAL	4145	3761	28401	4039	3535	27556	35130	442	480	2281	3203	9.1%

3.2.2 Prevention of Mother-to-Child Transmission of HIV (PMTCT)

VCT uptake amongst antenatal clients is very good throughout the region (Table 10). Of the 4065 clients attending antenatal care (ANC) in the Boland/Overberg Region, 98.6% accepted VCT. Of these, 11.5% were positive. Positivity rates were highest in Witzenberg (12.2%), Overstrand (18.0%) and Theewaterskloof (10.2%). Overall, 99.78% accepted PMTCT, which is a very good rate and is consistently high throughout the Region.

Table 10: VCT uptake amongst antenatal clients

Sub-district facilities	Service Attended	Accept Testing	VCT uptake	MTCT +	Accept PMTCT	%ACCEPT TESTING	POS
Breede Valley	2712	2696	99	230	231	99.4	8.5
Breeriver/Winelands	1627	1610	99	72	72	99.0	4.5
Witzenberg	1871	1854	99	227	227	99.1	12.2
CAPE WINELANDS EAST TOTAL	6210	6160	99	529	530	99.2	8.6
Cape Aghulhas	438	416	95	18	18	95.0	4.3
Overstrand	1406	1381	98	248	247	98.2	18.0
Swellendam	514	514	100	23	23	100.0	4.5
Theewaterskloof	1707	1699	100	173	173	99.5	10.2
OVERBERG TOTAL	4065	4010	99	462	461	98.6	11.5

3.2.3 PMTCT – Baby Follow-up

In total, 832 babies were registered onto the PMTCT programme. Most babies received formula feeding (94.8%), with compliance ranging from 70.0% in Witzenberg to 91.7% in Swellendam (Table 11). Overall, 3.8% of babies were transferred out; 1.1% died, and 84.7% were well at the time of the PCR test. The PMTCT transmission rate, as evidenced by the percentage of babies who tested positive was 3.2% for the CWE, 7.9% for the Overberg and 5.6% overall. The highest rates were reported for Cape Agulhas, but the absolute numbers are very small.

It must however be noted that the data reported in Table 11 needs to be interpreted with caution. The apparent lower rates in the CWE are actually as a result of the larger number of infants who are lost to follow-up. The latter has biased the results to suggest a more favourable outcome.

Table 11: PMTCT

Sub-Districts	Number of babies registered	Feeding Choice		Good Formula Compliance			Transfer In (n)	Transfer Out	Status at PCR				Accept PCR Test		Transmission rate (%)
		Formula	Breast-feeding	Yes	No	Transfer Out			Well	Sick	Died	Lost to Follow-up	Yes	No	
Breede River-Winelands	109	94.5%	5.8%	81.6%	11.7%	7.8%	7	7.3%	84.4%	1.8%	0.0%	6.4%			3.2
Breede Valley	191	99.0%	1.1%	88.4%	10.6%	1.1%	3	1.0%	90.1%	1.0%	1.6%	6.3%			3.6
Witzenberg	111	99.1%	0.9%	70.0%	24.5%	5.5%	0	4.5%	75.7%	3.6%	0.0%	14.4%			2.4
Cape Winelands East	411	97.8%	2.2%	81.6%	14.7%	4.0%	10	3.6%	84.7%	1.9%	0.7%	8.5%			3.2
Cape Agulhas	23	91.3%	9.5%	209.5%	4.8%	4.8%	1	4.3%	87.0%	0.0%	0.0%	8.7%			10.0
Overstrand	199	91.0%	10.5%	103.3%	2.8%	0.6%	0	2.5%	88.4%	1.5%	0.5%	6.5%			7.3
Swellendam	25	96.0%	4.2%	91.7%	8.3%	0.0%	0	0.0%	92.0%	0.0%	4.0%	4.0%			8.7
Theewaterskloof	174	92.5%	8.1%	79.5%	16.8%	5.0%	0	6.3%	79.3%	4.0%	2.3%	8.0%			8.4
Overberg	421	91.9%	9.0%	98.4%	9.0%	2.6%	1	4.0%	84.8%	2.4%	1.4%	7.1%			7.9
Cape Winelands East Overberg	832	94.8%	5.6%	89.9%	11.9%	3.3%	11	3.8%	84.7%	2.2%	1.1%	7.8%			5.6

3.3 Antiretroviral Treatment

Antiretroviral treatment (ART) was first rolled out to three sites in 2004. At the end of 2007, nine sites were accredited to provide ART in the region. The total number of patients enrolled onto the programme was 2138, which included 1924 (90.0%) adults and 214 (10.0%) children (Table 12). Brandvlei Correctional Services, Caledon Hospital and Brewelskloof Hospital were the newly accredited sites for 2007.

Table 12: Cumulative number of patients receiving antiretroviral treatment, 2007

D. Accumalative number of patients receiving ART Treatment at the ART Sites (Jan - Dec 2007)												
	Branvlei Corr. Serv	Brewelskloof Hosp	Ceres Hosp	Worcester Hosp	Robertson Hosp	Cape Winelands East	Caledon Hosp	Grabouw CHC	Hermanus Hosp	Swellendam Hosp	Over- berg	Cape Winelands East / Overberg
Adults	14	10	295	651	292	1262	47	186	363	66	662	1924
Children	0	5	16	85	43	149	2	31	22	10	65	214
Total Patients	14	15	311	736	335	1411	49	217	385	76	727	2138

3.4 Summary

HIV and AIDS remain a problem in the Boland/Overberg Region. VCT services are readily available in the region and the targets for 2007 have been exceeded for both the CWE and the Overberg. The PMTCT programme is fully rolled out, and the uptake rates are high. However, loss to follow-up of babies who are put onto the PMTCT programme is of concern and has to be monitored more closely.

As indicated in the 2006 BO Health Status Report, a more clearly defined strategy for health and social services needs to be put into place. These should include interventions targeting prevention strategies, plans for minimizing the social impacts of the disease, and plans to protect the well-being of HIV and AIDS orphans.

3.5 Recommendations

- Strengthen VCT and PMTCT programmes, including strengthening the follow-up of babies on the PMTCT programme.
- Support and maintain the ART roll-out.
- Support infant feeding practices.
- Increase and strengthen intersectoral approaches to HIV prevention and health promotion.

4. Child Health

Child health is of major Public Health concern globally, particularly in low-to-middle income countries. In recent years, various global goals for child health have been set to ensure a reduction in child mortality and in the incidence of preventable diseases. The Millennium Development Goal 4 aims to achieve a two-thirds reduction in child mortality by 2015, compared to 1990. The United Nations General Assembly Special Session (UNGASS) goals for 2010 are to achieve a target of 90% full immunization coverage for children younger than 1 year of age, and national coverage of at least 80% in every district.

4.1 Immunization Coverage

Immunization coverage is useful for measuring progress towards the Expanded Programme of Immunizations' (EPI) goal of reducing morbidity, disability and mortality due to diseases that are preventable through vaccinations.²⁹ More specifically, it measures the ability of the health system to deliver the recommended vaccines in the first year of life.²⁹ The diseases that are targeted in South Africa are: tuberculosis, poliomyelitis, diphtheria, measles, tetanus, pertussis, and Hepatitis B. Immunisation coverage is calculated by dividing the number of new children < 1 year of age who are fully immunized by the estimated population under 1 year. A child who is *fully immunized under 1 year – new*, is defined as having completed his/her primary course of immunization before the age of one. A primary immunization course includes:

- BCG – which protects against miliary tuberculosis or tuberculous meningitis.
- OPV 1,2,3 - Oral polio vaccine
- DTP-HiB (Diphtheria, Tetanus, Pertussis –) 1,2,3 – Protects against Diphtheria, Tetanus, Pertussis, Haemophilus influenza B and is used as a proxy for vaccine availability in the province. Haemophilus influenza B is the leading cause of bacterial meningitis in infants and children under 5 years old.
- Hep B 1,2,3 - Hepatitis B vaccine is used for long-term control of chronic Hepatitis B infection and its consequences (namely, cirrhosis and liver cancer).
- 1st measles dose before age 1 years – for measles prevention

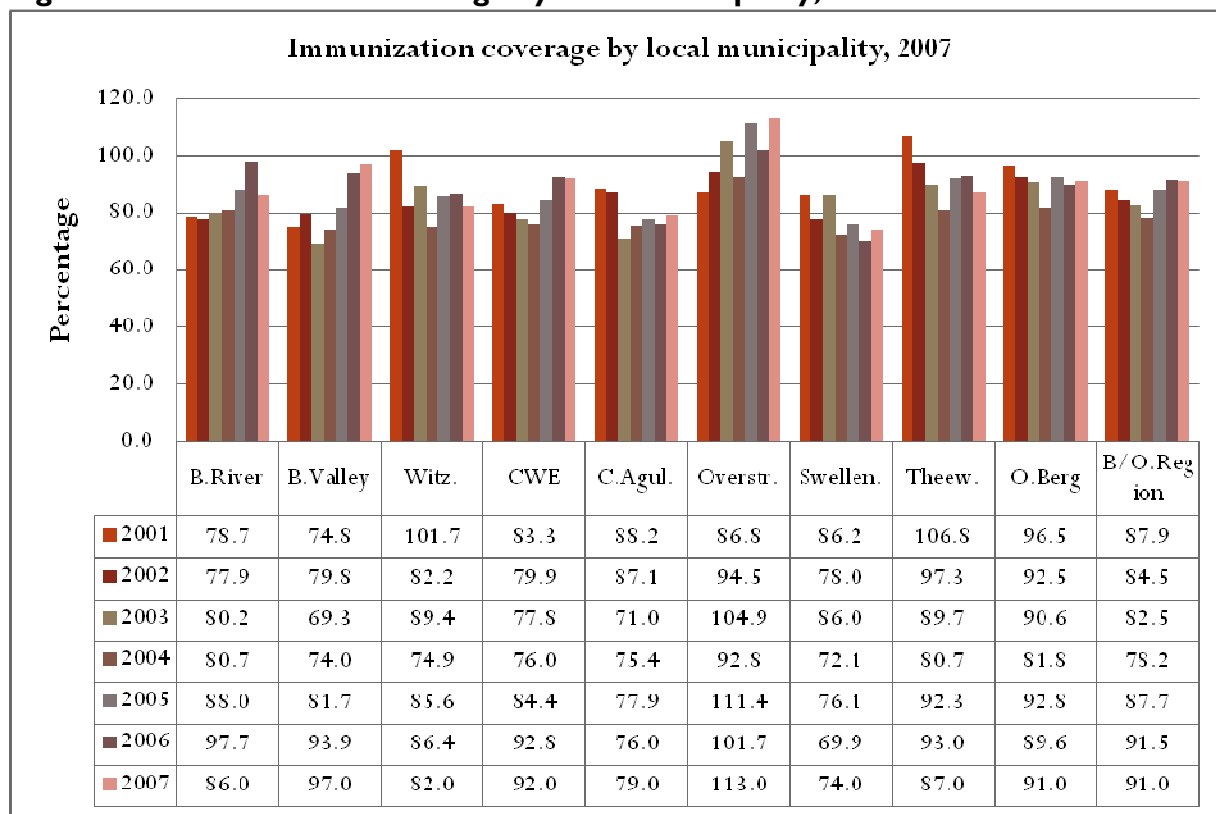
Immunisation coverage can be assessed using routinely collected data (as is done in South Africa) or by conducting population-based surveys. Based on routinely collected data, coverage

for the BO regions was estimated to be 91% (Figure 12), which is above the provincial target of 90%. The lowest coverage was reported in Swellendam (74%), followed by Witzenberg (82%). In the Overstrand, the coverage was estimated to be 113%.

Coverage values exceeding 100% may reflect that the population figures provided by Statistics South Africa underestimate the true population figures, thereby resulting in an overestimation of the true immunization coverage estimates. Furthermore, factors such as population migration, changes in the birth rates, and infant mortality may all impact the estimation of the population figures.²⁹ In previous years, when provincially-derived estimates of the population size were used to determine immunization coverage, the estimates were lower than that reported using the Stats SA data.

In 2005, a population-based immunization coverage survey using the aforementioned provincial population estimates was conducted.³⁰ Using the survey estimates, the reported vaccine coverage for the CWE was lower (72%) than the estimation obtained using the Stats SA figures (84%). For the Overberg, the vaccine coverage figure was 73% compared to 93% using the Stats SA figures. These results therefore suggest that the true immunization figures for the BO Region may in fact be lower than is reported in Figure 12. Furthermore, the survey results were in fact closer to those obtained when assessing immunization coverage by using provincially-derived data.

Figure 12: Immunization coverage by local municipality, 2007



Some explanations for low coverage were offered by Regional staff. These are presented in the section below.

- People come from neighbouring districts for antenatal bookings and deliveries, but leave before their children are fully immunized. This has been reported to be a common occurrence in the Swellendam and Overstrand sub-districts.
- Some children are left in the care of their grandmothers who are too old to bring them in to the health facilities.
- During the winter months patients tend to not visit the health facilities as regularly as they do during summer months.
- During the third quarter of 2007/08, regional staff arranged a door-to-door visit. They discovered that during December many community members leave the area temporarily. Attendance is also affected by the increased rates of alcohol abuse at that time.

- Many private patients take their children to specialists who work in larger towns. These immunizations are therefore often not counted as part of the routine data.
- Further investigation into the low coverage estimates in the Swellendam sub-district revealed that the actual number of births in the area was lower than the estimate provided by Stats SA.
- Overstrand reported an increase in hospital deliveries, but this was not reflected in the Stats SA figures, i.e. there are more babies to immunize than babies in the 'denominator'.
- Two national measles campaigns took place between May and July 2007.

4.1.1 Recommendations

- Repeat the field survey conducted in 2005, as this is the most reliable reflection of the truth and has been proven to be a powerful way to motivate staff.
- There is a plan for each sub-district to embark on the Reach Every District (RED) strategy. Review progress made on implementation of survey study recommendations.

4.2 Child Mortality

Despite a decrease in the global under-five mortality rate trends over the past 30 years, South Africa is one of 12 countries where a local rise in under-five mortality rate has been reported. It is thus estimated that South Africa will most likely not achieve the Millennium Development Goals of attaining a two-thirds reduction in child mortality by 2015, compared to 1990.³¹

In 2006 a Saving Children survey of 39 hospitals in 9 provinces in South Africa was conducted.³² Children from birth to 18 years admitted to children's wards were included in the analysis. Most (64%) of in-hospital child deaths occurred in children < 1 years of age, with a large majority of these deaths occurring in the neonatal period (first month of life). About a third (33%) of deaths occurred during the first 24 hours of admission. Just under two-thirds (65%) of children who died were malnourished, and 49% were eligible to receive anti-retroviral therapy on the basis of their HIV staging but did not. The report also shows that the primary causes of death of children were: acute respiratory tract infections (including *Pneumocystis Carinii Pneumonia*), diarrhoeal disease, sepsis, and TB. The health context in which most children lived were characterized by high rates of HIV, malnutrition and poverty; and most of the modifiable

factors occurred in the home, clinics, emergency and paediatric wards (attributable to clinical personnel).

In South Africa, the effect of HIV has resulted in a steady increase in the infant mortality rate since the early 1990s, which is in contrast to the decline observed between 1980 and 1990. In 2000, the estimated infant mortality rate for South Africa was 59 per 1000 live births.³³ In 2000, the IMR in the Western Cape was the lowest in the country, with a rate of 31.7 per 1000 live births.

In the Western Cape the Child Healthcare Problem Identification Programme (CPIP) was introduced at Eben Donges (now renamed Worcester) and George Hospitals in 2004. It was subsequently expanded to include more facilities.³² The total number of admissions was 8309 and the in-hospital mortality rate was 1.1%, with 3 modifiable risk factors per death. The primary causes of death were: septicaemia, pneumonia/acute respiratory infection, acute diarrhoea/hypovolaemic shock, suspected *Pneumocystis Carinii* Pneumonia (PCP), and bacterial meningitis. Most deaths occurred within the first 3 days of admission and after-hours. Data from Worcester Hospital, showed that out of 3611 admissions, 19 deaths were reported, giving an in-hospital mortality rate of 0.5%. The mortality rate was highest for the age category 1-12 months (6.3%), followed by the 1-5 year age group (21%). Most (42%) of the deaths occurred in children with severe malnutrition and 32% in children underweight for age; about a quarter were HIV positive. Of those who were clinically staged for AIDS, stage 4 (21%) was the most common. The top five 'all diagnoses' were: acute diarrhoea (26%), septicaemia (21%), pneumonia, ARI (16%), suspected PCP (16%), and other serious infections (5%).

4.2.1 Infant mortality

The Infant Mortality Rate (IMR) measures deaths during the first year of life, and is defined as the probability of a child born in a specified year dying before reaching the age of 1 year.²⁹ In the first few months of life these deaths could be due to genetic or structural malformations, or due to antenatal or obstetric complications. In later months, mortality may more likely be associated with social and environmental conditions. A limitation of the IMR measure however, is that it does not indicate whether the deaths occur in the neonatal or post-natal periods.

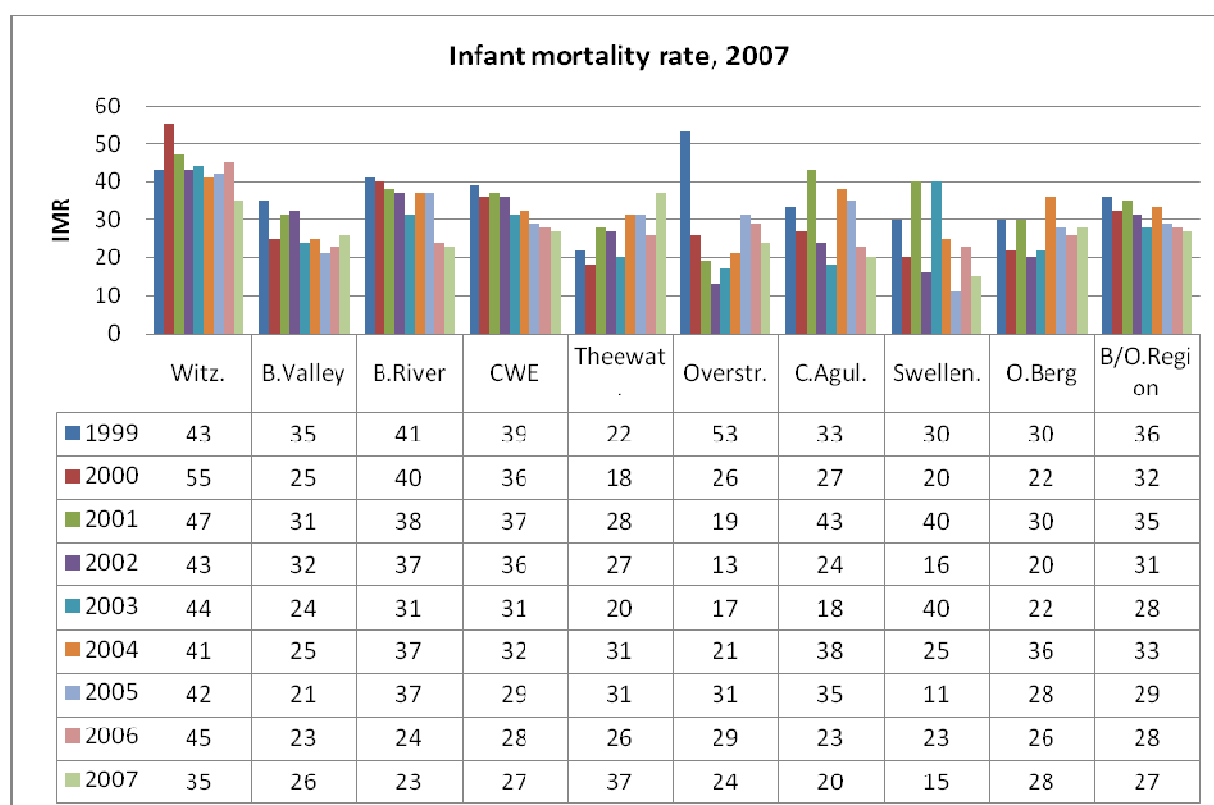
In the BO Region, 279 deaths were officially reported to the Department of Home Affairs for children under the age of 1 year resulting in an infant mortality rate of 27 per 1000 for the BO region (Table 13). The highest rates were reported in Witzenberg (35 per 1000 live births) and Theewaterskloof (37 per 1000 live births). The lowest rates were reported for Swellendam (7 per 1000 live births) and Cape Agulhas (8 per 1000 live births), but the actual numbers of births and deaths in these sub-districts were low in comparison to the rest of the region.

Table 13: Under-1 and under-5 mortality rates for Cape Winelands and Overberg, 2005-2007

DISTRICT	2005					2006					2007				
	BIRTHS	<1 YR DEATHS	DEATHS / 1000	<5 YR DEATHS	DEATHS <5 YEARS / 1000	BIRTHS	<1 YR DEATHS	DEATHS / 1000	<5 YR DEATHS	DEATHS <5 YEARS / 1000	BIRTHS	<1 YR DEATHS	DEATHS / 1000	<5 YR DEATHS	DEATHS <5 YEARS / 1000
Breede River / Winelands	1,518	56	36	73	48	1 449	35	24	39	27	1,407	33	23	37	26
Breede Valley (Worcester)	3,850	80	20	100	25	4 102	96	23	111	27	3,948	101	26	122	31
Witzenberg	1,534	64	41	79	51	1 547	70	45	84	54	1,605	56	35	64	40
CWE	6,902	200	28	252	36	7 098	201	28	234	33	6,960	190	27	223	32
Cape Agulhas	375	13	34	15	40	385	9	23	13	34	398	8	20	10	25
Overstrand (Hermanus)	880	27	30	32	36	1 002	29	29	31	31	1,105	27	24	34	31
Swellendam	444	5	11	5	11	482	11	23	14	29	469	7	15	7	15
Theewaterskloof	1,224	38	31	47	38	1 191	31	26	36	30	1,259	47	37	55	44
OVERBERG	2,923	83	28	99	33	3 060	80	26	94	31	3,231	89	28	106	33
BO Region	9,825	283	28	351	35	10 158	281	28	328	32	10,191	279	27	329	32

Figure 13 presents the trend in IMR for the Boland/Overberg region and for each sub-district from 1999 to 2007. IMRs change slowly, and are best monitored every 5 years.²⁹ To record it annually however is useful as a positive trend in the face of the HIV and AIDS epidemic is reported as significant. The total number of live births in 2007 was 10 191. An overall downward trend is demonstrated with the rate dropping from 31 per 1000 live births to 27 per 1000 live births between 2002 and 2007. Of concern is the observed increase in the IMR in Theewaterskloof. This may reflect underlying socioeconomic factors as there are two large informal settlements in this sub-district. The IMR in Witzenberg is high, but there has been a decline from 43 to 35 per 1000 live births between 2002 and 2007. The observed reduction for Breede Valley could possibly be attributed to the impact of Worcester Hospital (which has an ICU) in that sub-district.

Figure 13: Infant mortality rate for Cape Winelands and Overberg, 2007:¹

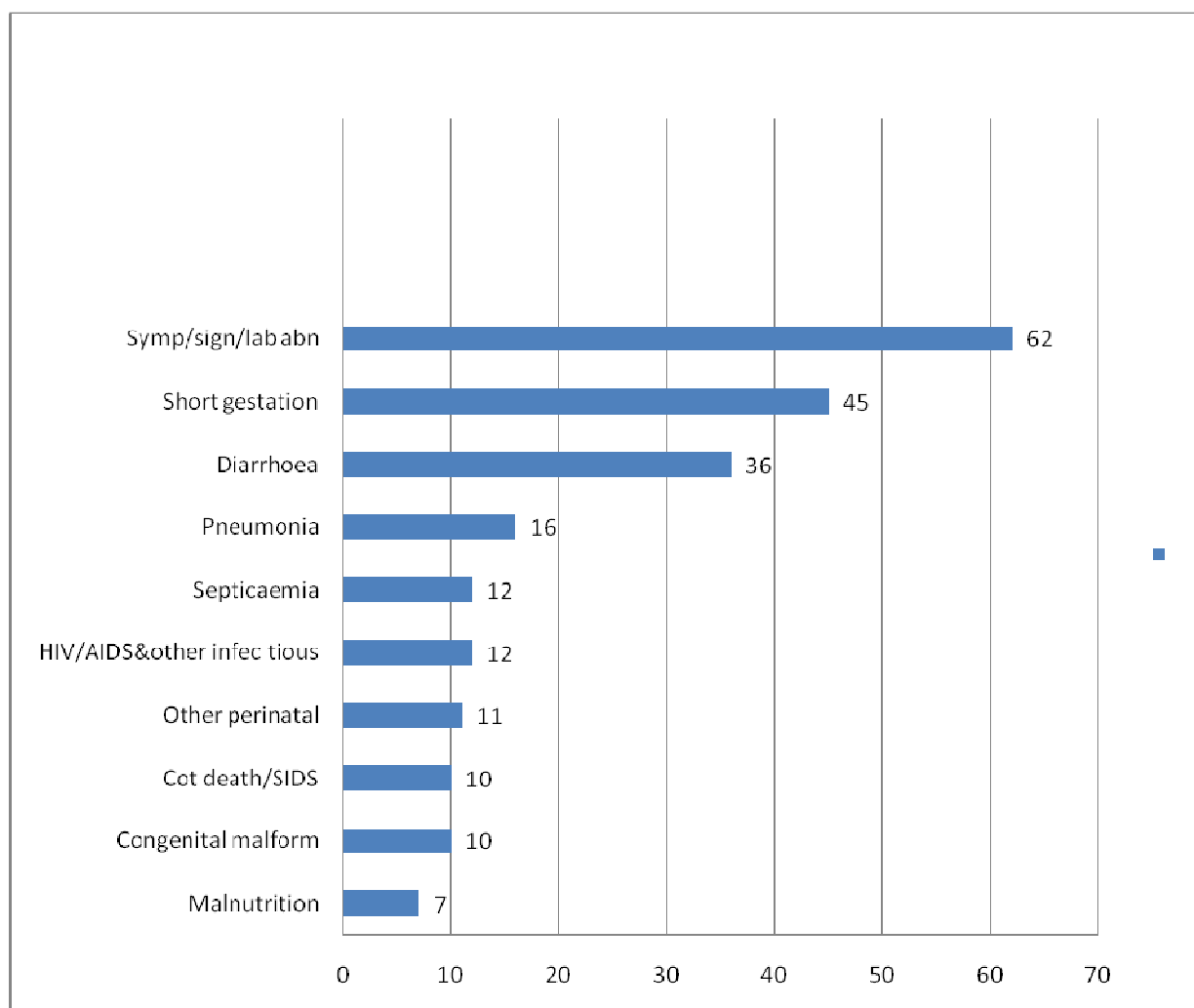


¹ In 2005, there was a problem collecting death data from the Caledon Home Affairs Office during March and April, and it is likely that deaths were missed during the period.

4.2.2 Causes of infant mortality

Figure 14 lists the leading causes of infant mortality in the BO region. The largest number (62) of deaths were ill-defined and were attributable to symptoms, signs, and/or laboratory abnormalities. Short gestation was the second most common cause of mortality. Overall, the remaining causes were primarily communicable in nature (76 in total).

Figure 14: Leading causes of death for under-1 years, 2007

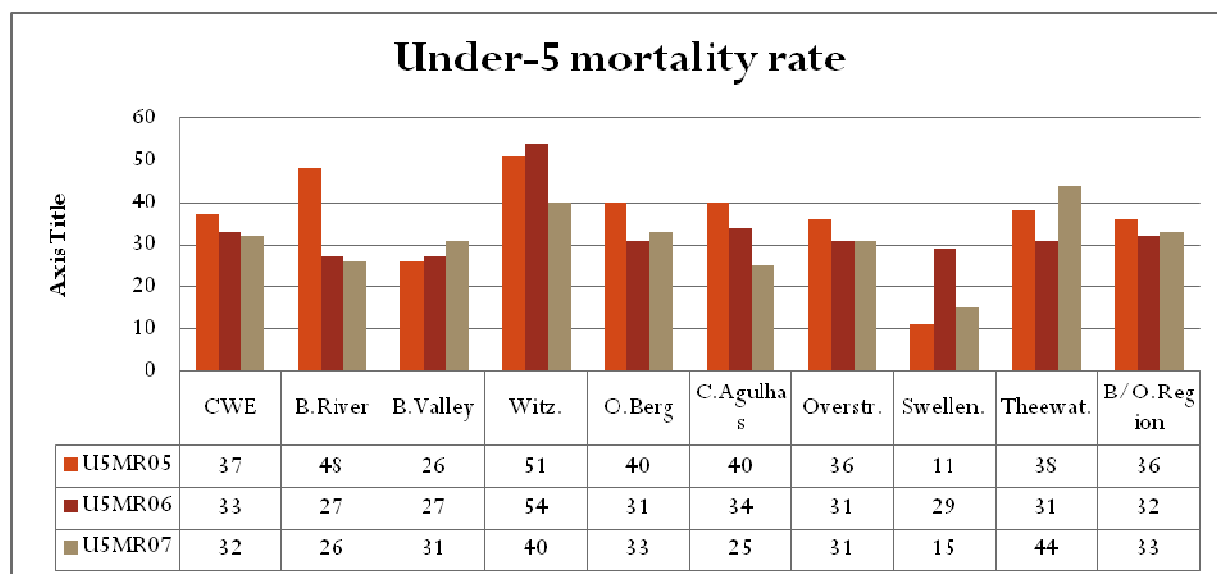


4.2.3 Under-5 mortality rates

The under-5 mortality rate is the number of deaths amongst children 1-4 years in a given period per 1000 live births in the same period.²⁹ The indicator reflects children's well-being and measures the risk of dying in infancy and early childhood. It reflects social, economic, environmental, and health care conditions in which the child lives.

In the BO regions the under-5 mortality rate has declined since 2005 (Figure 15). As for the IMR, the under-5 mortality rates are highest in the Witzenberg and Theewaterskloof sub-districts (41 and 44 per 1000 live births, respectively). The lowest rate was reported Swellendam (15 per live births).

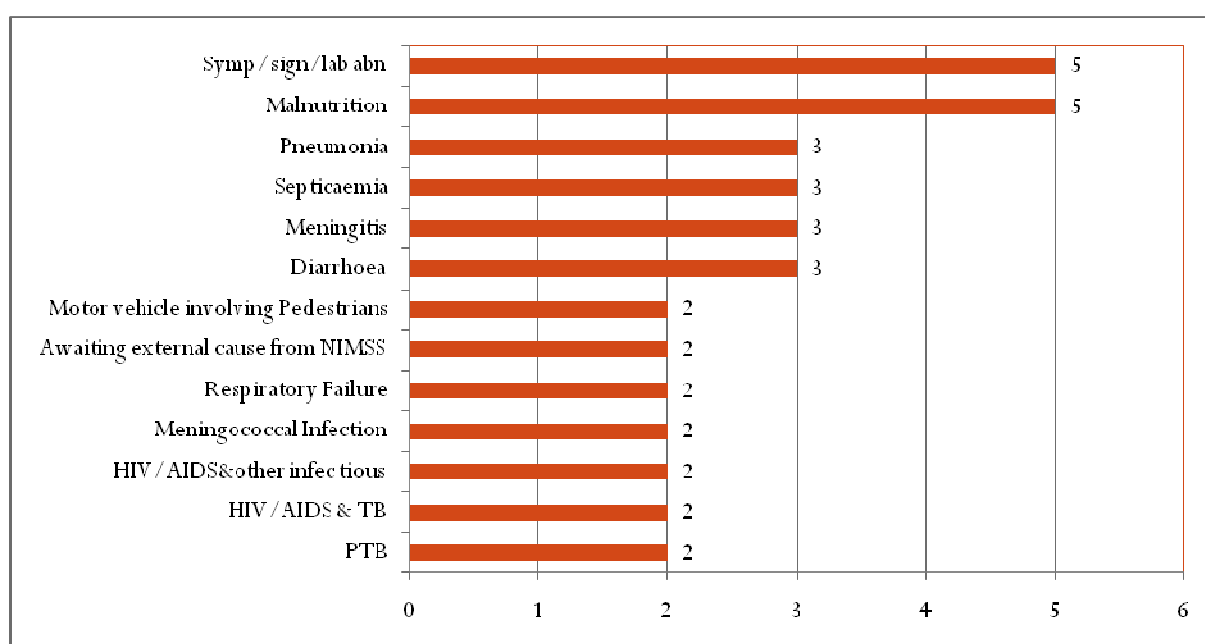
Figure 15: Under-5 mortality rate, 2007



4.2.4 Causes of death in under-5's²

The absolute numbers of deaths for the under-5 age category is low (Figure 16). Symptoms, signs, and/or laboratory abnormalities and malnutrition were the leading causes of death, and communicable diseases comprised the majority of causes (20 in total).

Figure 16: Leading causes of death for under-5's, 2007



4.2.5 Summary

In comparison to the rest of South Africa, the IMR in the BO region is low and is declining. Given the verbal reports from District Management the data reflects an overall favourable response to the various targeted interventions implemented both provincially and within the District.

² This excludes the deaths for the age group < 1 years.

Most child deaths occur in the under-1 year age group, with a large proportion attributable to infectious diseases, including HIV and AIDS. However, the large numbers of deaths classified as ill-defined may mask the true distribution of the leading causes of death. In areas like Witzenberg, the rise in IMR needs to be addressed. Short gestation, as a cause of infant death is also concerning, as this reflects antenatal care. As for the under-1 year deaths in this age group, the under-5 year mortality rate is declining. Infectious causes are primarily responsible for deaths in this age group with a certain proportion directly attributable to HIV and AIDS, and TB. Review of the distribution of TB diagnoses showed that a large proportion of the under-5 year age group had this condition and these results may reflect a need to review contact tracing and prophylaxis for children in the region. CPIP,³² which also reported high numbers of children dying of HIV-related conditions suggests that many infants are not being tested for HIV at the 6-week immunization visit or when they become ill. Furthermore, those who are diagnosed are not given PCP prophylaxis when indicated. Child PPIP also showed that breastfeeding rates were very low. Exclusive breastfeeding should be encouraged at all times.

4.2.6 Recommendations

PPIP and CPIP give an indication of what happens at hospital level, but also provides an indication of the scope and scale of interventions that are needed at primary care level. Below are a list of interventions that incorporates recommendations proposed by CPIP and the Western Cape Burden of Disease groups.

- Consider implementing an early post-natal home visit to:
 - Assist with and encourage breastfeeding; actively discourage mixed feeding.
 - Determine whether the infant is ill.
 - Detect any problems that the mother may be experiencing.
- Promote and strengthen Vitamin A supplementation.
- Promote accurate growth monitoring in all facilities.
- Pregnant mothers should be educated about the importance of
 - Antenatal care
 - Testing for HIV
 - Participation in PMTCT if HIV positive

- Early testing of all exposed neonates for HIV, particularly at the 6 week immunization visit, and early introduction of cotrimoxazole prophylaxis.
- Improved clinical assessment in admission and emergency ward, and early assessment of severity of dehydration and respiratory distress.
- Promotion of community component of Integrated Management of Childhood Illnesses (IMCI). Educate moms on handwashing, early and appropriate treatment of diarrhoea, as this was actively promoted in the Breërivier/Winelands sub-district through non-profit organizations with special social capital funding, and it should be further explored.

4.3 Perinatal mortality rates

The perinatal period starts at foetal viability and ends on the 7th day after delivery. The Perinatal Mortality Rate (PNMR) is defined as the total number of perinatal deaths per 1000 total number of births. It is considered to be a key outcome indicator for newborn care and directly reflects prenatal, intrapartum and neonatal care. It comprises of stillbirths and early neonatal deaths, as indicated in the equation below.

Foetal deaths (stillbirths) typically reflect the success of maternal health interventions, whereas early neonatal deaths reflect the success of neonatal health interventions. Perinatal mortality is determined by a host of factors, and provides an indication of the status of broader health and social problems within a population. It is also a sensitive indicator for quality of care.

$$\text{Perinatal Mortality Rate} = \frac{\text{Stillbirths} + \text{Early neonatal Deaths}}{\text{Total number of births}} \times 1000$$

It is important to note that in South Africa foetal viability is estimated using birthweight rather than gestational age. The assumption is that in most settings within South Africa gestational age is not always known. Furthermore, in developing countries foetal viability is estimated to be at 1000g or 28 weeks, as these countries are often not equipped to treat premature babies. The PNMR in South Africa is estimated to be 34 per 1000 births (>1000g) over the period 2000-2002. PNMR in developed countries is usually less than 6 per 1000 births, whereas in developing countries rates range from 30 to 200 per 1000 births.³⁴

Perinatal deaths are recorded at hospitals. In the BO Region, the Perinatal Problem Identification Programme (PPIP) has been running for many years. It is a computer-based programme and aims to determine the causes of perinatal death, avoidable factors, missed opportunities and substandard care. In South Africa, the most common primary cause of death of babies over 1000g is intrapartum hypoxia. The most common avoidable factors for high PNMR are: absent, infrequent, or late attendance for antenatal care; poor reporting of decreased foetal movements by the mother; and delay in seeking medical attention during labour.

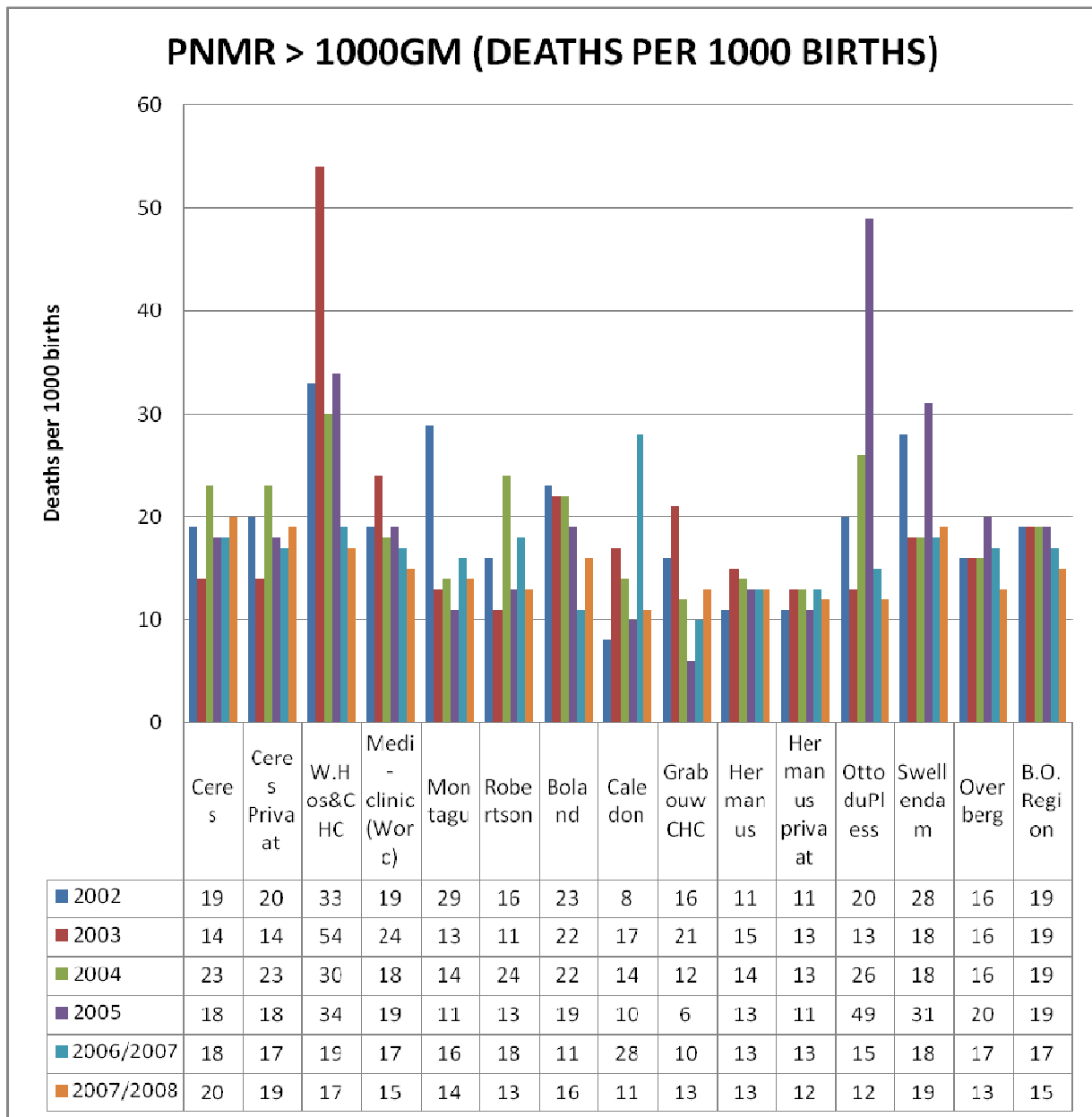
According to the Saving Babies 2006-2007 Report³⁵:

- Pregnant women 17 years or less, and pregnant women 35 years and older had significantly higher perinatal mortality rates than women between the ages of 20 and 34 year.
- The top 5 causes of perinatal deaths were:
 - Labour-related complications (mainly intrapartum asphyxia and birth trauma) – 17%
 - Spontaneous perterm birth – 23%
 - Placental disease (mainly pre-eclampsia and placental abruption) – 23%
- The majority of births and deaths occurred in community health centers and District Hospitals, and the PNMR was highest in the District Hospitals. The quality of care and administrative problems were also thought to be worst in these hospitals. Lack of facilities to resuscitate hypoxic or immature neonates were thought to be the primary causes.
- About 44% of deaths were thought to be avoidable had the healthcare provider acted appropriately.

4.3.1 Perinatal mortality >1000gm per 1000 births

There was an overall decrease in the PNMR > 1000gm (Figure 17). As for the PNMR >500gm, an increase in the death rate for >1000gm at Caledon and Hermanus Hospitals is observed. The rates should however be interpreted with caution as the actual numbers are low.

Figure 17: Perinatal mortality rates >1000gm (deaths per 1000 births), 2007

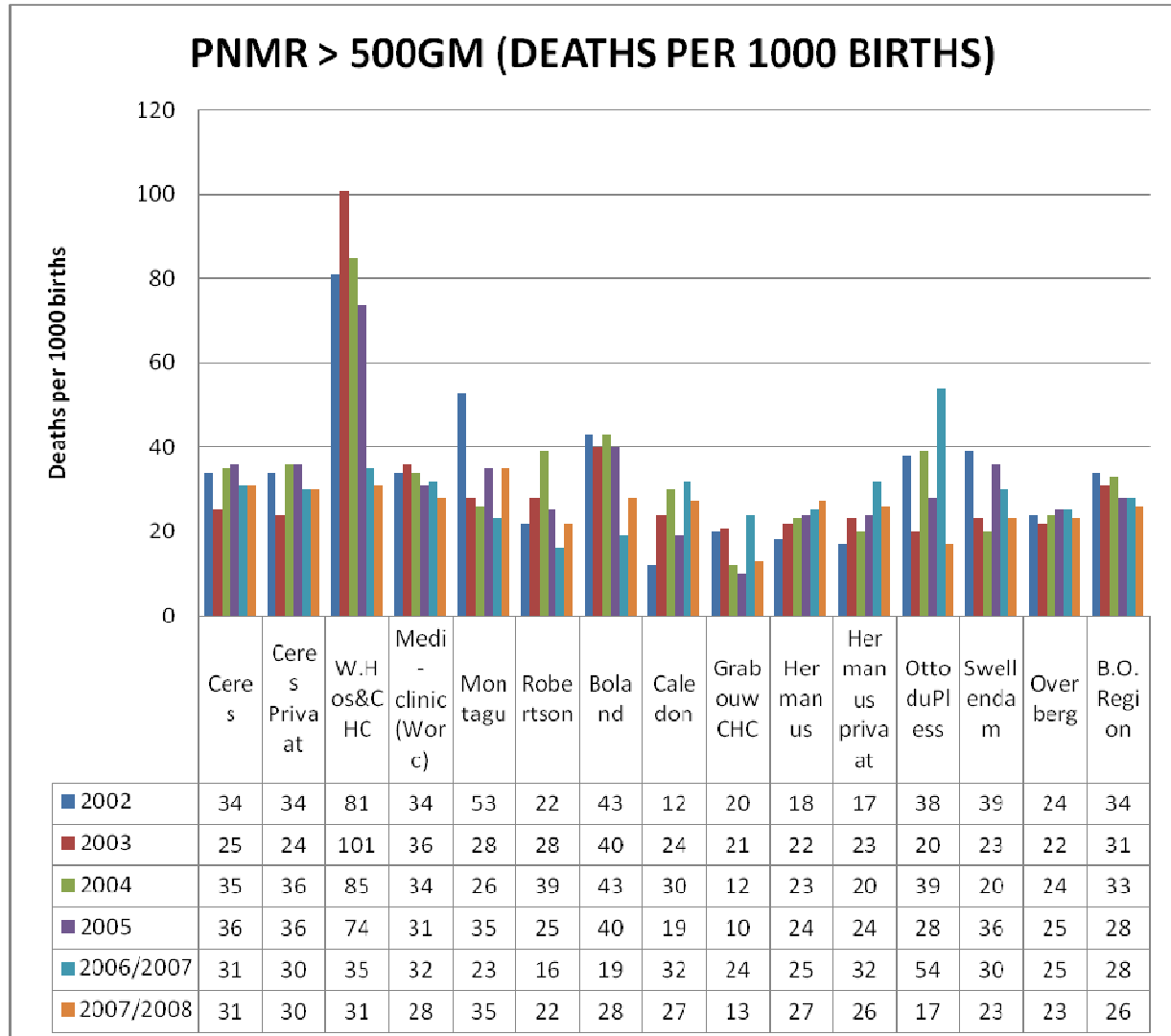


4.3.2 Perinatal Mortality Rate > 500gm per 1000 births

For the BO region, a decreasing trend in the PNMR > 500gm has been observed throughout the region (Figure 18).

The higher rates of deaths observed for Worcester Hospital (30 per 1000 births) can be attributed to it being a referral hospital. A steady increase in the death rates was observed for Caledon and Hermanus Hospitals. Possible reasons for this are that the numbers in Caledon are small. In Hermanus, the number of deliveries increased dramatically over the past 2 to 3 years, and staff are under pressure as the number of midwives were not increased accordingly. In Montagu, the visiting gynaecologist from Worcester Hospital reported that the local improvement in the mortality rate was most likely as a result of regular PPIP meetings which resulted in improved staff dedication.

Figure 18: PNMR > 500mg (deaths per 1000 births), 2007



* From 2006, the perinatal mortality rate is determined according to the financial year. The rates prior to 2006, have to be compared with caution when compared to the 2006/07 and 2007/08 financial years.

4.5 Low Birth Weight

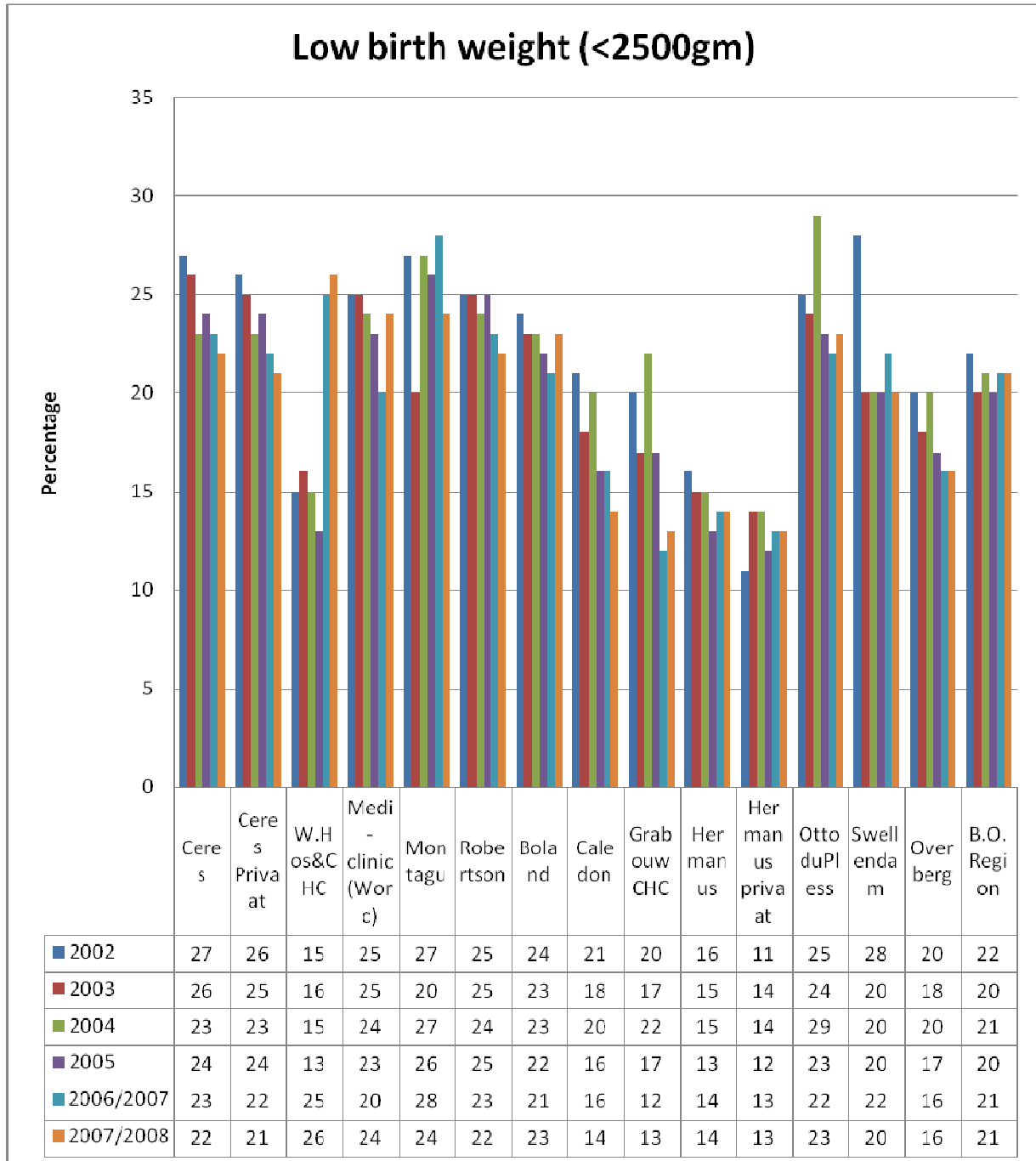
Low birth weight (LBW) is defined as the total number of births < 2500gm, expressed as a percentage of the total number of births. It is a proxy indicator of the socioeconomic and

health status of a community and measures whether one of the major objectives of obstetric care – which is to prevent LBW – is achieved.

In developing countries, where assessment of gestational age is often unreliable it is a proxy measure for intra-uterine growth rate. Furthermore, LBW is the single most important predictor of newborn well-being and survival.²⁹ Studies have also shown that babies weighing >3kg are ten times less likely to die than those weighing under 3 kg. The prevalence of LBW is estimated to be about 7% in developed countries, whereas in developing countries it is much higher at about 15%. LBW is associated with: impaired cognitive development; infectious diseases in early infancy (e.g. pneumonia, diarrhea); and maternal malnutrition.

In the BO region, the percentage of LBW babies was 21%, which is higher than the figure of 15.8% for the Western Cape in 2000 (Figure 19). Overall, the rates in Boland were much higher than that of the Overberg. It has been reported that birth weights of children born in the BO Region are on average lower than that of children born in other parts of South Africa [Personal communication with District Director]. The reason for this is not well-defined as yet. Possible associations could be higher usage of alcohol during pregnancy. Literature has also suggested that there is a link between low level exposure to pesticides and low birth weight, but this association is speculative and has to be confirmed in this region. Low birth weight in this region therefore warrants further investigation.

Figure 19: Low birth weight (<2500gm), 2007



4.6 Recommendations

- Research into the cause of low birth weight is urgently required, particularly given the longstanding nature of this problem in the area.
- Encourage early antenatal care booking, it assists with early problem identification.
- Basic Antenatal Care (BANC) is a national quality improvement programme, and was first introduced in the province in 2006. Its primary aim is to focus on early identification of pregnant women who are at risk and subsequent early referral to the appropriate level of care. Ongoing implementation and monitoring of outcomes is necessary.
- Regular feedback of perinatal statistics to medical staff and midwives at each hospital is very important.
- Investigate using the routine mortality surveillance system as an alternative source of data for Early Neonatal Deaths to improve completeness of data.
- Strengthen and develop reproductive and sexual health services. Reproductive health planning has an impact on low birth weight.
- Focus on maternal education.
- Promote adherence to antenatal, obstetric care and case management guidelines.
- Strengthen facilities, equipment, and staff training in facilities.
- Improve parenting skills and child bonding

5. Maternal, Women's and Reproductive Health

Millennium Development Goal 5 is to reduce the maternal mortality ratio by three-quarters, between 1990 and 2015. The global ratio of maternal deaths is 400 per 100 000 live births. For sub-Saharan Africa, the Maternal Mortality Ratio is estimated to be 1000 per 100 000 live births in the year 2000.

Since 1997, South African confidential enquiries into maternal deaths have been conducted to describe: the trends in maternal deaths; the pattern of disease causing these deaths; and avoidable factors, missed opportunities or substandard care that has resulted in these deaths.³⁶ The report is released every three years, and covers a triennium. For the period 2002-2004, 3406 maternal deaths were reported. The primary obstetric causes of death were non-pregnancy-related infections, complications of hypertension, obstetric haemorrhage, pregnancy-related sepsis and pre-existing maternal disease, AIDS, pneumonia, tuberculosis and meningitis. Cardiac disease was the primary cause of pre-existing medical disease. Patient orientated factors, such as delay in seeking medical help, unsafe abortions, and no available antenatal care were the most common avoidable, missed opportunity and substandard care factors identified in the enquiry. Lack of appropriately trained staff and lack of specific health care facilities were the most common administrative factors. Finally, health worker orientated problems, particularly at primary care level were attributed to substandard diagnostic and management practices. Hypertension, obstetric haemorrhage, pregnancy-related sepsis and non-pregnancy related infections were reported as the most common causes of avoidable deaths. Lack of antenatal attendance put these women at four-fold greater risk of dying than those who did not attend the clinic early in pregnancy.

5.1 Maternal Mortality

Maternal mortality is defined as the number of maternal deaths per 100 000 live births over a period of 1 year. It refers to the number of women who die as a result of childbearing, or who die within 42 days of termination of pregnancy.

The 1998 South African Demographic and Health Survey estimated the MMR to be 150 per 100 000, which is low for a developing country. The target set by the Safe Motherhood Initiative of the WHO is 124 per 1000 000 live births by 2015.³⁷ The Saving Mother's Report estimated this value to be between 170 and 200 per 100 000.

For 2007/8, four maternal deaths were reported in the Boland/Overberg region (Table 14). All four deaths were reported in the CWE District. It should however be noted that the latter reporting period differs to 2005 (when a calendar year was used). It is also important to note that these deaths do not reflect deaths that may have occurred at home, as this data element is only collected in health facilities. The number of live births for 2007 was 10 191 which translates to a MMR of 39 per 100 000 live births. This figure is much lower than the national average.

Table 14: Maternal deaths, 2002-2005 and 06/07 to 07/08*

	2002	2003	2004	2005	06/07	07/08
CERES	1	2	1	1	1	1
CERES PRIVAAT	0	0	0	0	0	0
WORCESTER HOSPITAAL & GGS	0	0	0	3	0	2
MEDI CLINIC WORCESTER	0	0	0	0	0	0
MONTAGU	0	1	0	0	0	0
ROBERTSON	0	1	1	0	0	1
BOLAND TOTAL	1	4	2	4	1	4
CALEDON	0	0	0	1	0	0
GGS GRABOUW	0	0	0	0	0	0
HERMANUS	1	0	1	1	1	0
HERMANUS PRIVAAT	0	0	0	0	0	0
OTTO DU PLESSIS	2	0	0	0	0	0
SWELLENDAM	0	1	0	1	3	0
OVERBERG TOTAL	3	1	1	3	4	0
BO Region	4	5	3	7	5	4

*Deaths between 2002 and 2004 cannot be directly compared to those for 05/06 and 07/08 as the reporting periods differ.

5.2 Stillbirths

A *stillbirth* refers to a foetal death prior to the complete expulsion or extraction of the foetus (≥ 26 weeks gestation and/or $\geq 500\text{gm}$) from its mother. Stillbirths reflect prenatal and intrapartum care and indicates the quality of maternal health services. The norm for South Africa is 14 to 20 per 1000 live births. The estimate for the BO region falls within this range.

Table 15: Stillbirths, 2007

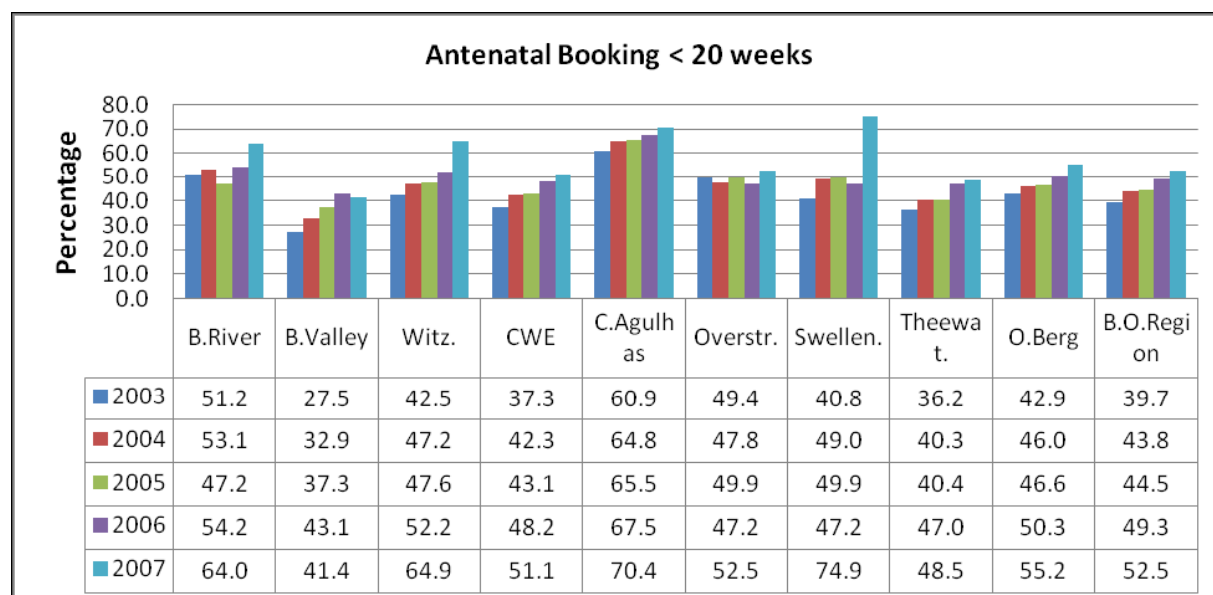
Hospital	SB	TOTAL BIRTHS	Still births
CERES	28	1589	1.8%
CERES PRIVAAT	0	44	0.0%
WORCESTER	63	1605	3.9%
WORCESTER CHC	4	1799	0.2%
WORCESTER MEDI CLINIC	6	617	1.0%
MONTAGU	12	511	2.3%
ROBERTSON	17	925	1.8%
CAPE WINELANDS EAST TOTAL	130	7090	1.8%
CALEDON	11	735	1.5%
HERMANUS	22	1026	2.1%
HERMANUS PRIVAAT	0	101	0.0%
GRABOUW CHC	7	542	1.3%
OTTO DU PLESSIS	3	401	0.7%
SWELLENDAM	7	476	1.5%
OVERBERG TOTAL	50	3281	1.5%
BO REGION	180	10371	1.7%

5.3 Antenatal booking < 20 years

The *antenatal booking rate before 20 weeks* is defined as the number of clients who present to antenatal services before 20 weeks gestation. This measure reflects access to care for pregnant women, as well as knowledge and attitudes to booking early in the pregnancy.

The Saving Mothers and Babies Reports both cite failure to book early as a cause for high maternal and perinatal mortality rates. In the BO region, there has been a steady increase in the antenatal booking rate from 39.7% to 52.5% (Figure 20). The booking rates for Breede Valley and Theewaterskloof are the lowest for the region, although both sub-districts show an increase from baseline in 2003.

Figure 20: Antenatal booking < 20 weeks, 2001-2007

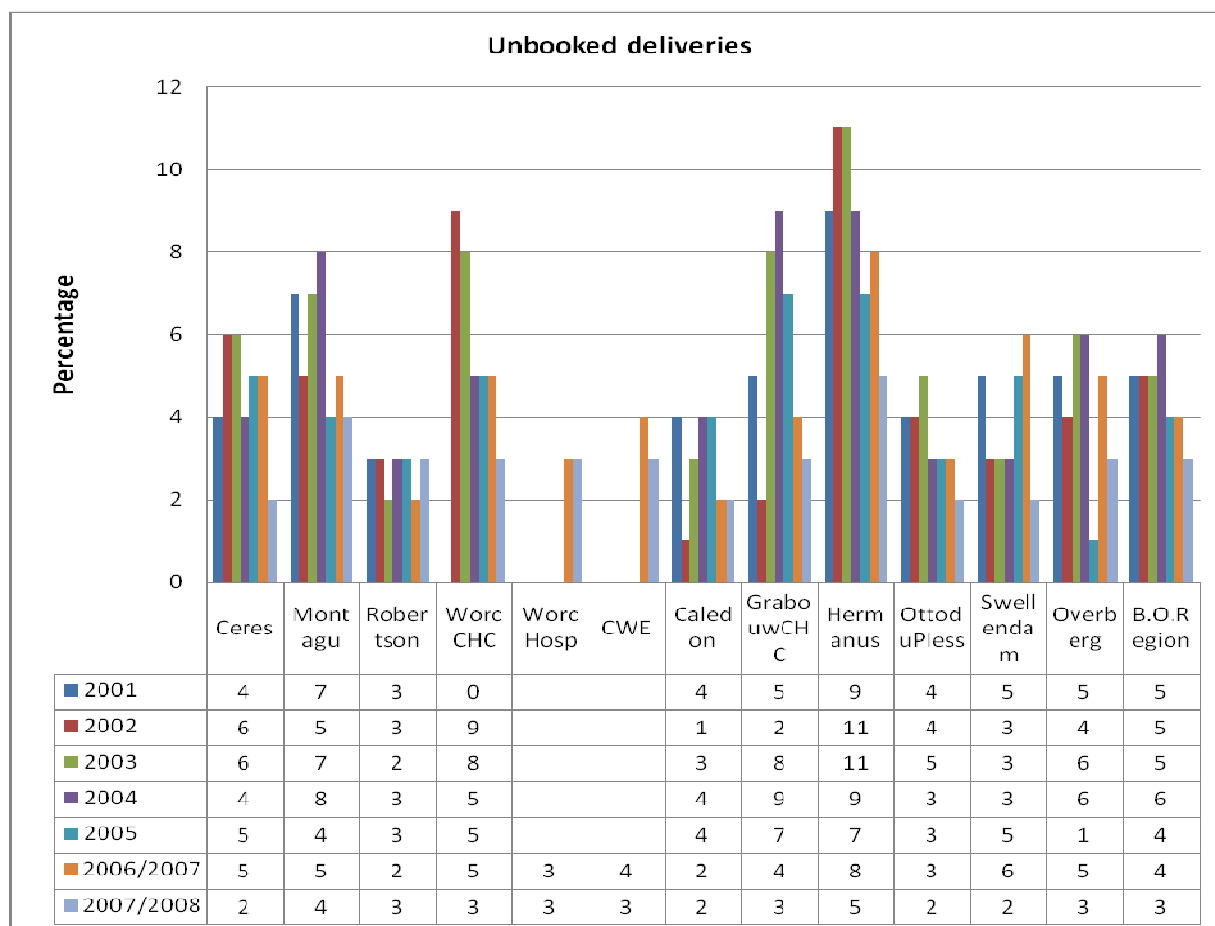


5.4 Unbooked deliveries

Unbooked deliveries refers to the number of deliveries in a health facility (to a mother who did not attend the antenatal clinic at any stage during her pregnancy), performed under the supervision of a trained medical or nursing staff member. Late presentation is one of the major factors associated with maternal and neonatal deaths. It also reflects factors relating to socioeconomic status, and access to or availability of antenatal services.

In the Boland/Overberg region, there has been a steady decline in the proportion of unbooked deliveries: from 5% in 2001 to 3% in 2007 (Figure 21). The highest percentages are observed at Hermanus Hospital. A reason cited by staff for the latter is that a substantial number of women travel to Hermanus from other municipalities specifically to give birth, particularly in the Eastern Cape. They therefore do not book at the antenatal clinics.

Figure 21: Unbooked deliveries, 2001-2005 and 2006/07 and 07/08



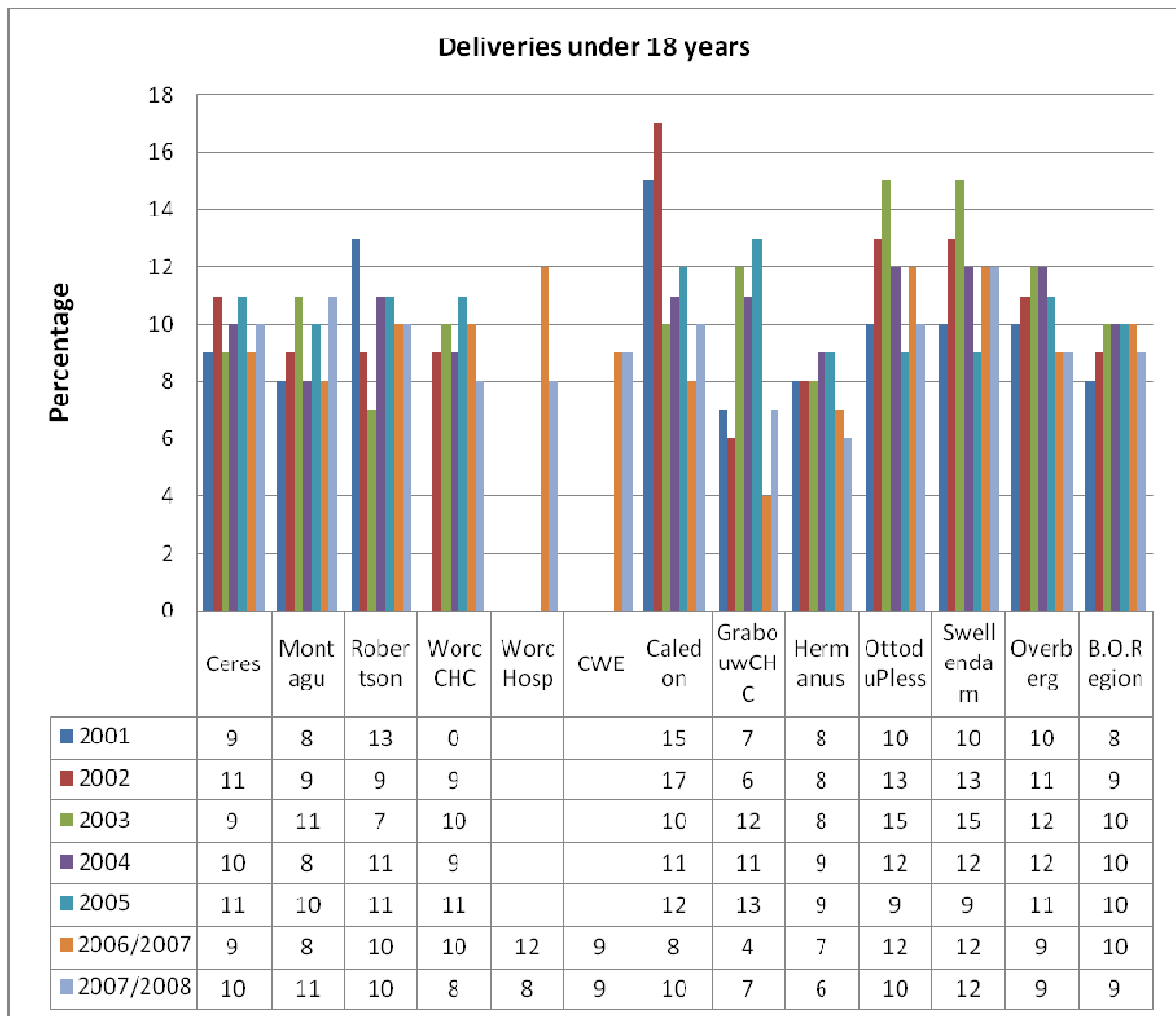
*Note the change in reporting from the year 2005.

5.5 Deliveries < 18 years (Teenage Pregnancies)

The indicator *deliveries under 18 years of age* measures the number of teenagers who deliver in a health facility under the supervision of trained medical or nursing staff member. This element can also be used as a proxy for teenage pregnancies, thereby providing health information (i.e. mothers whose bodies may be underdeveloped to deliver safely), and socio-economic status (i.e. the mother's ability to take care of the child). It also provides information on the effectiveness of family planning programmes.

In the BO Region, the proportion of teenage pregnancies remained steady at 10% between 2006 and 2007 (Figure 22). In 2007/08, 9% of all deliveries were to women younger than 18 years. The highest proportion (12%) delivered in Swellendam Hospital in the Overberg. This was followed by Montagu Hospital (11%).

Figure 22: Deliveries under 18 years, 2001-2005 and 2006/07 and 07/08



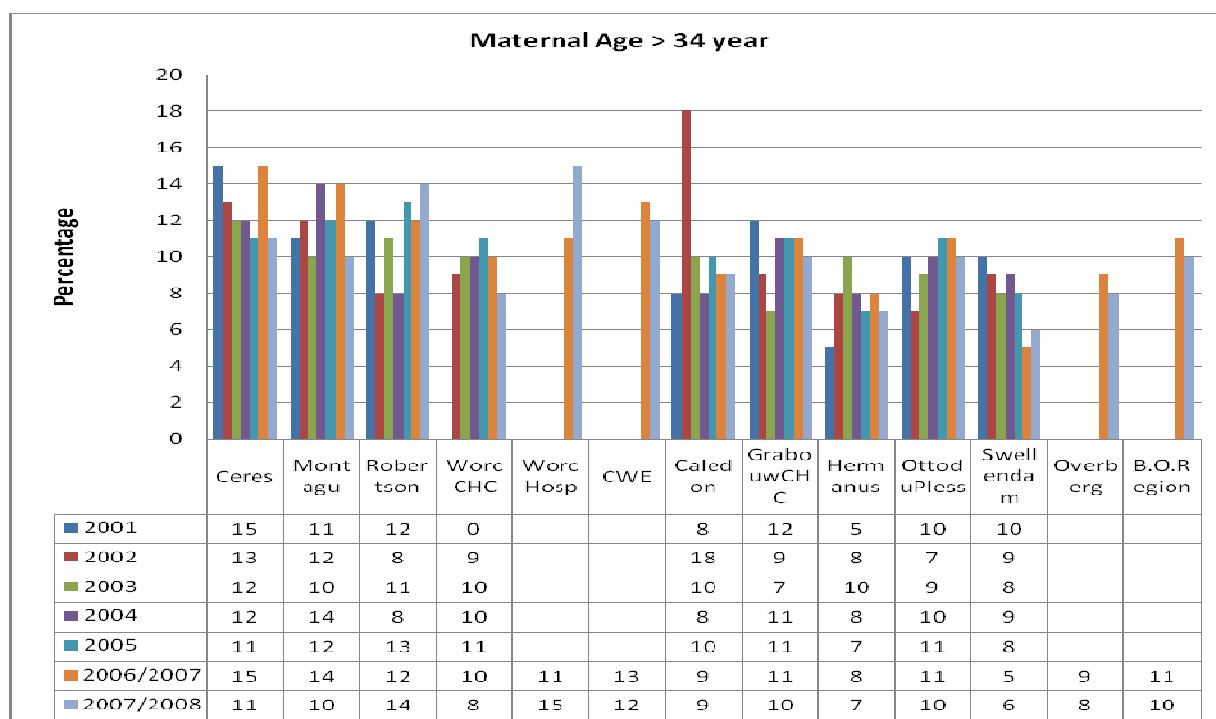
*Note the change in reporting from the year 2005.

5.6 Maternal age > 34 years

The indicator, *delivery to a women 35 years and older*, measures the number of women in this age category who deliver in a health facility, under the supervision of trained medical staff. This indicator is useful for monitoring the quality of obstetric care and high risk cases. It also serves as a proxy for the effectiveness of Family Planning programmes at educating older women of the dangers of pregnancies later in life. In the Saving Mothers Report also cites older age as a risk for maternal mortality.

Ten percent of the total deliveries in the Boland/Overberg Regions were to women 35 years and older (Figure 23). In CWE, the figure of 12% was higher than that of the Overberg (8%). Worcester and Robertson delivered the highest number of > 35 year old pregnancies. The results suggest that the Family Planning programmes in Ceres, Montagu, and Robertson should be investigated.

Figure 23: Maternal age, 2001-2005 and 2006/07 and 07/08



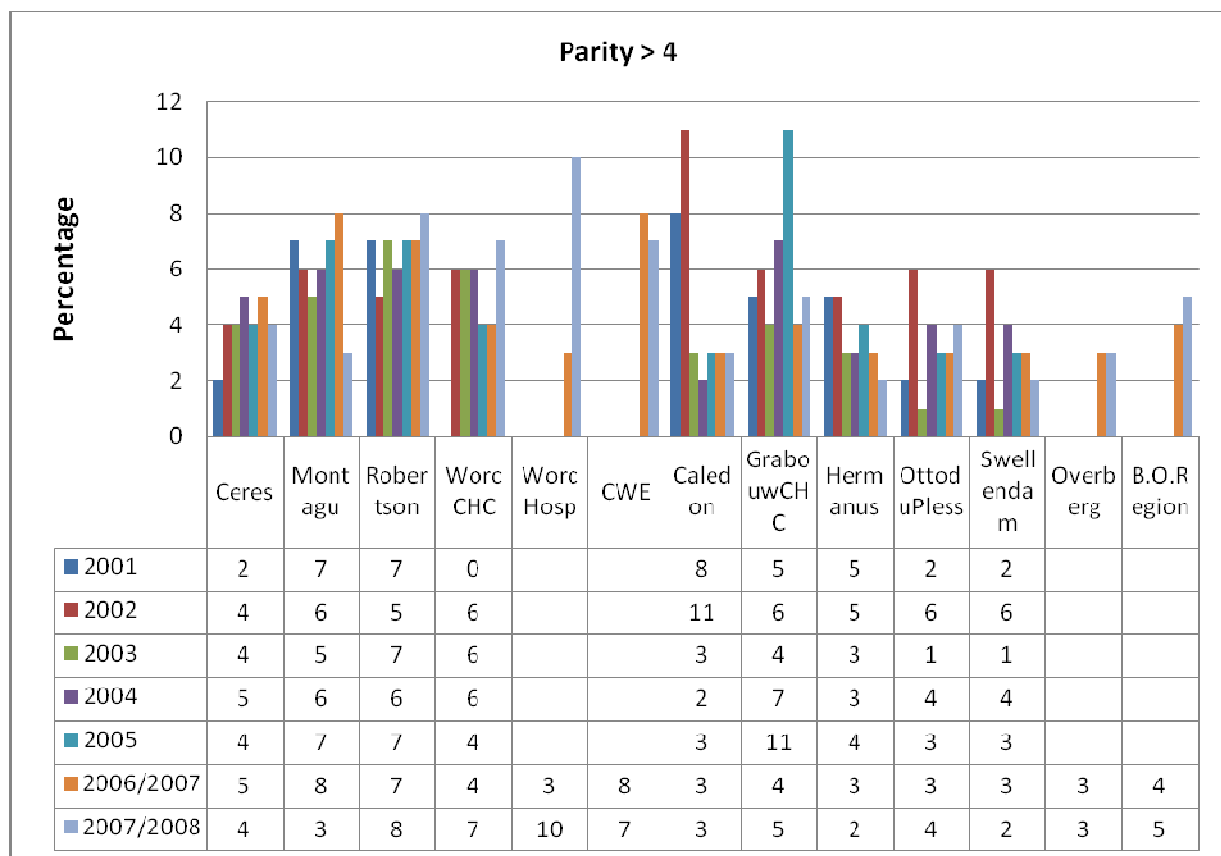
*Note the change in reporting from the year 2005.

5.7 Parity > 4

Parity refers to the number of children that a woman has delivered in her lifetime. A *parity of greater than four*, therefore measures how many women who have had four or more prior births deliver in a health facility under the supervision of trained medical or nursing staff members. This indicator monitors the quality of obstetric care and high-risk cases, and the effectiveness of Family Planning programmes.

The proportion of women with a parity of greater than 4 is 5% for 2007 (Figure 24). For the Boland/Overberg region, the results show that rates are highest in the CWE.

Figure 24: Parity > 4, 2001-2005 and 2006/07 and 07/08



*Note the change in reporting from the year 2005.

5.8 Sterilisations

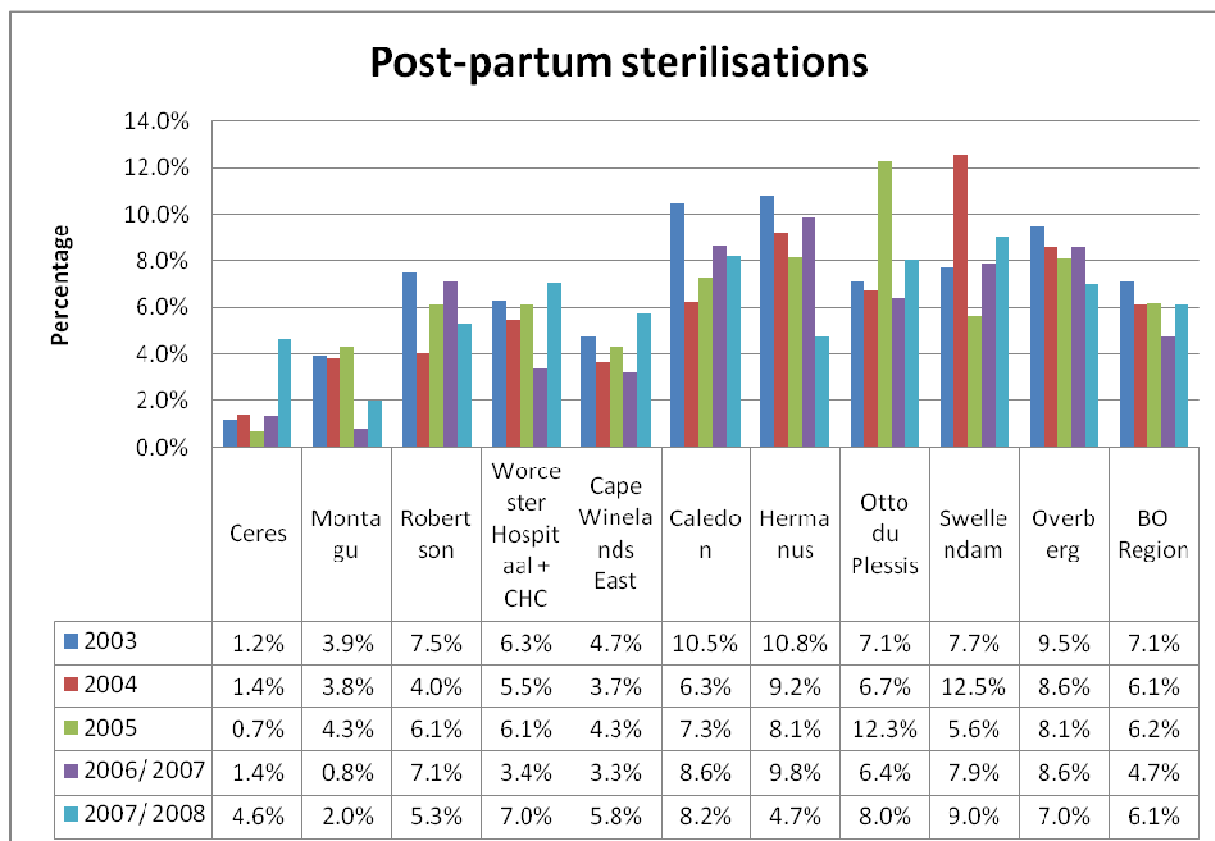
Table 16 lists the number of sterilisations conducted in the years 2006 and 2007. There has only been a moderate increase in the number of sterilisations conducted between 2006 and 2007. Most sterilisations are done postpartum.

Table 16: Sterilizations 2006/07-2007/08

HOSPITAL	2006 - 2007				2007 - 2008			
	POST PARTUM	INTERVAL	VASECTOMY	TOTAL	POST PARTUM	INTERVAL	VASECTOMY	TOTAL
CERES	21	76	0	97	73	71	3	147
MONTAGU	4	55	0	59	10	30	0	40
ROBERTSON	68	0	1	69	49	8	2	59
WORCESTER	121	78	37	236	236	62	39	337
CWE TOTAL	214	209	38	461	368	171	44	583
CALEDON	61	25	6	92	60	25	5	90
HERMANUS	89	27	4	120	48	36	2	86
OTTO DU PLESSIS	25	51	3	79	32	37	3	72
SWELLENDAM	39	18	1	58	43	15	4	62
OVERBERG TOTAL	214	121	14	349	183	113	14	310
BO REGION	428	330	52	810	551	284	58	893

Figure 25 presents the percentage of post-partum sterilisations per hospital as calculated by the number of sterilisations divided by the number of deliveries. Overall, there has been a decline in the percentage of sterilisations post-delivery.

Figure 25: Post-partum sterilizations, 2003-2005; 2006/07-2007/08*

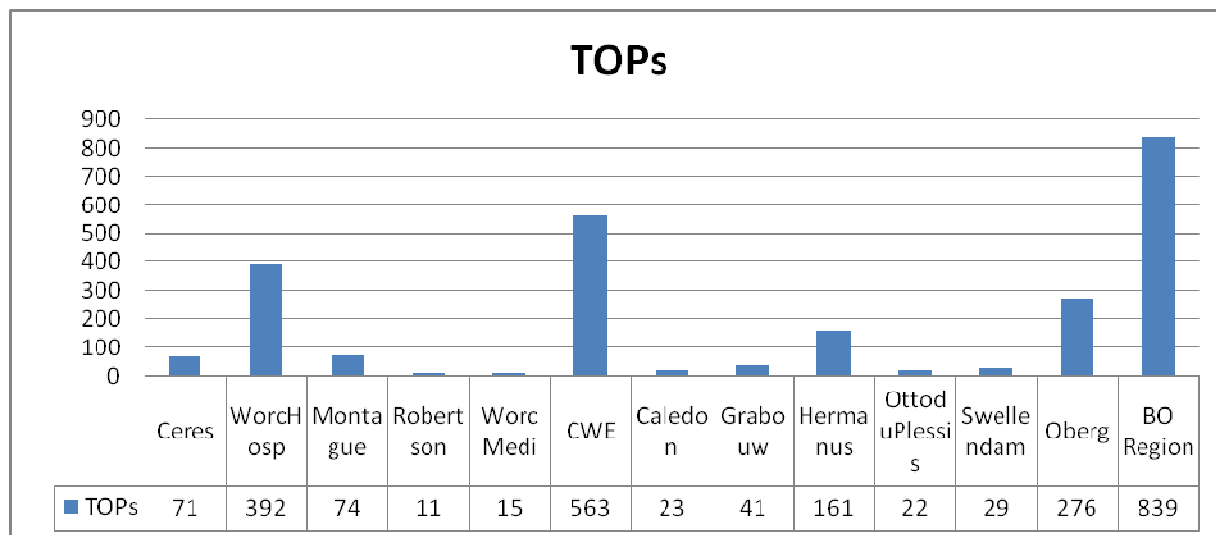


* Total Deliveries includes BBA's and excludes Private Hospital Deliveries. Note the change in reporting from the year 2005.

5.9 Termination of Pregnancies

In February 1997, Termination of Pregnancies (TOP) was legalised in South Africa. By April 1997, TOP services were implemented in the Western Cape. The total number of TOPs performed for 2007/08 were 839; 643 of these were performed before 12-weeks gestation (Figure 26). The remaining 196 were performed between 13 and 20 weeks gestation age.

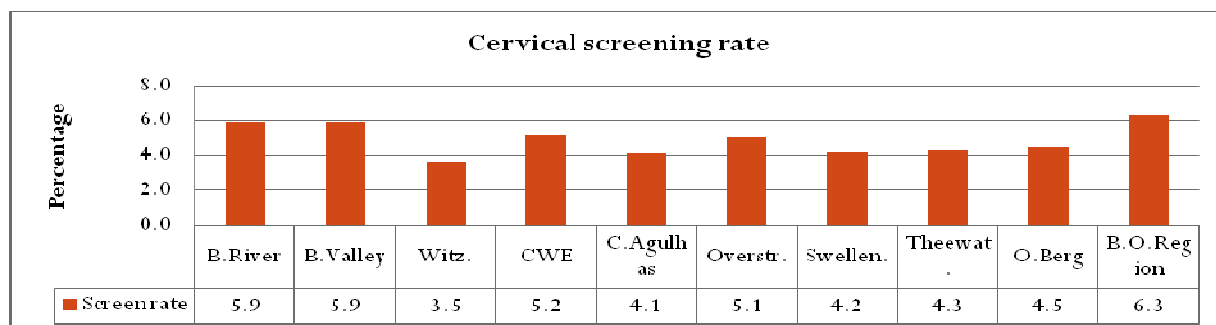
Figure 26: Termination of pregnancies, 2007



5. 10 Cervical Smear Coverage

Cervical cancer contributes 2% to the premature mortality cause profile for women ≥ 15 years in the Boland/Overberg region in 2005. It is ranked amongst the top 20 causes of death amongst women in the Boland/Overberg Region. Cervical smear coverage is defined as a cervical smear done for screening purposes, and not for diagnostic or other reasons. According to the National policy, each woman is to receive three cervical smears at 10-yearly intervals starting at the age of 30 years. Targets are set annually, and are increased every year to reach a total of 10%. In 2007/08 the target was 7.5%.

Figure 27: Cervical screening rate, 2007



Denominator used was female population 30-59 years.

5.11 Summary

- Maternal mortality rates are low in the BO Region, but rising death rates in some sub-districts have to be investigated.
- The number of teenage pregnancies, pregnancies in women > 45 years, and pregnancies in women with parity >4 are high and should be reduced in all age groups.
- Family planning to be strengthened. Sterilisations have dropped, especially in Worcester.
- Antenatal care should be strengthened as it provides an opportunity to identify risk factors for foetal and maternal deaths. Early attendance creates opportunities for early interventions.
- Commendable work by Women and Maternal Health Programmes, as reflected in the results.

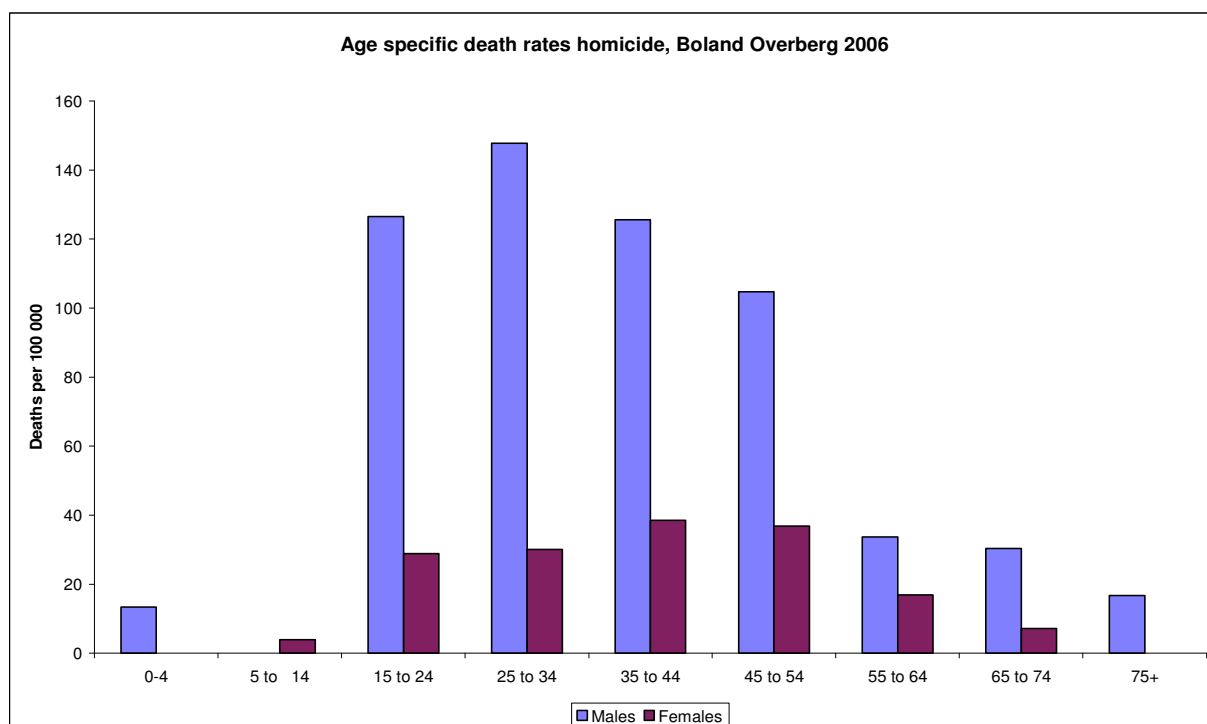
5.12 Recommendations

- Advocate for and improve access to Family Planning services throughout the Region. This may require an intersectoral collaborative approach, and engagement with schools and local NGOs.
- Prioritisation of Family Planning by management.
- Increase facility-based educational drives regarding maternal and women's health issues and services provided by the public sector for women.
- An evaluation of the impact and outcomes of the cervical screening programme is necessary, namely, the number of positive cases detected, the number lost to follow-up, the number of cases cured.

6. Injuries

The mortality data presented in an earlier section demonstrates the impact that violence and traffic accidents have on the YLL in the Boland/Overberg population. In 2006, injuries were reported to account for 16% of deaths in the Region. The age-specific death rates (Figure 28) show that males between the ages of 15 years and 34 years are most affected.

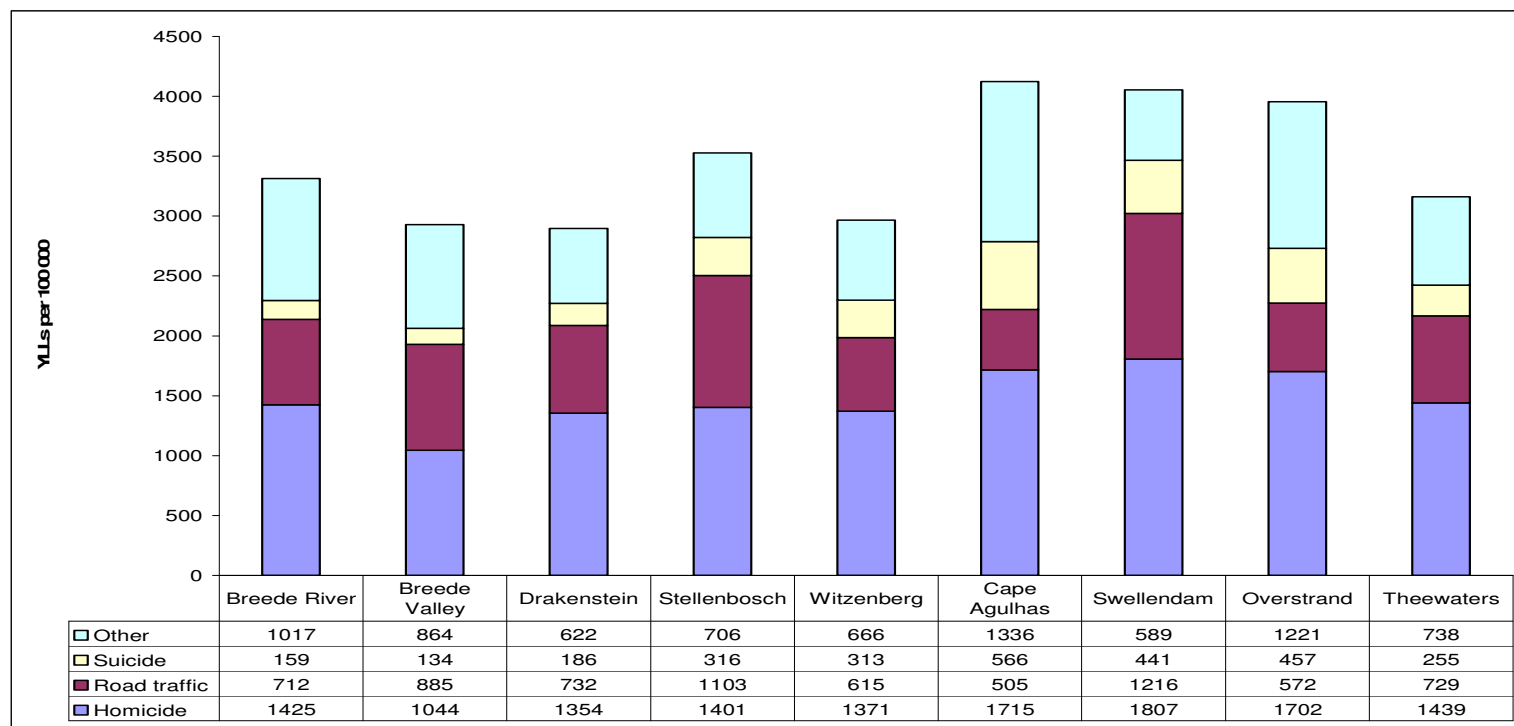
Figure 28: Age-specific death rates due to homicide, Boland/Overberg 2006



Age-standardised injury premature mortality rates for the local municipalities are presented in

Figure 29. Homicides contribute the most to the premature mortality across in all local municipalities. In Stellenbosch and Swellendam, road traffic accident figures are high. Suicides contribute to more the premature mortality in Cape Agulhas and Swellendam.

Figure 29: Age-standardised premature mortality rates due to injuries by local municipality, Boland/Overberg 2006



6.1 Recommendations

- Evaluate the readiness of trauma facilities and staff to deal with serious road traffic accidents and homicides.
- An intersectoral approach to road traffic accidents and homicides is needed.
- Poverty alleviation and unemployment needs to be addressed.
- Alcohol abuse needs to be targeted through health promotion and intersectoral approaches.

7. Notifiable conditions

7.1 Key notifiable conditions

In South Africa, it is legislated that the authorities be notified in the event that patients present to health facilities with certain conditions. In the BO region, TB meningitis cases have consistently ranged between 31 and 39 cases per year (Table 17). In 2007, the number of meningococcal cases was only 5, which is lower than the average number of cases reported since 2001. There were no cases of congenital syphilis, measles, Haemophilus influenza and pertussis. Thirteen cases of pesticide poisoning were reported for the region. Only one death due to meningococcal meningitis was reported.

Table 17: Key notifiable conditions, Boland/overberg, 2007

Disease	2001		2002		2003		2004		2005		2006		2007	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Congenital syphilis	9	0	3	2	6	0	1	1	1	0	1	0	0	0
Measles	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Haemophilus Influenza	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Meningococcal Infections	22	4	7	1	18	1	11	2	11	2	15	1	5	1
TB Meningitis	34	1	33	1	33	5	39	4	33	6	33	0	31	0
Pertussis	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Hepatitis A	17	0	13	0	10	0	11	0	15	0	4	0	4	0
Hepatitis B	6	0	7	1	7	0	5	0	5	0	1	0	1	0
Other Viral Hepatitis	0	0	1	0	0	0	0	0	0	0	0	0	1	0
Pesticide/agric poisoning	23	1	25	0	16	0	29	0	18	0	21	1	13	1

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