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# Western Cape Mortality Profile 2010

September 2013



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## Suggested citation

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A copy of this report, as well as the data, is available on the Internet at:

<http://www.mrc.ac.za/bod/reports.htm>

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# Acronyms and abbreviations

<b>AIDS</b>	<b>A</b> cquired <b>I</b> mmune <b>D</b> eficiency <b>S</b> ndrome
<b>ASSA</b>	<b>A</b> ctuarial <b>S</b> ociety of <b>S</b> outh <b>A</b> frica
<b>DNF</b>	<b>D</b> eath <b>N</b> otification <b>F</b> orm
<b>ICD-10</b>	<b>I</b> nternational <b>S</b> tatistical <b>C</b> lassification of <b>D</b> isease
<b>Group I</b>	Communicable diseases, maternal, perinatal and nutritional conditions
<b>Group II</b>	Non-communicable diseases
<b>Group III</b>	Injuries
<b>NBD</b>	<b>N</b> ational <b>B</b> urden of <b>D</b> iseases and Related Health Problems
<b>PGWC</b>	<b>P</b> rovincial <b>G</b> overnment of the <b>W</b> estern <b>C</b> ape
<b>PIMSS</b>	<b>P</b> rovincial <b>I</b> njury <b>M</b> ortality <b>S</b> urveillance <b>S</b> ystem
<b>Stats SA</b>	<b>S</b> tatistics <b>S</b> outh <b>A</b> frica
<b>YLLs</b>	<b>Y</b> ears of <b>L</b> ife <b>L</b> ost

## Glossary

**UNDERLYING CAUSE OF DEATH:** The disease or injury which initiated the train of morbid events leading directly to death or the circumstances of the accident or violence that produced the fatal injury (WHO).

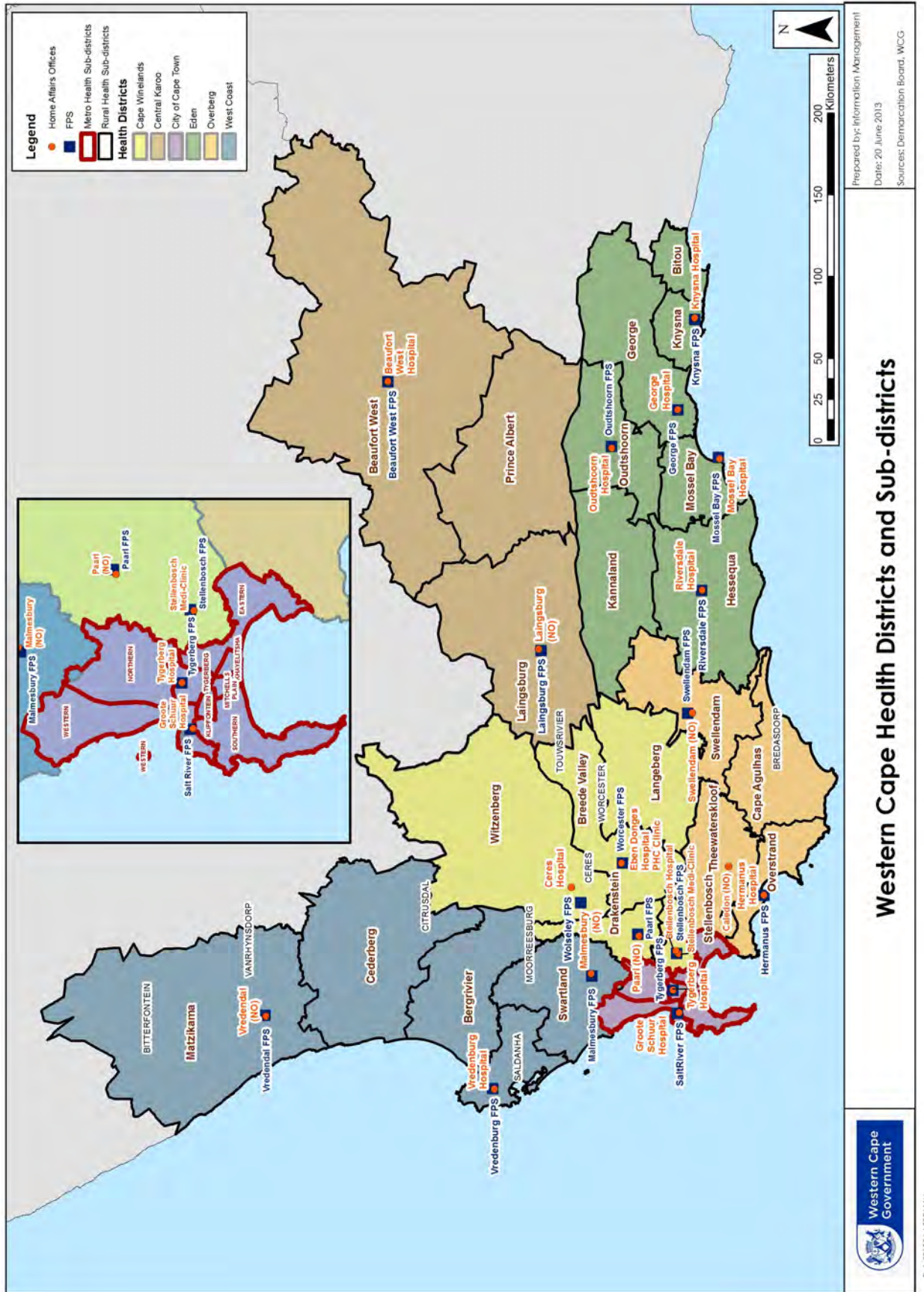
**IMMEDIATE CAUSE OF DEATH:** Any disease or condition entered on line (a) in Part 1 of the death certificate directly leading to death and consequent to diseases entered on lower lines of Part 1. Also known as the terminal, direct or final cause of death.

**INTERMEDIATE CAUSE OF DEATH:** Any cause between the underlying cause and the immediate cause of death, or, if the certificate has not been filled out correctly, any condition that the certifier should have reported there. Also known as a complication of the underlying cause.

**MECHANISM OF DEATH:** The physiological disturbance in the body at the time of death, e.g. metabolic acidosis, hypokalaemia and acute cardiac failure.

**MANNER OF DEATH:** Manner of death helps to clarify the modality/intention surrounding the deceased. The most common options for the classification of this variable are natural, accident, intentional self-harm (including suicide), assault (homicide) and undetermined.

**RISK FACTORS:** A risk is an attribute or exposure that is causally associated with increased risk of a disease or injury. These may be physiological (eg. hypertension), or external (eg. air pollution).





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# 1 Western Cape Mortality profile 2010

## 1.1 Introduction

Cause of death information is essential for planning and monitoring health programmes. The Western Cape Department of Health (WCDoH), the City of Cape Town and the Medical Research Council (MRC) Burden of Disease Research Unit have developed a mortality surveillance system that reports on mortality at district and sub-district levels in the province. It makes use of cause of death information provided on death notifications for deaths registered with the Department of Home Affairs. It groups causes into meaningful categories, makes adjustments for the ill-defined causes and makes use of population estimates produced for the Western Cape Provincial Government to provide mortality rates. This report presents the results for 2010, providing sub-district profiles for the first time.

## 1.2 Methods

### Data collection

The six district information offices of the WCDoH collected copies of death notification forms (DNFs) from the local Department of Home Affairs offices in their district. Socio-demographic and cause of death information were captured into a customised database at each district office (Local Mortality Surveillance System – LMSS). Information on the manner of death for those due to unnatural causes was collected by Forensic Pathology Services (FPS) (Provincial Injury Mortality Surveillance System – PIMSS).

### Data cleaning

LMSS data were sent to the MRC for checking and cleaning of duplicates. Incorrect capture of serial and mortuary reference numbers, invalid ages, and missing sex and incomplete or incorrect LMSS data were returned to the respective offices for correction. The PIMSS data were sent electronically to the MRC for similar cleaning and queries were returned to FPS for checking.

### Data linking

Cases in the PIMSS data were linked with cases in the LMSS data using the DNF serial number and/or mortuary reference number. The linked data were further checked for duplicates, valid date of birth and date of death. Where the linked data matched on date of birth, date of death, serial number and sub-district of residence, these were considered to be the same case. There were 41,733 death records in the surveillance dataset, of which 7,177 linked with the PIMSS data after careful checking. The PIMSS records that did not link with the LMSS data (1,810 cases) were added to the merged dataset on the assumption that these records were missing from the LMSS data. Where residence information was missing from PIMSS records (N = 457 of which 374 (78.7%)), were from Cape Metropole District), the place of injury was used to allocate the death to a district.



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## Cause of death coding

The natural causes were coded to ICD-10<sup>1</sup> (4 digit) and the underlying cause was selected using the automated coding software, IRIS.<sup>2</sup> Rejects (spelling errors or errors in medical certification) were corrected and recoded using IRIS or manually if required. The unnatural deaths from PIMSS were coded directly to ICD-10 (3 digit), using a look-up table based on the apparent manner and external cause information. The ICD codes were aggregated into 215 National Burden of Disease (NBD) analysis codes<sup>3</sup> distinguishing causes in the NBD list, general garbage codes and specific garbage codes.

## Exclusions

There were 9,360 PIMSS records of which 297 were excluded: non-residents of WC (172), date of death 2009 (7), non-human remains (14) and non-viable fetus/abortion/fetus/ "concealment of birth" (104). These cases included 25 infant deaths labeled "concealment of birth" from the mortuaries. Since no further information was available to determine whether these were live births or not, these data were excluded from further analysis. However, these may have included some cases of infanticide. Stillbirths, defined as any record having ICD-10 code P95 as the underlying or multiple cause code, were excluded from the final merged data (1,476), leaving a total of 42,067 records for analysis.

## Data completeness

The completeness of our data was assessed against Stats SA 2010<sup>4</sup> data on total deaths per district and found to be 92.2% complete overall. This is a marked improvement from the overall completeness of 83.7% achieved in 2009. Cape Metropole District had the highest completeness (97.4%), while Central Karoo (78.3%), West Coast (80.9%) and Cape Winelands (82.5%) had the lowest completeness (see Appendix Table A.1). Completeness for children under five years was high at 96.8% overall. Overberg (79.8%) and Central Karoo (87.2%) were the districts with the lowest completeness for children.

Since Stats SA mortality data was not available by sub-district, completeness at sub-district level was assessed by comparing the deaths reported to the surveillance system with the deaths registered at the local Home Affairs offices, the assumption being that most deaths in the sub-districts would be registered at the nearest Home Affairs office. This comparison revealed that death notifications received from the following Home Affairs offices were relatively low: Vredendal (52%), Caledon/Grabouw/Swellendam (65%), Oudtshoorn and Beaufort West (78%), and Paarl (85%). This suggests that deaths are incomplete in Mat-sikama, Cederberg, Oudtshoorn, Beaufort West, Laingsburg, Prince Albert, Drakenstein and Stellenbosch sub-districts. However, despite the low completeness noted for deaths from Caledon, Grabouw and Swellendam Home Affairs offices, Overberg district had fairly good completeness (88.8%) when compared to district deaths from Stats SA.

<sup>1</sup>World Health Organization. International classification of diseases and related health problems. Tenth Revision. Geneva: World Health Organization; 1992

<sup>2</sup>Johansson L, Pavillon G, Pelikan L, Weber S. Iris automated coding system for causes of death. User's reference manual (Iris version V4.1.3). IRIS Institute 2012.

<sup>3</sup>Pillay-Van Wyk V, Laubscher R, Msemburi W, Groenewald G, Dorrington R, Vos T, Bradshaw D & the SA NBD team. Second South African National Burden of Disease Study: Data cleaning, validation and SA NBD List. MRC Technical Report. Forthcoming.

<sup>4</sup>Statistics South Africa. Mortality and causes of death in South Africa, 2010. Findings from death notification. Statistical release P0305. Pretoria: Statistics South Africa, 2013.

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## Validity checks

Validity checks were performed on causes that are age and sex specific, and corrections made when any anomalies were identified (WebAppendix).

## Redistribution

In order to provide a comprehensive profile of the causes of death, adjustments were made to account for ill-defined and garbage codes (non-specific causes) as well as cases with missing age and sex. There were 99 cases with unknown age and 63 cases with unknown sex (24 were unknown for both age and sex). The overall numbers of deaths were adjusted by proportionally redistributing deaths of unknown age and sex within each cause of death. Eight per cent of deaths were misclassified to ill-defined signs and symptoms (R00-R99) and a further 10.8% assigned to a range of other garbage codes (Appendix Tables A.2 and A.3), including intermediate causes of death (e.g. septicæmia), mechanisms of death (e.g. cardiac arrest), partially specified causes (e.g. cancer with unknown site) or risk factors (e.g. hypertension) and ill-defined injuries. Estimated numbers of deaths, according to the NBD list, were derived by proportionally redistributing the garbage codes to specified causes within each age sex category in stages outlined in the WebAppendix.

## Data aggregations

Causes from the NBD list were grouped into the four broad groups to provide an overall profile of the causes of death. These include:

- HIV/AIDS and TB
- Other Group I - Communicable diseases (excluding HIV/AIDS and TB), maternal, perinatal and nutritional conditions (Comm/Mat/Peri/Nut)
- Group II - Non-communicable diseases
- Group III – Injuries

In order to reduce the problem of misclassification of causes, trends in cause-specific mortality were assessed for five groupings of major burden causes of death:

1. Major infectious diseases (AIDS, TB, diarrhoea and pneumonia combined)
2. Cardiovascular and metabolic diseases (including stroke and diabetes)
3. Cancers
4. Chronic respiratory diseases (asthma, COPD, other respiratory)
5. Injuries

## Analysis

Premature mortality was calculated as years of life lost (YLLs) by multiplying the observed number of deaths in each age category by an idealised life expectancy for that age based on a model life table, Coale and Demeny West level 26,<sup>5</sup> with life expectancy at

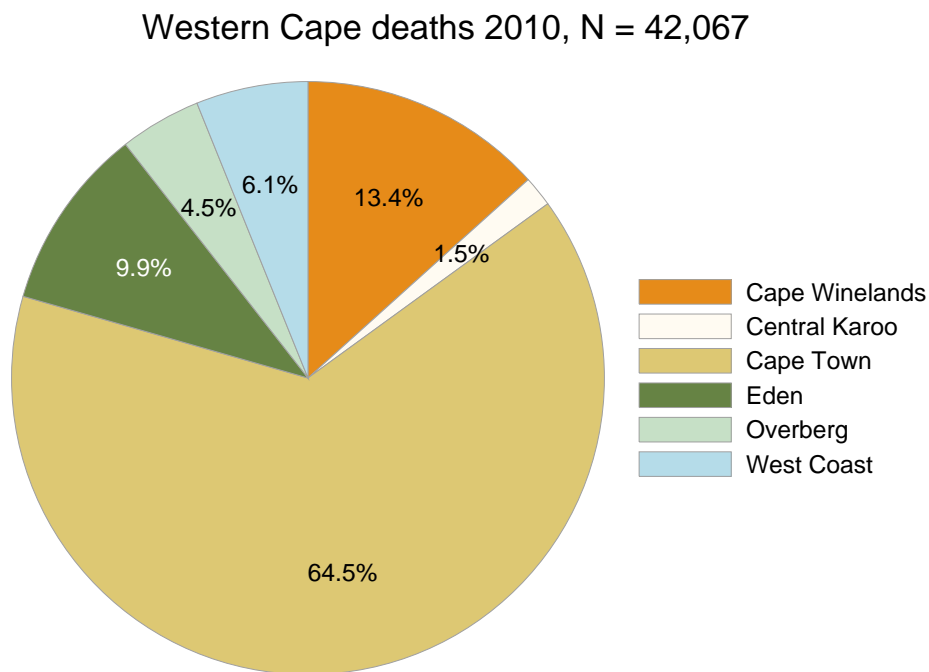
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<sup>5</sup>Coale AJ & Demeny P (1966). Regional Model Life Tables and Stable Population, Princeton University Press, Princeton, N.J. 1966.

birth of 82.5 years for females and 80 years for males. Age weighting was not applied but the YLLs were discounted at 3% in line with the South African NBD study<sup>6</sup>. Age standardised mortality rates were calculated using population estimates derived from the sub-district totals produced by Dorrington and Moultrie for the Western Cape Government in 2012 with the sub-district age sex distribution from the 2007 community survey iteratively re-scaled to sum up to the district age sex totals. The WHO age distribution for the world was used as the standard<sup>7</sup>.

### 1.3 Results

There were 42,067 deaths in the Western Cape with 64.5% of these occurring in the Cape Metropole District (Figure 1.1). Male deaths accounted for 55% of all deaths (Figure 1.2). Injuries accounted for a much higher proportion of male deaths compared to female deaths, peaking between 15 and 35 years of age.



**Figure 1.1: District proportions of provincial deaths**

**Table 1.1: Western Cape districts deaths and YLLs, 2010**

District	Deaths	%	YLLs	%
Cape Winelands	5,640	13.4	101,380	13.6
Central Karoo	637	1.5	11,444	1.5
Cape Town	27,149	64.5	484,741	65.1
Eden	4,169	9.9	69,795	9.4
Overberg	1,905	4.5	31,935	4.3
West Coast	2,567	6.1	45,682	6.1
Western Cape	42,067	100.0	744,977	100.0

<sup>6</sup>Bradshaw D, Groenewald P, Laubscher R, Nannan N, Nojilana B, Norman R, et al. Initial burden of disease estimates for South Africa, 2000. Cape Town: South African Medical Research Council, 2003.

<sup>7</sup>Ahmad OB, Boschi-Pinto C, Lopez AD, Murray CJL, Lozano R, Inoue M. Age standardisation of rates: A new WHO standard. GPE Discussion Paper Series: No.31. EIP/GPE/EBD. World Health Organization 2001.

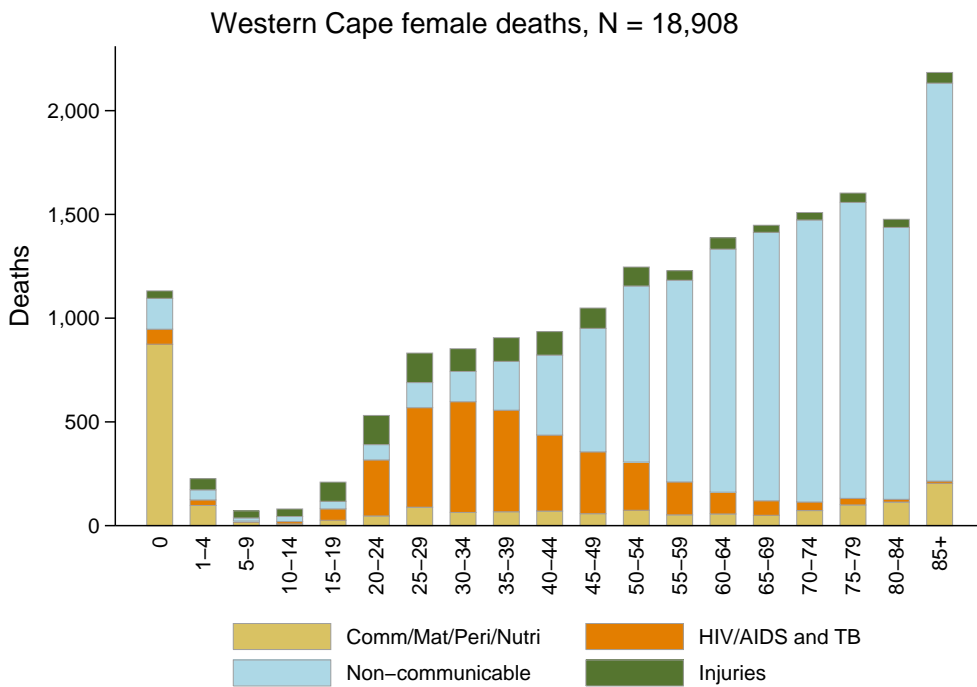
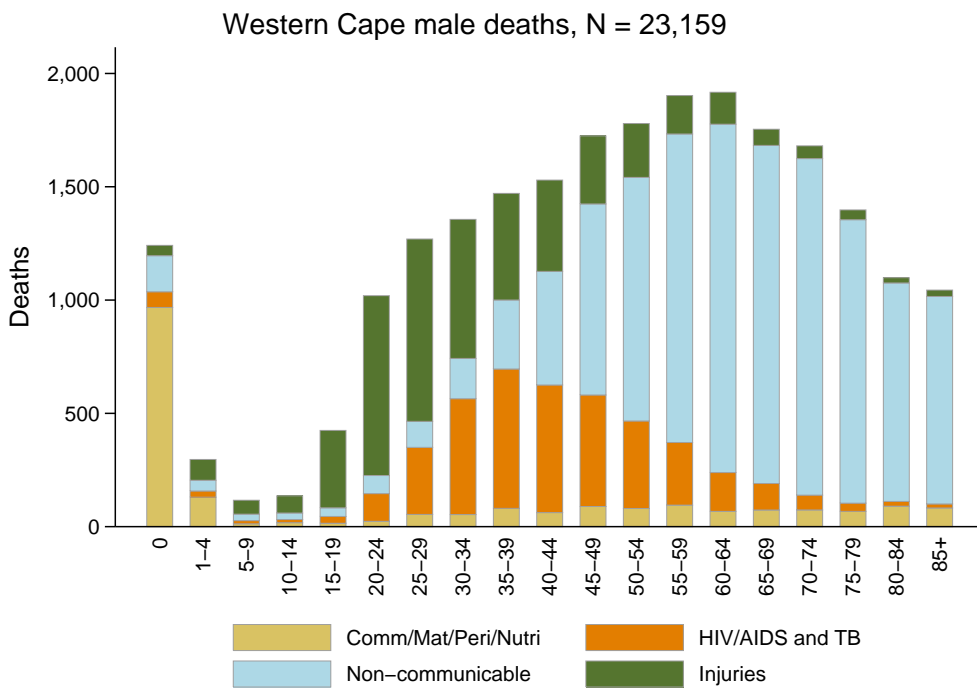
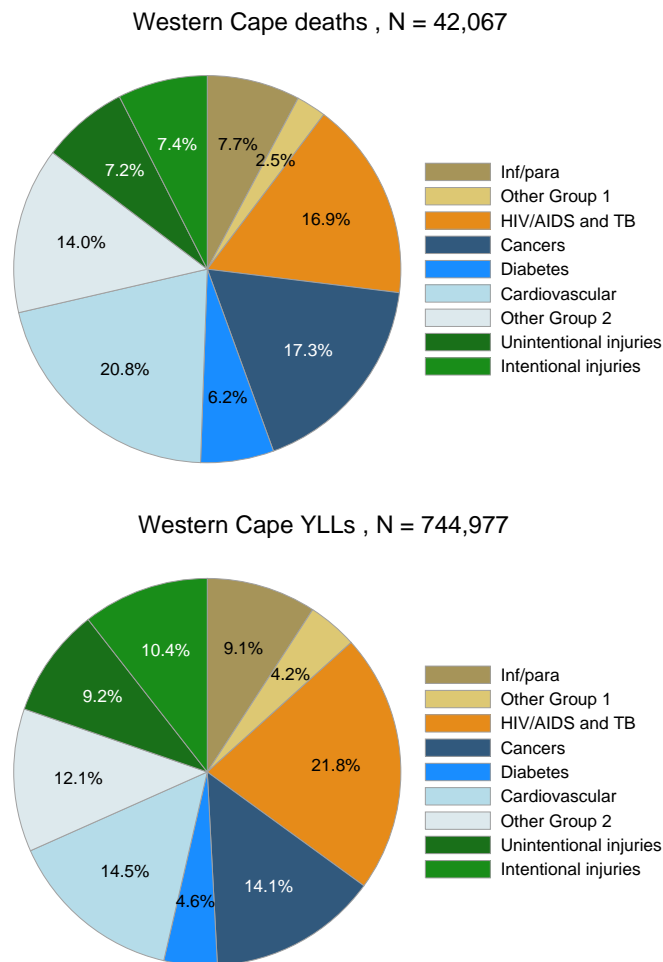


Figure 1.2: Age-specific deaths by broad cause and sex, Western Cape 2010

The proportions of deaths and YLLs by disease category are shown in Figure 1.3. Cardiovascular diseases accounted for the largest proportion of all deaths (20.8%) but the largest category of premature mortality was due to HIV/AIDS and TB (21.8%), see Figure 1.3. The leading causes of death and YLLs are presented in Figures 1.4 to 1.6 for males, females and persons respectively. Interpersonal violence was the leading cause of premature mortality among males (Figure 1.4) and HIV/AIDS the leading cause amongst females (Figure 1.5). HIV/AIDS, tuberculosis, interpersonal violence and ischaemic heart disease were the leading single causes of premature mortality for all persons (Figure 1.6).

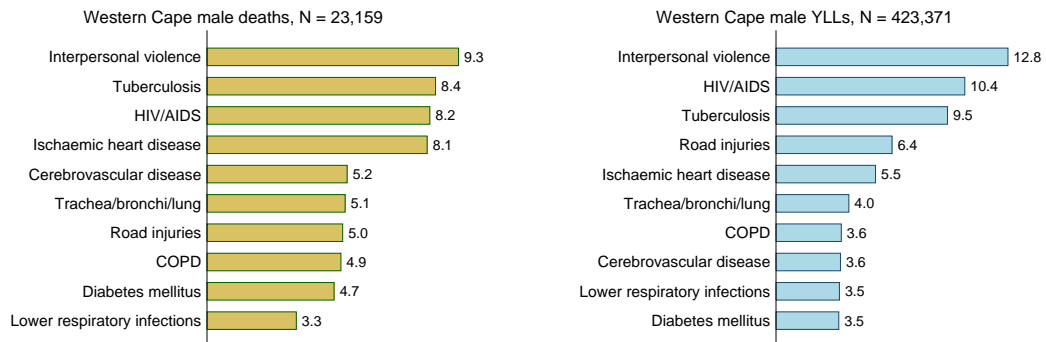


**Figure 1.3: Cause of death and premature mortality profile, Western Cape 2010**

**Table 1.2: Deaths and YLLs by disease category for persons, Western Cape 2010**

Cause	Deaths	%	YLLs	%
Inf/para	3,221	7.7	67,569	9.1
Other Group 1	1,050	2.5	31,250	4.2
HIV/AIDS and TB	7,118	16.9	162,470	21.8
Cancers	7,258	17.3	104,958	14.1
Diabetes	2,624	6.2	34,176	4.6
Cardiovascular	8,763	20.8	108,107	14.5
Other Group 2	5,889	14.0	90,143	12.1
Unintentional injuries	3,019	7.2	68,568	9.2
Intentional injuries	3,125	7.4	77,735	10.4
Total	42,067	100.0	744,977	100.0

### 1.3.1 Western Cape males



**Figure 1.4: Leading causes of death for males, Western Cape 2010**

**Table 1.3: Leading causes of death for males, Western Cape 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
Interpersonal violence	2,142	9.3	Interpersonal violence	54,183	12.8
Tuberculosis	1,947	8.4	HIV/AIDS	44,095	10.4
HIV/AIDS	1,899	8.2	Tuberculosis	40,050	9.5
Ischaemic heart disease	1,875	8.1	Road injuries	27,097	6.4
Cerebrovascular disease	1,193	5.2	Ischaemic heart disease	23,243	5.5
Trachea/bronchi/lung	1,177	5.1	Trachea/bronchi/lung	17,018	4.0
Road injuries	1,156	5.0	COPD	15,248	3.6
COPD	1,141	4.9	Cerebrovascular disease	15,057	3.6
Diabetes mellitus	1,082	4.7	Lower respiratory infections	14,815	3.5
Lower respiratory infections	761	3.3	Diabetes mellitus	14,663	3.5
Top 10 causes	14,373	62.1	Top 10 causes	265,468	62.7
Total	23,159	100.0	Total	423,371	100.0

### 1.3.2 Western Cape females

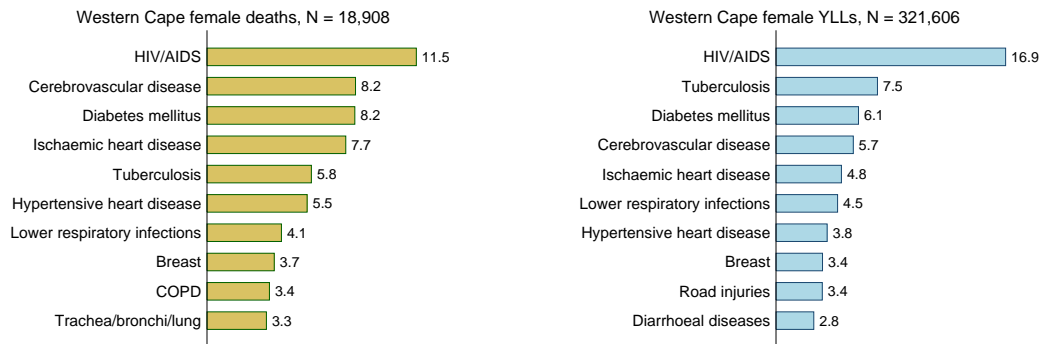


Figure 1.5: Leading causes of death for females, Western Cape 2010

Table 1.4: Leading causes of death for females, Western Cape 2010

Cause of death	Deaths	%	Cause of death	YLLs	%
HIV/AIDS	2,184	11.5	HIV/AIDS	54,325	16.9
Cerebrovascular disease	1,549	8.2	Tuberculosis	24,001	7.5
Diabetes mellitus	1,542	8.2	Diabetes mellitus	19,514	6.1
Ischaemic heart disease	1,448	7.7	Cerebrovascular disease	18,283	5.7
Tuberculosis	1,089	5.8	Ischaemic heart disease	15,477	4.8
Hypertensive heart disease	1,044	5.5	Lower respiratory infections	14,568	4.5
Lower respiratory infections	776	4.1	Hypertensive heart disease	12,092	3.8
Breast	701	3.7	Breast	11,002	3.4
COPD	651	3.4	Road injuries	10,946	3.4
Trachea/bronchi/lung	620	3.3	Diarrhoeal diseases	8,939	2.8
Top 10 causes	11,605	61.4	Top 10 causes	186,908	58.1
Total	18,908	100.0	Total	321,606	100.0



### 1.3.3 Western Cape persons

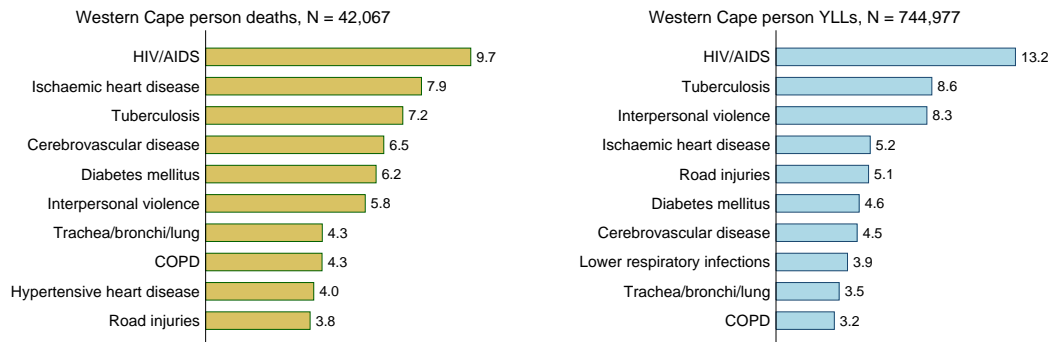


Figure 1.6: Leading causes of death for persons, Western Cape 2010

Table 1.5: Leading causes of death for persons, Western Cape 2010

Cause of death	Deaths	%	Cause of death	YLLs	%
HIV/AIDS	4,082	9.7	HIV/AIDS	98,420	13.2
Ischaemic heart disease	3,323	7.9	Tuberculosis	64,051	8.6
Tuberculosis	3,036	7.2	Interpersonal violence	62,017	8.3
Cerebrovascular disease	2,743	6.5	Ischaemic heart disease	38,720	5.2
Diabetes mellitus	2,624	6.2	Road injuries	38,042	5.1
Interpersonal violence	2,458	5.8	Diabetes mellitus	34,176	4.6
Trachea/bronchi/lung	1,796	4.3	Cerebrovascular disease	33,340	4.5
COPD	1,792	4.3	Lower respiratory infections	29,383	3.9
Hypertensive heart disease	1,664	4.0	Trachea/bronchi/lung	25,945	3.5
Road injuries	1,609	3.8	COPD	23,967	3.2
Top 10 causes	25,127	59.7	Top 10 causes	439,211	59.0
Total	42,067	100.0	Total	744,977	100.0

### 1.3.4 Leading causes of premature mortality, WC Districts 2010

A detailed profile for each district is provided in Appendix Section A.4. Figure 1.7 presents a summary of the leading 10 causes of premature mortality for each district. It can be seen that the leading cause of premature mortality in all districts was HIV/AIDS. This was followed by TB in all districts with the exception of Overberg and Cape Metropole District, where interpersonal violence ranked second and TB third (Figure 1.7). Ischaemic heart disease, cerebrovascular disease and road injuries ranked amongst the top six causes of death in all districts except Central Karoo and Cape Winelands, where COPD featured in the top six causes.

Rank	Cape Winelands	Central Karoo	Cape Metro	Eden	Overberg	West Coast	Western Cape
1	HIV/AIDS (13.3%)	HIV/AIDS (11.7%)	HIV/AIDS (13.6%)	HIV/AIDS (13%)	HIV/AIDS (11.2%)	HIV/AIDS (10.7%)	HIV/AIDS (13.2%)
2	Tuberculosis (10.1%)	Tuberculosis (9.1%)	Interpersonal violence (8.9%)	Tuberculosis (8.2%)	Interpersonal violence (7.7%)	Tuberculosis (10.4%)	Tuberculosis (8.6%)
3	Interpersonal violence (7.2%)	Interpersonal violence (7.8%)	Tuberculosis (8.3%)	Interpersonal violence (6.9%)	Tuberculosis (6.2%)	Interpersonal violence (7.1%)	Interpersonal violence (8.3%)
4	Cerebrovascular disease (5.6%)	COPD (6.6%)	Ischaemic heart disease (5.2%)	Ischaemic heart disease (6.5%)	Road injuries (6.1%)	Ischaemic heart disease (6.3%)	Ischaemic heart disease (5.2%)
5	COPD (5%)	Cerebrovascular disease (5.1%)	Road injuries (5.2%)	Cerebrovascular disease (5.5%)	Ischaemic heart disease (5.7%)	Cerebrovascular disease (5.7%)	Road injuries (5.1%)
6	Road injuries (4.7%)	Road injuries (4%)	Diabetes mellitus (4.9%)	Road injuries (4.7%)	Cerebrovascular disease (5.1%)	Road injuries (5.6%)	Diabetes mellitus (4.6%)
7	Ischaemic heart disease (4%)	Ischaemic heart disease (3.7%)	Lower respiratory infections (4%)	COPD (4.5%)	Trachea/bronchi/lung (4.4%)	Diabetes mellitus (4.6%)	Cerebrovascular disease (4.5%)
8	Diabetes mellitus (3.7%)	Trachea/bronchi/lung (3.2%)	Cerebrovascular disease (3.9%)	Trachea/bronchi/lung (4.1%)	Diabetes mellitus (4.1%)	Lower respiratory infections (4.4%)	Lower respiratory infections (3.9%)
9	Lower respiratory infections (3.4%)	Lower respiratory infections (3%)	Trachea/bronchi/lung (3.3%)	Lower respiratory infections (4.1%)	Lower respiratory infections (3.5%)	Trachea/bronchi/lung (3.8%)	Trachea/bronchi/lung (3.5%)
10	Trachea/bronchi/lung (3.3%)	Hypertensive heart disease (2.3%)	Hypertensive heart disease (2.9%)	Diabetes mellitus (4.1%)	COPD (3.1%)	COPD (3.6%)	COPD (3.2%)

Figure 1.7: League table of leading causes of premature mortality, WC Districts 2010

## 2 Child mortality

### 2.1 Child mortality rates

Sources of information on live births and child deaths in the Western Cape include Statistics SA,<sup>1,2</sup> birth and death registration data, WCDoH and City of Cape Town data (LMSS; live births occurring in facilities from SINJANI). These provide different estimates of child mortality rates, particularly at district and sub-district level (see Table 2.1). Due to this uncertainty, it was decided to present a range of infant and child mortality rates from these different sources of data. In addition, estimates of IMR and U5MR were made using an abridged lifetable (deaths LMS and population estimates Centre for Actuarial Research (CARE)). These estimates suggest that the infant mortality rate (IMR) for the Western Cape ranges between 22.4 and 23.4 deaths per 1,000 live births, and that West Coast and Central Karoo districts have the highest child mortality rates, Table 2.1. Variations between estimates were greatest for Eden and Overberg.

**Table 2.1: Estimates of IMR and U5MR, Western Cape districts 2010**

Districts	IMR per 1,000 live births			U5MR per 1,000 live births		
	LMSS/SINJANI	Stats SA	Lifetable	LMSS/SINJANI	Stats SA	Lifetable
Cape Winelands	21.9	25.4	22.7	26.8	31.7	27.9
Central Karoo	30.3	33.8	29.7	36.5	44.1	36.0
City of Cape Town	*22.5	22.6	22.0	*27.6	27.8	27.7
Eden	16.5	19.2	22.4	20.3	23.8	24.0
Overberg	24.0	33.0	19.6	32.0	46.3	26.4
West Coast	31.5	30.2	32.8	35.6	35.6	36.8
Western Cape	22.4	23.4	22.7	27.4	29.1	27.9

\*City of Cape Town live births

Trends in IMR and U5MR between 2007 and 2010 data are shown in Table 2.2 using Stats SA vital registration data (Appendix Table A.4), as these data were available for the period. Child mortality rates stayed fairly consistent over this period in the Western Cape. Variations in districts are difficult to interpret.

**Table 2.2: Trends in IMR and U5MR in Western Cape districts, 2007 – 2010 Stats SA**

Districts	IMR per 1,000 live births (Stats SA)				U5MR per 1,000 live births (Stats SA)			
	2007	2008	2009	2010	2007	2008	2009	2010
Cape Winelands	28.6	22.8	25.3	25.4	34.0	30.1	31.2	31.7
Central Karoo	45.2	44.2	40.7	33.8	60.3	58.6	51.7	44.1
City of Cape Town	21.5	21.2	21.9	22.6	26.1	26.1	26.4	27.8
Eden	30.7	23.4	23.8	19.2	37.2	29.3	28.4	23.8
Overberg	36.8	28.1	28.8	33.0	45.6	35.2	33.9	46.3
West Coast	32.3	28.4	23.4	30.2	37.8	34.0	26.7	35.6
Western Cape	24.5	22.4	23	23.4	29.7	27.9	27.7	29.1

<sup>1</sup>Statistics South Africa. Mortality and causes of death in South Africa, 2010. Findings from death notification. Statistical release P0305. Pretoria: Statistics South Africa, 2013.

<sup>2</sup>Statistics South Africa. Recorded live births, 2011. P0305, Pretoria: Statistics South Africa, 2012

## 2.2 Causes of child deaths

The cause of death profile for children under five years is shown in Figure 2.1. Neonatal deaths accounted for 34% of the under five deaths followed by pneumonia (15%), diarrhoea (15%), injuries (7%), HIV (5%) and congenital abnormalities (4%). The causes of neonatal deaths were prematurity (16%), followed by birth asphyxia (7%) and severe infections (5%). Injuries, including interpersonal violence, fires, road injuries and accidental suffocation, accounted for 1% of neonatal deaths and 7% of deaths in children under five years. It is possible that some of the 25 cases of “concealment of birth” were actually cases of infanticide and would increase the proportion of injury deaths in neonates to 2%. It should also be noted that HIV is likely to be underreported as a cause of death in these data with probable misattribution of HIV-related deaths to pneumonia and diarrhoea.

The change in causes of death between 2009 and 2010 in neonates and children from 1 to 59 months are shown in Figure 2.2 and Figure 2.3 respectively. It must be noted that the 2009 child deaths were adjusted to the 2009 Stats SA deaths and the 2010 data are unadjusted at 97% of the Stat SA 2010 deaths. In neonates, there were slight increases in the numbers of deaths due to prematurity and birth asphyxia between 2009 and 2010, with slight declines in the other causes. In children, a marked decline in HIV/AIDS deaths between 2009 and 2010 was noted, but this was offset by a steep increase in pneumonia deaths, which could have been HIV-related. A slight decline in diarrhoea, malnutrition, septicaemia and meningitis was noted over this period. A measles epidemic in 2010 resulted in 43 deaths in children under five years, with 16 of these deaths occurring in Khayelitsha.

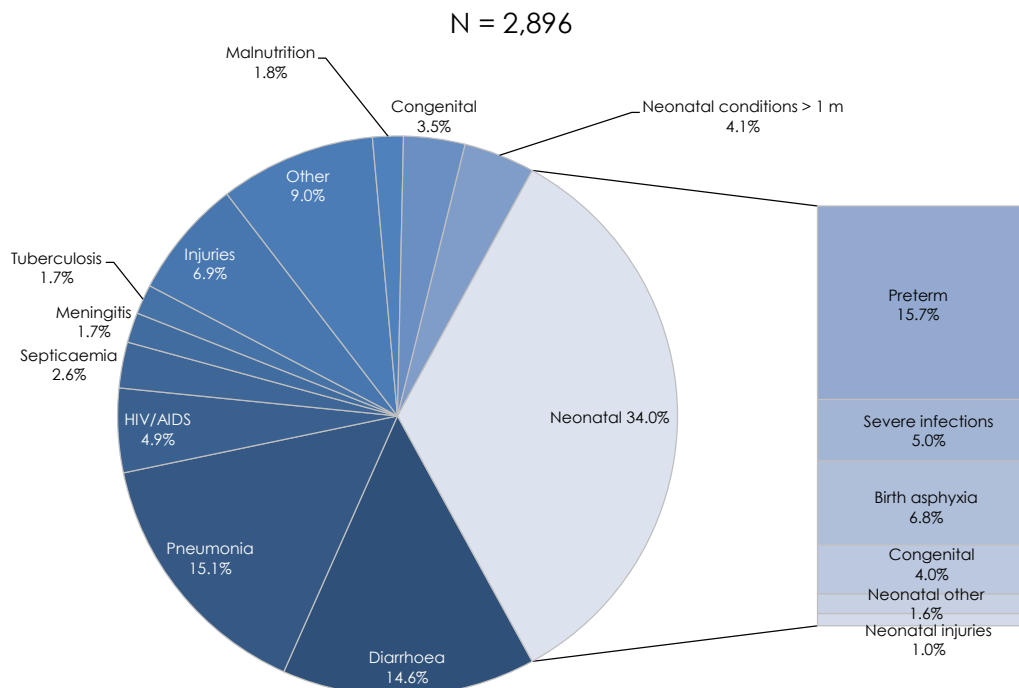


Figure 2.1: Causes of death in children under five years, Western Cape 2010

## Neonatal deaths, Western Cape

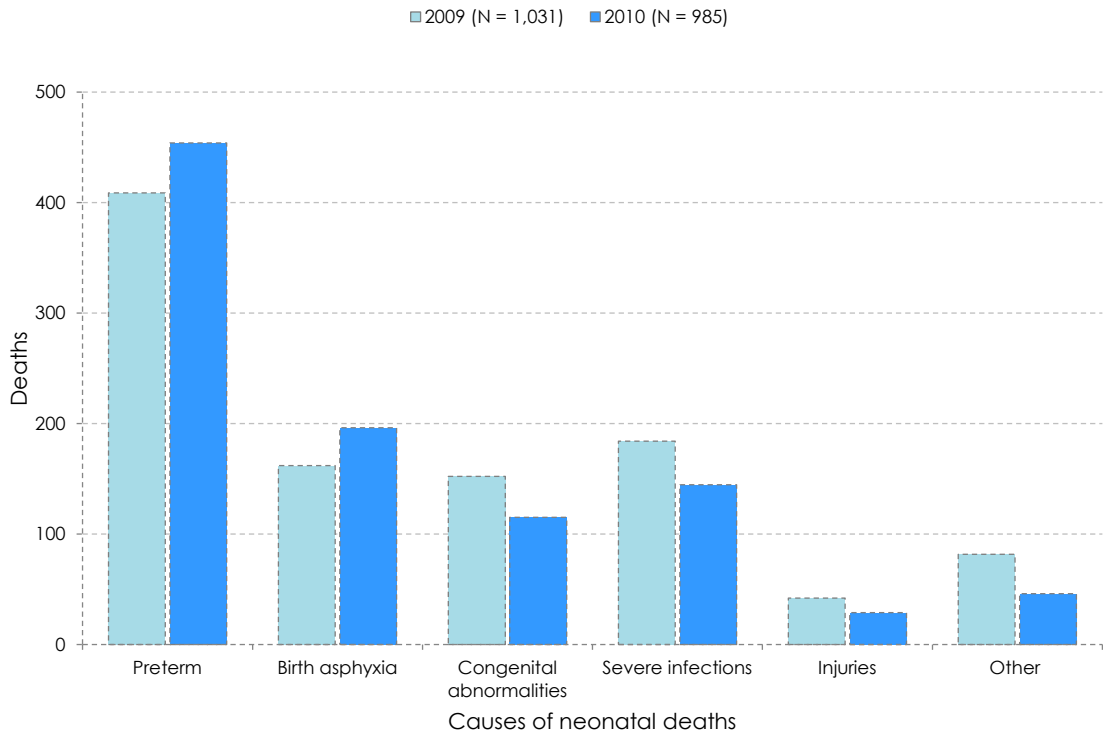


Figure 2.2: Change in neonatal causes of death, Western Cape 2009 to 2010

## Children 1-59 mths, Western Cape

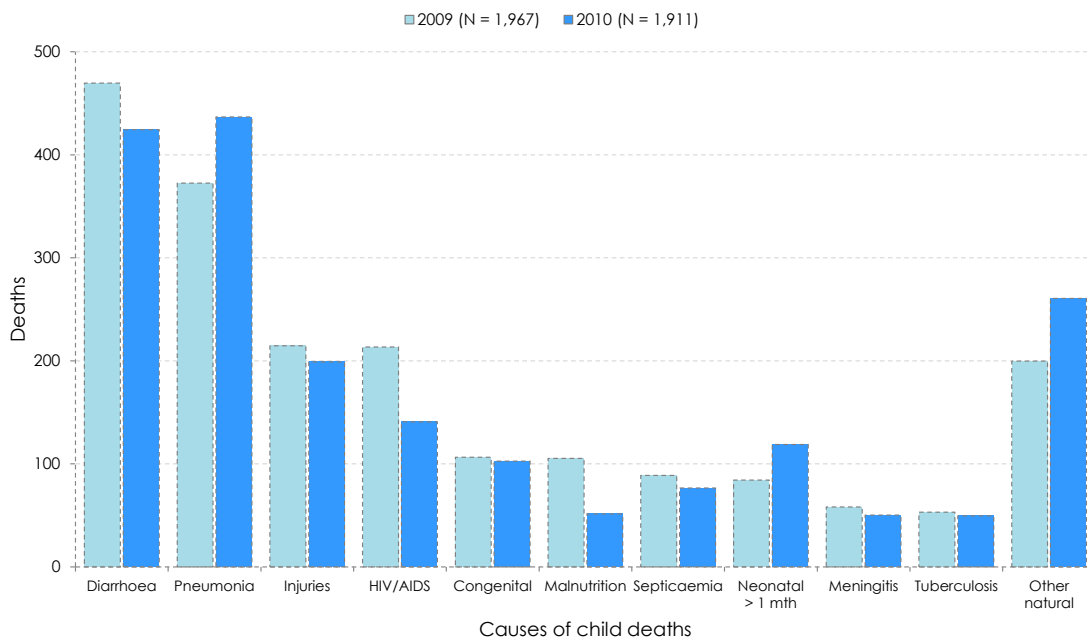


Figure 2.3: Change in child causes of death, Western Cape 2009 to 2010

### 3 Deaths from vaccine-preventable diseases

Vaccine-preventable diseases accounted for 61 deaths in the Western Cape in 2010 (Table 3.1). These were mainly due to a measles epidemic, the first major epidemic since 1992 in the Western Cape, although there have been sporadic small outbreaks. The majority of these deaths were in post neonatal infants but older children and young adults were also affected. Fifty six of the deaths occurred in the Cape Metro with the majority occurring in Khayelitsha, Table 3.2.

**Table 3.1: Vaccine-preventable deaths by age group, Western Cape 2010**

Age Group	Whooping cough A37	Chicken pox B01	Measles B05	Total vaccine preventable
28–364 days	1	0	34	35
1–4	0	0	9	9
5–9	0	1	1	2
20–24	0	0	1	1
25–29	0	2	4	6
30–34	0	0	3	3
35–39	0	0	3	3
40–44	0	0	1	1
60–64	0	0	0	0
85+	0	1	0	1
<b>Total</b>	<b>1</b>	<b>4</b>	<b>56</b>	<b>61</b>

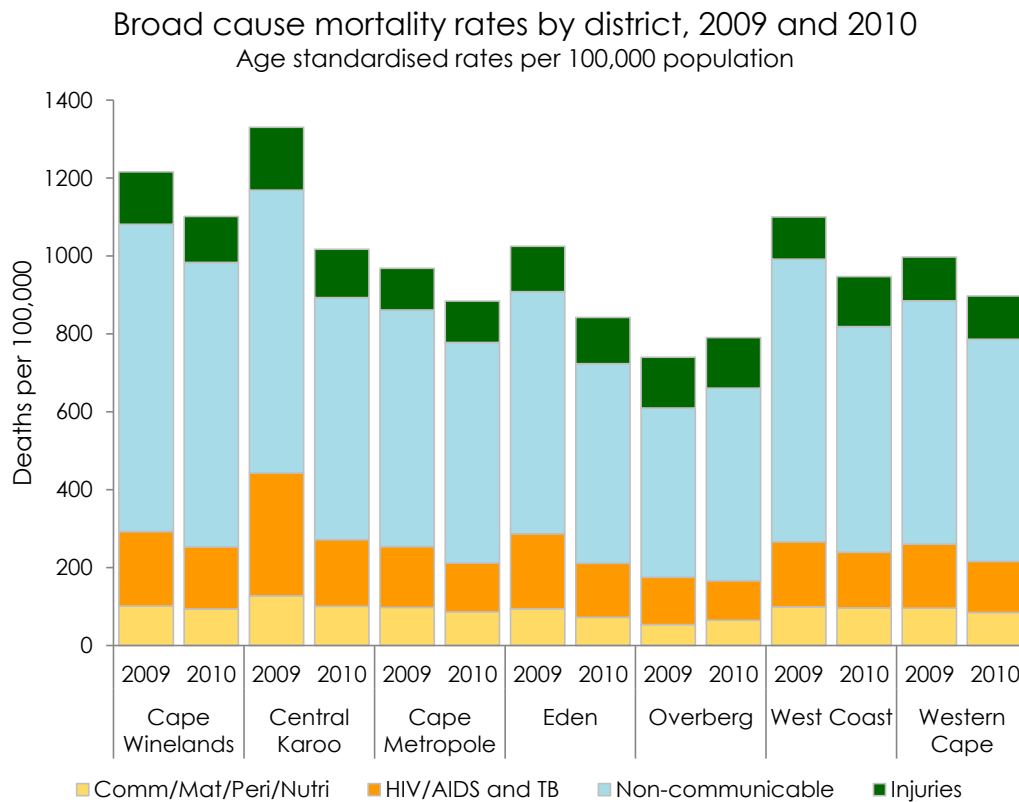
**Table 3.2: Vaccine-preventable deaths by cause and district, Western Cape 2010**

District	Whooping cough A37	Chicken pox B01	Measles B05	Total vaccine preventable
<b>City of Cape Town</b>	<b>1</b>	<b>3</b>	<b>51</b>	<b>56</b>
CT Eastern	0	0	5	5
CT Khayelitsha	0	0	17	17
CT Klipfontein	1	2	4	7
CT Mitchells Plain	0	0	5	5
CT Northern	0	0	6	6
CT Southern	0	1	3	4
CT Tygerberg	0	0	5	5
CT Western	0	0	6	6
<b>Cape Winelands</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>
Drankenstein	0	0	2	2
Stellenbosch	0	0	1	1
<b>Overberg</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
Theewaterskloof	0	1	2	3
<b>Western Cape</b>	<b>1</b>	<b>4</b>	<b>56</b>	<b>61</b>

## 4 Cause-specific mortality rates

### 4.1 Broad causes

#### Districts



**Figure 4.1: Age-standardised rates (per 100,000) by broad cause and year, Western Cape districts**

Age-standardised mortality rates (ASR) are shown by broad cause groups for 2009 and 2010 for each district in Figure 4.1, and the values are provided in Table 4.1. It can be seen that with exception of Overberg, there was a decrease in the all-cause mortality rates in the province. However, when interpreting the changes between 2009 and 2010, it is important to note that the deaths for 2009 were adjusted to the numbers reported by Stats SA in 2009, while no adjustment was made for the 2010 deaths. With the exception of the Cape Metropole District, it must therefore be assumed that some of the decrease can be ascribed to the lack of completeness of the deaths in 2010, particularly in Central Karoo, West Coast and Cape Winelands. Large declines were observed in the Cape Metropole District with a large decline in the ASR for non-communicable diseases and HIV and TB, a smaller decline in Comm/Mat/Peri/Nutr ASR, but the injury ASR remaining the same. In Cape Winelands and Central Karoo, injury ASRs declined, whilst in West Coast, injury ASRs increased between 2009 and 2010. The injury ASR in Cape Winelands and Central Karoo declined while it increased in the West Coast.



**Table 4.1: Age-standardised rates (per 100,000) by broad cause and year, Western Cape districts**

	Cape Winelands	Central Karoo	Cape Metro	Eden	Overberg	West Coast	Western Cape
Comm/Mat/Peri/Nutr							
2009	101.4	127.9	97.9	94.4	54.1	99.0	95.9
2010	93.5	100.6	86.1	72.2	65.1	96.4	85.0
HIV/AIDS and TB							
2009	190.8	314.6	156.0	192.4	121.4	167.4	164.3
2010	159.9	170.9	125.3	139.2	101.4	142.7	131.0
Non-communicable							
2009	789.5	726.5	607.4	621.3	434.0	725.5	624.8
2010	729.9	621.6	566.5	511.8	494.0	579.6	570.4
Injuries							
2009	133.9	161.0	106.8	116.6	130.8	108.5	112.4
2010	118.2	123.9	106.5	118.6	129.8	128.0	111.1
All causes							
2009	1215.6	1330.1	968.1	1024.8	740.3	1100.4	997.4
2010	1101.5	1017.1	884.5	841.8	790.3	946.7	897.4

## Subdistricts

Figures 4.2–4.5 show the rankings of sub-districts according to ASRs for each of the four broad causes, and Figure 4.6 shows the ranking based on the all-cause ASR. These need to be interpreted cautiously as the differences in death rates may be influenced by variations in the completeness in the data, as well as uncertainties in the estimates of the population age distribution. In summary:

- Comm/Mat/Peri/Nutr ASR (Figure 4.2) was highest in Bergrivier followed by Breede Valley and Khayelitsha. The lowest ASRs were in Swellendam and Cape Agulhas. When interpreting the ASRs for causes by sub-district (Figures 4.2 – 4.6), it is important to consider the completeness of death registration. The high rates in Breede Valley, Langeberg and Witzenberg may partly reflect the higher completeness of death reporting in those sub-districts.
- HIV and TB ASRs were highest in Khayelitsha followed by Witzenberg and Beaufort West. Prince Albert, Hessequa and Laingsburg had the lowest HIV and TB ASR (Figure 4.3).
- Non-communicable disease ASR was highest in Witzenberg followed by Breede Valley, Mitchells Plain and Langeberg. Matsikama and Bitou had the lowest ASR for non-communicable diseases (Figure 4.4).
- Since injury deaths were considered to be complete, it was felt that the injury ASRs provided an accurate reflection of the situation. Cederberg had the highest injury ASR followed by Swellendam, Prince Albert and Langeberg. Witzenberg also ranked amongst the top seven highest injury ASRs. Oudtshoorn and Northern had the lowest injury ASRs (Figure 4.5).
- Witzenberg had the highest all-cause ASR followed by Breede Valley, Mitchells Plain, Langeberg and Khayelitsha (Figure 4.6).

Comm/Mat/Peri/Nutr ASR, 2010

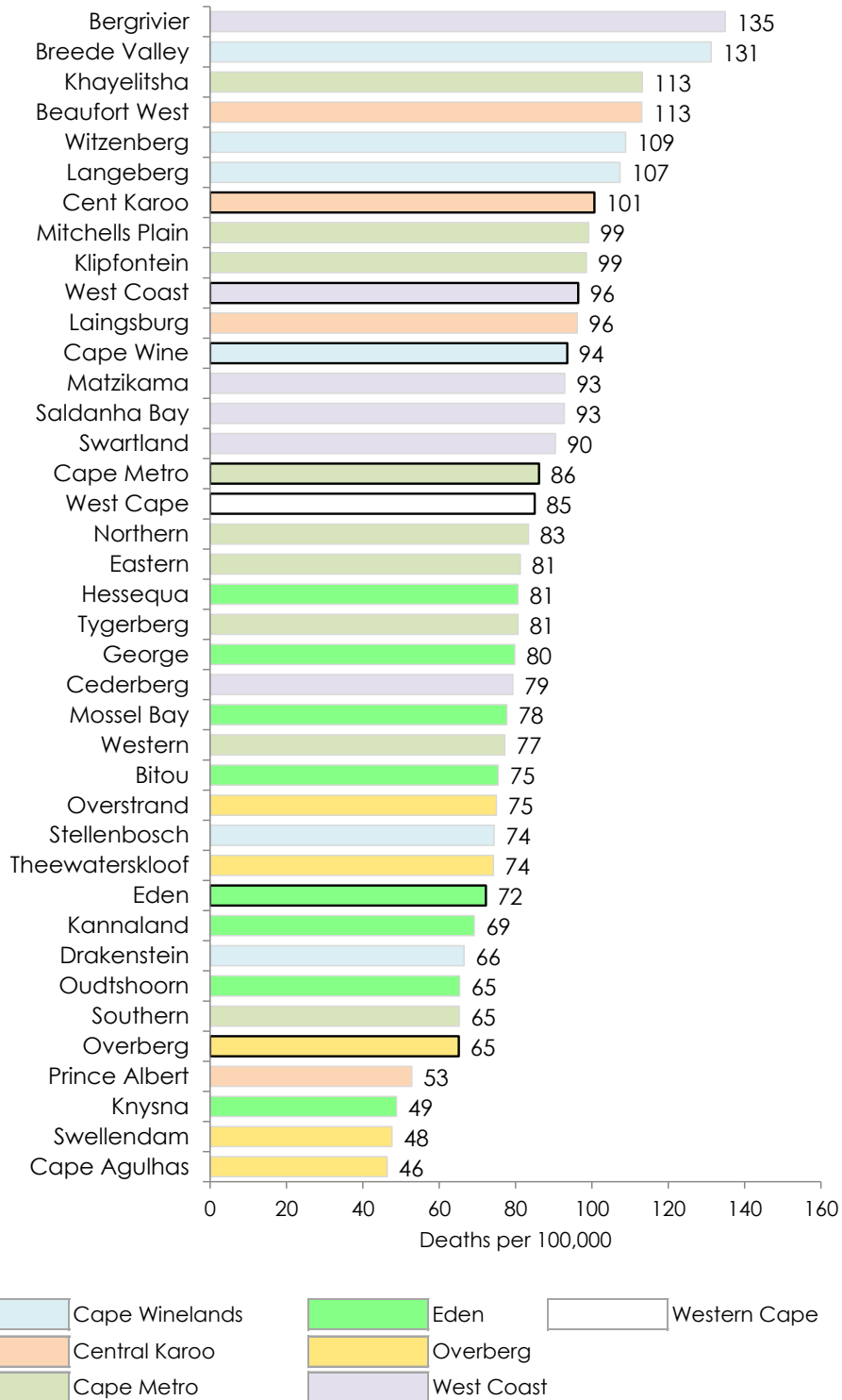
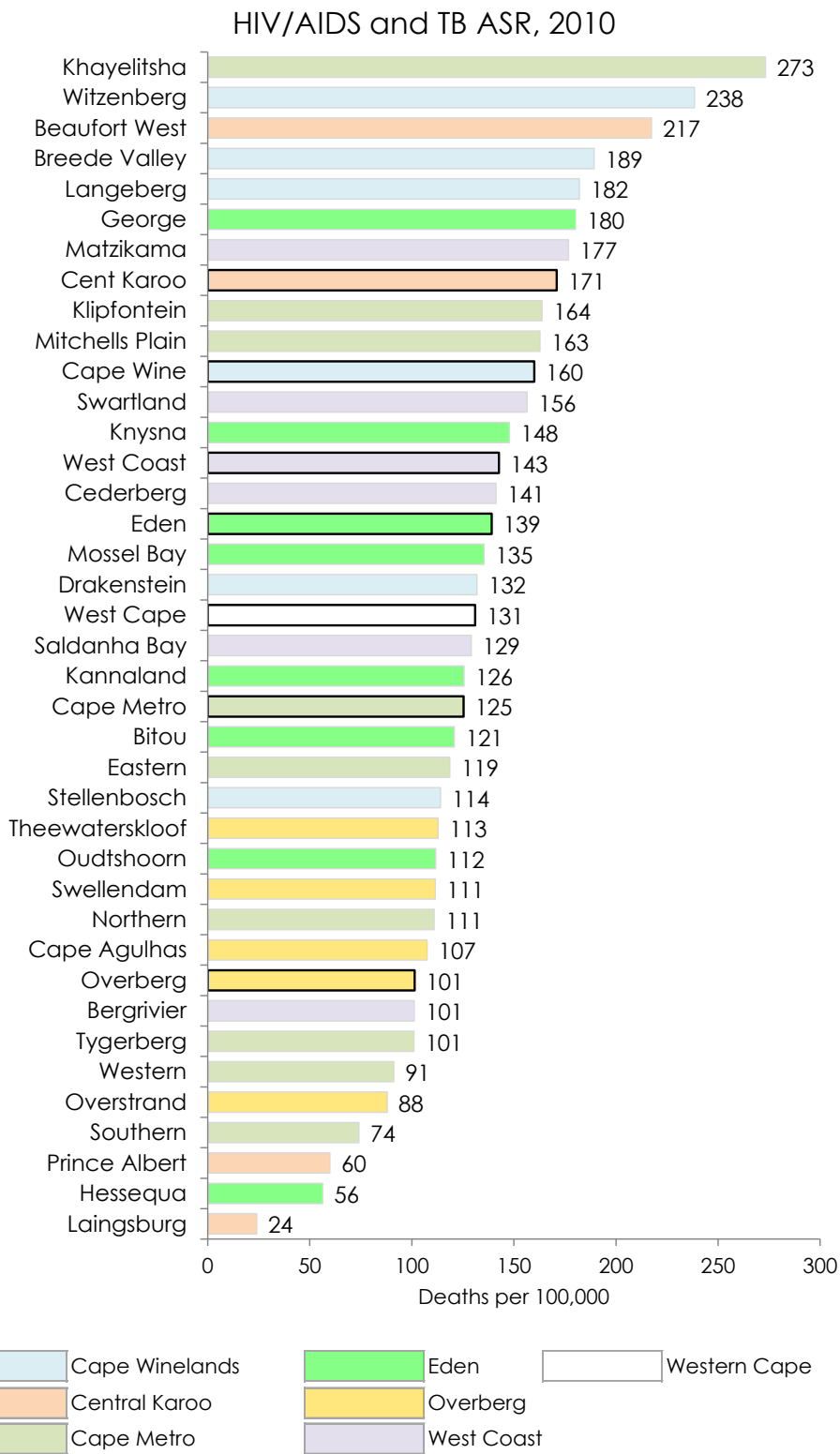
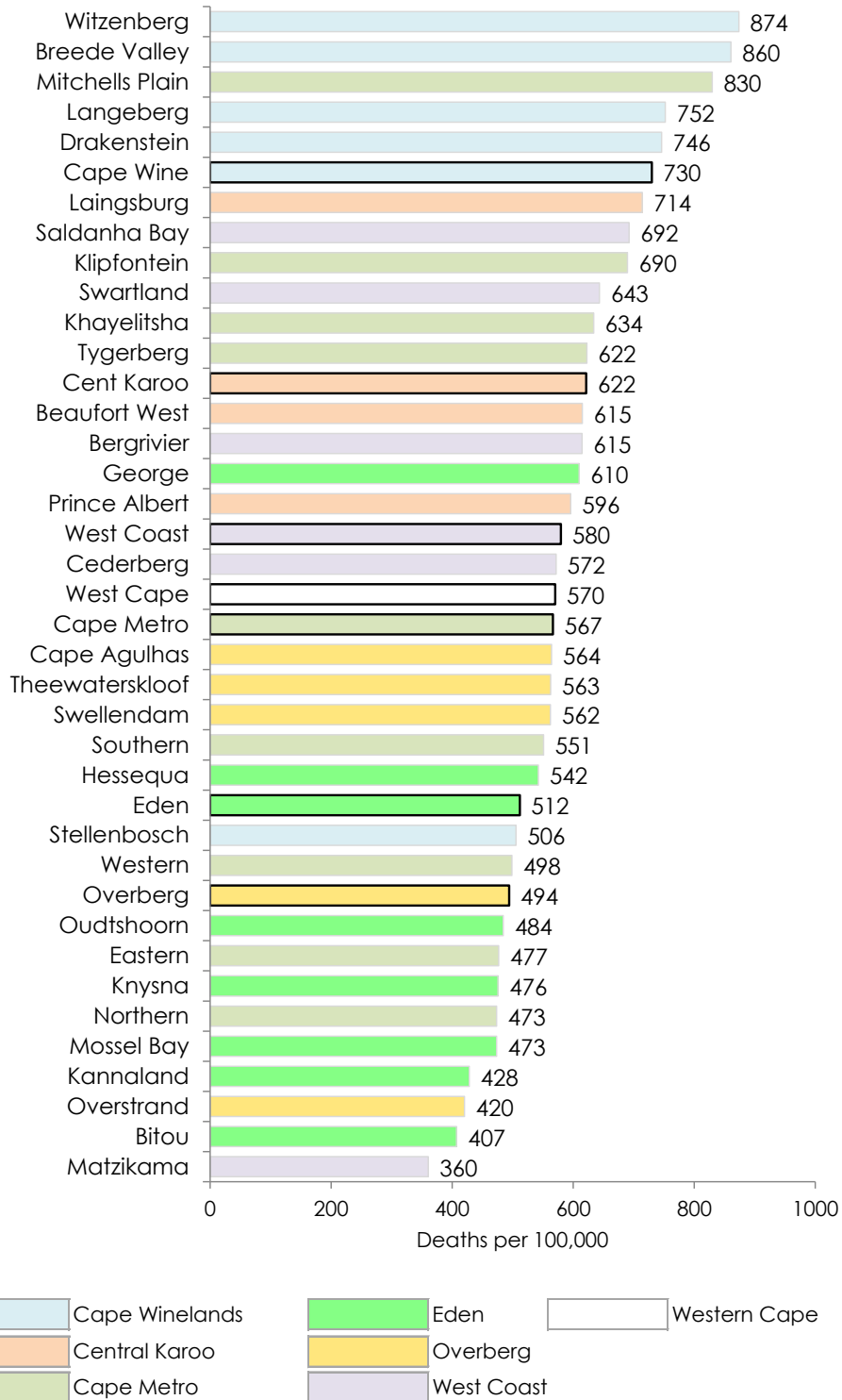


Figure 4.2: Age-standardised death rates for Comm/Mat/Peri/Nutri, Western Cape sub-districts 2010



**Figure 4.3: Age-standardised death rates for HIV/AIDS and TB, Western Cape sub-districts 2010**

### Non-communicable ASR, 2010



**Figure 4.4: Age-standardised death rates for Non-communicable diseases, Western Cape sub-districts 2010**

### Injuries ASR, 2010

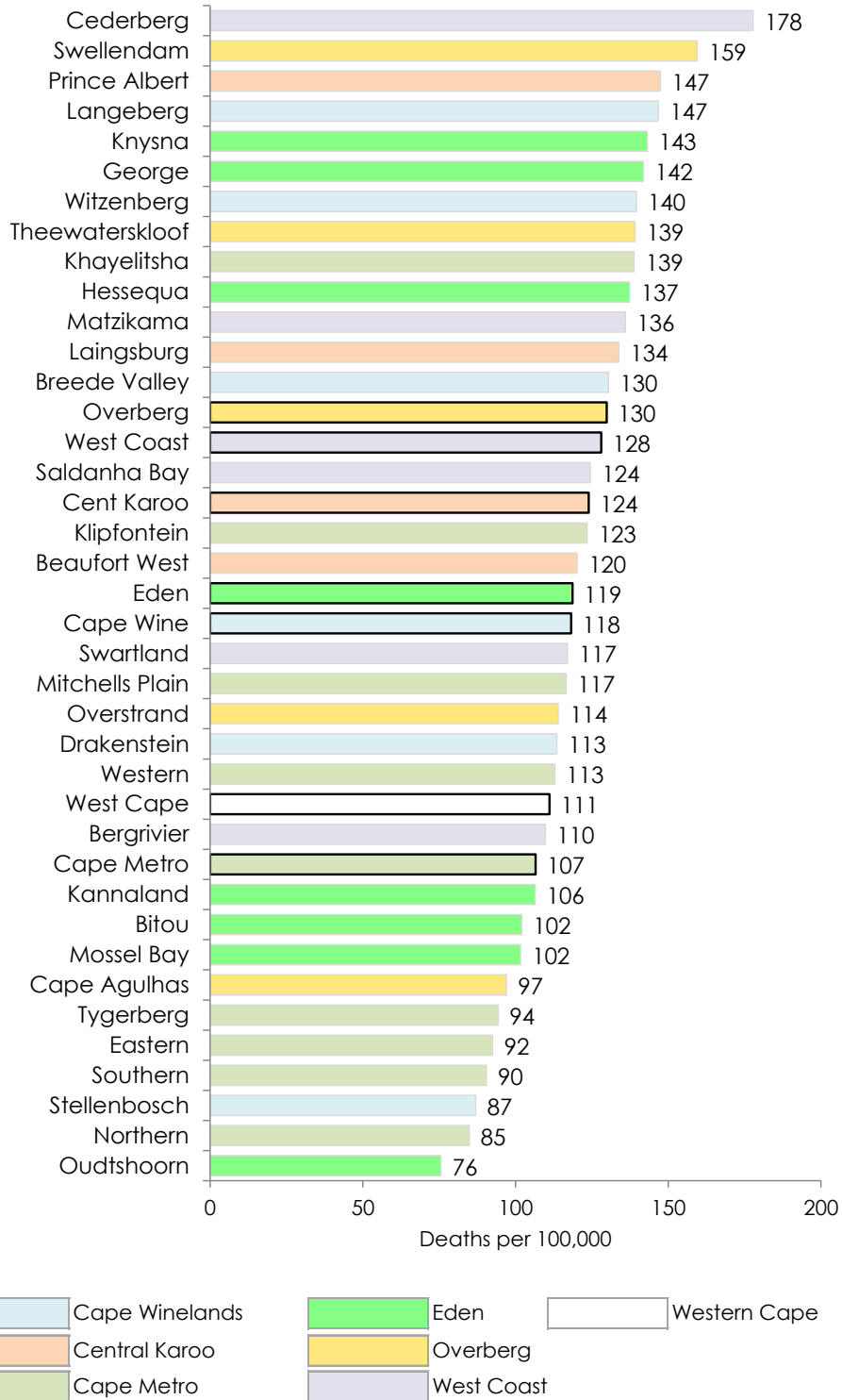


Figure 4.5: Age-standardised death rates for injuries, Western Cape sub-districts 2010

### All causes ASR, 2010

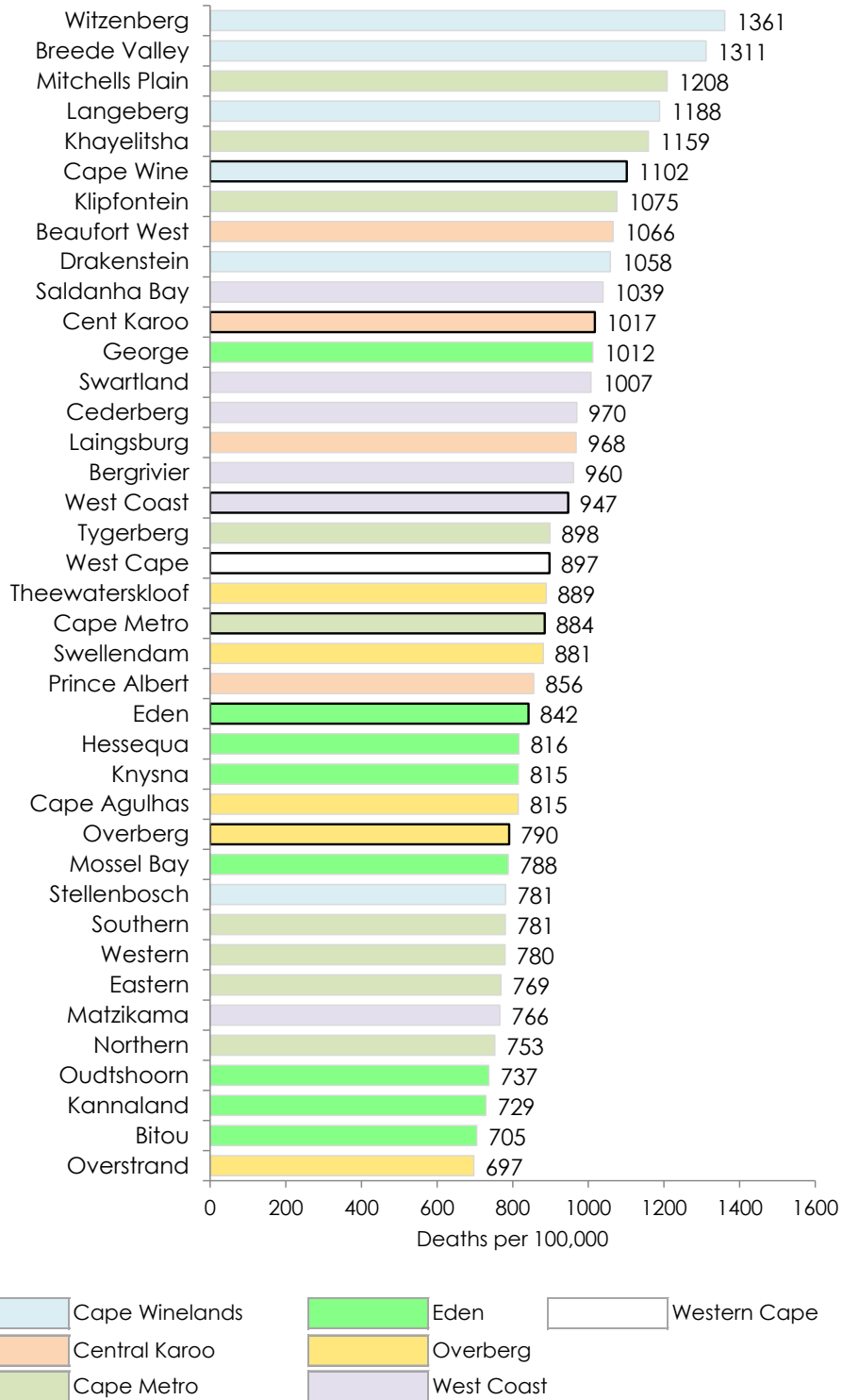
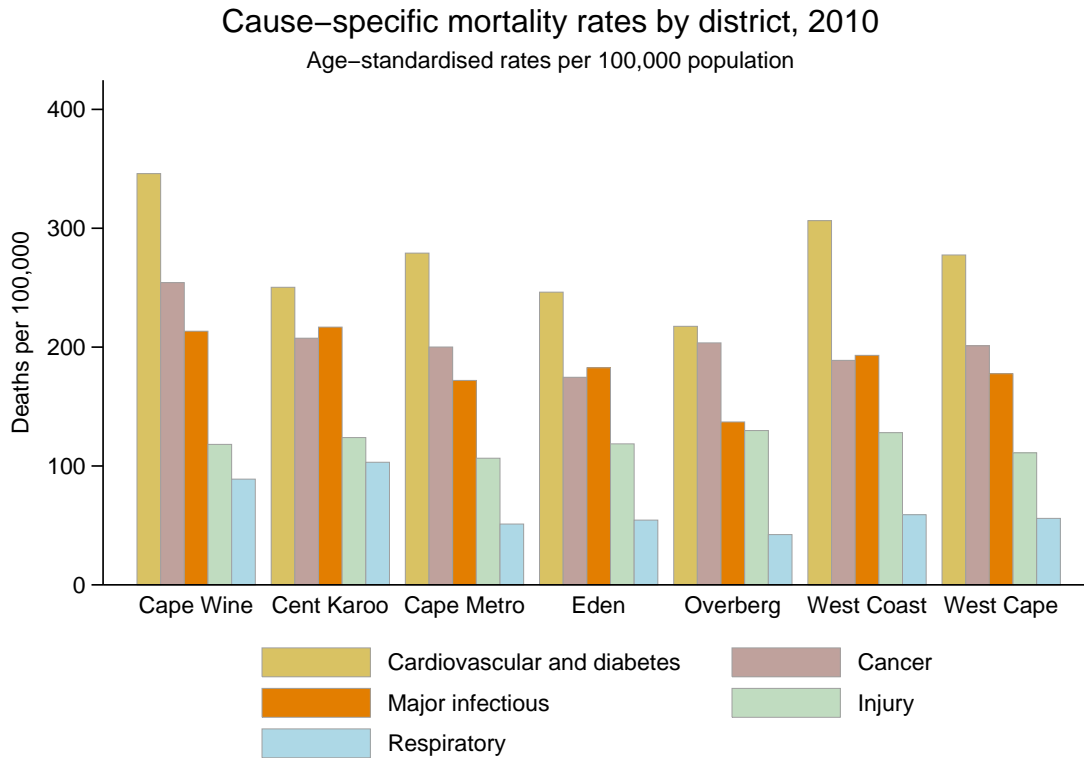


Figure 4.6: Age-standardised death rates for all causes, Western Cape sub-districts 2010

## 4.2 Major causes

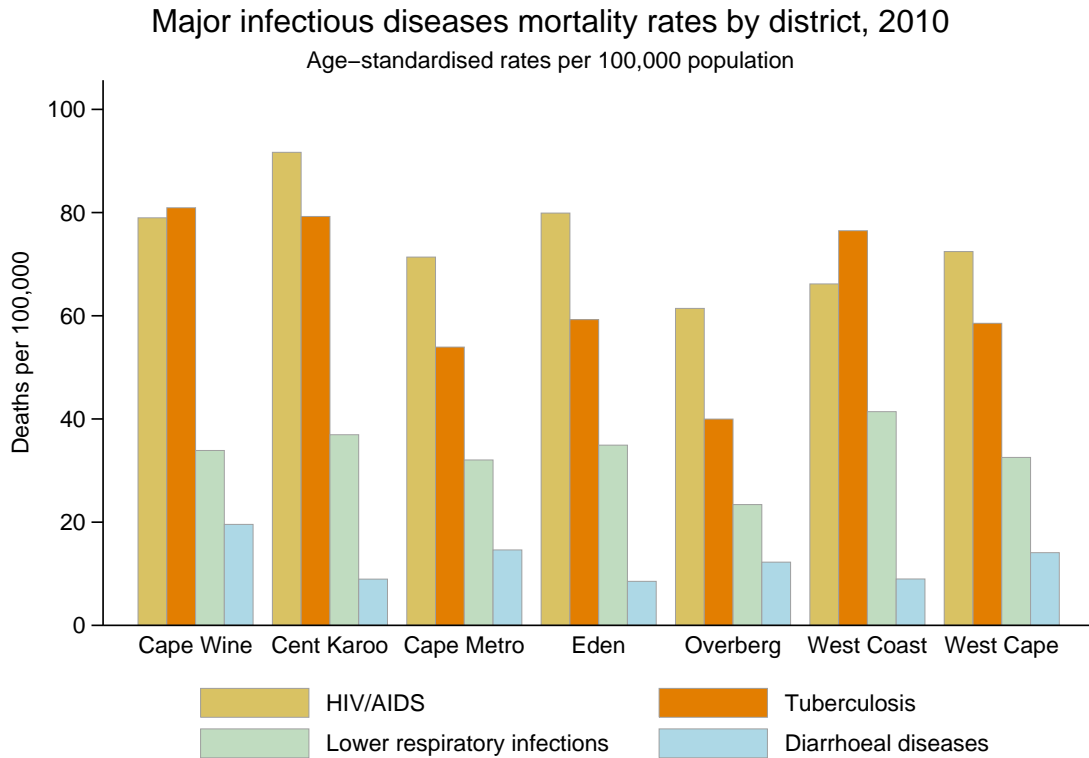


**Figure 4.7: Major disease mortality rates by district, Western Cape 2010**

Cause-specific mortality rates for selected groupings of major burden causes are presented to overcome the problem of misclassification of causes of death (Figure 4.7). Cardiovascular and diabetes rates show marked variation across districts, whilst injury mortality rates are more consistent. Cardiovascular and diabetes mortality rates were highest in Cape Winelands and lowest in Overberg. Cancer mortality rates were highest in Cape Winelands and lowest in Eden. Major infectious death rates were highest in Central Karoo and lowest in Overberg.



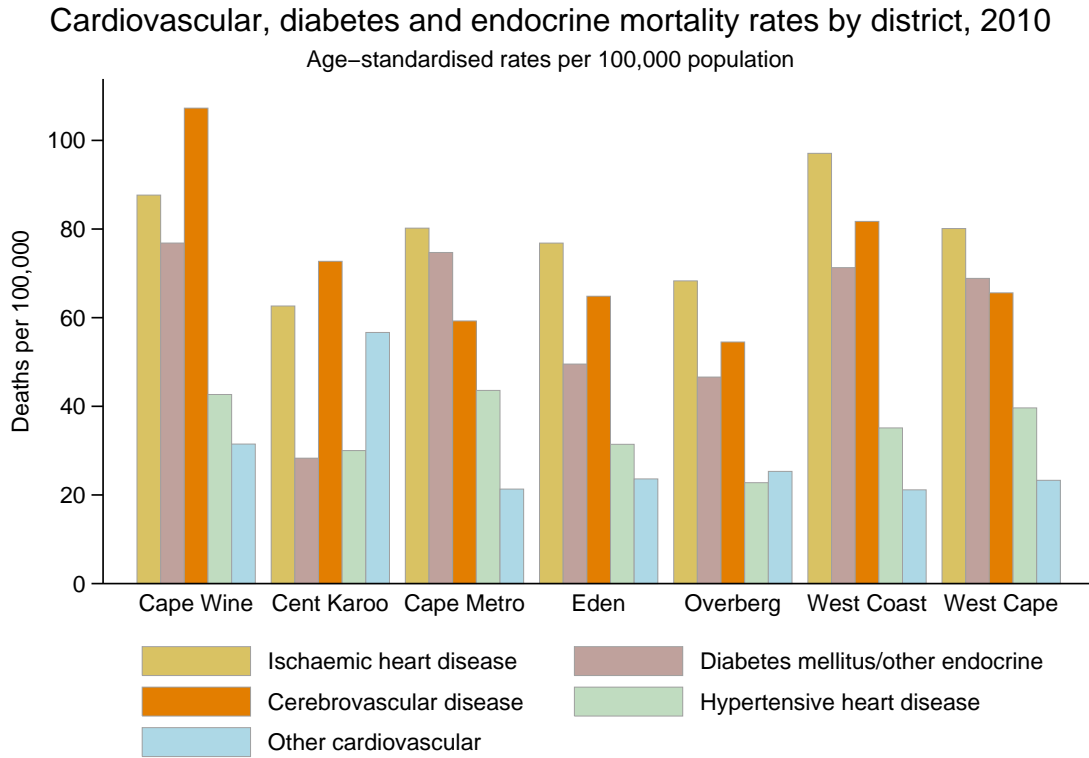
### 4.3 Major infectious diseases



**Figure 4.8: Major infectious disease mortality rates by district, Western Cape 2010**

HIV mortality rates were highest in Central Karoo followed by Cape Winelands and Eden. TB death rates were highest in West Coast followed by Central Karoo and Cape Winelands. Lower respiratory infection rates were highest in Central Karoo followed by West Coast and Cape Winelands. Diarrhoea death rates were highest in Cape Winelands followed by Cape Metro and Overberg.

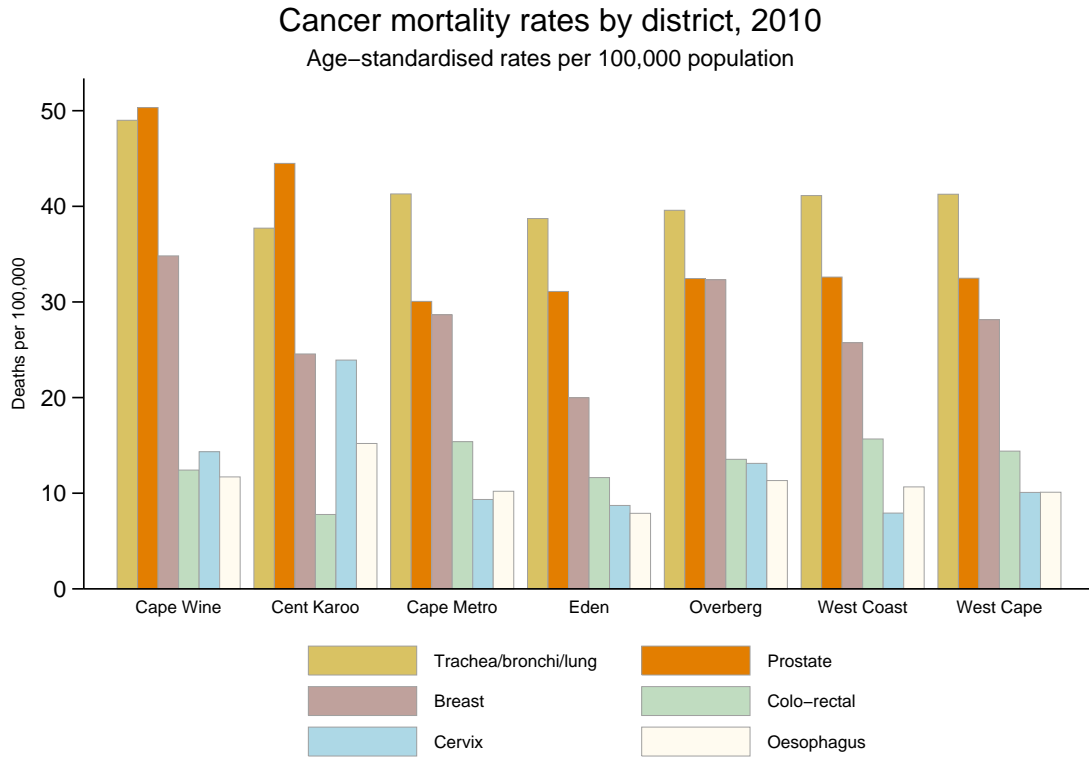
## 4.4 Cardiovascular and diabetes



**Figure 4.9: Cardiovascular, diabetes and endocrine mortality rates by district, Western Cape 2010**

Ischaemic heart disease death rates were highest in West Coast and lowest in Central Karoo and Overberg, whilst death rates due to cerebrovascular disease were highest in Cape Winelands and lowest in the Cape Metro and Overberg. Diabetes and endocrine mortality rates were highest in Cape Winelands and lowest in Central Karoo. Hypertensive heart disease death rates were highest in Cape Winelands and Cape Metro and lowest in Overberg districts.

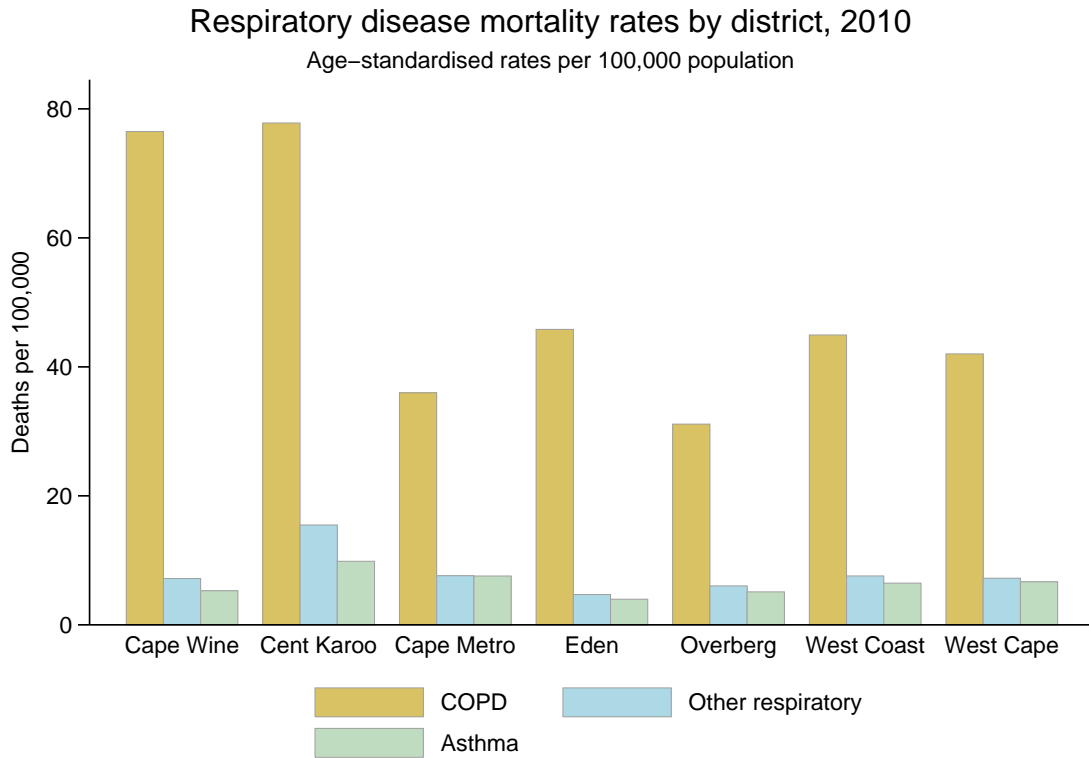
## 4.5 Cancers



**Figure 4.10: Cancer mortality rates by district, Western Cape 2010**

Lung cancer mortality rates were highest in Cape Winelands and lowest in Central Karoo with the other districts showing less variation. Prostate cancer mortality rates were also highest in Cape Winelands followed by Central Karoo. Breast cancer death rates were highest in Cape Winelands followed by Overberg and lowest in Eden. Death rates due to cervix cancer death were highest in Central Karoo followed by Cape Winelands and lowest in West Coast. Colo-rectal cancer death rates were highest in West Coast and Cape Metro, and lowest in Central Karoo. Death rates due to oesophageal cancer were highest in Central Karoo and lowest in Eden.

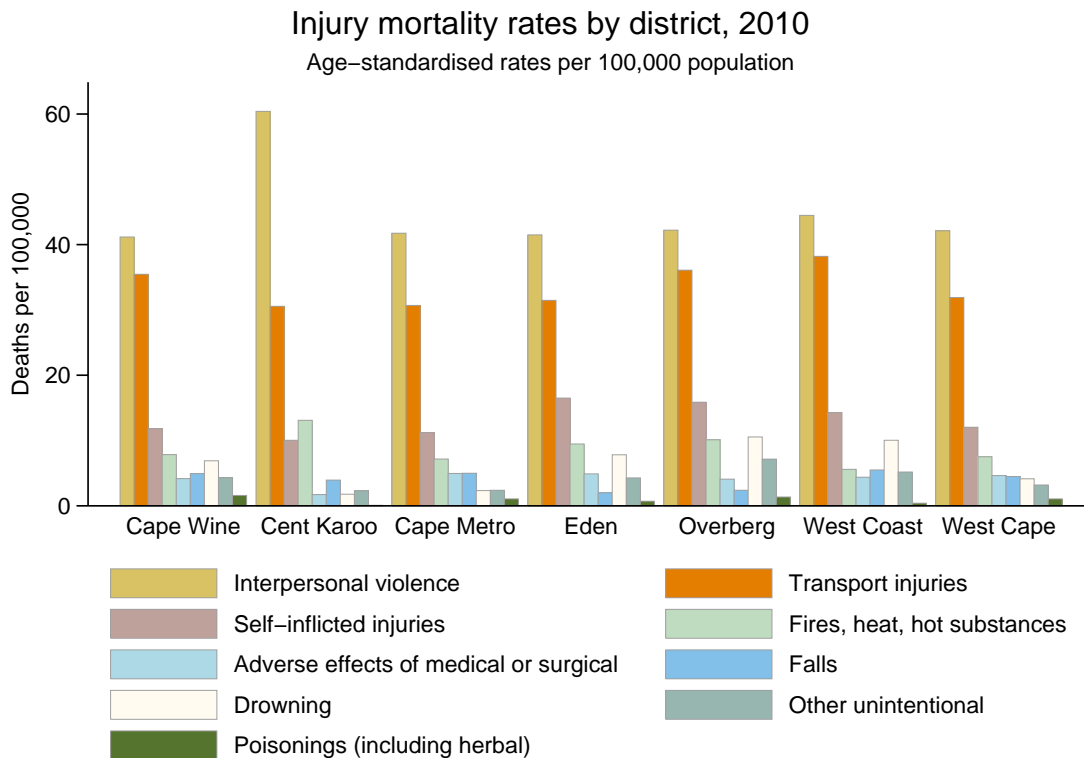
## 4.6 Respiratory diseases



**Figure 4.11: Respiratory disease mortality rates by district, Western Cape 2010**

Chronic obstructive pulmonary disease (COPD) death rates were highest in Central Karoo and Cape Winelands, and lowest in Overberg. Death rates due to asthma were highest in Central Karoo with little variation between the other districts.

## 4.7 Injuries



**Figure 4.12: Injury mortality rates by district, Western Cape 2010**

Injury mortality rates are likely to reflect accurate levels as well as cause of mortality, since information on injury fatalities was obtained from the mortuaries and was thus considered to be complete, and the proportion of ill-defined causes for injuries was less than 3%. Mortality rates due to interpersonal violence was very high in Central Karoo (60 per 100,000) but fairly consistent at around 40 deaths per 100,000 across other districts. Interpersonal violence declined slightly in all districts between 2009 and 2010, with the exception of West Coast, where there was a marked increase (33-44 per 100,000) and Cape Winelands where there was a slight increase (40-41 per 100,000).

Transport injury mortality rates were highest in West Coast (39 deaths per 100,000) and lowest in Eden and Cape Metro (31 per 100,000). Marked declines were noted in the transport injury deaths rates between 2009 and 2010 in Cape Winelands (47-35 per 100,000) and Central Karoo (59-30 per 100,000), resulting in a small overall decline of 34 to 31 per 100,000 in the Western Cape. Self-inflicted injuries (suicides) were highest in Eden and Overberg (16 per 100,000) and West Coast (14 per 100,000) and lowest in Central Karoo (10 per 100,000). Death rates due to accidental drowning were highest in Overberg and West Coast (10 per 100,000) and lowest in Cape Metro and Central Karoo (2 per 100,000).

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## 5 Discussion

There are a number of limitations in the data, and improving the completeness and other quality issues need to be addressed to enable the data to be fully utilised. None-the-less, this is the first report to provide a mortality profile for all sub-districts in Western Cape, and to rank the levels of mortality by sub-district. The report provides reasonably robust information about the leading causes of premature mortality, which can assist districts to identify priorities for interventions, and highlights the high-burden causes of mortality.

Whilst mortality due to HIV/AIDS has stabilised and started to decline, it is still the leading cause of premature mortality across all districts in Western Cape. This highlights the need to strengthen intersectoral prevention strategies and to continue to strengthen the health service response, particularly with regard to providing chronic care at primary health facilities. Tuberculosis remains a leading cause of premature mortality, despite reported improvements in cure rates, suggesting that improved case finding is required. Opportunities to identify suspects and speed up the process of diagnosing TB at primary health-care facilities should be sought. Injury-related mortality, particularly due to interpersonal violence and road traffic injuries, remains extremely high particularly amongst young males. Intersectoral interventions aimed at reducing alcohol-related violence have shown potential, and these efforts should be strengthened and expanded. Non-communicable diseases particularly cardiovascular disease and diabetes mellitus account for a large proportion of premature mortality, particularly amongst women. This emerging epidemic needs to be addressed through the strengthening of primary care management, promoting healthy lifestyles and addressing upstream risk factors. Smoking related causes of death such as COPD and lung cancer, are also high, particularly amongst men. Smoking prevalence rates are particularly high amongst the coloured population, both men and women. Whilst public tobacco control interventions in South Africa are very advanced, more could be done at primary health care level to promote smoking cessation at the individual level.

The data shows differentials in health between districts, with age-standardised death rates ranging between 749 per 100,000 (Overberg) and 1,065 per 100,000 (Cape Winelands). Whilst some of these differences may be accounted for by different levels of completeness of death reporting, this may indicate inequalities in health care between districts.

Efforts to strengthen the quality of the data are needed to enable the surveillance system to be used to monitor child mortality rates and assess the impact of health services and interventions. For example, the web-based mortality surveillance system with automated coding has the potential to provide up-to-date mortality information for monitoring deaths due to vaccine-preventable and notifiable diseases.

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## **6 Recommendations for improving the surveillance system**

Improving data quality will require that doctors receive adequate training in medical certification and that data capturers are trained in medical terminology. A programme of training in medical certification of death was implemented in Western Cape and has been implemented at both medical schools in the province and needs to be maintained

IRIS automated coding software makes it possible to standardise coding across districts for routine cases, however, experienced coders are required to do the manual coding of the rejected cases. To this end, the Health Impact Assessment Unit of the Provincial Department of Health plans to recruit a trained ICD10 morbidity and mortality coder. To ensure good quality data, it is necessary to build quality assurance measures such as standard operating procedures and quality assurance monitoring procedures for data collection and capture, into the system.

Specific challenges regarding the sustainability of the system need to be addressed, for example:

- a. securing the appropriate resources
- b. integrating and institutionalising the system into a fragmented health system managed by both provincial and local authorities
- c. ensuring co-operation between government departments (Local Municipal Health Department, Provincial Health Department and National Home Affairs Department)

Despite these challenges, the results of this collaborative effort between the government departments mentioned above, as well as the Medical Research Council and the universities of Cape Town and Stellenbosch, serves as an example of what can be achieved.

Demonstrating the utility and encouraging the use of the information provided by this system at district and sub-district level will hopefully convince health managers and health workers of the importance of this information, and provide incentives to ensure that the data quality is improved at all levels of the system.



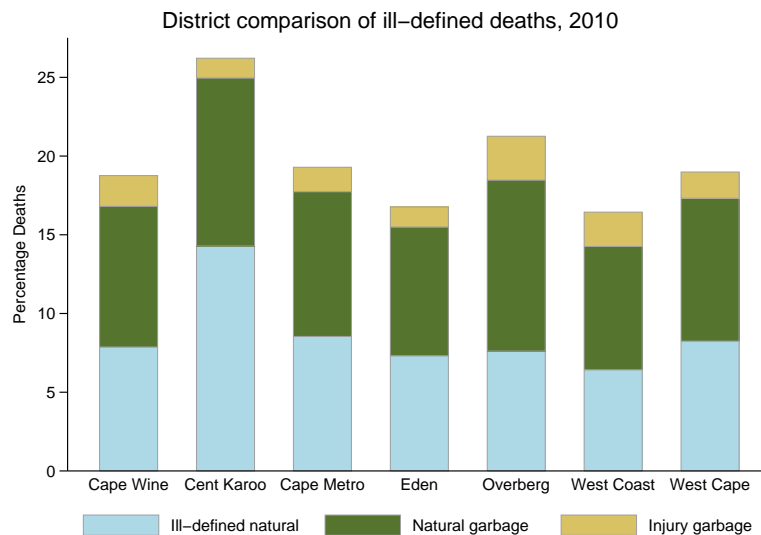
## A APPENDICES

### A.1 Completeness by district and age

**Table A.1: Estimates of completeness of all deaths compared with Stats SA deaths, 2010**

District	Completeness (%)			N		
	< 5 yr	> 5 yr	All	< 5 yr	> 5 yr	All
Cape Winelands	94.7	81.7	82.5	394	5,236	5,640
Central Karoo	87.2	77.9	78.3	41	594	637
Cape Metropole	99.4	97.2	97.4	1,957	25,123	27,149
Eden	89.4	87.1	87.2	204	3,965	4,169
Overberg	79.8	88.8	88.4	103	1,798	1,905
West Coast	96.5	79.9	80.9	193	2,373	2,567
Western Cape	96.8	91.8	92.2	2,892	39,089	42,067

### A.2 Proportion ill-defined



**Figure A.1: District comparison of ill-defined causes**

**Table A.2: District comparison of garbage coded causes, 2010**

District	Deaths	Ill-def %	Garb (nat) %	Garb (inj) %	All Garb %
Cape Wine	5,640	7.9	8.9	2.0	18.8
Cent Karoo	637	14.3	10.7	1.3	26.2
Cape Metro	27,149	8.5	9.2	1.6	19.3
Eden	4,169	7.3	8.2	1.3	16.8
Overberg	1,905	7.6	10.9	2.8	21.3
West Coast	2,567	6.4	7.8	2.2	16.4
West Cape	42,067	8.2	9.1	1.7	19.0

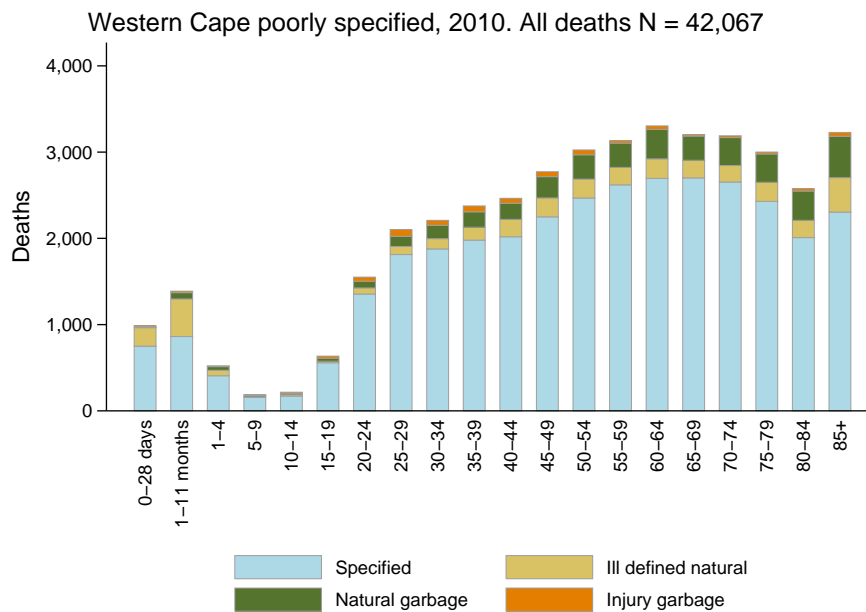


Figure A.2: Western Cape poorly specified, 2010

Table A.3: Western Cape quality of reporting, 2010

Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	985	21.7	0.9	1.2	23.8
1-11 months	1,388	31.4	5.3	1.2	37.9
1-4	523	12.2	8.0	2.0	22.1
5-9	188	3.2	9.1	3.8	16.1
10-14	216	7.4	7.9	5.6	20.9
15-19	634	2.9	5.5	3.8	12.1
20-24	1,551	4.5	5.0	3.0	12.6
25-29	2,101	4.5	5.6	3.7	13.7
30-34	2,209	5.4	7.0	2.6	15.0
35-39	2,377	6.3	7.5	2.9	16.7
40-44	2,464	8.2	7.6	2.3	18.1
45-49	2,773	7.9	8.9	2.1	18.9
50-54	3,026	7.2	9.4	1.9	18.4
55-59	3,131	6.5	9.0	0.8	16.3
60-64	3,305	6.8	10.3	1.3	18.4
65-69	3,202	6.4	8.8	0.5	15.6
70-74	3,190	6.0	10.2	0.7	16.8
75-79	3,001	7.4	11.0	0.7	19.1
80-84	2,575	7.8	13.2	1.0	22.0
85+	3,228	12.3	14.9	1.4	28.6
All	42,067	8.2	9.1	1.7	19.0

### A.3 Live births and deaths, Stats SA Western Cape

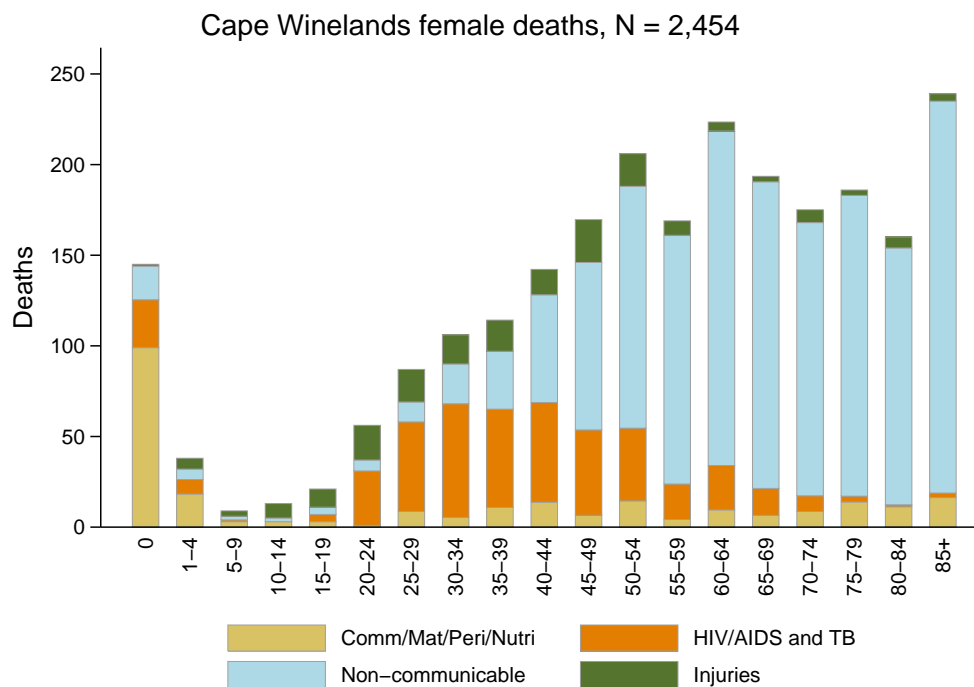
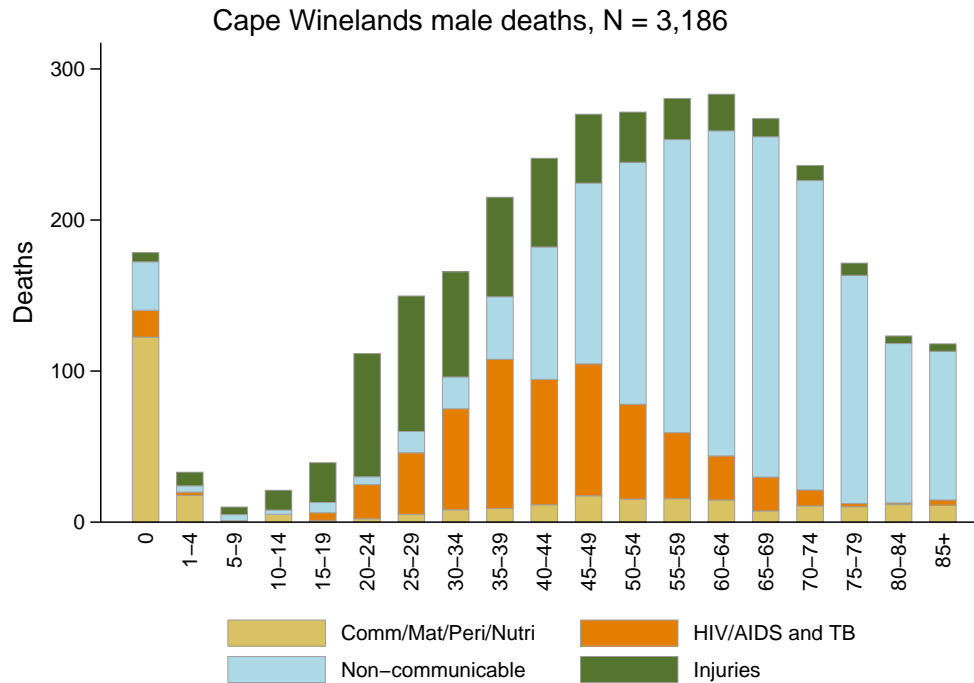
**Table A.4: Live births and deaths in children under five years, Stats SA**

Districts	DEATHS (Stats SA)								LIVE BIRTHS (Stats SA)			
	2007		2008		2009		2010		2007	2008	2009	2010
	0	1-4	0	1-4	0	1-4	0	1-4				
Cape Wine	379	71	308	99	336	79	334	82	13,231	13,521	13,297	13,140
Cent Karoo	54	18	55	18	48	13	36	11	1,195	1,245	1,180	1,065
Cape Metro	1,607	346	1,617	373	1,591	331	1,590	373	74,723	76,318	72,731	70,504
Eden	313	66	245	62	235	46	182	44	10,194	10,477	9,890	9,482
Overberg	104	25	83	21	79	14	92	37	2,827	2,956	2,742	2,789
West Coast	189	32	173	34	139	20	170	30	5,844	6,096	5,945	5,621
<b>West Cape</b>	<b>2,646</b>	<b>558</b>	<b>2,481</b>	<b>607</b>	<b>2,428</b>	<b>503</b>	<b>2,404</b>	<b>577</b>	<b>108,014</b>	<b>110,613</b>	<b>105,785</b>	<b>102,601</b>

## A.4 District profiles

### A.4.1 Cape Winelands

#### A.4.1.1 Broad causes



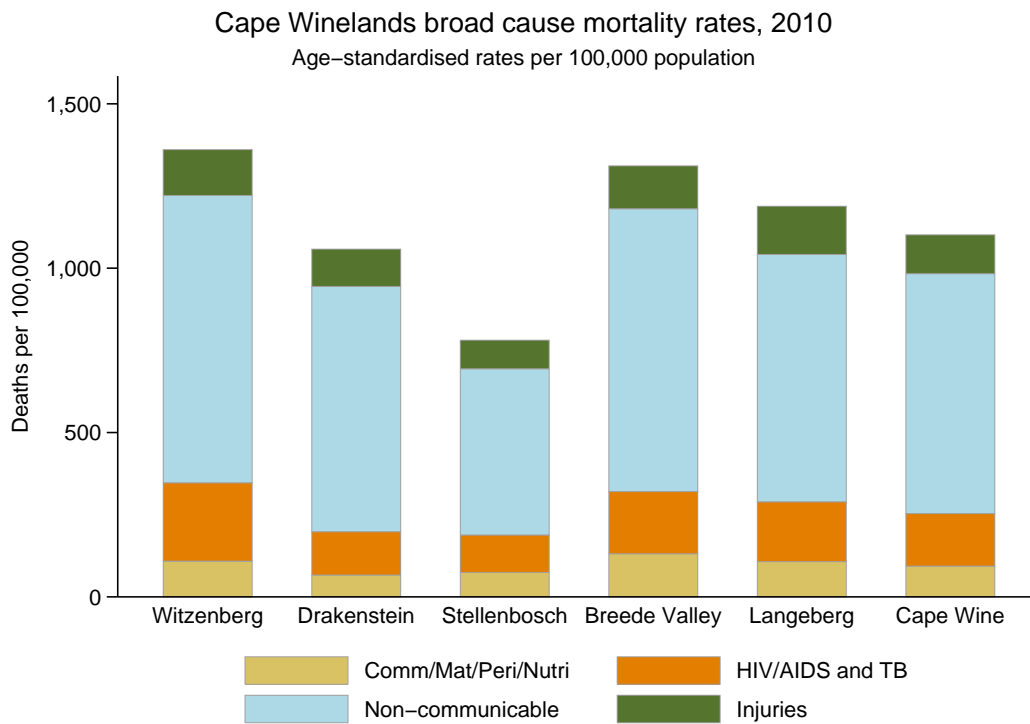
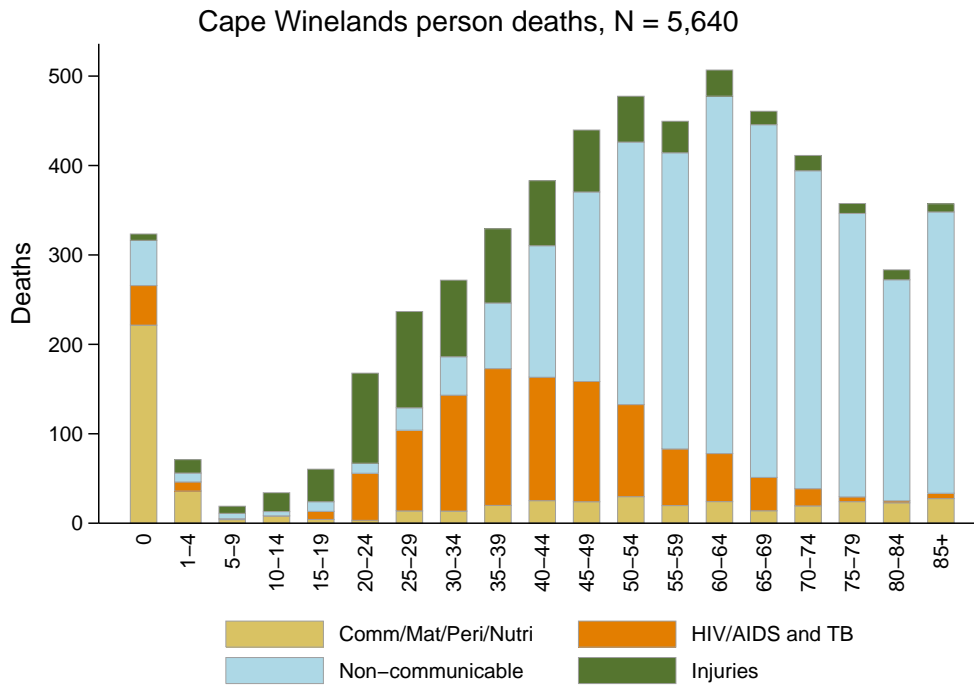
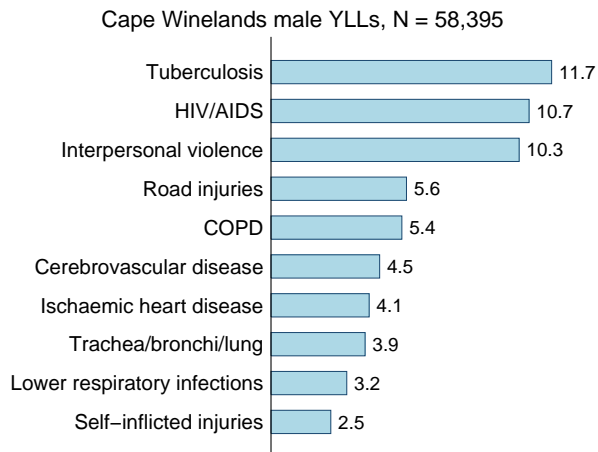
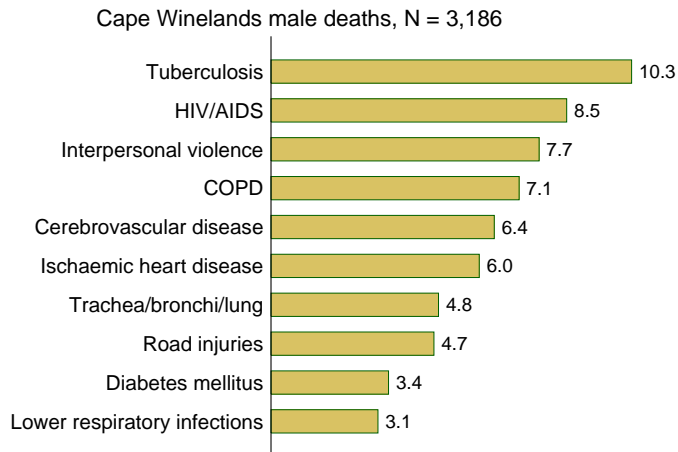


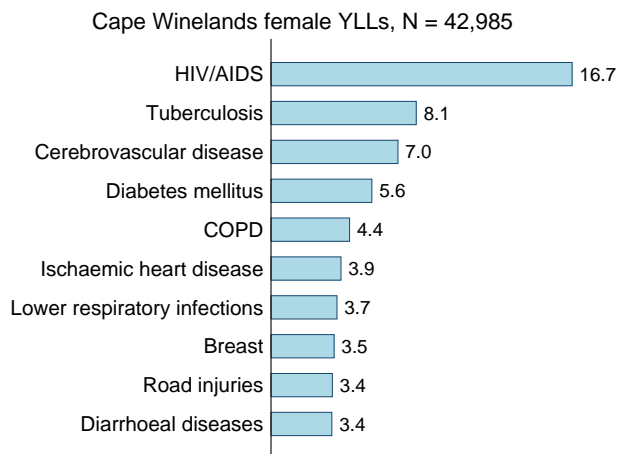
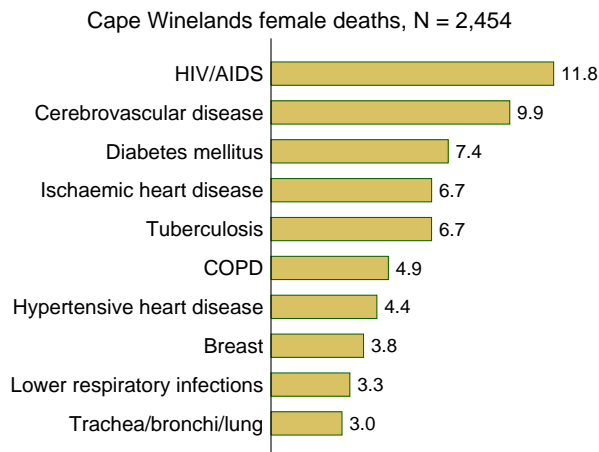
Figure A.3: Cape Winelands age-standardised death rates per 100,000

#### A.4.1.2 Leading causes of deaths and YLLs



**Table A.5: Leading causes of death for males, Cape Winelands 2010**

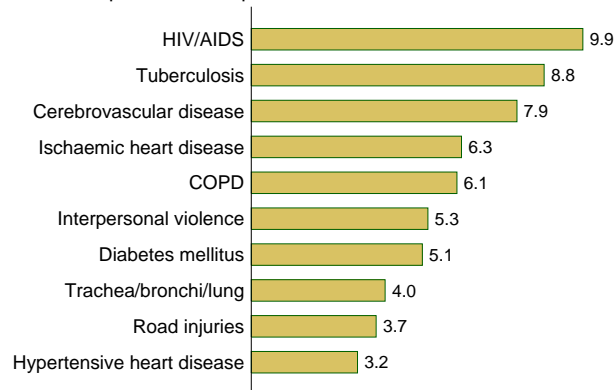
Cause of death	Deaths	%	Cause of death	YLLs	%
Tuberculosis	330	10.3	Tuberculosis	6,816	11.7
HIV/AIDS	270	8.5	HIV/AIDS	6,268	10.7
Interpersonal violence	245	7.7	Interpersonal violence	6,027	10.3
COPD	227	7.1	Road injuries	3,291	5.6
Cerebrovascular disease	204	6.4	COPD	3,179	5.4
Ischaemic heart disease	190	6.0	Cerebrovascular disease	2,639	4.5
Trachea/bronchi/lung	153	4.8	Ischaemic heart disease	2,384	4.1
Road injuries	149	4.7	Trachea/bronchi/lung	2,285	3.9
Diabetes mellitus	107	3.4	Lower respiratory infections	1,840	3.2
Lower respiratory infections	98	3.1	Self-inflicted injuries	1,452	2.5
Top 10 causes	1,974	62.0	Top 10 causes	36,107	61.8
Total	3,186	100.0	Total	58,395	100.0



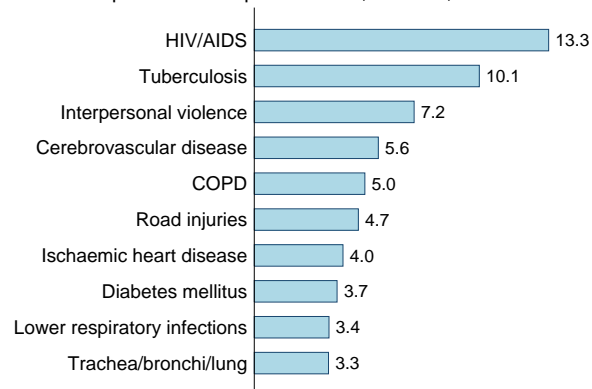
**Table A.6: Leading causes of death for females, Cape Winelands 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
HIV/AIDS	289	11.8	HIV/AIDS	7,178	16.7
Cerebrovascular disease	244	9.9	Tuberculosis	3,462	8.1
Diabetes mellitus	181	7.4	Cerebrovascular disease	3,026	7.0
Ischaemic heart disease	164	6.7	Diabetes mellitus	2,405	5.6
Tuberculosis	164	6.7	COPD	1,873	4.4
COPD	120	4.9	Ischaemic heart disease	1,668	3.9
Hypertensive heart disease	108	4.4	Lower respiratory infections	1,572	3.7
Breast	94	3.8	Breast	1,504	3.5
Lower respiratory infections	80	3.3	Road injuries	1,463	3.4
Trachea/bronchi/lung	72	3.0	Diarrhoeal diseases	1,451	3.4
Top 10 causes	1,516	61.8	Top 10 causes	25,204	58.6
Total	2,454	100.0	Total	42,985	100.0

Cape Winelands person deaths, N = 5,640



Cape Winelands person YLLs, N = 101,380



**Table A.7: Leading causes of death for persons, Cape Winelands 2010**

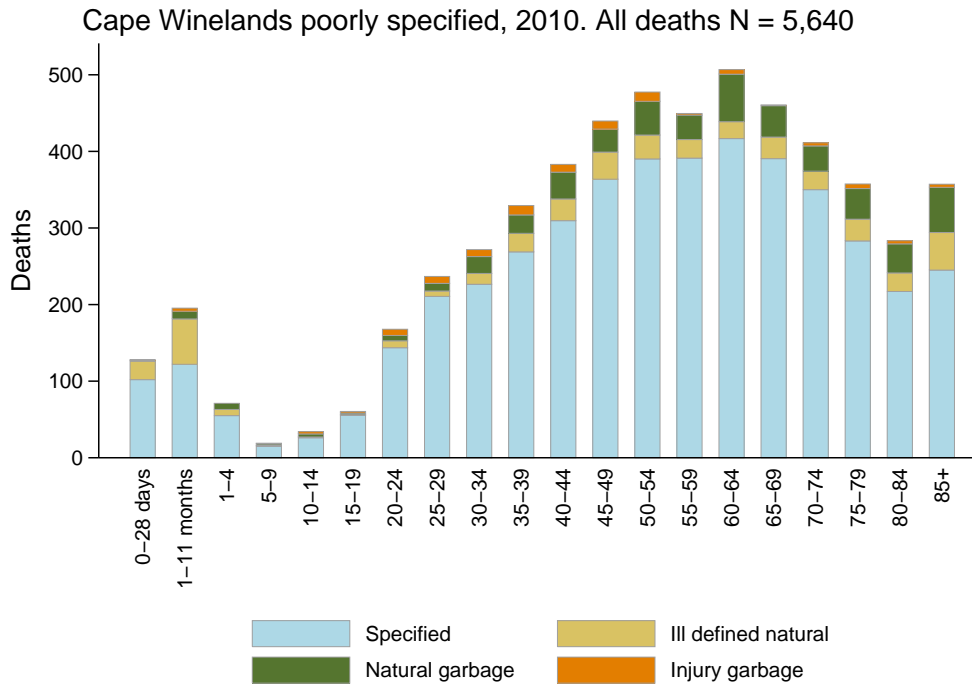
Cause of death	Deaths	%	Cause of death	YLLs	%
HIV/AIDS	559	9.9	HIV/AIDS	13,446	13.3
Tuberculosis	494	8.8	Tuberculosis	10,279	10.1
Cerebrovascular disease	448	7.9	Interpersonal violence	7,301	7.2
Ischaemic heart disease	354	6.3	Cerebrovascular disease	5,666	5.6
COPD	347	6.1	COPD	5,051	5.0
Interpersonal violence	298	5.3	Road injuries	4,754	4.7
Diabetes mellitus	288	5.1	Ischaemic heart disease	4,052	4.0
Trachea/bronchi/lung	226	4.0	Diabetes mellitus	3,782	3.7
Road injuries	210	3.7	Lower respiratory infections	3,413	3.4
Hypertensive heart disease	179	3.2	Trachea/bronchi/lung	3,390	3.3
Top 10 causes	3,403	60.3	Top 10 causes	60,053	59.2
Total	5,640	100.0	Total	101,380	100.0



Rank	Witzenberg	Drakenstein	Stellenbosch	Breede Valley	Langeberg	Cape Winelands
1	HIV/AIDS (16.3%)	HIV/AIDS (11.7%)	HIV/AIDS (13.7%)	HIV/AIDS (13.4%)	HIV/AIDS (12.1%)	HIV/AIDS (13.3%)
2	Tuberculosis (12.3%)	Tuberculosis (9.4%)	Tuberculosis (9.7%)	Tuberculosis (10%)	Tuberculosis (9.6%)	Tuberculosis (10.1%)
3	COPD (6.8%)	Interpersonal violence (7.4%)	Interpersonal violence (9.4%)	Interpersonal violence (6.2%)	Interpersonal violence (7.4%)	Interpersonal violence (7.2%)
4	Interpersonal violence (6.3%)	Cerebrovascular disease (7.2%)	Road injuries (6%)	Cerebrovascular disease (5.7%)	COPD (5.4%)	Cerebrovascular disease (5.6%)
5	Ischaemic heart disease (4.8%)	COPD (5.6%)	Lower respiratory infections (4.4%)	Lower respiratory infections (4.6%)	Cerebrovascular disease (5.2%)	COPD (5%)
6	Cerebrovascular disease (4.8%)	Ischaemic heart disease (4.7%)	Hypertensive heart disease (4%)	COPD (4.4%)	Road injuries (4.6%)	Road injuries (4.7%)
7	Road injuries (4.7%)	Road injuries (4.3%)	Ischaemic heart disease (3.9%)	Road injuries (4.3%)	Diabetes mellitus (3.5%)	Ischaemic heart disease (4%)
8	Diarrhoeal diseases (4.2%)	Diabetes mellitus (4.3%)	Cerebrovascular disease (3.8%)	Trachea/bronchi/lung (4.1%)	Trachea/bronchi/lung (3.2%)	Diabetes mellitus (3.7%)
9	Preterm birth complications (3.8%)	Trachea/bronchi/lung (3.1%)	Diabetes mellitus (3.6%)	Diabetes mellitus (3.7%)	Diarrhoeal diseases (2.9%)	Lower respiratory infections (3.4%)
10	Diabetes mellitus (3.2%)	Lower respiratory infections (2.5%)	Trachea/bronchi/lung (3.2%)	Ischaemic heart disease (3.5%)	Lower respiratory infections (2.8%)	Trachea/bronchi/lung (3.3%)

**Figure A.4: League table of leading causes of premature mortality, Cape Winelands 2010**

### A.4.1.3 Proportion ill-defined



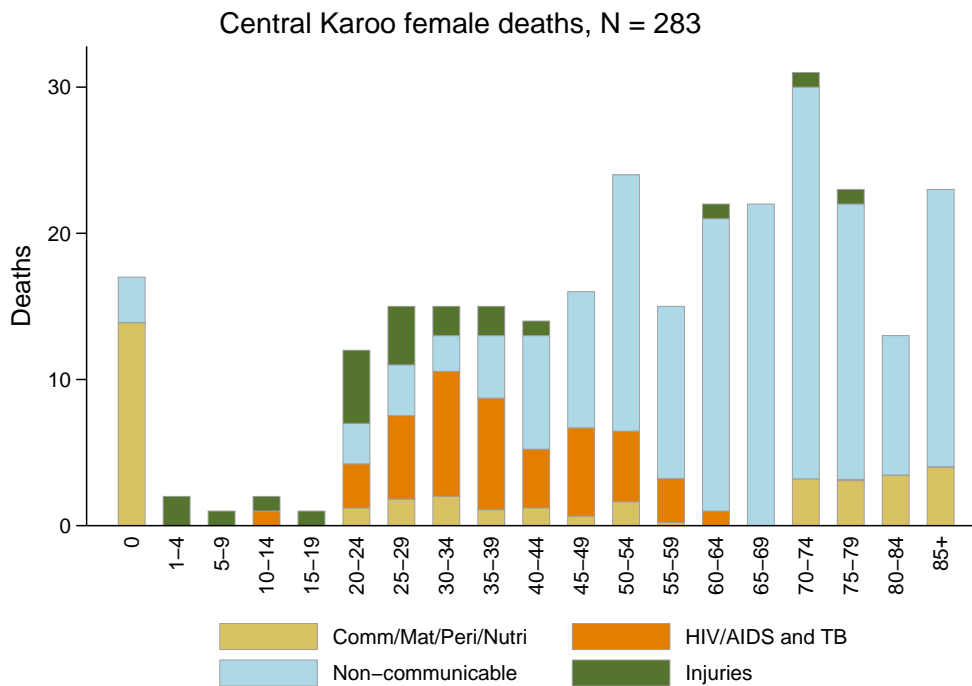
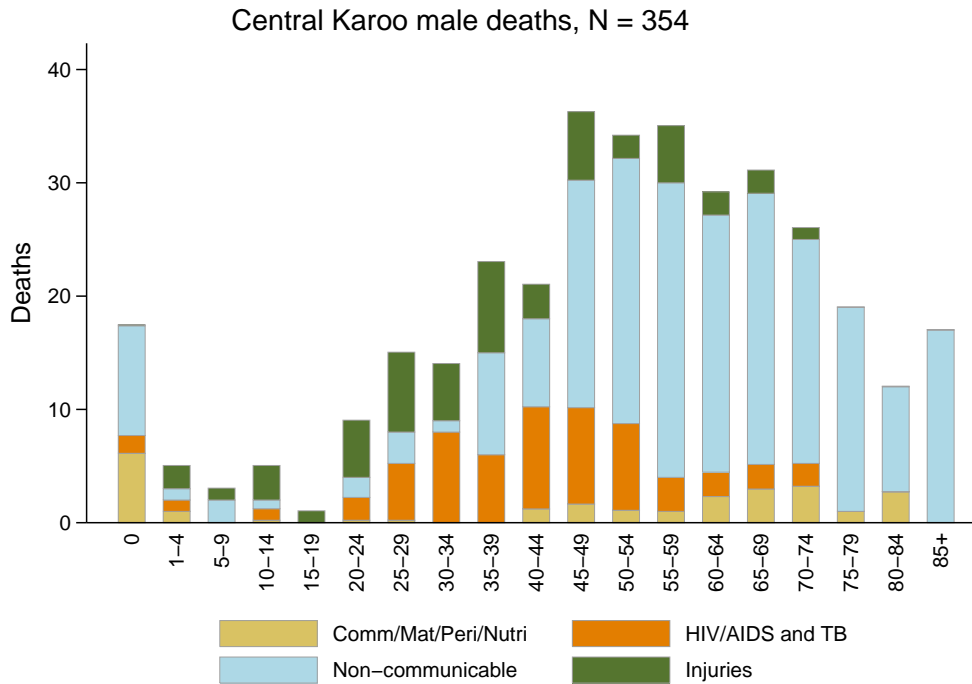
**Table A.8: Cape Winelands quality of reporting, 2010**

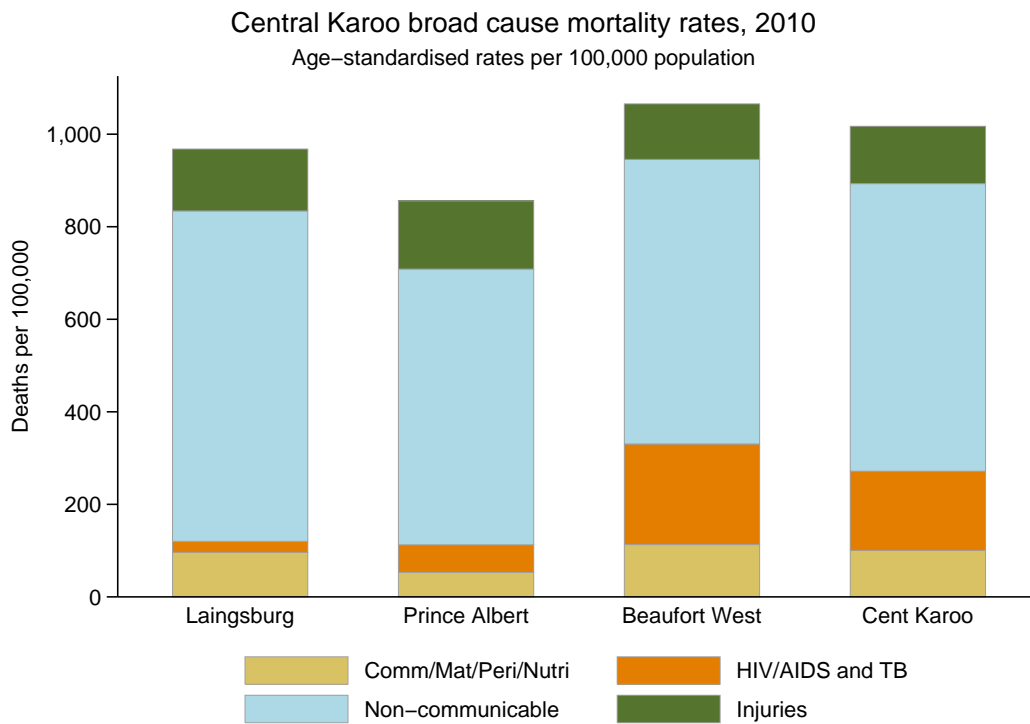
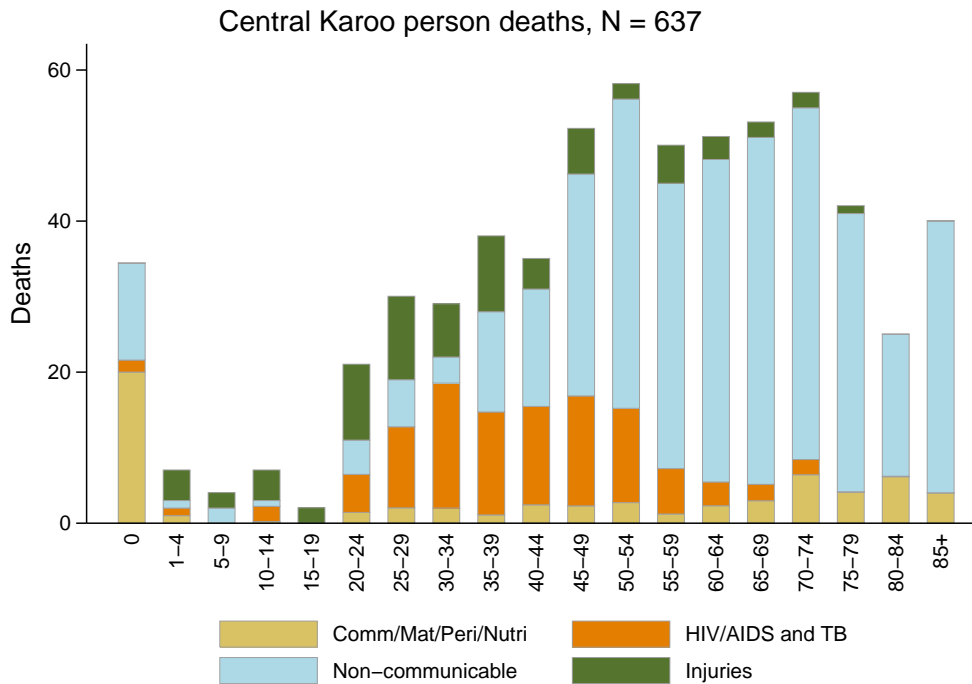
Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	128	18.8	0.8	0.8	20.4
1-11 months	195	30.3	5.1	2.1	37.5
1-4	71	11.4	11.3	0.0	22.6
5-9	19	5.3	10.5	5.3	21.1
10-14	34	2.9	11.7	8.8	23.4
15-19	60	1.7	3.3	3.5	8.5
20-24	168	5.4	4.2	4.8	14.4
25-29	237	3.0	4.2	3.8	11.0
30-34	272	5.2	8.1	3.4	16.7
35-39	329	7.4	7.3	3.7	18.4
40-44	383	7.4	9.1	2.7	19.2
45-49	440	8.0	6.8	2.4	17.3
50-54	477	6.5	9.2	2.5	18.3
55-59	449	5.4	7.1	0.5	13.0
60-64	507	4.4	12.2	1.2	17.8
65-69	461	6.1	8.9	0.2	15.2
70-74	411	5.9	8.0	1.0	14.9
75-79	357	7.9	11.2	1.7	20.8
80-84	283	8.6	13.4	1.4	23.4
85+	357	13.7	16.5	1.1	31.4
All	5,640	7.9	8.9	2.0	18.8

## A.4.2 Central Karoo

### A.4.2.1 Broad causes

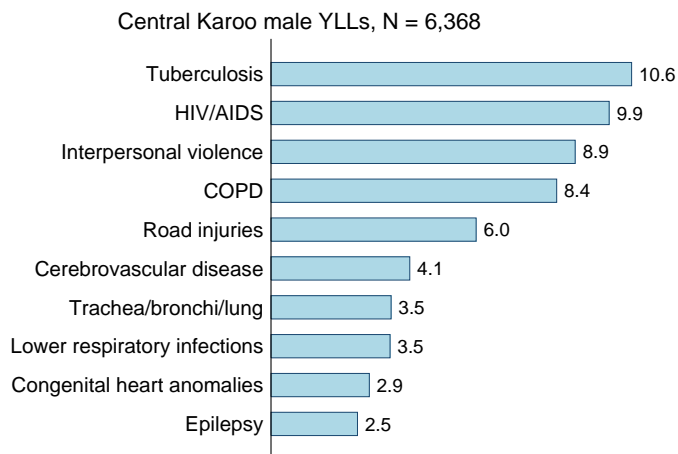
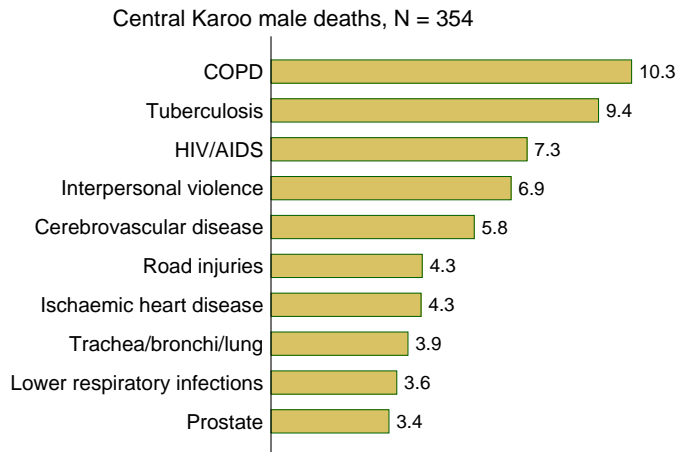
Interpret these results with caution as they are based on a small number of deaths.





**Figure A.5: Central Karoo age-standardised rates per 100,000**

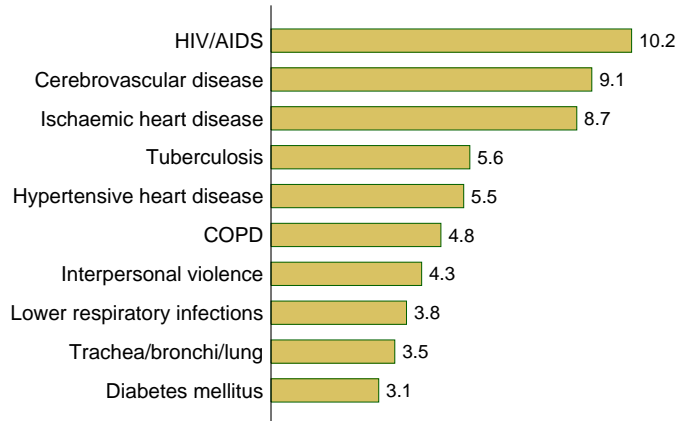
#### A.4.2.2 Leading causes of deaths and YLLs



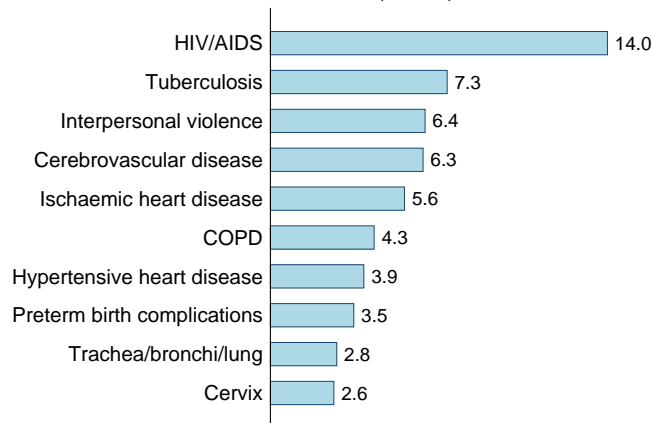
**Table A.9: Leading causes of death for males, Central Karoo 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
COPD	37	10.3	Tuberculosis	674	10.6
Tuberculosis	33	9.4	HIV/AIDS	632	9.9
HIV/AIDS	26	7.3	Interpersonal violence	569	8.9
Interpersonal violence	24	6.9	COPD	534	8.4
Cerebrovascular disease	21	5.8	Road injuries	384	6.0
Road injuries	15	4.3	Cerebrovascular disease	260	4.1
Ischaemic heart disease	15	4.3	Trachea/bronchi/lung	225	3.5
Trachea/bronchi/lung	14	3.9	Lower respiratory infections	223	3.5
Lower respiratory infections	13	3.6	Congenital heart anomalies	184	2.9
Prostate	12	3.4	Epilepsy	162	2.5
Top 10 causes	210	59.3	Top 10 causes	3,767	59.2
Total	354	100.0	Total	6,368	100.0

Central Karoo female deaths, N = 283



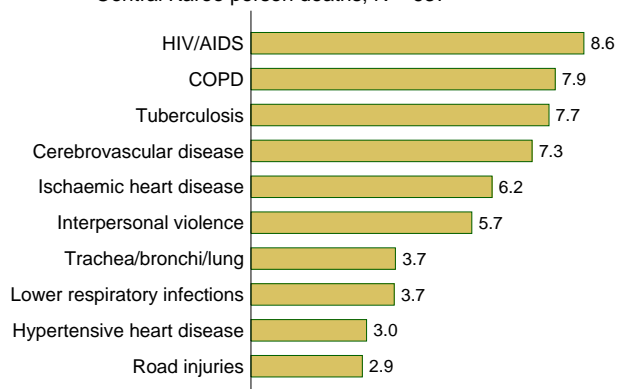
Central Karoo female YLLs, N = 5,076



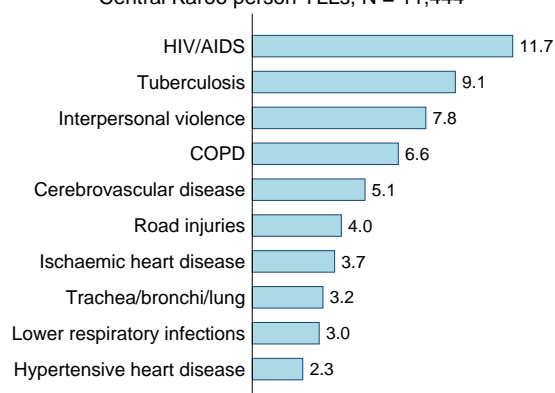
**Table A.10: Leading causes of death for females, Central Karoo 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
HIV/AIDS	29	10.2	HIV/AIDS	710	14.0
Cerebrovascular disease	26	9.1	Tuberculosis	373	7.3
Ischaemic heart disease	25	8.7	Interpersonal violence	326	6.4
Tuberculosis	16	5.6	Cerebrovascular disease	322	6.3
Hypertensive heart disease	15	5.5	Ischaemic heart disease	283	5.6
COPD	14	4.8	COPD	219	4.3
Interpersonal violence	12	4.3	Hypertensive heart disease	197	3.9
Lower respiratory infections	11	3.8	Preterm birth complications	176	3.5
Trachea/bronchi/lung	10	3.5	Trachea/bronchi/lung	140	2.8
Diabetes mellitus	9	3.1	Cervix	134	2.6
Top 10 causes	166	58.7	Top 10 causes	2,815	55.5
Total	283	100.0	Total	5,076	100.0

Central Karoo person deaths, N = 637



Central Karoo person YLLs, N = 11,444



**Table A.11: Leading causes of death for persons, Central Karoo 2010**

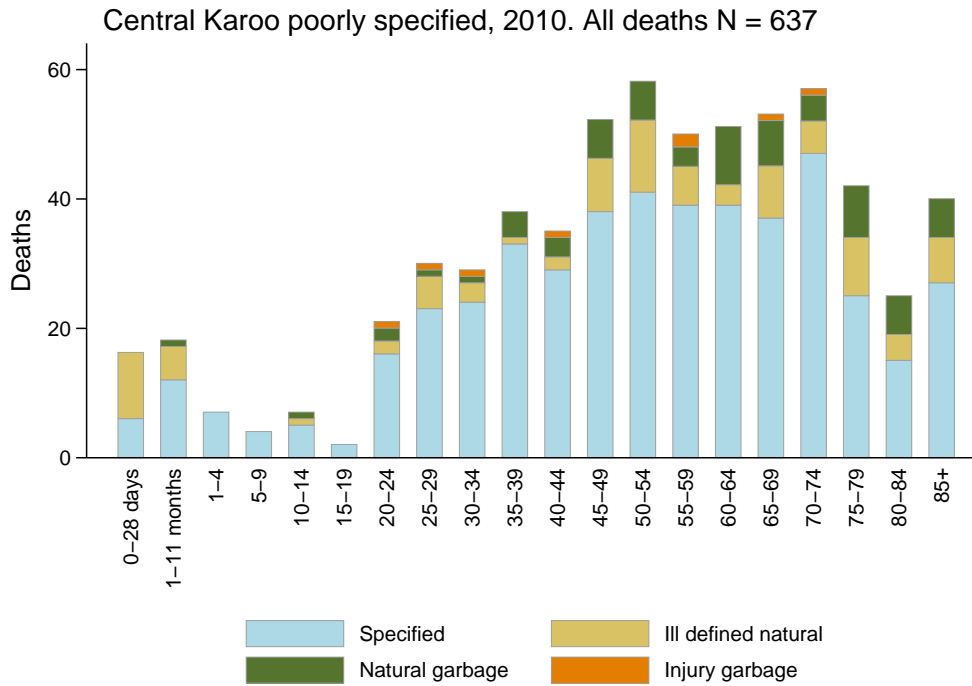
Cause of death	Deaths	%	Cause of death	YLLs	%
HIV/AIDS	55	8.6	HIV/AIDS	1,343	11.7
COPD	50	7.9	Tuberculosis	1,047	9.1
Tuberculosis	49	7.7	Interpersonal violence	895	7.8
Cerebrovascular disease	46	7.3	COPD	753	6.6
Ischaemic heart disease	40	6.2	Cerebrovascular disease	581	5.1
Interpersonal violence	36	5.7	Road injuries	459	4.0
Trachea/bronchi/lung	24	3.7	Ischaemic heart disease	424	3.7
Lower respiratory infections	24	3.7	Trachea/bronchi/lung	364	3.2
Hypertensive heart disease	19	3.0	Lower respiratory infections	345	3.0
Road injuries	18	2.9	Hypertensive heart disease	260	2.3
Top 10 causes	362	56.8	Top 10 causes	6,472	56.6
Total	637	100.0	Total	11,444	100.0

Rank	Laingsburg	Prince Albert	Beaufort West	Central Karoo
1	Oesophagus (9.1%)	Interpersonal violence (9.3%)	HIV/AIDS (14.3%)	HIV/AIDS (11.7%)
2	Road injuries (8.8%)	Ischaemic heart disease (8.3%)	Tuberculosis (11.4%)	Tuberculosis (9.1%)
3	Interpersonal violence (8.3%)	Other circulatory diseases (6%)	Interpersonal violence (7.5%)	Interpersonal violence (7.8%)
4	Cerebrovascular disease (3.6%)	Self-inflicted injuries (5.6%)	COPD (7.3%)	COPD (6.6%)
5	Congenital heart anomalies (2.9%)	COPD (5.2%)	Cerebrovascular disease (5.6%)	Cerebrovascular disease (5.1%)
6	COPD (2.9%)	Lower respiratory infections (4.7%)	Trachea/bronchi/lung (3.9%)	Road injuries (4%)
7	Ischaemic heart disease (2.7%)	HIV/AIDS (4.5%)	Road injuries (3.8%)	Ischaemic heart disease (3.7%)
8	HIV/AIDS (2.6%)	Asthma (3.9%)	Lower respiratory infections (3.1%)	Trachea/bronchi/lung (3.2%)
9	Epilepsy (2.4%)	Congenital disorders of GIT (3.8%)	Ischaemic heart disease (3%)	Lower respiratory infections (3%)
10	Larynx (2.4%)	Tuberculosis (3.3%)	Preterm birth complications (2.9%)	Hypertensive heart disease (2.3%)

**Figure A.6: League table of leading causes of premature mortality, Central Karoo 2010**



### A.4.2.3 Proportion ill-defined

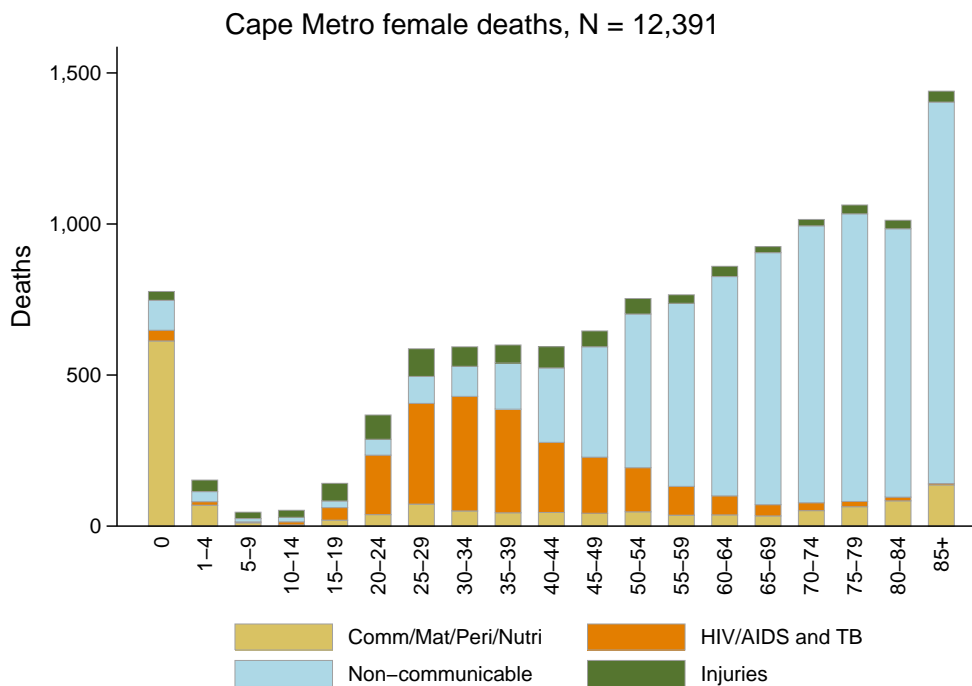
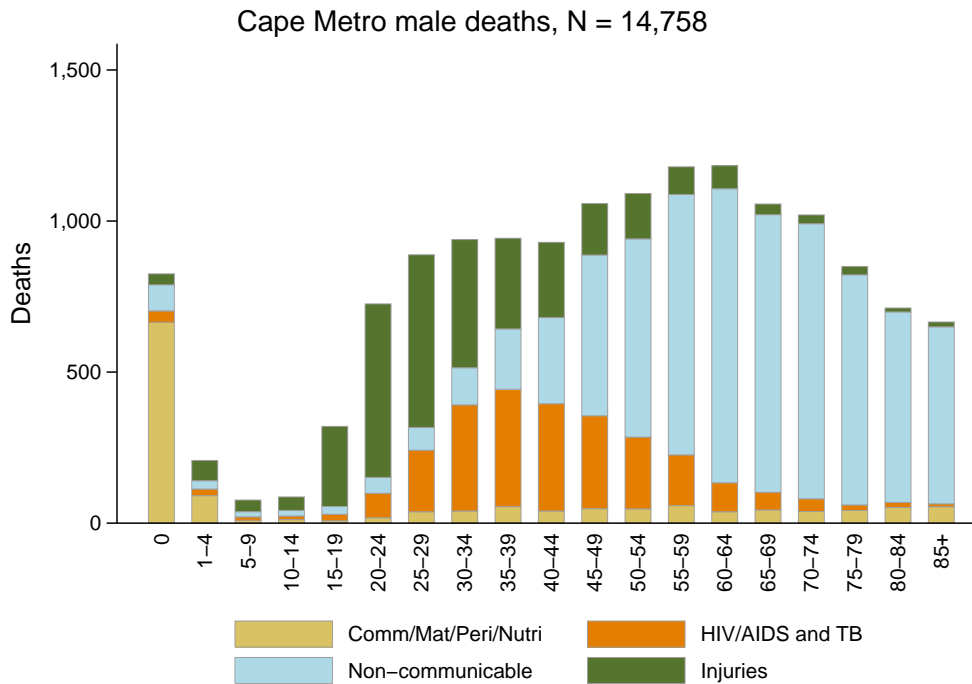


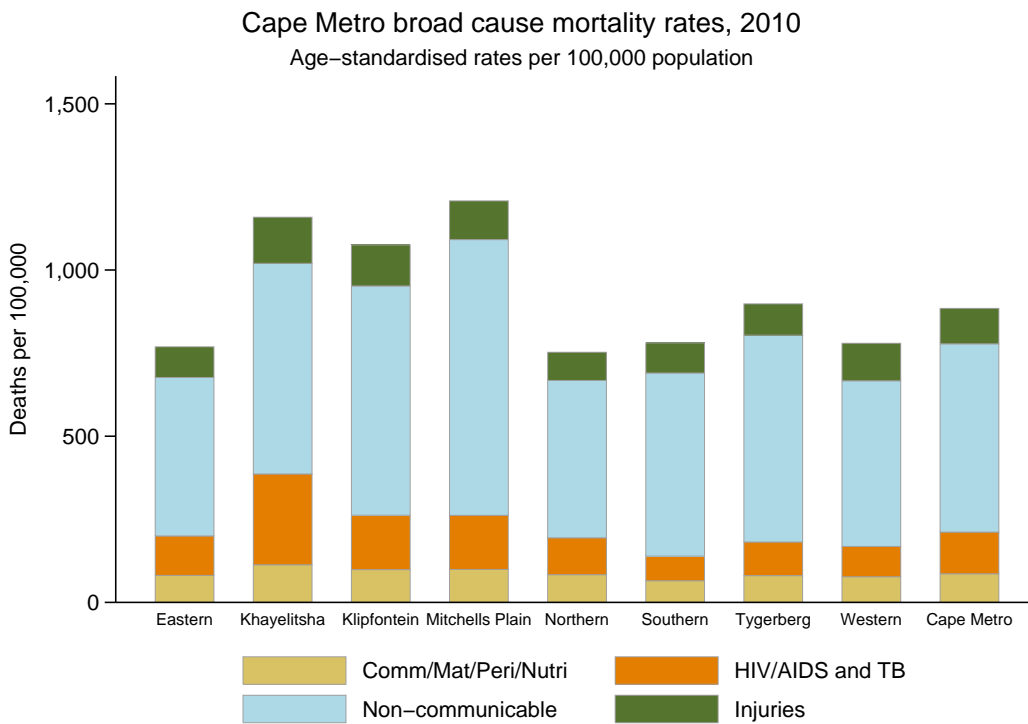
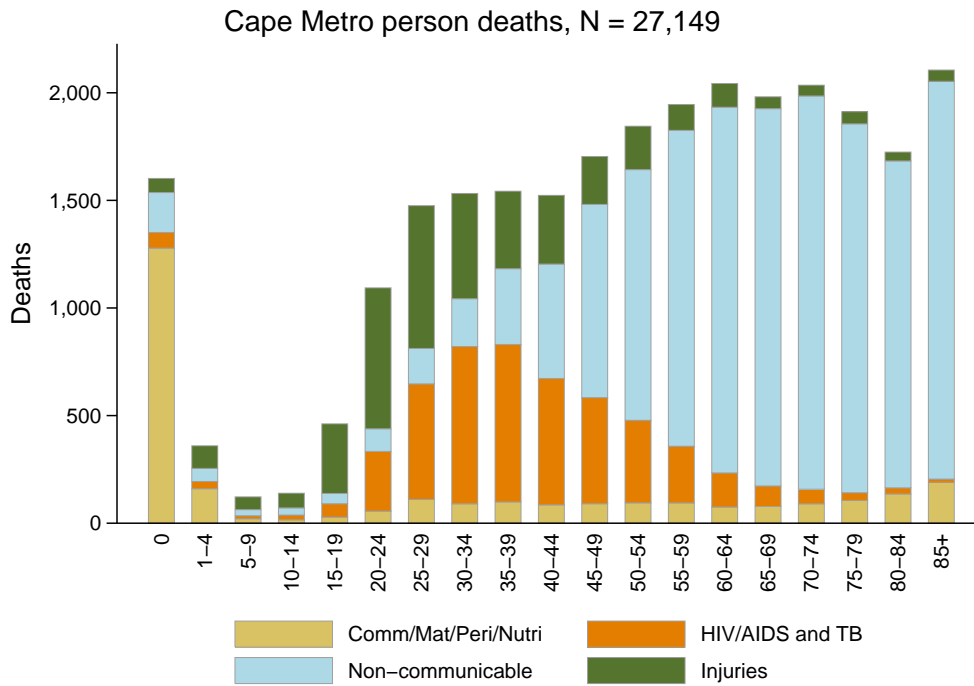
**Table A.12: Central Karoo quality of reporting, 2010**

Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	16	62.8	0.0	0.0	62.8
1-11 months	18	28.3	5.5	0.0	33.8
1-4	7	0.0	0.0	0.0	0.0
5-9	4	0.0	0.0	0.0	0.0
10-14	7	14.2	14.2	0.0	28.4
15-19	2	0.0	0.0	0.0	0.0
20-24	21	9.5	9.5	4.8	23.8
25-29	30	16.6	3.3	3.3	23.3
30-34	29	10.3	3.4	3.4	17.2
35-39	38	2.6	10.5	0.0	13.1
40-44	35	5.7	8.6	2.9	17.1
45-49	52	15.7	11.5	0.0	27.2
50-54	58	19.2	10.3	0.0	29.5
55-59	50	12.0	6.0	4.0	22.0
60-64	51	6.2	17.6	0.0	23.7
65-69	53	15.2	13.2	1.9	30.3
70-74	57	8.8	7.0	1.8	17.5
75-79	42	21.4	19.0	0.0	40.4
80-84	25	16.0	24.0	0.0	39.9
85+	40	17.5	15.0	0.0	32.5
All	637	14.3	10.7	1.3	26.2

## A.4.3 Cape Metropole

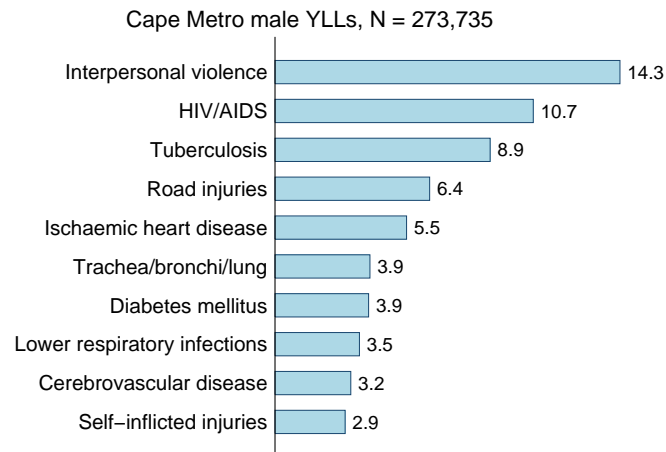
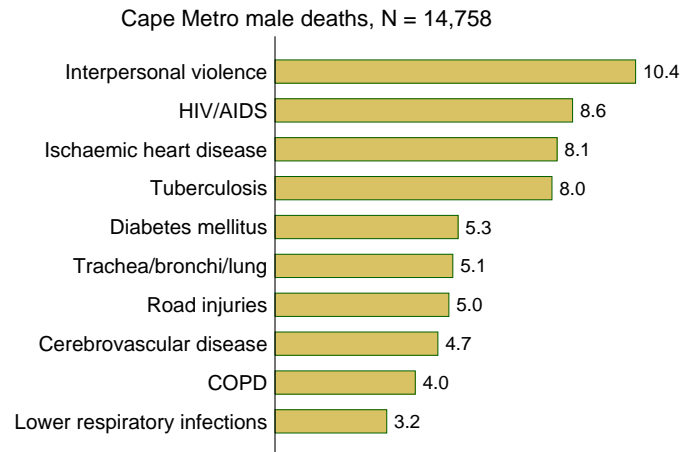
### A.4.3.1 Broad causes





**Figure A.7: Cape Metropole age-standardised rates per 100,000**

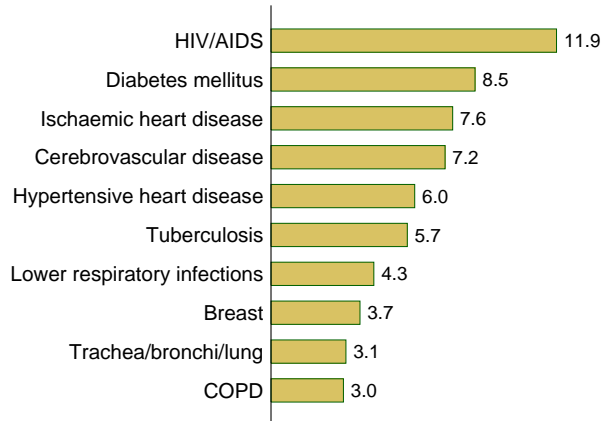
### A.4.3.2 Leading causes of deaths and YLLs



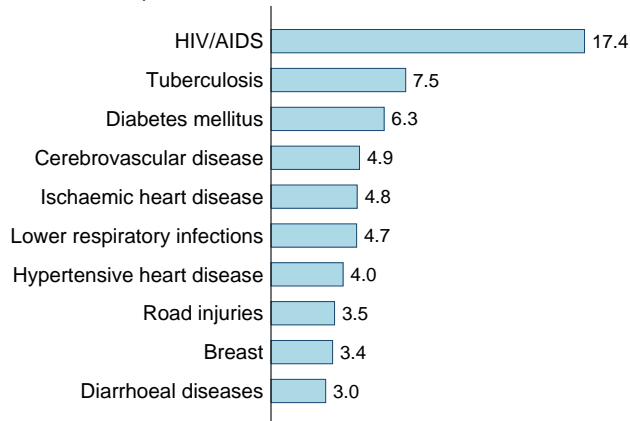
**Table A.13: Leading causes of death for males, Cape Metro 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
Interpersonal violence	1,530	10.4	Interpersonal violence	39,281	14.3
HIV/AIDS	1,263	8.6	HIV/AIDS	29,408	10.7
Ischaemic heart disease	1,197	8.1	Tuberculosis	24,494	8.9
Tuberculosis	1,175	8.0	Road injuries	17,610	6.4
Diabetes mellitus	777	5.3	Ischaemic heart disease	14,979	5.5
Trachea/bronchi/lung	755	5.1	Trachea/bronchi/lung	10,811	3.9
Road injuries	738	5.0	Diabetes mellitus	10,658	3.9
Cerebrovascular disease	691	4.7	Lower respiratory infections	9,613	3.5
COPD	595	4.0	Cerebrovascular disease	8,629	3.2
Lower respiratory infections	474	3.2	Self-inflicted injuries	7,983	2.9
Top 10 causes	9,195	62.3	Top 10 causes	173,259	63.3
Total	14,758	100.0	Total	273,735	100.0

Cape Metro female deaths, N = 12,391



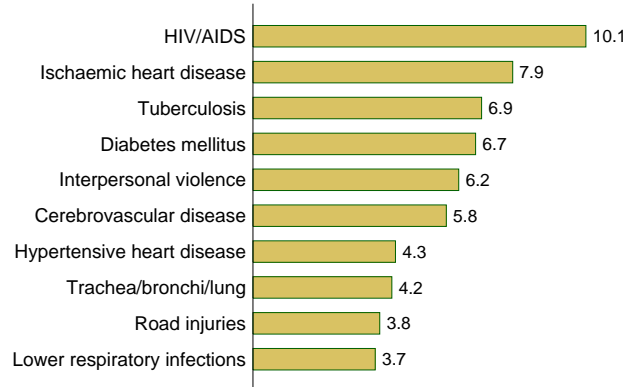
Cape Metro female YLLs, N = 211,005



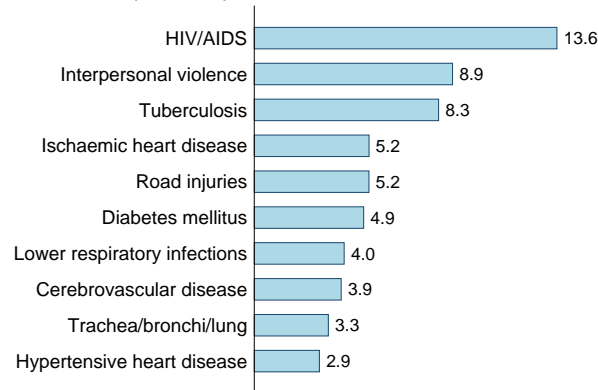
**Table A.14: Leading causes of death for females, Cape Metro 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
HIV/AIDS	1,472	11.9	HIV/AIDS	36,692	17.4
Diabetes mellitus	1,052	8.5	Tuberculosis	15,760	7.5
Ischaemic heart disease	936	7.6	Diabetes mellitus	13,238	6.3
Cerebrovascular disease	897	7.2	Cerebrovascular disease	10,355	4.9
Hypertensive heart disease	741	6.0	Ischaemic heart disease	10,082	4.8
Tuberculosis	703	5.7	Lower respiratory infections	10,017	4.7
Lower respiratory infections	530	4.3	Hypertensive heart disease	8,434	4.0
Breast	459	3.7	Road injuries	7,436	3.5
Trachea/bronchi/lung	386	3.1	Breast	7,207	3.4
COPD	373	3.0	Diarrhoeal diseases	6,399	3.0
Top 10 causes	7,548	60.9	Top 10 causes	121,751	57.7
Total	12,391	100.0	Total	211,005	100.0

Cape Metro person deaths, N = 27,149



Cape Metro person YLLs, N = 484,741



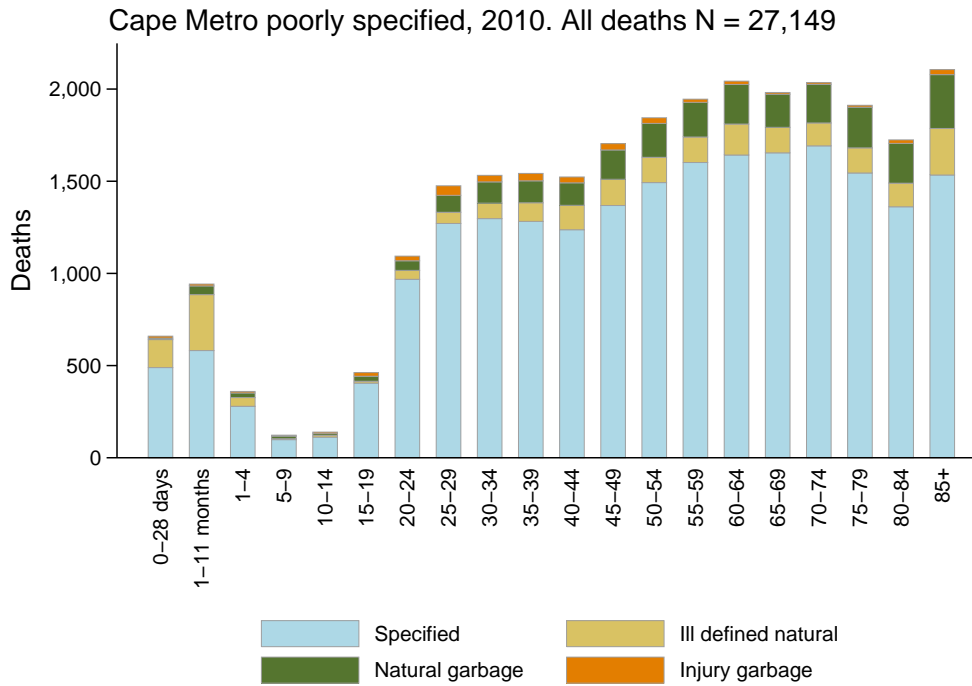
**Table A.15: Leading causes of death for persons, Cape Metro 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
HIV/AIDS	2,734	10.1	HIV/AIDS	66,100	13.6
Ischaemic heart disease	2,134	7.9	Interpersonal violence	43,302	8.9
Tuberculosis	1,878	6.9	Tuberculosis	40,255	8.3
Diabetes mellitus	1,829	6.7	Ischaemic heart disease	25,062	5.2
Interpersonal violence	1,690	6.2	Road injuries	25,046	5.2
Cerebrovascular disease	1,588	5.8	Diabetes mellitus	23,896	4.9
Hypertensive heart disease	1,170	4.3	Lower respiratory infections	19,631	4.0
Trachea/bronchi/lung	1,141	4.2	Cerebrovascular disease	18,984	3.9
Road injuries	1,041	3.8	Trachea/bronchi/lung	16,175	3.3
Lower respiratory infections	1,004	3.7	Hypertensive heart disease	14,222	2.9
Top 10 causes	16,209	59.7	Top 10 causes	292,671	60.4
Total	27,149	100.0	Total	484,741	100.0

Rank	Eastern	Khayelitsha	Klipfontein	Mitchells Plain	Northern	Southern	Tygerberg	Western	Cape Metro
1	HIV/AIDS (14.1%)	HIV/AIDS (22.7%)	HIV/AIDS (14.4%)	HIV/AIDS (15.9%)	HIV/AIDS (14.6%)	Ischaemic heart disease (8.4%)	HIV/AIDS (9.9%)	Interpersonal violence (9.6%)	HIV/AIDS (13.6%)
2	Tuberculosis (9.4%)	Interpersonal violence (13.3%)	Interpersonal violence (11.4%)	Interpersonal violence (10%)	Tuberculosis (9.3%)	HIV/AIDS (8.4%)	Tuberculosis (8.1%)	HIV/AIDS (9.1%)	Interpersonal violence (8.9%)
3	Interpersonal violence (7.1%)	Tuberculosis (9.7%)	Tuberculosis (8.5%)	Tuberculosis (8.1%)	Interpersonal violence (6.6%)	Interpersonal violence (6.1%)	Ischaemic heart disease (7.3%)	Tuberculosis (7.5%)	Tuberculosis (8.3%)
4	Road injuries (6.3%)	Road injuries (6.4%)	Diabetes mellitus (6.5%)	Diabetes mellitus (5.3%)	Ischaemic heart disease (5.6%)	Tuberculosis (6%)	Interpersonal violence (6.6%)	Ischaemic heart disease (6.2%)	Ischaemic heart disease (5.2%)
5	Ischaemic heart disease (5%)	Lower respiratory infections (5%)	Ischaemic heart disease (4.3%)	Lower respiratory infections (5.2%)	Road injuries (5.1%)	Diabetes mellitus (5.9%)	Diabetes mellitus (6.2%)	Road injuries (5.3%)	Road injuries (5.2%)
6	Lower respiratory infections (4.8%)	Diarrhoeal diseases (3.6%)	Hypertensive heart disease (4.3%)	Road injuries (4.7%)	Cerebrovascular disease (4.3%)	Trachea/bronchi/lung (5.3%)	Road injuries (5.8%)	Diabetes mellitus (4.9%)	Diabetes mellitus (4.9%)
7	Diabetes mellitus (4.5%)	Preterm birth complications (2.8%)	Cerebrovascular disease (4.2%)	Ischaemic heart disease (3.8%)	Diarrhoeal diseases (4.2%)	Cerebrovascular disease (4.8%)	Cerebrovascular disease (5%)	Cerebrovascular disease (4%)	Lower respiratory infections (4%)
8	Cerebrovascular disease (3.9%)	Hypertensive heart disease (2.5%)	Lower respiratory infections (3.9%)	Diarrhoeal diseases (3.4%)	Diabetes mellitus (3.4%)	Road injuries (4.7%)	Trachea/bronchi/lung (4%)	Trachea/bronchi/lung (3.9%)	Cerebrovascular disease (3.9%)
9	Diarrhoeal diseases (3.8%)	Fires, hot substances (2.4%)	Trachea/bronchi/lung (3.4%)	Trachea/bronchi/lung (3.1%)	Trachea/bronchi/lung (3.4%)	COPD (3.3%)	Lower respiratory infections (3.4%)	Lower respiratory infections (3.7%)	Trachea/bronchi/lung (3.3%)
10	Hypertensive heart disease (2.7%)	Diabetes mellitus (2.4%)	COPD (2.8%)	Cerebrovascular disease (2.9%)	Lower respiratory infections (2.9%)	Hypertensive heart disease (3.2%)	COPD (3.4%)	COPD (3.3%)	Hypertensive heart disease (2.9%)

Figure A.8: League table of leading causes of premature mortality, Cape Metropole 2010

### A.4.3.3 Proportion ill-defined



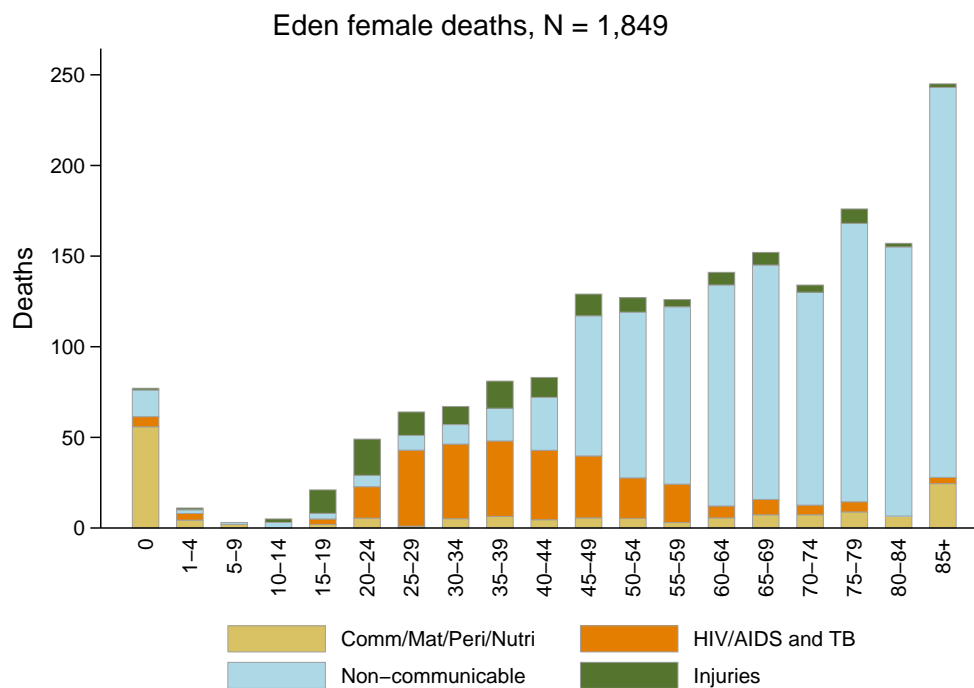
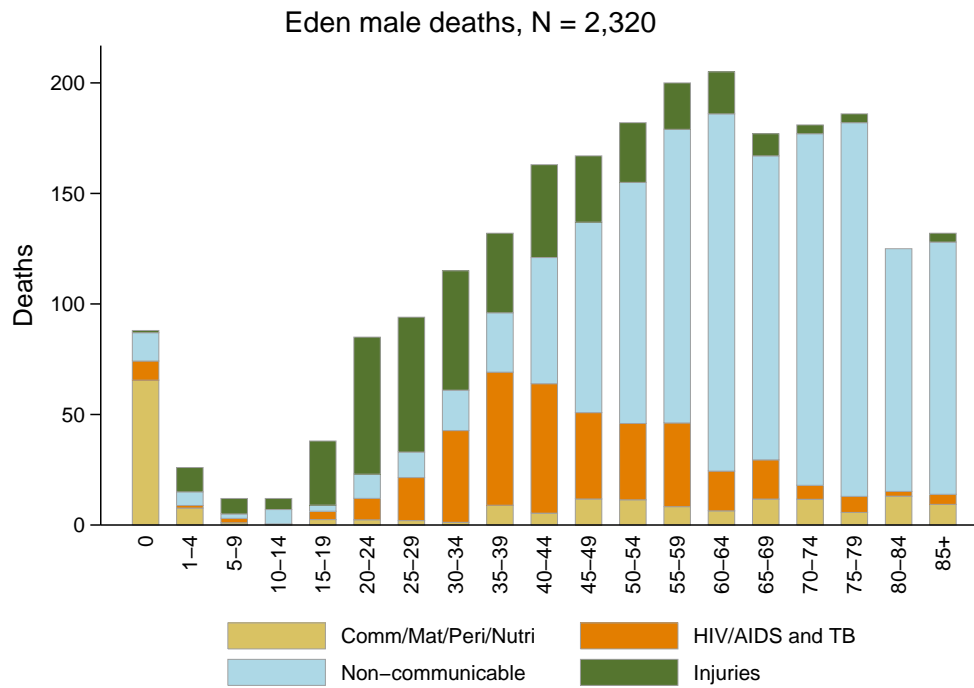
**Table A.16: Cape Metropole quality of reporting, 2010**

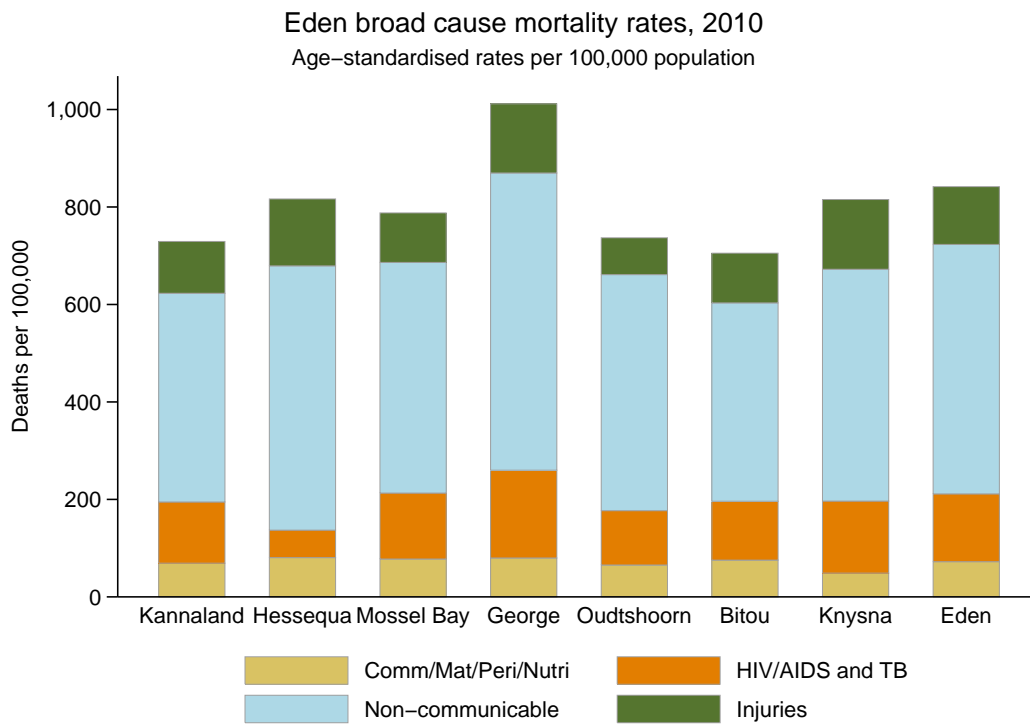
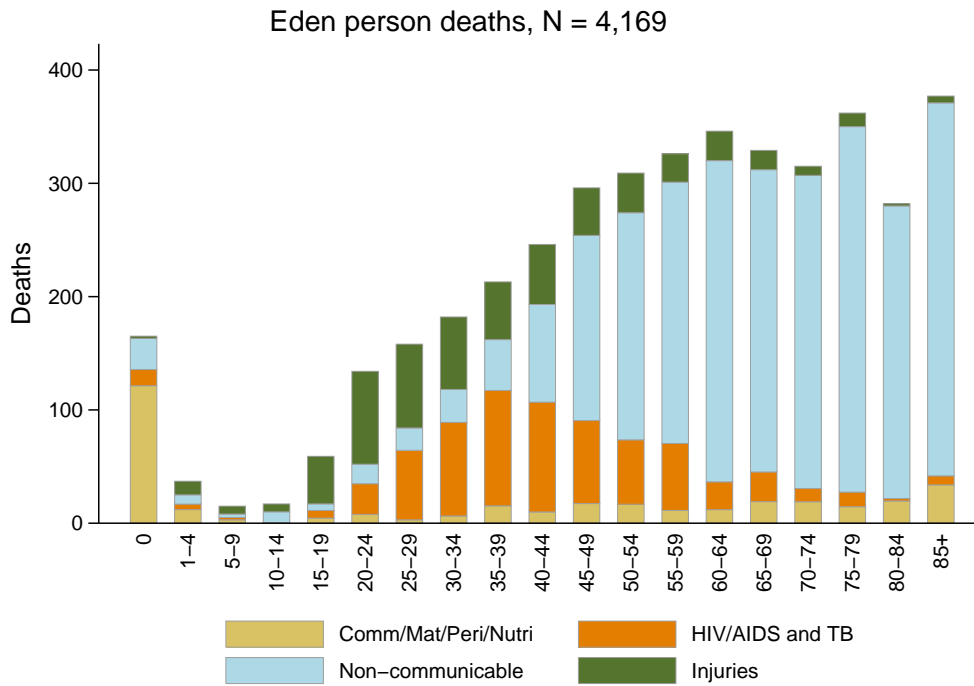
Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	660	23.0	1.2	1.6	25.8
1-11 months	942	32.2	5.0	1.1	38.3
1-4	360	13.2	6.9	2.3	22.4
5-9	123	4.1	11.4	4.2	19.8
10-14	139	7.3	7.2	5.1	19.6
15-19	462	2.2	5.8	4.3	12.3
20-24	1,094	4.4	4.8	2.3	11.5
25-29	1,476	4.1	6.2	3.5	13.9
30-34	1,532	5.5	7.5	2.3	15.3
35-39	1,543	6.6	7.7	2.6	16.9
40-44	1,523	8.7	8.0	2.1	18.8
45-49	1,704	8.3	9.3	2.0	19.7
50-54	1,845	7.4	10.0	1.7	19.1
55-59	1,945	7.1	9.7	0.9	17.7
60-64	2,043	8.2	10.5	0.9	19.6
65-69	1,981	7.0	9.1	0.5	16.5
70-74	2,035	6.1	10.3	0.4	16.9
75-79	1,912	7.1	11.6	0.5	19.2
80-84	1,725	7.4	12.5	1.1	21.0
85+	2,106	12.0	13.9	1.3	27.2
All	27,149	8.5	9.2	1.6	19.3



## A.4.4 Eden

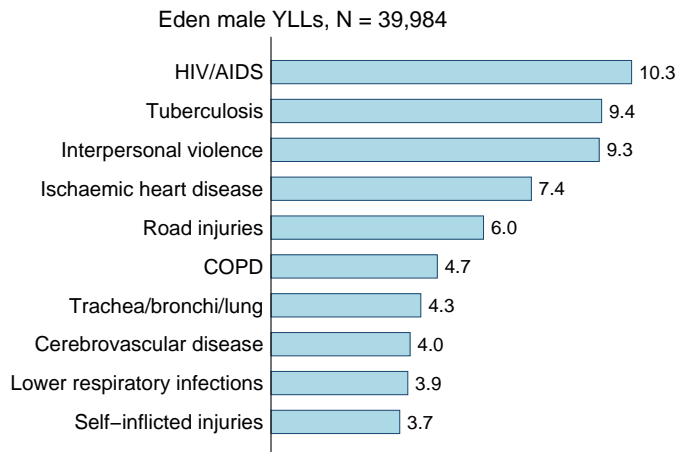
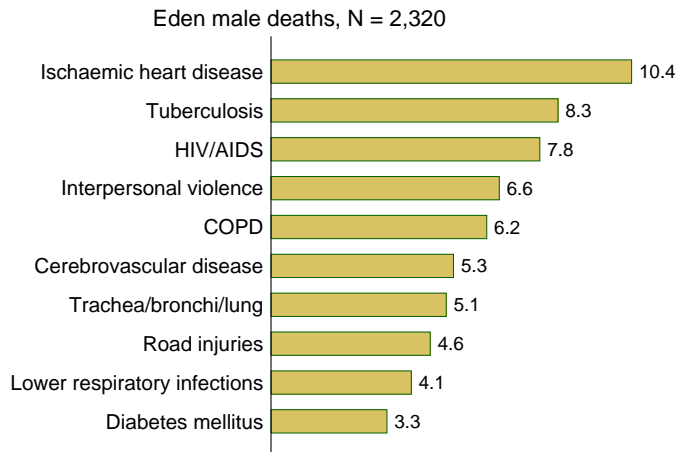
### A.4.4.1 Broad causes





**Figure A.9: Eden age-standardised rates per 100,000**

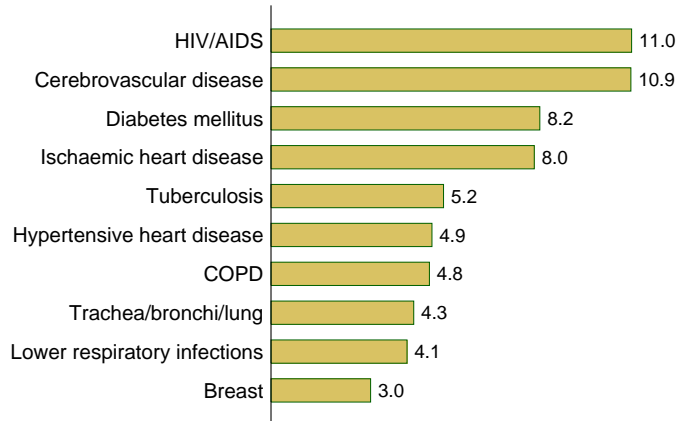
#### A.4.4.2 Leading causes of deaths and YLLs



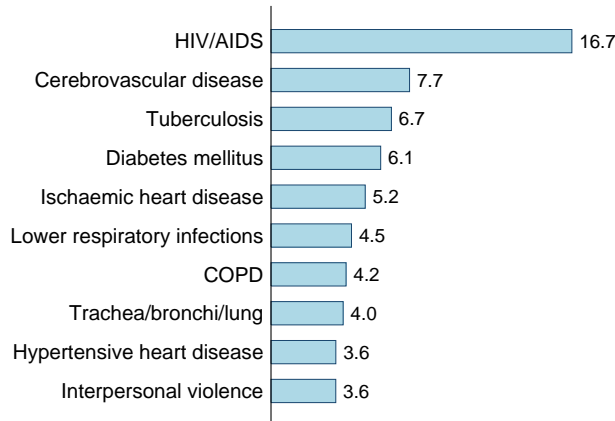
**Table A.17: Leading causes of death for males, Eden 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
Ischaemic heart disease	242	10.4	HIV/AIDS	4,100	10.3
Tuberculosis	192	8.3	Tuberculosis	3,760	9.4
HIV/AIDS	180	7.8	Interpersonal violence	3,732	9.3
Interpersonal violence	153	6.6	Ischaemic heart disease	2,960	7.4
COPD	145	6.2	Road injuries	2,417	6.0
Cerebrovascular disease	122	5.3	COPD	1,891	4.7
Trachea/bronchi/lung	117	5.1	Trachea/bronchi/lung	1,704	4.3
Road injuries	107	4.6	Cerebrovascular disease	1,581	4.0
Lower respiratory infections	94	4.1	Lower respiratory infections	1,556	3.9
Diabetes mellitus	78	3.3	Self-inflicted injuries	1,464	3.7
Top 10 causes	1,430	61.6	Top 10 causes	24,760	61.9
Total	2,320	100.0	Total	39,984	100.0

Eden female deaths, N = 1,849



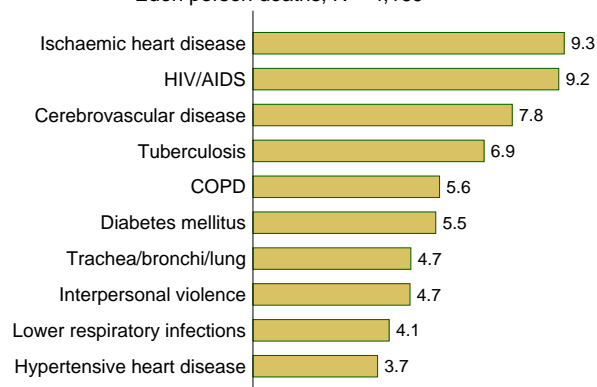
Eden female YLLs, N = 29,811



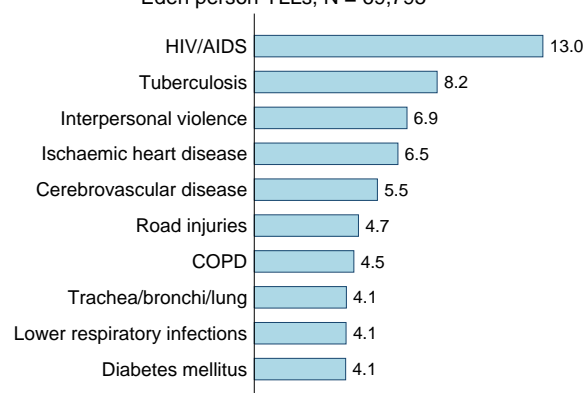
**Table A.18: Leading causes of death for females, Eden 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
HIV/AIDS	203	11.0	HIV/AIDS	4,975	16.7
Cerebrovascular disease	202	10.9	Cerebrovascular disease	2,291	7.7
Diabetes mellitus	151	8.2	Tuberculosis	1,991	6.7
Ischaemic heart disease	148	8.0	Diabetes mellitus	1,813	6.1
Tuberculosis	97	5.2	Ischaemic heart disease	1,557	5.2
Hypertensive heart disease	91	4.9	Lower respiratory infections	1,331	4.5
COPD	89	4.8	COPD	1,241	4.2
Trachea/bronchi/lung	80	4.3	Trachea/bronchi/lung	1,193	4.0
Lower respiratory infections	76	4.1	Hypertensive heart disease	1,072	3.6
Breast	56	3.0	Interpersonal violence	1,071	3.6
Top 10 causes	1,194	64.6	Top 10 causes	18,302	61.4
Total	1,849	100.0	Total	29,811	100.0

Eden person deaths, N = 4,169



Eden person YLLs, N = 69,795



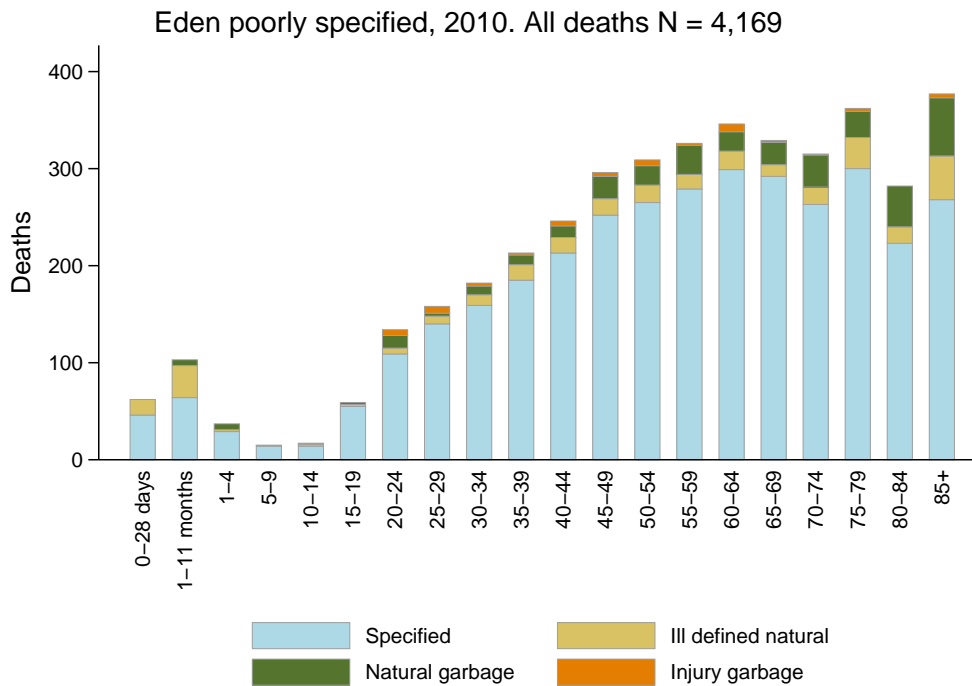
**Table A.19: Leading causes of death for persons, Eden 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
Ischaemic heart disease	390	9.3	HIV/AIDS	9,075	13.0
HIV/AIDS	383	9.2	Tuberculosis	5,751	8.2
Cerebrovascular disease	325	7.8	Interpersonal violence	4,803	6.9
Tuberculosis	289	6.9	Ischaemic heart disease	4,518	6.5
COPD	234	5.6	Cerebrovascular disease	3,872	5.5
Diabetes mellitus	229	5.5	Road injuries	3,276	4.7
Trachea/bronchi/lung	198	4.7	COPD	3,132	4.5
Interpersonal violence	197	4.7	Trachea/bronchi/lung	2,896	4.1
Lower respiratory infections	171	4.1	Lower respiratory infections	2,886	4.1
Hypertensive heart disease	156	3.7	Diabetes mellitus	2,873	4.1
Top 10 causes	2,570	61.7	Top 10 causes	41,867	60.0
Total	4,169	100.0	Total	69,795	100.0

Rank	Kannaland	Hessequa	Mossel Bay	George	Oudtshoorn	Bitou	Knysna	Eden
1	Tuberculosis (10.6%)	Ischaemic heart disease (12.6%)	HIV/AIDS (14.2%)	HIV/AIDS (14.5%)	Tuberculosis (9.9%)	HIV/AIDS (16.4%)	HIV/AIDS (16.9%)	HIV/AIDS (13%)
2	HIV/AIDS (9.4%)	Road injuries (6.6%)	Tuberculosis (8.6%)	Tuberculosis (9.1%)	HIV/AIDS (9.4%)	Interpersonal violence (7.5%)	Interpersonal violence (8.7%)	Tuberculosis (8.2%)
3	Interpersonal violence (7.3%)	Diabetes mellitus (6.6%)	Ischaemic heart disease (6.6%)	Interpersonal violence (8.3%)	Ischaemic heart disease (8.4%)	Lower respiratory infections (6.9%)	Cerebrovascular disease (8.1%)	Interpersonal violence (6.9%)
4	Road injuries (7.1%)	Cerebrovascular disease (5.6%)	Cerebrovascular disease (5.3%)	Ischaemic heart disease (5.4%)	Cerebrovascular disease (7.2%)	Cerebrovascular disease (6.1%)	Tuberculosis (6.2%)	Ischaemic heart disease (6.5%)
5	COPD (7%)	Tuberculosis (5%)	Interpersonal violence (5.1%)	Trachea/bronchi/lung (5.1%)	COPD (5.4%)	Tuberculosis (5.4%)	Road injuries (6%)	Cerebrovascular disease (5.5%)
6	Ischaemic heart disease (7%)	Interpersonal violence (4.7%)	Diabetes mellitus (4.6%)	COPD (4.8%)	Interpersonal violence (4.6%)	Road injuries (4.8%)	Ischaemic heart disease (4.2%)	Road injuries (4.7%)
7	Cerebrovascular disease (5.8%)	COPD (4.4%)	Lower respiratory infections (4.5%)	Cerebrovascular disease (4.2%)	Road injuries (4.5%)	Trachea/bronchi/lung (4.3%)	COPD (3.3%)	COPD (4.5%)
8	Lower respiratory infections (5.4%)	Trachea/bronchi/lung (4.2%)	Road injuries (4.1%)	Diabetes mellitus (4%)	Diabetes mellitus (4.2%)	Ischaemic heart disease (4.1%)	Lower respiratory infections (3.2%)	Trachea/bronchi/lung (4.1%)
9	Diabetes mellitus (3.9%)	Lower respiratory infections (3.7%)	COPD (3.8%)	Road injuries (3.9%)	Lower respiratory infections (3.9%)	Self-inflicted injuries (4%)	Trachea/bronchi/lung (3.1%)	Lower respiratory infections (4.1%)
10	Trachea/bronchi/lung (2.3%)	Self-inflicted injuries (3%)	Trachea/bronchi/lung (3.6%)	Lower respiratory infections (3.8%)	Hypertensive heart disease (3.6%)	COPD (3.6%)	Fires, hot substances (3%)	Diabetes mellitus (4.1%)

Figure A.10: League table of leading causes of premature mortality, Eden 2010

### A.4.4.3 Proportion ill-defined

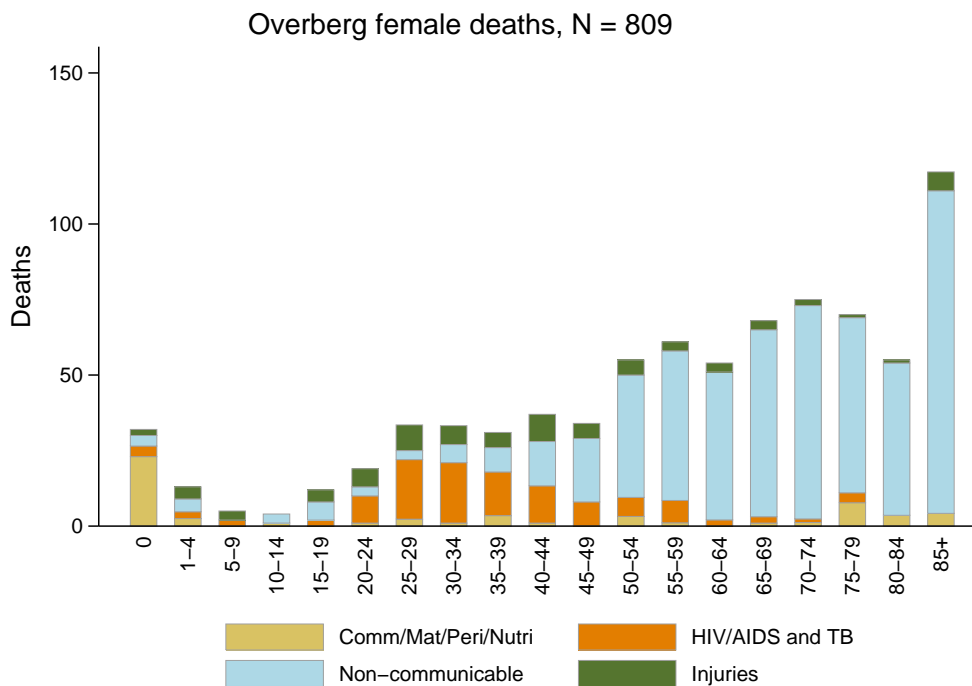
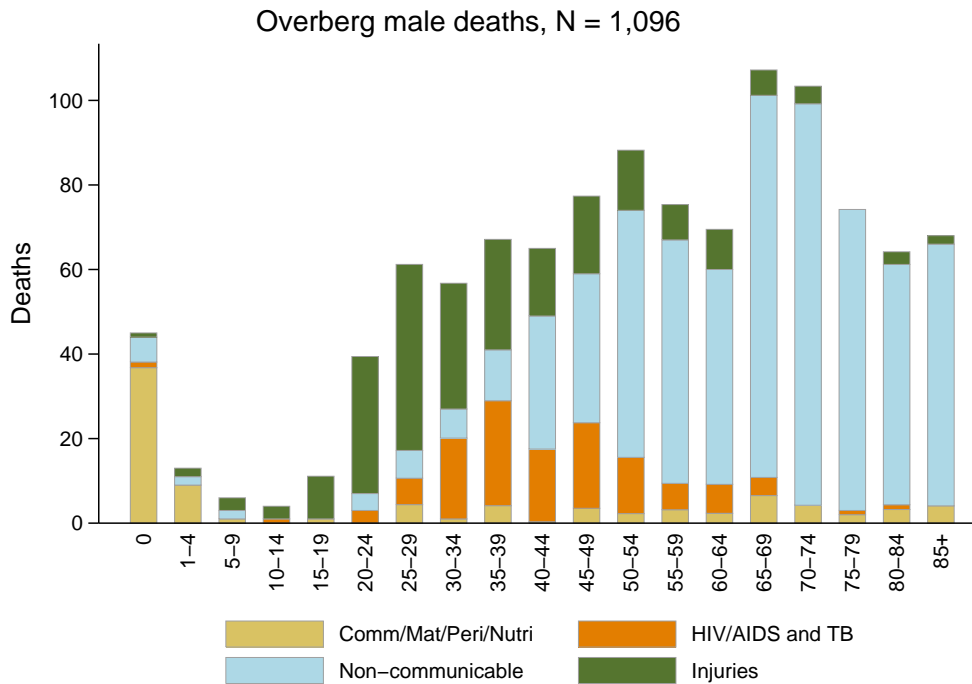


**Table A.20: Eden quality of reporting, 2010**

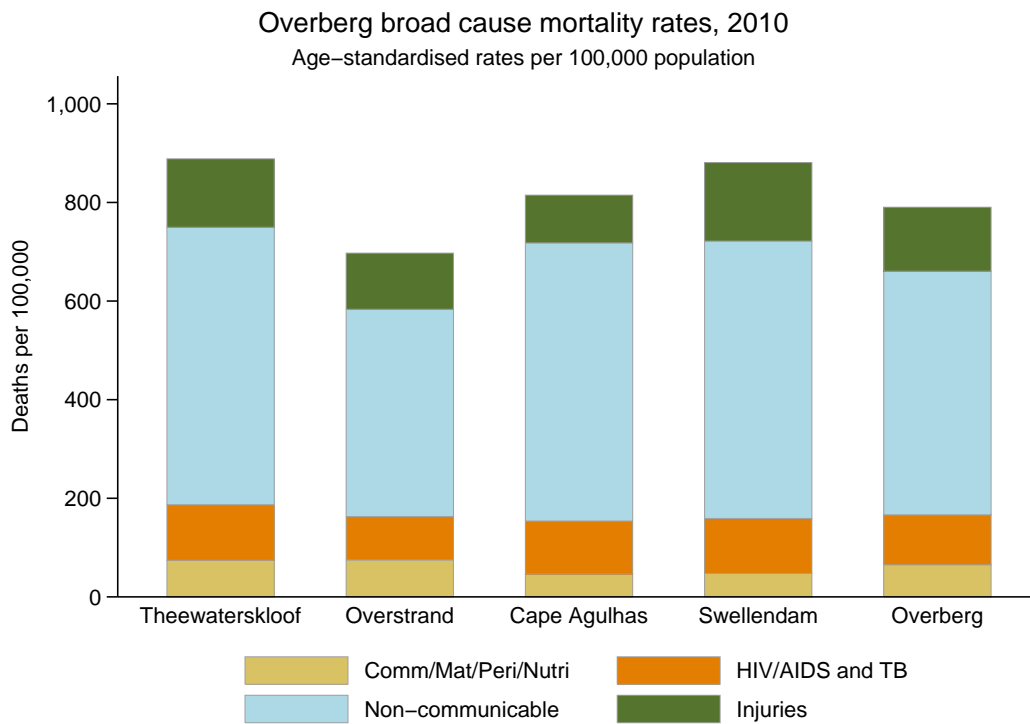
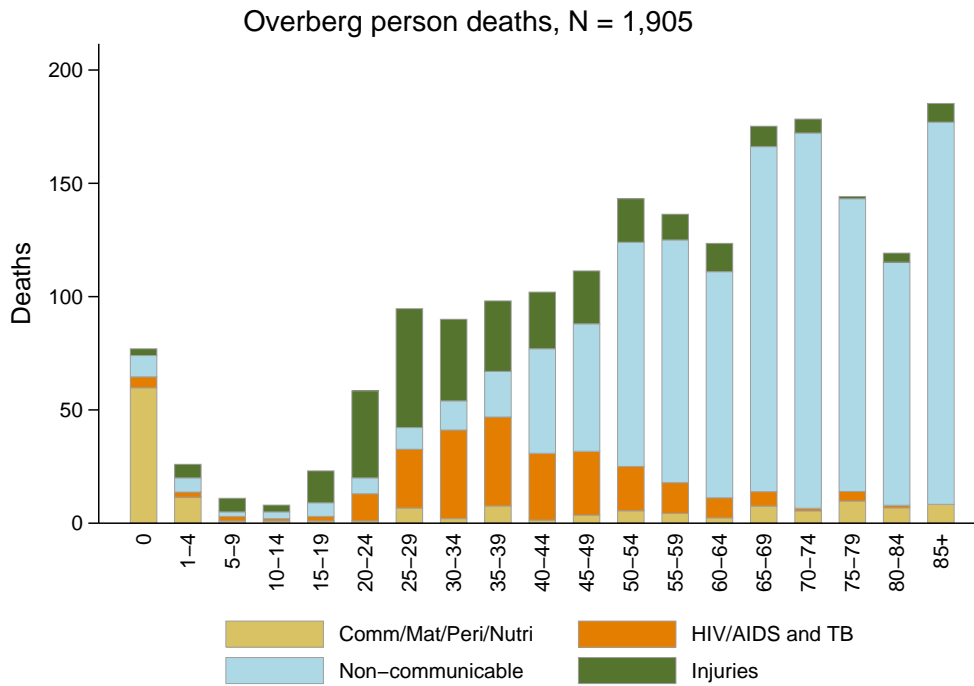
Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	62	25.8	0.0	0.0	25.8
1-11 months	103	32.0	5.8	0.0	37.8
1-4	37	5.4	16.2	0.0	21.6
5-9	15	0.0	6.6	0.0	6.6
10-14	17	11.7	5.9	0.0	17.6
15-19	59	3.4	3.4	0.0	6.8
20-24	134	4.5	9.7	4.5	18.6
25-29	158	5.1	1.9	4.4	11.4
30-34	182	6.0	4.9	1.6	12.6
35-39	213	7.5	4.7	0.9	13.1
40-44	246	6.5	4.9	2.0	13.4
45-49	296	5.7	7.8	1.4	14.9
50-54	309	5.8	6.5	1.9	14.2
55-59	326	4.6	9.2	0.6	14.4
60-64	346	5.5	5.8	2.3	13.6
65-69	329	3.6	7.0	0.6	11.2
70-74	315	5.7	10.5	0.3	16.5
75-79	362	8.8	7.5	0.8	17.1
80-84	282	6.0	14.9	0.0	20.9
85+	377	11.9	15.9	1.1	28.9
All	4,169	7.3	8.2	1.3	16.8

## A.4.5 Overberg

### A.4.5.1 Broad causes

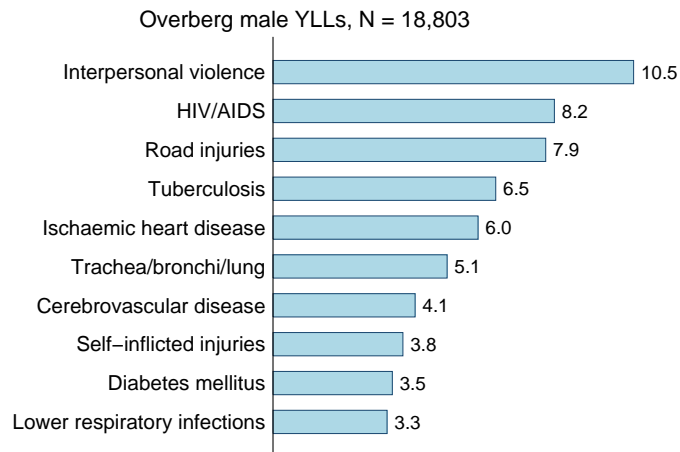
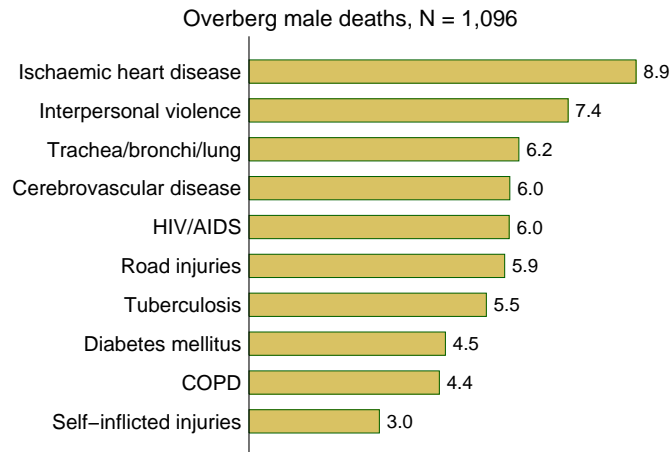






**Figure A.11: Overberg age-standardised rates per 100,000**

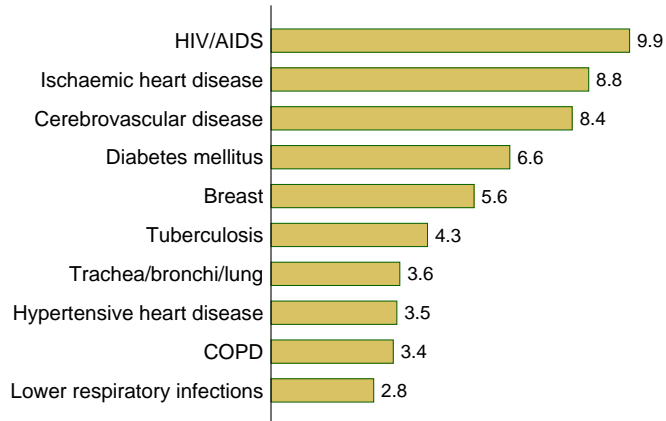
#### A.4.5.2 Leading causes of deaths and YLLs



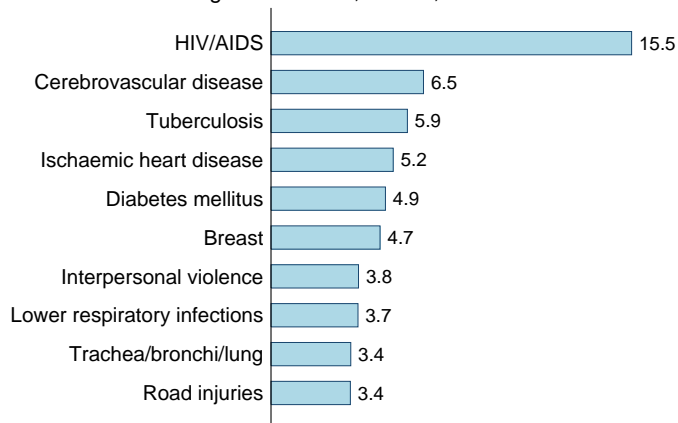
**Table A.21: Leading causes of death for males, Overberg 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
Ischaemic heart disease	98	8.9	Interpersonal violence	1,970	10.5
Interpersonal violence	81	7.4	HIV/AIDS	1,537	8.2
Trachea/bronchi/lung	68	6.2	Road injuries	1,490	7.9
Cerebrovascular disease	66	6.0	Tuberculosis	1,217	6.5
HIV/AIDS	66	6.0	Ischaemic heart disease	1,120	6.0
Road injuries	65	5.9	Trachea/bronchi/lung	951	5.1
Tuberculosis	60	5.5	Cerebrovascular disease	776	4.1
Diabetes mellitus	50	4.5	Self-inflicted injuries	710	3.8
COPD	48	4.4	Diabetes mellitus	652	3.5
Self-inflicted injuries	33	3.0	Lower respiratory infections	623	3.3
Top 10 causes	634	57.8	Top 10 causes	11,045	58.7
Total	1,096	100.0	Total	18,803	100.0

Overberg female deaths, N = 809

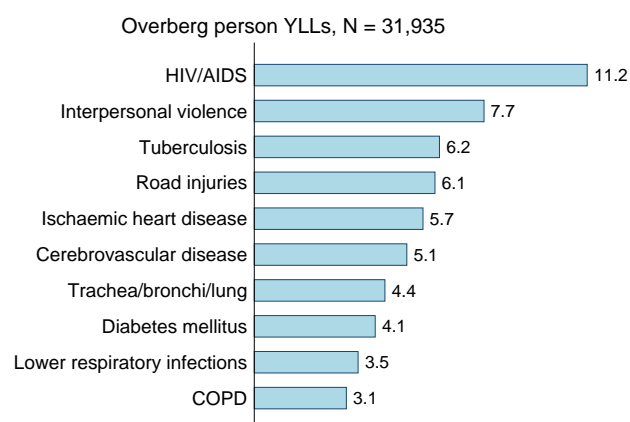
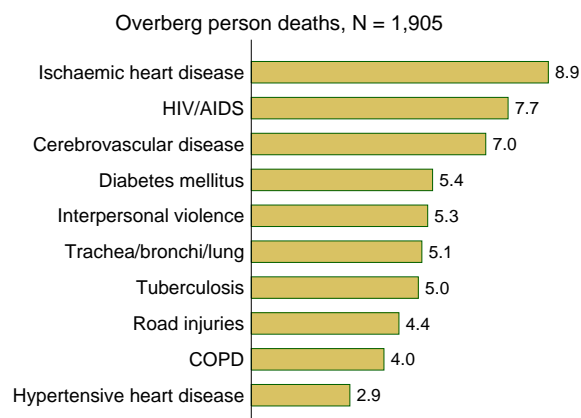


Overberg female YLLs, N = 13,132



**Table A.22: Leading causes of death for females, Overberg 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
HIV/AIDS	80	9.9	HIV/AIDS	2,032	15.5
Ischaemic heart disease	71	8.8	Cerebrovascular disease	859	6.5
Cerebrovascular disease	68	8.4	Tuberculosis	768	5.9
Diabetes mellitus	54	6.6	Ischaemic heart disease	689	5.2
Breast	46	5.6	Diabetes mellitus	645	4.9
Tuberculosis	35	4.3	Breast	614	4.7
Trachea/bronchi/lung	29	3.6	Interpersonal violence	493	3.8
Hypertensive heart disease	28	3.5	Lower respiratory infections	490	3.7
COPD	27	3.4	Trachea/bronchi/lung	449	3.4
Lower respiratory infections	23	2.8	Road injuries	447	3.4
Top 10 causes	461	57.0	Top 10 causes	7,207	54.9
Total	809	100.0	Total	13,132	100.0



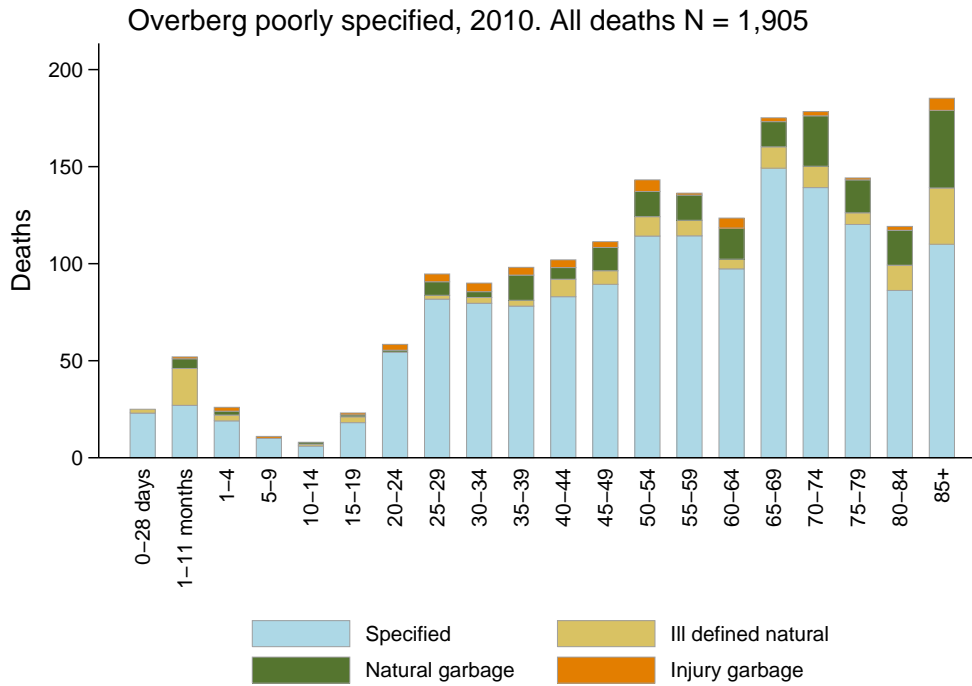
**Table A.23: Leading causes of death for persons, Overberg 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
Ischaemic heart disease	169	8.9	HIV/AIDS	3,569	11.2
HIV/AIDS	146	7.7	Interpersonal violence	2,463	7.7
Cerebrovascular disease	133	7.0	Tuberculosis	1,985	6.2
Diabetes mellitus	103	5.4	Road injuries	1,937	6.1
Interpersonal violence	100	5.3	Ischaemic heart disease	1,809	5.7
Trachea/bronchi/lung	97	5.1	Cerebrovascular disease	1,635	5.1
Tuberculosis	95	5.0	Trachea/bronchi/lung	1,400	4.4
Road injuries	84	4.4	Diabetes mellitus	1,296	4.1
COPD	76	4.0	Lower respiratory infections	1,113	3.5
Hypertensive heart disease	56	2.9	COPD	987	3.1
Top 10 causes	1,060	55.7	Top 10 causes	17,737	55.5
Total	1,905	100.0	Total	31,935	100.0

Rank	Theewaterskloof	Overstrand	Cape Agulhas	Swellendam	Overberg
1	HIV/AIDS (11.1%)	HIV/AIDS (11%)	HIV/AIDS (13.7%)	HIV/AIDS (9.1%)	HIV/AIDS (11.2%)
2	Interpersonal violence (10.8%)	Ischaemic heart disease (6.9%)	Cerebrovascular disease (8.1%)	Road injuries (8%)	Interpersonal violence (7.7%)
3	Tuberculosis (8.2%)	Interpersonal violence (6.1%)	Ischaemic heart disease (8%)	Tuberculosis (7.9%)	Tuberculosis (6.2%)
4	Road injuries (7.2%)	Trachea/bronchi/lung (4.3%)	Road injuries (5.3%)	Cerebrovascular disease (6.5%)	Road injuries (6.1%)
5	Cerebrovascular disease (5.2%)	Road injuries (4.2%)	Trachea/bronchi/lung (4.9%)	Diabetes mellitus (5.8%)	Ischaemic heart disease (5.7%)
6	Lower respiratory infections (4.9%)	Tuberculosis (4%)	Diabetes mellitus (4.5%)	Interpersonal violence (5.6%)	Cerebrovascular disease (5.1%)
7	Trachea/bronchi/lung (4.4%)	Self-inflicted injuries (3.7%)	Interpersonal violence (4.2%)	Ischaemic heart disease (4.3%)	Trachea/bronchi/lung (4.4%)
8	Ischaemic heart disease (4.4%)	Diabetes mellitus (3.6%)	Tuberculosis (4.1%)	Trachea/bronchi/lung (4.1%)	Diabetes mellitus (4.1%)
9	Diabetes mellitus (3.7%)	Cerebrovascular disease (3.2%)	COPD (3.9%)	Drowning (3.7%)	Lower respiratory infections (3.5%)
10	COPD (3.5%)	Diarrhoeal diseases (2.9%)	Lower respiratory infections (3.8%)	COPD (3.3%)	COPD (3.1%)

Figure A.12: League table of leading causes of premature mortality, Overberg 2010

### A.4.5.3 Proportion ill-defined

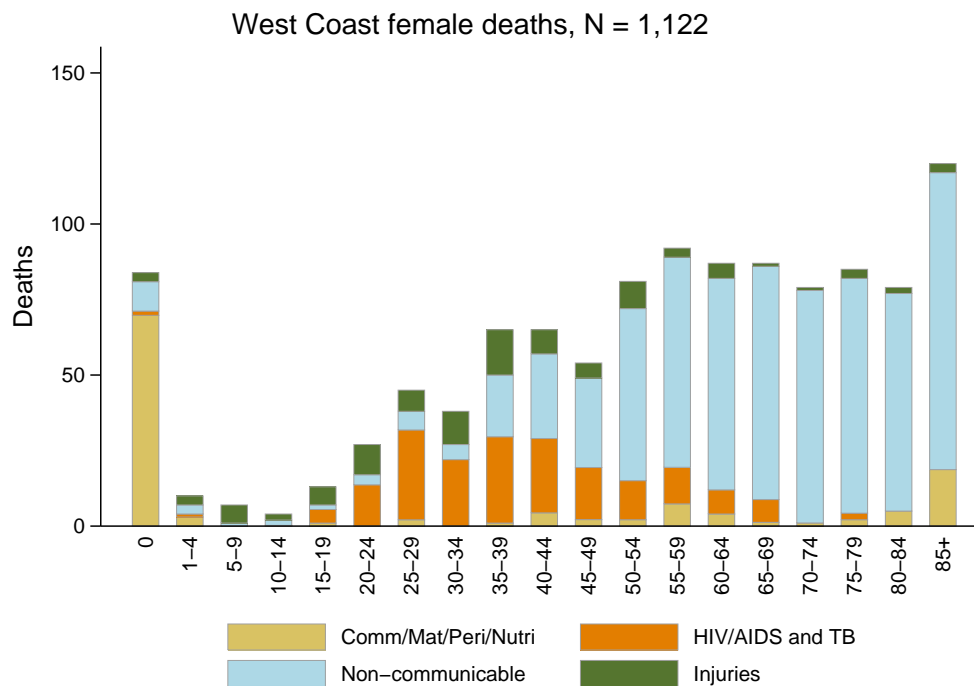
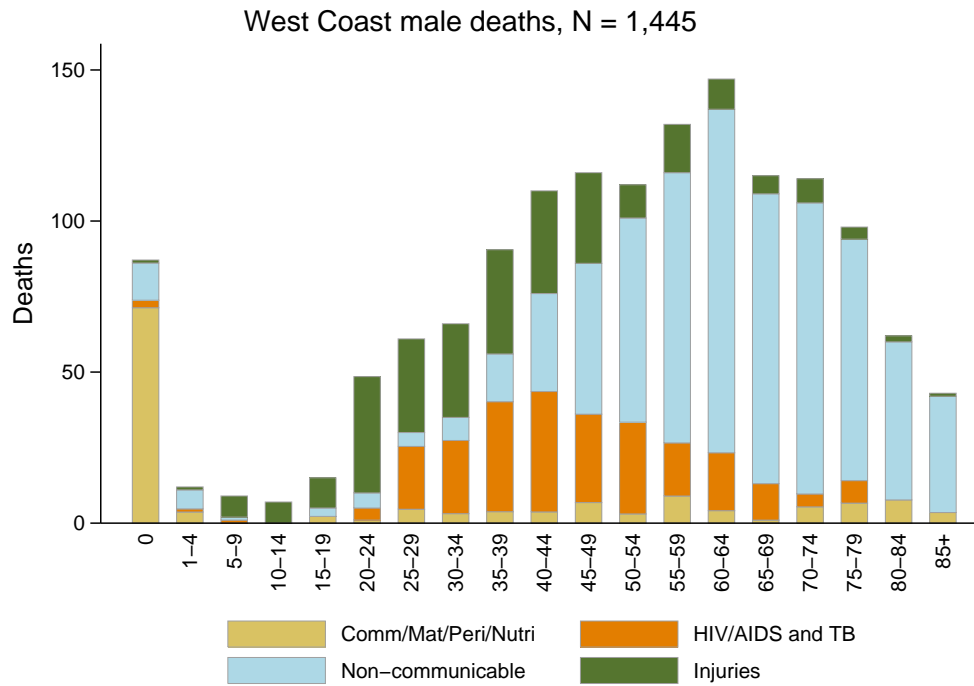


**Table A.24: Overberg quality of reporting, 2010**

Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	25	8.0	0.0	0.0	8.0
1-11 months	52	36.5	9.6	1.9	48.1
1-4	26	11.5	7.7	7.7	26.9
5-9	11	0.0	0.0	9.1	9.1
10-14	8	12.5	12.5	0.0	25.0
15-19	23	13.0	4.3	4.3	21.6
20-24	58	0.0	1.7	5.1	6.8
25-29	95	2.1	7.4	4.2	13.7
30-34	90	3.3	3.3	4.9	11.6
35-39	98	3.1	13.2	4.1	20.4
40-44	102	8.8	5.9	3.9	18.6
45-49	111	6.3	10.8	2.7	19.8
50-54	143	7.0	9.1	4.2	20.2
55-59	136	5.9	9.5	0.7	16.1
60-64	123	4.0	13.0	4.2	21.2
65-69	175	6.3	7.4	1.1	14.8
70-74	178	6.2	14.6	1.2	22.0
75-79	144	4.2	11.8	0.7	16.6
80-84	119	10.9	15.1	1.7	27.7
85+	185	15.7	21.6	3.4	40.6
All	1,905	7.6	10.9	2.8	21.3

## A.4.6 West Coast

### A.4.6.1 Broad causes



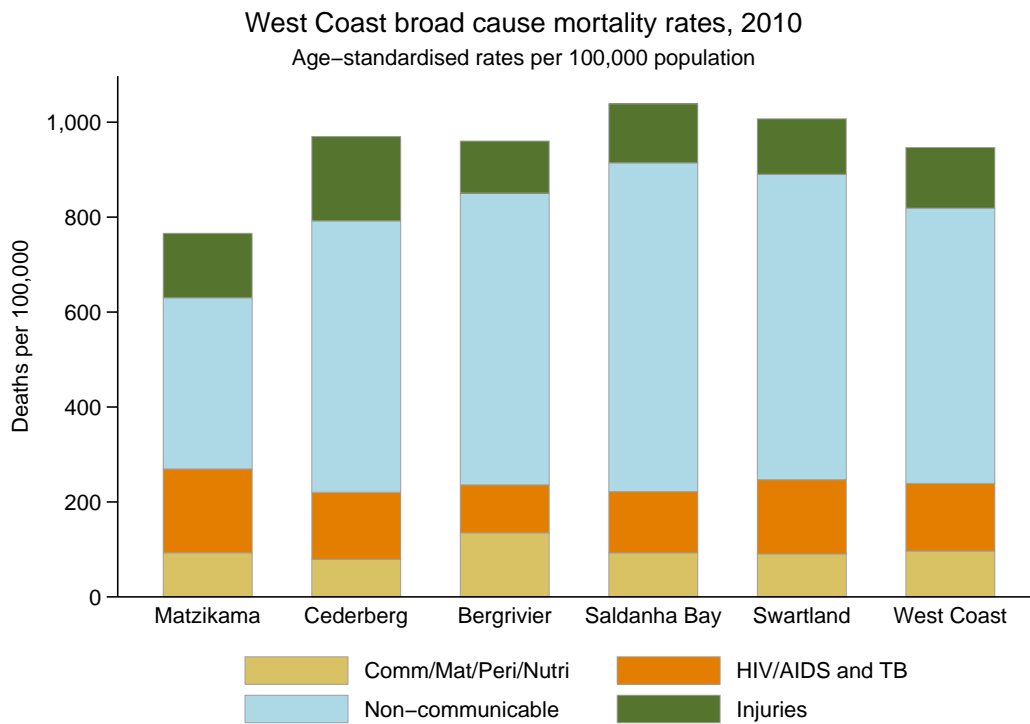
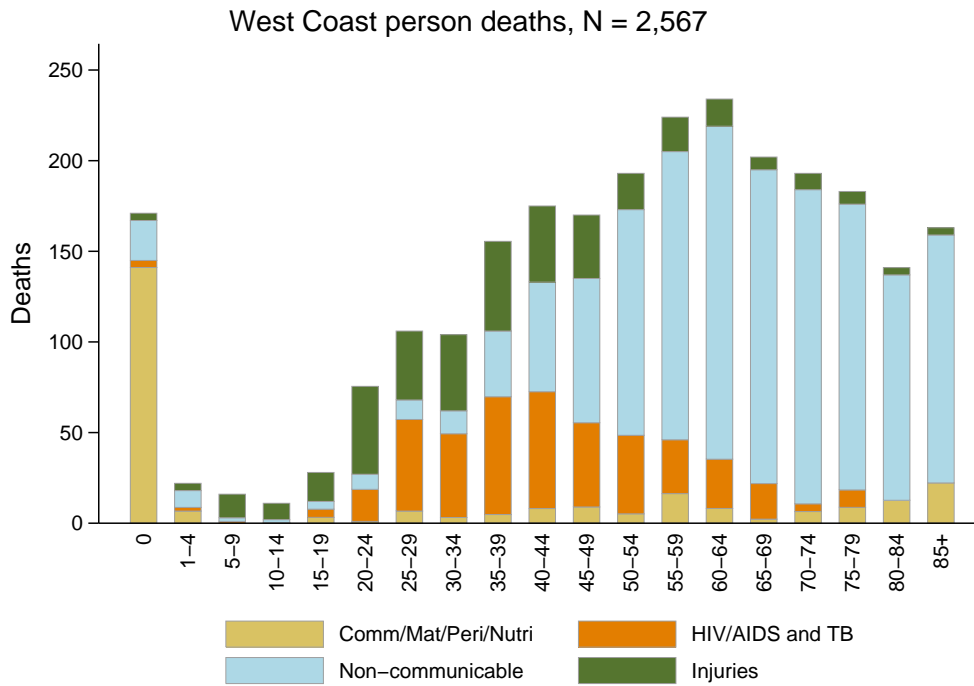
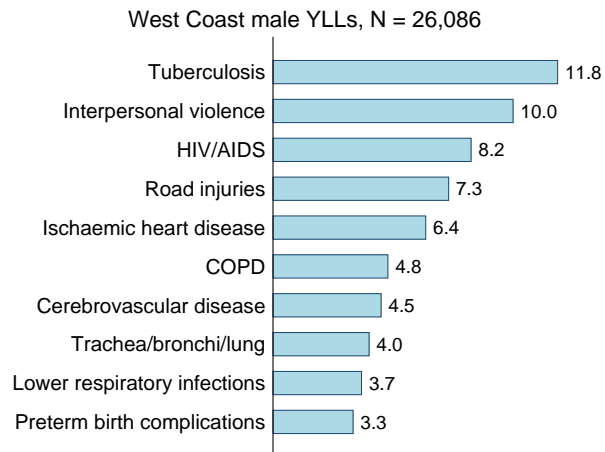
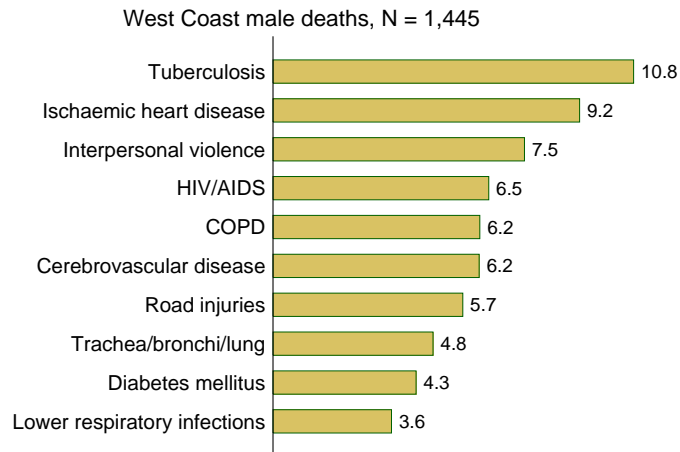


Figure A.13: West Coast age-standardised rates per 100,000



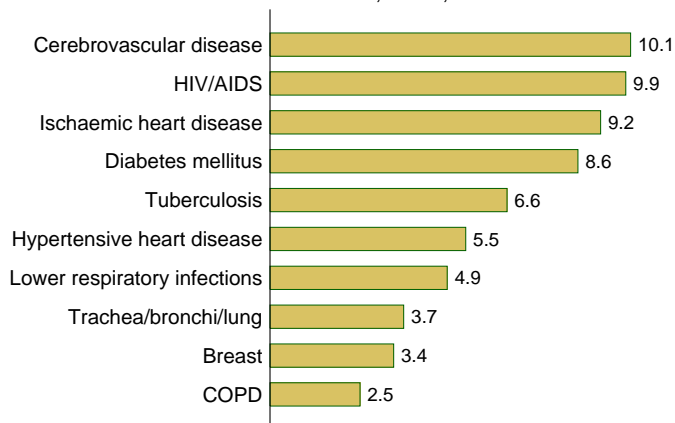
#### A.4.6.2 Leading causes of deaths and YLLs



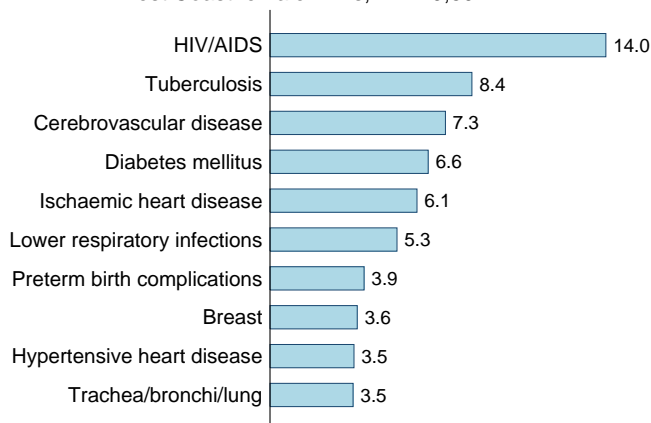
**Table A.25: Leading causes of death for males, West Coast 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
Tuberculosis	156	10.8	Tuberculosis	3,089	11.8
Ischaemic heart disease	133	9.2	Interpersonal violence	2,605	10.0
Interpersonal violence	109	7.5	HIV/AIDS	2,149	8.2
HIV/AIDS	94	6.5	Road injuries	1,906	7.3
COPD	90	6.2	Ischaemic heart disease	1,657	6.4
Cerebrovascular disease	89	6.2	COPD	1,247	4.8
Road injuries	82	5.7	Cerebrovascular disease	1,172	4.5
Trachea/bronchi/lung	69	4.8	Trachea/bronchi/lung	1,042	4.0
Diabetes mellitus	62	4.3	Lower respiratory infections	960	3.7
Lower respiratory infections	51	3.6	Preterm birth complications	868	3.3
Top 10 causes	936	64.8	Top 10 causes	16,646	63.8
Total	1,445	100.0	Total	26,086	100.0

West Coast female deaths, N = 1,122



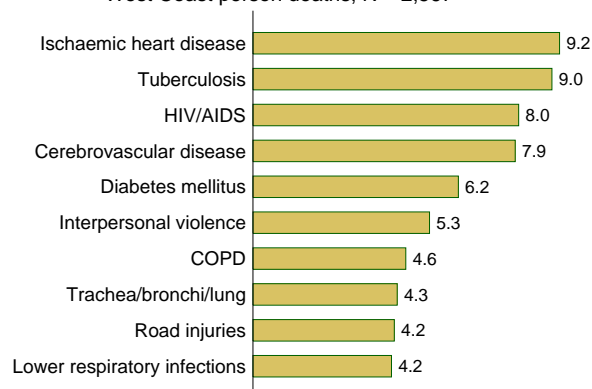
West Coast female YLLs, N = 19,597



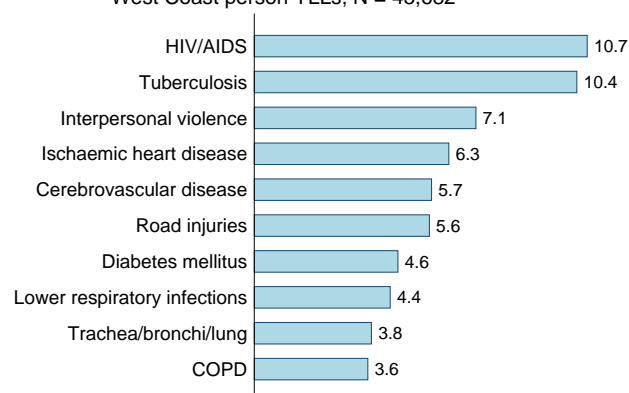
**Table A.26: Leading causes of death for females, West Coast 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
Cerebrovascular disease	113	10.1	HIV/AIDS	2,738	14.0
HIV/AIDS	111	9.9	Tuberculosis	1,646	8.4
Ischaemic heart disease	103	9.2	Cerebrovascular disease	1,430	7.3
Diabetes mellitus	96	8.6	Diabetes mellitus	1,289	6.6
Tuberculosis	74	6.6	Ischaemic heart disease	1,198	6.1
Hypertensive heart disease	61	5.5	Lower respiratory infections	1,035	5.3
Lower respiratory infections	55	4.9	Preterm birth complications	767	3.9
Trachea/bronchi/lung	42	3.7	Breast	711	3.6
Breast	39	3.4	Hypertensive heart disease	685	3.5
COPD	28	2.5	Trachea/bronchi/lung	677	3.5
Top 10 causes	723	64.5	Top 10 causes	11,829	60.4
Total	1,122	100.0	Total	19,597	100.0

West Coast person deaths, N = 2,567



West Coast person YLLs, N = 45,682



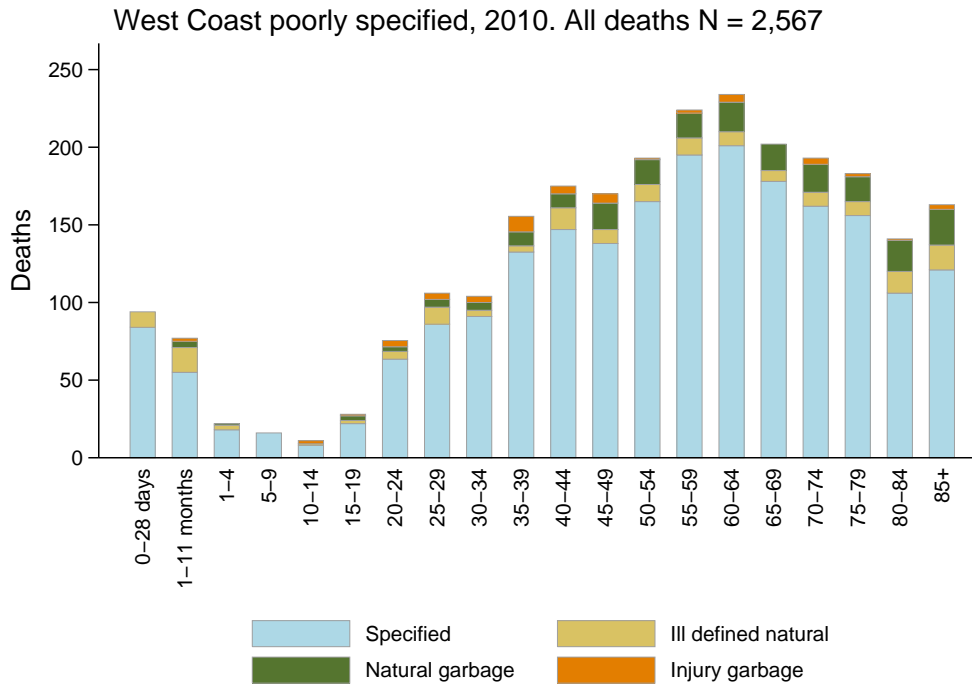
**Table A.27: Leading causes of death for persons, West Coast 2010**

Cause of death	Deaths	%	Cause of death	YLLs	%
Ischaemic heart disease	236	9.2	HIV/AIDS	4,887	10.7
Tuberculosis	231	9.0	Tuberculosis	4,734	10.4
HIV/AIDS	205	8.0	Interpersonal violence	3,254	7.1
Cerebrovascular disease	202	7.9	Ischaemic heart disease	2,856	6.3
Diabetes mellitus	158	6.2	Cerebrovascular disease	2,602	5.7
Interpersonal violence	136	5.3	Road injuries	2,570	5.6
COPD	118	4.6	Diabetes mellitus	2,109	4.6
Trachea/bronchi/lung	111	4.3	Lower respiratory infections	1,995	4.4
Road injuries	109	4.2	Trachea/bronchi/lung	1,719	3.8
Lower respiratory infections	107	4.2	COPD	1,667	3.6
Top 10 causes	1,613	62.9	Top 10 causes	28,393	62.2
Total	2,567	100.0	Total	45,682	100.0

Rank	Matzikama	Cederberg	Bergivier	Saldanha Bay	Swartland	West Coast
1	HIV/AIDS (17%)	Tuberculosis (11.8%)	Ischaemic heart disease (11.1%)	HIV/AIDS (10.9%)	HIV/AIDS (11.2%)	HIV/AIDS (10.7%)
2	Tuberculosis (11.8%)	Interpersonal violence (11.3%)	Tuberculosis (10.8%)	Tuberculosis (8.4%)	Tuberculosis (10.3%)	Tuberculosis (10.4%)
3	Interpersonal violence (10.2%)	Cerebrovascular disease (7.5%)	HIV/AIDS (5.6%)	Interpersonal violence (7.1%)	Road injuries (7.2%)	Interpersonal violence (7.1%)
4	Preterm birth complications (5.7%)	Road injuries (6.7%)	Cerebrovascular disease (5.1%)	Diabetes mellitus (5.9%)	Ischaemic heart disease (6.9%)	Ischaemic heart disease (6.3%)
5	Lower respiratory infections (5.5%)	Ischaemic heart disease (6.3%)	Lower respiratory infections (5.1%)	Cerebrovascular disease (5.6%)	Cerebrovascular disease (5.6%)	Cerebrovascular disease (5.7%)
6	Cerebrovascular disease (5.1%)	HIV/AIDS (6.1%)	Road injuries (4.9%)	Lower respiratory infections (5%)	Diabetes mellitus (4.9%)	Road injuries (5.6%)
7	Trachea/bronchi/lung (4.2%)	Lower respiratory infections (4.9%)	Interpersonal violence (4.9%)	Road injuries (4.9%)	Interpersonal violence (4.3%)	Diabetes mellitus (4.6%)
8	Road injuries (4%)	Diabetes mellitus (4.4%)	Diabetes mellitus (4%)	Ischaemic heart disease (4.5%)	COPD (3.7%)	Lower respiratory infections (4.4%)
9	Drowning (3.9%)	Preterm birth complications (4%)	Birth asphyxia (3.6%)	COPD (4.4%)	Trachea/bronchi/lung (3.6%)	Trachea/bronchi/lung (3.8%)
10	Ischaemic heart disease (3.9%)	Drowning (3.3%)	Trachea/bronchi/lung (3.6%)	Trachea/bronchi/lung (4.3%)	Lower respiratory infections (2.5%)	COPD (3.6%)

Figure A.14: League table of leading causes of premature mortality, West Coast 2010

### A.4.6.3 Proportion ill-defined



**Table A.28: West Coast quality of reporting, 2010**

Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	94	10.6	0.0	0.0	10.6
1-11 months	77	20.8	5.2	2.6	28.6
1-4	22	13.6	4.5	0.0	18.2
5-9	16	0.0	0.0	0.0	0.0
10-14	11	9.1	0.0	18.2	27.3
15-19	28	7.1	10.7	3.6	21.4
20-24	76	6.6	4.0	5.3	15.9
25-29	106	10.4	4.7	3.8	18.9
30-34	104	3.8	4.8	3.8	12.5
35-39	156	2.6	5.8	6.4	14.8
40-44	175	8.0	5.1	2.9	16.0
45-49	170	5.3	10.0	3.5	18.8
50-54	193	5.7	8.3	0.5	14.5
55-59	224	4.9	7.1	0.9	12.9
60-64	234	3.8	8.1	2.1	14.1
65-69	202	3.5	8.4	0.0	11.9
70-74	193	4.7	9.3	2.1	16.1
75-79	183	4.9	8.7	1.1	14.8
80-84	141	9.9	14.2	0.7	24.8
85+	163	9.8	14.1	1.8	25.8
All	2,567	6.4	7.8	2.2	16.4