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Western Cape Mortality Profile 2009

May 2012

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20th Floor, 4 Dorp Street, Cape Town, 8001
tel: +27 21 483 3563 fax: +27 21 483 6169

PO Box 2060, Cape Town, 8000
www.westerncape.gov.za

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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

AIDS	**A**cquired **I**mmune **D**eficiency **S**yndrome
ASSA	**A**ctuarial **S**ociety of **S**outh **A**frica
DNF	**D**eath **N**otification **F**orm
ICD-10	**I**nternational Statistical **C**lassification of **D**isease
Group 1	Communicable diseases, maternal, perinatal and nutritional conditions
Group II	Non-communicable diseases
Group III	Injuries
NBD	**N**ational **B**urden of **D**iseases and Related Health Problems
PGWC	**P**rovincial **G**overnment of the **W**estern **C**ape
PIMSS	**P**rovincial **I**njury **M**ortality **S**urveillance **S**ystem
StatsSA	**S**tatistics **S**outh **A**frica
YLLs	**Y**ears of **L**ife **L**ost

1 Western Cape Mortality profile 2009

1.1 Introduction

The importance of mortality information for health planning, monitoring and evaluation cannot be overstated. Since levels and cause profiles of mortality can differ markedly between districts and sub-districts it is important to have this information at local level. The Department of Health, Provincial Government of Western Cape (PGWC) together with the City of Cape Town, have recognised the importance of local level mortality surveillance and have implemented a province wide mortality surveillance system. This report presents the first results from this system for 2009.

1.2 Methods

The six district information offices of the Western Cape Department of Health 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 was captured on a customized database at each district office. The data was sent to the Medical Research Council for cleaning and was returned to the offices for correction if necessary. Information on the manner of death for deaths due to unnatural causes (Provincial Injury Mortality Surveillance System - PIMSS) was collected by Forensic Pathology Services and sent electronically to the MRC for cleaning. The PIMSS data was linked with the surveillance data using the serial number of the death notification forms and the mortuary reference number as linking variables. Where PIMSS data could not be matched to surveillance data, these records were added to the surveillance data and the place of injury was used to allocate the death to a district rather than the residential address as in the surveillance data.

Data completeness assessed against StatsSA 2009 district death totals was 83.7% overall, with West Coast (64.7%) and Overberg (72.2%) having the lowest completeness amongst districts. West Coast had particularly low completeness for child deaths (39.1%) (Appendix A.1). The natural causes were coded to ICD-10 using the automated coding software, IRIS. The ICD codes were aggregated into 214 National Burden of Disease (NBD) analysis codes. The unnatural deaths from PIMSS were coded directly to the NBD analysis codes as sufficient information for coding to ICD-10 is not provided on the DNF.

Ill-defined and garbage codes were redistributed across specified causes of death according to algorithms developed for the National Burden of Disease study. Ill-defined conditions accounted for 9.4% and garbage codes for 10.1% of deaths in the Western Cape with slight variations across districts.

Causes were grouped into the three main groups used by the Global Burden of Disease Classification, namely:

- Group I - Communicable diseases, maternal, perinatal and nutritional conditions (Comm/Mat/Peri/Nut)
- Group II - Non-communicable diseases

- Group III - Injuries

Given the large burden due to HIV/AIDS and TB, usually part of Group I in South Africa, these conditions formed a fourth group.

The final mortality estimates were made by adjusting the death data for completeness against Stats SA 2009 data for natural causes. This was done using separate adjustment factors for under 5 years and 5+ years, keeping the sex and cause profile of the original data. Mortality rates were estimated using district population estimates adjusted to the ASSA2008[1] provincial estimates for 2009 for the Western Cape (Appendix A.3). Years of Life Lost were estimated using a model life table, Coale and Demeny West level 26 with life expectancy at birth of 82.5 years for females and 80 years for males. YLLs were discounted at 3% without any age weighting applied. Age standardised rates were calculated using the WHO age distribution as the standard[2].

Following the Health Data Advisory and Co-ordination Committee (HDACC) recommendation to monitor cause-specific mortality rates for fairly broad groupings of causes, to reduce the problem of misclassification of causes[3], the following groupings of causes were used:

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.

The HDACC was established by the Director-General of the Department of Health with the aim of

1. Improving the quality and integrity of data on health outcomes,
2. Establishing consensus among research experts from various academic institutions, research institutions and government departments on indicators and indicator values, identification of reliable empirical data sources to be used to monitor these indicators as well as mechanisms to improve data systems, and
3. Advising on baseline values and targets for the negotiated service delivery agreement (NSDA) for the 2010-2014 period.[4]

[1] http://aids.actuarialsociety.org.za/ASSA2008-Model-3480.htm

[2] 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.

[3] Pillay-van wyk V, Bradshaw D, Groenewald P, Laubscher R. Improving the quality of medical certification of cause of death: The time is now! SAMJ 2011;101(9):626.

[4] National Department of Health. Health Data Advisory and Co-ordination Committee Report. November 2011.

1.3 Results

There were an estimated 46,254[5] deaths in the Western Cape in 2009 with 63% of these occurring in the Cape Metropole District (Fig 1.1). Male deaths accounted for 55% of all deaths (Fig 1.2). Injuries accounted for a much higher proportion of male deaths compared to female deaths, peaking between 15 and 39 years of age.

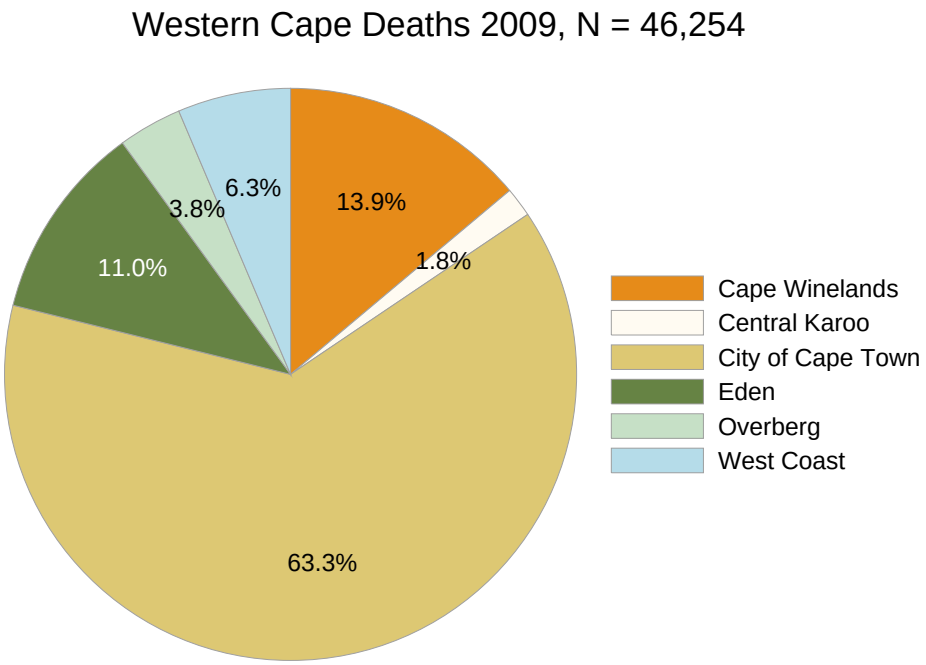


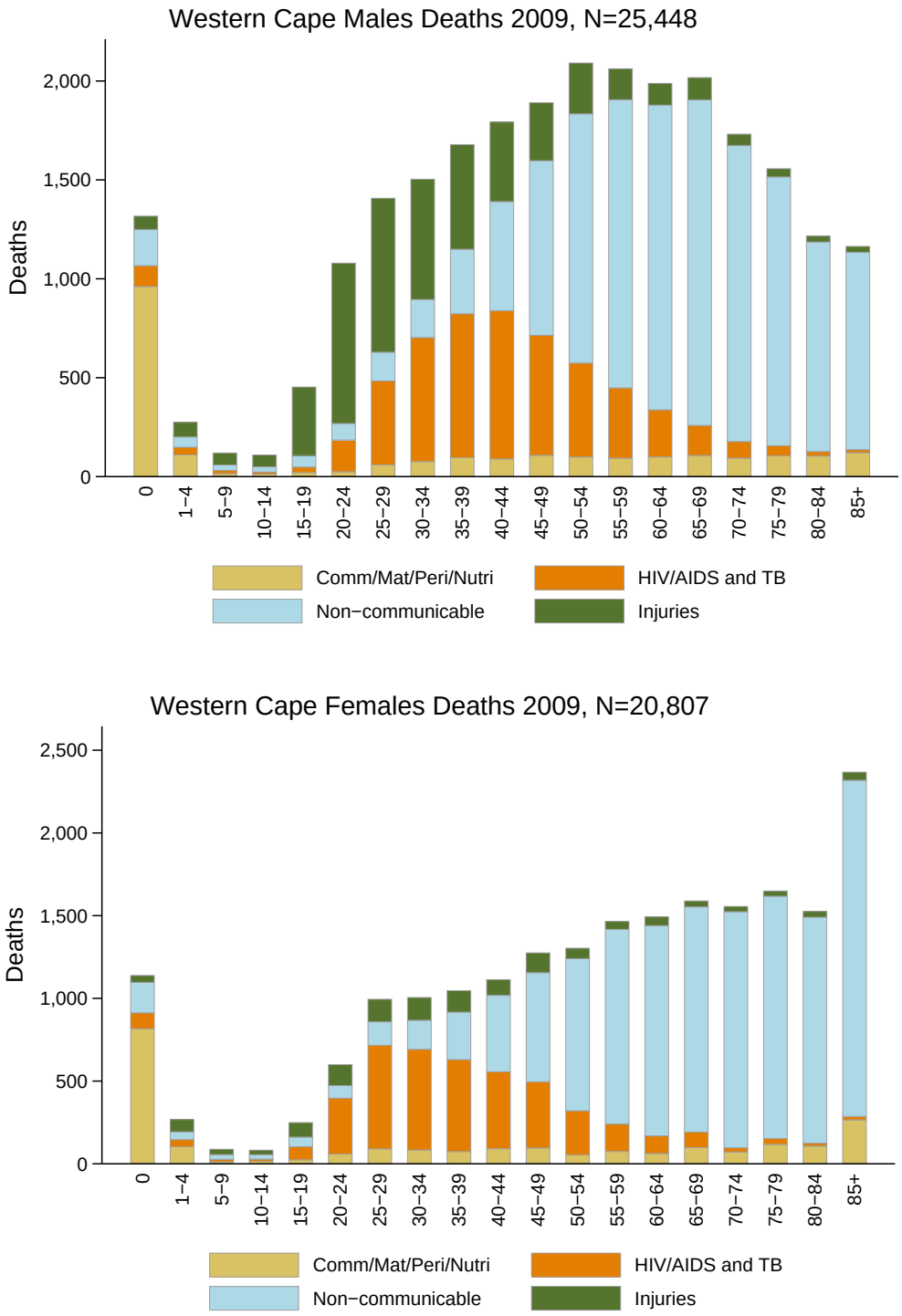
Figure 1.1: District proportions of provincial deaths

District	Deaths	%	YLLs	%
Cape Winelands	6,444	13.9	116,335	14.1
Central Karoo	812	1.8	14,784	1.8
City of Cape Town	29,272	63.3	524,818	63.7
Eden	5,086	11.0	86,990	10.6
Overberg	1,745	3.8	30,191	3.7
West Coast	2,894	6.3	50,400	6.1
Western Cape	46,254	100.0	823,518	100.0

Table 1.1: Western Cape districts deaths and YLLs, 2009

[5]See Table A.2 displaying a unit difference in provincial total before proportional redistribution of ill-defined which leads to this rounding error difference of 1 for Cape Winelands.

Figure 1.2: Age specific deaths by broad cause and sex, Western Cape 2009



Cardiovascular disease accounted for the largest proportion of all deaths (21.2%) but the largest category of premature mortality was due to HIV/AIDS and TB (24.6%), see Fig 1.3. The leading causes of death and YLLs are presented in sections 1.3.1 - 1.3.3 for males, females and persons respectively. HIV/AIDS and TB, together with Interpersonal violence and Ischaemic heart disease were the leading single causes of premature mortality for all persons. TB was the leading cause of premature mortality in males and HIV/AIDS the leading cause in females (Fig 1.4 - Fig 1.6).

Figure 1.3: Cause of death and premature mortality profile Western Cape 2009

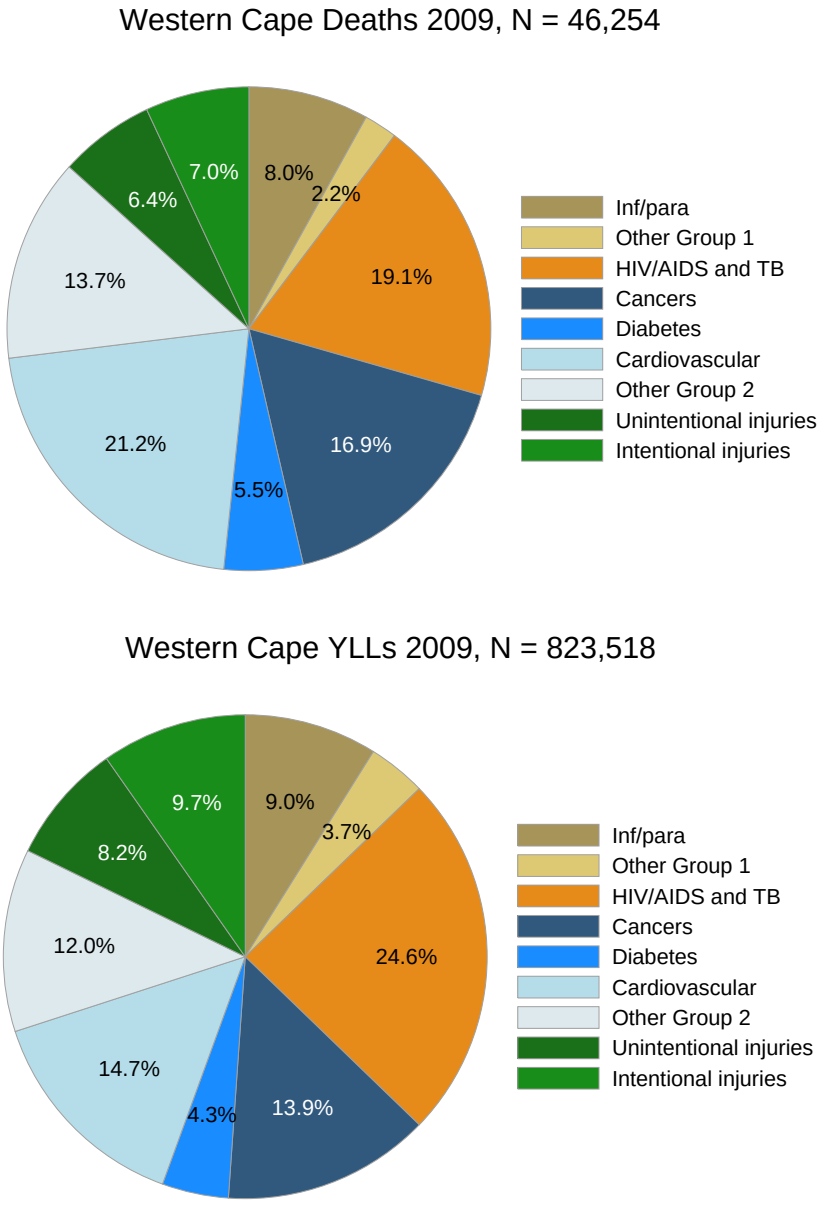


Table 1.2: Deaths and YLLs by disease category for Persons, Western Cape 2009

Cause	Deaths	%	YLLs	%
Inf/para	3,704	8.0	74,081	9.0
Other Group 1	1,012	2.2	30,253	3.7
HIV/AIDS and TB	8,849	19.1	202,511	24.6
Cancers	7,828	16.9	114,405	13.9
Diabetes	2,559	5.5	35,159	4.3
Cardiovascular	9,803	21.2	121,109	14.7
Other Group 2	6,321	13.7	98,717	12.0
Unintentional injuries	2,960	6.4	67,631	8.2
Intentional injuries	3,217	7.0	79,653	9.7
Total	46,254	100.0	823,518	100.0

1.3.1 Western Cape males

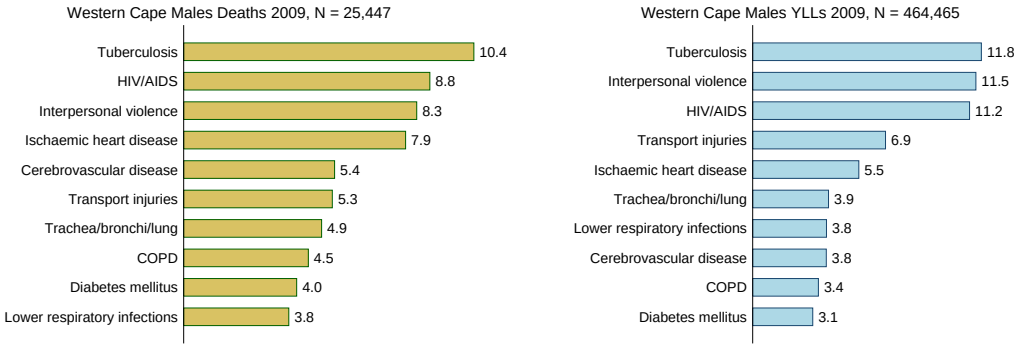


Figure 1.4: Leading causes of death for Males, Western Cape 2009

Cause of death	Deaths	%
Tuberculosis	2,643	10.4
HIV/AIDS	2,242	8.8
Interpersonal violence	2,122	8.3
Ischaemic heart disease	2,021	7.9
Cerebrovascular disease	1,374	5.4
Transport injuries	1,354	5.3
Trachea/bronchi/lung	1,256	4.9
COPD	1,135	4.5
Diabetes mellitus	1,029	4.0
Lower respiratory infections	957	3.8
Top 10 causes	16,133	63.4
Total	25,447	100.0

Cause of death	YLLs	%
Tuberculosis	54,898	11.8
Interpersonal violence	53,590	11.5
HIV/AIDS	52,069	11.2
Transport injuries	31,889	6.9
Ischaemic heart disease	25,481	5.5
Trachea/bronchi/lung	18,203	3.9
Lower respiratory infections	17,716	3.8
Cerebrovascular disease	17,675	3.8
COPD	15,774	3.4
Diabetes mellitus	14,419	3.1
Top 10 causes	301,716	65.0
Total	464,465	100.0

Table 1.3: Leading causes of death for Males, Western Cape 2009

1.3.2 Western Cape females

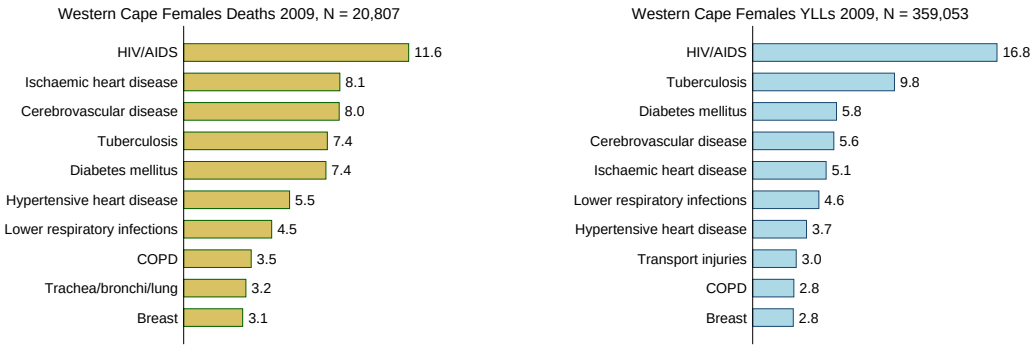


Figure 1.5: Leading causes of death for Females, Western Cape 2009

Cause of death	Deaths	%
HIV/AIDS	2,420	11.6
Ischaemic heart disease	1,680	8.1
Cerebrovascular disease	1,673	8.0
Tuberculosis	1,545	7.4
Diabetes mellitus	1,530	7.4
Hypertensive heart disease	1,139	5.5
Lower respiratory infections	946	4.5
COPD	726	3.5
Trachea/bronchi/lung	669	3.2
Breast	635	3.1
Top 10 causes	12,963	62.3
Total	20,807	100.0

Cause of death	YLLs	%
HIV/AIDS	60,460	16.8
Tuberculosis	35,084	9.8
Diabetes mellitus	20,739	5.8
Cerebrovascular disease	20,080	5.6
Ischaemic heart disease	18,175	5.1
Lower respiratory infections	16,381	4.6
Hypertensive heart disease	13,320	3.7
Transport injuries	10,773	3.0
COPD	10,187	2.8
Breast	10,048	2.8
Top 10 causes	214,365	59.7
Total	359,053	100.0

Table 1.4: Leading causes of death for Females, Western Cape 2009

1.3.3 Western Cape persons

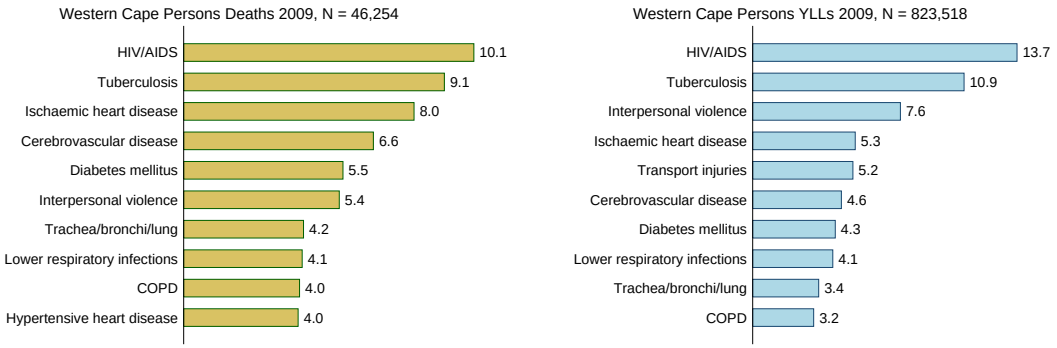


Figure 1.6: Leading causes of death for Persons, Western Cape 2009

Cause of death	Deaths	%
HIV/AIDS	4,662	10.1
Tuberculosis	4,188	9.1
Ischaemic heart disease	3,701	8.0
Cerebrovascular disease	3,047	6.6
Diabetes mellitus	2,559	5.5
Interpersonal violence	2,500	5.4
Trachea/bronchi/lung	1,925	4.2
Lower respiratory infections	1,904	4.1
COPD	1,861	4.0
Hypertensive heart disease	1,839	4.0
Top 10 causes	28,185	60.9
Total	46,254	100.0

Cause of death	YLLs	%
HIV/AIDS	112,529	13.7
Tuberculosis	89,982	10.9
Interpersonal violence	62,880	7.6
Ischaemic heart disease	43,656	5.3
Transport injuries	42,662	5.2
Cerebrovascular disease	37,755	4.6
Diabetes mellitus	35,159	4.3
Lower respiratory infections	34,097	4.1
Trachea/bronchi/lung	28,095	3.4
COPD	25,961	3.2
Top 10 causes	492,136	59.8
Total	823,518	100.0

Table 1.5: Leading causes of death for Persons, Western Cape 2009

1.3.4 Leading causes of premature mortality, WC Districts 2009

The leading causes of premature mortality in all districts were HIV/AIDS and TB with interpersonal violence and transport injuries in the top 5 causes of YLLS except in Eden where transport injuries ranked 9th and in West Coast where interpersonal violence ranked 7th and transport injuries 6th.

Rank	Western Cape	West Coast	Overberg	Eden	Cape Metro	Central Karoo	Cape Winelands
1	HIV/AIDS (13.7%)	Tuberculosis (12.4%)	Tuberculosis (11.1%)	Tuberculosis (12.9%)	HIV/AIDS (14.7%)	HIV/AIDS (17.9%)	HIV/AIDS (12.0%)
2	Tuberculosis (10.9%)	HIV/AIDS (10.2%)	HIV/AIDS (10.4%)	HIV/AIDS (11.9%)	Tuberculosis (10.2%)	Tuberculosis (11.5%)	Tuberculosis (11.8%)
3	Interpersonal violence (7.5%)	Ischaemic heart disease (7.2%)	Interpersonal violence (8.3%)	Ischaemic heart disease (6%)	Interpersonal violence (8.4%)	COPD (7.4%)	Interpersonal violence (6.1%)
4	Ischaemic heart disease (5.3%)	Cerebrovascular disease (5.9%)	Transport injuries (6.8%)	Interpersonal violence (6%)	Ischaemic heart disease (5.2%)	Interpersonal violence (6.9%)	Transport injuries (6.1%)
5	Transport injuries (5.1%)	Lower respiratory infections (5.1%)	Ischaemic heart disease (5%)	Cerebrovascular disease (5.5%)	Transport injuries (5%)	Transport injuries (6.3%)	Cerebrovascular disease (5.5%)
6	Cerebrovascular disease (4.6%)	Transport injuries (5%)	Cerebrovascular disease (4.8%)	COPD (5%)	Diabetes mellitus (4.7%)	Cerebrovascular disease (5.9%)	COPD (5.2%)
7	Diabetes mellitus (4.3%)	Interpersonal violence (4.9%)	Lower respiratory infections (4.4%)	Lower respiratory infections (4.7%)	Lower respiratory infections (4.1%)	Ischaemic heart disease (4.1%)	Ischaemic heart disease (4.7%)
8	Lower respiratory infections (4.2%)	Diabetes mellitus (4.1%)	Trachea/bronchi/lung (4.0%)	Trachea/bronchi/lung (4.1%)	Cerebrovascular disease (4%)	Diarrhoeal disease (3.9%)	Lower respiratory infections (4%)
9	Trachea/bronchi/lung (3.4%)	COPD (3.9%)	COPD (3.1%)	Transport injuries (4.1%)	Trachea/bronchi/lung (3.1%)	Preterm birth complications (3.2%)	Trachea/bronchi/lung (3.8%)
10	COPD (3.1%)	Trachea/bronchi/lung (3.7%)	Self-inflicted injuries (3.1%)	Diabetes mellitus (3.9%)	Hypertensive heart disease (2.9%)	Trachea/bronchi/lung (3.0%)	Diabetes mellitus (3.5%)

Figure 1.7: League table of leading causes of premature mortality, WC Districts 2009

2 Child mortality

2.1 Mortality rates

The completeness of natural child deaths in the Western Cape surveillance system in 2009 compared with StatsSA 2009 data was 94.4% overall, but there were marked variations between districts ranging from 39.1% in West Coast to 102% in the Cape Metropole (Appendix A.1). The surveillance systems includes deaths of people without an ID number and therefore should be collecting more deaths then the Home Affairs population register, which do not include these deaths. The available data sources suggest that in Cape Town there are approximately 1600 infant deaths (4 - 5 deaths per day) and about 350 deaths in children aged 1 - 4 years (1 death per day), annually (Table 2.1). In the Western Cape there are about 2600 deaths in infants and about 550 deaths in children aged 1-4 yrs annually. It is not possible to determine a trend from the available data. Since the surveillance data is not complete for child deaths we have used the 2007 - 2009 StatsSA infant and child deaths to estimate infant mortality (IMR) and under 5 mortality rates (U5MR[1]). The total live births for each district for 2007 - 2009 were also obtained from StatsSA (and include late registrations) see Table 2.1. The live birth totals from the local sources (Metro and CoCT) differed and were lower than the StatsSA totals.

We recommend that, until the completeness of the Western Cape Surveillance data collection of child deaths is improved, particularly in West Coast, the estimates based on StatsSA deaths and live births be used as baseline.

Table 2.1: Estimates of Infant and Under-5 mortality by Western Cape districts

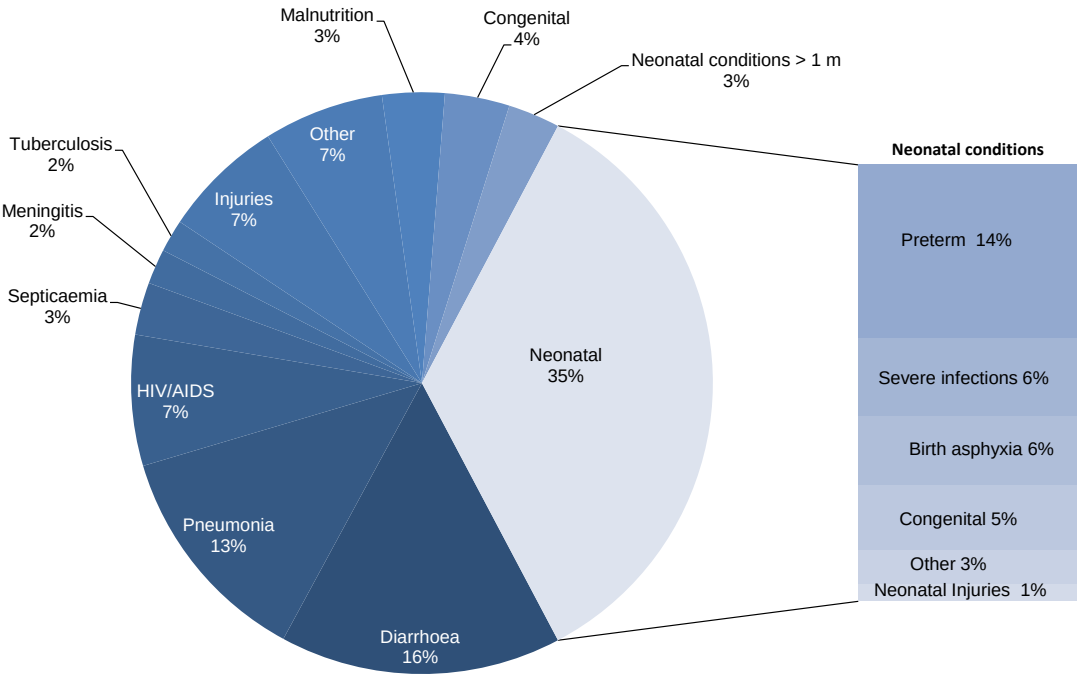
Districts	DEATHS (StatsSA)						BIRTHS (StatsSA)			IMR < 1 yr			U5MR < 5yr		
	2007		2008		2009		2007	2008	2009	2007	2008	2009	2007	2008	2009
	0	1-4	0	1-4	0	1-4									
Cape Winelands	379	71	308	99	336	79	13549	14378	14290	28	21	24	33	28	29
Central Karoo	54	18	55	18	48	13	1201	1268	1169	45	43	41	60	58	52
Cape Metropole	1607	346	1617	373	1591	331	78811	82494	77730	20	20	20	25	24	25
Eden	313	66	245	62	235	46	10439	11576	11021	30	21	21	36	27	25
Overberg	104	25	83	21	79	14	2892	3279	3047	36	25	26	45	32	31
West Coast	189	32	173	34	139	20	5856	6481	6326	32	27	22	38	32	25
Western Cape	2646	558	2481	607	2431	504	112748	119476	113583	23	21	21	28	26	26

2.2 Causes of child deaths

The cause of death profile for children under 5 years is shown in Fig 2.1. Neonatal deaths accounted for 35% of the under five deaths followed by diarrhoea (16%), pneumonia (13%) HIV (7%), injuries (7%), congenital abnormalities (4%) and malnutrition(3%). The causes of neonatal deaths were prematurity (14%), followed by birth asphyxia and severe infections (6%) and congenital abnormalities (5%). Injuries, including interpersonal violence, fires, traffic injuries and accidental suffocation, accounted for 1% of neonatal deaths and 7% of deaths in children under 5 years. HIV/AIDS is likely to be underreported in this data with probable misattribution of HIV related deaths to pneumonia and diarrhoea.

[1] U5MR have been approximated by dividing the number of deaths under-5 yrs by the number of births. Ideally the U5MR should be calculated using a life table approach.

Figure 2.1: Causes of death in children under five years, Western Cape 2009



3 Cause specific mortality rates

3.1 Broad causes

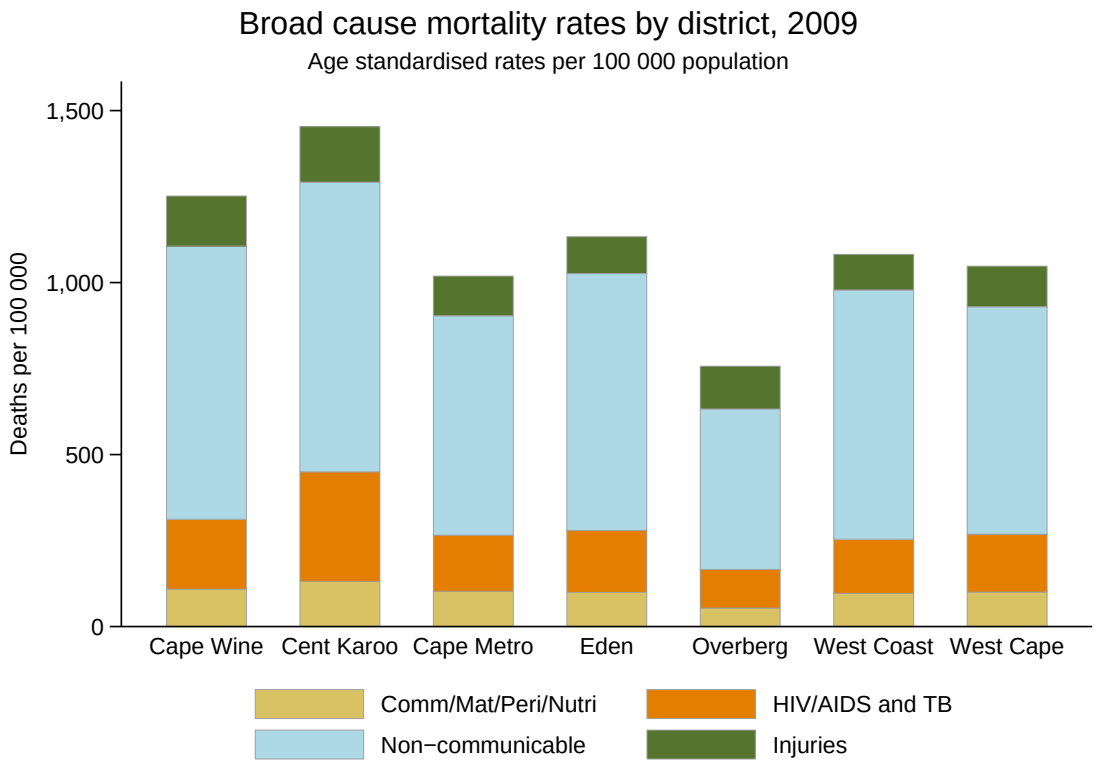


Figure 3.1: Age standardised death rates by broad cause, Western Cape Districts 2009

Age standardised all cause mortality rates were compared across districts (Fig 3.1). Overberg had the lowest all cause mortality rates and Central Karoo and Cape Winelands the highest[1].

[1] Noting that the total numbers of deaths in Central Karoo is very small (812) and that the results should be interpreted with caution.

3.2 Major causes

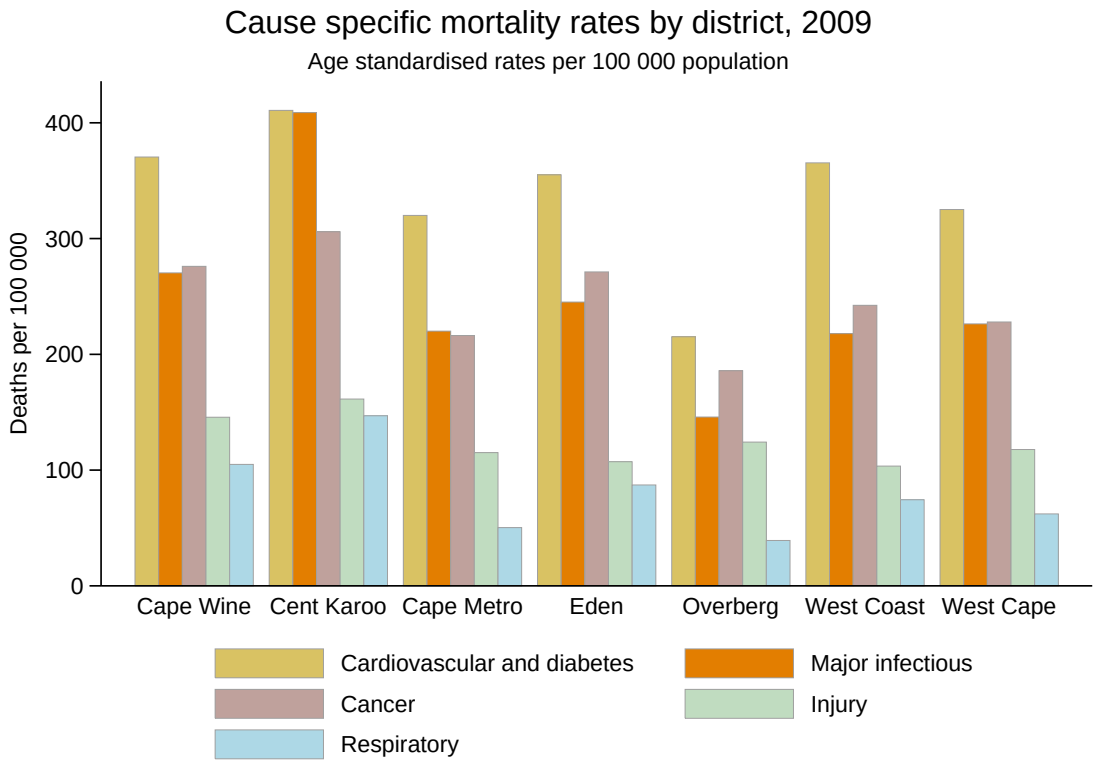


Figure 3.2: Major disease mortality rates by district, Western Cape 2009

Cause specific mortality rates for fairly broad groupings of causes are presented to overcome the problem of misclassification of causes of death. These can be used to monitor trends over time. Major infectious disease and respiratory death rates were highest in Central Karoo and Cape Winelands and lowest in the Cape Metropole and Overberg. Cardiovascular diseases and diabetes death rates were highest in Central Karoo, Cape Winelands and West Coast and lowest in Overberg. Cancer rates were highest in Central Karoo, Cape Winelands and Eden. Injury death rates were highest in Central Karoo and Cape Winelands and lowest in Eden and West Coast.

3.3 Major infectious diseases

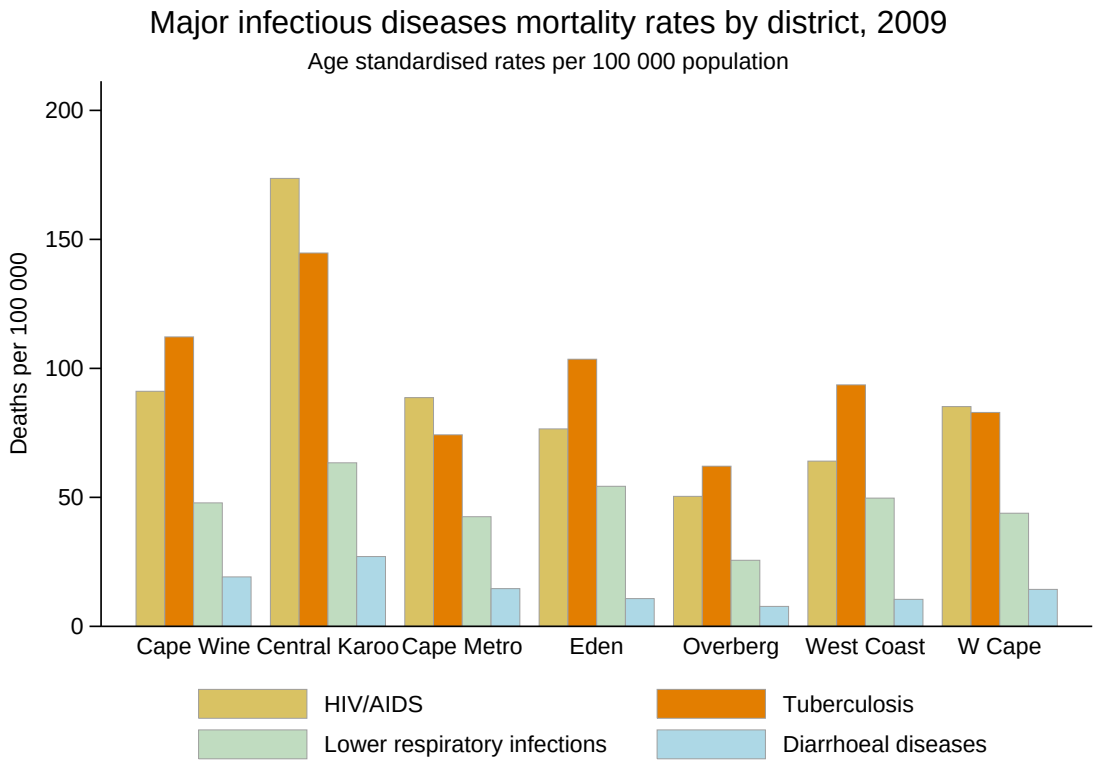


Figure 3.3: Major infectious disease mortality rates by district, Western Cape 2009

Death rates for the four major infectious diseases are presented in Fig 3.3. It is important to note that the death rates for TB, diarrhoeal diseases and lower respiratory infections may reflect misclassified HIV deaths. TB death rates were higher than the Western Cape average in all districts except Cape Metropole and Overberg.

3.4 Cardiovascular and diabetes

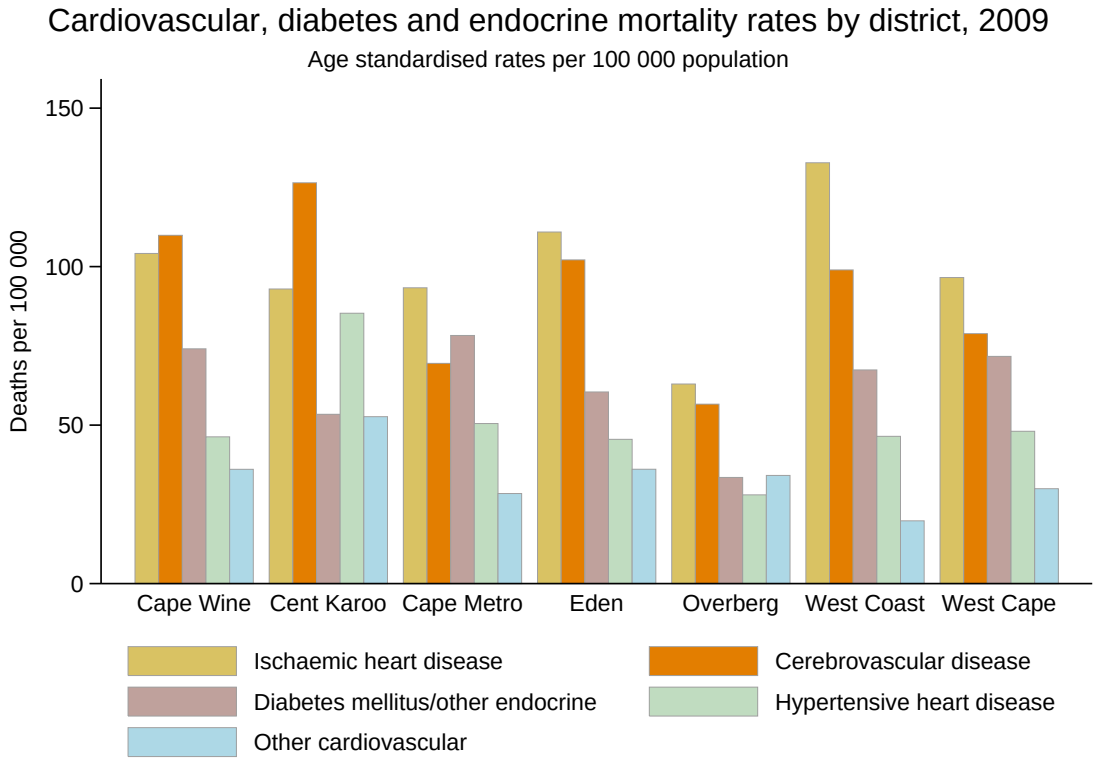


Figure 3.4: Cardiovascular, diabetes and endocrine mortality rates by district, Western Cape 2009

Ischaemic heart disease death rates were highest in West Coast, Eden and Cape Winelands and lowest in Overberg. Cerebrovascular disease death rates were highest in Central Karoo, Cape Winelands and Eden and lowest in Overberg. Diabetes death rates were highest in the Cape Metropole and Cape Winelands whilst hypertensive disease death rates were highest in Central Karoo followed by Cape Metropole.

3.5 Cancers

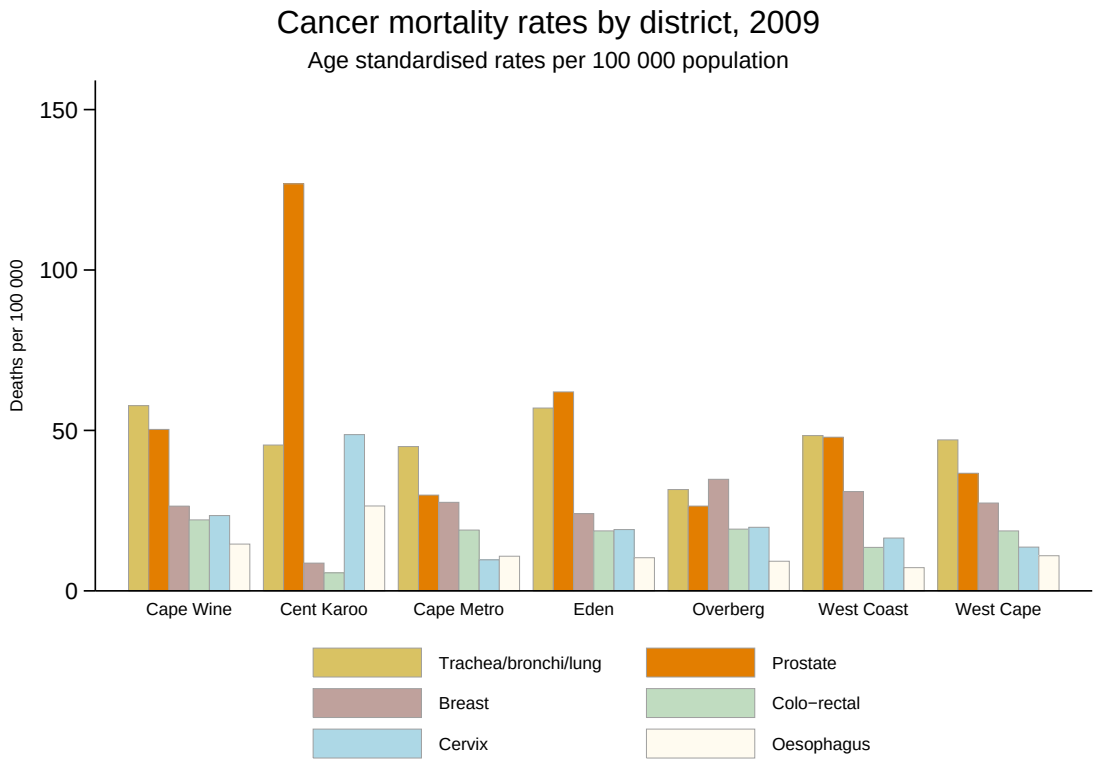


Figure 3.5: Cancer mortality rates by district, Western Cape 2009

Lung cancer was the most common cancer in the Western Cape followed by prostate, breast, colo-rectal, cervix and oesophagus cancer. Lung cancer death rates were highest in Eden and Cape Winelands suggesting that smoking may be or have been high in these districts. Colo-rectal cancer death rates were highest in Cape Winelands and lowest in Central Karoo. Breast cancer death rates were highest in Overberg and lowest in Central Karoo. Oesophagus cancer death rates were highest in Central Karoo and lowest in West Coast. Cervix cancer death rates showed large variations between districts with highest in Central Karoo and lowest in Cape Metropole. This probably reflects both variable access to cervical cancer screening as well as varying incidence of HPV in different districts. The very high rates of prostate cancer in Central Karoo should be interpreted with caution as the number of deaths in Central Karoo is small.

3.6 Respiratory diseases

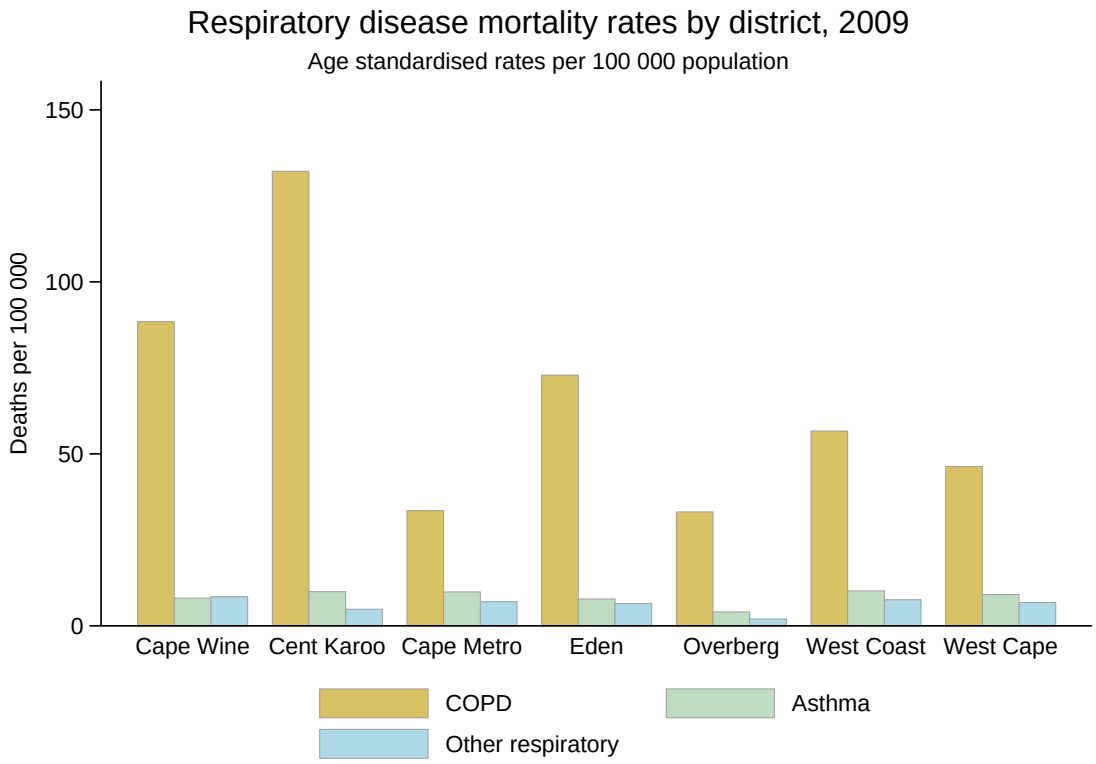


Figure 3.6: Respiratory disease mortality rates by district, Western Cape 2009

COPD death rates were highest in Central Karoo, Cape Winelands and Eden suggesting that smoking rates are highest in these districts.

3.7 Injuries

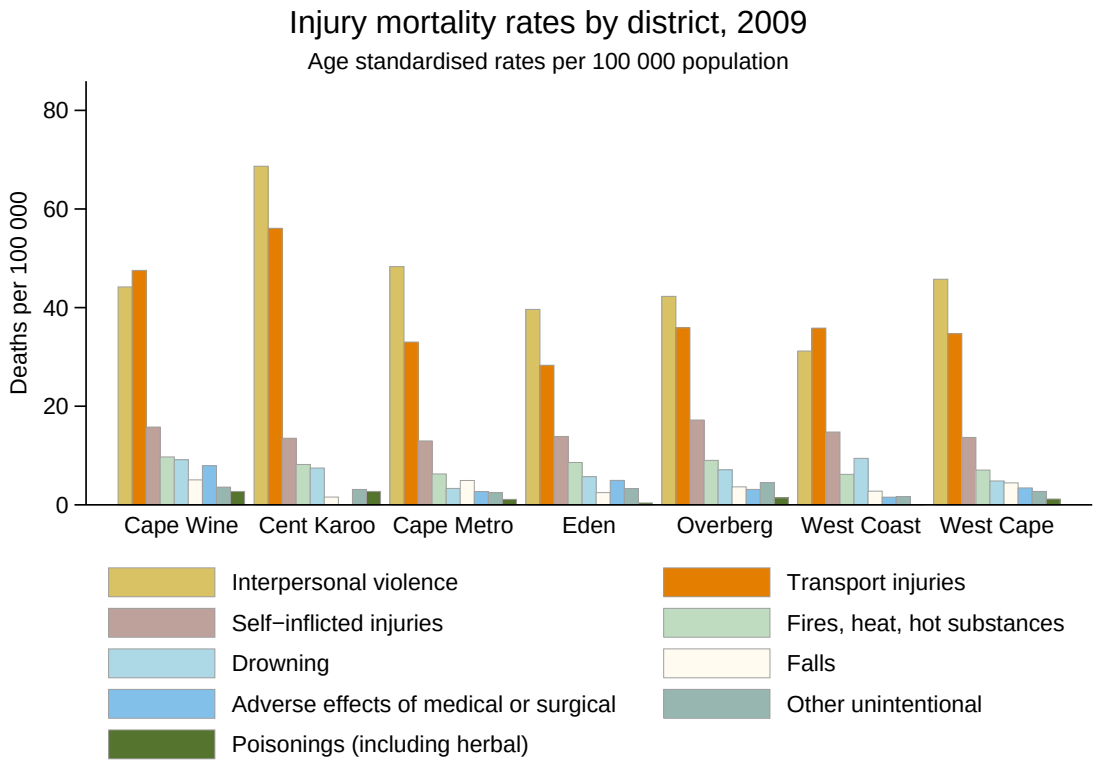


Figure 3.7: Injury mortality rates by district, Western Cape 2009

Death rates due to interpersonal violence were highest in Central Karoo and Cape Metropole and lowest in West Coast. Transport injury death rates were highest in Central Karoo and Cape Winelands and lowest in Eden. Suicide rates were highest in the Overberg. Drowning rates were highest in the West Coast.

4 Discussion

This is the first report on the mortality profile of all districts in the Western Cape. Overall completeness of natural deaths measured against Stats SA is 84% with West Coast and Overberg having the lowest completeness and Central Karoo having the highest. Since the underlying causes coding of HIV and injuries differs between StatsSA and Western Cape mortality surveillance, the premature mortality profiles are slightly different. Known euphemisms for HIV are coded to HIV in the Western Cape, and more information is available for coding injury causes in the Western Cape, so these are likely to be more accurate than the Stats SA cause of death data.

The challenges that remain are to improve the data quality, namely, the completeness of data and to reduce the ill defined causes and garbage codes. The completeness of child death data in particular, needs to be prioritised. The proportion of ill-defined deaths is highest in the 1 - 11 month agegroup (43% overall) and needs special attention. Efforts need to be made to improve the accuracy of the live birth data, particularly in areas where two organisations are collecting the same data. In order to improve the quality of death certification and reduce ill-defined and other garbage codes a province wide death certification training initiative has been implemented and is currently being evaluated. To date training sessions on death certification have been offered at state hospitals across the Western Cape, with almost 800 doctors attending the training. Data capturers have been trained in medical terminology in order to improve the quality of the captured cause of death data which is needed for automated coding to ICD 10. A web-based database is currently being developed to facilitate maintenance of the data. In addition, the Forensic pathology services system which provides the injury data is being enhanced to ensure that more accurate data is provided.

Whilst there are still challenges with regards to the data completeness and quality, the district profiles are likely to have identified the major causes of premature mortality in each district and thus the priorities for local planning.

A APPENDICES

A.1 Completeness by district and age

District	Completeness (%)			N Before Adj		N After Adj	
	< 5	> 5	All	< 5	> 5	< 5	> 5
Cape Winelands	95.5	88.6	89.1	363	4 563	380	5 152
Central Karoo	102.2	90.5	91.3	52	602	51	665
Cape Metro	98.3	83.3	84.4	1788	19 593	1 819	23 521
Eden	92.4	86.0	86.3	239	3 662	259	4 260
Overberg	103.5	70.3	72.2	86	956	83	1 360
West Coast	39.1	66.3	64.7	58	1 602	149	2 417
Western Cape	94.4	82.9	83.7	2587	30 977	2 741	37 375

Table A.1: Estimates of completeness and numbers of natural deaths

A.2 Proportion ill-defined

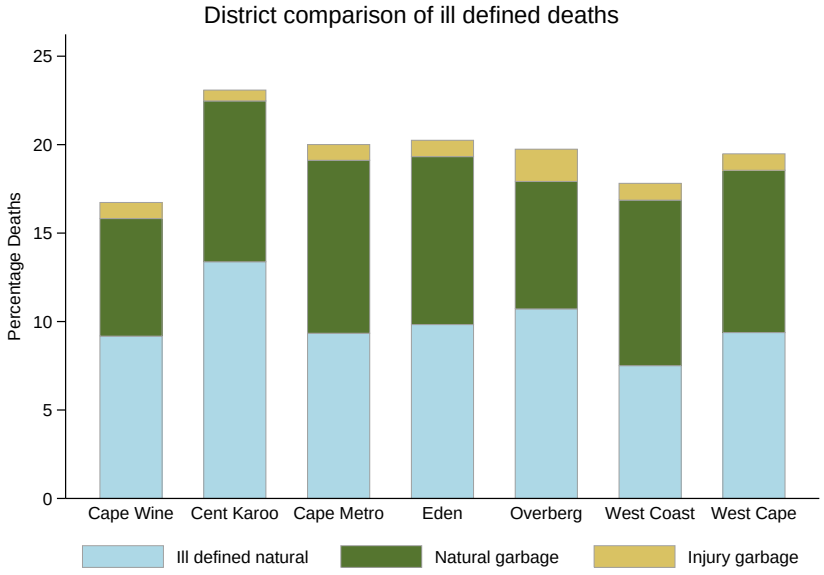


Figure A.1: District comparison of ill-defined causes

District	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
Cape Wine	6,445	9.2	6.6	0.9	16.7
Cent Karoo	813	13.4	9.1	0.6	23.1
Cape Metro	29,272	9.3	9.8	0.9	20.0
Eden	5,086	9.8	9.5	0.9	20.2
Overberg	1,745	10.7	7.2	1.8	19.7
West Coast	2,894	7.5	9.4	1.0	17.8
West Cape	46,255	9.4	9.2	0.9	19.5

Table A.2: District comparison of garbage coded causes[1]

[1]Table 1.3 total displays a unit difference due to rounding errors.

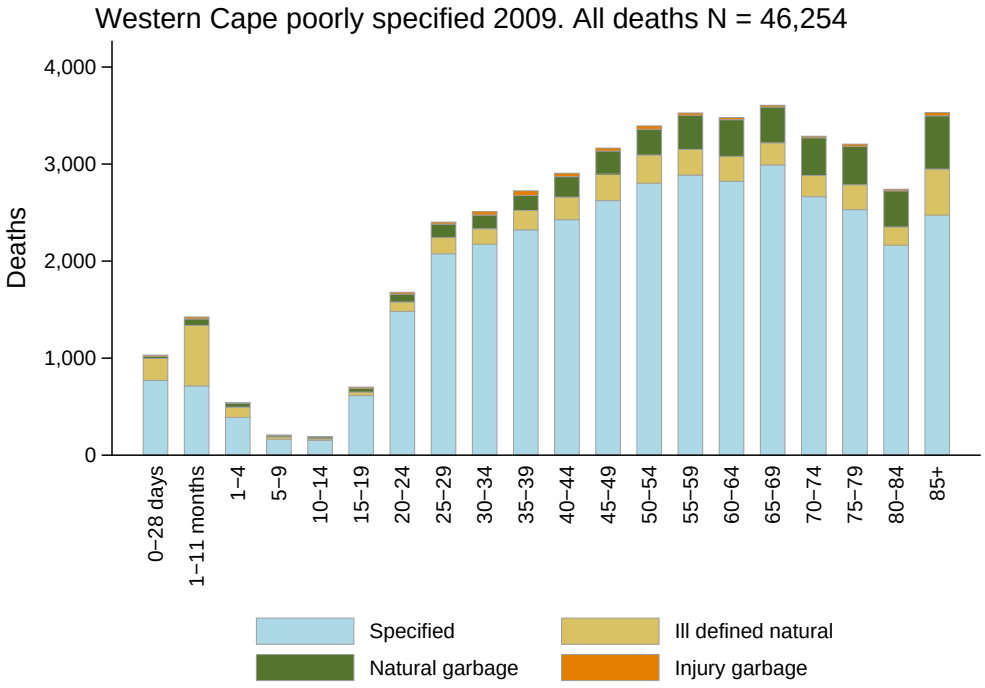


Table A.3: Western Cape quality of reporting

Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	1,031	21.9	2.2	1.1	25.3
1-11 months	1,424	43.7	4.7	1.4	49.9
1-4	542	19.5	7.5	1.2	28.3
5-9	207	11.7	7.4	1.6	20.8
10-14	192	8.8	9.9	1.7	20.4
15-19	702	5.2	5.5	1.8	12.5
20-24	1,679	5.7	4.9	1.1	11.7
25-29	2,402	6.9	5.8	0.8	13.6
30-34	2,509	6.4	5.6	1.4	13.4
35-39	2,725	7.3	5.7	1.8	14.8
40-44	2,905	8.0	7.3	1.2	16.5
45-49	3,165	8.6	7.5	1.0	17.1
50-54	3,394	8.6	7.8	1.1	17.4
55-59	3,527	7.5	10.0	0.7	18.2
60-64	3,480	7.4	10.9	0.6	18.9
65-69	3,606	6.3	10.2	0.5	17.1
70-74	3,287	6.6	11.8	0.5	18.9
75-79	3,206	8.0	12.4	0.7	21.1
80-84	2,741	6.8	13.6	0.6	21.0
85+	3,531	13.4	15.6	0.9	29.9
All	46,254	9.4	9.2	0.9	19.5

A.3 District population estimates

Western Cape district and City of Cape Town sub-district population numbers by age for 1996 until 2016 were previously estimated using a ratio method, based upon the 1996 and 2001 censuses and the 2007 community survey[1]. Since then Stats SA has released mid-year population estimates at district level and ASSA2008 has released provincial population estimates. A comparison of population estimates for the Western Cape found the Stats SA

[1] Zinyakatira Nesbert. Population Projections in the district municipalities of the Western Cape Province, 1996 - 2016. Department of Social Development. October 2009.

estimates to be the lowest and the ASSA2008 estimates to be between that of Social Development and the Stats SA estimate. However, the age distributions of the Social Development estimate and ASSA2008 were more similar to each other than the age distribution of the Stats SA estimate for the province. The comparison also revealed that there were differences between the district totals. It was therefore decided to use a balancing technique to simultaneously scale the original estimates to total the ASSA2008 provincial total and age distribution while the district totals were scaled to the Stats SA totals.

The following method is used to adjust the estimated district population numbers by age. The adjustment is such that the sum over district of the numbers at a specific age gives the ASSA2008 model province total for that age, and the sum over age of the numbers in a specific district gives the total as per Stats SA for that district, scaled to ensure that the totals of all the district sum to the total for the province. This adjustment is an iterative proportional distribution of the adjusted Stats SA district totals and ASSA2008 model province age totals. In this sequence:

1. Rescale the Stats SA totals by district to give S_j such that the sum of S_j across all districts j is equal to the total numbers in the province.

2. Let the district population numbers for each age i and district j be represented by D_{ij} and then set D_{1ij}

$$D_{1ij} = \frac{D_{ij}}{\sum_i D_{ij}} \times S_j \tag{A.1}$$

   where D_{1ij} are the numbers in district j aged i after the first proportional redistribution of S_j.

3. Let the ASSA2008 model province totals for age i be represented by A_i and then set $\hat{D}_{1ij}$

$$\hat{D}_{1ij} = \frac{D_{1ij}}{\sum_j D_{1ij}} \times A_i \tag{A.2}$$

   where $\hat{D}_{1ij}$ are the numbers in district j aged i after the first proportional redistribution of A_i.

4. Set D_{ij} = $\hat{D}_{1ij}$ in equation A.1 to calculate D_{2ij} and repeat for k iterations until

$$\sum_i \hat{D}_{kij} = S_j \tag{A.3}$$

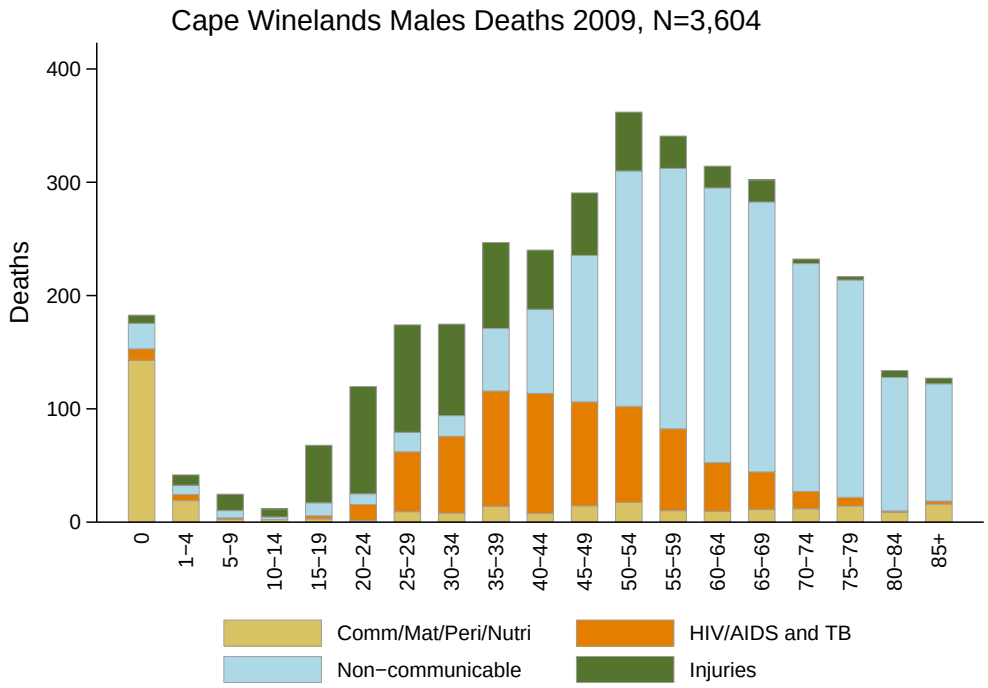
$$\sum_j \hat{D}_{kij} = A_i \tag{A.4}$$

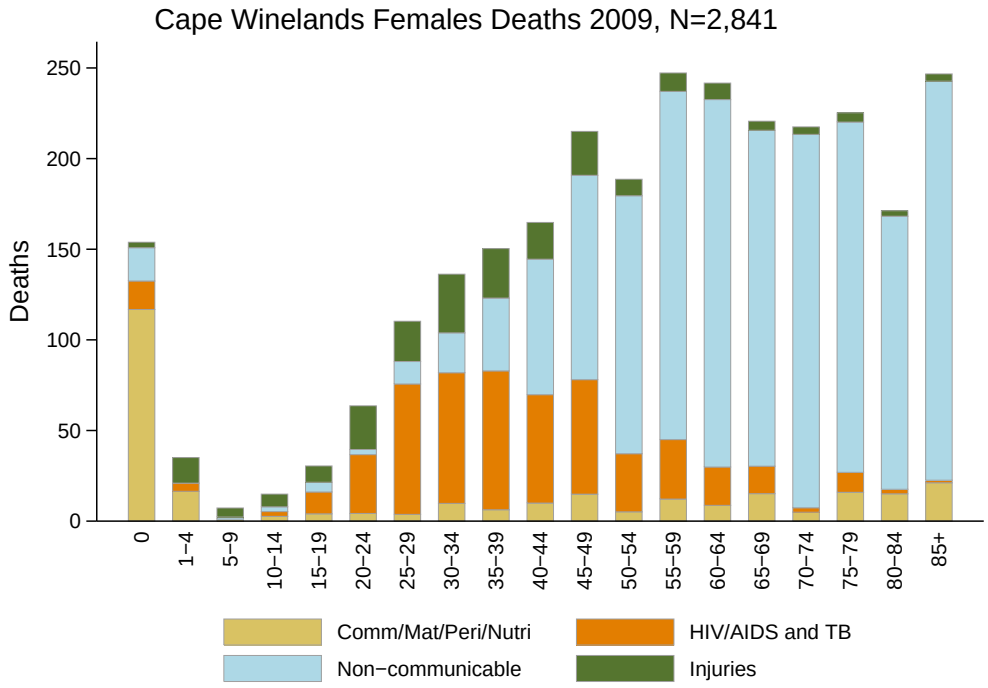
   for every age i and district j.

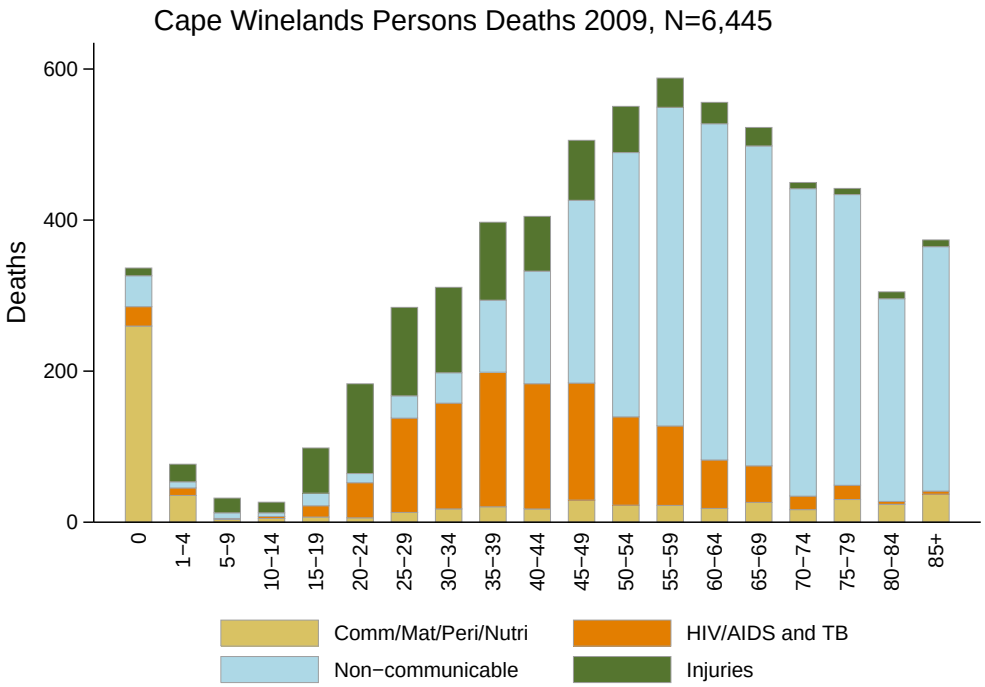
A.4 District profiles

A.4.1 Cape Winelands

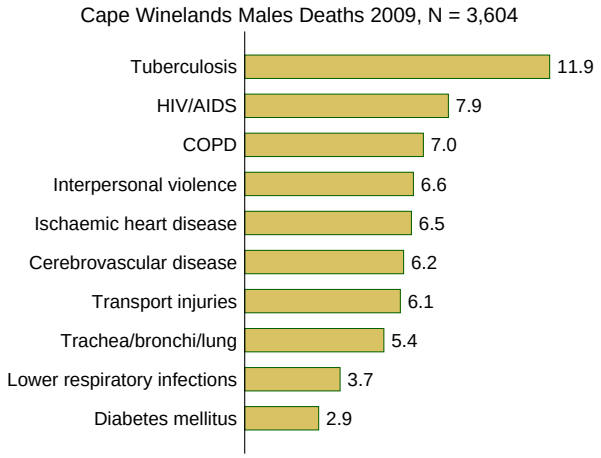
A.4.1.1 Broad causes

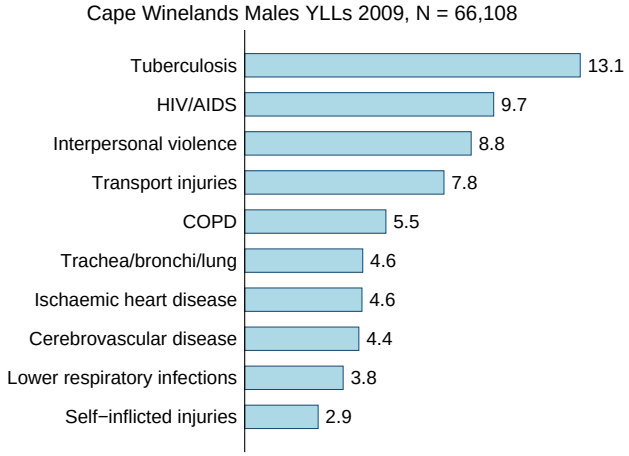





Cape Winelands Persons Deaths 2009, N=6,445
Deaths
600
400
200
0
0
1–4
5–9
10–14
15–19
20–24
25–29
30–34
35–39
40–44
45–49
50–54
55–59
60–64
65–69
70–74
75–79
80–84
85+
Comm/Mat/Peri/Nutri
HIV/AIDS and TB
Non−communicable
Injuries

A.4.1.2 Leading causes of deaths and YLLs

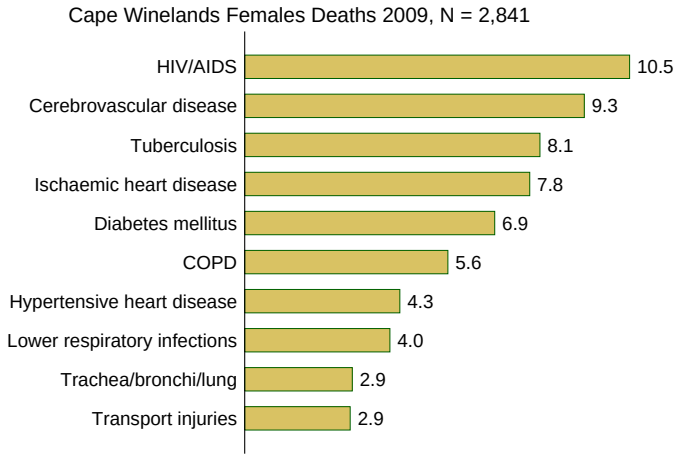


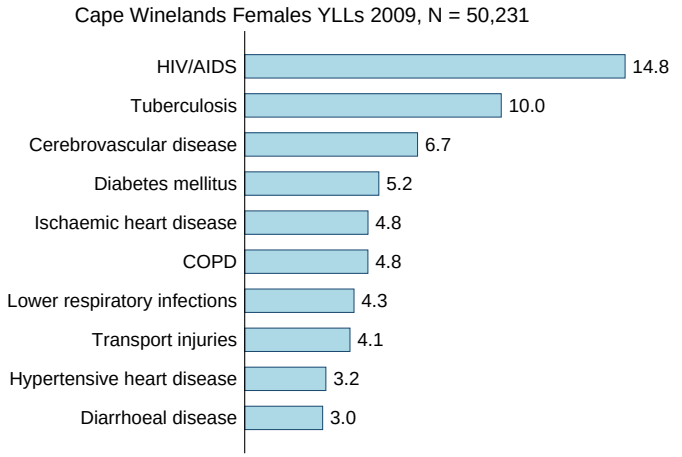


Cause of death	Deaths	%
Tuberculosis	428	11.9
HIV/AIDS	286	7.9
COPD	251	7.0
Interpersonal violence	237	6.6
Ischaemic heart disease	234	6.5
Cerebrovascular disease	223	6.2
Transport injuries	219	6.1
Trachea/bronchi/lung	195	5.4
Lower respiratory infections	134	3.7
Diabetes mellitus	104	2.9
Top 10 causes	2,312	64.1
Total	3,604	100.0

Cause of death	YLLs	%
Tuberculosis	8,645	13.1
HIV/AIDS	6,415	9.7
Interpersonal violence	5,835	8.8
Transport injuries	5,134	7.8
COPD	3,638	5.5
Trachea/bronchi/lung	3,041	4.6
Ischaemic heart disease	3,021	4.6
Cerebrovascular disease	2,941	4.4
Lower respiratory infections	2,537	3.8
Self-inflicted injuries	1,892	2.9
Top 10 causes	42,578	64.4
Total	66,108	100.0

Table A.4: Leading causes of death for Males, Cape Winelands 2009

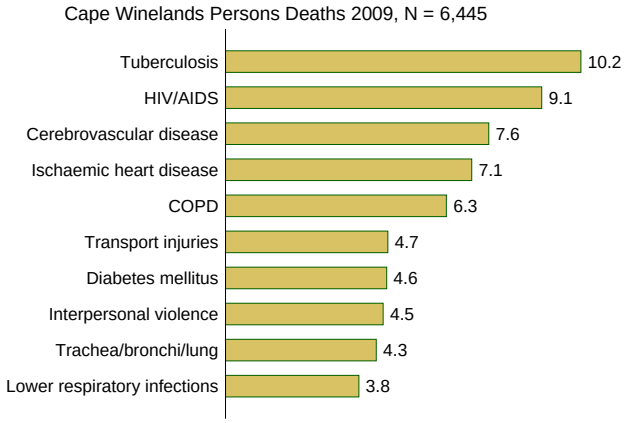


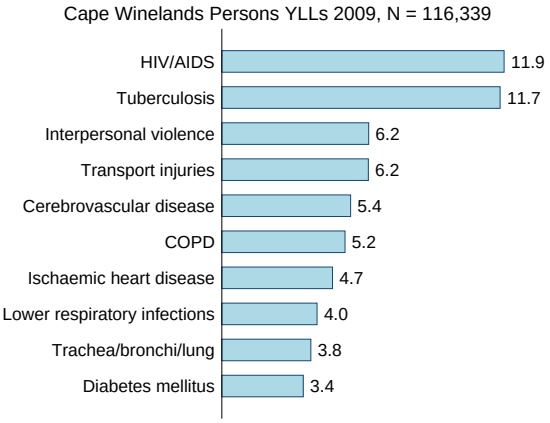


Cause of death	Deaths	%
HIV/AIDS	300	10.5
Cerebrovascular disease	264	9.3
Tuberculosis	230	8.1
Ischaemic heart disease	222	7.8
Diabetes mellitus	195	6.9
COPD	158	5.6
Hypertensive heart disease	121	4.3
Lower respiratory infections	113	4.0
Trachea/bronchi/lung	84	2.9
Transport injuries	82	2.9
Top 10 causes	1,768	62.3
Total	2,841	100.0

Cause of death	YLLs	%
HIV/AIDS	7,447	14.8
Tuberculosis	5,022	10.0
Cerebrovascular disease	3,384	6.7
Diabetes mellitus	2,625	5.2
Ischaemic heart disease	2,413	4.8
COPD	2,412	4.8
Lower respiratory infections	2,140	4.3
Transport injuries	2,061	4.1
Hypertensive heart disease	1,589	3.2
Diarrhoeal disease	1,526	3.0
Top 10 causes	30,423	60.6
Total	50,231	100.0

Table A.5: Leading causes of death for Females, Cape Winelands 2009





Cause of death	Deaths	%
Tuberculosis	658	10.2
HIV/AIDS	586	9.1
Cerebrovascular disease	488	7.6
Ischaemic heart disease	456	7.1
COPD	409	6.3
Transport injuries	301	4.7
Diabetes mellitus	299	4.6
Interpersonal violence	292	4.5
Trachea/bronchi/lung	279	4.3
Lower respiratory infections	247	3.8
Top 10 causes	4,014	62.3
Total	6,445	100.0

Cause of death	YLLs	%
HIV/AIDS	13,861	11.9
Tuberculosis	13,667	11.7
Interpersonal violence	7,211	6.2
Transport injuries	7,195	6.2
Cerebrovascular disease	6,325	5.4
COPD	6,049	5.2
Ischaemic heart disease	5,434	4.7
Lower respiratory infections	4,676	4.0
Trachea/bronchi/lung	4,371	3.8
Diabetes mellitus	3,999	3.4
Top 10 causes	72,789	62.6
Total	116,339	100.0

Table A.6: Leading causes of death for Persons, Cape Winelands 2009

A.4.1.3 Proportion ill-defined

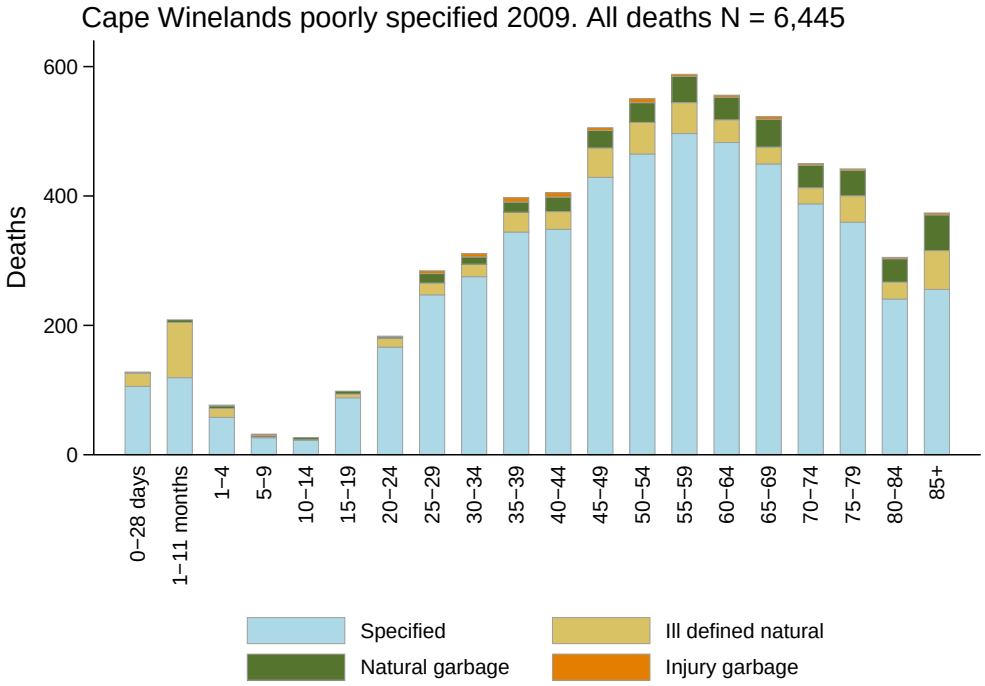


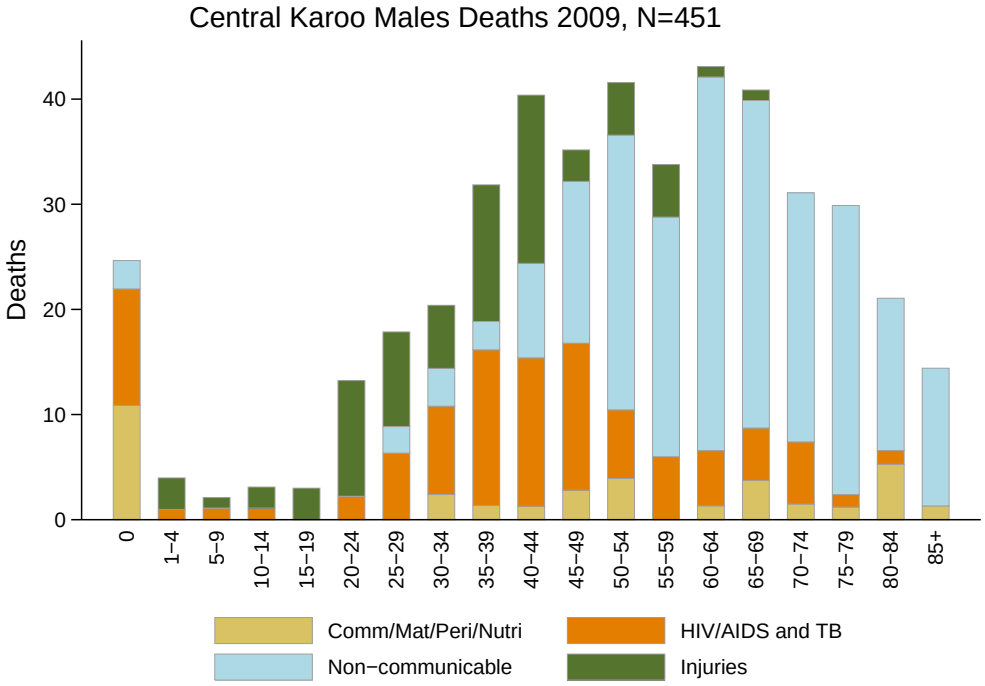
Table A.7: Cape Winelands quality of reporting

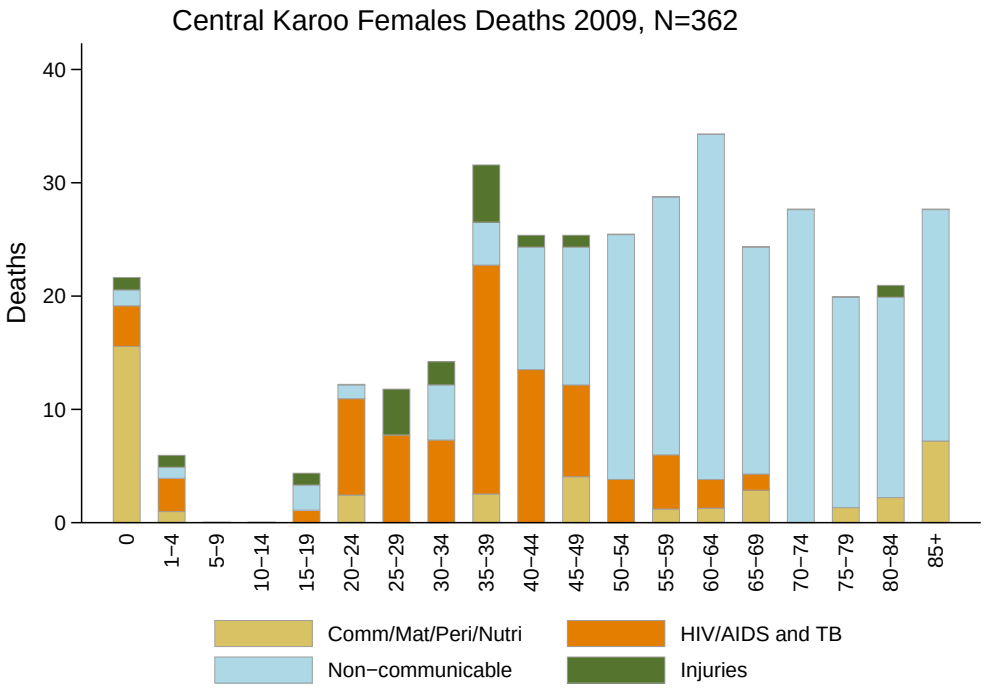
Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	128	15.6	0.8	0.9	17.3
1-11 months	209	40.9	2.0	0.0	42.9
1-4	77	17.8	5.5	1.4	24.7
5-9	32	3.6	7.1	7.1	17.7
10-14	27	4.3	12.8	0.0	17.0
15-19	98	5.8	4.6	0.0	10.4
20-24	183	7.4	1.2	0.6	9.3
25-29	284	6.4	5.2	1.5	13.1
30-34	311	6.2	3.6	1.7	11.5
35-39	397	7.7	4.0	1.6	13.3
40-44	405	6.7	5.6	1.6	13.9
45-49	506	9.0	5.4	0.9	15.2
50-54	551	8.9	5.5	1.2	15.6
55-59	588	8.1	6.9	0.5	15.6
60-64	556	6.3	6.3	0.6	13.2
65-69	523	5.0	8.2	0.8	14.0
70-74	450	5.5	7.8	0.5	13.8
75-79	442	9.3	8.9	0.5	18.7
80-84	305	8.6	11.8	0.7	21.1
85+	374	16.1	14.8	0.8	31.7
All	6,445	9.2	6.6	0.9	16.7

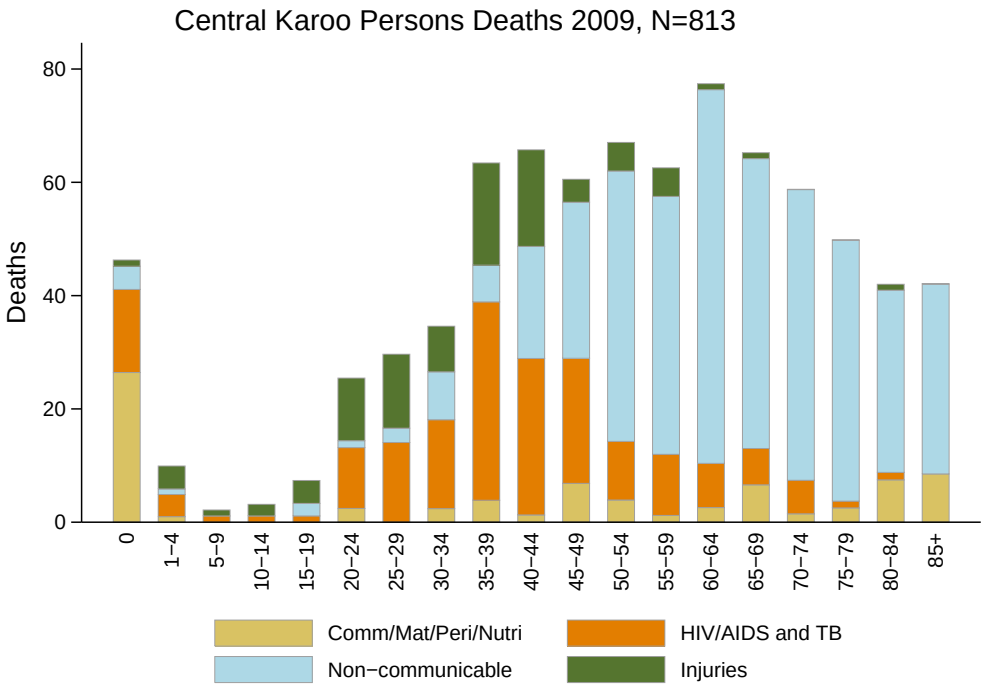
A.4.2 Central Karoo

A.4.2.1 Broad causes

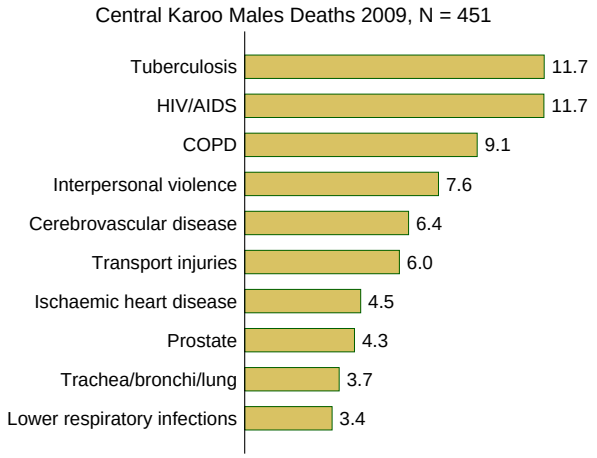
Interpret these results with caution as they are based on a small number of deaths.

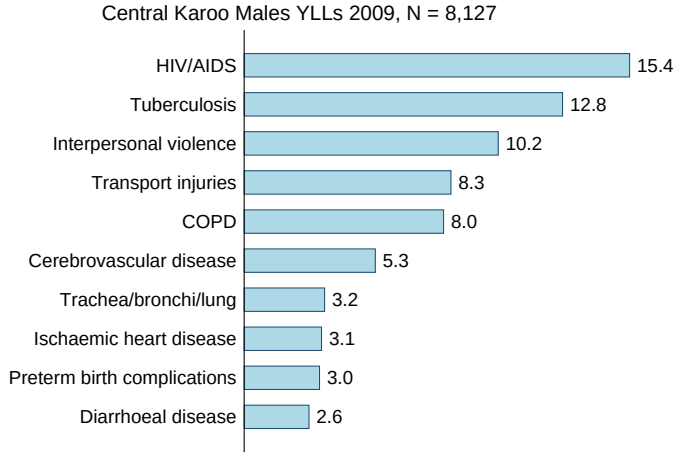





Central Karoo Persons Deaths 2009, N=813
Deaths
0
20
40
60
80
0
1–4
5–9
10–14
15–19
20–24
25–29
30–34
35–39
40–44
45–49
50–54
55–59
60–64
65–69
70–74
75–79
80–84
85+
Comm/Mat/Peri/Nutri
HIV/AIDS and TB
Non−communicable
Injuries

A.4.2.2 Leading causes of deaths and YLLs

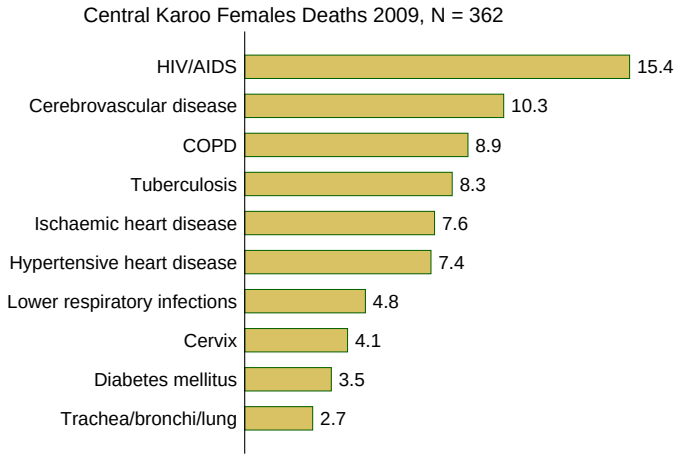


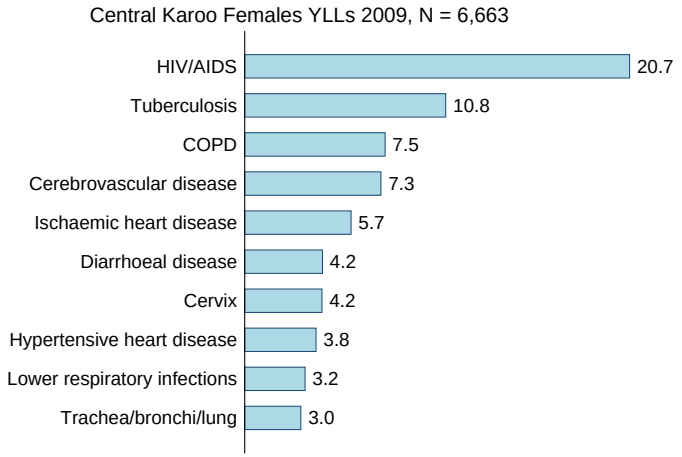


Cause of death	Deaths	%
Tuberculosis	53	11.7
HIV/AIDS	53	11.7
COPD	41	9.1
Interpersonal violence	34	7.6
Cerebrovascular disease	29	6.4
Transport injuries	27	6.0
Ischaemic heart disease	20	4.5
Prostate	19	4.3
Trachea/bronchi/lung	17	3.7
Lower respiratory infections	15	3.4
Top 10 causes	308	68.2
Total	451	100.0

Cause of death	YLLs	%
HIV/AIDS	1,255	15.4
Tuberculosis	1,036	12.8
Interpersonal violence	827	10.2
Transport injuries	673	8.3
COPD	649	8.0
Cerebrovascular disease	427	5.3
Trachea/bronchi/lung	262	3.2
Ischaemic heart disease	252	3.1
Preterm birth complications	245	3.0
Diarrhoeal disease	211	2.6
Top 10 causes	5,744	70.7
Total	8,127	100.0

Table A.8: Leading causes of death for Males, Central Karoo 2009

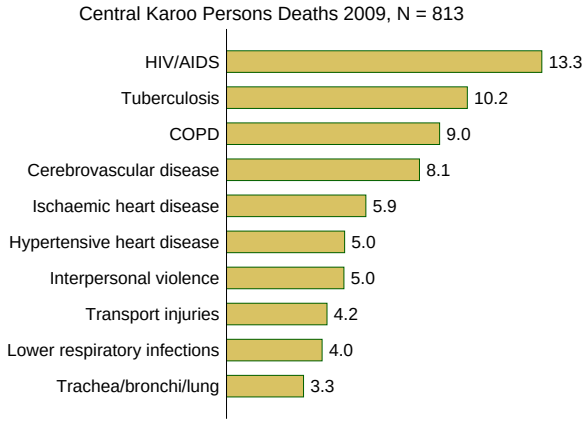


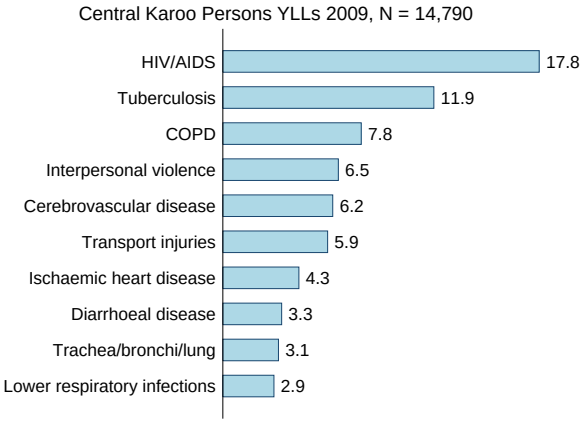


Cause of death	Deaths	%
HIV/AIDS	56	15.4
Cerebrovascular disease	37	10.3
COPD	32	8.9
Tuberculosis	30	8.3
Ischaemic heart disease	27	7.6
Hypertensive heart disease	27	7.4
Lower respiratory infections	17	4.8
Cervix	15	4.1
Diabetes mellitus	13	3.5
Trachea/bronchi/lung	10	2.7
Top 10 causes	264	73.0
Total	362	100.0

Cause of death	YLLs	%
HIV/AIDS	1,379	20.7
Tuberculosis	720	10.8
COPD	503	7.5
Cerebrovascular disease	488	7.3
Ischaemic heart disease	381	5.7
Diarrhoeal disease	279	4.2
Cervix	277	4.2
Hypertensive heart disease	255	3.8
Lower respiratory infections	216	3.2
Trachea/bronchi/lung	201	3.0
Top 10 causes	4,593	68.9
Total	6,663	100.0

Table A.9: Leading causes of death for Females, Central Karoo 2009





Cause of death	Deaths	%
HIV/AIDS	108	13.3
Tuberculosis	83	10.2
COPD	73	9.0
Cerebrovascular disease	66	8.1
Ischaemic heart disease	48	5.9
Hypertensive heart disease	41	5.0
Interpersonal violence	40	5.0
Transport injuries	34	4.2
Lower respiratory infections	33	4.0
Trachea/bronchi/lung	26	3.3
Top 10 causes	553	68.0
Total	813	100.0

Cause of death	YLLs	%
HIV/AIDS	2,633	17.8
Tuberculosis	1,756	11.9
COPD	1,152	7.8
Interpersonal violence	961	6.5
Cerebrovascular disease	915	6.2
Transport injuries	872	5.9
Ischaemic heart disease	633	4.3
Diarrhoeal disease	490	3.3
Trachea/bronchi/lung	463	3.1
Lower respiratory infections	425	2.9
Top 10 causes	10,220	69.1
Total	14,790	100.0

Table A.10: Leading causes of death for Persons, Central Karoo 2009

A.4.2.3 Proportion ill-defined

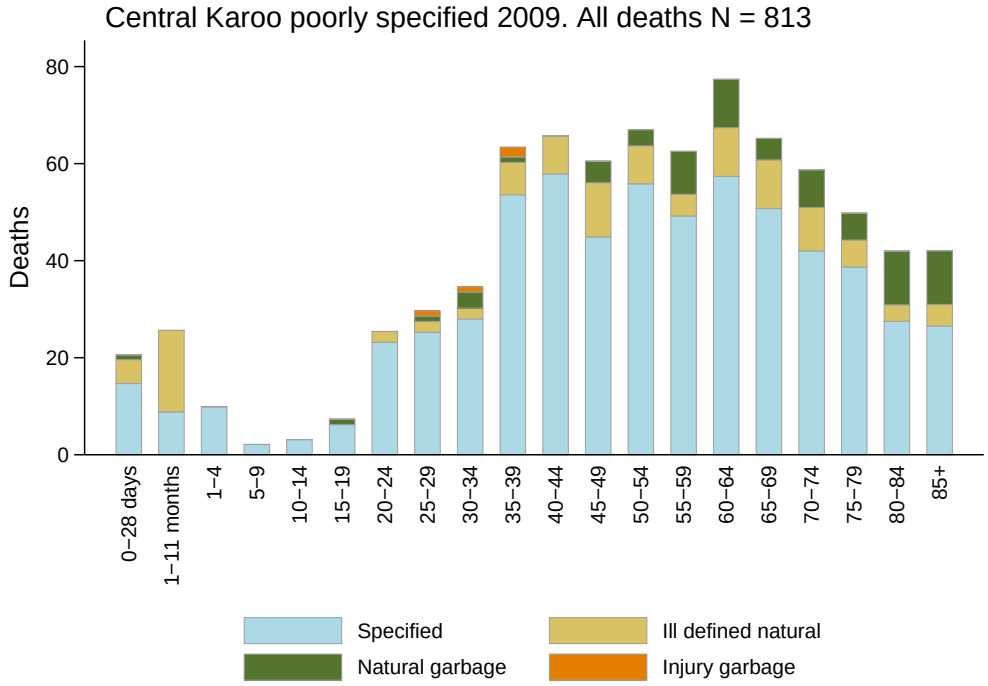
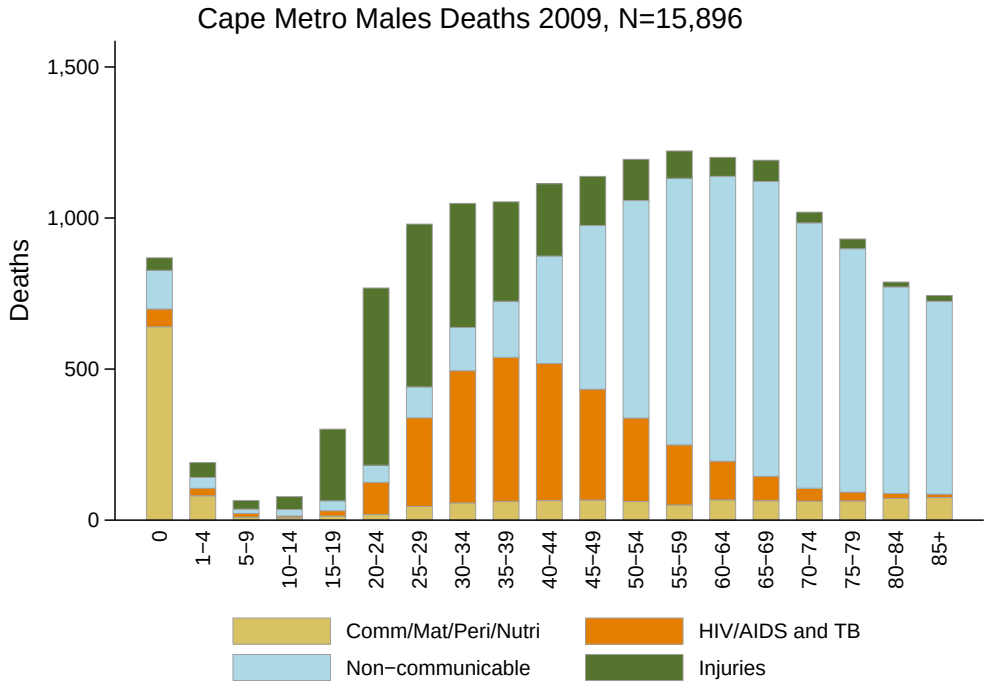


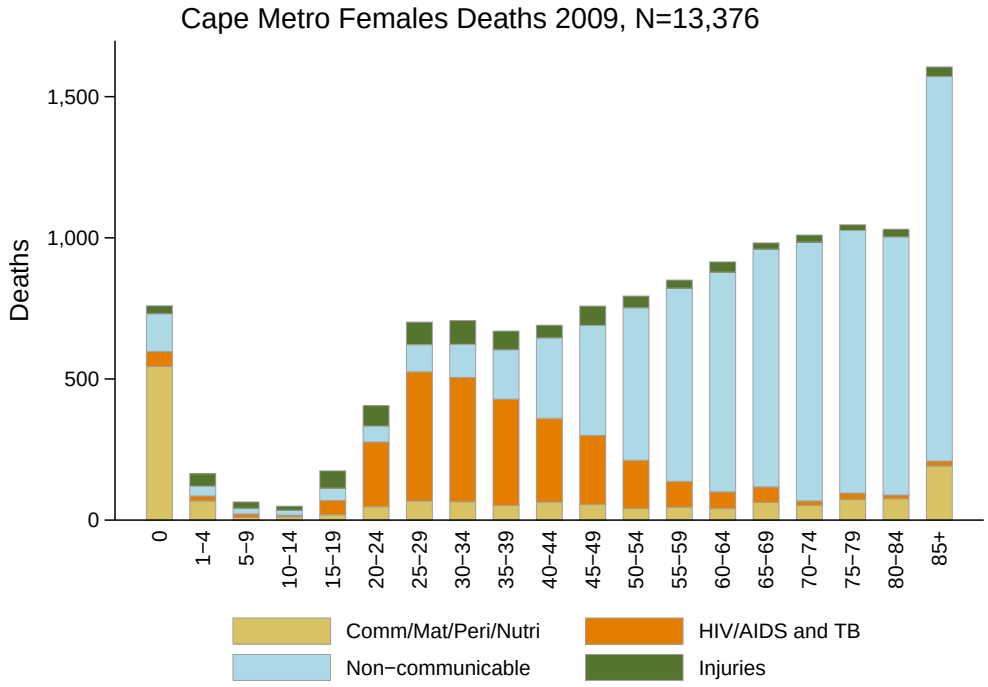
Table A.11: Central Karoo quality of reporting

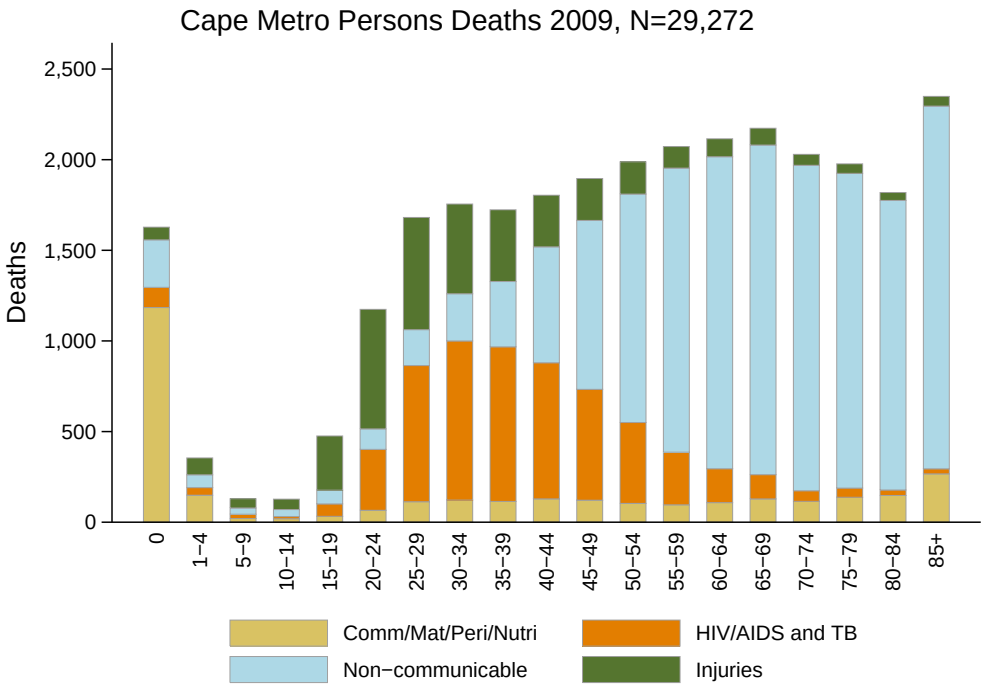
Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	21	23.9	4.7	0.2	28.9
1-11 months	26	65.4	0.0	0.2	65.6
1-4	10	0.0	0.0	0.5	0.5
5-9	2	0.0	0.0	2.3	2.3
10-14	3	0.0	0.0	1.6	1.6
15-19	7	0.0	15.0	0.7	15.7
20-24	25	8.8	0.0	0.2	9.0
25-29	30	7.5	3.7	3.5	14.8
30-34	35	6.4	9.6	3.0	19.1
35-39	63	10.5	1.7	3.2	15.5
40-44	66	11.9	0.0	0.1	11.9
45-49	61	18.5	7.3	0.1	25.8
50-54	67	11.7	4.9	0.1	16.7
55-59	63	7.1	14.1	0.1	21.3
60-64	77	13.0	12.8	0.1	25.9
65-69	65	15.4	6.8	0.1	22.2
70-74	59	15.3	13.2	0.1	28.5
75-79	50	11.2	11.1	0.1	22.4
80-84	42	8.0	26.3	0.1	34.5
85+	42	10.6	26.3	0.1	37.0
All	813	13.4	9.1	0.6	23.1

A.4.3 Cape Metropole

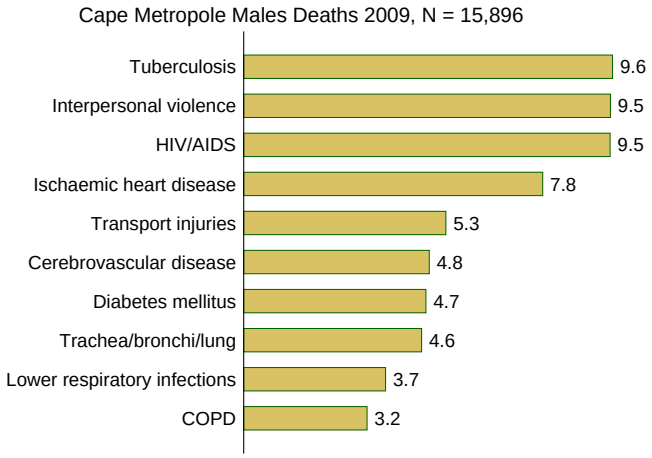
A.4.3.1 Broad causes

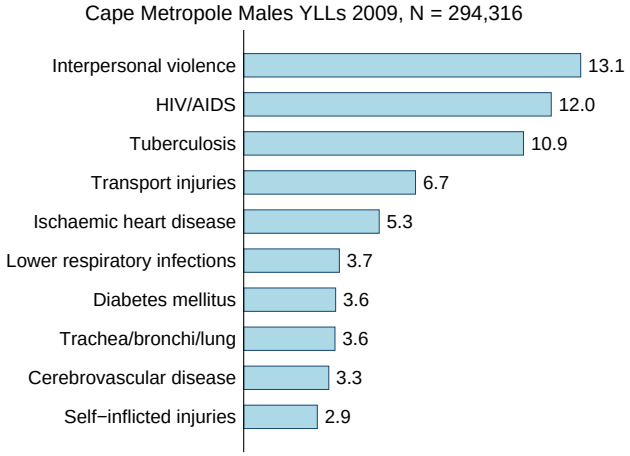





Cape Metro Persons Deaths 2009, N=29,272
Deaths
2,500
2,000
1,500
1,000
500
0
0
1–4
5–9
10–14
15–19
20–24
25–29
30–34
35–39
40–44
45–49
50–54
55–59
60–64
65–69
70–74
75–79
80–84
85+
Comm/Mat/Peri/Nutri
HIV/AIDS and TB
Non−communicable
Injuries

A.4.3.2 Leading causes of deaths and YLLs

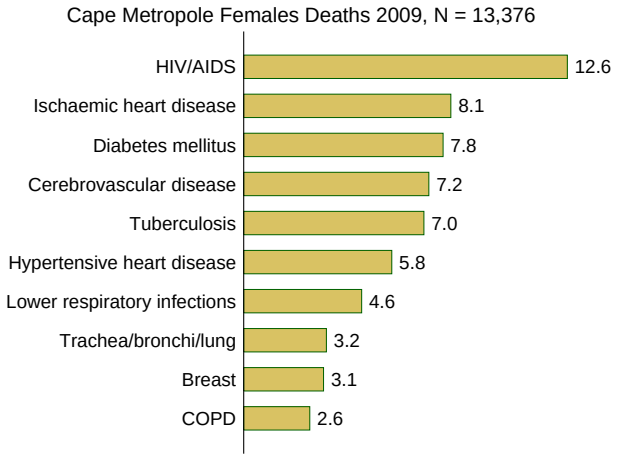


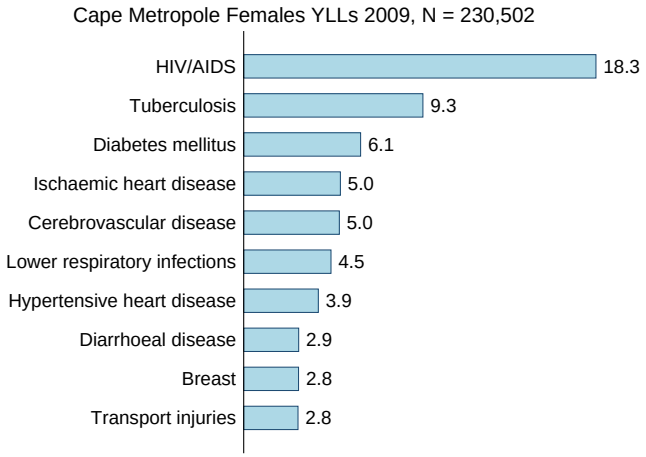


Cause of death	Deaths	%
Tuberculosis	1,523	9.6
Interpersonal violence	1,515	9.5
HIV/AIDS	1,513	9.5
Ischaemic heart disease	1,235	7.8
Transport injuries	835	5.3
Cerebrovascular disease	766	4.8
Diabetes mellitus	753	4.7
Trachea/bronchi/lung	735	4.6
Lower respiratory infections	586	3.7
COPD	509	3.2
Top 10 causes	9,970	62.7
Total	15,896	100.0

Cause of death	YLLs	%
Interpersonal violence	38,653	13.1
HIV/AIDS	35,277	12.0
Tuberculosis	32,090	10.9
Transport injuries	19,706	6.7
Ischaemic heart disease	15,541	5.3
Lower respiratory infections	10,970	3.7
Diabetes mellitus	10,544	3.6
Trachea/bronchi/lung	10,467	3.6
Cerebrovascular disease	9,757	3.3
Self-inflicted injuries	8,442	2.9
Top 10 causes	190,029	64.6
Total	294,316	100.0

Table A.12: Leading causes of death for Males, Cape Metropole 2009

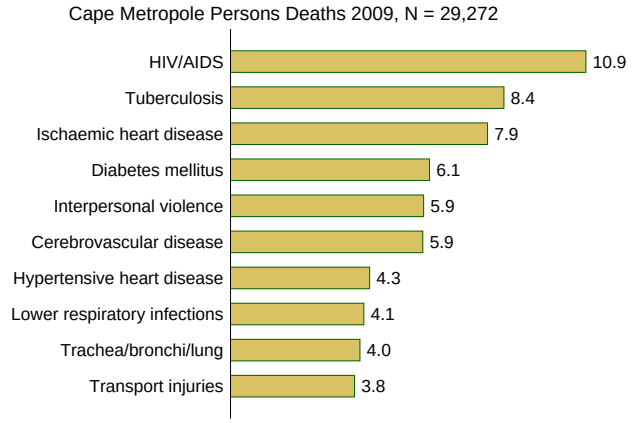


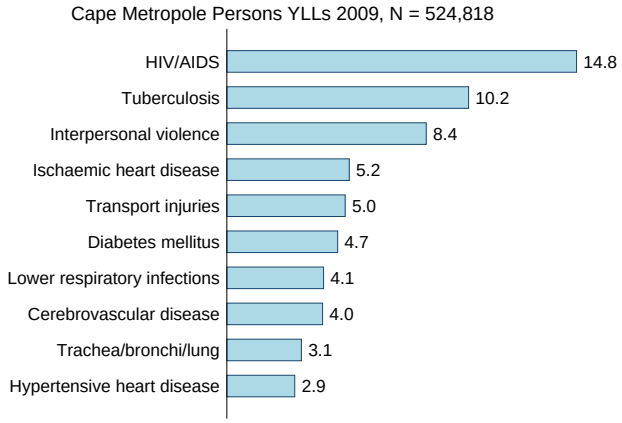


Cause of death	Deaths	%
HIV/AIDS	1,687	12.6
Ischaemic heart disease	1,080	8.1
Diabetes mellitus	1,039	7.8
Cerebrovascular disease	965	7.2
Tuberculosis	939	7.0
Hypertensive heart disease	772	5.8
Lower respiratory infections	615	4.6
Trachea/bronchi/lung	431	3.2
Breast	416	3.1
COPD	344	2.6
Top 10 causes	8,289	62.0
Total	13,376	100.0

Cause of death	YLLs	%
HIV/AIDS	42,189	18.3
Tuberculosis	21,464	9.3
Diabetes mellitus	14,004	6.1
Ischaemic heart disease	11,578	5.0
Cerebrovascular disease	11,453	5.0
Lower respiratory infections	10,454	4.5
Hypertensive heart disease	8,935	3.9
Diarrhoeal disease	6,585	2.9
Breast	6,567	2.8
Transport injuries	6,505	2.8
Top 10 causes	137,120	59.5
Total	230,502	100.0

Table A.13: Leading causes of death for Females, Cape Metropole 2009





Cause of death	Deaths	%
HIV/AIDS	3,200	10.9
Tuberculosis	2,462	8.4
Ischaemic heart disease	2,315	7.9
Diabetes mellitus	1,792	6.1
Interpersonal violence	1,739	5.9
Cerebrovascular disease	1,731	5.9
Hypertensive heart disease	1,253	4.3
Lower respiratory infections	1,201	4.1
Trachea/bronchi/lung	1,166	4.0
Transport injuries	1,116	3.8
Top 10 causes	17,976	61.4
Total	29,272	100.0

Cause of death	YLLs	%
HIV/AIDS	77,466	14.8
Tuberculosis	53,554	10.2
Interpersonal violence	44,172	8.4
Ischaemic heart disease	27,119	5.2
Transport injuries	26,211	5.0
Diabetes mellitus	24,549	4.7
Lower respiratory infections	21,424	4.1
Cerebrovascular disease	21,210	4.0
Trachea/bronchi/lung	16,515	3.1
Hypertensive heart disease	15,045	2.9
Top 10 causes	327,264	62.4
Total	524,818	100.0

Table A.14: Leading causes of death for Persons, Cape Metropole 2009

A.4.3.3 Proportion ill-defined

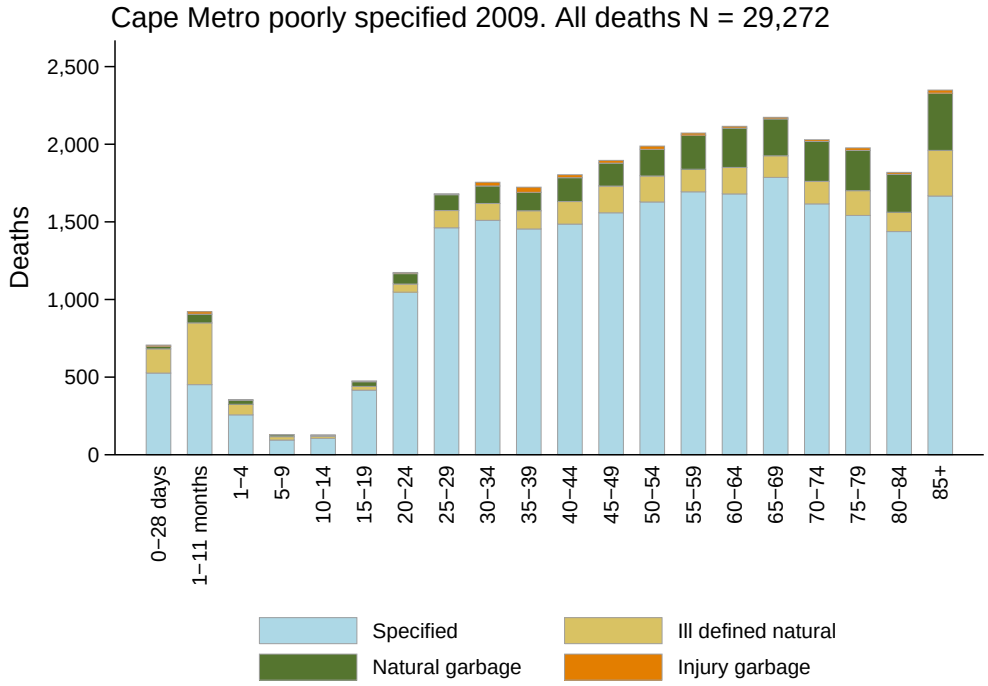
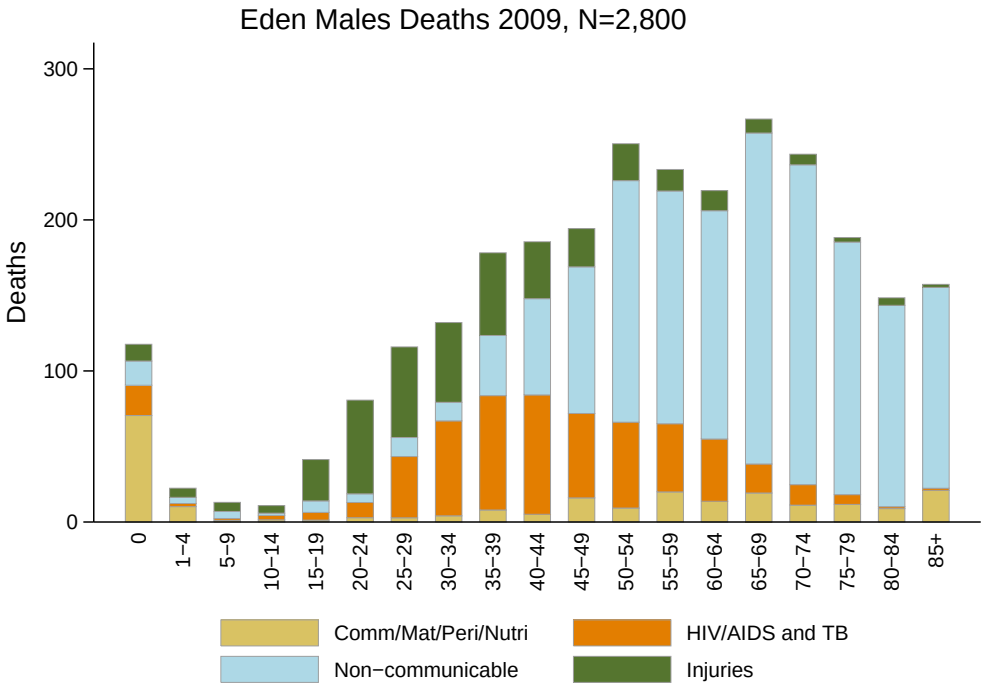


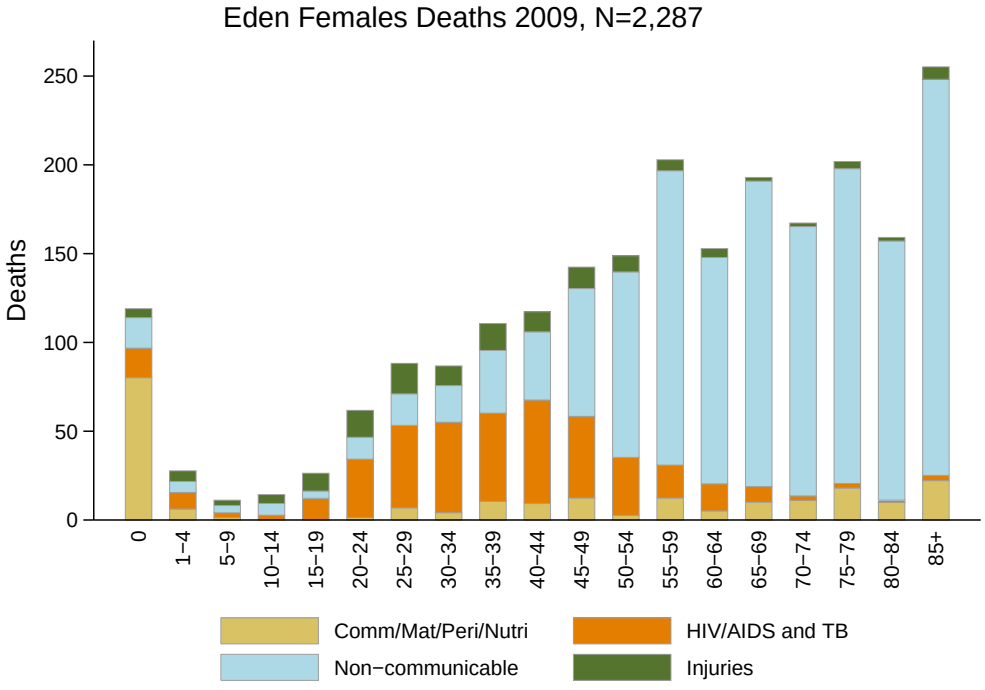
Table A.15: Cape Metropole quality of reporting

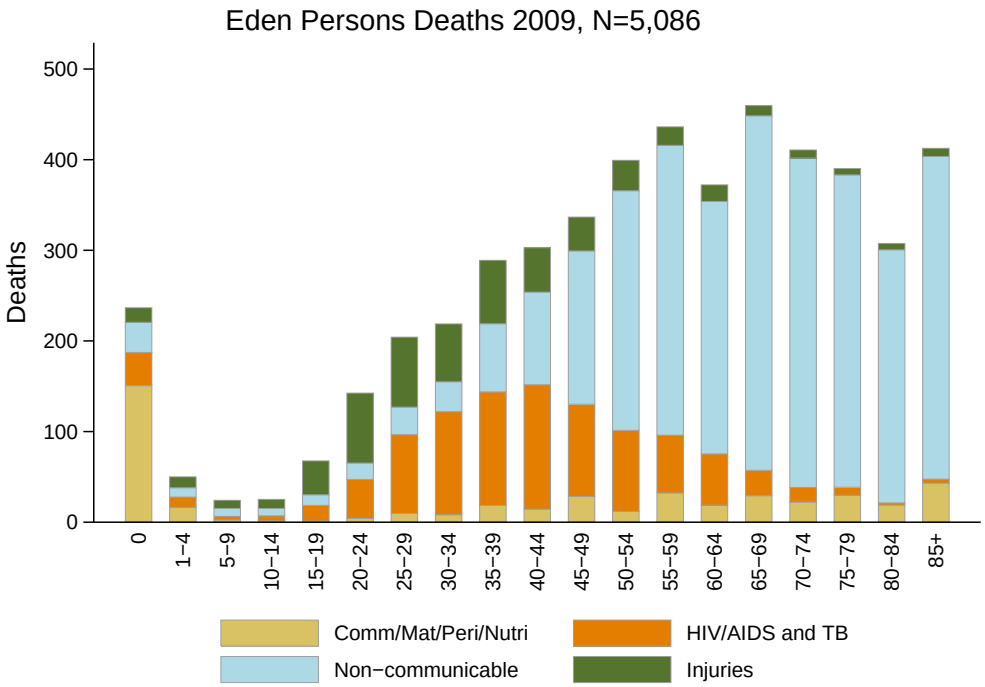
Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	707	22.1	2.4	1.0	25.6
1-11 months	921	43.2	6.1	1.7	51.0
1-4	355	19.2	7.5	0.9	27.6
5-9	129	17.0	9.3	0.8	27.0
10-14	127	10.5	4.7	1.7	17.0
15-19	476	5.1	6.3	1.2	12.6
20-24	1,174	4.5	5.7	0.6	10.8
25-29	1,681	6.6	6.1	0.4	13.0
30-34	1,755	6.2	6.4	1.4	14.0
35-39	1,724	6.8	6.9	1.9	15.6
40-44	1,804	8.1	8.5	1.1	17.6
45-49	1,896	9.1	7.8	0.9	17.8
50-54	1,988	8.4	8.6	1.1	18.1
55-59	2,072	7.0	10.6	0.7	18.3
60-64	2,115	8.1	12.0	0.5	20.6
65-69	2,173	6.4	10.9	0.5	17.8
70-74	2,029	7.1	12.7	0.6	20.4
75-79	1,977	8.1	13.1	0.9	22.0
80-84	1,819	6.8	13.5	0.7	21.0
85+	2,349	12.5	15.7	0.9	29.1
All	29,272	9.3	9.8	0.9	20.0

A.4.4 Eden

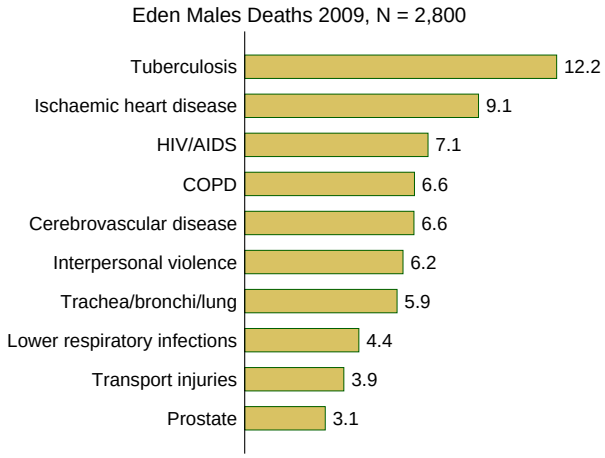
A.4.4.1 Broad causes

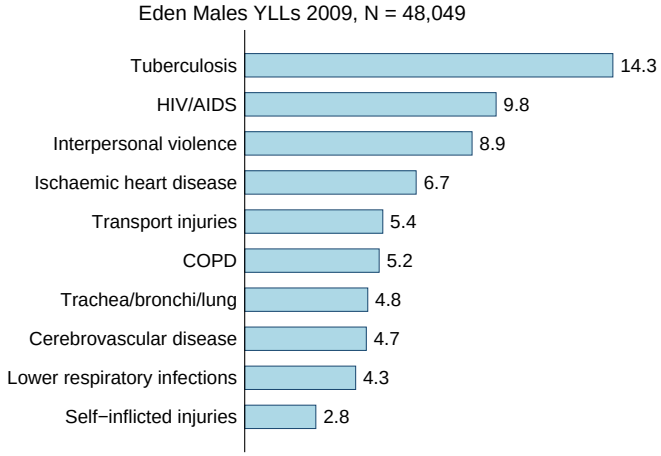





Eden Persons Deaths 2009, N=5,086
Deaths
500
400
300
200
100
0
0
1–4
5–9
10–14
15–19
20–24
25–29
30–34
35–39
40–44
45–49
50–54
55–59
60–64
65–69
70–74
75–79
80–84
85+
Comm/Mat/Peri/Nutri
HIV/AIDS and TB
Non−communicable
Injuries

A.4.4.2 Leading causes of deaths and YLLs

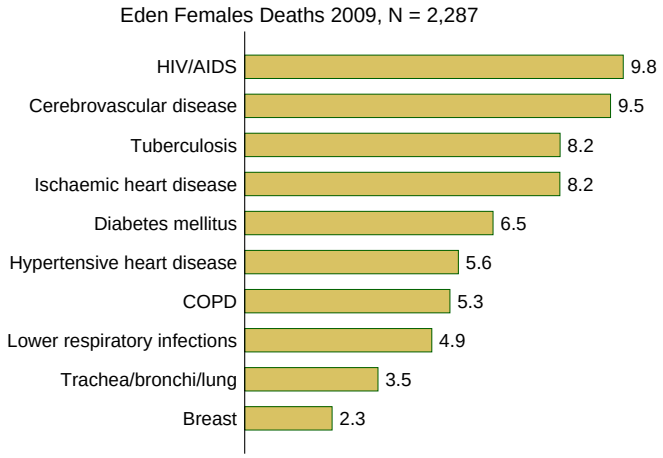


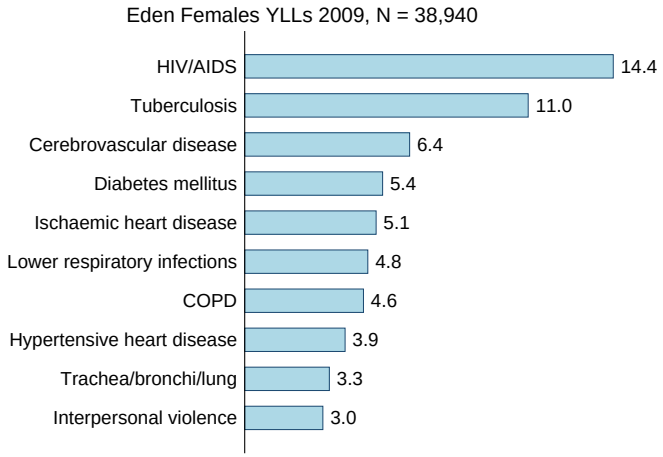


Cause of death	Deaths	%
Tuberculosis	340	12.2
Ischaemic heart disease	255	9.1
HIV/AIDS	200	7.1
COPD	185	6.6
Cerebrovascular disease	185	6.6
Interpersonal violence	173	6.2
Trachea/bronchi/lung	166	5.9
Lower respiratory infections	125	4.4
Transport injuries	108	3.9
Prostate	88	3.1
Top 10 causes	1,825	65.2
Total	2,800	100.0

Cause of death	YLLs	%
Tuberculosis	6,894	14.3
HIV/AIDS	4,708	9.8
Interpersonal violence	4,258	8.9
Ischaemic heart disease	3,210	6.7
Transport injuries	2,586	5.4
COPD	2,518	5.2
Trachea/bronchi/lung	2,304	4.8
Cerebrovascular disease	2,277	4.7
Lower respiratory infections	2,078	4.3
Self-inflicted injuries	1,332	2.8
Top 10 causes	31,576	65.7
Total	48,049	100.0

Table A.16: Leading causes of death for Males, Eden 2009

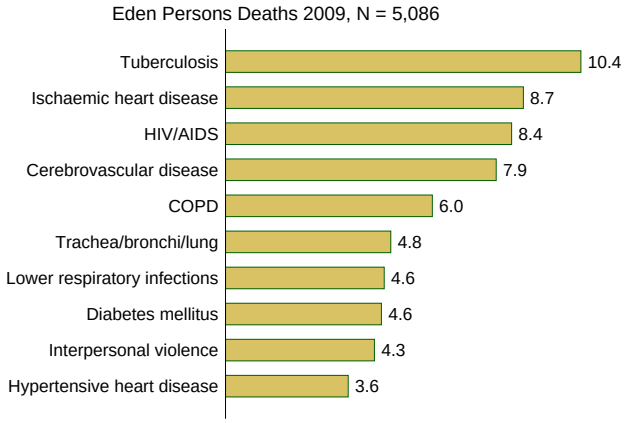


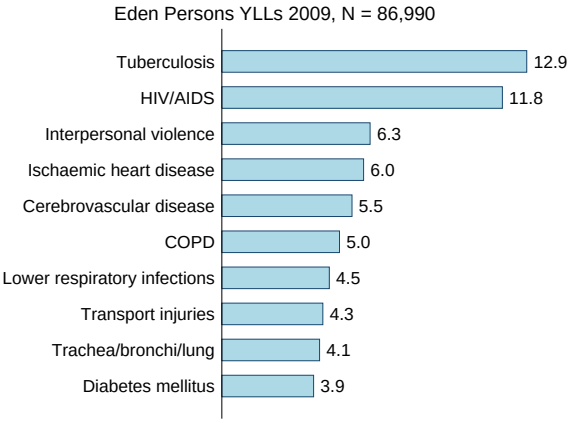


Cause of death	Deaths	%
HIV/AIDS	225	9.8
Cerebrovascular disease	217	9.5
Tuberculosis	187	8.2
Ischaemic heart disease	187	8.2
Diabetes mellitus	148	6.5
Hypertensive heart disease	127	5.6
COPD	122	5.3
Lower respiratory infections	111	4.9
Trachea/bronchi/lung	79	3.5
Breast	52	2.3
Top 10 causes	1,455	63.7
Total	2,287	100.0

Cause of death	YLLs	%
HIV/AIDS	5,593	14.4
Tuberculosis	4,302	11.0
Cerebrovascular disease	2,503	6.4
Diabetes mellitus	2,093	5.4
Ischaemic heart disease	1,994	5.1
Lower respiratory infections	1,868	4.8
COPD	1,802	4.6
Hypertensive heart disease	1,523	3.9
Trachea/bronchi/lung	1,284	3.3
Interpersonal violence	1,186	3.0
Top 10 causes	23,712	60.9
Total	38,940	100.0

Table A.17: Leading causes of death for Females, Eden 2009





Cause of death	Deaths	%
Tuberculosis	528	10.4
Ischaemic heart disease	442	8.7
HIV/AIDS	425	8.4
Cerebrovascular disease	402	7.9
COPD	307	6.0
Trachea/bronchi/lung	245	4.8
Lower respiratory infections	236	4.6
Diabetes mellitus	232	4.6
Interpersonal violence	221	4.3
Hypertensive heart disease	182	3.6
Top 10 causes	3,220	63.3
Total	5,086	100.0

Cause of death	YLLs	%
Tuberculosis	11,196	12.9
HIV/AIDS	10,301	11.8
Interpersonal violence	5,444	6.3
Ischaemic heart disease	5,205	6.0
Cerebrovascular disease	4,780	5.5
COPD	4,320	5.0
Lower respiratory infections	3,946	4.5
Transport injuries	3,708	4.3
Trachea/bronchi/lung	3,589	4.1
Diabetes mellitus	3,369	3.9
Top 10 causes	54,304	62.4
Total	86,990	100.0

Table A.18: Leading causes of death for Persons, Eden 2009

A.4.4.3 Proportion ill-defined

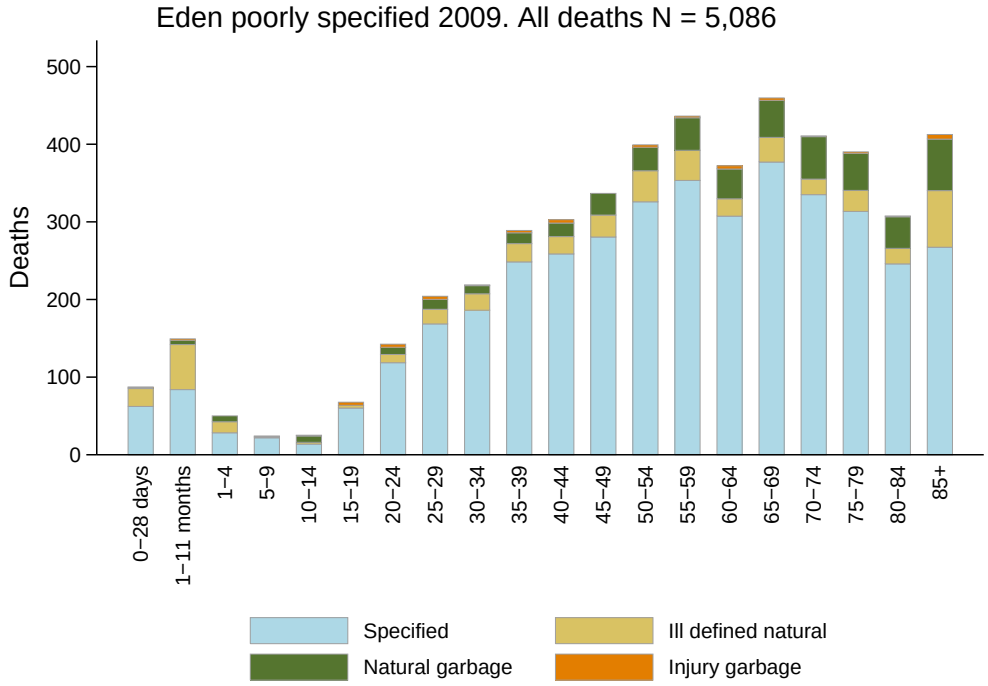
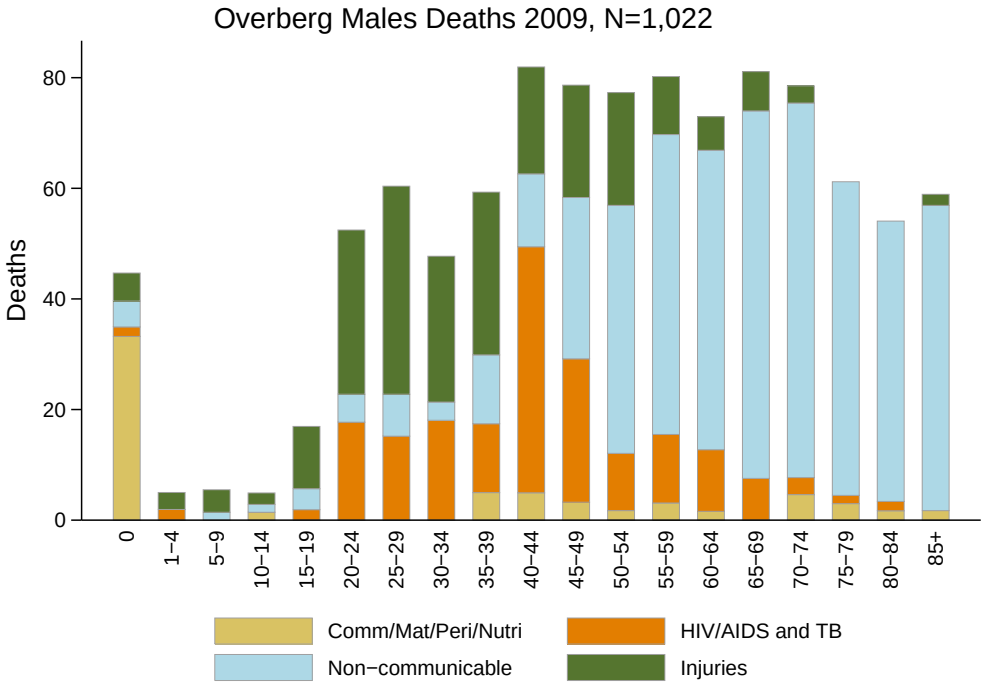


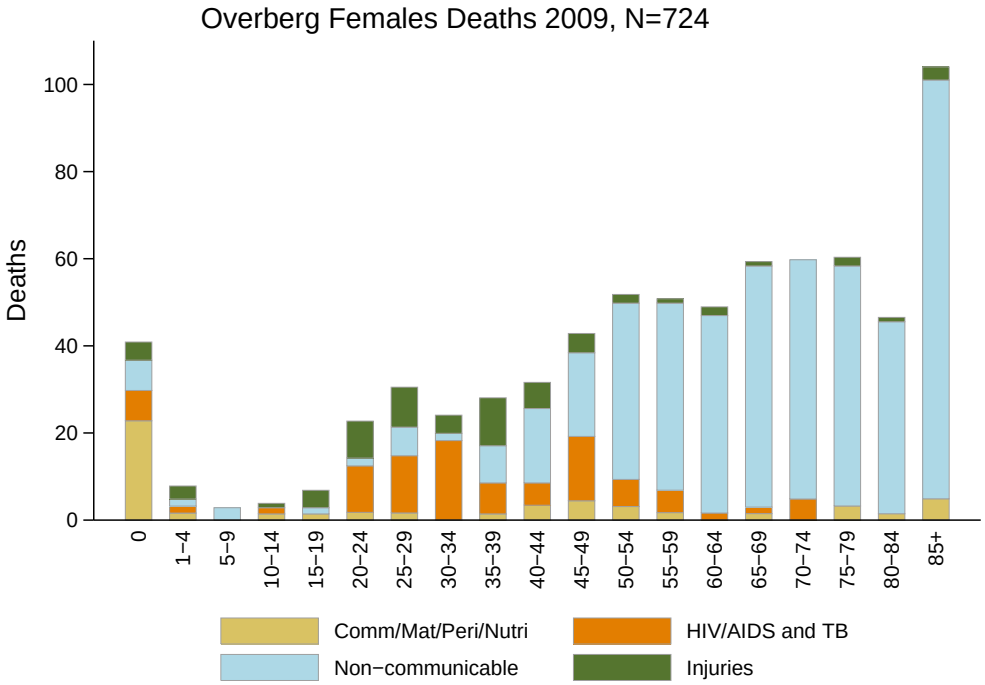
Table A.19: Eden quality of reporting

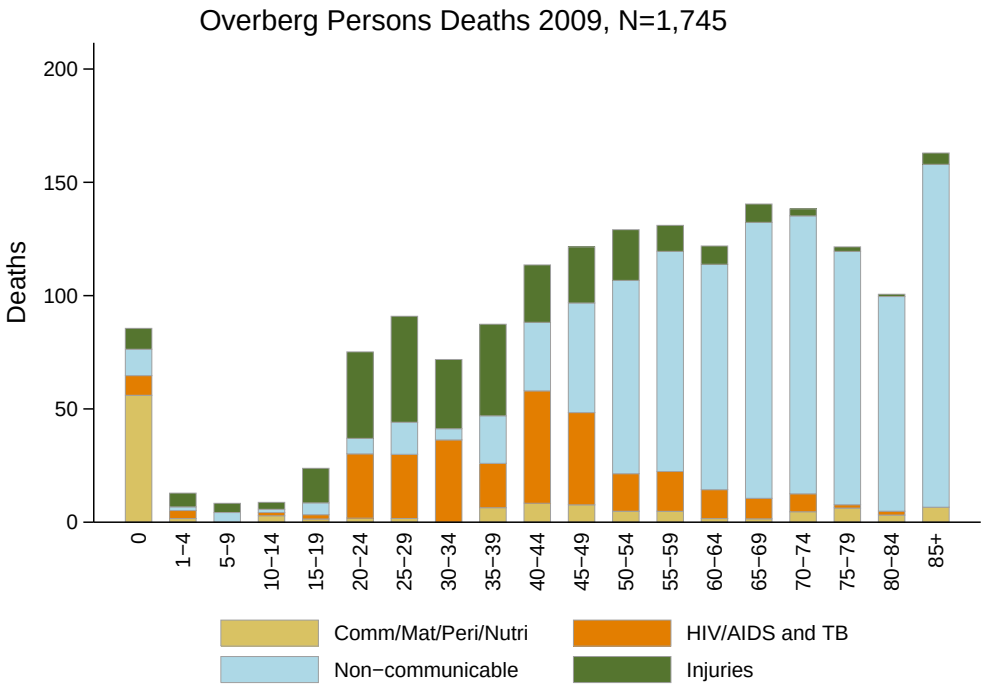
Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	87	26.3	1.2	1.1	28.7
1-11 months	149	38.8	3.6	1.3	43.8
1-4	50	28.4	15.1	0.0	43.5
5-9	24	4.9	4.8	0.0	9.7
10-14	25	9.3	32.3	4.0	45.6
15-19	68	5.2	0.0	5.9	11.1
20-24	142	7.4	6.5	2.8	16.8
25-29	204	9.2	6.3	2.0	17.4
30-34	219	9.7	4.8	0.5	14.9
35-39	289	8.1	4.8	1.0	14.0
40-44	303	7.4	5.8	1.4	14.6
45-49	337	8.4	8.3	0.0	16.7
50-54	399	10.0	7.6	0.8	18.4
55-59	436	8.9	9.6	0.5	19.0
60-64	372	6.0	10.3	1.1	17.4
65-69	460	6.9	10.4	0.7	18.0
70-74	411	4.9	13.3	0.2	18.4
75-79	390	6.9	12.2	0.5	19.7
80-84	308	6.5	13.2	0.3	20.1
85+	413	17.7	16.1	1.5	35.2
All	5,086	9.8	9.5	0.9	20.2

A.4.5 Overberg

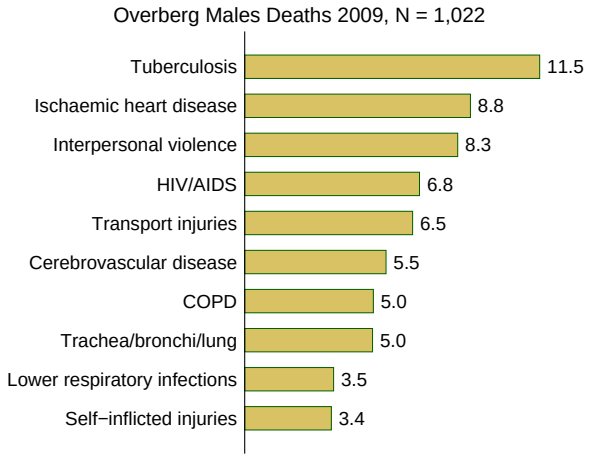
A.4.5.1 Broad causes

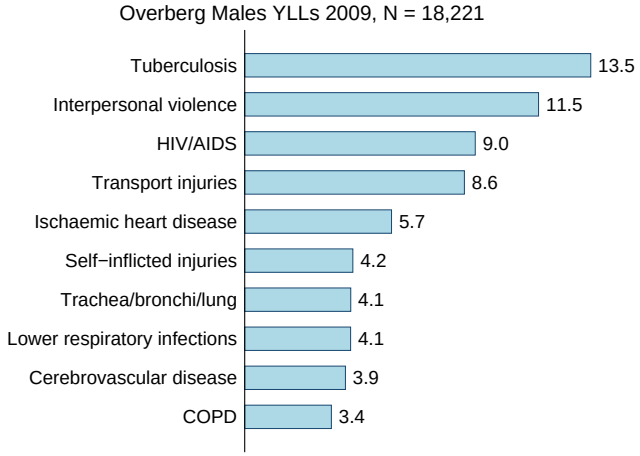





Overberg Persons Deaths 2009, N=1,745
Deaths
200
150
100
50
0
0
1–4
5–9
10–14
15–19
20–24
25–29
30–34
35–39
40–44
45–49
50–54
55–59
60–64
65–69
70–74
75–79
80–84
85+
Comm/Mat/Peri/Nutri
HIV/AIDS and TB
Non−communicable
Injuries

A.4.5.2 Leading causes of deaths and YLLs

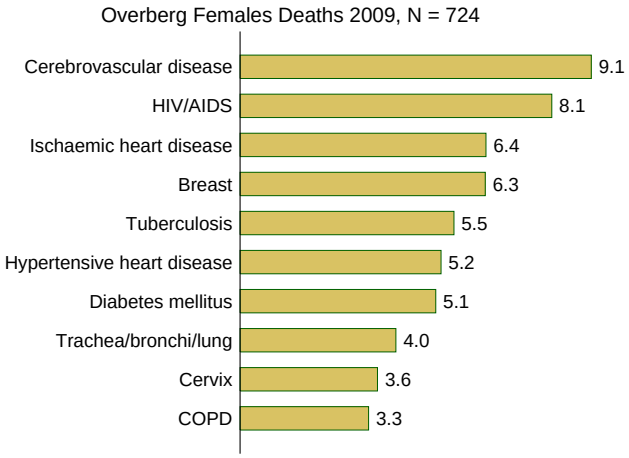


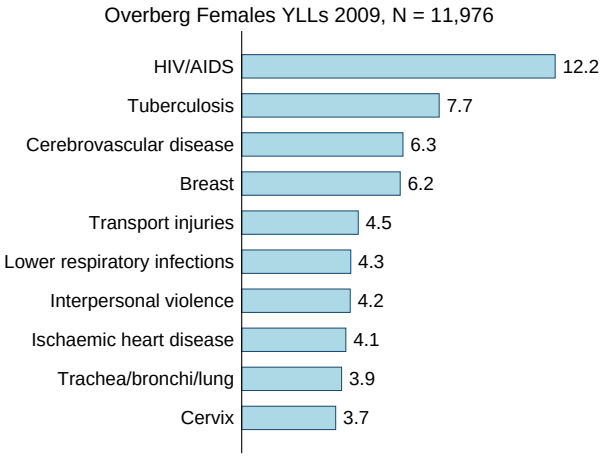


Cause of death	Deaths	%
Tuberculosis	117	11.5
Ischaemic heart disease	90	8.8
Interpersonal violence	85	8.3
HIV/AIDS	70	6.8
Transport injuries	67	6.5
Cerebrovascular disease	56	5.5
COPD	51	5.0
Trachea/bronchi/lung	51	5.0
Lower respiratory infections	35	3.5
Self-inflicted injuries	34	3.4
Top 10 causes	657	64.3
Total	1,022	100.0

Cause of death	YLLs	%
Tuberculosis	2,457	13.5
Interpersonal violence	2,087	11.5
HIV/AIDS	1,637	9.0
Transport injuries	1,560	8.6
Ischaemic heart disease	1,043	5.7
Self-inflicted injuries	768	4.2
Trachea/bronchi/lung	753	4.1
Lower respiratory infections	752	4.1
Cerebrovascular disease	715	3.9
COPD	615	3.4
Top 10 causes	12,387	68.0
Total	18,221	100.0

Table A.20: Leading causes of death for Males, Overberg 2009

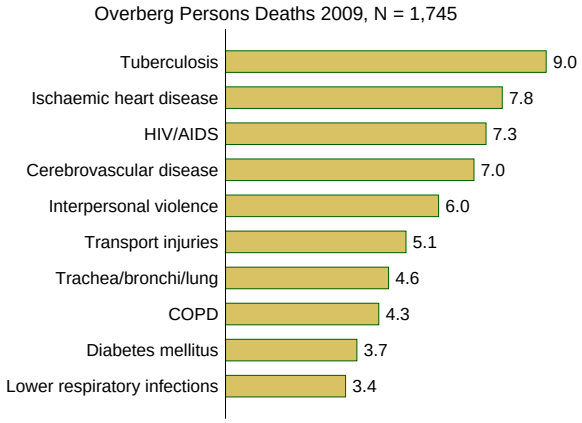


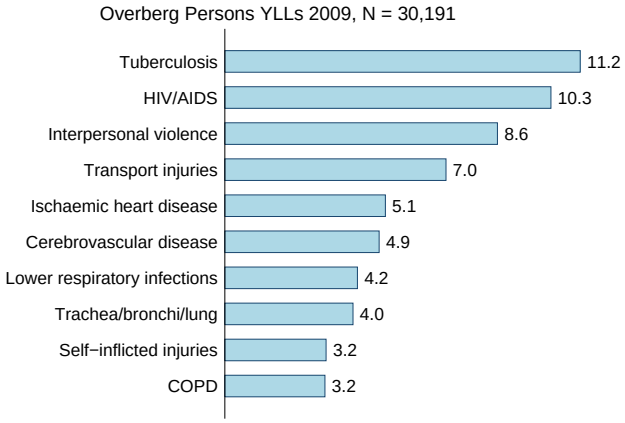


Cause of death	Deaths	%
Cerebrovascular disease	66	9.1
HIV/AIDS	58	8.1
Ischaemic heart disease	46	6.4
Breast	46	6.3
Tuberculosis	40	5.5
Hypertensive heart disease	38	5.2
Diabetes mellitus	37	5.1
Trachea/bronchi/lung	29	4.0
Cervix	26	3.6
COPD	24	3.3
Top 10 causes	409	56.6
Total	724	100.0

Cause of death	YLLs	%
HIV/AIDS	1,463	12.2
Tuberculosis	922	7.7
Cerebrovascular disease	753	6.3
Breast	740	6.2
Transport injuries	544	4.5
Lower respiratory infections	509	4.3
Interpersonal violence	506	4.2
Ischaemic heart disease	486	4.1
Trachea/bronchi/lung	466	3.9
Cervix	439	3.7
Top 10 causes	6,406	53.5
Total	11,976	100.0

Table A.21: Leading causes of death for Females, Overberg 2009





Cause of death	Deaths	%
Tuberculosis	158	9.0
Ischaemic heart disease	136	7.8
HIV/AIDS	128	7.3
Cerebrovascular disease	122	7.0
Interpersonal violence	105	6.0
Transport injuries	89	5.1
Trachea/bronchi/lung	80	4.6
COPD	75	4.3
Diabetes mellitus	65	3.7
Lower respiratory infections	59	3.4
Top 10 causes	1,016	58.2
Total	1,745	100.0

Cause of death	YLLs	%
Tuberculosis	3,379	11.2
HIV/AIDS	3,100	10.3
Interpersonal violence	2,593	8.6
Transport injuries	2,104	7.0
Ischaemic heart disease	1,529	5.1
Cerebrovascular disease	1,468	4.9
Lower respiratory infections	1,261	4.2
Trachea/bronchi/lung	1,219	4.0
Self-inflicted injuries	963	3.2
COPD	952	3.2
Top 10 causes	18,413	61.0
Total	30,197	100.0

Table A.22: Leading causes of death for Persons, Overberg 2009

A.4.5.3 Proportion ill-defined

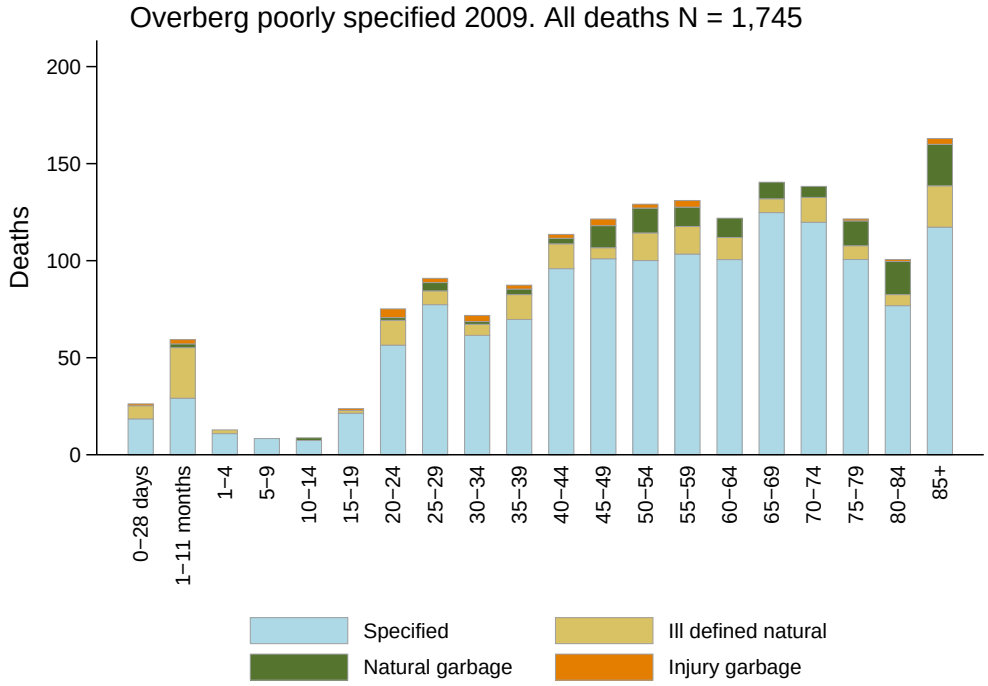
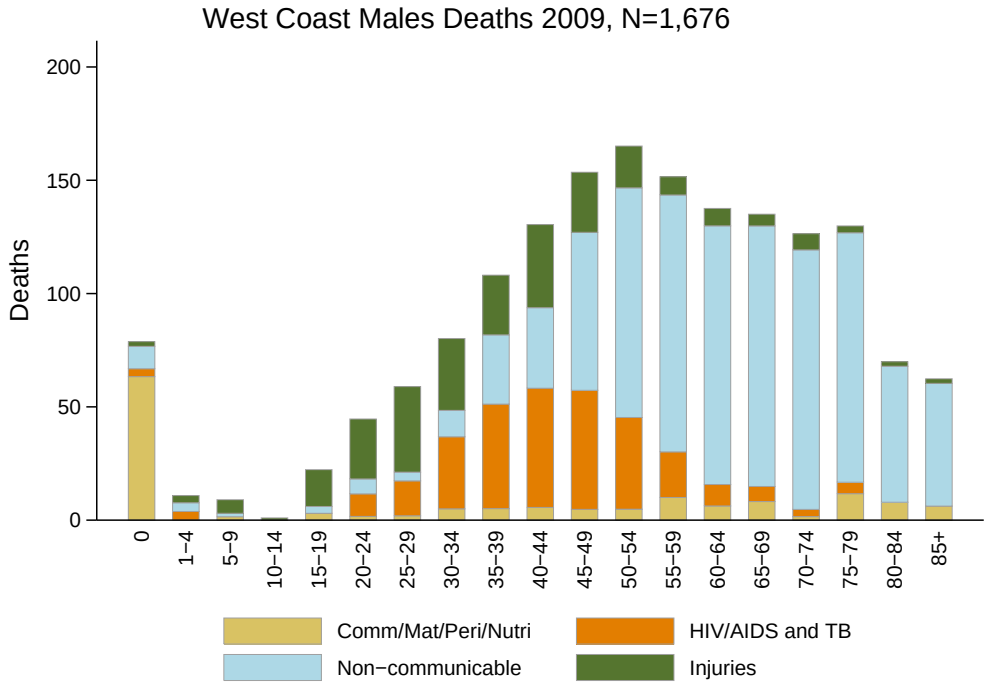


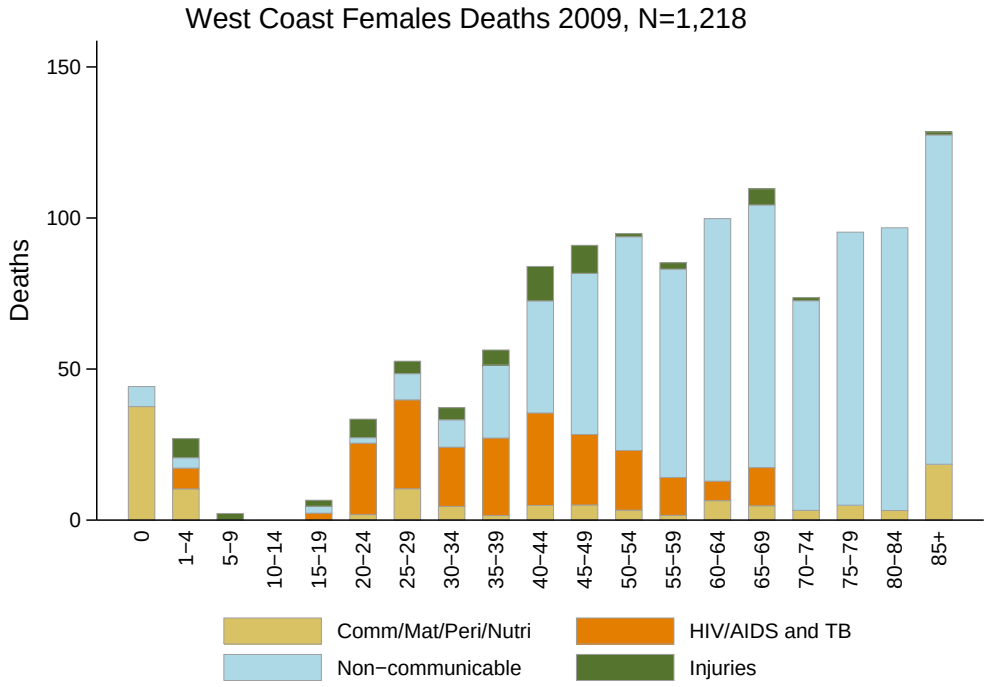
Table A.23: Overberg quality of reporting

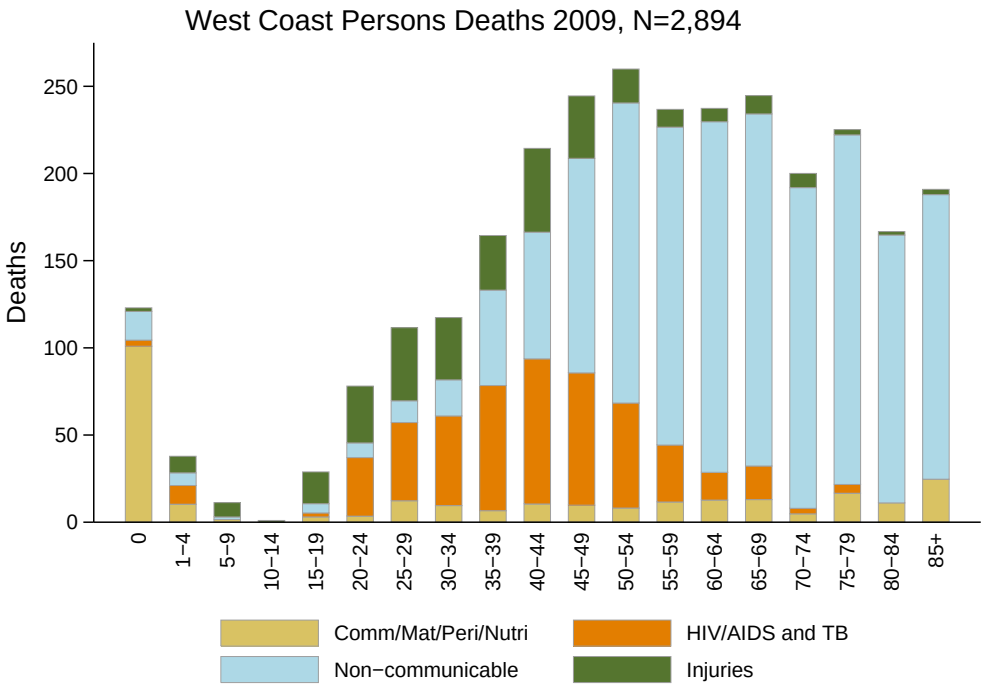
Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	26	25.8	0.0	3.8	29.6
1-11 months	59	44.0	3.3	3.7	50.9
1-4	13	15.1	0.0	0.0	15.1
5-9	8	0.0	0.0	0.0	0.0
10-14	9	0.0	16.2	0.0	16.2
15-19	24	6.0	0.0	4.2	10.2
20-24	75	17.0	1.9	6.0	24.9
25-29	91	7.8	4.7	2.4	14.9
30-34	72	7.9	2.0	4.4	14.3
35-39	87	14.7	3.3	2.3	20.2
40-44	114	11.3	2.5	1.8	15.5
45-49	121	4.7	9.4	2.8	16.9
50-54	129	11.0	9.9	1.5	22.5
55-59	131	10.9	7.6	2.6	21.1
60-64	122	9.3	8.2	0.0	17.5
65-69	140	5.1	6.1	0.0	11.1
70-74	138	9.3	4.1	0.0	13.4
75-79	122	5.9	10.5	0.8	17.2
80-84	101	5.7	17.0	1.0	23.6
85+	163	13.1	13.1	1.8	28.0
All	1,745	10.7	7.2	1.8	19.7

A.4.6 West Coast

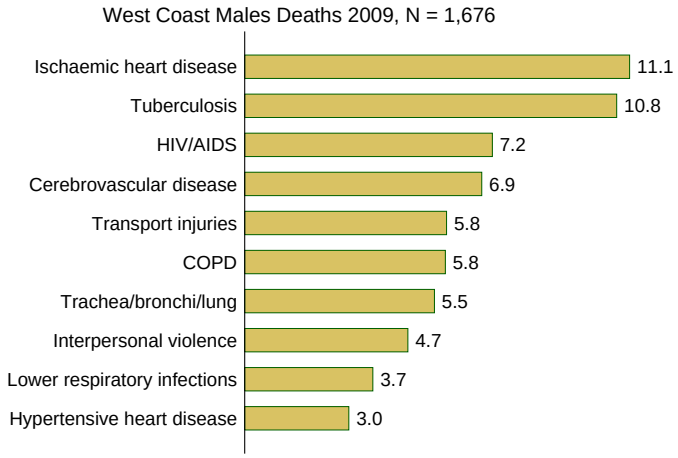
A.4.6.1 Broad causes

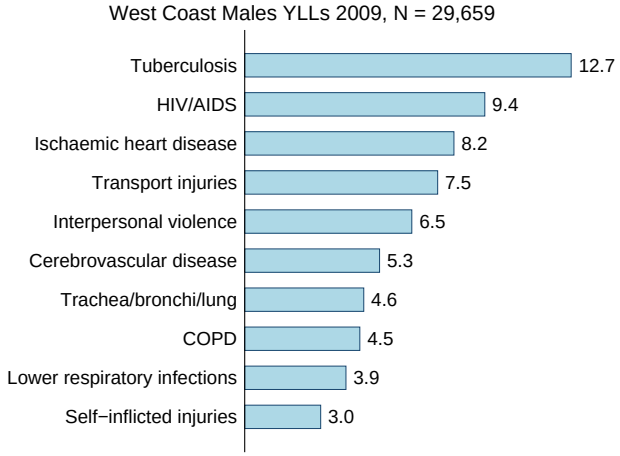





West Coast Persons Deaths 2009, N=2,894
Deaths
0
50
100
150
200
250
0
1–4
5–9
10–14
15–19
20–24
25–29
30–34
35–39
40–44
45–49
50–54
55–59
60–64
65–69
70–74
75–79
80–84
85+
Comm/Mat/Peri/Nutri
HIV/AIDS and TB
Non−communicable
Injuries

A.4.6.2 Leading causes of deaths and YLLs

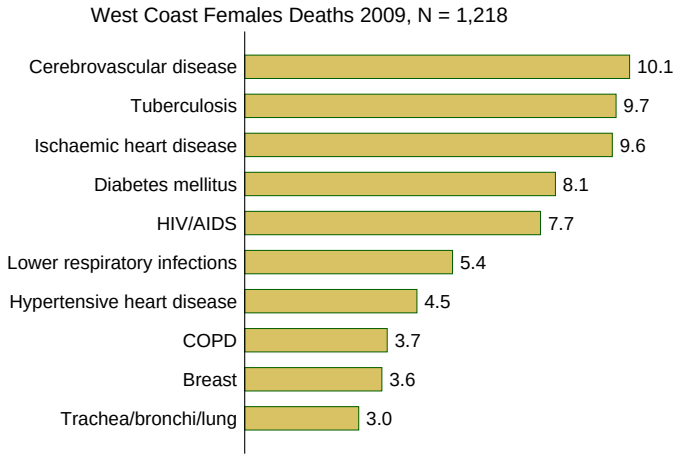


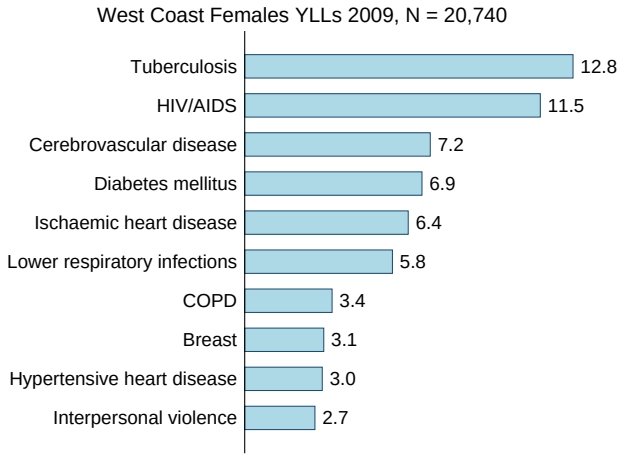


Cause of death	Deaths	%
Ischaemic heart disease	187	11.1
Tuberculosis	181	10.8
HIV/AIDS	120	7.2
Cerebrovascular disease	115	6.9
Transport injuries	98	5.8
COPD	97	5.8
Trachea/bronchi/lung	92	5.5
Interpersonal violence	79	4.7
Lower respiratory infections	62	3.7
Hypertensive heart disease	51	3.0
Top 10 causes	1,082	64.6
Total	1,676	100.0

Cause of death	YLLs	%
Tuberculosis	3,774	12.7
HIV/AIDS	2,775	9.4
Ischaemic heart disease	2,419	8.2
Transport injuries	2,230	7.5
Interpersonal violence	1,932	6.5
Cerebrovascular disease	1,559	5.3
Trachea/bronchi/lung	1,376	4.6
COPD	1,331	4.5
Lower respiratory infections	1,170	3.9
Self-inflicted injuries	878	3.0
Top 10 causes	19,156	64.6
Total	29,659	100.0

Table A.24: Leading causes of death for Males, West Coast 2009

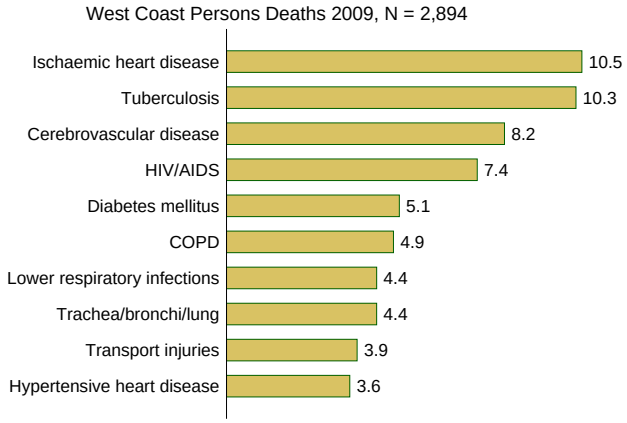


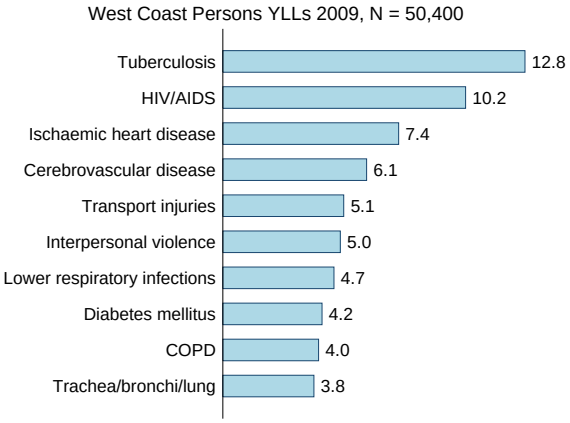


Cause of death	Deaths	%
Cerebrovascular disease	123	10.1
Tuberculosis	118	9.7
Ischaemic heart disease	117	9.6
Diabetes mellitus	99	8.1
HIV/AIDS	94	7.7
Lower respiratory infections	66	5.4
Hypertensive heart disease	55	4.5
COPD	45	3.7
Breast	44	3.6
Trachea/bronchi/lung	36	3.0
Top 10 causes	799	65.6
Total	1,218	100.0

Cause of death	YLLs	%
Tuberculosis	2,654	12.8
HIV/AIDS	2,389	11.5
Cerebrovascular disease	1,500	7.2
Diabetes mellitus	1,433	6.9
Ischaemic heart disease	1,322	6.4
Lower respiratory infections	1,194	5.8
COPD	706	3.4
Breast	639	3.1
Hypertensive heart disease	627	3.0
Interpersonal violence	568	2.7
Top 10 causes	13,025	62.8
Total	20,740	100.0

Table A.25: Leading causes of death for Females, West Coast 2009





Cause of death	Deaths	%
Ischaemic heart disease	304	10.5
Tuberculosis	299	10.3
Cerebrovascular disease	238	8.2
HIV/AIDS	215	7.4
Diabetes mellitus	148	5.1
COPD	143	4.9
Lower respiratory infections	128	4.4
Trachea/bronchi/lung	128	4.4
Transport injuries	112	3.9
Hypertensive heart disease	105	3.6
Top 10 causes	1,820	62.9
Total	2,894	100.0

Cause of death	YLLs	%
Tuberculosis	6,427	12.8
HIV/AIDS	5,164	10.2
Ischaemic heart disease	3,740	7.4
Cerebrovascular disease	3,059	6.1
Transport injuries	2,572	5.1
Interpersonal violence	2,499	5.0
Lower respiratory infections	2,364	4.7
Diabetes mellitus	2,110	4.2
COPD	2,037	4.0
Trachea/bronchi/lung	1,938	3.8
Top 10 causes	30,629	60.8
Total	50,400	100.0

Table A.26: Leading causes of death for Persons, West Coast 2009

A.4.6.3 Proportion ill-defined

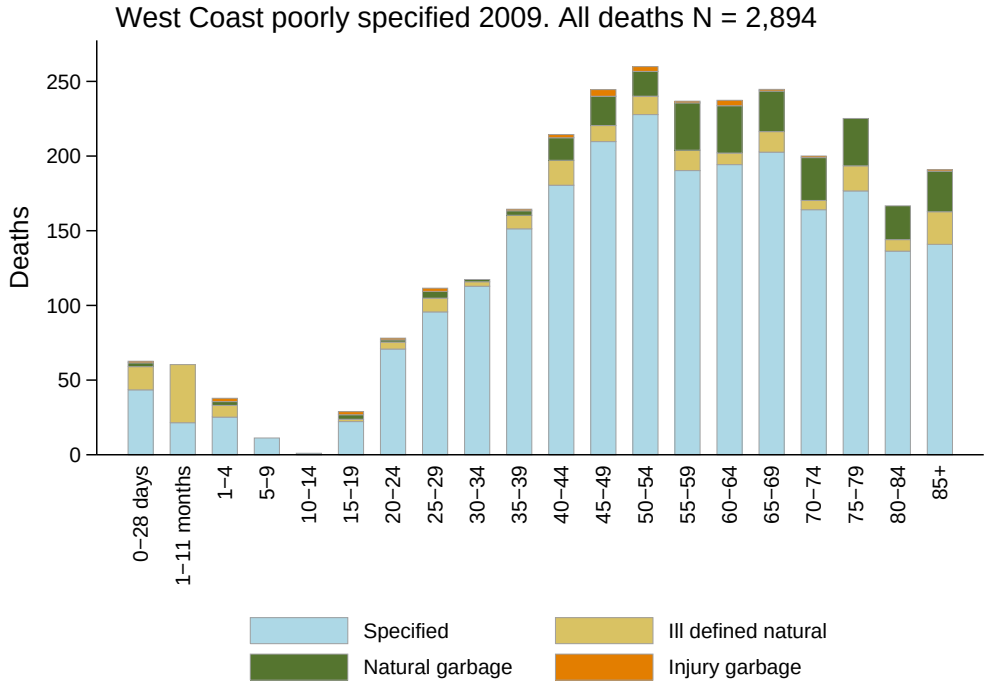


Table A.27: West Coast quality of reporting

Age	Deaths	Ill def %	Garb (nat) %	Garb (inj) %	All Garb %
0-28 days	63	24.8	4.1	1.7	30.6
1-11 months	60	64.5	0.0	0.0	64.5
1-4	38	20.8	6.8	5.9	33.4
5-9	11	0.0	0.0	0.0	0.0
10-14	1	0.0	0.0	0.0	0.0
15-19	29	5.4	10.5	7.2	23.1
20-24	78	5.9	1.9	1.5	9.3
25-29	112	8.3	4.1	1.9	14.2
30-34	117	2.6	1.3	0.0	3.9
35-39	164	5.5	1.8	0.7	8.0
40-44	214	7.8	7.0	1.0	15.8
45-49	244	4.4	8.0	1.8	14.2
50-54	260	4.7	6.4	1.2	12.4
55-59	237	5.8	13.4	0.5	19.6
60-64	237	3.2	13.4	1.5	18.1
65-69	245	5.6	11.1	0.5	17.2
70-74	200	3.1	14.3	0.5	18.0
75-79	225	7.5	14.1	0.0	21.5
80-84	167	4.6	13.6	0.0	18.2
85+	191	11.4	14.2	0.5	26.2
All	2,894	7.5	9.4	1.0	17.8