Comparison of the demographic profiles of two cities: Cape Town and Tshwane, 1997–2011

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Preface

This report provides a comparative analysis of the population and death statistics for the City of Cape Town and the City of Tshwane metropolitan municipalities. It is based on Census 1996 and Census 2011 data, and information on deaths and their causes from the death registration system maintained by the Department of Home Affairs for 1997, 2007 and 2011.

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1. *Introduction*

This report provides a comparative analysis of the population and death statistics for the City of Cape Town and the City of Tshwane metropolitan municipalities. Population statistics are based on Census 1996 and Census 2011 results, and death statistics are based on information on deaths and their causes collected through the death registration system maintained by the Department of Home Affairs for 1997, 2007 and 2011.

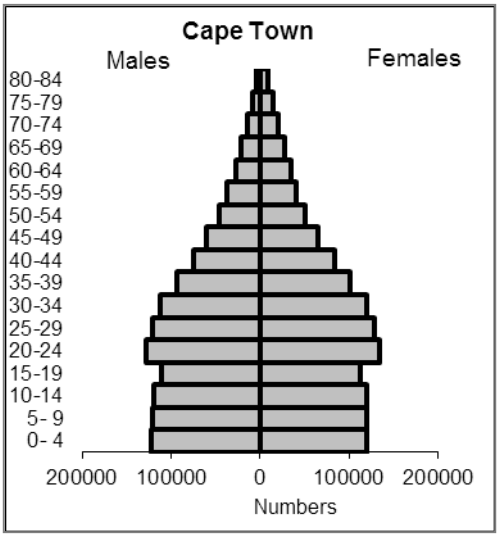
Population indicators used for the comparison include population size, sex ratios, and median ages. A comparison is also made on the age pattern of mortality, sex ratios at death and median ages at death. In addition, the report discusses differences in causes of death between the two cities, highlighting natural and non-natural causes of death, and specific causes of non-natural deaths for selected ages. A comparison is made of the ten leading natural causes of death and their relative importance within these cities. Lastly, the report looks at the extent and trends of deaths due to communicable and non-communicable diseases.

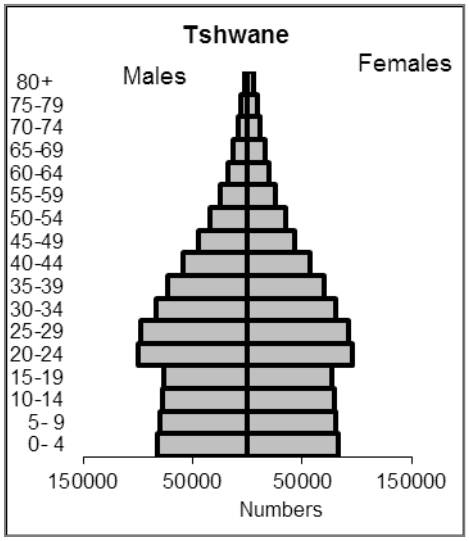
2. *The population structure in the City of Tshwane and the City of Cape Town*

A total of 3 740 026 people were enumerated in the City of Cape Town in 2011, compared to 2 921 488 in the City of Tshwane. While the population in both metropolitan areas increased between 1996 and 2011, the increase was higher in the City of Tshwane (10,0%) than in the City of Cape Town (7,7%).

The age and sex composition of a population is determined by the number of births, deaths and net migration. A population pyramid shows a picture of the history of a population. Figures 1 and 2 show the population pyramids of the City of Cape Town and the City of Tshwane for 1996 and 2011. In 1996, both Cape Town and Tshwane had pyramids that looked almost similar. However, the City of Tshwane showed a male population that was slightly larger at ages 20–24 and 25–29, while the City of Cape Town had bulges at ages 20–24 for both males and females. The City of Cape Town also had a slightly smaller population at ages 15–19. At older ages, both pyramids look similar.

Figure 1: Population structure of the population of the City of Cape Town and the City of Tshwane, 1996





In 2011, we observe that both cities still had largely similar population structures with increases in the population at ages 0–4 years, and lower than expected proportions at ages 5–19 years. What is also obvious is the increase in the population in age groups 20–29. The 2011 population structure of both metros is a reflection of the age structure observed at national level (Figure 3). There are two possible explanations for the observed structure. The first might be in-migration, hence the bulge at migration ages. The second possibility is under-reporting of the population in the age group 5–19 for both males and females. However, notwithstanding the similarity between the two population structures, the City of Tshwane had a slightly higher proportion of the population at ages 20–29 than the City of Cape Town for both sexes.

Figure 2: Population structure of the population of the City of Cape Town and the City of Tshwane, 2011

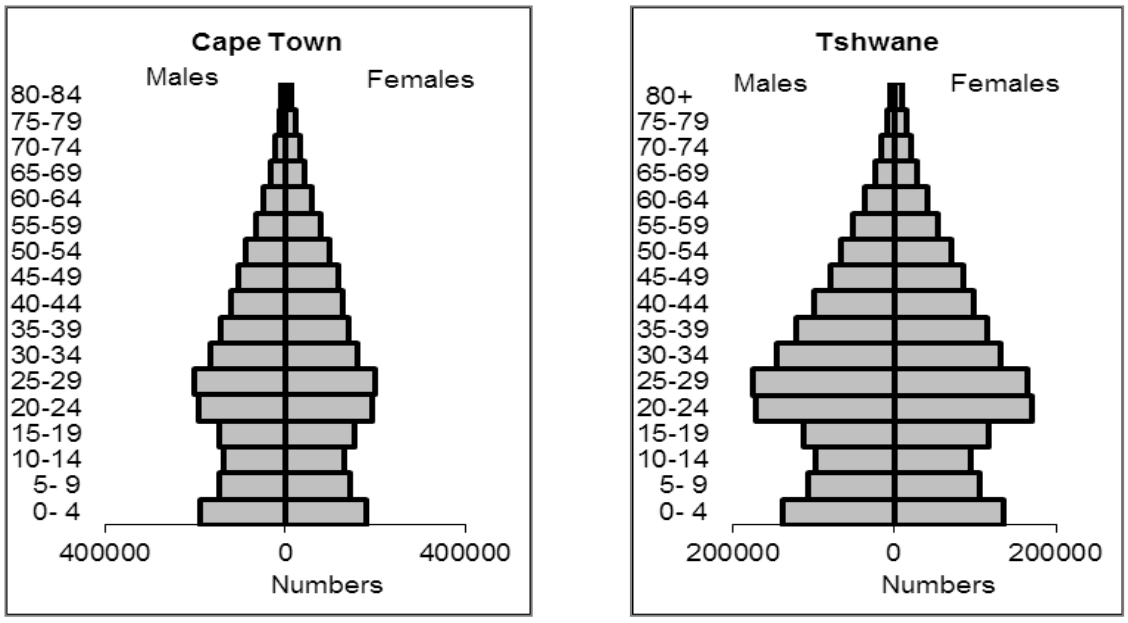
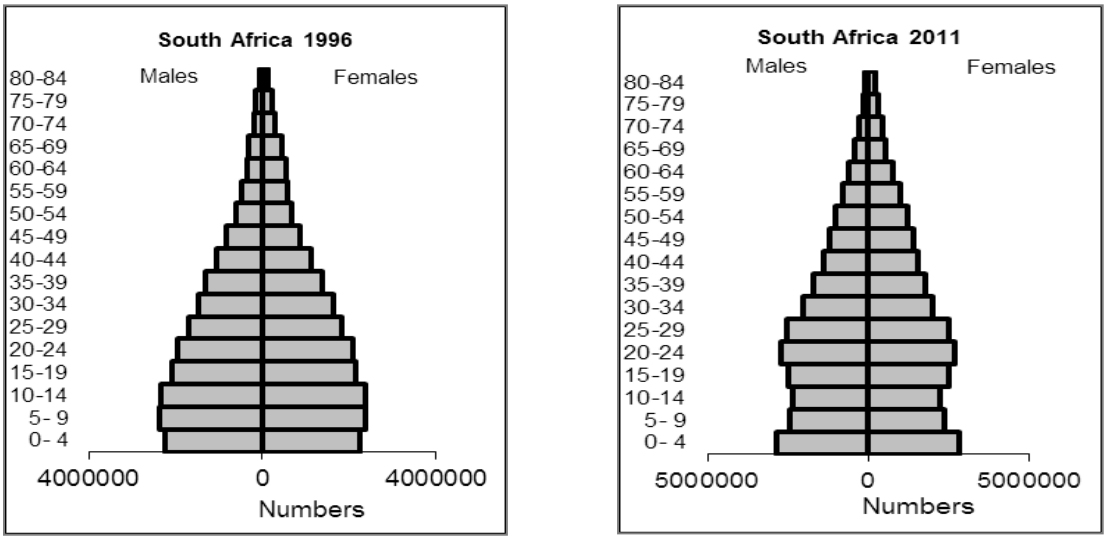


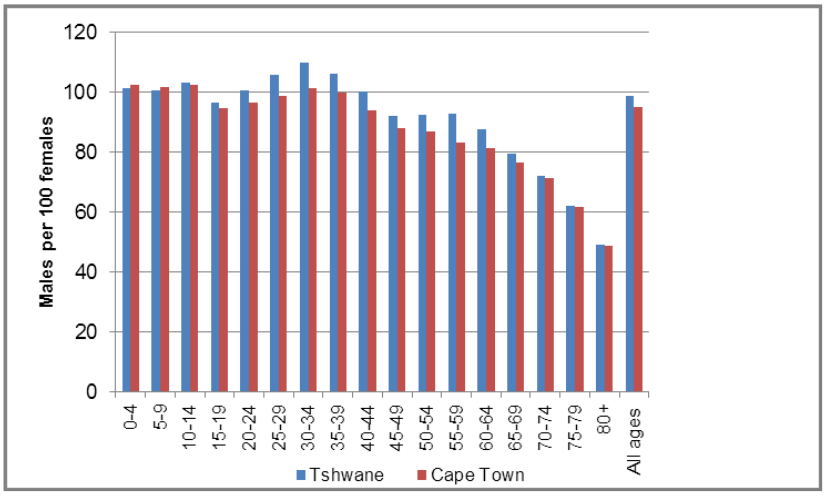
Figure 3: Population structure of the population of South Africa; 1996 and 2011



2.1 Sex ratios and median ages

Sex ratio is one of the key measures of the sex composition of a population. It gives the number of males for every 100 females. Ratios above 100 indicate the predominance of males over females; conversely, when it is lower than 100, the reverse is true. Generally, sex ratios at birth are high and decrease gradually as age increases due to longer female longevity. Figure 4 shows sex ratios by age for the City of Tshwane and the City of Cape Town based on the 2011 population census.

Figure 4: Sex ratios of the City of Tshwane and the City of Cape Town, 2011

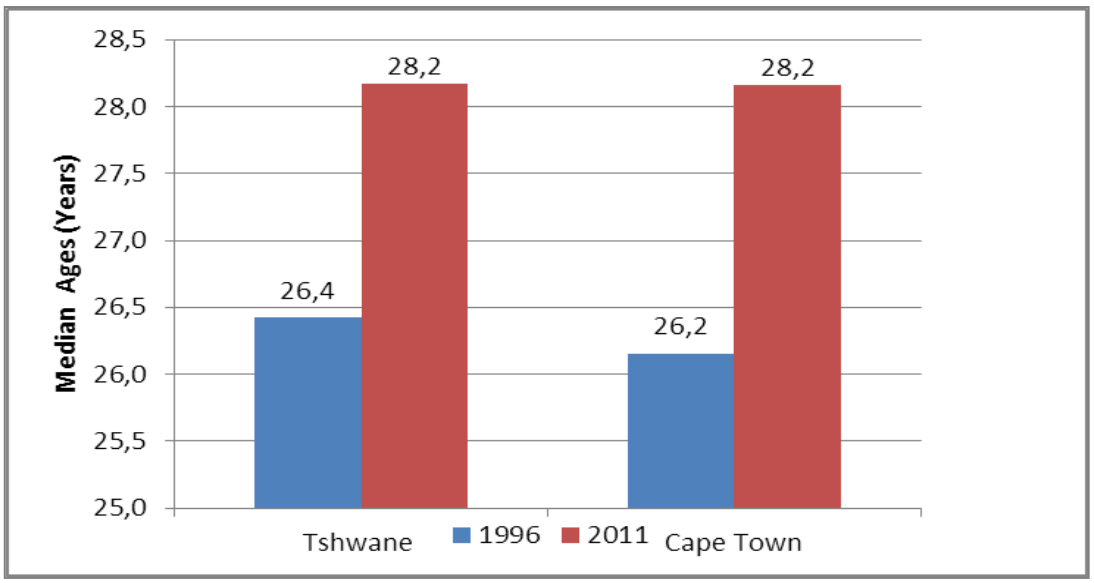


The overall sex ratio in the City of Tshwane was 99 males per 100 females in 2011, while that of the City of Cape Town was 95 males per 100 females, indicating that both populations were predominantly female. This is consistent with the lower sex ratios observed for the South African population in all censuses since 1996. Sex ratios at birth in South Africa are normally estimated at 102 males per 100 females. The ratios at birth are 101 and 102 for the City of Tshwane and the City of Cape Town in 2011 respectively (not shown in the analysis).

The general pattern depicted in Figure 4 shows higher sex ratios for the City of Tshwane at ages 15–69 years, while above age 70, the ratios of the two metros were almost the same. The City of Tshwane had sex ratios above 100 between the ages 20–24 and 40–44, the highest being sex ratios for age group 30–34 at 110 males per 100 females. This might be the result of in-migration of mainly males in these age groups. Above age 44, the ratios in both metros decreased to below 100, but in the City of Tshwane the ratios remained higher than those in the City of Cape Town. The City of Cape Town had lower sex ratios between ages 15–29. At national level, lower sex ratios were observed at ages 25–34 from the Census 2011 results. Phillips and Anderson (2001) attributed lower sex ratios in censuses to the undercount of young adult men relative to young adult women, based on the 1996 census.

Figure 5 shows the median ages of the two populations in 1996 and 2011. The median ages of the two metros were estimated at 26,2 years for the City of Tshwane and 26,4 years for the City of Cape Town in 1996. These figures increased to 28,2 years for both metros in 2011, which was higher than the 25,0 years estimated for the country during the same year.

Figure 5: Median ages of the population for the City of Cape Town and the City of Tshwane, 1996 and 2011



3. Number of deaths[1]

Table 1 shows the number of deaths in the City of Cape Town, the City of Tshwane and South Africa from 1997 to 2011. In 2011, 26 466 deaths were recorded in the City of Cape Town, compared to 19 574 deaths that were recorded in the City of Tshwane. As is the case in the rest of the country, both cities had a decrease in the number of deaths from those observed in 2010, with a higher decrease observed in the City of Cape Town (5,6%) than in the City of Tshwane (1,7%). Both cities recorded percentages that were lower than the decrease recorded at national level (7,7%). Even though the number of deaths in the whole country started declining steadily since 2007, consistent declines in the two metros started in 2008.

[1]Both the 1996 South African, City of Cape Town and City of Tshwane populations were moved to 1997 mid-year to facilitate this analysis.

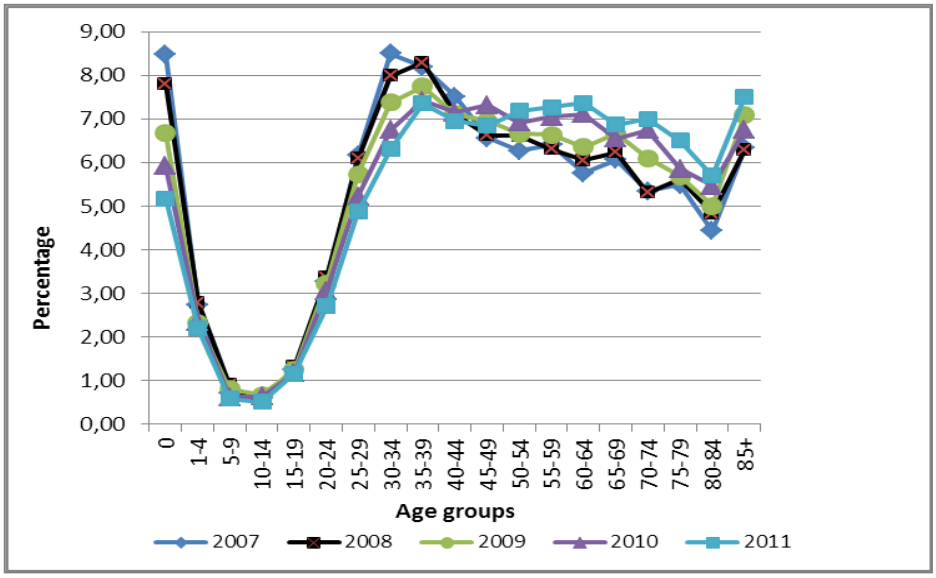
Table 1: Number of deaths by year of death and area, 1997–2011

Year of death	South Africa	City of Cape Town	City of Tshwane
1997	317 195	19 730	14 969
1998	365 909	21 933	16 976
1999	381 882	22 407	16 685
2000	416 442	23 089	17 750
2001	455 188	24 944	19 396
2002	502 370	26 404	21 008
2003	557 034	26 690	23 168
2004	577 084	26 476	24 533
2005	598 354	27 855	25 095
2006	613 128	27 593	27 506
2007	604 406	29 321	27 077
2008	595 681	29 534	27 308
2009	579 978	28 903	26 887
2010	547 724	28 041	19 921
2011	505 803	26 466	19 574

Figures 6 and 7 show the age patterns of death between 2007 and 2011 for the City of Tshwane and the City of Cape Town, respectively. The typical pattern of death is the one where the number/proportion of deaths starts low and increases by age. For the two cities, mortality starts high at childhood ages, and then declines temporarily before increasing in the young adult to adult ages (from ages 20–24 to higher ages). This pattern (where mortality is higher at young adult ages) was more pronounced for the City of Tshwane than for the City of Cape Town.

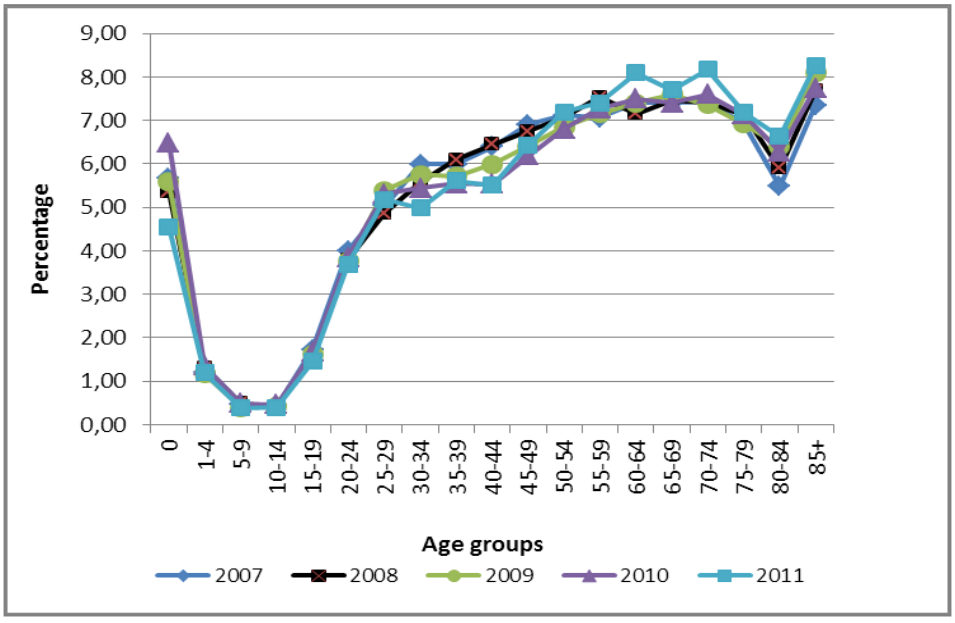
The obvious higher proportion of deaths at ages 20–39 years observed during 2007 to 2009, decreased significantly from 2010 in the City of Tshwane. Where deaths used to peak at age group 30–34 in 2007, the peak has moved to the 35–39 age group in 2011. The biggest decrease was for age 0, where the number of deaths decreased at a rate of 17,0% between 2007 and 2011. For ages 25–44, the annualised rate of decrease was 11% between the two points. The lowest decrease was among ages 1–19, where the number of deaths remained lowest even during the time of rising mortality. Most important is that the data indicate that the age pattern of deaths is starting to return to normal, where the levels are highest at older ages and lower at younger ages. The most notable decrease for the City of Tshwane occurred between 2009 and 2010, where there was a decrease of 26% in the number of deaths.

Figure 6: Percentage distribution of deaths by age and year of death, City of Tshwane, 2007–2011



Deaths in the City of Cape Town also increased with age, but were consistently higher at older ages (55 years and older) than at young adult ages, even in 2007. The decrease between 2007 and 2011 maintained a pattern where deaths at older ages were higher than deaths at young adult ages. Deaths for those aged 0 decreased at a rate of 15%between 2007 and 2011, which constitutes a level slightly lower than that observed for the City of Tshwane. This is the biggest decrease by age in the City of Cape Town. The highest decrease in the City of Cape Town occurred between 2008 and 2009 when the number of deaths decreased by 39%.

Figure 7: Percentage distribution of deaths by age and year of death, City of Cape Town, 2007–2011

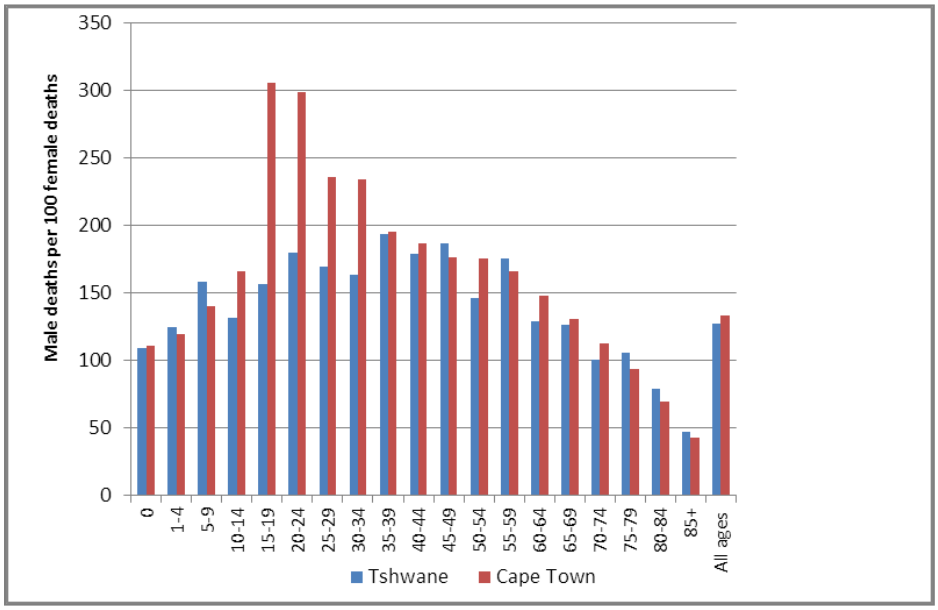


3.1 Sex ratios at death; 1997 and 2011

Sex ratios at death show the differences in the number of deaths between males and females. Ratios above 100 indicate higher male deaths than female deaths, while ratios below 100 indicate the opposite. Shryock *et al* (1976) note that sex ratios at death vary more widely across countries than sex ratios at birth. The authors denote a population with sex ratios above 125 as high, those between 105 and 125 as intermediate while ratios between 100 and 105 as low.

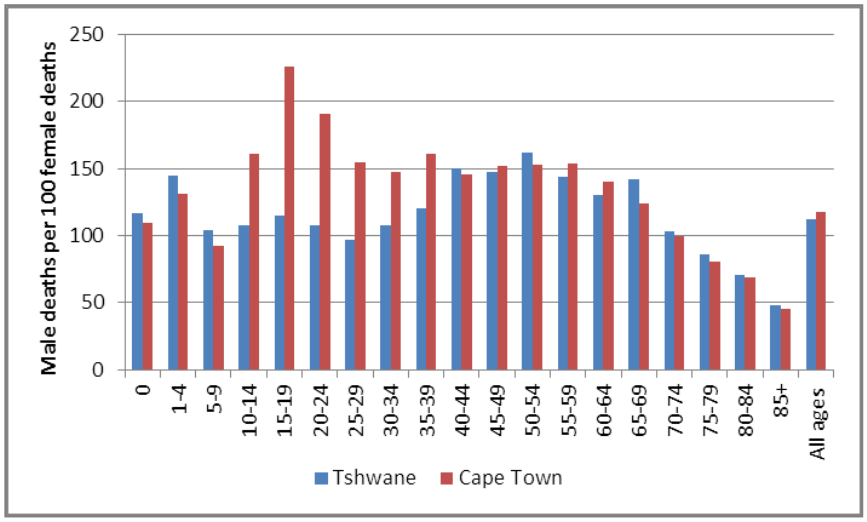
Figures 8 and 9 show sex ratios at death for the City of Cape Town and the City of Tshwane in 1997 and 2011. Total sex ratios at death for the two metros were above 100 for both years. Both cities had high ratios (above 125) in 1997 at 134 and 127 respectively; these decreased to 117 and 112 (intermediate) in 2011. This decrease indicates some improvement in the mortality rates for males as shown in the Appendices A1 and A2. Age-specific ratios show a typical pattern, where they are higher at younger ages and taper off at older ages, which is indicative of excess female mortality at older ages.

Figure 8: Sex ratios at death for the City of Tshwane and the City of Cape Town, 1997



The City of Cape Town had a higher overall sex ratio at death at both points (134 and 117 respectively in 1997 and 2011), compared to the City of Tshwane (127 and 112 respectively in 1997 and 2011) . The 1997 ratios in the City of Cape Town were higher at age groups 10–14 to 40–44, with the highest observed among age groups 15–19and 20–24 (300 and 298 male deaths per 100 female deaths, respectively). These ratios decreased to 226 and 190 respectively in 2011, but remained the highest as compared to other age groups. In the City of Tshwane, higher ratios were observed at ages 20–24, 35–39 and 45–49, estimated at 180, 194 and 187, respectively. In 2011, ages 40–54 had ratios that ranged from 150 in age group 40–44 and 162 at ages 50–54.

Figure 9: Sex ratios at death for the City of Tshwane and the City of Cape Town, 2011



3.2 Median age at death

The median age at death is the age at which exactly half of the deaths occur in a given time period, that is, one half of the deaths occurred below that age and another half above that age. Figure 10 shows trends in the median ages of death for the City of Cape Town and the City of Tshwane in 1997, 2007 and 2011. Median ages of death were generally higher in the City of Cape Town across the three points. They decreased for the two metros in 2007, but increased for both in 2011. This is the period (up to 2007) that corresponds to the higher mortality associated with HIV deaths in the country. As is the case in most populations, median ages of death were higher for females than for males in the two metros. The biggest difference in the median age of death between the two metros was in the median age of female deaths. There was an 8,1 years' difference between the median age of death for females in the City of Tshwane and in the City of Cape Town in 2011, having decreased from a difference of 14,2 years in 2007.

The recovery in mortality was still not at the level observed in 1997. For instance, in 1997 on average, females in the City of Tshwane died at 60,5 years of age. This decreased to 47,7 in 2007 before increasing again to 56,6 years in 2011. Figure 10 further shows that in 2011, there was a difference of four years between the two metros and a more pronounced eight years' difference between females in the two metros.

Figure 10: Median age at death for the City of Cape Town and the City of Tshwane, 1997, 2007 and 2011

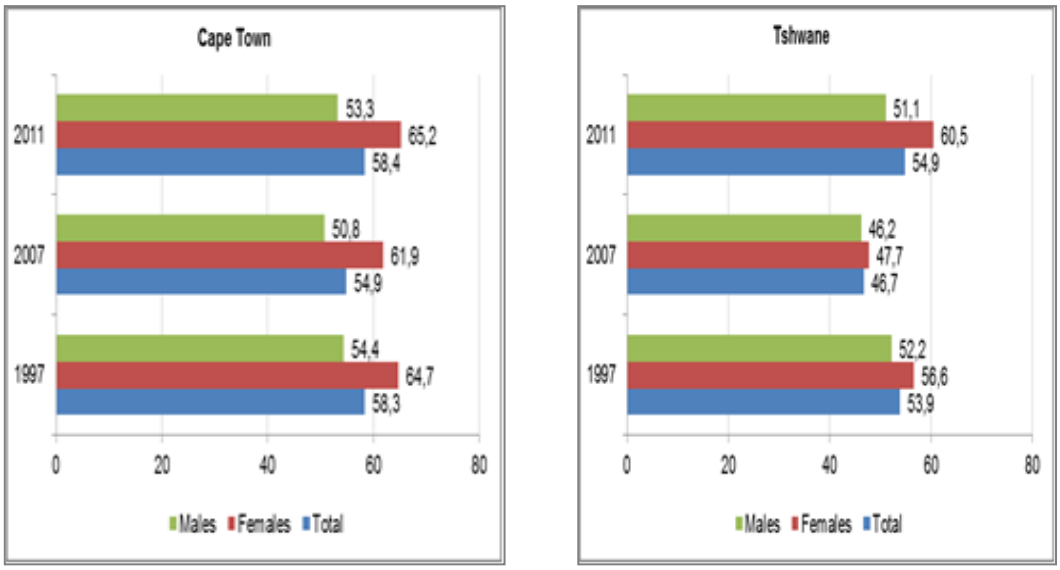
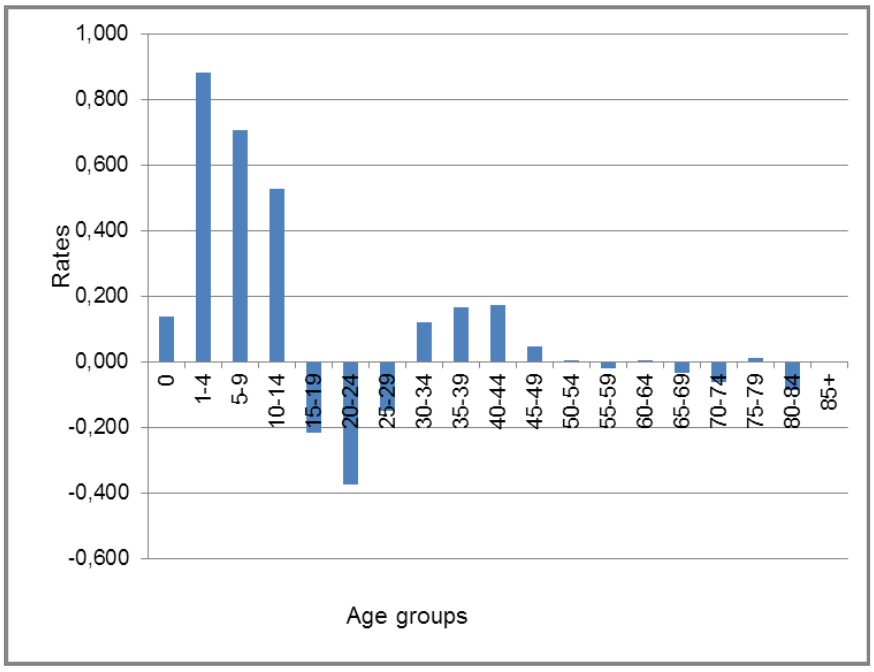


Figure 11 shows the relative death rate in the City of Tshwane compared to the rate in the City of Cape Town by age group for 2011. Any value above zero indicates that the death rate in the City of Tshwane for any given age group was higher than the rate in the City of Cape Town for the same age group. A value below zero (negative value) means that the death rate for the City of Cape Town at that age was higher than the death rate in the City of Tshwane for the same age.

Figure 11: Relative death rates for the City of Tshwane and the City of Cape Town, 2011



It can be observed that across all age groups, save for age group 15–29 and at some older ages (specifically age groups 65–69, 70–74 and 80–84), mortality in the City of Tshwane was higher than that in the City of Cape Town. This advantage that the City of Cape Town had was highest between ages 0–14 and at ages 30–44 years. For those aged 15–29, the City of Cape Town death rates became higher than those for the City of Tshwane. This factor is also observed for ages 55–59, 65–69, 70–74 and the other subsequent older ages.

4. Causes of death

4.1 Natural and non-natural causes of death

The results on causes of death are based exclusively on the underlying causes[2] of death. Causes of death are divided into two groups: natural and non-natural. Non-natural causes of death cover all deaths that were not attributable, or may not have been attributable, to natural causes (Stats SA, 2014).

Figure 12: Percentage of deaths due to natural and non-natural causes of death, City of Cape Town and City of Tshwane, 1997, 2007 and 2011

Figure 12 shows the percentage distribution of deaths by natural and non-natural causes of death for the City of Cape Town and the City of Tshwane for the years 1997, 2007 and 2011. The highest percentage of deaths due to non-natural causes was observed in 1997 for both metros, where the non-natural causes of death accounted for 20,6% of the total deaths. The highest percentage of deaths due to natural causes for both cities was observed in 2011 at 88,2% and 90,8%, respectively.

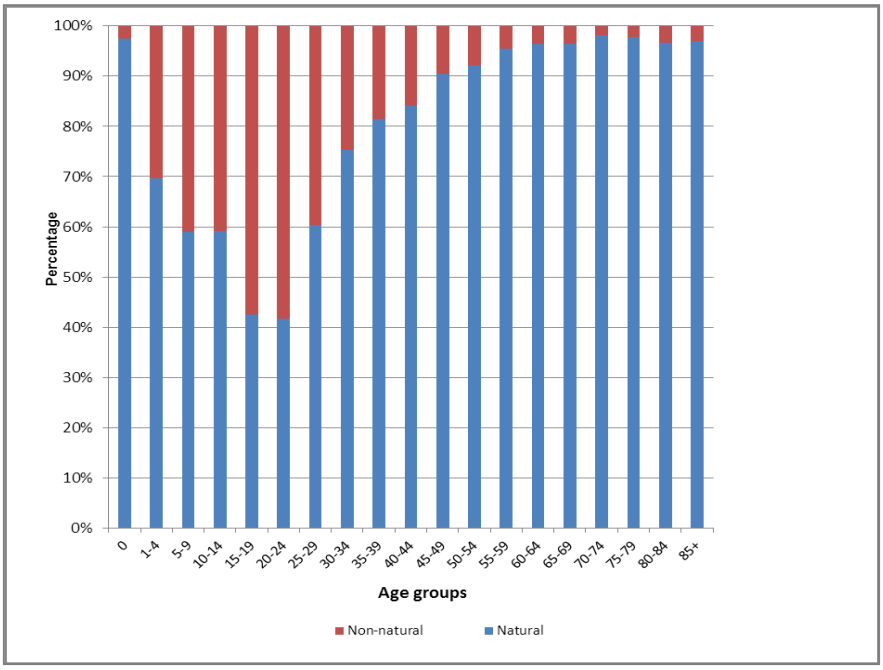
The City of Tshwane had a higher proportion of deaths due to natural causes in both 2007 and 2011 (89,3% and 90,8%) compared to the City of Cape Town. Conversely, the City of Cape Town had a higher proportion of non-natural causes of death at similar points (14,9% for 2007and 11,8% for 2011).

[2] *Underlying cause of death* (previously known as primary cause) is the disease or injury that initiated the sequence of events leading directly to death; or the circumstances of the accident or violence which produced the fatal injury (WHO: 2009).

Figures 13 and 14 show the percentage distribution of deaths by natural and non-natural causes of death by age for the City of Cape Town and the City of Tshwane in 2011. For the City of Cape Town, the highest percentage of deaths due to non-natural causes is noted in the age groups 15–19 and 20–24 (see Figure 12). These two age groups accounted for over 50% of deaths in these age groups (57,6% and 58,3% respectively).It is only in these two age groups where the percentage of non-natural causes of death was higher than that of natural causes. The high proportion of non-natural causes in this group was followed by those aged 5–9 and 10–14 (at around 41% each).

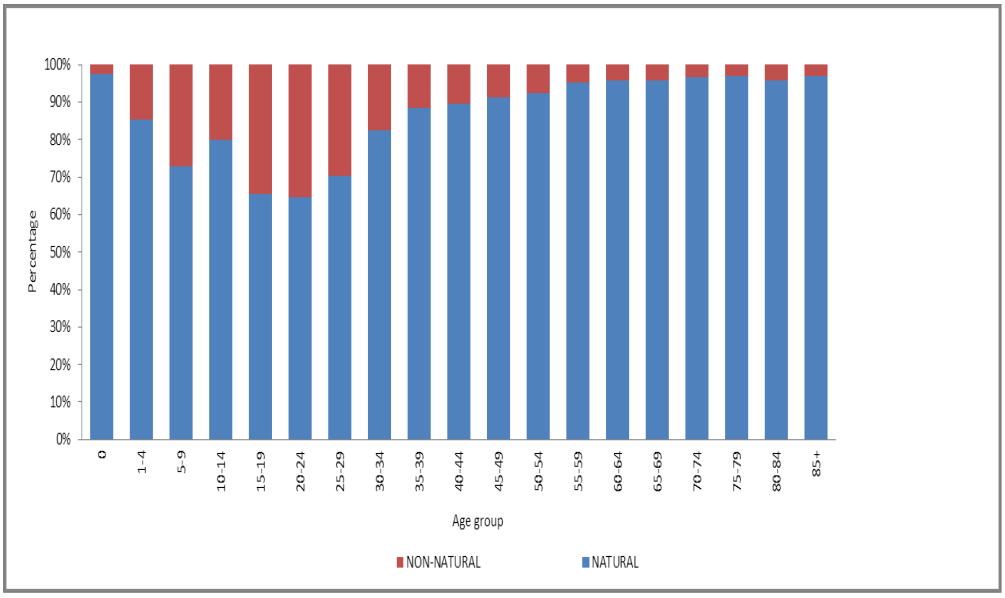
At older ages (60+), the bulk of deaths were due to natural causes with only 3% and less of the total deaths in the older ages resulting from non-natural causes of death.

Figure 13: Percentage distribution of natural and non-natural causes of death by age, City of Cape Town, 2011



Similar to the City of Cape Town, the highest percentage of deaths due to non-natural causes is depicted in age groups 15–19 and 20–24 (at 34,5% and 35,3%) in the City of Tshwane. The lowest percentage of deaths due to non-natural deaths was at age 0 (2,4%). A comparison between the City of Cape Town and the City of Tshwane shows that the proportion of deaths due to non-natural causes at each age was higher in the City of Cape Town. Even at younger ages such as age groups 1–4 and 5–9, the City of Cape Town still had a higher proportion of deaths due to non-natural causes than the city of Tshwane. For instance, at ages 1–4, 30,4% of deaths were due to non-natural causes in the City of Cape Town, while this figure was only 15,0% for the City of Tshwane for the same age group.

Figure 14: Percentage distribution of natural and non-natural causes of death by age, City of Tshwane, 2011



4.2 Non-natural causes of death

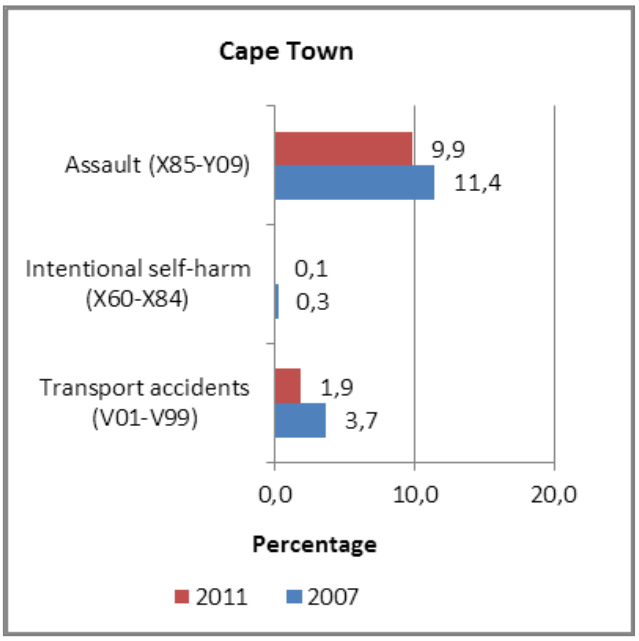
Table 2 shows a comparison of the extent of non-natural causes of death in the two cities for 2011. The City of Cape Town had a higher number of deaths due to non-natural causes (at 3 134 compared to 1 802 for the City of Tshwane). *Other external causes of accidental injury* contributed the highest percentages in both cities, with the City of Cape Town at 55,4% and the City of Tshwane at 80,5%. *Other external causes of accidental injury* include causes such as accidental exposure to other and unspecified factors, exposure to smoke, fire and flames and other accidental threats to breathing, among others. For the City of Cape Town, the second biggest group was death due to *assault*, accounting for 21,9%, followed by non-natural deaths due to *events of undetermined intent (10,5%).* About 8,2% of non-natural deaths in the City of Tshwane were due to *events of undetermined intent,* followed by deaths due to *transport accidents* (5,0%).

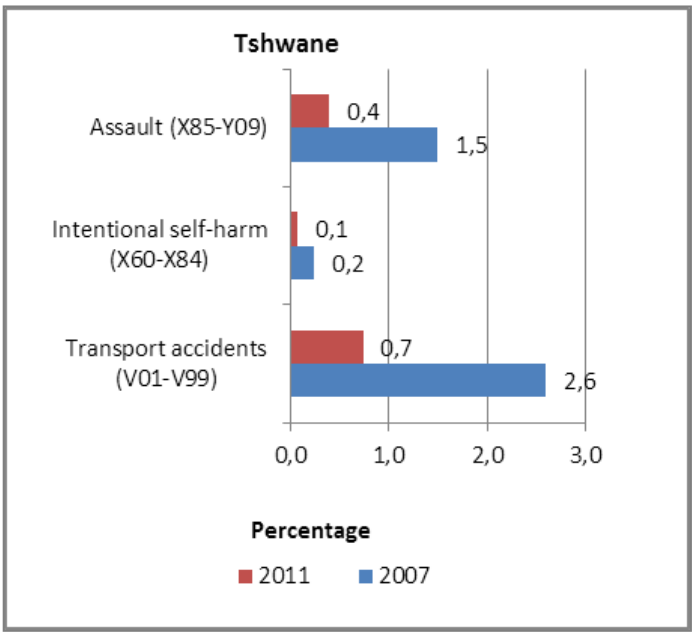
Table 2: Total number and percentage of deaths due to non-natural causes; City of Cape Town and City of Tshwane, 2011

Causes of death (based on ICD-10)	City of Cape Town		City of Tshwane	
	No.	%	No.	%
Transport accidents (V01-V99)	232	7,4	91	5,0
Other external causes of accidental injury (W00-X59)	1 736	55,4	1 451	80,5
Intentional self-harm (X60-X84)	21	0,7	3	0,2
Assault (X85-Y09)	687	21,9	30	1,7
Event of undetermined intent (Y10-Y34)	329	10,5	148	8,2
Complications of medical and surgical care (Y40-Y84)	123	3,9	76	4,2
Sequelae of external causes of morbidity and mortality (Y85-Y89)	6	0,2	3	0,2
Total	**3 134**	**100,0**	**1 802**	**100,0**

The age group 15–29 was responsible for a higher proportion of deaths due to non-natural causes at national level (15,0%). Figure 15 presents the percentage distribution of deaths due to assault, intentional self-harm and transport accidents in this age group for the City of Cape Town and the City of Tshwane for 2007 and 2011. For the City of Cape Town, about 9,9% of deaths in this age group were due to *assault*, followed by *transport accidents* (1,9%) in 2011. These proportions constitute a decrease from 11,4% and 3,7% observed in 2007 for the city. In the City of Tshwane, the proportion of deaths due to *transport accidents* (0,7%) was higher than the proportion of deaths that resulted from *assault* (0,4%), but both were lower than the proportions for the City of Cape Town. In both metros, less than 1% of deaths were due to *intentional self-harm*.

Figure 15: Percentage distribution of selected non-natural causes of death at ages 15–29, 2007 and 2011





4.3 Natural causes of death

Table 3 shows the ten leading natural causes of death in the City of Cape Town and the City of Tshwane in 2011. The leading cause of death in the City of Cape Town was *diabetes mellitus*, accounting for 6,7% of deaths, followed by *tuberculosis* in the second rank at 6,6% and *ischaemic heart disease* as the third leading cause at 6,0%. For the City of Tshwane, the leading natural cause of death was *tuberculosis* at 8,2%, followed by *other forms of heart disease* at 7,0% with *influenza and pneumonia* (6,0%) occupying the third place. *Human immunodeficiency virus [HIV] disease* was the fourth leading cause of death in the City of Cape Town (5,7%), while it occupied the tenth position in the City of Tshwane (2,6%).

Table 3: The ten leading natural causes of death: City of Cape Town and City of Tshwane, 2011

Causes of death (based on ICD-10)	City of Cape Town			City of Tshwane		
		No.	%		No.	%
Diabetes mellitus (E10-E14)	1	1 764	6,7	5	950	4,9
Tuberculosis (A15-A19)	2	1 752	6,6	1	1 601	8,2
Ischaemic heart diseases (I20-I25)	3	1 601	6,0	7	721	3,7
Human immunodeficiency virus [HIV] disease (B20-B24)	4	1 513	5,7	10	512	2,6
Cerebrovascular diseases (I60-I69)	5	1 425	5,4	4	1 124	5,7
Malignant neoplasm of digestive organs (C15-C26)	6	1 147	4,3	...	...	...
Hypertensive diseases (I10-I15)	7	1 022	3,9	6	784	4,0
Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	8	1 014	3,8	...	...	...
Chronic lower respiratory diseases (J40-J47)	9	984	3,7	...	...	...
Other forms of heart disease (I30-I52)	10	767	2,9	2	1 376	7,0
Influenza and pneumonia (J09-J18)	...	...	...	3	1 175	6,0
Intestinal infectious diseases (A00-A09)	...	...	...	8	608	3,1
Certain disorders involving the immune mechanism (D80-D89)	...	...	...	9	519	2,7
Other natural causes		10 343	39,1		8 402	42,9
Non-natural causes		3 134	11,8		1 802	9,2
All causes		**26 466**	**100,0**		**19 574**	**100,0**

Looking at the percentage distribution of deaths due to communicable diseases shown in Figure 16 for the two cities in 2011, it is observed that the City of Tshwane had a higher proportion of deaths due to communicable diseases compared to the City of Cape Town. It was only *human immunodeficiency virus [HIV] disease* that was reported in higher proportions in the City of Cape Town than in the City of Tshwane. In the City of Tshwane, the top three leading communicable diseases, in order of importance, were *tuberculosis*; *influenza and pneumonia;* and *intestinal infectious diseases*. The three most common communicable diseases in the City of Cape Town were *tuberculosis; human immunodeficiency virus [HIV] disease;* and *influenza and pneumonia.*

Figure 16: Percentage of deaths by selected communicable diseases in the City of Cape Town and the City of Tshwane, 2011

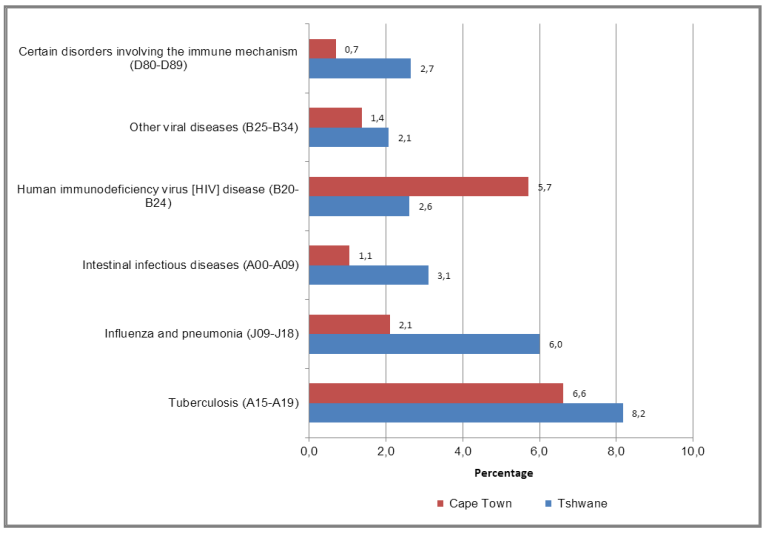
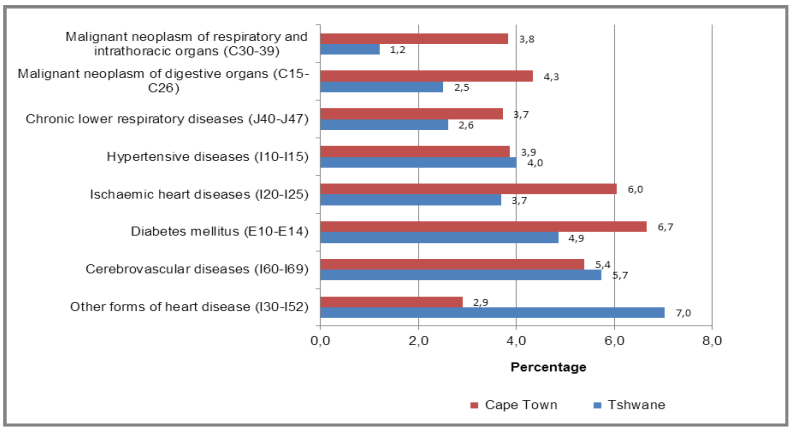


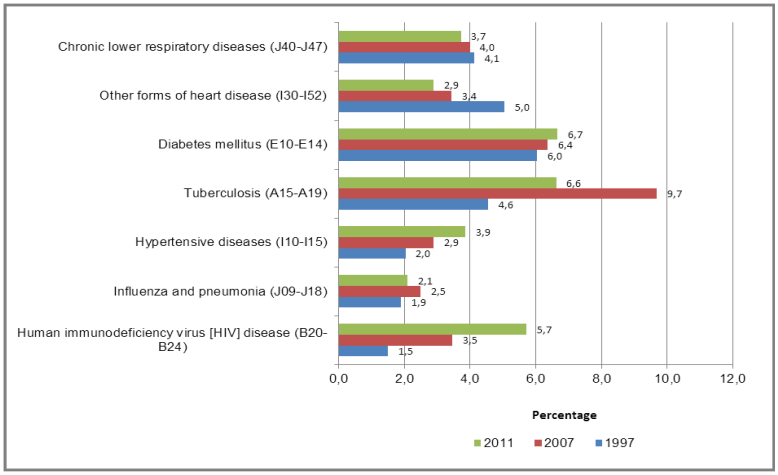
Figure 17 shows the percentage of deaths due to non-communicable diseases for the two cities. Non-communicable diseases were more prevalent in the City of Cape Town than in the City of Tshwane. It was only *other forms of heart disease* and *cerebrovascular diseases* that were more prominent in the City of Tshwane than in the City of Cape Town. About 7,0% of deaths in the City of Tshwane compared to 2,9% in the City of Cape Town were due to *other forms of heart disease*. *Diabetes mellitus, ischaemic heart diseases and cerebrovascular diseases* were the three most common non-communicable diseases in the City of Cape Town in 2011, responsible for a total of 18,0% of deaths. For the City of Tshwane, the three top non-communicable diseases were *other forms of heart disease*; *cerebrovascular diseases;* and *diabetes mellitus*, which together accounted for 17,6% of deaths.

Figure 17: Percentage of deaths by selected non-communicable diseases in the City of Cape Town and the City of Tshwane, 2011



Figures 18 and 19 show trends in selected leading causes of death in the City of Cape Town (Figure 18) and the City of Tshwane (Figure 19) for 1997, 2007 and 2011. These trends in causes of death can be divided into three groups: those that declined consistently between the three periods; those that increased consistently; and those that increased or decreased in 2007 and have started to increase or decrease again in 2011.

Figure 18: Percentage of deaths for selected natural causes of death for the City of Cape Town, 1997, 2007 and 2011

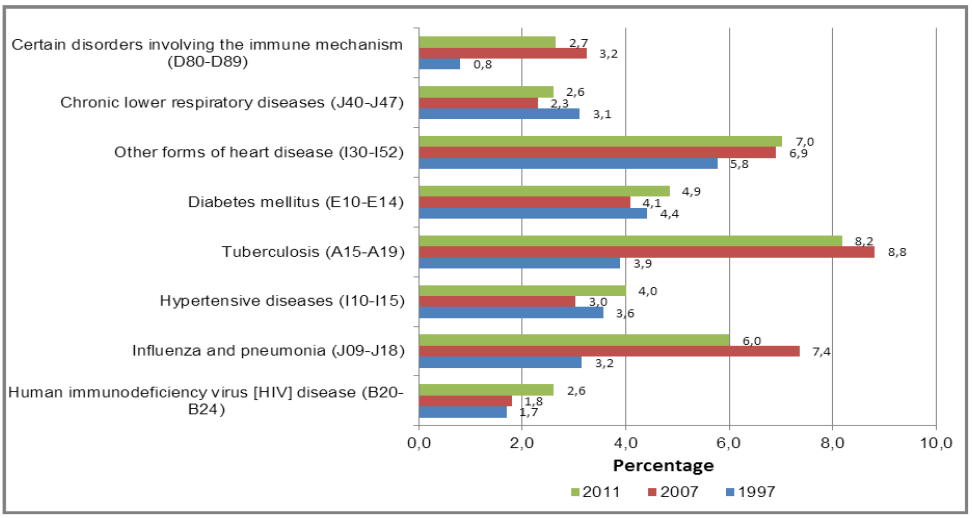


The first group is composed of the number of deaths due to *chronic lower respiratory diseases* and *other forms of heart disease*, which both decreased steadily between 1997 and 2011 in the City of Cape Town. The higher decrease was in the proportion of deaths resulting from *other forms of heart disease,* which declined by 2,0% between 1997 and 2011.

The proportions of deaths increased consistently between the three periods for deaths due to *diabetes mellitus*, *hypertensive diseases* and *human immunodeficiency virus [HIV] disease*. Even though the proportions of persons who died from *diabetes mellitus* were higher at all three points, the increase in deaths due to *HIV diseases* was remarkable over the three periods (from 1,5% in 1997 to 5,7% in 2011). This increase may also be attributed to better reporting of deaths due to *HIV diseases* over time.

The last group is for those causes where there was an upwards or downwards reversal from 2007. They include *influenza and pneumonia*, which increased between 1997 and 2007, but started to decline in the latter period (from 2,5% in 2001 to 2,1% in 2011). The biggest reversal was in the proportion of deaths due to *tuberculosis*, which increased from 4,6% in 1997 to 9,7% in 2007, but decreased again in 2011 to 6,6%.

Figure 19: Percentage of deaths for selected natural causes of death for the City of Tshwane, 1997, 2007 and 2011



In the City of Tshwane, there was no consistent decrease observed for the selected causes of death over time. However, there was a consistent upward trend from 1997 in two causes of death, namely *HIV disease* and *other forms of heart disease*. The largest increase in the proportion of deaths was due to *other forms* of *heart disease* (from 5,8% in 1997 to 6,9% in 2007), with a slight increase in 2011 (7,0%).

The most notable change in the City of Tshwane was a reversal of trends between 2007 and 2011. This group consists of those causes where there was a reversal downwards or upwards. Those declining from 2007 levels include deaths due to *influenza and pneumonia* (from 7,4% in 2007 to 6,0% in 2011). The proportion of deaths due to *tuberculosis* also decreased from 8,8% in 2007 to 8,2% in 2011.

Lastly, the number of deaths associated with *certain disorders involving the immune mechanism* increased from less than 1% in 1997 to 3,2% in 2007, and decreased to 2,7% in 2011. Causes of death associated with *hypertensive diseases* decreased from 3,6% in 1997 to 3,0% in 2007,and increased again in 2011 to 4,0%. This trend was also true for deaths due to *diabetes mellitus* and *chronic lower respiratory diseases*.

5. Summary

This report undertook a comparative analysis of the population structure, deaths and causes of death in the City of Cape Town and the City of Tshwane, based on data from the censuses of 1996 and 2011 and mortality and causes of death data focusing on the years 1997, 2007 and 2011. The results confirm a decline in the number of deaths that were observed in the country since 2007.

As is the case at national level, most deaths in the City of Cape Town and the City of Tshwane were due to natural causes compared to non-natural causes. The percentage distribution of deaths by natural and non-natural causes of death over the periods 1997, 2007 and 2011 shows higher but declining proportions of deaths due to non-natural causes of death, and the reverse as far as deaths to natural causes are concerned for both cities. The City of Cape Town had a higher percentage of deaths due to non-natural causes than the City of Tshwane. This was concentrated more at the younger ages of 5–29 years.
Assault and *transport accidents* contributed about 10% to non-natural causes of deaths in the City of Cape Town in 2011. This figure was a decline from what was observed in 2007. These proportions were higher than those obtained in the City of Tshwane.

Of the ten leading natural causes of death in the City of Tshwane, half were due to non-communicable diseases. Eight of the top ten causes of death in the City of Cape Town were attributable to non-communicable diseases, with only two diseases (*tuberculosis and human immunodeficiency virus [HIV] disease)* as the leading communicable diseases. *Tuberculosis* was the leading cause of death due to communicable diseases in the two metros. Although the City of Cape Town had higher proportions of deaths due to *HIV disease* than the City of Tshwane, this is likely attributable to better reporting of causes of death in the City of Cape Town than in the City of Tshwane. *Diabetes mellitus* was the leading cause of death as a result of non-communicable diseases in the City of Cape Town, and also the number one overall leading cause of death in the city. *Other forms of heart disease* was a leading cause in the City of Tshwane, and the proportion of deaths due to this cause increased between 1997 and 2011.

6. References

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Appendices

Table A1: Age-specific death rates, City of Tshwane 1997, 2007 and 2011

	MALE			FEMALE		
	1997	2007	2011	1997	2007	2011
0	0.0278	0.0520	0.0183	0.0250	0.0479	0.0161
1-4	0.0028	0.0041	0.0023	0.0022	0.0036	0.0017
5-9	0.0012	0.0010	0.0006	0.0008	0.0008	0.0005
10-14	0.0012	0.0010	0.0005	0.0009	0.0009	0.0005
15-19	0.0022	0.0016	0.0011	0.0014	0.0017	0.0009
20-24	0.0041	0.0034	0.0015	0.0024	0.0033	0.0016
25-29	0.0046	0.0063	0.0028	0.0029	0.0069	0.0029
30-34	0.0058	0.0102	0.0045	0.0036	0.0089	0.0044
35-39	0.0076	0.0113	0.0065	0.0041	0.0090	0.0057
40-44	0.0094	0.0137	0.0081	0.0054	0.0094	0.0057
45-49	0.0127	0.0144	0.0101	0.0070	0.0096	0.0064
50-54	0.0157	0.0195	0.0129	0.0106	0.0114	0.0079
55-59	0.0252	0.0261	0.0165	0.0138	0.0166	0.0105
60-64	0.0324	0.0351	0.0229	0.0213	0.0215	0.0154
65-69	0.0465	0.0506	0.0328	0.0284	0.0325	0.0198
70-74	0.0673	0.0570	0.0438	0.0480	0.0435	0.0310
75-79	0.1001	0.1040	0.0624	0.0620	0.0688	0.0460
80-84	0.1369	0.1270	0.0804	0.0916	0.0969	0.0646
85+	0.1861	0.1724	0.1282	0.1675	0.1733	0.1129

Table A2: Age-specific death rates, City of Cape Town 1997, 2007 and 2011

	MALE			FEMALE		
	1997	2007	2011	1997	2007	2011
0	0.0231	0.0389	0.0156	0.0214	0.0372	0.0152
1-4	0.0015	0.0023	0.0012	0.0012	0.0020	0.0009
5-9	0.0008	0.0008	0.0004	0.0006	0.0007	0.0003
10-14	0.0007	0.0009	0.0004	0.0004	0.0006	0.0003
15-19	0.0028	0.0036	0.0019	0.0009	0.0015	0.0007
20-24	0.0046	0.0074	0.0034	0.0015	0.0035	0.0017
25-29	0.0050	0.0091	0.0041	0.0020	0.0056	0.0027
30-34	0.0058	0.0117	0.0047	0.0023	0.0072	0.0033
35-39	0.0072	0.0130	0.0063	0.0034	0.0077	0.0041
40-44	0.0088	0.0153	0.0071	0.0042	0.0089	0.0047
45-49	0.0118	0.0212	0.0101	0.0062	0.0110	0.0057
50-54	0.0163	0.0277	0.0133	0.0085	0.0147	0.0077
55-59	0.0235	0.0328	0.0182	0.0126	0.0188	0.0099
60-64	0.0337	0.0452	0.0252	0.0181	0.0267	0.0149
65-69	0.0444	0.0567	0.0344	0.0267	0.0398	0.0214
70-74	0.0612	0.0813	0.0457	0.0377	0.0568	0.0332
75-79	0.0850	0.1134	0.0601	0.0555	0.0871	0.0471
80-84	0.0759	0.1356	0.0908	0.0473	0.1024	0.0695
85+	0.1291	0.2708	0.1315	0.1208	0.2506	0.1275