

# Cape Town Mortality, 2001

## Part II

### An equity lens – lessons and challenges

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CITY OF CAPE  
TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

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## **Introduction**

There is a growing commitment by both the Provincial and Municipal Government structures to review explicitly the equity of service delivery. In the opening address of the Provincial Parliament, Premier Martinus van Schalkwyk, stressed that the year would be one of implementation and service delivery (van Schalkwyk, 2003) and spoke of the challenge to reduce poverty and inequality. At a meeting of the City Council in December 2002, the Council set as one of its objectives: to introduce and maintain a system of equitable services. In the Mayoral Budget speech (Mfeketo, 2003) on the 28 May 2003 Mayor Mfeketo said:

“Given the vast inequities that still exist in our City we have made it a specific objective to bring access to the benefits of urban life to all people in our City”.

The Provincial and the City Health Departments have both demonstrated their commitment to equitable service delivery by participating in a partnership - the Cape Town Equity Gauge Project - together with the School of Public Health, University of the Western Cape. The Equity Gauge Project aims to make visible the issue of health inequity through the development of an equity gauge- a monitoring tool - and to use this to advocate for more equity-based policies and budgets.

Through a consultative process with health sub-district managers equity has been defined as a concept of social justice. Equity is fairness, not equality (Whitehead, 1992). Sub-districts with greatest needs should have greater service provision than those with less need. In Cape Town the assessment of need has been derived from three types of data: socioeconomic indicators known to impact greatly on health, demography and health status. Morbidity and mortality data measure the latter. Internationally, mortality data have become the cornerstone of burden of disease studies. The mortality data analysed by the Medical Research Council (Groenewald *P et al*, 2003) allow us firstly, to investigate inequities in the burden of disease and secondly, to discuss the resource allocation implications that this has.

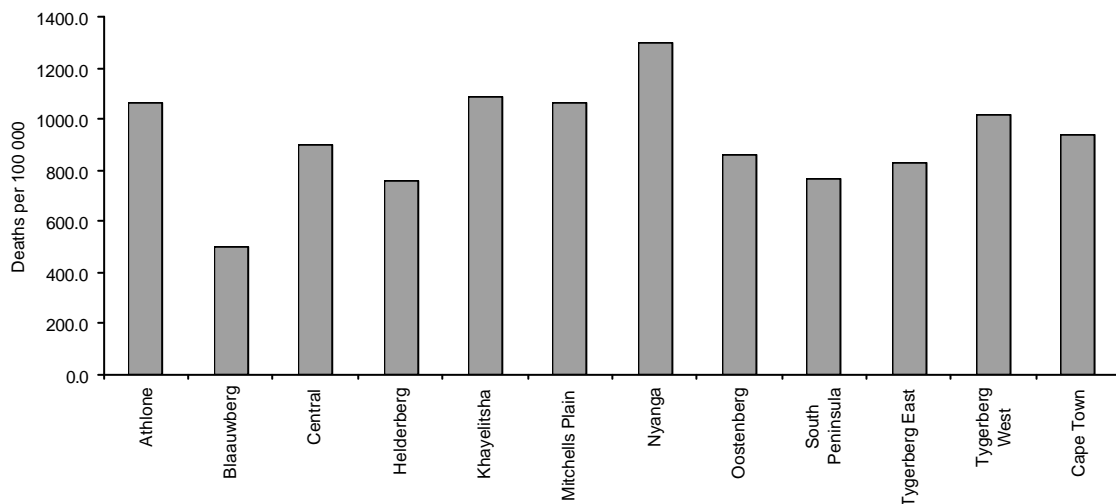
Our questions are:

- Do geographical inequities exist in the burden of disease across the 11 health sub districts of Cape Town?

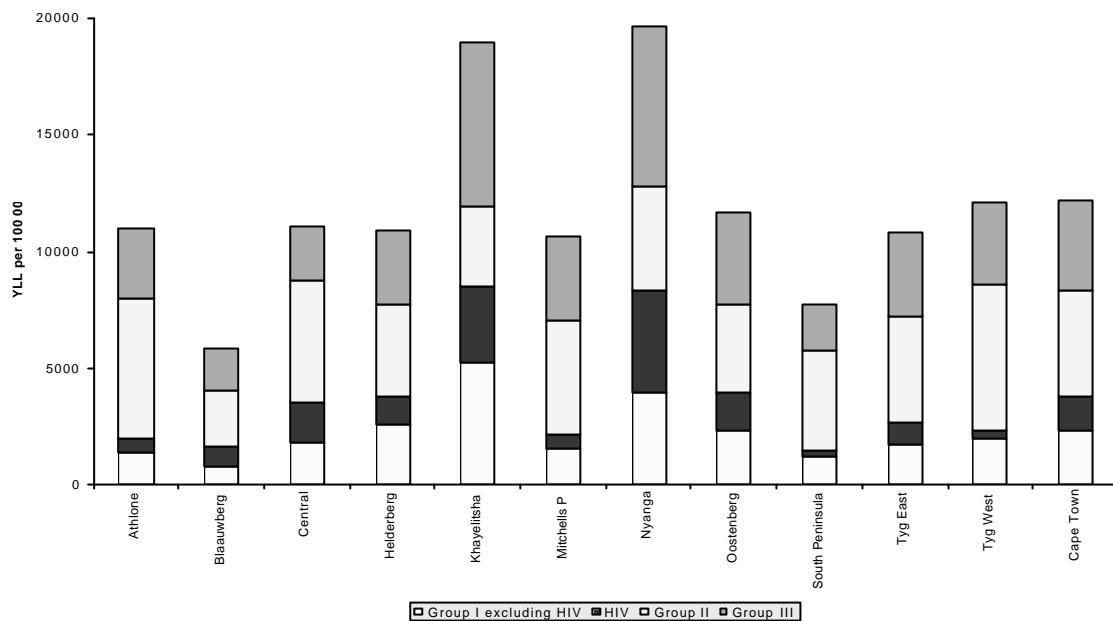
- Do inequities exist in the burden of disease between women and men?
- Are inequities in the burden of disease relatively more pronounced in particular age groups?
- If inequities do exist, then what policy and resource allocation implications does this have for Cape Town and health subdistrict managers?

## Mortality and premature mortality

Total mortality varies across Cape Town. While mortality is greatest in Nyanga and Khayelitsha, premature mortality is disproportionately higher in these two sub-districts. Premature mortality, calculated using Years of Life Lost (YLL), is of particular interest to public health managers who work to avoid premature and preventable mortality. It can be seen from figures 1 and 2 that the premature mortality rates (YLLs per 100000 population) do not correspond exactly to mortality rates and some of the differences between districts are highlighted. For example, while mortality is seen to be the greatest in Nyanga and Khayelitsha, premature mortality is disproportionately higher in these two sub-districts. The crude premature mortality rates experienced by Nyanga (19 619) and Khayelitsha (18 932) are approximately 1.5 times higher than in Cape Town overall (12 140).



**Figure 1: Age standardized mortality rates (per 100 000) in the sub-districts of Cape Town, 2001**



**Figure 2: Premature mortality (Years of Life Lost per 100 000) in the sub-districts of Cape Town, 2001**

To understand the causes of premature mortality better, a review of the distribution of the causes of mortality in each subdistrict is helpful. The Global Burden of Disease approach (Murray and Lopez, 1996) divides mortality into three broad groups of causes of death, which are useful for a broad assessment of the cause profile. Group I is the pre-transitional causes and includes communicable diseases, maternal causes, perinatal conditions and nutritional deficiencies. These are generally related to underdevelopment and lack of health services. Group II is the non-communicable causes, many of which are related to lifestyle and exposures to other risk factors. Group III is the injuries including homicide, road accidents, fire and suicide.

Premature mortality in a subdistrict such as Athlone, Blaauwberg, Mitchells Plain, South Peninsula, Tygerberg East or Tygerberg West is the result of a high proportion of Group II and III causes. It appears that the disproportionate burden of premature mortality in Nyanga and Khayelitsha is due to a quadruple burden of disease. They have higher than average burden of Group I (communicable diseases, maternal, perinatal and nutritional conditions), they have a significant burden due to Group II (non communicable diseases) and Group III (injuries) compared to the other sub-

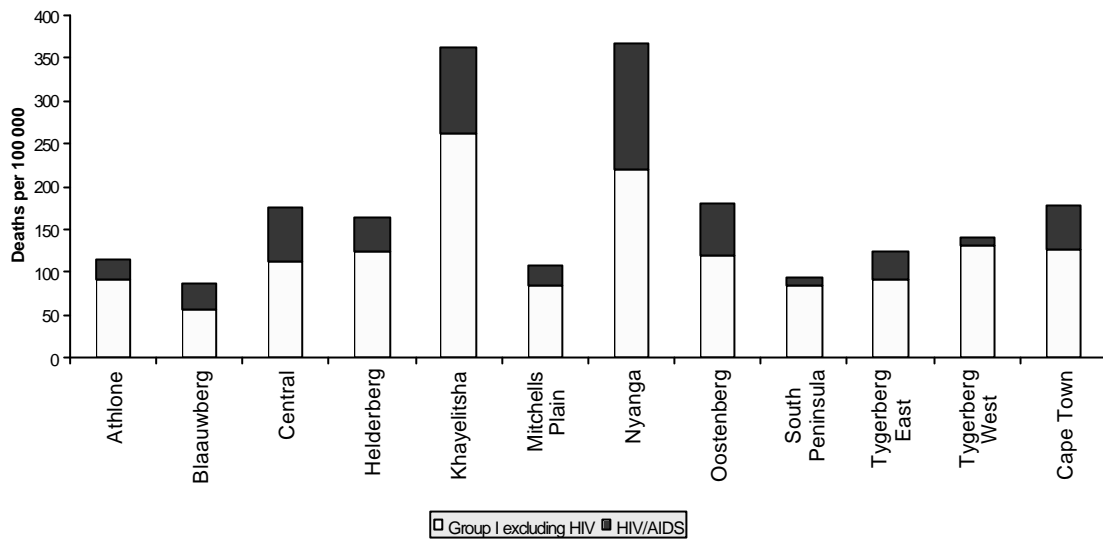
districts and lastly, they carry the additional burden of HIV/AIDS. Central, Helderberg and Oostenberg sub-districts also experience a quadruple burden of disease, though to a lesser extent.

While it is the review of premature mortality that has greatest relevance to public health professionals in the South African context, we will now turn to age standardised mortality as we disaggregate the three broad groups into more specific causes of death.

### **Pre-transitional causes of mortality (Group I)**

The geographic distribution of pre-transitional causes of mortality, including HIV, is shown in Figure 3. There are marked inequities. The age standardised mortality rate per 100 000 is highest in Nyanga (366) and Khayelitsha (363) and lowest in Blaauwberg (86), South Peninsula (94) and Tygerberg East (123). The burden of HIV mortality is borne predominantly by Khayelitsha and Nyanga. Lower respiratory infections and diarrhoeal disease also contribute to the inequitable distribution in this group.

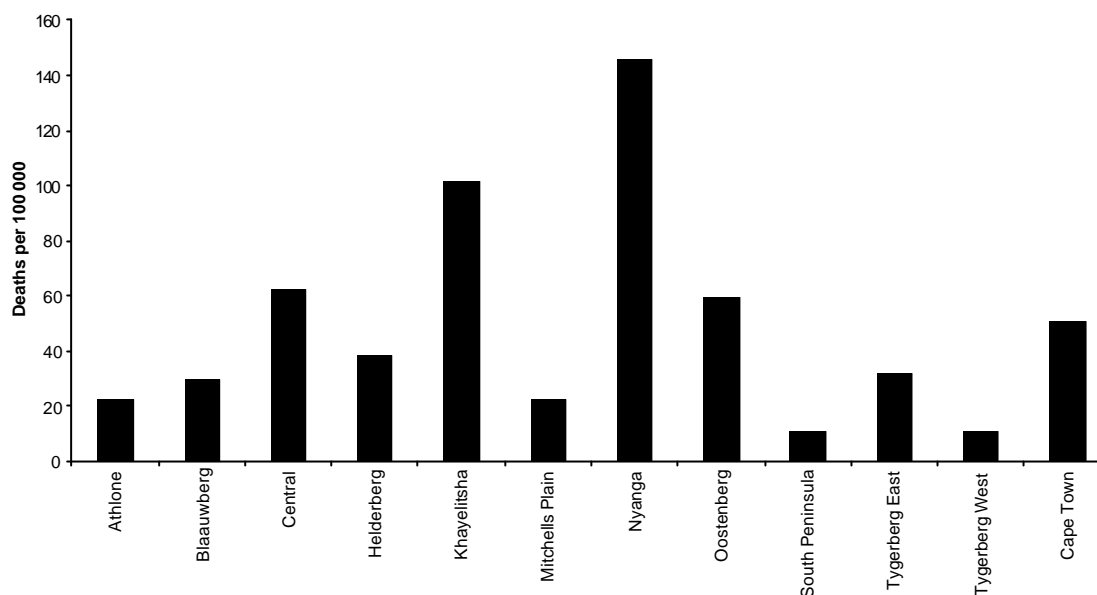




**Figure 3: Age standardized death rates (per 100 000) persons due to pre-transitional (Group 1) causes including HIV in the sub-districts of Cape Town, 2001**

## HIV/AIDS

HIV/AIDS is the leading cause of death amongst women in Cape Town (accounting for 9.3% of female deaths) and the third cause of death overall (accounting for 7.4% of all deaths). The geographic distribution of HIV mortality shows marked variation in the burden of this disease. These are borne out by the antenatal surveillance results (Department of Health, 2002) and must be prioritised for intervention by both the Provincial and City Health Departments. The age standardised mortality rate per 100 000 is highest in Nyanga (146) and Khayelitsha (102) and lowest in South Peninsula (11), Tygerberg West (11) and Athlone (22).

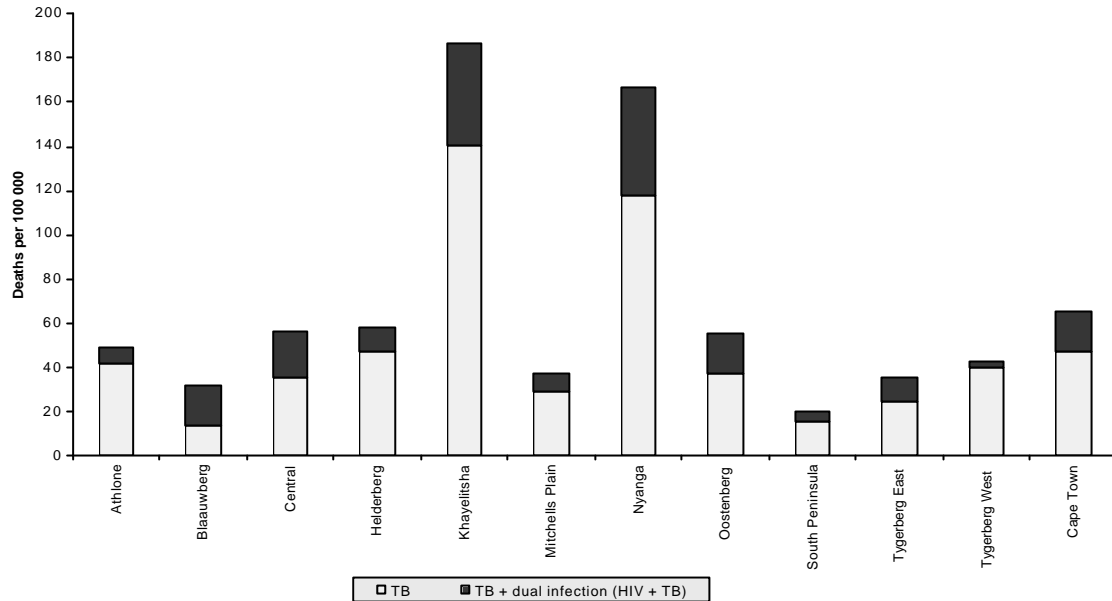


**Figure 4: Age standardized death rates due to HIV/AIDS (per 100 000) persons in the sub-districts of Cape Town, 2001**

## Tuberculosis

Where both tuberculosis and HIV are noted as causes of death on the death certificate, HIV is taken to be the underlying cause and tuberculosis the secondary cause. Figure 5 shows tuberculosis as the underlying cause of death (TB) in the absence of HIV and tuberculosis where it is both the underlying and secondary (to HIV) cause. The age standardised tuberculosis mortality rate per 100 000, excluding cases known to be HIV positive, is highest in Khayelitsha. (141) and Nyanga (117) with a Cape Town rate of 47. When tuberculosis deaths of HIV positive people are included, the mortality rate climbs to 187, 167 and 56 respectively.

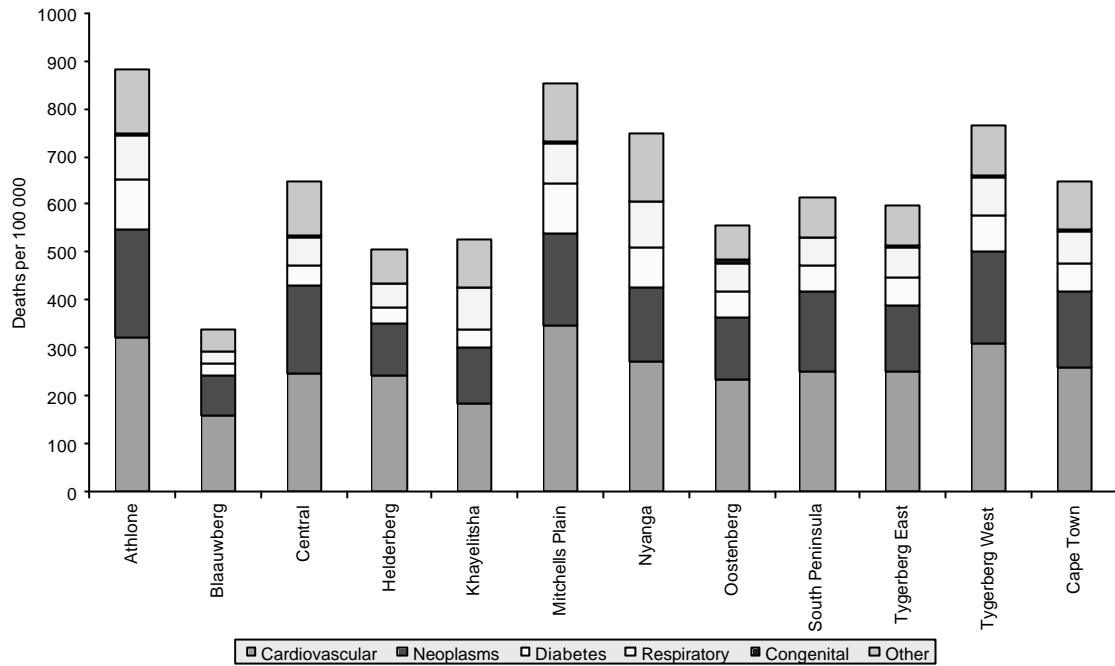
Both Nyanga and Khayelitsha have high HIV prevalences (Department of Health, 2002). The apparent differences in HIV and TB mortality between these two sub-districts may be an artefact brought about by differences in the preferences of those who fill out death certificates – more dual infections in Khayelitsha being recorded as TB rather than specifying HIV as the underlying cause of death.



**Figure 5: Age standardized death rates due to tuberculosis (per 100 000) persons in the sub-districts of Cape Town, 2001**

### **Non-communicable causes of mortality (Group II)**

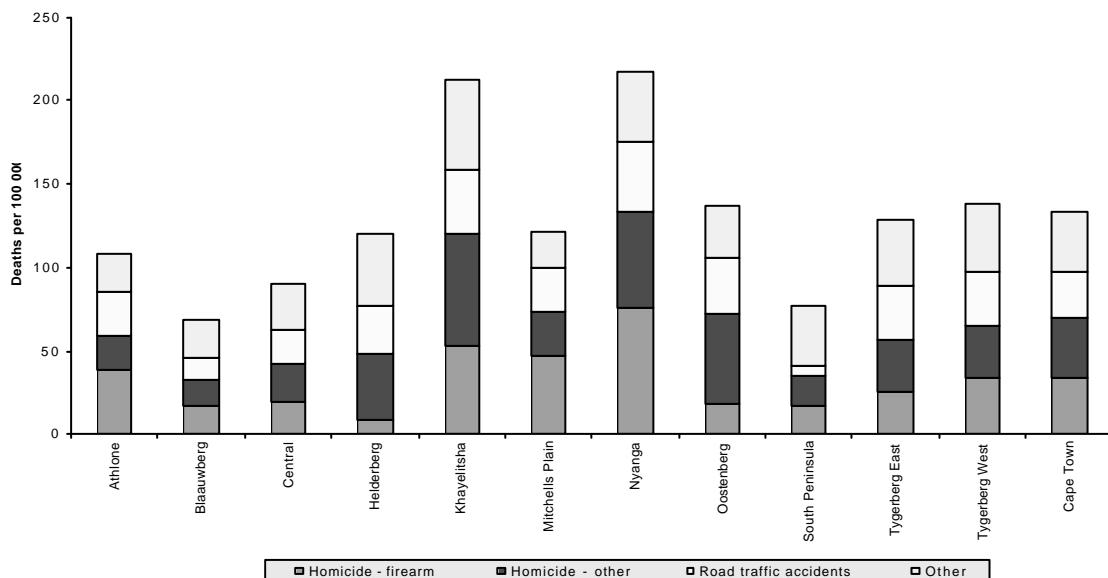
The geographic distribution of non-communicable diseases follows a different pattern to that we have seen in the other equity comparisons. The highest burden of disease, as shown by age standardised mortality rates per 100 000 is borne by Athlone (843), Mitchells Plain (832), Tygerberg West (735) and Nyanga (719), the lowest burden is in Blaauwberg (341) and the Cape Town rate is 627. The highest causes of mortality are cardiovascular and neoplasms.



**Figure 6: Age standardized death rates due to non-communicable diseases (per 100 000) persons in the sub-districts of Cape Town, 2001**

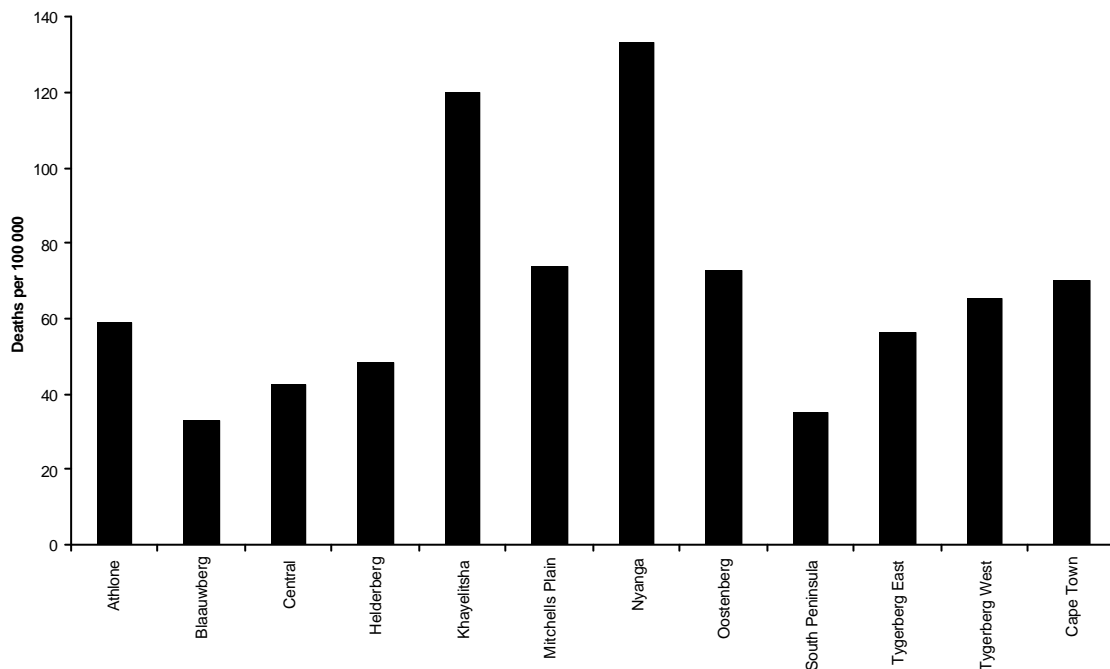
### Injury causes of mortality (Group III)

The two major components of this burden are homicide and road traffic accidents. Once again the pattern of inequity that emerges is that Khayelitsha and Nyanga have very high rates of homicide as well as road traffic accidents.



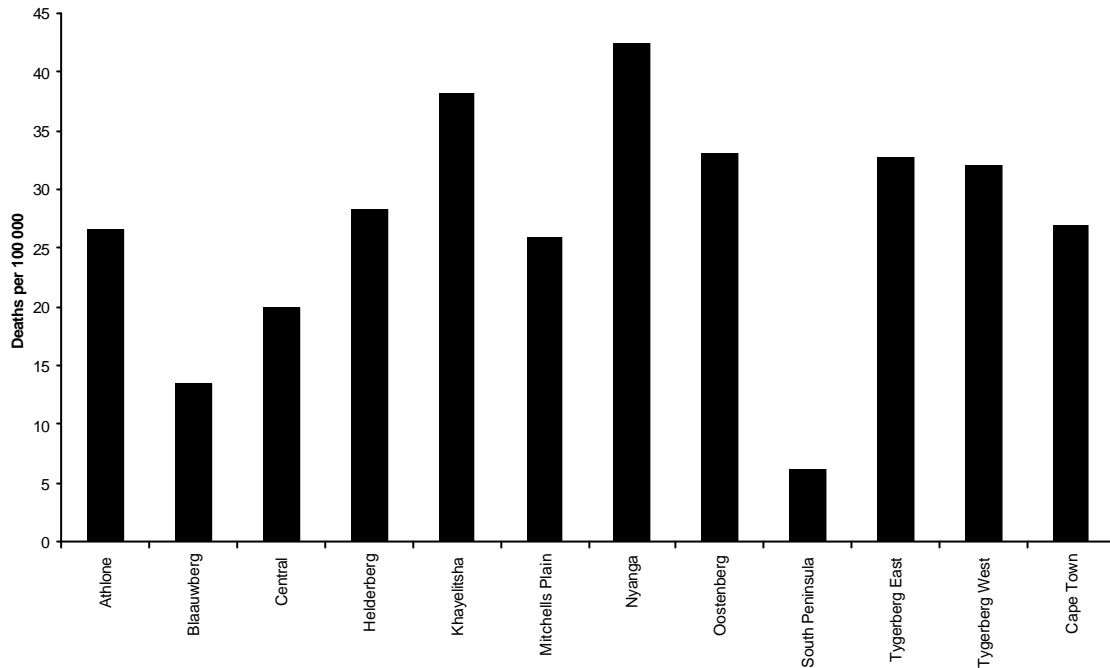
**Figure 7: Age standardized death rates due to injuries (per 100 000) persons in the sub-districts of Cape Town, 2001**

Homicide is the top cause of mortality overall in Cape Town, representing 10.6% of all deaths and with an age standardised rate of 70 per 100 000 persons. The geographic distribution of homicide shows marked inequities with the highest rates experienced in Nyanga (133) and Khayelitsha (120), and the lowest rates in Blaauwberg (33) and South Peninsula (35). Homicide is a potentially avoidable cause of premature mortality and should be targeted for intersectoral intervention.



**Figure 8: Age standardized death rates due to homicide for persons in the sub-districts of Cape Town, 2001**

Road traffic accidents is the 9<sup>th</sup> cause of overall mortality, representing 3.7% of all deaths in Cape Town and with an age standardised rate of 27 per 100 000 persons. Once again a similar geographic pattern emerges with the highest rates experienced in Nyanga (43) and Khayelitsha (38), the lowest rates in Blaauwberg (13) and South Peninsula (6).



**Figure 9: Age standardized death rates due to road traffic accidents for persons in the sub-districts of Cape Town, 2001**

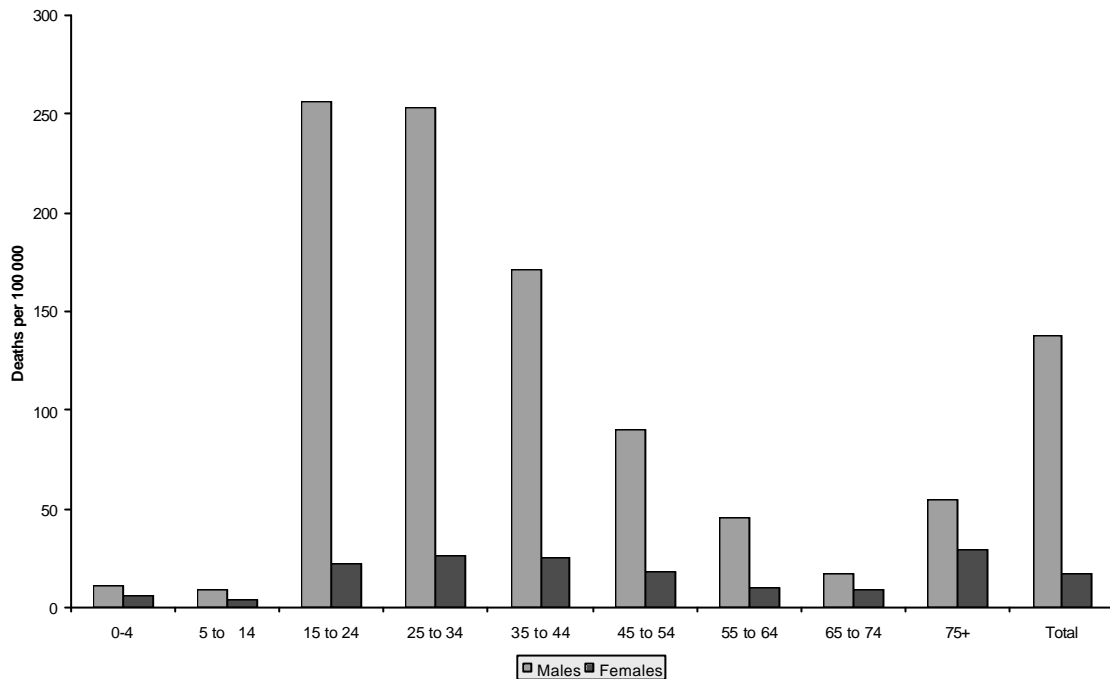
## Gender and age

Table 1 shows the male to female ratio of the age standardised death rates for the total deaths and the cause groups, as well as the causes where the rate for males is more than twice the rate for females – or the rate for males is less than a half of that for females. Overall mortality for males is higher than it is for females (a ratio of 1.35). The gender pattern is marked for injuries with male rates being more than 4.5 times higher than female rates. It is also higher for males for alcohol related conditions (substance abuse, cirrhosis of liver, diseases of pancreas) and smoking related conditions (lung cancer and chronic obstructive disease). Epilepsy, protein-energy malnutrition and melanoma are higher for males while Alzheimer’s and skin diseases are higher for females.

**Table 1. Comparison of age standardized rates between males and females for selected causes, Cape Town 2001**

Cause of death	Male	Female	M:F Ratio
<b>Group I</b>	<b>171.0</b>	<b>154.5</b>	<b>1.11</b>
Protein-energy malnutrition	1.2	0.5	2.40
<b>Group II</b>	<b>438.5</b>	<b>415.0</b>	<b>1.06</b>
Trachea/bronchi/lung cancer	36.2	16.4	2.21
Breast cancer	0.3	19.8	0.02
Cervix and uterus cancer	0	8.5	
Ovary cancer	0	3.4	
Prostate cancer	10.4	0	
Melanoma	0.3	0.1	3.00
Substance abuse (alcohol and drugs)	1.2	0.5	2.58
Alzheimer's disease	2.5	5.1	0.49
Epilepsy	8.1	3.3	2.45
Chronic obstructive pulmonary disease	34.1	16.6	2.05
Cirrhosis of liver	6.4	2.2	2.99
Diseases of the pancreas	1.3	0.5	2.37
Skin disease	0.3	0.7	0.43
<b>Group III: Injuries</b>	<b>230.5</b>	<b>50.6</b>	<b>4.51</b>
Road traffic accidents	40.7	13.5	3.00
Other transport accidents	5.9	1.7	3.53
Drowning	4.5	0.6	7.29
Other unintentional injuries specified	15.0	7.1	2.12
Suicide and self-inflicted	14.5	2.8	5.13
Homicide	138.0	17.5	7.81
<b>Total</b>	<b>840.0</b>	<b>620.0</b>	<b>1.35</b>

Homicide is the top cause of death in Cape Town and the top cause of death for men. Further there are marked differences in the distribution of homicide deaths between men and women. The age specific homicide rate per 100 000 for men is 138 and for women 17.5 across Cape Town. The age distribution of deaths shows that an alarming number of male deaths occur in the 15 to 34 year age group, see Figure 10.

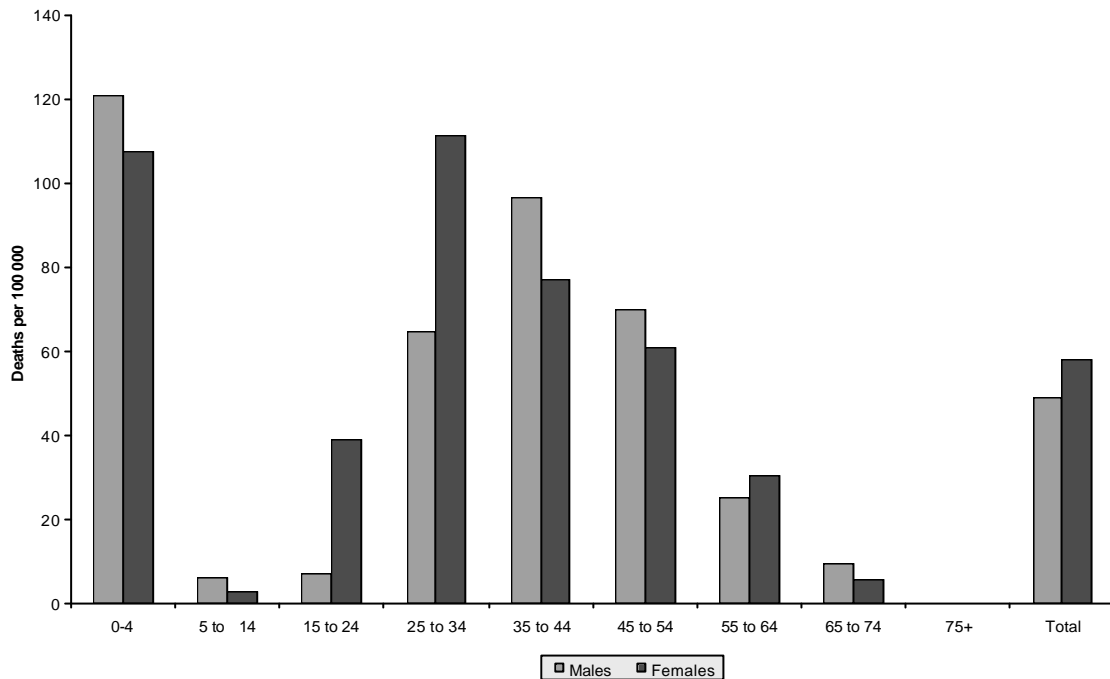


**Figure 10: Age specific death rates due to homicide for males and females in the sub-districts of Cape Town, 2001**

The top cause of death for women in Cape Town is HIV/AIDS. The age standardised HIV death rate for women is 54.1 per 100 000 compared to 46.9 per 100 000 for men, ranking 4<sup>th</sup> in the top causes of male death. For Cape Town, the age standardised death rate for HIV/AIDS is 50.5 per 100 000, ranking 3<sup>rd</sup> after homicide and ischaemic heart disease. The burden of HIV is borne by women who are the main carers, who have a higher infection rate and who are dying earlier of the disease than men.

The age pattern of HIV related mortality is shown in Figure 11. This displays the high death rate among young children low rates in 5-14 yr age group with an increase in 15 – 24 yr age group and peaking in the 25 – 34 age group for women. In men the rate increases in the 25 - 34 age group and peaks in the 35 - 44 age group.





**Figure 11: Age specific death rates due to HIV males and females in the sub-districts of Cape Town, 2001**

### **What are the implications for equity?**

The Cape Town Equity Gauge project has found a recurrent geographical pattern of inequity in health status and the underlying determinants of health across the sub district data, using a wide range of data sources including the Census 96, the annual Cape Town Health IMR reports, the Quarterly Tuberculosis Reports and the Provincial Antenatal Survey (Cape Town Equity Gauge, unpublished). This geographical pattern of health inequity is again apparent in the burden of disease data. Khayelitsha and Nyanga consistently emerge as the areas carrying the highest total burden of disease and the highest burden of group I and III causes. The only exception to this is the pattern of Group II diseases, although even here Khayelitsha and Nyanga show a higher than average burden.

Of particular concern is the inequity in premature mortality, which is disproportionately higher in Khayelitsha and Nyanga. The social and economic consequence of the loss of young lives is great. It undermines the Province's hope of creating prosperity for all and restoring human dignity (van Schalkwyk, 2003) and the

Unicity's vision of becoming prosperous, safe and secure (City of Cape Town, 2002).

The Province and the City will do well to invest in securing a health work force, able to contribute to the wealth of Cape Town and care for its families.

In the new National Health Bill, South Africa has reaffirmed its commitment to a primary health care approach which emphasizes health promotion and the prevention of ill-health as part of a comprehensive care package (Department of Health, 2003). The Provincial Healthcare 2010 is based on this approach and has the support of the Provincial Minister of Health (Meyer, 2003). The City Health Business Plan also prioritises preventative health care (City Health Directorate, 2002). Much of the premature mortality in Cape Town is preventable. Indeed, the low level of Group I (pre-transitional) causes of mortality in the wealthier sub-districts of South Peninsula and Tygerberg West bear testimony to the health improvements brought about by adequate access to housing, sanitation, water and health care. The challenge is to ensure that poorer sub-districts also benefit from this basic infrastructure.

Inadequate provision of water and sanitation is largely responsible for gastrointestinal infections. Overcrowded housing facilitates the spread of respiratory infections such as tuberculosis. Maternal deaths are preventable if there is access to a good quality health service. Analysis of the 1996 census data (Cape Town Equity Gauge, unpublished) reveals that the provision of basic services is inequitable across Cape Town, with a high proportion of households in Khayelitsha and Nyanga living in informal housing and not having adequate access to water and sanitation. It is therefore not surprising to find disproportionately high levels of pre-transitional mortality in Khayelitsha and Nyanga.

It is a challenge that must be taken up by the Provincial Government of the Western Cape and the Unicity as part of a coordinated and interdepartmental collaboration. It is not sufficient to address inequities in the health services alone: the underlying determinants of this inequity in mortality have to be addressed by provision of adequate housing, water and sanitation. However inequities in health service delivery also need to be addressed. Why are the health services not able to detect and adequately treat these illnesses before they result in death?

HIV infection is preventable through a range of strategies such as effective syndromic management of STIs, condom distribution, lifeskills programmes in schools, VCT testing and PMTCT programmes. Premature mortality can be prevented by early detection and treatment of opportunistic diseases (including tuberculosis) and antiretroviral therapy. The burden of HIV is once again borne predominantly by Khayelitsha and Nyanga. In managing its HIV programme, Cape Town must take cognisance of the differing burden across the sub-districts and ensure that equity in service delivery is held as a measurable goal. This is of particular importance when introducing new services as work in Brazil (Victora *et al*, 2000) and Zambia (Nsutebu *et al*, 2001) suggest an inverse equity hypothesis: as new public health interventions are introduced they initially reach those of higher socioeconomic status who have better access to services and this leads to greater inequity in coverage, morbidity and mortality.

HIV is now the leading cause of death in women in Cape Town. Mortality is higher in women and occurs at young ages. This has important policy implications. Adequate access for women must be ensured for care and support within the HIV programmes.

The fight against tuberculosis has been prioritized in the City Health Business Plan (City Health Directorate, 2002). HIV is now fueling the tuberculosis epidemic (WHO, 2002). Cape Town will have to develop a comprehensive approach to effectively tackle tuberculosis. While the health services has the responsibility of intensifying case finding and improving cure rates, other departments will need to be active in addressing some of the underlying problems by addressing adequacy of housing, job creation and promotion of economic opportunities. Tuberculosis remains a disease of poverty in Cape Town: the distribution of the mortality burden correlates with lack of adequate housing, high unemployment and levels of absolute poverty (Cape Town Equity Gauge, unpublished).

The high incidence of non communicable diseases found in the poorer districts of Athlone and Mitchells Plain demonstrates that this group of diseases is not only associated with wealth. Non-communicable diseases remain an important cause of disease burden in poorer communities and have a different pattern of geographic distribution in Cape Town. Of concern is the fact that the expenditure on chronic

medication does not reflect the high disease burden in poorer communities.

Hypertension and diabetes are themselves contributing causes to non-communicable diseases but are also risk factors for ischaemic and hypertensive heart disease and stroke. Additional factors include smoking, obesity and poor diet. A comprehensive primary health care strategy is needed to address these problems.

As the leading cause of death in Cape Town, the high rate of homicide deaths requires special investigation. This burden is largely in the male population and affects a younger age group. Both the Province and the City have committed themselves to fighting crime and securing safety of streets and homes for all residents (van Schalkwyk, 2003; City of Cape Town, 2002). The pattern of the distribution of homicides should inform the allocation of resources to crime prevention programmes. The underlying socioeconomic instability of the high incidence areas needs to be addressed by an intersectoral approach.

This mortality report has investigated a number of inequities in the burden of disease that present an immediate challenge to both the Province and to the City of Cape Town as they strive to improve the quality of life of all people in Cape Town. The challenge in addressing the burden of disease in Cape Town can only be met through a comprehensive primary health care strategy that involves the coordinated action of the health sector together with housing, sanitation, public works, safety and security, trade and industry. Only then will the Western Cape government and their municipal partners hope to achieve the dream of “Ikapa Elihlumayo” (Meyer, 2003), understood as growing and developing the Cape and giving prosperity to all. This dream is clearly not possible without a commitment to equitable service delivery.

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