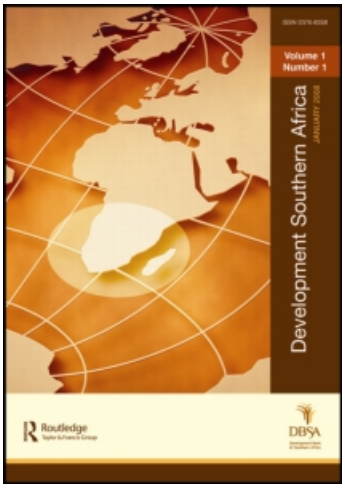

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Inequity in poverty: the emerging public health challenge in Johannesburg

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Inequity in poverty: the emerging public health challenge in Johannesburg

Angela Mathee, Trudy Harpham, Brendon Barnes, André Swart, Shan Naidoo, Thea de Wet & Piet Becker

In 2005, in recognition of the role of social factors in increasing health inequities, the World Health Organisation established the Commission on the Social Determinants of Health. South Africa is among the most unequal societies in the world. It faces serious public health challenges, including an elevated burden of chronic disease, and high levels of violence. This paper presents data from a cross-sectional study of socio-economic and health status conducted in five Johannesburg housing settlements in 2006. The findings paint a picture of health inequities across and within the study sites, and socio-environmental conditions that undermine the prospects of protecting and promoting health. The authors suggest the need for a new approach to public health in areas of urban impoverishment in Johannesburg and elsewhere.

Keywords: *Urban; health; poverty; inequity; public health; Johannesburg; South Africa*

1. INTRODUCTION

1.1 The global situation

In 2005 the World Health Organisation established the Commission on the Social Determinants of Health in response to evidence of increasing health inequities around the world – both between and within countries – rooted in social factors (Marmot, 2005; World Health Organisation – Centre for Health Development, 2008). There is a growing body of evidence to suggest that relative economic inequalities are linked to well-being, health in particular; in other words, the greater the economic inequality, the worse the average health picture. Violence and insecurity in cities around the world are also often linked to *perceived* inequalities (Wilkinson, 1996). The work of the Commission on the Social Determinants of Health may be described as examining the 'causes of the causes of ill health' in the world, based on the premise that 'if the major determinants of ill health are social, so too must be the remedies' (Marmot, 2005:1103; World Health Organisation – Centre for Health Development, 2008).

Over one-half of the world's population currently live in urban environments, and most will do so by 2050. In Asia and Africa, urban populations will double over the next 25 years, and

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by 2030 the majority of the world's towns and cities will be in the developing world (United Nations Population Fund, 2007). Internal population growth and migration into urban areas not only add to the size and shape of cities but also increase their complexity.

Current urbanisation, for the most part, is taking place in areas of 'concentrated disadvantage' (Vlahov et al., 2007). This is especially true in sub-Saharan Africa, where large numbers of urban dwellers live in informal settlements or rundown inner-city areas. Living conditions in these poor environments have a negative effect on people's health and increase their burden of disease. To understand the differentiation within cities, an increasing number of studies have now begun to focus on the detail of the health and well-being of urban residents through a socio-economic lens.

This has often not been possible in the past – particularly in developing countries where recent, accurate censuses are unavailable, and where national household surveys often fail to have large enough urban samples to provide a disaggregated picture of urban life. One of the main recommendations of the US National Academies of Science's expert panel on urban population dynamics in developing countries in 2002 was that national surveys, like the Demographic and Health Surveys, should increase their urban samples to enable such disaggregation (Montgomery et al., 2003). So, we are gradually seeing a clearer pattern of urban socio-economic differentiation. However, a further step is needed. The urban poor are not homogeneous. Montgomery et al. (2003), analysing 85 Demographic and Health Surveys, have shown that there is great socio-economic variation among the urban poor. Policy-makers have yet to catch up with this refined understanding. Johannesburg is a city in point: policies are not tailored to respond specifically to the needs of the city's diverse population, especially those in greatest need.

1.2 Johannesburg

Johannesburg, with a population of 3.2 million, is the largest city in South Africa and forms part of the Gauteng city-region with two other metropolitan areas (Tswane and Ekurhuleni) and some district municipalities. This city-region is growing rapidly not only in size but also in inequality among its inhabitants. City managers face a number of challenges, including increasing demands for formal housing and basic services such as water, electricity and sanitation. In Johannesburg, the delivery of formal housing and services is particularly challenging because of rapid urbanisation, and because of the formation of many smaller households through a process of 'unbundling' of bigger households (Statistics South Africa, 1998, 2003, 2008; Policy Coordination and Advisory Service, 2003). As a result, many poor households continue to live in informal settlements, small brick and corrugated iron backyard dwellings and derelict inner-city buildings.

In 2004, in recognition of the role of poverty, inequity and other social concerns in human development, the City of Johannesburg launched a Human Development Strategy (City of Johannesburg, 2005). The aim of the Human Development Strategy is to provide a framework within which other 'city policies can accommodate a human development perspective and address conditions such as poverty, inequality and social exclusion on a city scale'. In 2006, in support of the Human Development Strategy, the Johannesburg-based World Health Organisation Collaborating Centre for Urban Health initiated a study to monitor socio-environmental conditions and health status in five Johannesburg housing settlements over a period of 5 years. The World Health Organisation Collaborating Centre for Urban Health is an urban health research and policy partnership of the South African Medical Research Council, the University of Johannesburg, the

University of the Witwatersrand and the City of Johannesburg. The working title of the project is the Health, Environment and Development (HEAD) study. In consultation with senior City of Johannesburg officials, five sentinel sites were selected on the basis of their perceived status as sites of relative impoverishment and rapid change. The sites were also selected to reflect the predominant housing types (inner-city, high-rise, mass-based low-cost housing from the apartheid and democratic eras and informal settlements) available to the urban poor in Johannesburg. Using data from the first year of the 5-year HEAD study (2006), this paper describes the variation across the selected study sites in terms of a range of variables: economic, social, health and environmental. It then identifies the policy implications of this more disaggregated picture of urban life.

2. METHODS

The 5-year HEAD study (2006–2010) uses annual cross-sectional surveys to examine living conditions and health status in five study sites. The overall goal is to monitor changes in housing conditions and health status, alongside the city's ongoing development programmes. The study sites are:

- Hillbrow – a high-rise, densely populated inner-city area;
- Bertrams – a mixed commercial/residential inner-city suburb that is also the location of one of the main stadia for the 2010 World Cup Soccer tournament;
- Riverlea – an apartheid-era, low-cost housing development constructed in the early 1960s specifically for the coloured community;
- Braamfischerville – a large-scale, low-cost housing settlement built in the past 10–15 years, following the transition from apartheid to democratic government in South Africa; and
- Hospital Hill – an informal settlement near the western boundary of the City of Johannesburg.

In Riverlea, Braamfischerville and Bertrams, an initial sample of 200 dwellings was randomly selected in each site using a table of random numbers and town-planning maps of the areas. Of these, 155, 188 and 132 dwellings in Riverlea, Braamfischerville and Bertrams, respectively, met the inclusion criteria, and formed the study sample. In Hillbrow, apartment buildings were first randomly selected, followed by floors in the selected buildings and then apartments on the selected floors. Due to social unrest at the time of the first fieldwork visit to the informal settlement of Hospital Hill, field-workers were instructed to interview any available respondent in the defined study area. Following the exclusion of all non-residential sites, the final study samples for Hillbrow and Hospital Hill consisted of 142 and 188 dwellings, respectively. At the selected dwellings, following written consent, an interview was conducted with a household member of at least 18 years of age, to obtain information on socio-demographic status, migration patterns, perceptions of housing and neighbourhood conditions, quality of life and health status. Interviews were conducted by environmental health students from the University of Johannesburg, who had been trained in interviewing techniques. An attempt to conduct an interview was made on a weekday and a weekend day, after which the endeavour was abandoned if there had been no success.

2.1 Limitations of the study

This was a simple cross-sectional study and use of the data is therefore restricted mainly to the purpose of description. Owing to social unrest at the time, and concern for

fieldworker safety, sample selection in Hospital Hill did not conform to the requirements for random sampling. Additional methodological challenges encountered during the conduct of this study have been written up separately and submitted for publication (Mathee et al., 2009).

3. RESULTS

3.1 Socio-demographic profile

Interviews were successfully completed in 524 dwellings. The overall response rate was 65 per cent, with rates varying widely across the study sites: 55 per cent in Hospital Hill, 65 per cent in Riverlea, 65 per cent in Braamfischerville, 52 per cent in Bertrams and 90 per cent in Hillbrow. While the overall majority of the study population was black African, the results showed that racial divisions associated with the apartheid era continue to be strongly entrenched in the study sites. Hillbrow and Braamfischerville housed black African households exclusively. This group also constituted the majority of households in Bertrams and Hospital Hill. By contrast, the vast majority of households in Riverlea were coloured. Overall, isiZulu and Afrikaans were the main languages spoken, with Sesotho, Setswana, Tshivenda and English also being spoken by sizeable proportions of the study population. Household origins were also diverse (South African and other countries on the African continent), with most households of non-South African origin being found in Hillbrow and Bertrams (see Table 1).

Household income disparity between Hillbrow (site of the highest average income) and Hospital Hill (lowest average income) was substantial enough to produce a bimodal distribution (see Figure 1 and Table 1), indicating considerable income heterogeneity across the sites. Overall, around 35 per cent of households were particularly poor economically, earning no income at all or less than R1000 monthly. The proportion of economically poor households was highest in Hospital Hill (62 per cent) and lowest in Hillbrow (7 per cent) (see Table 1). More than one-quarter of households (26 per cent)

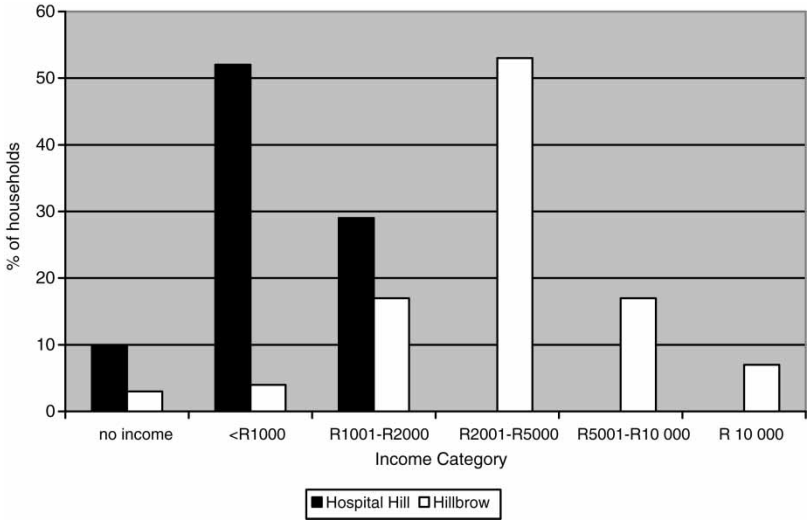

Figure 1: Comparison of average monthly household incomes in Hospital Hill and Hillbrow

Table 1: Socio-demographic profile by area

	Hospital Hill (n = 104)	Riverlea (n = 101)	Braamfischerville (n = 122)	Bertrams (n = 69)	Hillbrow (n = 128)	Total sample (n = 524)
Population group (% households)						
Primary	Black African – 100	Coloured – 91	Black African – 100	Black African – 71	Black African – 77	Black African – 77
Secondary	0	Black African – 8	0	White – 18	Coloured – 19	Coloured – 19
Main home languages spoken (% households)						
Primary	Sesotho – 25	Afrikaans – 80	Setswana – 36	isiZulu – 34	isiZulu – 45	isiZulu – 25
Secondary	isiXhosa – 21	English – 11	isiZulu – 29	Afrikaans – 24	Tshivenda – 12	Afrikaans – 21
% non-South African households	7	0	2	13	31	
% households without income or earning <R1000.00 monthly	62	48	41	21	7	36
% households with money saved	32	30	44	52	62	44
% households with medical aid/insurance	1	19	12	23	21	15
% households with access to a computer	0	5	6	25	22	11
Respondents' rating of standard of living[a] (mean)	4.0	5.7	5.8	5.8	6.0	5.5

[a]Rated from 0 (highly dissatisfied) to 10 (highly satisfied).

were receiving a child support grant from the state, while 6 per cent and 13 per cent, respectively, were receiving disability grants and old-age pensions. Access to state social grants varied considerably over the five study sites. In Braamfischerville, for example, 44 per cent of households were receiving child support grants, while in Hillbrow the figure was only 5 per cent. The lower proportion of Hillbrow households receiving this grant could be because there are fewer children in the area and because there is a higher proportion of households of non-South African origin here that are less likely to qualify for state grants. Fourteen per cent of households were involved in income-generating activities (fixing motor vehicles, spray-painting, making jewellery, repairs to electrical appliances, hairdressing) based at their dwelling sites, with a concomitant elevated risk of household exposure to the chemicals or substances used in these processes. In 4 per cent of households more than one such home-based 'cottage industry' was being operated.

3.2 Living conditions

The smallest households (an average of 3.6 people per household) were in Hillbrow and the largest in Braamfischerville (an average of 4.7 people per household). Apart from the informal settlement of Hospital Hill, most areas were well supplied with indoor water supplies and indoor sanitation, and electricity was the main fuel used for cooking (Table 2). The Hospital Hill community used mainly outdoor or communal water supplies and sanitation services, and paraffin for cooking. While a running hot water supply was expected in Hospital Hill, this was at a surprisingly low level in the established, formal settlements of Braamfischerville (only 6 per cent of households had access to running hot water) and Riverlea (despite having been developed in the early 1960s, only 18 per cent of Riverlea households reported having access to running water), and to some extent in Bertrams (27 per cent of households had no access to running hot water). There was evidence of household degradation in all five study areas, with one-quarter of respondents reporting a major problem with leaking roofs, 15 per cent with leaking water pipes, and 36 per cent with cracks in walls. Around 14 per cent reported damp problems, and 25 per cent said they had a major problem with peeling interior paint.

3.3 Neighbourhood perceptions, experiences and infrastructure

Perceptions of noise as a major problem were widespread, ranging from 26 per cent in Braamfischerville to 45 per cent in both Hillbrow and Hospital Hill. Most households (88 per cent overall) used public transport to get around – from 75 per cent in Bertrams to 96 per cent in both Hospital Hill and Braamfischerville. Violence was a major public health concern in all of the study sites but was most pressing in Hospital Hill, where, using a 1-year recall period, respondents from more households (28 per cent) than in the other study sites reported that a member had been a victim of selected forms of violence (rape, intentional gunshot, stabbing, beating). Hillbrow households had the lowest incidence of experience of violence. Nevertheless, 14 per cent of Hillbrow households had a member who had been afflicted by violence in the past year. In Hospital Hill, concern was most widespread over increased crime during the previous year. Notable in Riverlea was the high proportion of households (15 per cent) that had been affected by multiple incidents of violence (see Table 2). The pattern of specific forms of violence varied from site to site. For example, the highest levels of rape were reported in Riverlea and Braamfischerville (8 per cent of households in each of these sites had a member who had been raped), as was the highest level of injury from intentional gunshot wounds (see Table 2).

Table 2: Living conditions and socio-environmental health status in the HEAD study, by study site

	Hospital Hill (n = 104)	Riverlea (n = 101)	Braamfischerville (n = 122)	Bertrams (n = 69)	Hillbrow (n = 128)	Total (n = 524)
Living conditions						
% households with access to running hot water	1	18	6	73	93	37
% households using mainly electricity for cooking	2	97	98	90	98	78
% households with major problem with leaking roofs	44	22	36	18	5	25
% households with major damp problem	24	11	16	16	8	14
% households with major problem with peeling interior paint	30	28	25	25	19	25
% households where work is done from home[a]	16	16	12	22	10	4
Neighbourhood infrastructure and conditions						
% households mainly walking or using public transport to get around	96	90	96	75	80	88
% respondents who regard noise as a major neighbourhood problem	45	31	26	36	45	37
Social concerns						
% households affected by violence (intentional gunshot, stabbing, rape or beating) – 12-month recall period	28	19	17	18	14	19
% households affected by multiple forms of violence – 12-month recall period	9	15	8	2	1	8
% of respondents who think crime worsened in past year	54	33	25	57	50	42
% respondents who believe that alcohol abuse is a major neighbourhood problem	70	75	51	76	88	72
% respondents who believe that drug abuse is a major neighbourhood problem	44	83	38	76	85	65

(Table continued)

Table 2: Continued

	Hospital Hill (n = 104)	Riverlea (n = 101)	Braamfischerville (n = 122)	Bertrams (n = 69)	Hillbrow (n = 128)	Total (n = 524)
Health status						
% adults with vomiting (2-week recall)	14	4	5	7	3	7
% adults with diarrhoea (2-week recall)	19	6	3	9	6	8
% households with an individual who suffers from						
Asthma	3	19	7	20	2	9
Diabetes	8	16	4	15	2	8
Hypertension	11	31	16	23	5	16
Stroke	2	5	3	6	0	3
Obesity	0	4	6	10	2	4
% households in which a death occurred during the past year	12	13	13	11	2	10
% respondents who experienced the following most/all of the time						
Nervousness/anxiety	24	16	18	13	9	16
Depression	21	16	23	20	6	17
% respondents who often/always did not feel life was worth living	14	10	10	7	0	8
% households in which a member has committed suicide	2	6	5	1	0	3

[a]One or more of the following: fixing cars at home, spray-painting, making jewellery, repairs to electrical appliances, hairdressing.

Concern over neighbourhood social issues was widespread, but particularly elevated in Hillbrow, Riverlea and Bertrams as far as drug abuse was concerned. Large proportions (70 − 88 per cent) of respondents in Hillbrow, Bertrams, Riverlea and Hospital Hill thought that alcohol abuse was a major neighbourhood problem, while in Braamfischerville a relatively lower proportion (51 per cent) of respondents thought so.

Health inequities were also clearly evident across the five study sites. In the informal settlement of Hospital Hill, as expected, levels of acute ill-health were highest. In Riverlea and Braamfischerville, on the other hand, in addition to high exposure to violence, levels of chronic ill-health were high, especially in respect of asthma, diabetes and hypertension. Those living in the inner-city areas of Hillbrow and Bertrams were relatively healthy, with all measures of ill-health, including acute, chronic and mental ill-health, as well as exposure to violence, being relatively low.

4. DISCUSSION AND CONCLUSIONS

This study provides clear evidence of the considerable extent of heterogeneity and inequity within and among housing settlements perceived as impoverished in Johannesburg. The households are heterogeneous in demographic profile, origin and culture, and socio-economic conditions. Inequity is evident in their living conditions, perceptions of neighbourhood social concerns, health status, household experience of violence, mortality and perceptions of quality of life. Striking from this study is how the data reflect the varied and multiple burdens of risk and disease now being borne by urban South African communities, especially chronic disease, mental ill-health and violence. For example, compared with the other three sites, the profiles of the Riverlea and Bertrams communities show a double burden of chronic ill-health and violence. Despite the relatively recent construction of the Braamfischerville housing settlement, respondents reported strikingly widespread housing degradation in the form of, for example, cracked walls, leaking roofs and leaking water pipes. Such degradation of housing infrastructure may lead, for example, to the proliferation of fungal spores and an elevated risk of asthma. At the same time, high levels of mental ill-health indicators were reported in Braamfischerville.

The poorest community in this study, Hospital Hill, was conspicuous in the severity and multi-pronged nature of its vulnerability. It had the lowest income, the worst living conditions and the poorest level of access to basic environmental health services. Its community also bore among the highest levels of community violence, acute ill-health conditions, mental ill-health and mortality. Respondents from Hospital Hill also rated their standard of living as relatively low. It is difficult to imagine how health can flourish in the five communities profiled here, especially in the context of the prevailing health-services-oriented paradigm (rather than health promotion and ill-health prevention) in Johannesburg. Traditional or currently provided health services and programmes may no longer be adequate to improve or promote the health of urban communities such as Hospital Hill and Riverlea. Instead, especially in respect of the burdens of violence and chronic ill-health, there is a growing need for innovation and the realignment of urban health services towards a closer match with community health profiles. In this regard, the World Health Organisation's Healthy Cities Project may provide a useful framework for a community and evidence-based approach to urban public health.

Within the context of a more holistic and evidence-based approach to public health (such as is offered by the Healthy Cities approach), the development of community health profiles would be key. Such profiles might be used to prepare action plans that

respond to burdens of ill-health and to evaluate the impact of development and public health interventions. It would be critically important to link performance measures for public health practitioners to health indicators of local relevance. In the Hospital Hill, Riverlea and Bertrams communities, for example, this study has shown high levels of community experience of violence, yet little action has been taken in this regard by local health departments, even though the literature suggests that even modest reductions in violence in dangerous neighbourhoods will be of considerable health benefit to children (Edwards & Tsouros, 2006). As far back as 1996, the issue of violence was placed on the agenda of the World Health Assembly, when violence was declared a worldwide public health problem (Mercado et al., 2007).

On a broader, developmental level, standard nationwide or region-wide socio-environmental interventions (such as social grants, housing delivery and improved access to water, sanitation and electricity) have clearly been of major benefit to deprived communities. However, in settings such as Hospital Hill and Riverlea, where deprivation is severe and multidimensional in nature, such broad-spectrum interventions may be valued yet not matched to local problems and needs. Instead, a dedicated, site-specific approach may be required, one that is evidence based and informed by local research and knowledge (such as can be acquired through the HEAD study community profiles). A site-specific, or tailor-made, approach may also be appropriate in the light of the evidence from this study of significant differences in profiles and characteristics across the five study communities. Local knowledge and data will be useful for identifying the most important community health needs, and the socio-environmental and public health interventions that will deliver the greatest health benefits. For example, in Riverlea and Braamfischerville there is a clear need to recognise the health implications of community violence (a fear of crimes of violence may mean more time spent indoors and more sedentary activities, leasing to higher levels of obesity and an increased risk of cardiovascular diseases, as well as higher levels of common mental disorders) (Edwards & Tsouros, 2006). Identification of the most appropriate and effective interventions will also demand a greater effort to understand the factors contributing to local violence. These may include poverty and hunger, poor street lighting, inadequate policing, ready access to alcohol and drugs, lack of youth programmes and recreational or sport facilities, and lack of life skills and parenting programmes.

To prevent disease and promote health it is particularly important to recognise the powerful role of non-health sectors (and the relatively weak role of the health sector) in determining public health status. Partnerships between the health and planning sectors, especially during the early settlement planning and design stages, can play a major role in determining the health status and safety of communities. For example, housing settlement design that encourages physical activity (pedestrian facilities, cycle tracks, sports fields, sufficient open space and recreational areas) and social interaction (provision for restaurants, shops and spaces where people can meet and engage with each other) could go a long way towards preventing obesity, cardiovascular disease, common mental disorders and violence, and could also encourage social cohesion and networking. To realise the health benefits of partnerships with non-health sectors, the health sector needs to improve capacity and skills related to intersectoral and community liaison, and to strengthen capacity, resources and infrastructure for urban health surveillance. Curricula may need to be adapted to ensure that public and environmental health professionals acquire skills in strategic and action planning processes and the evaluation of interventions. Urban health managers need to ensure that management systems and

performance indicators are directly linked to local health concerns. Public health networking (including effective public health engagement in bodies such as the South African Cities Network) and exchange programmes with cities elsewhere in South Africa and the rest of the world could also prove valuable in upgrading skills and learning from successes and failures in other relevant settings.

In many ways the ground is fertile for action on the social determinants or the 'causes of the causes' of ill-health in South Africa, where poverty and violence are well-recognised social problems. There is also support at the highest political level for a focus on inequity and social factors. In 2006 the then President, Thabo Mbeki, acknowledged that development efforts in the country had focused on 'changing the material conditions [water, sanitation, housing, electricity, telecommunications and so forth] of the lives of [South African] people', but were lacking in terms of the social dimensions. He went on to say that 'human fulfilment consists of more than access to modern services', and appealed to South Africans to 'place at the centre of our daily lives the pursuit of the goals of social cohesion and human solidarity' (Mbeki, 2006). The focus on addressing poverty and inequity in South Africa is likely to be strengthened further with the recent election of President Jacob Zuma.

There is now a need for urban health practitioners in Johannesburg, and elsewhere in South Africa, to translate the call for action on inequity and social factors into action by taking a fresh look at the evidence from this and other studies for the human condition in cities such as Johannesburg. The 'causes of the causes' of ill-health in these and similar communities must be closely examined, and an answer found to the provocative question posed by the Commission on the Social Determinants of Health: 'Why do we keep treating people for illnesses only to send them back to the conditions that created the illness in the first place?' (World Health Organisation, 2002). To respond to the mounting public health problems in South Africa's large cities and growing towns, public health departments need to consider very seriously whether their current activities and urban health status programmes are doing any good, and to redefine their roles and responses to make a real difference to the health of South Africa's poorest urban areas.

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