

HIV/AIDS, Economics and Governance in South Africa: Key Issues in Understanding Response

A LITERATURE REVIEW 2002



HIV/AIDS, Economics and Governance in South Africa: Key Issues in Understanding Response

A Literature Review

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Introduction

by Warren Parker and Kevin Kelly

This literature review and analysis of issues related to economics, HIV/AIDS and governance, follows a similar review conducted in 2000. In the review it was noted that many gaps existed in the literature, and that there was a generally poor understanding of crucial issues that inform impact, policy and response. It is certainly a positive sign that in the development of an updated bibliography (available as a separate document), the number of texts available has almost doubled in the space of two years. Whilst authors of this review continue to highlight gaps, particularly in South Africa specific research, it is a positive sign that social scientists are developing a closer interest in HIV/AIDS, and that funding and support for research in the area is clearly growing.

The HIV/AIDS context in South Africa is rapidly changing. In the previous review close attention was paid to economic impacts and responses, with an emphasis on impacts. In the present review, authors have oriented their chapters much more closely to issues of economic and social development and response in relation to an epidemic that has become a firmly entrenched development issue. On the one hand, there are explorations of cost issues, direct and indirect, whilst on the other, there is a general stock-taking of response. Both aspects are critical to understanding the way forward, and indeed there remain critical gaps. However, it is also important to note the notion that little progress has been made and that nothing has been done. This is largely a product of difficulties in recognising tangible indicators of response. For example, a recent survey showed 75% of business have HIV/AIDS policy in place, and this is significant. The next steps – and this is the role of research – is unpacking the nature of these responses, and identifying the implications for planning and resource allocation, and this is explored in this volume.

The objectives of this review are to:

- ❑ identify completed and ongoing research conducted on the economic aspects of HIV/AIDS and its implications for governance in South Africa;
- ❑ provide a comprehensive bibliography of literature in the area;
- ❑ make a preliminary assessment of the quality of the existing research, to identify trends and gaps in the research, to identify priority areas for research, and especially to identify the types of research that could contribute significantly to improving the response to the epidemic;
- ❑ identify problems associated with existing research and to identify how these might be addressed in future research.

A systematic approach was followed in identifying emerging texts utilising electronic searches of various research databases as well as a comprehensive Internet search. The literature search informed the identification of emerging thematic areas and researchers and practitioners working in the field were commissioned to develop chapters. Chapters were reviewed by an editorial panel, and second drafts were oriented towards creating a greater coherence with themes across chapters and integration with parallel chapters. Whilst it is recommended that this volume be read in sections, we have oriented chapters to move sequentially from issues of macroeconomic impact, governance and general public policy, through a review of pragmatic issues related to impact and response, with the final chapters focusing on pragmatic aspects of treatment and issues related to the international drug trade.

Claudia Ford, Gregory Lewis and Bronwynne Bates review a range of studies related to macroeconomic impact, pointing out that diverse methodologies elicit wide-ranging

and sometimes conflicting conclusions. Clearly model-based projections need more 'robust data' but also sensitivity to likely adjustments in response to the epidemic. HIV/AIDS policy will obviously have significant impact on the way the epidemic unfolds – and at present there is little clarity as to what choices will be made by government.

Ryann Manning's chapter on HIV/AIDS and democracy is oriented towards understanding the implications of HIV/AIDS for governance. Whilst noting the general lack of definitive sources – most texts being of a theoretical, conceptual or speculative nature – she draws together a number of important strands. It is noted that there is a critical link between government legitimacy and HIV/AIDS response, with an important supporting mechanism within higher levels of social capital. Specifically, an important role is played in the provision of an entrenched human and social rights framework. However, although this exists in South Africa, other aspects of governance need to be taken into account – for example, the need for transparency and partnership with HIV/AIDS stakeholders when developing national policies.

Although democratic approaches might contribute to social capital and social cohesion, it is also recognised that authoritative governance and restrictive religious traditions can also contribute to cohesion that limits the spread of the epidemic. Conflict and instability are factors that perpetuate infection and limit response, and political leadership is understood to be a critical factor in ensuring social stability and security. In general, the argument favours democratic approaches to governance, with HIV/AIDS being recognised as having the potential to elicit political pressure from affected and marginalised sectors. Equally, HIV/AIDS has the potential to engender severe impacts on social stability and national institutions.

Alison Hickey's chapter on public policy and administration picks up on Manning's concepts of the influence of democratic governance on HIV/AIDS mitigation. The review focuses particularly on contextualising the national government response in relation to sectoral needs and responses. Whilst on the surface, many key formations and policies are in place, a greater emphasis on systematic and urgency is still required. It is pointed out however, that a 'Catch 22' situation exists whereby 'the disease directly impacts on government's ability to deliver regular services, whilst at the same time requiring the government deliver more services'.

Issues relating to policy and administration within sectors are explored in some detail including issues relating to education, the social sector, agriculture, the military, and prison systems. In key areas intransigence and lack of transparency on the part of government with regard to research findings has the net effect of limiting understanding of impacts and slowing the rate of response – particularly at the level of public policy and administration.

Given that the formal sector has some way to go in mitigating HIV/AIDS impact and systematically managing response, *Ethel Teljeur's* chapter on the response of NGOs, CBOs and communities, provides insight into emerging responses. However, as the review is quick to point out, whilst NGOs and CBOs fulfil a critical role in assisting individuals, families and communities, there is a distinct lack of resources within this sector, and there are generally poor linkages with the formal sector services. Of concern is the entrenchment of 'informal' service provision, and the general lack of a systematic approach.

The impact of HIV/AIDS on households in South Africa can be well understood through reference to the experience of many other African countries. Pre-emptive household coping strategies typically include diversification of assets and sources of income, labour-saving techniques, employment of savings and linkages to informal insurance networks. As these strategies are exhausted impacts extend to withdrawing

children from school, sale of assets, and debt, with the death of income earners driving already poor households into deeper cycles of poverty. Whilst communities can and do respond, and whilst CBOs and NGOs emerge and formate in response to critical social issues, there are clear disparities in the level of resources that can be generated in comparison to the public sector.

Guy Mhone's review of the economic impact of HIV/AIDS in Africa points to a number of lessons learned that can be readily translated into South Africa. However, the gaps in research across countries remain remarkably consistent. For example, there remains an overall lack of reliable and consistent epidemiological and demographic data upon which to base policy and planning. Furthermore, with regard to other methodological issues, there is a general orientation towards understanding the formal economy, but for the most part, African economic activity occurs in non-formal sectors.

As most authors emphasise, there is a general need to continuously explore issues underpinning HIV/AIDS including poverty, migration, income distribution, human capital, education, health, development, gender, rights, and access to resources and services.

Returning to the formal sector, *Christine Randall's* review of industries, workplaces and sectoral impacts and responses identifies ongoing issues with a lack of formative epidemiological data across sectors. Early analyses of the emerging impacts of HIV/AIDS on business have, however, prompted a number of large South African corporates to develop proactive responses, and to entrench these as suitable models of workplace practice. It is noted however, that challenges remain in terms of developing appropriate responses to support and care as AIDS illness escalates. It is pointed out that impacts on businesses differ, and that smaller businesses were far less likely to have taken any steps in response to the epidemic.

South Africa is characterised by a large expenditure on HIV prevention programmes, yet there has been extraordinarily little exploration of the cost-effectiveness of such interventions. *Kevin Kelly's* chapter explores conceptual frameworks for understanding cost benefit issues. At the outset he problematises linear models of individual behavioural response, pointing out that behaviour is largely a product of contextual mediators of risk including poverty, gender, migration and the like, but also specifically linked to resource and service provision. Although there remains a paucity of suitable baseline data against which to contextualise and measure interventions, there are a number of approaches that can be developed for cost analysis of programmes. Areas of focus include programme outputs (process outcomes), outcomes (programme objectives), and impacts in terms of indices of prevention. Insight into costs of various interventions including mass media, condom provision and voluntary counselling and testing is provided, and it is pointed out that there is a need to locate prevention programmes within a broader programme of social development.

Issues of resource allocation come to the fore in Chris Desmond and Tim Quinlan's review of the costs of care and support. They point to significant disparities in the national budget – R18-billion for defence, as compared to R7-billion for health and R409-million for social development. Perhaps as a consequence of such disparities, there has been an organic development of community-based responses to support and care. Such responses however, remain constrained by limited channels of resource provision and support, and an over-reliance on volunteer labour. There is, however, a continuum between formal and informal systems and it is argued that emerging responses should not be seen as a panacea, and that the formal response should continue to be developed. There is also a need for broader analysis of integrated management strategies (incorporating cost analysis), and understanding economies of scale and financing.

In the final chapters *Nathan Geffen* and *Toby Kasper* review issues of treatment provision. Failure to provide HIV/AIDS treatment is contextualised by a number of social consequences including impacts on the health system (escalation of patient loads and costs), orphanhood (particularly amongst the poor), and legal consequences (for example, court action for treatment provision). Costs and benefits of treatment provision, both for prevention (for example, mother to child transmission, post exposure prophylaxis, sexually transmitted infections), and care (HAART), are explored. With regard to the international pharmaceutical industry, there are a number of urgent research needs including assessment of the generic pharmaceutical industry; research into legal options in relation to patents; economic research into cost savings of treatment provision; and development of an understanding of the implications of globalisation.

Understanding responses to HIV/AIDS

Much of the efforts of social scientists over the past 15 years has been directed at understanding the costs to the society of the AIDS epidemic. Impacts are usually compared to a 'no-AIDS' scenario and the difference is understood to be the impact of the epidemic. This kind of analysis has typically failed to take into account the responses of the society to the epidemic, in modelling impact and in determining the costs to the society. It is important to understand the response of the society for a number of reasons:

- *Understanding of impact:* The impact of the epidemic is mitigated by a range of responses designed to prevent infections and to mitigate impact at individual, familial, community, infrastructural and societal levels. Until we measure and understand the scope and extent of response we are not in a position to accurately predict the impact of the epidemic. Rosen, for example, proposes investment in AIDS as good business practice, arguing that costs of prevention programmes are recovered by savings in terms of costs to the company of the epidemic. AIDS ultimately costs the company less when resources are committed to responding to it. We cannot understand the impact of AIDS on the economy until we understand the nature and scope of responses to it.
- *Planning of response:* Until we seriously turn our attention to monitoring and evaluating the response framework, we are in a weak position to plan further. At the moment we have very little information about how the society is responding to the epidemic and second generation surveillance systems have yet to be entrenched.
- *Social development planning:* The AIDS epidemic is widely believed to be capable of having a devastating impact on South African society in almost all areas of social development. AIDS is usually described as a crisis or a threat, even a catastrophe. It sometimes seems as if the society has frozen in the headlights of the multiple problems bearing down on it. In this context we appear still to be focused on estimating the potential dangers, and impact assessments extended into ever new areas of social functioning, from security to education planning. It is obviously important to respond in all areas where there is impact, but there appears to be little understanding beyond what is likely to happen. Inevitably the society is going to need to move beyond managing a crisis and it is going to need to do this by integrating AIDS response with development planning. There is growing evidence of transition to democracy in Africa and ambitious plans are afoot for the rejuvenation of African economies. For momentum to build in these areas it is going to be necessary for social development and AIDS responses to coincide. To do this, much more understanding is necessary about the opportunities and possibilities for ever more effective AIDS responses which are commensurate with

the broader aims of social development, economic upliftment, security and democracy.

- *Costs and opportunities*: AIDS responses are likely to have generalised effects, beyond the immediate field of AIDS impact. Equally, some examples of outcomes of AIDS response that are likely to have positive ramifications for the society are: a sense of urgency and fast-tracking of development of health and social services and infrastructure; funding for health systems and infrastructure; funding of community-based organisations; improvement in efficacy of inter-departmental functioning at local and provincial government levels; and the creation of higher degrees of social capital. Alleviation of poverty and its effects and the focus on healthier lifestyles and positive social values are also positive outcomes that are fortunate byproducts of social development programmes aimed at reducing susceptibility to AIDS. The struggle against AIDS in developing countries is increasingly used as a further force behind the debt relief to highly indebted poor countries. There are probably many other 'positive' dimensions to AIDS and whereas there can be no doubt that the net outcome of AIDS is negative, there may be some social benefits which accrue, and there have to be to move from coping with a crisis to growth and development.

Overall, the chapters in this volume point to important lessons learned and provide critical insights for the trajectory of future research, both in the short- and longer-term.

List of acronyms

ANC	Antenatal clinic
ARV	Antiretrovirals
ASO	HIV/AIDS service organisation
CBO	Community-based organisation
DALY	Disability-adjusted life years
DoE	Department of Education
DoH	Department of Health
HAART	Highly active retroviral therapy
MTCT	Mother-to-child transmission
NGO	Non-governmental organisation
PHC	Primary health care
PLHA	People living with HIV/AIDS
SRH	Sexual and reproductive health
STD	Sexually transmitted disease
STI	Sexually transmitted infection
TB	Tuberculosis
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNICEF	United Nations Children's Fund
VCT	Voluntary counselling and testing
WHO	World Health Organisation

The macroeconomic impact of HIV/AIDS in South Africa

by Claudia Ford, Gregory Lewis and Bronwynne Bates¹

This chapter reviews the literature on the macroeconomic impact of HIV/AIDS, identifies some of the methodological and econometric constraints in existing studies, indicates the need for further studies on macroeconomic impact, and examines the policy implications of the results of current research in this area.

What characterises South Africa's economy and economic strategy makes it simultaneously more and less vulnerable to the economic ravages of the HIV/AIDS epidemic, as will be shown in this review of current studies. In looking at the importance of asset markets, Barr and Kantor (2002) describe South Africa as 'an emerging market, with its related susceptibility to market flows, dependency on resource prices, and experiencing continual shocks to its economic system including high levels of volatility in the business cycle.' They further say, 'South Africa is an economic system within a global market for goods, services and savings. There is a resultant matrix of reactions, interactions and feedback to exogenous real shocks that determines the level and growth rates of output, incomes and prices in the system.'

The essence of the South African economic strategy is to ensure macroeconomic stability as a necessary condition for sustained economic growth and job creation, which are necessary for poverty reduction and wealth redistribution. (Calitz 2002) Current research on the macroeconomic impact of HIV/AIDS seeks, in general, to quantify the effect of the epidemic as an endogenous shock on a volatile, emerging and globalised economic system.

Impact on economic growth

There is general agreement on the harm the epidemic causes to key factors of economic growth, stemming from the sharply increased death rate among the most economically active members of the population and leading to a reduction in total capital and human resources available for production and investment, a reduction in savings rates and disposable incomes, and a reduction in domestic consumption. (SABCOHA 2002; Theodore 2001; Guinness & Alban 2000; Stover 1999; Bloom & Mahal 1995) The epidemic is also acknowledged as a development crisis, with the effect of undermining key components of South Africa's economic reforms, most critically in the areas of wealth redistribution, poverty reduction and improved social capital. (Guinness & Alban 2000; Barnett & Whiteside 1999)

The literature shows that we have reasonably good information about the rate at which the epidemic is developing, but insufficient information on the rate at which the epidemic is destroying the economic and development potential of the country, leading to substantial uncertainty about the macroeconomic impact of the epidemic. (Theodore 2001; Barks-Ruggles 2001; Foote & Akukwe 2000; UNAIDS 2002; MacFarlan & Sgherri 2001)

Estimated gross domestic product (GDP) loss is driven by an estimate of the number of AIDS cases in a given year and the average loss of income and output associated with those cases. (Theodore 2001) However, as Guinness (2000) points out, 'The impact of AIDS is not only related to prevalence. Economic changes due to HIV/AIDS tend to occur slowly and there is a time lag between increasing prevalence and the felt impact.' The period of asymptomatic infectiousness experienced by individuals means

¹ Compiled by the Centre for Applied Business and Economic Studies, University of the Witwatersrand

that by the time the costs of dealing with the impact are fully recognised, it is too late to attempt to reduce them. (Barnett & Whiteside 1999)

The studies of the effect of an absolute decline in labour supply on unemployment are speculative and inconclusive. Some authors believe that businesses may respond by becoming more capital intensive, and less absorptive of surplus labour. (Theodore 2001) Some authors suggest that current labour surpluses may be absorbed and negate some of the effects of decreased production. (Arndt & Lewis 2000; Broomberg 1993; Bloom & Mahal 1995) The overall impact on labour supply and productivity will also depend on the distribution of those affected across skill categories and employment status – most macro estimates rely on assumptions (rather than detailed analysis) in relation to these variables, leading to divergent estimates of GDP and growth impact.

There are, however, a number of broad trends emerging on the impact of these factors on GDP growth rates. In the first instance there are those authors whose economic forecasting of the impact of HIV/AIDS leads them to predict a likely reduction of GDP growth rate from 0.3% a year; (Stover 1999) to 1% a year; (SABCOHA 2002) to between 1 and 1.6% a year; (Arndt & Lewis 2000) to as much as 25% over a 20-year period. (Stover 1999) Arndt and Lewis (2000) further describe a scenario of a 15% reduction in the human development index (HDI) by the year 2010, and an overall reduction in the size of the South African economy – lower GDP — by 17% in 2010.

Other authors find, primarily through an examination of expected lifetime earnings of the prematurely deceased, a modest impact of the epidemic on per capita income, but a decline in economic welfare that is far greater than the rate of decline in GDP. (Jamison 2001)

Further studies find that dire macroeconomic predictions have not come to pass, that the epidemic's effect on growth rate of per capita income and GDP is minimal, that the macroeconomic impact of AIDS is 'gradual, subtle and incremental' and that evidence from other countries suggests that it is possible to maintain high growth rates through the epidemic. (Whiteside & Sunter 2000; Madi & Weeks 2000; Bloom & Mahal 1995)

Impact on short-run macroeconomic variables

In looking at the effect of AIDS on short-run macroeconomic variables such as inflation, the interest rate, exchange rates and the balance of payments, and the overall fiscal outlook for South Africa, certain well-accepted views on the impact of AIDS should be noted. AIDS will have a negative effect on the level of savings in South Africa. Private saving will be reduced as household expenditure on healthcare increases. However, the impact on savings might not be that severe, as household savings levels in South Africa are generally low, and the white population group, which contributes over 60% of private household savings, has a low HIV/AIDS prevalence rate. (Madi & Weeks 2000) Nonetheless, private savings will likely decrease, and government healthcare expenditure may crowd out public investment and/or raise the deficit. (Laubscher & Malunga 2000)

Companies will experience higher costs related to increased medical and death benefits, and higher training costs due to increased staff turnover and absenteeism. (Loewenson 1999) These costs will in part be passed on to consumers. Government spending will necessarily be higher, in order to cope with increased healthcare demands by the public, and an increase in social infrastructure requirements, for example, to care for orphans. This will be the case even in the absence of an explicit policy of providing AIDS drugs and treatment – such a policy would raise expenditure further.

Several factors distinguish South Africa from other countries in sub-Saharan Africa experiencing high rates of HIV/AIDS prevalence. Extreme income inequality, and large differences in AIDS infection rates across population groups mean that analysis must necessarily be disaggregated in order to model the situation effectively. Further, South Africa's high unemployment rate means the effect of AIDS on labour supply may be more muted than in other countries. Government policy with regard to the epidemic is somewhat unclear, making it difficult to distinguish which of the costs of treatment will be born by the state, and which by individual households. These problems enhance the difficulty of modelling the macroeconomic impact of AIDS.

Nonetheless, many studies have attempted to model the macroeconomic impact of the epidemic, and the results reflect the different views on how AIDS may affect key variables. The two most influential studies of recent years have been the ING Barings study of April 2000, and the more recent study by the Bureau of Economic Research (BER) in September 2001. The consensus view of various authors and the estimates of the impact of AIDS relative to a no-AIDS scenario from these two particular studies are described.

Higher costs for companies should be passed on to consumers, and hence be reflected in both producer price inflation (PPI) and consumer price inflation (CPI) figures. There is some indication that slower growth and a bias towards healthcare spending will constrain domestic demand growth in many sectors, limiting the extent of AIDS-driven inflation. (BER 2001) On the other hand, higher government spending in healthcare and social services, could place upward pressure on the inflation rate. (Laubscher & Malunga 2000) Overall, there is evidence that inflation will increase, with estimates of the size of the increase due to AIDS ranging from 2% to 3% extra. (ING Barings 2000; BER 2001)

The Reserve Bank, which targets inflation, will be forced to respond to high inflation by increasing interest rates. Furthermore, increased government expenditure will have to be financed through the bond markets, and this too will drive up interest rates. There is some evidence that the high prevalence of the AIDS epidemic in sub-Saharan Africa, and the South African government's failure to find a clear policy response to AIDS, has increased the perception of risk associated with South African assets and pushed up interest rates. (Laubscher & Malunga 2000) All of these effects act to increase the interest rate relative to a no-AIDS scenario – estimates of the magnitude of the effect range from between 1% and 1.5% in the period 2001-2005, and between 3% and 4% over the longer term. (ING Barings 2000; BER 2001)

In terms of standard no arbitrage assumptions, economic theory predicts that an increase in the South African inflation rate will lead to a depreciation of the currency at the same rate. Hence, the increase in inflation due to AIDS is expected to lead to a depreciation of the rand. Furthermore, import intensity will increase, as most healthcare products are produced abroad, and lowered worker productivity may mean that South African domestic production runs up against supply side constraints. This too will strengthen the demand for foreign currency, and cause depreciation of the rand. Estimates suggest that the rand will be between 2% and 3.5% weaker over the next 15 years as a result of AIDS. (ING Barings 2000; BER 2001)

The effect of AIDS on the balance of payments (BoP) is controversial, with some commentators arguing that the current account will be improved by the AIDS crisis, and others arguing that it will in fact be worsened. The depreciation of the exchange rate should lead to a strengthening of the export sector, and a decline in the demand for imports. (BER 2001) On the other hand, government demand for healthcare products, which must generally be imported, will increase.

Furthermore, export sectors such as the mining sector are more vulnerable to AIDS than other sectors, and output from these sectors may decrease. (Stover & Bollinger

1999) The consensus seems to be that there will be a small improvement in the current account. This negligible effect is likely to be wiped out by a substantial weakening of the capital account, as foreign capital moves out of South Africa in response to declining investor confidence as the AIDS crisis grows. This is notwithstanding the larger capital inflows *required* by the domestic savings shortfall. (BER 2001) Overall, the BoP should weaken somewhat, but more precise estimates are not available.

AIDS has important fiscal impacts. The government will have to increase spending on health services. It is important to note that the size of this increase depends partially on the level of foreign aid and NGO support that the government is able to attract for its policies. Also, the evidenced ability of the health insurance industry to absorb some of the treatment costs, in the face of a sub-optimal treatment response by government, has contributed to slowing the impact on public healthcare costs.

Tax revenues will be lower than in the no-AIDS scenario, as economic growth slows. In particular, income tax revenues will be lower as people spend less time working and more time attending funerals, caring for those with the disease or coping with AIDS themselves. The fact that AIDS in South Africa has higher prevalence among the poorer members of the black population means that the impact on income tax receipts will be correspondingly less. The sum total of increased spending and lower tax revenues is that government will have to increase the budget deficit in order to maintain current levels of social spending and welfare. Estimates of the size of the increase range from 0.1% to 3.1% of GDP. (BER 2001)

Impact on labour and demographics

It is expected that with the rise in the prevalence of HIV/AIDS in sub-Saharan Africa there will be a decline in population growth in the affected countries. This view is not uniformly supported, and there has been a range of views around whether or not the epidemic will in fact change population growth rates into negative numbers. (Barnett, Whiteside & Desmond 2000)

AIDS tends to strike young adults, and therefore it reduces life expectancy of the population as a whole, and increases the burden of the working age population who are required to care for the young and the sick. (Arndt & Lewis 2000) Fransen and Whiteside state that in no way will the HIV/AIDS epidemic completely stop population growth; it will however slow population growth especially in areas that have significantly higher prevalence rates of HIV infection. Whiteside and Sunter (2000) state that the HIV/AIDS epidemic is unlikely to result in negative population growth, except in certain areas where there are exceptionally high levels of HIV prevalence and declining fertility. This has been noted, for example, in KwaZulu-Natal.

A decreased rate of population growth and a smaller population affects both the supply side and the demand side of the economy. The mortality rate of 20-40 year olds has already increased, reducing the working population and increasing the number of orphans. This impacts on the economy by reducing the amount of money earned, thereby reducing disposable household income. Growing economies like South Africa's rely on household expenditure for economic development and growth. In addition, the increase in the number of orphans impacts directly on the money government has to make available for education and care for these orphans.

Recent estimates indicated that up to 15% of South Africa's economically active population is HIV positive or suffering from AIDS in 2000. (Laubscher & Malunga 2000) Research shows that the growth rate for the number of women with HIV has far outstripped the growth rate for men. The amount of mother-to-child transmission

has also increased in the past decade, increasing not only the mortality rate for women but also for young children. (Whiteside & Sunter 2000; Laubscher & Malunga 2000)

As these trends continue, they are likely to effect population growth. In terms of reducing fertility the effect is expected to be threefold. In the first instance the number of births will be reduced if many women die before they reach the end of their childbearing years. The second effect will be seen if HIV infection and the onset of AIDS physiologically reduces fertility. A third effect on fertility is if awareness and condom usage increase to the extent of reducing fertility. (Whiteside & Sunter 2000) Fertility decreases, however, may be offset by the population replacement desires of childbearing cohorts.

As the highest prevalence is among the economically active population this will have a direct impact on the labour market. The epidemic is expected to have a differential impact on growth of the labour supply by skill category. (Arndt & Lewis 2000) In Cuddington (1993) it is discussed that the demand for, and supply of labour will decrease. The demand shift will occur as the productivity of labour decreases. The supply shift relates to the fewer number of people available in the labour market to work. As AIDS is more prevalent among the economically active, the impact of the epidemic is likely to be much larger than the absolute number of actual AIDS deaths. (Stover & Bollinger 1999)

South Africa has a significant skilled labour shortage due to the effects of apartheid, 'Bantu' education and the large numbers of migrant labourers. The research in sub-Saharan Africa has shown that the epidemic is affecting the skilled, unskilled and semi-skilled workforce differently, depending on country circumstances. (Cuddington 1993)

In Tanzania it was hypothesised that the disease was not going to have a terribly detrimental effect on the labour market, as unskilled workers were easily replaceable, due to very high unemployment rates. This cannot be extrapolated to the South African market however, as even if unskilled workers are easily replaceable our labour shortage exists more among skilled workers, and the epidemic is also affecting this cohort quite significantly. The ING Barings report (1999) suggested, however, that the infection had peaked at nearly three times higher for the unskilled and semi-skilled compared to the skilled workers in the labour market. (Arndt & Lewis 2000)

The epidemic will impact factor demands of both labour and capital. Although South Africa experiences a labour surplus, it is combined with a skills shortage, and the rate of infection among the unemployed is likely to be the same as that found among the unskilled. Again, due to the skills shortage in South Africa, which is expected to be exacerbated by the HIV/AIDS epidemic, remuneration and replacement costs are also set to increase significantly. (ING Barings Report 2000)

Productivity in organisations is affected negatively because of the HIV/AIDS epidemic. These costs to companies can be described as both direct and indirect costs. Direct costs include medical aid and pension benefits, drugs (if they are made available to HIV positive workers) and funeral expenses. Indirect costs include training and recruitment costs, and absenteeism or time lost due to illness or caring for sick family members. With the onset of AIDS increasing rapidly, it is expected that there will be higher incidences of labour turnover, which will result in a less experienced labour force that is in turn less productive. (Stover & Bollinger 1999)

Impact on foreign investment

There is some speculation that worker shortages may lead to higher wages and therefore higher domestic production costs. Higher domestic production costs would

likely lead to a loss in international competitiveness and foreign exchange shortages. (Stover 1999) A decrease in production, and the likely effects on the business supply chains (SABCOHA 2002) also presents a greater risk profile and is in itself likely to lead to a decrease in direct foreign investment. (SABCOHA 2002; ING Barings 2000) The possibility of a slow economy adds to an increased perception of risk, rapid withdrawals of capital and severe pressure on the balance of payments and exchange rates. (Barr and Kantor 2002) A lack of confidence in the future of South Africa leads to higher interest rates and a cycle of slower spending levels and a slower economy. Weak growth then further discourages foreign direct and portfolio investment. (Barr & Kantor 2002; de Wet 2002)

De Wet argues that shocks to the financial market and in particular to foreign investment are the dominant disturbances in the South African economy, however this analysis is not specifically geared to the effect of HIV/AIDS on financial markets. (de Wet 2002) It is generally agreed that AIDS may put pressure on inflation and interest rates, but that these are possibly short term effects, and the overall impact on the balance of payments may remain minimal. (Laubscher & Malunga 2000; BER 2001)

Models employed for research

Guinness and Alban (2000) define a macroeconomic study as an examination of a specific event or chain of events on GDP, HDI or a society's total income.

Macroeconomic studies of the impact of HIV/AIDS rely on evidence gathered through surveys, report analysis, modelling exercises and anecdotal evidence. (Guinness & Alban 2000)

In the studies cited above, we may distinguish between different approaches. One approach is characterised by broad qualitative evaluations of the impact of AIDS on macroeconomic variables. This is often problematic, as AIDS has conflicting effects on many variables, as noted above with respect to the current account. It may be that these sorts of qualitative approaches can be fruitfully applied at the sectoral level, but are less valuable in a macro context. (Barnett & Whiteside 2000).

Another approach is the case study, in which a study of a particular country is conducted, and insights gleaned from this case are extended. (MacFarlan & Sgherri 2001, on Botswana; and Cuddington 1993, on Tanzania) Unfortunately, South Africa's somewhat unique position among sub-Saharan countries means that the experiences of other countries cannot necessarily be applied to the South African case.

We also see direct modelling of the South African economy and the impact of AIDS. This approach, used in the ING Barings and BER studies, has proved the most fruitful, as it is able to quantitatively estimate the various effects and come to some conclusion regarding the overall impact of AIDS. Furthermore, it is expected that these types of models will become more accurate over time, as the demographic projections produced by the Actuarial Society of South Africa (ASSA) improve, and as further micro level research allows more precise assumptions to be made.

Nonetheless, we may criticise these models for not taking account of differences in the way AIDS affects certain key sectors, in particular the mining and informal sectors. The IMF has successfully modelled the Botswanan economy in a two-sector model of the formal and informal sectors. (MacFarlan & Sgherri 2001) Future efforts should concentrate on refinements to econometric models such as these.

The study of the impact of AIDS on the economy at a macro level has also relied heavily on projection models built from extrapolations, projections, simulations and impact analysis. All of these models have some shortcomings or limits in application.

In general, weaknesses of projection models revolve around the large number of epidemiological and economic assumptions that they require; their suitability for short-term information; a lack of direct cost estimates; or insufficient attention to the impact of prevention. *The human capital approach does not examine how the direct costs of the epidemic are financed by replacement of or addition to other expenditures.* Simulation models require extensive data input and high skill levels for manipulation. (Barnett & Whiteside 1999)

John Cuddington (1993) developed a Solow style model to study the effects of the epidemic on the growth path and GDP per capita in Tanzania. (Cuddington 1993; World Bank 1993) The model makes assumptions about the demographic effects of AIDS in order to estimate the macroeconomic effects on the economy and compares the results with a counterfactual 'no-AIDS' scenario. MacFarlan (2001) and Kambou (1992) have also examined a dual economy equilibrium model and its impact on labour, savings and investment and the banking sector. Arndt and Lewis (2000) adapt a standard computable general equilibrium model for South Africa.

Barr and Kantor (2002) have developed a model to forecast turning points in the growth rate of economic variables up to one year ahead. This model incorporates the important feedback loops between balance of payments, interest rates and growth in the money supply sector. (Barr and Kantor 2002) This model is able to forecast broad trends in short-term interest rates and the balance of trade, and their sensitivity to external and internal shocks. The model should be tested on the shock to the economy due to the AIDS epidemic.

Gaps in the research

Gaps in the information needed to inform studies of the macroeconomic impact of HIV/AIDS are significant. Most significantly, costs arising for companies, changing household consumption and expenditure patterns, estimated government spending and demographic profiles need more robust data. *Model-based projections need to include sensitivity analysis on epidemiological and economic assumptions.*

Instead of broad statements of economic growth or slow down, studies need to look at specific issues in the growth path of the economy, and a dynamic analysis of this growth relative to the AIDS epidemic as a major internal shock. Models are needed that will relate to how fast the economy adjusts, what the level of output will be at each stage of adjustment, when most of the change will take place, and the shape of this path of change.

Studies that measure the performance of the economy on an aggregate basis – overall economic growth, changes in the structure of the economy, and prospects for sustainable growth – need to be integrated with AIDS impact studies.

Generally, HIV/AIDS-related economic indicators are not collected systematically, and are not sufficiently refined or robust. Existing research is limited in its applicability for policy and too narrow in its scope. There is an absence of control groups in AIDS research, which limits its generalisability, and the sectoral expense and demand implications are not adequately explored. (Guiness and Alban 2000)

It would be useful to examine South Africa's demographic changes, and see if a new type of demographic transition is indicated under the pressure of the AIDS epidemic. Examinations of the effect of increased death rates on the birth rate under an AIDS scenario are lacking. Will replacement pressures increase birth rates, or will the birth rates decrease due to the high death rates among women in the fertility age cohort? What will be the overall effect on population growth rates, and at what level will death rates stabilise? What are the consequent effects on economic growth?

Impact studies concentrating on the morbidity and mortality of women would be helpful, as we know this group has been disproportionately affected and continues to have extreme vulnerability

In the past the greater certainty of reaching an advanced age — due to the traditional demographic transition of lower death rates and a rise and subsequent fall in birth rates — led to increased returns to investment in education and other forms of human capital. Studies are needed to see if the skewing of the demographic transition in South Africa leads to decreased investment in human capital, and with what effect on labour and productivity.

The loss of social capital is difficult to measure directly and is currently described by its symptoms. However, social capital describes a type of investment and the effects of the loss of social capital need to be studied, quantified and measured for economic value and impact. Currently only very limited studies on AIDS orphans attempt to quantify the economic value of social capital. (Barnett & Whiteside 1999)

There are other areas in which there is a clear need for more research. There is a need for analysis of the long-term effect of the demographic changes caused by AIDS on South Africa's macroeconomic outlook. For example, current AIDS research has demonstrated that the impact of the disease will be to increase the proportion of the population that fall into younger cohorts. This would suggest that there would be a decrease in the average savings rate, as young people (under 25 years of age) tend to consume a greater proportion of their income than those in older cohorts. (Barks-Ruggles 2001) It is not clear, however, if this is in fact an outcome of the AIDS epidemic — more research is needed.

Research is needed into the economic costs of the various levels of healthcare provision possible for dealing with AIDS, in order to estimate with greater accuracy the distribution of costs that may arise under various policies. These studies should include estimates of opportunity costs, such as family members' time, and potential productivity losses resulting from AIDS; as well as the direct costs of healthcare to government, businesses and households. Some research in this field already exists, but more is necessary. (Barnett & Whiteside 2000)

Research into the effects of AIDS on informal sector savings and growth would be useful. A significant number of people in South Africa are employed in the informal sector, but the dynamics of AIDS in this sector are not well studied. Since the informal sector plays a relatively small role in the overall economy, it is unlikely that estimates of the impact of AIDS on macroeconomic variables will be much affected by such studies; but the effects of AIDS on income inequality in South Africa may be better understood if such a study were undertaken.

There needs to be more thorough sectoral research on the costs of and ability to replace skilled, semi-skilled and unskilled labour. It is also necessary to study the impact of AIDS on factor intensity and returns in the various sectors to see if there is a shift towards capital-intensive production and to ascertain the returns to capital due to absenteeism.

Policy implications

National health, epidemiological, social and economic responses to the HIV/AIDS epidemic is a leadership challenge. The World Bank believes that information about the state of the epidemic is a public good, and that the management of the disease is a public priority, made more challenging because it deals with issues of private behaviour. Appropriate economic policy, however, has the potential to moderate the negative economic impacts of the epidemic. (Arndt & Lewis 2000)

The opportunity for South Africa to avert a catastrophic result from the HIV/AIDS epidemic has passed. Lack of coordination and conflicting signals regarding policy principles and direction from national government and between government agencies has reduced the effectiveness of current AIDS programmes. (Calitz 2000) The timing, scale and quality of government response has not been adequately informed by knowledge of the economic impact of the disease. (Theodore 2001) Theodore (2001) goes on to say, 'The initiation of an effective response must be seen in the light of what is in fact a race against time.'

The opportunity that is now presented to government is the chance to manage perceptions of the effect of the epidemic on the health of the economy, and the effectiveness of policy and programme interventions to minimise economic, social and health consequences. As well, the government is in a position to make domestic budgetary reallocations in favour of HIV/AIDS programmes if needed, thereby sending the message that the country is in fact dealing with a crisis. (Barr and Kantor 2002; Theodore 2001) Despite the economic and information constraints already mentioned, there is sufficient information about the epidemic for the government to project, design and plan these interventions. (Lowenson 1999)

Conditions specific to South Africa, present further challenges to enacting effective policy, as there must be a prudent balance between acting on current research and estimating the differential effects on impact in South Africa, of those conditions. On a macroeconomic level South Africa's uniqueness is characterised by an extremely high Gini coefficient; the apparent ability of the health sector to, so far, absorb costs; an historically low rate of household savings; an extremely low status of women across cultural groups; the rate and time at which the infection is growing; a large surplus labour/unemployment problem; and the skewed labour skill, racial and education gradients of HIV/AIDS. Also, while South Africa's macroeconomic performance has been satisfactory, reforms on labour market deregulation and privatisation have been slow. These are all conditions that affect the projected macroeconomic impact, and must be factored into policy making. (Madi & Weeks 2000; Calitz 2002)

A number of general economic forecasting models have not been employed for the HIV/AIDS epidemic, and might be examined for their utility and rigor. For example, the growth, employment and redistribution strategy (GEAR) team, under Finance Minister Trevor Manuel, based a number of their formulation and forecasts on an economic model developed by the team – unpublished, and perhaps sidelined by a loss of focus around GEAR. (Barr & Kantor 2002)

Sachs and Warner (1997), in a general review of economic growth in sub-Saharan Africa, find that poor economic policies play an especially important role in slow growth, especially continued reluctance by states to increase their openness to international markets. Laubscher and Malunga (2000) suggest that policy makers need to monitor the epidemic closely and react to changing situations, as opposed to adopting long-term strategies. The ability to mount this type of response will require dedicated resources, responsible to government in an advisory role, but independent of the state bureaucracy.

It is clear that AIDS will have deleterious effects on the savings rate, on the inflation rate, and on the fiscal deficit. The key question is how the costs of AIDS sufferers are financed. (Madi & Weeks 2000) Either households can be left to purchase what healthcare is available themselves, when they can afford it, or government can step in to provide specialised AIDS clinics, free or cheap antiretroviral drugs and support for AIDS sufferers. The former minimises the fiscal deficit but harms the savings rate and long-term growth prospects, since households will end up spending their income on healthcare, rather than saving. By contrast, the latter policy may be difficult to

finance without pushing up interest rates. Government needs to balance these elements and arrive at a sensible policy that splits the burden of AIDS costs in an economically efficient manner between households, businesses (many of whom have AIDS policies), and the government.

Important policy implications come out of studying the demographic impact of the epidemic, especially the importance of creating effective policies to cope with mother-to-child transmission and orphans. These issues result in an increase in child-headed households and the elderly caring for the young. The financial situation of these households changes, resulting in both greater household expenditure and lower savings, directly affecting the growth prospects for the economy and government expenditures on social services and education.

It should be noted that government has the ability to procure drugs at cheaper prices than companies or households, and that government is in a good position to attract international funding for its AIDS policies. The need for a government policy that maximises the use of support available from abroad, and attempts to maintain fiscal balance while relieving the spending burden of households is clear.

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HIV/AIDS and Democracy: What do we know?

by Ryann Manning ¹

The simple answer to the question posed by this chapter is that we know very little, because there is scarcity of substantive data and primary research on the topic of HIV/AIDS and democracy.² The vast majority of sources discussed in this paper are theoretical or conceptual pieces, which speculate – with varying degrees of depth – on the possible, probable, or expected impact of HIV/AIDS on security and democracy, as well as the impact of insecurity and antidemocratic forces on accelerating the spread of HIV, or of democracy and governance on slowing that spread. Very little literature contains substantive proof of these predictions – a fact that should not be seen to dispute their findings, but rather to highlight the need for more systematic research in this field.

This paper is structured in two sections. The first reviews work on the impact of democracy, governance, security, and related factors on the spread and implications of HIV/AIDS. The second section reviews a range of work on the impact of HIV/AIDS on democracy, governance and security.

Impact of democracy and security on the spread of HIV/AIDS

There has been widespread speculation from various sectors that democracy and related factors – such as good governance, social cohesion and a strong civil society, as well as the absence of violent conflict and political instability – can help slow the HIV/AIDS epidemic and minimise its impact.

Mattes has offered some preliminary thoughts on how democratic governance could impact the spread of HIV/AIDS, which Willan has discussed in her concept paper, 'Considering the impact of HIV/AIDS on Democratic Governance and vice versa'. (Willan 2000)³ For instance, Mattes notes a potentially important link between government legitimacy and HIV/AIDS prevention. Democratically-elected governments generally enjoy greater legitimacy than other regime types, he argues, and legitimate governments are more credible sources of information on HIV/AIDS, are more likely to enjoy public trust and be able to 'take the people with them' on policy and budgetary changes, and are more likely to persuade citizens to adopt prevention measures. Mattes also suggests that democratic governments may enjoy greater citizen compliance with tax and rate payments, freeing more resources for HIV/AIDS and other programmes. In addition, he notes that public awareness of the epidemic may be higher in democratic societies – presumably as a result of free speech and a free press – which may translate into stronger demands for a government response to the epidemic, as well as greater citizen empowerment and collective action. He also identifies a number of important socio-cultural factors that result from a democratic environment, including higher levels of 'intersocietal and interpersonal trust,' denser networks of 'cooperative citizen groups', and higher levels

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2 This chapter was first prepared as a paper for 'AIDS and democracy: Setting the research agenda', a workshop held in Cape Town, April 2002. It does not represent a comprehensive inventory of all that has been done on the topic of HIV/AIDS and democracy, but rather all that the author was able to find given limited time and resources. Though efforts were made to broaden the reach of the review, the researcher's awareness of papers, symposia, and other work on this topic was limited primarily to those which she could access on the Internet, or which were available locally or from people within her immediate sphere of operation.

3 Robert Mattes is currently the head of the Democracy in Africa Research Unit (DARU) at UCT, and was previously with IDASA.

of social capital, all of which enable and facilitate collective action to combat the epidemic and manage its impacts. Social capital, moreover, will ease the burden on government to provide social welfare and other services. Finally, Mattes notes a list of factors related to democracy and governance that influence the epidemic, including gender equality, stronger family structures, norms of monogamy, and reduced labour migration.

Whiteside, in a briefing to USAID, considers other factors of democracy and good governance that may help slow the epidemic and minimise its impact. (Whiteside 1999) He argues that a fair legal system, respect for human rights, and support for the rights and empowerment of women would help reduce stigma, increase openness, and aid prevention. He also suggests that a credible and competitive political process may make AIDS an election issue and foster leadership around AIDS, while a fair and gender-neutral electoral system will facilitate greater female representation, with positive externalities for HIV/AIDS. Furthermore, a strong civil society is essential to combating the epidemic, he argues. Finally, he contends that transparent and accountable government institutions will improve the sharing of information around HIV/AIDS and possibly contribute to better leadership on the issue.

In a paper examining the impact of HIV/AIDS on 'human security', Fourie and Schonteich (2001) consider factors that help spread HIV/AIDS (or help slow that spread) and which are integrally linked to democracy. In particular, they focus on gender and the role of a human rights-based culture and polity in slowing the spread of HIV/AIDS and mitigating its impact. Stigma and discrimination, they argue, hamper HIV/AIDS interventions, and could be minimised by a socially- and legally-entrenched respect for human rights. Such respect would also ease gender inequalities that heighten women's susceptibility and vulnerability to HIV/AIDS. The authors restate the widely-accepted argument that gender inequality helps drive the epidemic, and also note that gendered laws and cultural norms – such as those governing land tenure, which can strip widows of their family's land – increase the vulnerability of women to the impacts of HIV/AIDS. (Fourie and Schonteich 2001)

Another relevant analysis is a brief paper by Patterson for the Interagency Coalition on AIDS and Development. (Patterson 2000) Though it does not explicitly set out to examine the link between democracy and AIDS, the paper discusses a number of factors of democracy and good governance that can facilitate more effective responses to the AIDS pandemic. These include a strong civil society, which is essential to a national response and can provide alternatives to ineffective government services. Patterson also claims that national AIDS policies are implemented more quickly when a broad, consultative process is undertaken, which is more likely in a democracy. Commitment by political leaders to addressing the epidemic is also more likely in a democracy, Patterson contends, because they 'face the consequences of non-action', such as being voted out of office. (Patterson 2000) As evidence, Patterson cites research by Mann that found countries whose leaders remained silent on HIV/AIDS ranked lower on the UNDP's Freedom Index. (Mann J, Tarantola D & Netter T 1992) Finally, Patterson discusses the importance of a free and active press, and draws parallels between HIV/AIDS and famines, which development theorist Amartya Sen has argued do not occur in countries with a free press. The press exposes that the famine is caused not by a lack of food but by a lack of *access* to food, and 'once exposed, the failure to act is ... intolerable'. (Patterson 2000: 4) A similar mechanism could spur action around HIV/AIDS.

The Pact AIDS Corps, a branch of an international organisation that works primarily on developing capacity within civil society organisations, has compiled a tool kit for applying democracy and governance (D&G) approaches to HIV/AIDS interventions. The premise is that D&G has 'a strategic role to play in... expanding and enhancing HIV/AIDS responses.' Pact AIDS Corps (2001) The tool kit discusses a number of

D&G concepts and activities with application to the AIDS pandemic: the rule of law, increased citizens' participation, increased capacity and enhanced flow of information.⁴ The kit lists objectives and applications for each to the AIDS field, identifies key gaps and challenges facing AIDS interventions, and explores how D&G initiatives can contribute to addressing some of these challenges. They also provide descriptions of specific tools contributed by individuals and organisations working in these fields.

A paper by Costarelli of the Electoral Institute of Southern Africa examines the importance of democratic participation for furthering social and economic rights, including the right to health, which are jeopardised by HIV/AIDS. (Costarelli 2002) Costarelli argues that greater participation, particularly by HIV-positive people, will lead to improved AIDS policies, and discusses options for special voting procedures to ensure the enfranchisement of people living with HIV/AIDS. The paper ends with a six-point plan for empowering citizens to 'make a real impact on their governments' policies.' (Costarelli 2002: 9)

In an analysis of political factors that shaped and hindered AIDS policy-making in South Africa, Manning identifies links between democratic norms and structures and more effective AIDS policies. (Manning 2001) For instance, she notes the importance of post-apartheid South Africa's emphasis on human rights for minimising HIV/AIDS-related discrimination. She also concludes that a more-democratic approach could have resulted in more effective policy making, arguing that an often-defensive reaction by the government to criticism of its HIV/AIDS policies eliminated an avenue for improving those policies. By dismissing the input of many HIV/AIDS stakeholders, the government 'missed the opportunity to foster quality evaluative input and improve the nation's AIDS policies.' (Manning 2001)

In a paper on democracy and governance in southern Africa, Kunaka argues that, 'democracy and governance become central processes in the fight against HIV/AIDS.' (Kunaka 2000) In particular, Kunaka argues that adding a human rights dimension to HIV/AIDS prevention and treatment will give these efforts mobilising power and help to empower women, children, sex workers and prisoners to avoid coerced and unsafe sex.

Finally, Hsu, manager of the UNDP's HIV and development project in South-East Asia, has compiled an analysis of the role of good governance in slowing the spread of HIV. (Hsu 2000) Hsu suggests that a combination of good governance and development result in low and stable HIV prevalence. As evidence, Hsu uses income inequality as a proxy for bad governance, and GNP as a proxy for development, and show that each correlate with HIV prevalence (the former directly, the latter inversely). He also discusses how certain factors of good governance can contribute to slowing the spread of HIV, such as: the rule of law, by empowering women and enabling people to know their rights and to use legal frameworks to improve their lives; transparency, by facilitating the flow of information about HIV/AIDS; and 'responsiveness to the needs and wishes of stakeholders and constituents.'

Civil society

One component of democracy widely believed to help combat HIV/AIDS is civil society, as mentioned by several papers cited above. Willan, for instance, explores this link, speculating that, 'by building strong civil societies – which both strengthens democratic governance, and is a pre-requisite for it – societies are less likely to experience an HIV epidemic, and are more able to respond to, and control the

⁴ The paper also identifies the D&G concepts of advocacy and transparency/accountability as relevant to HIV/AIDS, but on these it does not elaborate further. Pact AIDS Corps: 11

epidemic.’ (Willan 2000: 14) Willan acknowledges that she found no systematic research testing this hypothesis, and proposes a research plan to do so. She notes research in Uganda during the early 1990s that suggested the success of Uganda’s HIV/AIDS interventions may have come primarily from their influence in strengthening civil society, which in turn slowed the epidemic. (Barnett, T cited in Willan 2000: 23)

Whiteside, in his USAID briefing, also discusses the potential for civil society to be a positive factor in resisting the spread and devastation of the HIV/AIDS pandemic. (Whiteside 2001) He ties this in part to his theories on social cohesion, which are discussed in detail in the next section, but also states explicitly that ‘societies with a high development of civil society and good governance are less likely to experience an HIV epidemic, and more likely to respond to the epidemic and control the spread of HIV.’ In addition, he argues that ‘developed democratic systems and civil society not only provide a measure of defence against HIV spread but also assist social response and mitigate the impact.’

The United Nations Development Programme (UNDP), in a document discussing the need for good governance as a component of any national HIV/AIDS programme, also touches on the importance of civil society. The document attributes the success of Senegal in containing the epidemic to a ‘flourishing of partnerships’ between government and civil society. (UNDP 2001)

Social cohesion

Whiteside and Barnett have hypothesised that levels of social cohesion and wealth determine how rapidly and how extensively an HIV/AIDS epidemic will spread. (Barnett & Whiteside 1999: 200-234) Based on these criteria, they group nations into four categories: societies with high levels of both social cohesion and income will not experience a serious epidemic; societies with high levels of social cohesion but low income will experience a very slow-moving epidemic, with infection checked by social controls; societies with low levels of social cohesion and low incomes will experience epidemics that develop slowly at first but accelerate later and eventually reach high levels of infection; and societies with low social cohesion and high income will experience the most rapidly-spreading epidemics and the highest overall levels of infection. However, the link between democracy and social cohesion, and thereby between democracy and the spread of HIV, is complicated. As the authors indicate, social cohesion can as likely stem from authoritative governance or restrictive religious traditions as from democratic inclusion and participatory structures. (Barnett & Whiteside 1999: 225) Even if higher levels of social cohesion can help slow the epidemic, there is no certainty that greater democratisation will increase social cohesion.

Conflict and instability

It is widely accepted that conditions of war, political instability and violent conflict provide fertile ground for the spread of HIV. As activist and former Mozambican education minister Machel has written, ‘The chaotic and brutal circumstances of war aggravate all the factors that fuel the HIV/AIDS crisis.’ (Machel 2002) A symposium of people involved in efforts to combat HIV/AIDS in post-conflict societies in Africa identified a list of mechanisms by which conflict contributes to the spread of HIV, based on evidence from throughout the continent. (Ngubane 2001) These mechanisms include the dislocation of communities, creation of flows of refugees, disruption of family life, breakdown of services, psychological stress, and contact between fighters and civilian women and children, including sexual exploitation and violence. At another forum on AIDS and violent conflict in Africa, Obaso of the Africa Initiative of the American Red Cross discussed a similar list of factors related to conflict situations

that help spread HIV. (Obaso M 2001) She highlighted the role of large-scale population movements – including of demobilised soldiers, refugees, and urban populations that return to rural areas in times of conflict – in bringing infected people and new viral strains to less-affected areas. She also mentioned disintegration of families and social norms, high rates of sexual assault, large number of both conflict and AIDS orphans, and commercial sex workers serving refugee camps as contributing to the spread of HIV.

The role of soldiers in spreading HIV has been one of the most widely-considered topics in the field of violent conflict and AIDS. Soldiers are themselves considered a high risk group for HIV infection, because of their age and gender, mobility, frequent separation from families, risk-taking ethos, and other factors, and generally have a higher HIV prevalence than the civilian population in their home countries. They are then believed to be a conduit for spreading HIV to civilian populations, particularly in rural or isolated areas.

Some of the earliest work on the links between HIV/AIDS and the military was by Whiteside and FitzSimons, who look at the implications of HIV/AIDS for national, regional and global security and stability. (Whiteside & FitzSimons 1992) Whiteside and FitzSimons, like many, note that soldiers are often a transmission vector for HIV, due to higher infection rates than civilian populations, the abandonment of social norms during conflict – with resulting surges in sexual activity and rape – and the collapse of prevention programmes. (Whiteside and FitzSimons 1992: 30)

Many subsequent analyses have considered the link between the demobilisation of military forces and the spread of HIV. In an article entitled, 'A policy critique of HIV/AIDS and demobilisation', Forman and Carballo explore this issue in depth and offer policy prescriptions. (Forman & Carballo: 73-92) The authors review the factors that make military personnel a high risk group for HIV infection, and note recognition by national governments and the United Nations that the deployment of soldiers as combatants or peacekeepers puts both soldiers and civilians at heightened risk for HIV. They offer striking statistics on HIV/AIDS in militaries in Africa, and note the need for HIV-prevention efforts among military personnel. They then consider the demobilisation of former combatants, arguing that 'if demobilisation programmes do not include prevention and peer counselling, the reintegration of HIV-positive soldiers into new communities and the return of combatants to their original villages may result in a major proliferation of the virus.' (Forman and Carballo: 79) They discuss how HIV/AIDS prevention can be integrated into demobilisation efforts, noting potential avenues for counselling, testing, education, and prevention, serving both military personnel and members of their communities. The article concludes with policy recommendations.

Carballo has also teamed with two other researchers to develop a 'Crisis and transition toolkit' on *Demobilization and its implications for HIV/AIDS*. (Carballo, Mansfield & Prokop 2000) This detailed tool kit addresses the health-related risks and opportunities posed by the demobilisation of military forces. The authors, as in the previous paper, discuss the unique risks and challenges around military forces and HIV/AIDS. They then explore opportunities within processes of demobilisation for incorporating HIV/AIDS education and treatment, and argue that linking HIV/AIDS prevention to demobilisation efforts would improve cost-effectiveness, place AIDS prevention on a nationally- and internationally-supported political agenda, and 'reach a population that is not only at high risk of the disease but that also has capacity to benefit from and contribute to HIV/AIDS prevention within its own ranks and in the larger community.' They note, for instance, that military personnel are 'trained to accept and internalise new information,' such as AIDS prevention information, and could be trained as AIDS educators. The paper concludes with concrete recommendations for integrating AIDS interventions into demobilisation.

Several other authors have considered the topics and issues raised here. For instance, Fourie and Schonteich also discuss the role of military conflict, armies, and peacekeepers in facilitating the spread of the epidemic. (Fourie and Schonteich 2001: 6-10) Goyer, in a short piece on HIV and political instability, discusses how militaries serve to spread the disease during times of conflict, and also notes that the ability of a government to respond to HIV/AIDS is severely undermined in times of instability, crisis, or conflict, contributing to a downward spiral between HIV and instability. (Goyer 2001: 13 & 16)

Impact of HIV/AIDS on democracy, governance and security

A number of political theorists have examined the potential impact of HIV/AIDS on democracy, with most concluding that the epidemic is likely to have a dire impact on the effectiveness and long-term sustainability of democracy in heavily-affected regions. Very little of this work is based on substantive evidence, and rather presents informed but speculative analyses based on the available epidemiological data and knowledge of political systems, democratic theory, international relations, and related fields.

One intellectual basis for this field of analysis is the demonstrated link between poor health and political instability and between good health and democracy. For instance, a well-known study by Gurr et al, examines the causes of state instability and failures of governance in 127 states between 1956 and 1996. Gurr found that infant mortality was strongly correlated with political instability – which the researchers defined as revolutionary wars, ethnic wars, genocides, and disruptive regime transitions – particularly in cases of partial democracies. (Gordon et al 2000)⁵

In recent years, researchers and analysts have begun to address the specific case of HIV/AIDS and democracy. Whiteside (1999) lists a number of ways that HIV/AIDS could impact democracy. The illness and death of prime-age adults will thin the ranks of citizens who ‘keep the wheels of commerce and the state turning, and [who] will provide the next generation of leaders.’ These deaths will also represent a loss of human capital, or a waste of resources invested in education, training and experience. Increasing numbers of orphans, he argues, will represent a potential long-term threat to stability and development, while illness and death within military ranks may jeopardise stability and security. Without sufficient political leadership, he suggests, the epidemic could lead to social instability via economic crises, stigma, blame and anomie, and is also likely to threaten human rights. He also argues that it will result in government inefficiency and economic stagnation. Finally, he lists specific impacts on USAID’s democracy and governance objectives, including the potential for deaths of police and legal officers to undermine the rule of law; for frequent by-elections due to illness and death of politicians to reduce ‘political credibility’; and for the loss of election officers to decrease the efficiency of electoral administration.

Another broad analysis of the impact of HIV/AIDS on democracy and governance is Willan’s concept paper. She begins by noting the paucity of research on this topic, and then theorises about how AIDS might affect democratic governance, citing a likely impact on ‘the size, strength, and leadership experience’ of civil society. (Willan 2000: 11) She also again discusses unpublished, preliminary ideas by Mattes. The first of five categories that Mattes identifies is increased budget demands, stemming from rising demands on health and welfare systems and linked to a crowding-out of non-health spending. Second is a simultaneous reduction in the tax base, as AIDS decimates the economically-productive sector of society. Third is a decrease in citizen

5 Other researchers have confirmed this link between infant mortality and democracy, including Thomas Zweifel & Patricio Navia, cited in Youde: 5.

'support' for democratic government – 'if you have a fatal disease, or if your life is burdened with caring for such people, why does it matter how you are governed?' the paper asks – and a possible 'desperation to try any form of government that promises to offer a solution.' (Willan 2000: 11) The fourth category is a decrease in citizen participation, because illness and the burden of caring for others will decrease the time and resources available for participating in public life, and being diagnosed HIV-positive may reduce the incentives for involvement. The final category is a decrease in citizen compliance – for instance, with payment of taxes – as a result of decreasing incentives for compliance and increasing poverty and desperation.

Another of the more comprehensive analyses of HIV/AIDS and democracy is the paper, 'All the voters will be dead' by Youde (2001). (He outlines a theoretical link between disease and democratic legitimacy and stability, and explores the expected consequences of HIV/AIDS for democracy. AIDS, he argues, could exacerbate social cleavages and group tensions, and also undermine state capacity and contribute to 'institutional fragility.' The paper's main argument focuses on three avenues by which HIV/AIDS could undermine democracy: by hindering the administration of elections and undermining their legitimacy, retarding economic growth, and weakening civil society. (Youde 2001: 9-10) Based on information from Botswana, Lesotho, South Africa, Zambia and Zimbabwe, Youde discusses these potential impacts in detail. Electoral administration, for instance, could be hindered by the increasingly challenging task of updating voter rolls to purge dead 'ghost voters', the high and possibly unsustainable cost of elections, the loss of skilled and impartial civil servants to administer elections, and the disenfranchisement of affected citizens due to burdensome registration requirements. These impacts, in turn, are likely to undermine the legitimacy of elections and of democracy itself. Youde also outlines the widely-accepted relationship between economic growth and democratic sustainability, and argues that HIV is also likely to undermine democracy by limiting economic growth. Finally, he contends that AIDS has already begun to undercut civil society and will continue to do so, because the disease disproportionately affects populations that are essential for a strong civil society: the youth, and the educated and professional classes.

Another exploration of these issues is that of Fourie and Schonteich on HIV/AIDS and human security. The authors examine the links between HIV/AIDS and security – defined broadly, to include safety from violent and non-violent threats – in 'public and private spaces.' (Fourie and Schonteich 2001: 11) These range from macroeconomic impacts to the impact on gender equality. One realm, for instance, is food security, and the authors predict a substantial impact on food production, potentially spurring large-scale migration of displaced peoples fleeing food shortages, which in turn will increase susceptibility to HIV infection. (Fourie and Schonteich 2001: 14) Also included are issues of HIV and governance, and the authors note the paucity of work on the topic. They then attempt to outline the conceptual issues around HIV and political stability, arguing that the epidemic interacts with other population pressures, such as migration and urbanisation, to create more volatile social and political situations. It is likely to produce heightened competition for limited resources and exacerbate intergroup tensions, and also to weaken the capacity of governing institutions by sapping human and financial resources. In addition, if a government is perceived to be poorly addressing HIV/AIDS, the epidemic could "produce a heightened sense of marginalisation amongst affected populations and a stronger sense of deprivation and resentment towards the government" which may result in spontaneous violence or the manipulation of dissatisfied groups to contribute to partisan violence.⁶

⁶ Fourie and Schonteich's paper also discusses the link between HIV/AIDS and crime, but their arguments and conclusions on that topic will be discussed in the section on Orphans, Crime and Security.

Another paper by Manning (2002) takes a theoretical perspective to explore the potential impact of HIV/AIDS on democracy. She examines definitions of democracy, and identifies ways in which HIV/AIDS could be expected to impact some of the central components of democracy, such as inclusion and the opportunity for effective participation. She then considers the potential impact of HIV/AIDS on factors that are believed to help sustain democracy, including economic growth; essential political institutions, such as elections and constitutionalism; and a cultural support for democracy and general 'civic-ness' in a society, including democratic participation and civil society. She concludes that HIV/AIDS could undermine democratic institutions and the factors that help sustain democracy, but notes that this impact is not certain and substantive research is needed.

In a recent paper, de Waal (2002) pursues a comprehensive conceptualisation of HIV/AIDS and governance, and attempts to develop a model for the governance implications of HIV/AIDS. He discusses models for demographic and economic impacts of AIDS, and develops an 'elementary process-based model for governance.' (De Waal 2002: 7) These models, he concludes, suggest potentially devastating impacts of HIV/AIDS in all three of these arenas. He also considers the epidemic's implications for leadership, regime stability, and economic rationality, and the implications of treatment availability for governance. Finally, he briefly considers how demographic, economic, and governance factors might impact the spread of HIV, and offers thoughts on policy implications.

Finally, the review by Parker et al (2000) covers existing research on the macroeconomic and demographic impact of HIV/AIDS; the impact on sectors, firms, workplaces, and households; the response of government, sectors, firms, workplaces, and NGOs; the treatment and care response; and the behavioural and social response. The review notes a dearth of research on the implications for governance, as a result of which the topic is only addressed directly in the introductory section, and then just briefly. Some of the review's sections, however – such as those on the responses by governments and by civic organisations and communities – are certainly informative from a democracy and governance perspective.

Government capacity and legitimacy

Many analysts have argued that AIDS will (or already does) undermine government capacity and the ability to provide services to the public.⁷ This impact is described as follows by a United Nations General Assembly roundtable: 'HIV/AIDS has a disastrous impact on the capacity of governments to deliver basic social services. Human resources are lost, public revenues reduced and budgets diverted towards coping with the impact.' (UNAIDS 2001)

As part of a panel discussion at the United States Institute for Peace, Homer-Dixon argued that HIV/AIDS 'will have a tremendous capacity to weaken the state' by undermining human capital and fiscal resources. He outlined the concept of an 'ingenuity gap', whereby the AIDS pandemic creates an increasing demand for ideas – or ingenuity – to solve practical, social, and technical problems, but simultaneously reduces society's capacity to provide good ideas. 'Disease and its consequences undermine the very adaptive capacity of the societies,' he explains, '...that they need to cope with the diseases that they're facing.' (USIP 2002)

One major avenue by which HIV/AIDS will impact state capacity will be through the civil service, which will experience increased personnel loss, rising absenteeism, and reduced productivity. As part of their series of 'AIDS Briefs for sectoral planners and

⁷ Many of the comprehensive analyses reviewed above, including those by Whiteside, Youde, and Fourie and Schonteich, also mention the impact of AIDS on government capacity and/or legitimacy.

managers,' Smart and HEARD have produced a brief that addresses the impact of HIV/AIDS on the civil service and recommends responses to mitigate that impact. (Smart 2000)

HEARD has also produced a toolkit for ministry employees that helps them identify, plan for and mitigate the impact on their ministries or departments. The toolkit, prepared by Abt Associates, warns that 'the ability of some ministries to fulfil their functions will be severely impacted.' (Abt Associates 2000)

AIDS also has the potential to undermine governments' public support and legitimacy. As Brower and Chalk (2002: 6) explain in a forthcoming paper on the security implications of infectious disease, 'If left unchecked, disease can undermine public confidence in the state's general custodian function, eroding, in the process, a polity's overall governing legitimacy as well as undermine the ability of the state itself to function.' As disease reduces government capacity and governments appear unable or unwilling to combat the disease, this situation will worsen, further undermining public confidence and possibly leading to political or social instability.⁸

A report by the International Crisis Group (ICG) also touches on the potential for the AIDS pandemic to undermine government legitimacy in hard-hit countries. 'The rising inability of governments to respond effectively to the AIDS epidemic contributes to instability in a restive citizenry,' the authors argue. Rising demands for services despite limited resources makes it increasingly difficult for governments to respond effectively, and failure to do so may cause the public to 'see... its leaders as part of the problem, rather than the solution.' (ICG 2001: 17) The authors argue that an increasing marginalisation of governing institutions could be potentially volatile. 'The space left behind by deteriorating national institutions can... easily be occupied by forces of destruction and conflict.' (ICG 2001: 19)

Other components of democracy

There are a number of other components of democracy that are expected to be negatively impacted by HIV/AIDS. For instance, there seems to be a general consensus that HIV/AIDS will have a detrimental impact on civil society, which will in turn weaken the society's effort to combat the epidemic.⁹ As Gordon argues in a briefing for the United States Institute of Peace, the epidemic is 'making tremendous inroads in to the professional classes – teachers, administrators, people who form the backbone of civil society. And that weakening of civil society... leads to a context in which the maintenance and sustainability of effective governance declines dramatically.' (USIP 2002)

In recognition of the potential vulnerability of civil society to HIV/AIDS, Kerkhoven and Jackson prepared an AIDS brief for the NGO sector as part of HEARD's *AIDS Briefs* series. They provide guidelines to help NGOs consider and respond to the potential impact of HIV/AIDS, both internal and external, on their organisations. For instance, the authors prompt NGOs to look at how the epidemic is impacting the productivity and morale of staff, and how supportive the organisation is to the needs and concerns of HIV-positive staff. Externally, they encourage NGOs to consider how AIDS will change the needs of the populations they serve. They also suggest ways to mitigate the impact of HIV/AIDS. (Kerkhoven & Jackson 2000)

Human rights are another factor of democracy expected to be threatened by HIV/AIDS. Kunaka, for instance, considers the potential consequences if HIV/AIDS

8 For instance, the authors point to the case of South Africa and President Thabo Mbeki's questioning of the basis of HIV/AIDS as a situation likely to undermine public confidence, Brower and Chalk 2002: 7.

9 The alternate postulate, that HIV/AIDS will provide a common enemy around which civil society can mobilise, organise, and thereby (paradoxically) strengthen, does not seem to be as widely articulated.

undermines human rights and development. 'Violations of human rights' pose a serious threat to democracy, and largely lead to political instability, negate economic development and threaten security of the individual,' she argues. Kunaka also reviews a number of ways by which HIV/AIDS undermines development, which in turn, she argues, 'create an environment conducive to political and economic instability which, if left unchecked will impact negatively on fragile democratic processes.' (Kunaka 2000)

National, regional and global security and violent conflict

The conception of HIV/AIDS as a threat to national, regional, and global security has gained rapid and widespread acceptance in recent years.¹⁰ In July 2000, AIDS became the first-ever health issue to be addressed by the United Nations Security Council, which issued a resolution on HIV/AIDS acknowledging both that the AIDS pandemic is exacerbated by violence and instability and that the pandemic 'if unchecked, may pose a risk to stability and security.' (UN 2000)

Again, some of the earliest thinking on AIDS as a threat to security comes from Whiteside and FitzSimons's 1992 work, discussed earlier. The authors note that the potential for unrest lies in societal imbalances, which may be exacerbated by HIV/AIDS. The authors contend that 'the ability of the disease to damage the global body politic is underestimated,' but also recognise that the pandemic could spur international cooperation. (Whiteside & FitzSimons 1992: 26 & 29) They also note that AIDS could disrupt national, regional, and global stability, speculating that the disease will undermine stability by affecting political leaders and the educated classes, thinning their ranks, reducing the quality of leadership, and opening the door to instability as 'various interest groups weigh their actions in the belief that they can govern better or more profitably.' (Whiteside & FitzSimons 1992: 31)

The link between HIV/AIDS and security is part of a larger field of analysis that perceives health crises, particularly infectious diseases, as a threat to global security. For instance, the forthcoming analysis by Brower and Chalk, which was mentioned earlier, explores how infectious diseases like HIV/AIDS can undermine security at individual, state, and regional levels. They identify avenues by which disease can threaten security, including by threatening individual-level security; undermining confidence in, legitimacy of, and effectiveness of the state; directly threatening military operations; and presenting a threat that is impossible to counter by normal 'border sovereignty' tactics.¹¹

Another person concerned with health-related security analysis is Price-Smith. In his article 'Contagion and Chaos', he examines the threat to security by what he calls emerging and re-emerging infectious disease (ERID). (Price-Smith 1998) Price-Smith contends that infectious disease poses one of the gravest threats to national security worldwide, and argues that the impacts of infectious disease are already being felt, with 'growing evidence that increasing ERID incidence and lethality has impaired state capacity in Cambodia, Zaire, Rwanda, Haiti, Liberia, Burundi, Somalia, and Sierra Leone (among others) during the past decade.' (Price-Smith 1998) His analysis examines the impact of ERID on four 'domains' at the state level – economic productivity, demography, defence, and governance – and its impact at the systems level. He highlights the potential for infectious diseases to create refugees and other

¹⁰ For additional resources on HIV/AIDS and security not included in this review – because the author was unable to secure copies during the time available – see the online list of resources on HIV/AIDS and conflict compiled by USAID as part of a Working Bibliography for Rethinking HIV/AIDS & Development at http://www.USAID.gov/regions/afr/conflictweb/AIDS_bibl.html (04/02).

¹¹ These are the avenues that the authors considered relevant to the case of HIV/AIDS; the other is biowarfare, Brower and Chalk 2002: 6.

mass migrations, and to deplete pools of skilled workers and thus hurt governmental capacity and institutional fragility, in turn undermining the stability of democracies. He calls war a 'disease amplifier' and notes the danger of exposing troops to disease and the likelihood of troops circulating ERIDs. At the systems level, he outlines the possibility of increasing South-North out-migration, ERID-induced chronic underdevelopment, and an increased incidence of state failure, with implications for regional and global stability. Finally, he discusses the need for adaptations to mitigate the impact of ERIDs. (Price-Smith 1998)

Price-Smith also participated on a panel discussing AIDS and violent conflict in Africa, where he reviewed recent research of his which identified a feedback loop between population health and state capacity. 'The rapid deterioration of population health can in fact generate a significant negative effect on a state's capacity to govern effectively... HIV/AIDS has the potential to seriously destabilise societies over the long-term, from five to 15 years,' he said. HIV/AIDS weakens the economy, drains government finances and diverts resources to health and away from other priorities, he explained, which heightens conflict between elites to control this declining resource base. It also imposes high costs on the poor and middle classes, which, he argued, will foster class polarisation and increase economic deprivation. Simultaneously, HIV/AIDS drains existing human capital and hampers the development of capital in young people, leading to institutional fragility. This combination of increasing deprivation and increasing fragility, in turn, provides an 'opportunity for violence either between elites or between classes,' a scenario exacerbated by ethnic cleavages. (USIP 2002)

Also on this panel was Gordon from the United States National Intelligence Council. Gordon's input built upon a analysis he directed entitled 'The global infectious disease threat and its implications for the United States'. (Gordon 2000) This national security estimate argues that the infectious disease burden globally 'is likely to aggravate and, in some cases, may even provoke economic decay, social fragmentation, and political destabilization.' It concludes that infectious disease will contribute to political instability and hinder democratic development in sub-Saharan Africa and elsewhere, and also increase political tensions in and among developed and developing countries. The paper also touches on the detrimental impact of HIV/AIDS on military readiness and international peacekeeping efforts.

Speaking at the forum, Gordon argued that 'the worst infectious diseases – and AIDS especially – slow economic development, undermine the social structure in [affected] countries [and] challenge democratic development and institutions, potentially contributing to humanitarian emergencies and the exacerbation of military conflicts.' (Gordon 2000) He described AIDS as a clear and present danger to many countries in sub-Saharan Africa, and said he believes AIDS 'is deepening the conditions that breed violent conflict in Africa.' He outlined seven lines of linkages between AIDS and conflict: impoverishment, breakdown of social bonds, orphaning of children, disruption of education, undermining of civil society, limited economic growth, and conflict over power and resources that could weaken governmental structures.

A third panellist at the forum was Homer-Dixon, who discussed the links between environmental stress and violent conflict and drew parallels with disease as a particular type of environmental stressor. (USIP 2002) Of five intermediate social effects that complete the causal chain between environmental stress and violent conflict, Homer-Dixon identified the weakening of institutions and impoverishment due to declining economic productivity as most relevant to the case of disease.¹² He argued that certain economic, political, social and cultural factors would determine whether violence

¹² The other three were declining agricultural production, large-scale migrations, and deepened social segmentation.

will occur as a result of the HIV/AIDS epidemic. 'A particularly volatile combination [is] if you've already got serious preexisting ethnic cleavages, abundant light weapons, and then this additional social stress of disease,' he said. Finally, he argued that violence as a result of disease would probably emerge suddenly and accelerate rapidly, and would most likely be caused by changes in the balance of power that give 'challenger groups' opportunities to confront the state.

One of the most comprehensive publications on HIV/AIDS and security, mentioned briefly already, was compiled by the ICG in 2001. (ICG 2001) The report, like many of the others cited here, challenges the traditional notion of security and asserts that HIV/AIDS undermines human security in a profound way, and is a threat to personal, economic, communal, national, and international security. These threats, it argues, result from the impact of HIV/AIDS on such factors as social structures, poverty, the exploitation or neglect of orphans, community and social cohesion, crime and policing, education and health care, governance and government effectiveness, military effectiveness, and the economy, including investment and the development of human capital and natural resources. The authors draw on evidence from all over the world and claim to identify 'clear cases where HIV/AIDS has heightened pressures toward instability.' (ICG 2001: 4) Although it covers a range of developed and less-developed countries, the report focuses on sub-Saharan Africa and the emerging epidemics in China, India, and the former Soviet republics. It also explores the impact of AIDS on international security, and the consequences of weak and destabilised states for cross-border and global security.

De Waal (2001) has analysed the potential for what he calls 'AIDS-related national crises' (ARNCs) to threaten African states. The author admits that 'we don't know' what the consequences of AIDS will be for governance, peace and security in Africa, but explores the potential under a worst-case scenario for the pandemic to cause and contribute to social, political, and economic crises in the continent. He suggests that Zimbabwe and the Democratic Republic of the Congo may be prototypes of future ARNCs, with the needs and desperation of HIV-positive fighters contributing to the 'ruthlessness' of war veterans in Zimbabwe and extending the conflict in the DRC. He also notes that predictions of the pandemic usually do not include a 'governance variable', and suggests that AIDS-related crises of governance will worsen the pandemic and thus contribute to a negative feedback loop between HIV, governance, and crisis. The paper explores the economic and social implications of the pandemic, from food insecurity and international dis-investment to corruption and reduced military readiness. Next, it examines the governance implications, arguing that 'pandemic-induced crises' will manifest themselves in 'a range of other social, economic and political pathologies', with ARNCs 'fasten[ing] on to the weak points of governance or socio-political relations.' De Waal argues that conventional responses to crises will not work with ARNCs, and might actually make things worse, and instead offers a range of suggestions and policy prescriptions.

Another brief piece on HIV and political instability is by Goyer, who argues that 'HIV/AIDS [is] changing the interests, needs, and demographics of many constituencies – factors that will affect voting patterns and political activity.' In addition, she notes that HIV/AIDS is likely to affect both democratic governance and political instability. (Goyer 2001)

Militaries and security

A number of analysts have examined the impact of AIDS on militaries and the consequences for security. The UNAIDS programme released a short analysis in 1998 that explores the factors that make military personnel more susceptible to HIV, including lengthy postings far from home, a risk-taking ethos, the age and

demographic profile of military forces, relative wealth when compared with local populations, and the availability of illicit drugs and commercial sex workers near military camps. (UNAIDS 1998) It also examines the disease's impact on the military and on the infected individuals and their families, and the risk of transmission to civilian populations. Finally, it discusses actions that can be taken to reduce these impacts.

In South Africa, Heinecken has been one of the most prominent thinkers on HIV/AIDS and the military. A recent article entitled 'Strategic implications of HIV/AIDS in South Africa', discussed the impact of HIV/AIDS on the South African National Defence Force (SANDF), and the national and regional implications of those impacts. (Heinecken nd: 109-115) According to the article, HIV infection rates overall in the SANDF are similar to those of the general public, but HIV prevalence among 23- to 29-year-old soldiers is as high as 50%. Heinecken explains how illness in the SANDF ranks will lead to a loss of skills and break in the continuity of command, with implications for morale, discipline, and cohesion. She also poses difficult questions about recruitment, peacekeeper deployment and other risky postings, and personnel who can no longer fulfill active duty, and discusses the regional implications of the HIV/AIDS epidemic, arguing that it will complicate international relations, make recruiting multinational peacekeeper forces more difficult, and potentially contribute to instability and internal violence such as that in Zimbabwe. (Heinecken nd: 110-113)¹³

Carballo is another analyst who has looked extensively at HIV/AIDS, the military, and security. One of his papers was a piece entitled *HIV/AIDS and Security*, which looks at the impact of HIV/AIDS on human (personal, health, educational, economic, community) and national security, with an emphasis on the latter. (Carballo, Cilloniz & Braunschweig nd) It offers some striking statistics on the prevalence of HIV in militaries worldwide, and cites estimates for South Africa (17% infection overall among military personnel, but some units as high as 90%) Angola (40 to 50%) the Democratic Republic of the Congo (40 to 60%) and Zimbabwe and Malawi (both 70 to 75%). (Carballo, Cilloniz & Braunschweig nd: 10) It also discusses the implications of the epidemic for peacekeepers, child soldiers, and private security companies or militias, and explores the HIV-related risk of disarmament, demobilisation, and reinsertion and the need to minimise transmission of HIV to communities once military personnel return home. Finally, the paper discusses the response of the security sector to HIV/AIDS, identifies opportunities for military interventions, and reviews case studies of relevant projects and programmes.

As part of its comprehensive exploration of the impact of HIV/AIDS on different types of security, the ICG paper, discussed earlier, also deals directly with the impact of HIV/AIDS on militaries. The authors contend that AIDS will become a national security issue because high prevalence rates will decrease military effectiveness and undermine security, and predicts that the 'vacuum left by weakened military and police forces' is likely to be filled by destabilising forces. In addition, the authors suggest that the prospect of early death to AIDS may cause soldiers to adopt riskier and even criminal behaviours on the battlefield. (ICG 2001)

Orphans, crime and security

One of the ways HIV/AIDS is expected to cause insecurity is via the large number of children who will be orphaned by the epidemic. Many experts warn that without proper care and support, these children will be vulnerable to anti-social tendencies.

¹³ Heinecken repeats a common assertion that HIV/AIDS – particularly infection among war veterans and young men – contributed directly to much of the current violence in Zimbabwe. DeWaal, discussed above, makes a similar contention.

As Cheek argues, orphans who are disconnected from social, economic and political support structures constitute ‘an “extra national” population group, [who] could easily become tools for ethnic warfare, economic exploitation, and political opportunism.’ He also discusses the plight of street children, whose ranks are swelling: ‘Life for these children is short, harsh, and cheap... Their ties to civilisation and society are being eroded by the need to survive on terms they cannot control.’ As a worst-case scenario, Cheek offers the example of Sierra Leone, where young boys were made ‘child soldiers’ and harems of young girls were kept as their sex slaves. Cheek warns that this scenario could be repeated in other countries, with orphans recruited to serve charismatic leaders in Angola, to join the ‘war veterans’ in Zimbabwe, or to serve as a new force in South Africa, where ‘latent bitterness over economic disparity and ethnic/racial tensions provide adequate tinder in search of a spark.’ (Cheek nd)

Schonteich, from the Institute for Security Studies in South Africa, has done extensive work on the links between HIV/AIDS, age, crime, and security, and contends that HIV/AIDS will result in rising crime in South Africa over the next 10 to 20 years. (Schonteich 1999, 2000) Schonteich first reviews evidence from various societies that young people in their teens and early 20s are more prone to commit crimes than people in other age groups, and argues that South Africa’s disproportionately large youth population will result in increased crime rates over the next 10 to 20 years. The HIV/AIDS epidemic will exacerbate this by orphaning a large number of children. Schonteich argues that AIDS orphans face particular disadvantages beyond those experienced by other orphans, including discrimination, social exclusion, the loss of education and health care, the psychological stress of what can be a particularly traumatic and drawn-out parental death, and the likelihood that they have lost two parents if they have lost one. Many of these orphans will be raised without proper supervision, and are consequently at risk of becoming involved in criminal activity. The combination of South Africa’s youthful population and the pool of AIDS orphans, he concludes, creates a volatile situation that could result in an explosion of crime rates, with consequences for security and political stability.

The paper by Fourie and Schonteich also addresses issues around HIV/AIDS and crime, but from a regional perspective. The authors review Schonteich’s analysis of the link between orphans, crime, and security, and argue that it applies to many other southern African countries besides South Africa. They also discuss the potential links between HIV/AIDS, income inequality, and crime, arguing that AIDS is likely to widen income inequalities and thereby fuel an increase in crime. (Fourie & Schonteich 2001: 24) They also address governance and the criminal justice system, which they expect to be detrimentally affected by HIV/AIDS. A high HIV prevalence among prison populations, for instance, would burden correctional services with providing care to HIV-positive inmates. In addition, HIV-positive inmates might intimidate wardens by threatening to infect them with HIV, and prisoners with little to lose could become increasingly uncooperative. Courts and trials will be disrupted by the illness or death of defendants, court officials, and witnesses, while police capacity may be reduced and financial resources for criminal justice reduced or diverted to health and welfare, jeopardising crime prevention and management.

Conclusion

So, what do we know about the links between HIV/AIDS and democracy? Assuming that the literature identified for this review is indicative of the field as a whole, and there is not a pool of work that escaped this researcher’s purview, it seems we know a bit about what we *expect to happen* and what we think *might happen*, but very little about what is *actually happening*. In other words, there is a definite lack of – and need for – substantive research on the links between HIV/AIDS and democracy. Though

the quality of many of the existing theoretical and predictive analyses is quite high, there is simply too much guesswork involved. Moreover, with regard to just about every relevant topic – except, perhaps, security – the range of research is still quite thin and there are many holes to be filled. Hopefully, this review will instigate efforts to fill holes in the research around HIV/AIDS and democracy, and flesh out our knowledge of this vital topic.

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Governance and HIV/AIDS: Issues of public policy and administration

by Alison Hickey¹

Introduction

The links between HIV and governance are becoming more widely understood and acknowledged. First off, more developed countries generally have lower prevalence rates. (Hsu 1999: 2) The World Bank's *Confronting AIDS: Public priorities in a global epidemic* shows that higher gross national product (GNP) per capita (in 1994 USD terms) the lower the urban adult HIV prevalence. Simultaneously less income inequality is generally associated with lower prevalence rates. 'As the government, by addressing income and economic development aspect of one's lives, one is dealing with the background HIV vulnerabilities that push individuals to take risks which they reasonably would not have taken if the environment is more favourable for their livelihood.' (Hsu 1999: 3)

Concurrently, countries with good governance appear to have low, stable HIV prevalence rates. Respect and practise of the rule of law helps to contain the impact of HIV/AIDS by reducing discrimination of HIV positive persons and protecting well-being of vulnerable groups. Also transparency assists organisations and parties working against the impact of HIV/AIDS to access information and design sound programmes. Putting these broad cause and effects together weaves the basic story that development and good governance will lead to a lower more stable HIV prevalence rate. (Hsu 1999: 1)

However it is not only political science which supplies a strong case for the link between governance and AIDS. Economic theory also suggests government intervention is justified and necessary. Kremer presents the theoretical case for government intervention in fighting AIDS in cases where individuals voluntarily assume risk of contracting the infection. (Kremer 1996) Even if one assumes the risk of contracting HIV/AIDS is individual bound, there is a solid argument for government intervention in combating the disease. Government should subsidise treatment because it creates larger social benefits than only the benefit to the HIV positive individual. Government intervention is required because the spread of HIV causes negative externalities, such as the costs to family members, the payment of health care and social security benefits. As with the case of government administered vaccines, treatment of HIV/AIDS – in that it contributes to prevention – is a public good. (Ainsworth and Teokul 2000: 56; Kremer 1996: 65) From an economic standpoint, market failures in the case of HIV/AIDS justify government intervention. For example, sexual choices are often made with asymmetric information; adverse selection suggests the need for government social insurance against the impact of HIV/AIDS; and government support of research and surveillance is required. (Kremer 1996: 65-74)

Purpose and scope

Given that government needs to intervene to slow the spread of the disease and mitigate its impact, what is the best way to do that? This chapter and the chapter on democracy and AIDS together survey the range of literature currently available on governance, democracy, public administration, and sectors related to HIV/AIDS in

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South Africa. We define governance as the principles, systems, institutions and practices government uses to pursue its legal, political and economic aims. This includes parliament, government departments, legal institutions and the like.

The chapter focuses on public management and service delivery by government generally. This is distinguished from the chapter on democracy and AIDS, which looks specifically at how HIV/AIDS impacts on the principles and aspects of South Africa's government which are definitive and vital to its democratic character. The principal topics covered here are:

- ❑ The planning, financing, management and implementation of government interventions for HIV/AIDS (and how standard public policy implementation issues, for example decentralisation, efficient management of resources, relate to HIV/AIDS).
- ❑ How HIV/AIDS impacts on government health systems and their strategic direction.
- ❑ How South African government interventions can support/initiate appropriate responses for particular sectors.

Although focus is on South Africa, selected research and analysis on southern Africa more broadly, and perspectives of international donors and governments in intervening in South Africa is included. Whilst in no way exhaustive, literature included can be considered representative of research and discussion in this area.

Structure

In order to examine these issues methodically, we first take a national perspective. International organisations and recognised best practices have put forward various models of how nations ought to go about approaching HIV/AIDS. We cover the big issues related to designing a national government response to HIV/AIDS, and outline South Africa's policy responses in the recent past. What does a national HIV/AIDS response imply for and demand of public administration, planning, budgeting, financing, accountability and service delivery systems? What has been or ought to be the role of each sphere of government?

The second section takes a sectoral approach. HIV/AIDS will impact on various sectors differently, and different sectors contain varying potential and opportunities to mitigate its impact or stop its spread. What government interventions are needed and effective for alleviating the impact of the disease on that sector and harness potential in that sector to positively fight the disease? In particular, there is a focus on the education and health sectors.

The most important contribution to sectoral planning on HIV/AIDS in South Africa is a series of briefs for planners and managers on each of the sectors, edited by Barnett, Blas and Whiteside (2000). For some sectors, such as manufacturing, tourism, and sports, these short studies are some of the only literature available on the particular impact of HIV/AIDS on operations, labour, markets, and possible responses for these sectors. They are an important starting point for developing government responses to help each sector reduce its susceptibility and vulnerability to HIV/AIDS.

Finally, gaps in the current available research in the area of governance, public administration and sectoral impacts of HIV/AIDS are identified.

National government response

Given the economic argument and the demonstrated links between HIV/AIDS and governance, UNAIDS has produced templates that guide governments and organisations through a basic strategic planning process. A national response would

proceed through four stages: situation analysis, response analysis, strategic plan formulation and resource mobilisation. (UNAIDS 1999: 6)

The literature generally agrees on some basic characteristics of an effective national HIV/AIDS government response. UNAIDS urges cultivation of a national HIV/AIDS strategic plan which is: expanded, multilevel, immediate and sustained, prioritised and full scale (beyond pilot projects). (UNAIDS 2000b: 10) Creating an enabling environment for an effective HIV/AIDS response involves public dialogue and supportive public policy, human resource and institutional capacity strengthening and adequate financial resources for the task. (UNAIDS 2000b: 8)

Four primary themes reemerge in the literature on shaping a national response to HIV/AIDS: multi-sectoralism; capacity-building; coordination of donor financing; and development of a country-specific approach.

Multi-sectoralism

Multi-sectoralism is an often repeated theme in shaping a national response to HIV/AIDS. (UNAIDS 2000b; Cohen 1999a; Cohen 1999b) HIV/AIDS is a public policy issue which is not limited to one sector (for example, health), or to one stage of government action (for example, it is not only an issue of policy design, implementation, service delivery, or evaluation). The South African government response to the epidemic has followed a similar pattern to many other countries. (Hickey 2002; Rensburg et al 2002) It begins with a health-centered response, and then as the disease spreads and prevalence rates rise, a national plan is drawn up which pulls in non-health sectors for the purposes of prevention and education. In 2000 the National Integrated Plan formalised a multi-sectoral approach and set up an accompanying financing strategy. A 2002 study by the Centre for Health Systems Research and Development gives the best review of the evolution of South Africa's response to HIV/AIDS towards a more entrenched multi-sectoral approach.

The challenge involves convincing and encouraging ministries outside health to incorporate the fight against HIV/AIDS into their core activities. Structures and systems are needed to coordinate the activities of the Ministry of Health, other ministries, and NGOs in fighting the disease. The primary tool for this is a multi-sectoral body set up within or on a tangent to the Ministry of Health, or in the office of the

Progression of national policy responses to HIV/AIDS in South Africa²

1988	AIDS Unit established with National Department of Health.
1989	Establishment of AIDS Training, Information and Counseling Centres (ATICCs) in urban areas.
1992	National Convention of South Africa (coalition of public, private sectors, NGOs and community-based organisations to develop national strategy).
1994	National AIDS Plan launched by NACOSA. RDP includes HIV/AIDS as a lead project.
1997	Review the Past, Plan the Future, Work Together.
1998	Government AIDS Action Plan. Establishment of Inter-ministerial Committee on AIDS. Launch of Partnership Against AIDS. South African AIDS Council established.
1999	HIV/AIDS and STD Strategic Plan for South Africa 2000-2005.
2000	National Integrated Plan for Children Infected and Affected by HIV/AIDS.

2 Source: Author's research and Charles Ngwena, 'HIV/AIDS policies and programmes'. Presentation at Ford Foundation Workshop, 2 December 2001

Presidency. Idasa's work has included an examination of international examples of multi-sectoral HIV/AIDS bodies in Thailand, Botswana, Uganda and Brazil which draws implications for the development of the South African National AIDS Council (SANAC) established by the President's Office in 1998. (Hickey 2002) Another method (suggested by the case studies) for eliciting and coordinating the participation of non-health ministries is to utilise existing budgeting and planning structures for poverty alleviation plans to mainstream and expand government's HIV/AIDS response.

Emphasis on building government capacity

The effect of HIV/AIDS in undermining government capacity is the second repeated theme in the literature on developing a government response to HIV/AIDS. For regions and international organisations to pursue sustainable development and poverty alleviation goals in developing countries and for developing countries themselves to improve their socioeconomic situation, a systems approach is needed which recognises the indirect impact of HIV/AIDS on the institutional and capacity of NGOs and government systems. The disease directly impacts on government's ability to deliver regular services, and simultaneously requires that government deliver more services. 'In all of the main areas of development both what can be achieved and how it is achieved are both directly and indirectly affected by the epidemic.' (Cohen 1999b: 4)

Cohen makes the critical link between the need for a multi-sectoral response to the disease, and the simultaneous obstacles created by the disease which undercut government's ability to respond and respond intersectorally:

What the evidence reveals is the inter-dependence of the social, economic and political systems, and it is precisely this capacity to function normally which is being undermined by the epidemic. Here is the crux of the problem as well as the challenge. The objective has to be the continued function of a complex and inter-dependent social and economic system. But this objective can only be achieved through policies and programmes which are themselves systemic and multi-sectoral. (Cohen 1999b: 3)

With respect to pursuing a multi-sectoral or multidimensional government strategy when capacity is severely compromised, Ainsworth and Teokul suggest some national AIDS control approaches have been ineffective precisely because they battled on too many fronts when they had inadequate administrative and financial resources. Poor countries with weak implementation capacity are better off prioritising cost-effective programmes for prevention, treatment and mitigation of the impact of the disease. (Ainsworth and Teokul 2000: 55)

Thus there appears to be general consensus that a national government response to HIV/AIDS must include concentrated efforts to build general planning and implementation capacity, for three reasons:

- a) the unique multi-sectoral response required has its own difficulties;
- b) sharp increases in funding for HIV/AIDS require government to absorb and spend large allocations, and rapidly roll out programmes nationally (UNDP 2001: 2); and
- c) HIV/AIDS itself will negatively impact on regular government capacity.

Coordination of donor financing

A third key issue is whether donor financing for HIV/AIDS interventions is centralised under the purview and direction of national government. Some of those funds appear

on the budget of the national Department of Health while some flows directly to NGOs, bypassing government structures. At present, there is no comprehensive system to centralise and coordinate all donor funding, although SANAC and Donor Coordination Forum organised by the Chief Directorate for HIV/AIDS and SANAC have played a role in soliciting and channeling donor funds. (Rensburg 2002; Hickey & Whelan 2001) The CHSRD report (2002) is the only attempt of an audit of donor funding for HIV/AIDS, with an analysis of where donor funds are targetted.

Country-specific responses

It is clear that countries need to develop an approach specific to their context, particularly given the variance of prevalence in African countries. (O'Farrell 2000: 25; Decosas & Beatson 2000: 26) But how do countries identify the particular drivers for the spread of the disease in their country, and how do they translate those drivers into specific indicators that can be addressed with practical programmes? Johnston makes an important contribution here. He asks, 'Why is it that HIV prevalence has increased so rapidly in some countries but increased more slowly and remained at much lower levels in other countries? Do policy makers and program planners fully understand the reasons for these different trends and the implications for their program planning.' (Johnston 2000) He suggests how programme planners can take those broad social cultural and economic determinants to HIV trends in their country and attach to them an intermediate set of biological and behavioural 'direct' determinants. For example, religion and status of women are broad determinants, but the associated 'direct' determinants would include sexual networking patterns, male circumcision, and level of sexual violence.

Governments and projects in Africa need to be learning from and sharing with each other laterally. Decosas & Beatson argue that capacity can be built with the facilitation of horizontal transfer of skills and knowledge between projects that seem to be working. 'Achieving adequate coverage of the response to HIV through replication rather than through large scale strategies may well provide a basis for southern Africa to overcome the devastating crisis of HIV.' (Decosas & Beatson 2000: 27) Such projects and articles are evidence of refinement, adaptation and sophistication of HIV/AIDS programmes.

Provincial government response

In South Africa the National Integrated Plan (NIP) for HIV/AIDS is the joint strategy by the departments of Health, Education and Social Development, which sees the national departments supporting provinces in running voluntary counselling and testing programmes, life-skills education, and home and community-based care and support interventions. Provincial health, education, and social development departments implement the three NIP programmes, with support and financing from national departments.

The multi-level nature of the NIP has implications for: departmental budgeting, strategic management, financial control and accountability, training and hiring, reporting, provincial budgeting, and intergovernmental transfers. Given that provinces are primarily responsible for the delivery of social services but remain largely reliant on national government for their budgets, national government must ensure that provinces effectively budget for and spend on this priority. Idasa studied how government budgets for its HIV/AIDS programmes and now it channels funds to the department responsible for implementation. While the conditional grant funding mechanism ensured nationally allocated funds were spent to fight the epidemic, problems common to all conditional grants (such as slow transfer of funds,

lengthy business plan approval processes) saw low actual spending rates by provinces. (Hickey 2002) This has prompted National Treasury and the Department of Health to explore new funding mechanisms which transfer HIV/AIDS funds to the provinces with less limitations and close oversight, thus allowing provinces more freedom in how the funds are spent.

In addition to the NIP, provinces are also involved in additional HIV/AIDS programmes to varying extents. In some areas, provincial departments implemented expanded programmes on their own initiative – with or without political and/or direct targeted financial support from national. The prime example is in the area of drug treatment where some provinces have instituted MTCT prevention programmes outside of the 18 designated national pilot sites. Provinces might finance such programmes (outside of NIP programmes) via allocations from their own provincial budgets. Idasa has analysed provincial financing sources for HIV/AIDS programmes in the health, education and social development sectors. However, the research is limited to the policy, attached budgets and financing mechanisms, and does not cover the political and management issues related to non-NIP provincial HIV/AIDS programmes.

Local government response

Below the national level, there is less material for sub-national governments, particularly regions and municipalities, on how one actually goes about factoring the impact of HIV/AIDS into planning. Whiteside et al produced a study for KwaZulu-Natal which lays out the expected impact of HIV/AIDS in that province. (Whiteside et al 1995) Conducted for the Town and Regional Planning Commission, the report is an excellent template for similar studies in other provinces, regions and municipalities, as it puts forward projections for the province and then translates these figures into practical changes to regional planning standards used to calculate demand for services and facilities. For example, the department usually plans on one primary school for every 450-550 dwelling units. Given the high vulnerability of school-age children to the impacts of the disease, should planners change this estimate? In which direction? (Whiteside et al 1995: 47) These questions are vital to ensure facilities such as crèches, cemeteries, community health centres are adequate.

The 1995 study is also useful in that it shows how municipal and regional planning bodies ought to be concerned with HIV/AIDS, how it directly impacts on their activities, structures and obligations, and entry points for the involvement of these local bodies in fighting the disease. (Whiteside et al 1995: 11, 54) Similar updated studies for other provinces and regions are needed to first persuade and encourage municipal structures to address HIV/AIDS issues in their area, and second, give them practical steps and numbers to begin to go about it.

Clearly much more work is needed on the obligations and potential role of municipal and regional bodies in confronting the disease. Smart and Whiteside have made the strongest contribution in a 2000 study which discusses the constitutional objectives of local government in development, the predominant reasons for their non-participation in HIV/AIDS thus far, and the impact HIV/AIDS can have on local government services and institutions. (Smart & Whiteside 2000) The pillars of a local government response must include: leadership by councillors and in the workplace; coordination with other government bodies and planning in consultation with other sectors and the community. Their excellent toolkit for local government contains the following:

- a model HIV/AIDS strategy for a city;
- model workplace HIV/AIDS policy;
- guidelines for networking and multi-sectoral planning;

- ❑ checklist of constitutional and legal responsibilities;
- ❑ model advocacy presentation;
- ❑ draft agenda for four day training for councilors and officials. (Smart and Whiteside 2000: 9)

The role of local government needs to be explored and identified more carefully, and more practical strategic planning material needs to be developed for the local level. At present, the most comprehensive and up-to-date study of local government responses to HIV/AIDS is the report by the Centre for Health Systems Research & Development (2002). The report contains good information from workshops conducted in the municipalities regarding their needs, strengths and weaknesses in HIV/AIDS interventions.

The education sector

Education is a clear example of a sector where HIV/AIDS clearly impacts *on* the sector – by affecting both demand and supply – at the same time that education (both formal and informal) offers perhaps the single best opportunity and leverage point for impacting *on* HIV/AIDS. The most literature surrounds the education sector, but though it is considerable, the writing is largely speculative and conceptual, and suggests possible and likely impacts of HIV/AIDS on education instead of providing evidence in research data.

We first look at the available material on the impact of HIV/AIDS on the education system, then at how the education sector can contribute positively and negatively to the spread and impact of the disease. Lifeskills programmes in schools are the prime intervention for HIV/AIDS prevention. Although literature on Lifeskills programmes are more extensive, there is insufficient assessment of programme progress. Also, there are too few recommendations and practical programme materials on interventions beyond in-school Lifeskills programmes.

Impact of HIV/AIDS on the education sector

A theme in the education and HIV/AIDS literature is the dual impact not simply on learners but on the education system as a whole and the ability of the disease to infect both people and institutions. (Badcock-Walters 2000; Coombe 2000a; Kelly 2000; Malaney 2000) By affecting individual learners, the disease curbs the demand for education. (Badcock-Walters 2000; Coombe 2000a; Kelly 2000; Malaney 2000; UNAIDS 2000a) Primarily by hurting sector capacity and institutions, the disease hurts the supply side of education. Figure 1 maps how the pandemic affects the demand, supply and quality of education (Badcock-Walters 2000; Coombe 2000a; Kelly 2000; UNAIDS 2000a) On the demand side, the epidemic will first affect the pool of potential learners and secondly impact on the enrollment and attendance rates, and lastly their ability to learn and concentrate once in the classroom.

On the supply side, the disease primarily attacks education via teachers' mortality, morbidity and productivity. However, there are additional less obvious effects. As administrators, school heads, policy makers are infected, the system will feel system-wide casualties from disruptions/inexperience in planning and management. Furthermore the larger government response to the disease will put extraordinary pressures on the national fiscus and perhaps shrink the resources allocated to education in the national or provincial budgets.

However all this literature reviewed above is largely speculative and theoretical. What is missing is hard data to confirm and measure these effects on demand and supply of education in South Africa. Recognising precisely this need, the Department of

Education (DoE) commissioned Abt Associates to do a comprehensive impact assessment of HIV/AIDS on the education sector in 1999. Coombe does quote provisional information from the ABT study: 'South Africa's 443 000 educators constitute the largest occupational group in the country. At least 12% are reported to be HIV positive.' (Coombe 2000b: 6) However, the department's refusal to release the report hampers HIV/AIDS programme planning and implementation. According to Wildeman 'Reluctance of provincial departments to fund HIV/AIDS programmes is due to the poor state of data on HIV/AIDS in the education system which obscures planning and subsequent programme allocations.' (Wildeman 2001) Given the importance of having hard data available on which to base policy interventions, the

Figure 1. Demand and Supply Effects of HIV/AIDS on the Education Sector³

<p>How HIV/AIDS impacts on demand for education</p> <ul style="list-style-type: none"> <input type="checkbox"/> Lessens number of school-age children <ul style="list-style-type: none"> • because increases mortality of men and women of reproductive age • increases mortality of children due to MTCT <input type="checkbox"/> Lessens number of children enrolling and increases absenteeism <ul style="list-style-type: none"> • due to children needing to care for infected parents or siblings (especially girls) <input type="checkbox"/> Children leave school to work as a result of financial hardship caused by mortality/morbidity of family member <input type="checkbox"/> Children drop out when families can no longer afford school fees <input type="checkbox"/> More orphans, members of child-headed households, & street children who must work and/or cannot afford school fees <input type="checkbox"/> Absenteeism due to mourning and funerals <input type="checkbox"/> Absenteeism increases likelihood of dropout and contributes to poor performance <input type="checkbox"/> Affects quality of children's time spent in school <ul style="list-style-type: none"> • loss of concentration, psychological effect on children with infected family members or friends • emotional effects of financial strain <p>How HIV/AIDS impacts on supply of education</p> <p><i>At individual level</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> By impacting labour: teachers, managers, school heads and experienced senior educators <input type="checkbox"/> Increased teacher deaths <input type="checkbox"/> Personal sickness create high rates of absenteeism and lower productivity <input type="checkbox"/> Psychological effect on infected employees and their colleagues, contributing to lower productivity <input type="checkbox"/> Absenteeism due to funerals and caring for relatives <input type="checkbox"/> Disproportionate effect on the punctuality/attendance/performance of female teachers <input type="checkbox"/> Above also true for administrators, policy-makers, school heads <p><i>At broader level</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Teacher attrition likely to outweigh lower enrollment so that teacher:student ratio worsens (Malaney) <input type="checkbox"/> Attrition of planners and administrators (disruption, loss of experience) weakens administration <input type="checkbox"/> Mortality/morbidity/replacement of senior planner impacts sector's ability to respond and proactively plan HIV/AIDS response <input type="checkbox"/> Financial burden on educational institutions to provide benefits to infected employees <input type="checkbox"/> Detrimental effect on budget as government shifts resources away from education

3 Sources: Badcock-Walters 2000; Coombe 2000a; Kelly 2000; Malaney 2000; UNAIDS 2000a

failure to release the study severely hurts progress in understanding actual impact of the disease in schools and means we must continue to make do with models and projections.

Malaney makes a very important contribution with an input-output model for actually projecting the impact on demand for schooling and supply of teachers (specifically impact on enrollment and teacher attrition). (Malaney 2000) This also allows one to project the effect on quality, by looking at teacher:student ratios. Malaney 'develops a model to assess the demand and supply effects of disease on the school system and to project necessary inputs in order to maintain educational quality. This model is constructed to be accessible and reproducible, and allows for modification of parameter values.' (Malaney 2000: 4) Malaney also points to holes in available data. For instance, we know little about seroprevalence rates in schools, dropout rates of orphans, morbidity of teachers, and the effect of attrition of planners and administrators.

Impact of education sector on HIV/AIDS

The education system has some negative effects of enabling or increasing the spread of the disease. Schools, particularly in rural areas, can be a breeding ground for the disease by providing opportunities primarily via sexual relationships between male teachers and young girls. (Badcock-Walters 2000: 2) Reportedly the measured infection rate amongst young women between age 15 and 19 rose from 12.7 % in 1997 to 21% in 1998. (Badcock-Walters & Whiteside 2000: 3)

Simultaneously the school system has the potential to contain the disease and provide access to a sexually-active population. (Badcock-Walters 2000; Coombe 2000a; Kelly 2000; UNAIDS 2000a) Here is a captive audience nation-wide, already supported nationally by government infrastructure, financing mechanisms and policy, which presents a simple access point to the age-group most ideally suited for prevention education. If we took good advantage of this sector for prevention and care, the benefits of the sector towards the fight against AIDS would far outweigh the negative impact AIDS has upon the sector.

Strong education programmes in schools can slow the spread of the disease in direct and indirect ways by:

- ❑ raising awareness in learners and via the learners, their families and communities;
- ❑ serving as centre for community efforts/structures for fighting the disease;
- ❑ prevention/condom education;
- ❑ generally raising the status of women and by furthering the education of girls;
- ❑ raising socioeconomic status of individuals and families, thus reducing poverty;
- ❑ linking education to economic growth.

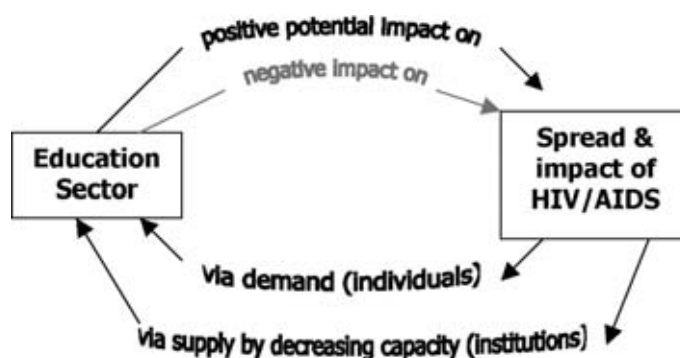
Undermined potential

At the same time that the disease offers the sector a unique and ready leverage point for stalling or reversing the spread of the disease, it is also eating away at the insides of educational systems and institutions in such a manner as to make the sector less able to plan and manage itself. The potential for the education sector to confront the disease is exponential, at the same time that the disease is undermining the sector's capacity to act on that potential.

This circular cause and effect story repeats itself in many sectors and becomes the basic starting point for understanding AIDS impact on most every sector. (Malaney 2000: 4) Collapse of the system (in this case, education) can contribute to spread of

disease; the spread of disease will contribute to the collapse of the system. Figure 2 summarises these dynamics, showing how HIV/AIDS impacts on the education sector (via demand and supply, and via individuals and institutions), and how the education sector can both positively and negatively affect the spread of the disease. (Badcock-Walters 2000; Kelly 2000; Malaney 2000)

Figure 2. How the education sector impacts and is impacted by HIV/AIDS



Government interventions in the education sector

There are four critical policy documents on the Department of Education's HIV/AIDS efforts. First, in 1999, DoE set out its 'National Policy on HIV/AIDS for Learners and Educators in Public Schools, and Students and Educators in Further Education and Training Institutions'. At the same time Minister Kadar Asmal launched his Call to Action: Tirisano, which in its overarching plans to reform the education systems, included HIV/AIDS as one of its nine priorities. The Lifeskills programme was allocated approximately one half of the funds designated for the National Integrated Plan for HIV/AIDS 2000-2005. The 'HIV/AIDS emergency: Guidelines for educators' distributed in 2000 via provincial structures, sets out the role of educators and school in the community. (Coombe 2000a: 34)

Supporting these policies and their implementation, the Department of Education has made plans and progress in filling the posts and establishing the structures at national, provincial and district level to implement the programmes, with slow and mixed success. In terms of assessments done on the Lifeskills programmes thus far, a study was conducted in KwaZulu-Natal province which raised the concern that the programme was not sufficiently accessing the learners who needed it most.

Also, Budget Information Service at Idasa has studied the Lifeskills programme and the budgeting and financing mechanisms used to support the policy. (Wildeman 2001) In 2001/02 an average of 39% of each province's expenditure went to education, and in 2002/03 (National Treasury 2001) and in the national budget education takes up 24% of non-interest expenditure. (National Treasury 2002) Given the relatively large proportion going to education in the budget, the issue is clearly not lack of political will with respect to prioritisation in the budget process. While prioritisation in budget allocations might be strong, improvement is needed in efficiency and effectiveness of Lifeskills programmes.

One issue that receives inadequate attention is the silence and stigma around the disease which pervades schools, teachers and students. (Badcock-Walters 2000; Kelly 2000) The first challenge is to break the silence and identify the problem. However even schools and educators who label the issue often treat the disease as a problem which – like others before it – can be countered with task groups and application of more resources. It takes a further degree of awareness to recognise that AIDS is a

qualitatively different challenge and that interventions to address it must begin from this understanding. (Kelly 2000: 7)

The literature provides a framework for understanding the causes and effects, models for projecting those effects, and information on Lifeskills programmes. However, there is much less on management – both projections, possible interventions and implementation plans.

There is also a dearth of material and creative interventions outside of formal Lifeskills curriculums. Tools for designing, assessing cost effectiveness, and evaluating and monitoring interventions in the education sector are scarce for interventions beyond Lifeskills education.⁴ More creative and explorative information is needed on other possible interventions in the education sector. Ideas include: targeting teachers to eliminate their high risk behaviour, bias, and develop them as positive role models in knowledge and behaviour; cooperation with the private sector and health services in partnerships; linking families to in-school sex education; changing current practice of placing many teachers away from home; training more teachers. (Badcock-Walters 2000; Malaney 2000)⁵ Two issues surrounding Lifeskills programmes are resistance to sexual health education and debate regarding the age of introduction of a reproductive sexual health curriculum. (UNAIDS 2000a: 6) Such projects may exist as pilots, but we need case studies, assessments of which are most cost-effective, and a design of how these programmes could be rolled out on a larger scale.

By way of summary of the education sector's approach to HIV/AIDS prevention, Casey and Thorn write that early policy interventions of the mid-1980s were based on the assumption that young people would avoid risky sexual behaviour if they were informed about the risks. Then policy-makers came to see that 'knowledge was necessary but not sufficient' to change behaviour and a second generation of HIV/AIDS education and prevention programmes were spawned which took an expanded approach and also addressed values, social influences, general decision-making and communication skills of learners. Casey and Thorn state that now successful interventions are shaped by two phases: knowledge and identification, followed by lifeskills and empowerment. (Casey & Thorn 1999: 8)

The health sector

Apart from issues of coordination with the social development and education sectors, implementing an integrated plan within the health sector alone is certainly complicated enough – particularly given the shift in South Africa since 1994 towards primary health care services. At the same time that the healthcare system was beginning to realise and face the full onslaught of the HIV/AIDS epidemic, we were already undertaking a major overhaul of the health care system to a primary health care emphasis. Since 1994, '...there has been a pressing need to coordinate local authority and provincial services, previously separately responsible for preventative and curative care respectively, and to bring together services offered through authorities in the former homelands, with new provincial and national structures.' (Schierhout & Fonn 1999) Thus how HIV/AIDS is included in healthcare policies is tied up in issues of:

- a) decentralisation of the health care system;
- b) integration of services within health;

4 Casey and Thorn have compiled a strong manual on Lifeskills programmes which discusses different methods for: needs assessment, project, policy and information interventions; and monitoring and evaluation. Also, UNAIDS produced special software in 1999 inputs various behavioural epidemiological and programme data on Lifeskills intervention and enables the user to model the effect of the programme on altering patterns of HIV transmission.

5 Although Malaney points out that training new teachers is extremely costly and therefore lowering class size might not be the most cost effective means to counter the impact of AIDS on education.

- c) HIV/AIDS health services as part of a multi-sectoral national response in coordination with the social development and education sectors in particular;
- d) effectiveness of alliances and partnerships in healthcare delivery.

Another issue that has beset HIV/AIDS responses is the debate of prevention vs. care. In one sense there has been a drive towards multi-sectoral responses which emphasize prevention and reduction of HIV transmission. But we are also seeing a lessening of the debate between prevention and care. This has occurred partly as our increased understanding of the link between prevention and available treatment, partly because treatments were available a number of years ago, and partly as a result of the number of infected people needing treatment expanding rapidly. Thus there is a larger push for the care agenda and increased attention and resources on determining the most effective and cost-effective care strategies. 'Inappropriate negative attitudes must be dispelled: they include the view that nothing can be done, that care is a bottomless pit, that prevention is the only option and that HIV/AIDS clinical services are not essential.' (Gilks 1998)

Decentralisation of health services

A key aspect of health sector reform is decentralisation, or the shift of control, planning and financing (to varying degrees) away from the central ministry of health and towards district level. Part of this is separating the policy-making and funding responsibilities of the national government from the service delivery responsibilities held by districts or provinces. (Gilks 1998: 141) To varying degrees and arrangements management, budget control and programme planning can be devolved or delegated to sub-national levels. Decentralisation of health services is particularly relevant to HIV/AIDS. For example, given the severity and scope of the epidemic, treatment costs are extraordinary; expecting or relying upon sub national governments to take on that burden without proper provisioning will not work. Second, community-based support initiatives and home-based care are increasingly being promoted. Such projects require a certain degree of decentralised administrative authority at the same time that such initiatives will need financial and technical support from government. Decentralisation also carries with it all the dynamics and difficulties caused when the principal – central government – has somewhat differing objectives and interests than the local agents to whom they have delegated authority or resources. (Bossert 2000: 2) With respect to HIV/AIDS, this difficulty is conspicuous when the principal and agent are from different political parties, or provincial or district health authorities do not share the basic views and politics of the Presidency on HIV/AIDS.

Integration of primary health care services

The basic issue surrounding integration of primary health care services is the question of how and to what extent primary health care (PHC) services should be available to users together and which PHC interventions are better run as vertical programmes. (Gilks 1998) This debate ties into HIV/AIDS because of the suggestion that contraceptive service and family planning – often established vertically run programmes – ought to be expanded to include HIV/AIDS prevention, education and condom provision programmes. Another example is the argument for combining TB and AIDS programme which were both run vertically in some provinces. In the area of HIV/AIDS and mental health, nurses' duties can be extended to include voluntary counselling and testing.

'Unlike other countries in the developing world, South Africa does not have strong donor driven vertical programmes. Nonetheless, the legacy of fragmentation and duplication of services mean that the promises of integration are attractive. As in the

1990s in South Africa, considerable effort is being expended on restructuring health services, with the political will to restructure in ways that promote equity, integration has perhaps been seen as something of a panacea.' (Schierhout & Fonn 1999) Health Systems Trust has done an excellent systematic literature review of studies on the effectiveness of integrated PHC services (from the perspective of the user) and key generic operational issues in service delivery. The 1999 review provides a sound foundation for the best positioning of HIV/AIDS services along the spectrum with entirely specialised and multi-purpose services at opposite ends. (Schierhout & Fonn 1999)

Integration of HIV/AIDS services is especially complicated and contains unique issues. First, the virus itself weakens the immune system, while opportunistic infections – such as TB – are the presenting problems and ultimately the source of death. How and why to distinguish treatment of HIV-enabled or sourced infections is a question. Second, legal rights issues and discrimination surrounding HIV positive persons can lead to isolation or referral of patients when technically this is unnecessary. As a result, many patients are managed at inappropriate levels of care. (Drysedale 2000; Schierhout & Fonn 1999) Third, as yet there is no cure for HIV/AIDS, prevention is linked with care and drug treatment. Fourth, as HIV/AIDS progresses through stages of infection, continuity of care is especially important. (Gilks 1998)

Multi-sectoral approach

The initial response by most governments was to deal with HIV/AIDS as a health issue. After the discovery of the first cases in the 1980s, the Ministry of Health addressed the problem with an extension of the existing structure in Health – by adding an HIV/AIDS Directorate. However, when the disease continued to spread to new sectors of the population infecting the broader population, a national plan was drawn up, under the primary leadership of the health sector, involving other sectors for the purposes of prevention and education. Subsequent years see the refining of the national plan and usually increased political commitment to an intersectoral approach to fighting the disease.

The challenge is then to convince and encourage ministries outside health to take on HIV/AIDS as part of their work – to integrate the fight against the disease into their mission. At this point, structures and systems are needed that push other ministries to take this issue on themselves instead of sitting back and providing advice on the best way the Ministry of Health ought to tackle the disease. Research of the Budget Information Service at Idasa has looked at budgeting processes, programme management, and financial control work in a large multi-sectoral plan.

DFID has produced a tool kit for planners on HIV/AIDS care and support programmes, which delineates various project approaches that require coordination between welfare and health sectors. (Gilks 1998) Each of these areas provides an opportunity for intersectoral cooperation:

- counselling and dissemination of basic information;
- support groups and networks of PLWA;
- home- and community-based care and support;
- support for children orphaned by AIDS;
- improving access to essential drugs;
- palliative and step-down care;
- partnerships with NGOs and the private sector.

Partnerships in the health sector

The broad movement towards establishment of alliances and partnerships in health care delivery is also relevant to HIV/AIDS treatment, care and prevention. Gillies surveys the published literature and case studies and states, 'Alliance or partnership initiatives to promote health across sectors, across professional and lay boundaries and between public, private and non-government agencies, do work. They work in tackling the broader determinants of health and well-being in populations in a sustainable manner, as well as in promoting individual health-related behaviour change.' (Gillies 1998) Given the need for a multi-sectoral approach to combating the disease, this is all the more applicable in the area of HIV/AIDS. Cornwall, Lucas and Pasteur refer to a shift towards community involvement in healthcare provision in many countries with communities acting as partners – as opposed to passive recipients. (Cornwall, Lucas & Pasteur 2000) Government's success with promoting and expanding community- and home-based care and support strategies will depend upon this type of local level partnership.

The social sector

The World Bank reports that AIDS is quickly becoming a disease of poverty with a high proportion of poor rather than the non-poor becoming infected. The social sector therefore faces an additional burden when families are plunged into poverty and those who are already poor become poorer. (Moorhead and Trudeau 2000: 2)

The social sector's ability to deliver services to larger numbers needing support as a result of disease will itself be constrained by the effect of AIDS on the sector's own labour pool. The social sector – both governmental and non-governmental programmes – can also expect less private support, as a result of the impact of HIV/AIDS on business and the economy, and more people dependant on welfare grants and services as a result of the epidemic.

The social sector's response must concentrate on:

- ❑ *Improvement and changes to existing programmes* to make them more accessible and relevant to those infected and affected by AIDS (for example, changing eligibility requirements to ensure orphans can access foster care grants). (Moorhead & Trudeau 2000: 3)
- ❑ *Pursuing and deepening a multi-sectoral approach.* Partly because an intersectoral approach is more effective and relevant for addressing this public policy problem. Second, the social sector is limited and simply cannot take on the entire increase demand placed upon it by HIV/AIDS. (Moorhead & Trudeau 2000: 3; Department of Social Development 2000: 35)
- ❑ *Support and encourage community-based organisations* incorporating HIV/AIDS component into their programmes. (Moorhead & Trudeau 2000; Department of Social Development 2000) However, Lund has pointed out that 'When everyone says that the community is going to care, mostly we mean that women are going to stretch their day even longer and have more and more responsibilities in the sphere of production and reproduction.' (Lund nd: 2) Unless our analysis takes into account the contribution of women's unpaid work, when we turn to community-based care we may have unrealistic expectations of how we are able to protect our children in the future.
- ❑ *Prioritise provision of basic services.* 'Improving access to basic necessities such as water, electricity, sanitation, and housing would reduce the burden of poverty, would increase income-generating opportunities, and would allow people to become more self-sufficient. Given more freedom of opportunity, people would not only be less susceptible to HIV/AIDS, but also better equipped to deal with the impact.' (Moorhead & Trudeau 2000: 3)

The agricultural sector

With regard to HIV/AIDS impact on agriculture, the research is primarily based on case studies of various African farming regions (for example, the livestock business in Namibia. (Engh, Stloukal & du Guerny 2000) The literature is lacking in South Africa-specific research. A case study of Rwanda commissioned in 1988 by the Food and Agriculture Organisation (FAO) of the United Nations predicts the percentage of farming households whose primary earner will become infected and looks at the differential impact of HIV/AIDS on different types of farms and crops. (Gillespie 1989) Another FAO study showed Kenya is experiencing a serious crisis in its commercial agriculture sector – with economic, financial, and social consequences. (Rugalema 1999) HIV/AIDS impacts on farming systems through: reduction in cultivated land, declining yields, change in crops grown (less variety), decreased livestock production; loss of agricultural skills, food insecurity and malnutrition. (du Guerny 1999: 13-15)

For commercial agriculture, HIV/AIDS impacts directly on human resources, and also indirectly on operations and capital. (Parry 2000: 1-2) For subsistence farming, increased illness and death from HIV/AIDS means a loss of both farm and domestic labour, and creates hardships and subsequent coping mechanisms which may increase the household's vulnerability to HIV/AIDS infection (migrant labour, for example). These households often rely on other activities to sustain themselves, including trading, providing skills outside the home, and labour migration, and thus are particularly vulnerable to infection and sensitive to its impact. (Barnett 2000: 3)

An FAO study published in 1999 uses numerous case studies of different rural development projects to look at what effect they have on vulnerability to HIV/AIDS. For instance, infrastructure projects in rural areas have the potential to possibly increase infection or reduce vulnerability, depending on their design (Topouzis and du Guerny 1998: 22). Rural development projects can have an unintended consequence of negatively influencing vulnerability to HIV/AIDS, or they can be designed to *reduce* vulnerability by addressing poverty, food security, gender inequality and migration. (Topouzis and du Guerny 1998: 69)

This means rural development strategies should anticipate and incorporate the impact of HIV/AIDS on labour, food security and capacity of formal and informal rural institutions. (Topouzis & Du Gueny 1999: 10) Clearly community-based responses will be particularly vital to subsistence farmers, and policy and programme approaches that support these local initiatives are needed. To this end, the FAO/UNAIDS publication takes the perspective of formal and informal rural institutions conducting rural development programmes. Its purpose is to help rural institutions understand the impact of HIV/AIDS on their target population and their activities, and accordingly design programmes that alleviate its impact. Rural institutions, in responding to HIV/AIDS, ought to focus on poverty alleviation, food security and sustainable livelihoods, empowerment of rural women, labour and infrastructure. (Topouzis & Du Guerny 1999: 28)

The military

The key piece of research in this area is a UNAIDS report on HIV/AIDS and the military. (UNAIDS 1998) UNAIDS found that infection rates among military personnel are considerably higher than infection rates of groups of equivalent age/sex in the civilian population. 'In many parts of the world, HIV and AIDS pose a far more serious threat to military populations than the inherently hazardous nature of their occupations.' (Yeager 2000: 2) HIV/AIDS is an internal risk to individuals, a broader risk to efficiency and readiness of the military forces, and thirdly an external threat to those areas hosting foreign military and the family of service people. Some of the contributing

factors are: increased opportunities for risky behaviour; separation from accustomed community; and the risk-taking culture characteristic of the military. (UNAIDS 1998: 3) The families of military personnel and the civilian population are also put at greater risk when service people return home or take leave while stationed away from home.

Beyond an individual level, it is also believed HIV/AIDS will impact on military preparedness, as a result of increased mortality, illness, lower productivity, training, replacement and other aspects of personnel management. (UNAIDS 1998: 5) Basic issues related to HIV/AIDS and the military sector are: prevention education, condom promotion and provision, testing and counselling, treatment and care for AIDS and STDs. (Yeager 2000: 2) However, costs of prevention and treatment programmes, as well as planning, management and training to deal with HIV/AIDS, will also certainly impact on the defence budget.

Concrete actions to be taken would be widespread condom distribution, expanded treatment of STDs, improved, more effective prevention education and awareness programmes, increased voluntary counselling and testing facilities, better civil-military cooperation, and changes to military practices (for example, shorter positions overseas) and culture (for example, condoning/encouraging risky sexual behaviour). (Yeager 2000, UNAIDS 2000) Controversy surrounds the issue of required testing of military personnel in terms of benefits vs. violation of individual rights. 'By 1995, according to a survey carried out by UNAIDS and the Civil-Military Alliance to Combat HIV and AIDS, HIV testing was carried out in some form by 93% of reporting militaries (58 of 62 countries responding to the question).' (UNAIDS 1998: 8)

The prison system

In this area, the key research and analysis to date is by Goyer and Gow who have written on the contributing factors to increased levels of HIV transmissions in SA prisoners and possible policy responses (Goyer & Gow 2000a, b, c) In the absence of available official statistics from the Department of Corrections, they relied upon interviews with prison employees and from South African Prisoners Organisation for Human Rights. (Goyer & Gow 2000a: 2)

It is estimated that infection rates in prisons are considerably higher than in those same demographic groups in the outside population. The infection rate and the incidence are also estimated to be higher in the prison population.

First area of required research is the effect of prison on inmates with respect to HIV/AIDS: the likelihood of infection while incarcerated, and the quality of treatment in prison of HIV-positive individuals. Goyer and Gow analyse the role of prison conditions and government policies in increasing transmission in South African prisons, but lack hard data. (Goyer and Gow 2000b) Transmission in the prison population occurs in four ways: tattooing and scarring, prison violence and intravenous drug use spread the infection, but the majority of transmission is due to homosexual activity, which occurs among juveniles, as an initiation rite, as currency in power structures among inmates, and as consequence of overcrowding. (Goyer and Gow 2000a) However, partly due to prison officials and policy-makers reluctance to admit the levels of homosexual activity and HIV/AIDS prevalence in the prisons, this is vastly under researched and ignored. Other factors that potentially contribute to high infection rates are: poor health care for STDs in prisons, inadequate condom provision and availability of disinfectants for intravenous drug-users. (Goyer and Gow 2000c: 3)

The second key area of research is the impact of HIV/AIDS on the prison system and life inside it. Treatment and care of HIV-positive prisoners could have a significant

cost, depending on the level of care provided. Prevention programmes will also affect prison budgets. Also, there is the dangerous link between TB and HIV/AIDS in prisons, as HIV-positive individuals are more susceptible to contracting TB and overcrowded conditions already increase TB infection. (Goyer & Gow 2000b: 7)

Prison administrators and policy-makers therefore face a number of issues in developing prevention and treatment policies and practices in prisons. (Goyer and Gow 2000c: 5) These include the:

- ❑ issue of mandatory testing of prisoners;
- ❑ possible segregation of HIV-positive persons from the general prison population;
- ❑ institution of better prevention programmes, including peer education;
- ❑ early release of HIV-positive individuals near the end of their lives;
- ❑ closed nature of prisons, limiting information available to civil society and government on conditions in prisons needed to formulate an effective and appropriate response.

'Informed policies on HIV/AIDS in prison must balance the constraints of limited resources with the need to preserve prisoners' basic human rights. The best policies will go beyond this equation and recognise the potential for positively impacting on greater community with concentrated and effective HIV/AIDS programmes within the corrections system.' (Goyer and Gow 2000c: 5) Confronting the spread and impact of HIV/AIDS on prisons will also mean dealing with issues of implementation, including allocations in prison budgets, managing prison bureaucracy, and developing partnerships with NGOs and other sectors of government. (Goyer and Gow 2000c: 15)

Research gaps

The literature on HIV/AIDS public policy and administration is lacking in the following important areas. We cite a number of topics and then discuss three research areas in more depth:

- ❑ The impact of HIV/AIDS on women specifically and how government interventions can address this.
- ❑ How government interventions in social sectors could become more effective by targeting women.
- ❑ Very little research and analysis has been done on HIV/AIDS and party politics and structures.
- ❑ There is a need for more quality research on the impact of HIV/AIDS on voter turnout, elections, and voter registration.
- ❑ The impact of HIV/AIDS on legislatures and the response of Parliament and legislatures to HIV infection of members of Parliament, provincial legislators, and local government leaders (for example, lower productivity, replacement of members who have died).
- ❑ More critical analysis is needed on public leadership and HIV/AIDS: the duty/role/potential of elected and appointed figures to address these issues.
- ❑ Role of Parliament in dealing with HIV/AIDS and as a conduit for public's concerns on the issue.
- ❑ Implementation aspect of government's response (as opposed to policy aspect): How does government deal with the unique budgeting and strategic management issues presented by HIV/AIDS as a multi-sectoral public policy issue?

In addition, three issues are emerging that are related to the increasingly hot intersection between media, governance and HIV/AIDS.

One, what is the effect of HIV/AIDS on democracy in South Africa, specifically the relationship between the government and the people and practices of democratic governance in this country? It has been suggested that the issue of provision of antiretroviral drugs to AIDS survivors, for example, has driven a wedge between 'democratic' government and the people. COSATU's opposition to the ANC's stand on the provision of AIDS drug treatment is threatening the tripartite alliance. The court case by the Treatment Action Campaign (TAC) has prompted examination of the extent to which the courts can interfere in the executive policy related to socioeconomic rights. To what degree have policy controversies surrounding HIV/AIDS affected citizens' trust that government will protect and prioritise their well-being?

Two, how has HIV/AIDS affected government's relationship with media and research organisations? It's reasonable to assert that the HIV/AIDS issue is altering government's relationship to the media and is certainly affecting government's level of trust and cooperation with research organisations. Has coverage of the HIV/AIDS issues made government and media's relationship more adversarial? It is imperative that democracy and governance projects, and interested donor organisations, address the HIV/AIDS debate when developing and implementing programmes to support the media sector in South Africa.

Third, how has media coverage of HIV/AIDS issues affected people's relationship with government and people's views of democracy? Media coverage of HIV/AIDS issues in South Africa not only affects individuals' lifestyle choices with respect to the disease, it will also affect their attitudes towards government and its responsiveness to citizen needs. Given the controversies surrounding the President's views on HIV/AIDS, the conflict between the Medical Research Council (MRC) and DoH on the leaked report on mortality rates, and the grassroots campaigns of the TAC for accessible antiretroviral drugs accompanying the court case, media coverage of government's behaviour and policy and civil society's response are likely to make a significant contribution to how South Africans view the severity of the HIV/AIDS crisis and the responsiveness of their government in a democracy.

Currently there is a gap in the literature on these three questions. What is needed is analysis of the content, extent, and perspective of media coverage of HIV/AIDS in South Africa and government's response to it. We know very little about how the effect the media has in:

- ❑ promoting or obscuring communication of government's message;
- ❑ lessening or amplifying the gap between people and government position;
- ❑ raising awareness, and the manner in which this is done (persuading of crisis, motivating individual responsibility, looking to government for change).

We also need to look at the role of research in designing public policy. Three examples are: the report on adult mortality rates in South Africa conducted by the MRC, the Department of Education failure to make public the impact assessment by ABT Associates on the education sector, and the Department of Health's reception of Health Systems Trust report on the results from the 18 Neviraprine pilot sites. All suggest how HIV/AIDS has affected and potentially weakened the relationship between research organisations and the executive and called into question the importance government gives to research in the making of public policy.

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Response of non-governmental organisations, community-based organisations and communities

by Ethel Teljeur¹

Introduction

In light of government inertia or inadequate responses to the HIV/AIDS pandemic in many developing countries, community-based organisations (CBOs) and non-government organisations (NGOs) have risen to the challenge. Often involving the affected community directly, these organisations have taken up a range of activities involving HIV/AIDS prevention, treatment and care as well as poverty alleviation and income-generation in response to the devastation of economic and social structures by the disease.

The interventions have generally been scattered, both geographically and methodologically and lack consistency in resources or approaches. Not surprisingly, the literature on these activities is equally scattered, with many papers focusing on one project or a selection of projects in a certain region, often drawing some policy recommendations related to the specifics of the project or community involved, but not systematically testing the effectiveness or efficiency of the projects in achieving its aims. Little rigorous economic or statistical analysis has been utilised in this literature. Although there are some noteworthy exceptions in which the research employs standardised variables for measuring input, output and outcomes that could easily be emulated elsewhere. (For example, Makan & Bachmann 1997, Mutangadura, Mukurazita & Jackson 1999)

The divergence in the literature on community-based projects is only partially explained by the divergence in the community characteristics and responses. Community responses are evidently community-specific, but often show striking similarities. Many communities in Africa have responded by absorbing the shocks internally initially, via informal insurance (transfers), adoption or sharing the burden of care within extended families. Second-order initiatives involve sharing the burden of care for the infected and their affected families and of income-generation. (Hunter & Williamson 2000; Mutangadura G, Mukurazita D & Jackson H 1999; Ntozi & Nakayiwa 1999)

Moreover, the policy recommendations do not often go beyond hollow phrases and platitudes, emphasising that 'the community should be consulted' or 'the CBOs would benefit from networking' or 'the response should be tailored to the situation on the ground' without giving any useful insights into how this may be achieved in a sustainable manner or incorporated into economic policies aimed at growth and development.

Nevertheless, some consensus emerges. Most research papers conclude that CBOs and NGOs fulfil an important role in helping families and communities to cope with HIV/AIDS and identify certain key problems for these organisations. One such problem is the lack of integration or linkages with formal social services, which is associated with a lack of resources, both financial and human, and the dependence of NGOs on donor funding or volunteers, and their subsequent constrained efficacy. Community-based health workers are seen as an essential extension to formal health care, even apart from the need for this type of care that has been invoked by HIV/AIDS.

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Unfortunately, the literature on community-based health care tends to focus mainly on the advantages of this type of informal extension to the formal health care sector. However, the dangers of 'informal' health care should be treated more seriously. The risks of misdiagnosis and inappropriate treatment, dissuading patients from seeking formal care have not been evaluated rigorously. Such an analysis may well find that some CBOs are rendering the communities involved a well-intended disservice.

A systematic approach to community responses, analysing what contribution NGOs are making, what gap they are filling, why they are more effective (or not) and why the public sector is not doing it is needed here. The economic rationale for supporting these initiatives needs to be carefully spelt out, in order to achieve synergies with formal health care or employment strategies.

The coping responses of households are well-documented in the literature, as are the negative effects of risk-mitigating actions of households in terms of lower current income and prolonged poverty. (Cohen 2000) However, the long-term effects on gross domestic product (GDP) growth and economic development, and the potentially mitigating impact of community responses in this regard, have not been given sufficient attention in the literature.

Moreover, the linkages between cross-cutting issues such as poverty, education, health, gender inequality, migration and HIV/AIDS are often mentioned in the literature regarding community responses to HIV/AIDS, but this reasoning is not extended to a systematic analysis of the NGO responses from a developmental point of view. Little of the available literature on NGOs and community-based responses takes account of how these responses alter the impact of HIV/AIDS on a country's growth path or structural transformation from an agrarian to an industrialised economy. Thorough research on how HIV/AIDS interacts with economic growth, poverty and related problems in a developing economy and how community-based responses can make a valuable contribution to cushion the long-term impact of the epidemic is required.

This chapter is aimed at identifying the economic issues associated with community-based responses, such as which economic circumstances contribute to or mitigate the severity and impact of HIV/AIDS and to what extent NGOs and CBOs can mitigate the long-term impact of the pandemic on future economic growth and development.

The framework for analysis

As a starting point it is important to identify the developmental issues that lie at the heart of the HIV/AIDS epidemic in South Africa. The cross-cutting obstacles to growth in a developing economy affect the impact of HIV/AIDS and are in their turn affected by HIV/AIDS. The following developmental issues will be used as a leitmotiv in this chapter: poverty, employment, income and wealth distribution, human capital and the quality of labour, community development (social capital), gender inequality and household dynamics, education, health, nutrition, migration, access to services, utilities infrastructure and sustainable development. (Poulson 1994)

These topics can be largely grouped into 4 categories: (1) poverty, employment, migration and income distribution, (2) human capital, education, health and development, (3) gender inequality, empowerment of minors and other disenfranchised groups and (4) access to services, utilities infrastructure and sustainable development.

These issues are all crucial indicators of a country's growth path or structural transformation from primary production in an agrarian economy to an expanding manufacturing sector in an industrialised economy. How the impact of HIV/AIDS is

exacerbated by the status of these factors needs to be evaluated as well as how the onset of AIDS will make these developmental hurdles even more difficult to overcome.

Impact of HIV/AIDS on households

The literature regarding the impact on households is extensive and illustrates the differences between the effects of HIV/AIDS compared to other diseases and causes of death as well as the differences and similarities in impact between countries. In Africa, the epidemiological pattern differs from that found in industrialised countries, as it is largely transmitted via heterosexual contacts. (Caldwell et al 1993:1, Stillwaggon 2000) As a predominantly sexually transmitted disease, HIV/AIDS attacks the age-group that is sexually active, which usually involves 'prime-age adults, at the peak of their income-earning years, who are often heads of families'. (Lundberg & Over 2000:2) Moreover, the literature clearly identifies specific African conditions that exacerbate the impact of HIV/AIDS on families in sub-Saharan African, such as poverty, gender inequality and vulnerability to natural disasters (Mutangadura, Mukurazita & Jackson 1999; Ntozi & Nakayiwa 1999) which tend to differ from the aggravating factors in for instance Asia where dependence on employment in the commercial sex industry acts as an aggravating factor. (Wachter, Knodel & Van Landingham 2000)

However, between and even within different African countries, the impact on individual households varies, due to differences in the nature of family structures across regions. (Caldwell et al 1993) Drawing generalised conclusions on household impact is therefore complex, as is defining generalised policy recommendations.

The socioeconomic impact on the household is well-documented. Economic consequences of HIV/AIDS involve loss of assets, decreased income and productive capacity, labour shortages, increased healthcare costs, and changing expenditure patterns. The social impact involves increased food insecurity, decreased school access, increased work burden on children, (Desmond, Michael & Gow 2000; Mutangadura 2000) as well as changes in household structure and composition, life expectancy, increased burden of care, losses and shifts in community support, and social isolation. (Aggleton & Bertozzi 1997) Rural households, poor households, the elderly, women and children suffer the most from the impact, (Desmond, Michael & Gow 2000; Wachter, Knodel & Van Landingham 2000) particularly in terms of loss of assets, decreased nutrition and education. (Lundberg & Over 2000:4; Topouzis & Hemrich 1998)

The emergence of HIV/AIDS orphans has an effect on other households in the community or extended family as well; straining household income and productive capacity of the extended families who buffer some of the impact of the death of parents. (Ainsworth, Beegle & Koda 2000) Elderly relatives tend to serve as surrogate parents (Agyarko & Kowal 2000) and, according to evidence from Asia and southern Africa, care givers as adult persons with AIDS often move back to their families and communities of origin, (Knodel et al 2000) which impacts negatively on their welfare and health. (Ainsworth & Dayton 2001)

Traditional community and extended family resources are stretched beyond their capacity by rapidly growing HIV/AIDS orphans, whilst at the same time the labour supply shrinks and fewer teachers and health workers are available. (Donahue 1998) Extended families who are overstretched by a large number of HIV/AIDS orphans have led to the emergence of child-headed households. Increasingly therefore, orphans are cared for by the elderly or the very young. (Foster nd)

These child-headed households are characterised by high mortality rates of AIDS orphans, food insecurity and low school enrolment, (Ayieko 1997) as well as malnutrition, lack of immunisations or health care, increased demands for labour,

lack of schooling, loss of inheritance, forced migration, homelessness, vagrancy, starvation, crime and exposure to HIV/AIDS infection. Maternal orphans are particularly affected, (Mutungadura 2000) although in rural areas where widows often lose their land, paternal orphans are also at risk of rapid impoverishment. Generally, rural children living on farms suffer most acutely from HIV/AIDS in the community, due to higher labour migration, greater involvement in production, diminished skills transfer from the parents, reduced schooling opportunities and higher food insecurity.

Evidence from Southern Africa shows that the impact of the HIV/AIDS pandemic is also not gender-neutral, as women tend to suffer a disproportionate amount. Elderly women are the main foster parents of maternal orphans; (Mutungadura 2000, Ntozi & Nakayiwa 1999) AIDS widows in rural areas often lose their access to land, labour, inputs, credit and support services; stigmatisation of widows can alienate them from the extended family and the community (Topouzis & Hemrich 1998) and female commercial sex workers are particularly vulnerable to HIV/AIDS. (Gordon & Crehan 1999)

The geographic concentration of the HIV/AIDS pandemic aggravates matters. AIDS orphans are prevalent 23 countries heavily affected by HIV/AIDS, 19 of these are in sub-Saharan Africa, where 'by 2010 these (maternal) orphans will comprise up to 8.9% of children under age 15'. (Hunter & Williamson 2000:2)

The fact that HIV/AIDS wipes out those in their prime income-generating years therefore has an impact on the welfare of the elderly who are caring for the orphans as well as on the children themselves. The long-term economic impact of orphans in child-headed households or extended households with limited access to education and often exposed to malnutrition has been given little attention in the literature. Some studies indicate the aggravating impact of macroeconomic policies resulting in the weakening of informal sources of support. (For example in Zimbabwe, Mutungadura 2000) Although the impact on savings, productivity, per capita income as well as the deepening of national poverty and negative impact on sustainable human development have been noted in the literature, (Cohen 2000) there is no thorough analysis of the long-term impact and of the role that community-based organisations could play in returning countries onto their long-term growth path. In particular, the relationship between the impact of HIV/AIDS on households and cross-cutting issues such as poverty, income distribution, employment, education, health, gender inequality and sustainable development needs to be unravelled and analysed.

Perhaps there is too little data at this point, but it should be possible to extrapolate enrolment rates to predict to what extent this generation will have 'fallen behind' in terms of education and income-generation potential. Likewise, an important question is whether HIV/AIDS affects the unemployed disproportionately, thereby reducing unemployment and how this is offset by the economic impact of reduced consumption and savings. These effects could have a substantial long-term impact on the developmental path of the nation involved, making it not only a humanitarian and health crisis but an economic one of significant proportions to developing nations in particular.

In addition, there is a need for South Africa-specific analysis, as much of the literature discussed here focuses on either sub-Saharan Africa or southern Africa as a whole or on individual African countries other than South Africa, thereby leaving the idiosyncrasies of the South African economy and its interaction with the economic impact of HIV/AIDS virtually untouched.

Coping responses of households

Poor households employ a range of coping strategies when faced with chronic HIV/AIDS morbidity in the family. Different strategies have different consequences

for the long-term welfare of the family. Pre-emptive coping responses include diversification of assets and sources of income; share-cropping; adoption of labour saving techniques; self-insurance via buffer stocks or savings; and informal insurance via networks of mutual support. (World Bank 2000; Hunter 1998; Mutangadura, Mukurazita & Jackson 1999)

Once these strategies are exhausted, households respond by dissaving, reallocation or diversification of labour (via migration or child labour), withdrawing children from school, depending on an extended family system and the community for support. (Kongsin et al 2000) Often these strategies provide temporary or inadequate relief, and prove unsustainable, especially if an entire community is involved. (World Bank 2000:158) Informal insurance (where households receive transfers from other households in the community after a death in the family), which tends to be of limited effectiveness for poorer households, is a case in point. (Lundberg & Over 2000) Government assistance can play a role although it is not always equitably targeted in practice. (Lundberg & Over 2000:9)

Ultimately households are forced to sell assets or reduce consumption. Households with access to credit seek loans after their savings are exhausted. Research from Thailand shows that affected households in the sample incurred per capita debt of 118% with respect to total household income per capita. (Kongsin et al 2000) These responses can severely affect not only the welfare of the family, but also of the country involved as low savings rates and withdrawal from education can have a deleterious effect on the long-term growth path of a country. The negative effects of risk-mitigating actions of households in terms of slower growth and lower current income are mentioned in the literature. (Lundberg & Over 2000:2, referring to Rosenzweig and Wolpin 1993, Platteau 1991, Rosenzweig and Binswanger 1990, Banerjee & Newman 1995, 1997) However, the long-term effects on GDP growth and economic development, have not been given sufficient attention in the literature. In particular the impact on poverty and the income distribution in a particular country has not been sufficiently analysed with the long-term developmental consequences in mind. The incidence of impoverished and indebted communities can have far-ranging effects on income distribution, financial markets, consumption and savings and therefore on business confidence, investment levels, and ultimately the macroeconomy as a whole. Likewise, the impact of reduced enrolment and nutrition on the availability and quality of the labour supply needs to be assessed with respect to (un)employment predictions. These links between the micro (household-level) impact and macroeconomic consequences is not sufficiently investigated in this literature.

Much of the literature investigates the impact of HIV/AIDS on a household from a generic point of view, for example when the breadwinner dies from HIV/AIDS, the household will respond in certain (predictable) ways. It is however, necessary to disentangle the different responses from different economic groups in the economy affected; be they richer or poorer communities or communities with above/below average access to services and infrastructure etc, in order to gauge the impact on existing economic disparities. South Africa, with its legacy of apartheid-induced physical and economic separation of communities, should prove one of the more challenging investigations in this regard.

Community responses

Traditional coping responses involve care for patients, orphans and widows in the extended family or wider community. Because HIV/AIDS is a structural phenomenon rather than an occasional occurrence and therefore affects entire communities simultaneously and not single families sporadically within a community, communities as a whole become impoverished, reducing the scope for these traditional coping

responses, (Smart 1999, Hunter & Williamson 2000) limiting them to low cost activities not involving, for example, the purchase of medication. (Mutangadura, Mukurazita & Jackson 1999)

Hunter & Williamson (2000) find that there are similarities among these community-based responses. The initial response of an affected community is typically sought within the community. Once this proves to be inadequate additional assistance can be provided by governments, NGOs and donors. These community responses to HIV/AIDS morbidity include: labour sharing regarding agricultural activities, day-care and nutrition centres, orphan support, community-based health care, home repair, home care and visits, provision of school uniforms, apprenticeship and training for orphaned adolescents, income-generating projects and credit schemes for *inter alia* funeral benefits. (Hunter & Williamson 2000; Mutangadura, Mukurazita & Jackson 1999; Ntozi & Nakayiwa 1999)

The interventions have generally been scattered, both geographically and methodologically and devoid of consistency in resources or approaches. Not surprisingly, the literature on these activities is equally scattered, with many papers focusing on one project or a selection of projects in a certain region, often drawing some policy recommendations related to the specifics of the project or community involved, but not systematically testing the effectiveness or efficiency of the projects in achieving its aims. There are many different NGO initiatives in South Africa alone, but very few of these are well documented and 'it is thus difficult to extract useful lessons ... either for other projects or as guidelines for the national strategy'. (Smart 1999) Some noteworthy exceptions include Makan & Bachmann (1997), Mutangadura, Mukurazita & Jackson (1999), and Cruse (1997).

Some consensus emerges from the literature. Most studies find that initiatives by CBOs are generally beneficial and can make a valuable contribution to improving basic health status in poor communities, (Jackson & Mhambi 1992) especially when involving the affecting community and when built on existing community structures such as churches, women's groups and schools. (Mutangadura, Mukurazita & Jackson 1999; Schapink et al 2000) HIV/AIDS home-care schemes are most successful when home-care providers are involved in planning and establishment of services, whereas care programmes incorporating existing staff in hospitals were less successful. (Jackson & Mhambi 1992) In South Africa the role of community health workers in primary health care has yet to be defined clearly, (Cruse 1997) and research into their current and future role would therefore be useful.

Many communities are involved in community-based home-care programmes to support affected members of the community. However, the quality of services offered is generally inadequate due to lack of resources and high levels of poverty. (Goma et al 2000) A general theme throughout the HIV/AIDS community care literature on Southern Africa is the strong link with poverty. Once affected by HIV/AIDS, poverty remains the primary concern of the family, as HIV/AIDS thrives in and intensifies poverty. (Cohen 1999, Thomas et al 1999, Costigan et al 2000, Goudge & Govender 2000) The linkages between poverty and HIV/AIDS lead to the conclusion that HIV/AIDS care needs to involve the provision of basic necessities including food, clothing and medication (Jackson & Mhambi 1992) and that, perhaps more importantly, HIV/AIDS prevention requires economic upliftment of impoverished communities. Incorporation of income-generation schemes in HIV/AIDS strategies is therefore a logical consequence. (Goma et al 2000)

Problematic for evaluation of the effectiveness of community-based initiatives is that they employ many different approaches. Some projects emphasise nutrition, others are caring for terminally ill, others train caregivers in the community or combine care with income-generation projects. Some of the evidence suggests that networking

among CBOs and NGOs significantly improves their effectiveness. Smart (1999) describes the approach of an organisation called CINDI (Children in Distress Network), which comprises a network of civil society and government agencies of over 40 organisations. CINDI identifies problems and pinpoints an organisation within its network that can find the solution. The approaches involve assistance to communities in finding support through schools, clinics, aid and grants, as well as communal food and income-generating initiatives. Most notably these organisations intervene when children are at risk by pressurising individual agencies/institutions or social workers to streamline procedures.

Community health workers' programmes frequently form part of the community-based responses to HIV/AIDS. An overview of community health worker programmes in the Western Cape in South Africa (Makan & Bachmann 1997) shows that these programmes deliver essential primary health-care services, particularly in marginalised communities. The programmes generally treat common diseases and operate in rural or peri-urban areas, characterised by severe poverty and inadequate formal social services. Herein lies precisely the problem with these programmes from a governance point of view. As Makan and Bachmann (1997) find: 'the comparison between community health workers and facility-based care is a useful one, but in most cases not representative of a real choice'. (p iv, v) Community health workers are utilised as inexpensive substitutes for formal health services in underserved areas, whereas they should only serve as complements to formal care.

Although as Hunter & Williamson (2000:3) remark 'these community-based support systems may be the least visible but most cost-effective ways to help families affected by HIV/AIDS', the risks associated with misdiagnosis or inappropriate treatment by insufficiently trained personnel remains. The literature does not distinguish between community-based health care that serves as a complement to formal care and initiatives that have become substitutes for public health services. More research into the health economics of caring for those affected by HIV/AIDS is required.

One of the most prominent NGO responses to HIV/AIDS in South Africa, namely the Treatment Action Campaign (TAC), campaigns for expanded access to anti-retroviral therapy via parallel importation and compulsory licensing. (Beresford 2002, TAC 2002) The price and availability of appropriate medication will affect the role and effectiveness of community-based organisations in South Africa, but the literature on community-based responses has not incorporated these issues of health economics sufficiently.

Cruse (1997) is a notable example of research on community health workers that takes account of the South Africa-specific circumstances and juxtaposes these with an analysis of international experiences with community health workers. Moreover, this research includes an analysis of how different economic circumstances aggravate or ameliorate the impact of HIV/AIDS, for instance farmworkers who are among the poorest in South Africa and who have limited access to health care (Cruse 1997: 27) are differentiated from other rural and peri-urban communities and their specific concerns and problems, taking into account different models of community health workers, such as nursing assistants and volunteer-based models. However, even this extensive research focuses exclusively on one issue, namely extending primary health care to under-served areas or communities, and does not extend the findings to the long term impact on the health and productivity of the workforce and economic development in general.

Methodologies

The methodologies employed in the literature often include a combination of quantitative and qualitative methods. Qualitative methods include focus groups and

key informant interviews. Quantitative methods involve data gathered via surveys; statistical information and regression techniques.

Some of the methodologies employed in the literature are flawed in some aspects; the statistical problems range from biased samples to unreliable sources. Sample sizes are sometimes insufficient, often because of the sensitive nature of the subject. Samples are also often biased; they can involve purposively selected samples used for impact assessments (for example, surveying only households where HIV/AIDS has had a visible impact demonstrated by the fostering of orphans and drawing conclusions on the impact of maternal death on household welfare without a control group not affected in the same manner, Mutangadura 2000). In other samples the combination of rural vs. urban demographics differs significantly from national representivity. Also problematic in this literature is the reliability of sources, as often secondary sources ('informants') are used (Knodel et al 2000) to provide information on a range of detailed information regarding the impact on individual households (including economic status, impact on and financial arrangements of the family, care-giving arrangements, community reaction etc). In other surveys respondents are required to evaluate the home-care providers in their presence, (Jackson & Mhambi 1992) biasing the responses in favour of the service providers.

The use of informants could bias the results as presumptions cannot be distinguished from actual observations. However, this bias should be weighed against other biases that characterise alternative approaches such as those based on volunteers, self-identified cases or attempted random samples that suffer from low response rates. (Levy & Albrecht 1989 in Mullan 1998) The particular difficulties of drawing unbiased and sufficiently large samples in the context of quantifying the impact of HIV/AIDS are extensively highlighted in the literature. (Mullan 1998) However, not all of the justifications for weak sampling are indeed substantiated. Even if samples are purposively selected, control groups can be used. Thorough analysis of the data obtained and identification and elimination of 'outliers' can mitigate the impact of small sample sizes.

Comprehensive surveys do exist, for example Kongsin et al (2000), Ntozi & Nakayiwa (1999) and Jackson & Mhambi (1992). Kongsin et al use a control group, and qualitative information to reinforce the quantitative information. A cross-sectional survey is performed, using information from 600 households. Ntozi & Nakayiwa (1999) perform a study of household coping mechanisms in Uganda in four phases, including qualitative pre-survey research and analysis, as well as a follow-up survey. Wachter, Knodel & Van Landingham (2000) use national samples covering 7 000 to 21 000 respondents with weights assigned to demographic situations to make the sample representative of the Thai population. The study involves simulations to predict the impact of HIV/AIDS on the elderly population and finds that HIV/AIDS increases the chances of losing one or more children to any cause of death before one's own death by 76%. Jackson & Mhambi's 1992 survey of home care provision in Zimbabwe is comprehensive, reviewing 150 organisations involved in HIV/AIDS home-care programmes.

Despite these efforts, many studies do not extrapolate their findings to the macroeconomic or cross-cutting developmental issue levels. One exception is the 2000 study on Thailand by Kongsin et al (2000). The cross-sectional survey used includes demographic information, school enrolment, health and health-related expenditure, time allocation, migration history, economic activities and source of income, expenditure, assets, transfers and savings, access to services, community involvement, and leads to a comparative analysis of households affected and not affected by chronic HIV morbidity, as well as between communities with different levels of available services. The results show a high level of dissaving and disproportionate percentage of health care expenditure with respect to income per

capita in affected households in Thailand. This study links HIV/AIDS to higher possibility of households entering into poverty. This type of study can contribute towards an understanding of the developmental aspects of HIV/AIDS and how community-based organisations can best be put to use in this context.

Some studies reveal that income-generating activities and credit schemes are an essential part of impact-alleviation assessments, (Donahue 1998, UNICEF 1997) but do not analyse the difference that HIV/AIDS has made to the need for employment creation and micro credit.

Many studies point to the fact that gender inequality leads to a disproportionate burdening of women by HIV/AIDS, but do not assess whether a reduction in gender inequality is more difficult to achieve due to HIV/AIDS or has perhaps played a role in the empowerment of women. The role of gender inequality and lack of access to education of women in the spread of HIV/AIDS needs to be linked to the debate on the role of gender equality and education in economic development.

The impact on enrolment ratios (several studies link reduced enrolment to the impact of HIV/AIDS on demographic and household characteristics, household assets, opportunity costs, adult mortality etc as explanatory variables for reduced enrolment, for example Ainsworth, Beegle & Koda 2000; Ayieko 2000; Caldwell et al 1993; Halkett 1998) needs to be discussed in the context of the skilled labour force that is required for development. This also needs to be cross-referenced with government policies on education and industrial development, in order to gauge to what extent the envisaged path to development may have become less feasible due to HIV/AIDS.

The impact of the emergence of child-headed households on labour supply and quality also needs to be assessed in a broader framework than the impact on households or the community alone. (Ayieko 1997)

Research on the impact on health in general due to HIV/AIDS tends to focus on the health of household members, for example linking the nutritional status of household members to *inter alia* recent adult deaths as is done by Ainsworth 2001, but does not extend the analysis to the impact on the labour force in general. The lack of access to resources such as health and housing is often seen as an explanation for the emergence of community-based organisations in alleviating the impact of HIV/AIDS. However, whether or not these organisations are providing essential services beyond HIV/AIDS and thereby perhaps contributing to a healthier more productive labour with implications at the macroeconomic level is not thoroughly investigated.

Proposals and policy implications

The policy recommendations generally involve approaches to alleviate the burden of HIV/AIDS on the woman, child, household or community (a relatively passive approach) or the economic empowerment of the woman, child, household or community (a more pro-active approach).

Programmes aimed at alleviating the strain involve a wide range of initiatives. Credit programmes to maintain household expenditure and schooling (Kongsin et al 2000) or benefit packages including food, schooling and clothing (Hunter & Williamson 2000) can provide immediate relief. More sustainable are women's lending and saving groups. (Hunter & Williamson 2000)

The recommendations regarding care arrangements include formal and informal sector approaches. Increased funding for medical care, counselling and community education (Caldwell et al 1993) is required for a range of community-based projects, for example home-based care at minimal cost to households, (Smart 1999) and community-based self-help groups. (Aggleton & Bertozzi 1997; Hunter & Williamson

2000; Donahue & Williamson 1999) Stronger links between community health workers to formal health services and informal health-care providers are seen as a logical extension of the intensified support for community-based projects. (Makan & Bachmann 1997) For CBOs to be effective community participation by people with HIV/AIDS needs to be promoted. (Aggleton & Bertozzi 1997; Donahue & Williamson 1999; Hunter & Williamson 2000; Mutungadura 2000)

Some of the studies link the HIV/AIDS interventions to more general developmental issues. Goudge & Govender (2000) and Hunter & Williamson (2000) stress the importance of development of the social and economic infrastructure for alleviating the impact on the most vulnerable households, including water infrastructure, electricity, housing etc. In addition, the importance of labour-saving interventions such as community-based health care, water infrastructure, fuel-efficient stoves etc is stressed. (Hunter & Williamson 2000) It is further recommended that HIV/AIDS prevention strategies are incorporated in development policies, including macroeconomic, health and fiscal policies. (Du Guerny & Hsu 2000)

The recommended programmes aimed at economic empowerment range from income-generating schemes to enhanced legal protection for widows. Micro-credit or finance programmes aimed at investing in self-employment include credit, savings and capacity-building programmes. (Donahue 1998; UNICEF 1997) They are particularly beneficial to marginalised groups, for example women and children and those without collateral. Although their role in poverty reduction is duly discussed in the literature and the synergetic links with social services is explored (micro-credit schemes tend to reduce poverty faster when they are combined with increased access to basic social services), no thorough analysis is included of the impact of these schemes on economic growth.

An interesting development is the call for income-generating resources for youngsters (10-18 year olds). The increasing number of AIDS orphans and the emergence of child-headed households requires either improved resources of caregivers (for example pensions) or providing these orphans with the resources to look after themselves. (Halkett 1998)

More fundamentally, the literature points towards the protection of property rights of women and children as in many parts of sub-Saharan Africa, women and children have no legal rights to own property. After a husband's death relatives often claim the husband's property. NGOs and CBOs already play a role in providing legal assistance for writing wills and services for widows and orphans to regain property, but protection of survivors' rights needs to be addressed at a national level. (Hunter & Williamson 2000) Other policy recommendations point towards reducing sexual violence and child prostitution as these phenomena have an aggravating impact of on the vulnerability of women and children to HIV/AIDS. (Gordon & Crehan 1999; Smart 1999)

A central theme in the literature on NGO and CBO interventions is that they would benefit from networking and coordination mechanisms (Smart 1999; Hunter & Williamson 2000) enabling them to respond both rapidly and appropriately to households or communities in need. Moreover, collaboration with government, community leaders and donors is seen as essential to improving the effectiveness and sustainability of community-based responses to HIV/AIDS. (Hunter & Williamson 2000; World Bank 2000)

Ultimately, the literature points towards the limits of coping mechanisms of the household and of community-based organisations. When these are exhausted due to the community-wide impact of HIV/AIDS, the state has a role in providing safety nets, such as insurance, health care provision and enabling income generation. As

the World Bank finds: 'many solutions will involve partnerships among poor communities, the private sector and the state'. (World Bank 2000: 158)

Need for further research

Research programmes do not always involve a multi-disciplinary approach or build on previous research. Moreover, much of the research covered in this literature review covers a small district with its specific characteristics, which does not allow for generalised conclusions or recommendations. Much of the literature is based on research performed elsewhere in Africa or in the developed world and therefore does not take the specific circumstances in South Africa that can play a role in determining its impact into account.

The need for further research therefore needs to address two fundamental issues. Firstly the research needs to be consolidated and systematised, whilst taking regional idiosyncrasies into due consideration, so that both more general and more region-specific conclusions or recommendations regarding the NGO and community-based response to HIV/AIDS can be drawn. This includes studies on the magnitude of different kinds of impact, impact distribution, mechanisms of impact, and response; and research into how the impact on women, households and communities can be alleviated. (Aggleton & Bertozzi 1997) These research programmes should be 'multi-disciplinary in design and implementation, build on previous research, be action-oriented and involve community groups and people living with HIV/AIDS'. (Aggleton & Bertozzi 1997)

Secondly, the research needs to take cross-cutting developmental issues into consideration when analysing the costs and benefits of community-based responses to HIV/AIDS. For a better understanding of community responses and to enable the development of appropriate prevention and mitigation strategies, future research should include the following aspects: how NGOs and CBOs affect the HIV/AIDS relationship with and its impact on (1) poverty, employment, migration and income distribution, (2) human capital, education, health and development, (3) gender inequality, household dynamics, empowerment of minors and other disenfranchised groups and (4) access to services, utilities infrastructure and sustainable development.

The role of NGOs in poverty reduction has been well-documented, whereas their role in employment, migration and income generation and distribution, which ultimately determine the chances of development at a national level, has been given less attention. The links between HIV/AIDS in poverty-stricken areas and issues such as migration and urbanisation as well as structural adjustment programmes that limit health spending requires further investigation. (Caldwell et al 1993)

Thirdly, the role of CBOs in attending to the daily care of HIV/AIDS orphans and in community health care has been highlighted, although no thorough analysis of its long-term impact on the quality of the labour force has been undertaken. The impact of HIV/AIDS on agricultural production systems, rural households/communities and food security (Baier 1997) and community responses to these changes requires further study in order to identify appropriate NGO responses.

Fourthly, the role of gender inequality and disenfranchisement of minors and poor people in general in terms of access to land and credit has been mentioned as an exacerbating factor worthy of further investigation. (Baier 1997; Topouzis & Hemrich 1998) It would be useful to extend the analysis to how the onset of the pandemic is bringing these inequalities to the fore and perhaps changing attitudes towards gender equality and how NGOs and CBOs can contribute to this process. In this context it is important to study household and family dynamics and how they differ across regions, (Caldwell et al 1993) as well as means of strengthening families and communities to

cope with AIDS orphans and vulnerable children. (Smart 1999) Reviewing national policies (Du Guerny & Hsu 1998) aimed to eliminate discrimination against women, children and the disenfranchised in general would be a useful starting point.

Lastly, the insufficient access to social services and utilities has wider implications than an aggravated impact on the poor and under-served people. There may be significant long-term developmental aspects to HIV/AIDS in under-served areas, as the spread is not curtailed, mother-to-child transmission is not prevented and opportunistic infections are more likely to be lethal under these circumstances.

Investigating the impact of HIV/AIDS on and its linkages to cross-cutting economic development issues is an important extension to the current literature and the first step towards identifying appropriate policy responses vis-à-vis the epidemic in general and vis-à-vis community-based and NGO responses in particular.

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The economic impact of HIV/AIDS in Africa

by Guy CZ Mhone ¹

Introduction

This chapter reviews selected studies on the economic impact and implications of HIV/AIDS in Africa with the aim of deriving policy lessons for South Africa and also suggesting areas for future research. As the HIV/AIDS epidemic has progressed in Africa, research interest has shifted from a focus on anthropological and sociological issues to the economic impact and implications of the disease. (Webb 1997) While there is a significant published and grey literature that addresses economic aspects of the HIV/AIDS epidemic in individual African countries, many such studies tend to be narrowly focused and fail to give a comprehensive view of the epidemiology of the disease in a holistic and integrated manner, hence the observation by Webb that:

The complexity of HIV/AIDS issues in developing countries, in Africa in particular, necessitates a certain degree of conceptualization in order to define the parameters of the subject and relative importance of factors involved. This does not necessarily imply the formulation of models as explanatory or predictive devices, more the representation of different variables in relation to one another. The theories relating to HIV/AIDS in terms of its epidemiology and impact on socioeconomic systems are in a state of flux, to the extent that the methodology of abstraction is far from clear and undergoing constant revision. (Webb 1997)

HIV/AIDS is a complex disease with respect to its causes, transmission, spread, consequences and treatment. Presumably then, a comprehensive economic analysis of the HIV/AIDS epidemic in any given country would have to address the economic considerations related to all of the foregoing aspects of the disease in an interrelated manner. As is discussed further, such an exercise has yet to be attempted for South Africa or any of the African countries. A number of studies, rather, have attempted to interrogate individual aspects of the disease, increasingly with a microeconomic or sectoral focus and at times a macroeconomic focus as well. A review of such studies reveals interesting but fragmented lessons but fails to give a holistic view of the problem in its economic context.

Useful general studies of the HIV/AIDS situation in Africa and South Africa have been undertaken, such as Webb's *HIV and AIDS in Africa* (1997) and Whiteside & Sunter's *AIDS: The challenge for South Africa* (2000). These books provide a good overview of the multifaceted issues at stake, while hinting at the key economic issues that need to be taken into account. However, a number of other studies delve into narrower economic issues at a country level, and others attempt comparative analyses for Africa as a whole or for select African countries. Thus for this review the above mentioned titles have been relied upon for general overviews of the HIV/AIDS epidemic in Africa and in South Africa, while the more specific texts have been relied upon to explore the economic issues at stake.

Whiteside & Sunter identify three ways in which sexual transmission of the virus can be prevented, namely through use of bio-medical interventions that reduce the risk of infection when one has sex with an infected partner; through change in sexual behaviour by acquiring and deploying the necessary knowledge, attitude and behaviour (KAB) that would make them abstain from sex, or make them faithful to a single partner, or make them use a condom when having sex. Whiteside & Sunter

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note that the foregoing methods of intervention need to be supplemented by policies that alter the socioeconomic environment:

Although the most proximate causes of being infected are biological, a person's sexual behaviour is determined by the number and type of sexual encounters he or she will have. Sexual behaviour is in turn determined by economic, social and cultural factors. (Whiteside & Sunter 2000)

With respect to South Africa they observe as follows:

For successful control of the epidemic, interventions are required that address the socioeconomic environment and make it possible for people to change their behaviour. Current interventions in South Africa constitute a necessary condition for control but are not a sufficient condition. This was recognized in the Department of Health's Beyond Awareness Campaign, if prevention is to move beyond knowledge to action, we must look at the socioeconomic causes of the epidemic and intervene accordingly. (Whiteside & Sunter 2000)

Whiteside & Sunter assess the record of the South African government in this respect, and while noting some successes that have been achieved, they generally find the approach being taken by government to be quite wanting in a number of respects. They note that:

... in most African countries, it is recognized that HIV prevention and AIDS mitigation require a multi-sectoral response. (Whiteside & Sunter 2000: 124)

Webb endorses this view and notes that:

... complexity of HIV spread is not to be underestimated. Many of the reasons for the failure of prevention programmes to date lie in this oversimplification, in reducing the epidemic to medical or health terms, to talk of HIV/AIDS as if socioeconomic processes were merely incidental. (Webb 1997: xii)

The HIV/AIDS epidemic has only recently peaked in South Africa, while in a number of African countries this peak was reached more than a decade ago. It is therefore of interest to assess what can be learnt from the experience of other African countries. Webb notes that on the basis of his field work in southern Africa, the fundamental questions have yet to be addressed, particularly those that relate to the interaction of socioeconomic factors with social behaviour and attitudes as mediated through individuals, households, and communities. In this respect, issues related to poverty, fatalism, uncertainty, violence and the lack of access to crucial resources loom large. He continues to note that:

The information and knowledge we need to address the epidemic in a more constructive way are therefore localized, and generalizations negate the reality of the great diversity and variety in the way people react to this unprecedented situation. The ultimate answer of prevention is yet to be found but evidence points to the need to re-conceptualize the whole idea of prevention into a long term intervention approach, with awkward political questions raised regarding resources, human rights and empowerment. (Webb 1997: xiii)

In attempting to review some of the studies undertaken in the rest of Africa it is necessary to distinguish between methodological issues that pertain to reporting and recording of cases, data collection and analysis and the generalisation of findings; and conceptual issues that pertain to: situational risk factors of a socioeconomic nature related to vulnerability and susceptibility to HIV/AIDS; the economic impact

of HIV/AIDS, and economic considerations related to the management of the health of those infected with HIV to prevention and the treatment and care of infected individuals. Thus a comprehensive approach to addressing the HIV/AIDS epidemic, at least in its economic aspects, needs to incorporate measures that address the socioeconomic risk factors; the negative demographic and economic consequences of the epidemic; the efficient and effective deployment of measures to prevent the infection and spread of the disease, and facilitating the treatment and care of those infected. There is, surprisingly, a significant amount of work that has been done on many the foregoing issues, although much of it is exploratory, suggestive and exhortative in nature.

Methodological issues

It is generally accepted that there is a need for reliable information on which to base interventions aimed at eradicating or controlling the disease and its consequences. Data is needed on the socioeconomic circumstances and behavioural and attitudinal orientations; on the incidence and spread of the disease; on the demographic and economic consequences of the disease; and on the effectiveness and efficiency of any interventions deployed to address the disease. Further, such data needs to be able to capture both the implications of the symptomatic phase of the disease in which individuals are HIV positive but do not have AIDS and the symptomatic stage of infection when individuals begin to show signs of opportunistic diseases or are afflicted with AIDS. On the aggregate level the information should be such that it sheds light on the three major stages (Doyle 1990) through which countries go namely, the pre-epidemic period when the prevalence rates are relatively low (less than 1%); the epidemic stage when the prevalence rate is above 1% and the rate of spread is high; and the endemic stage when the rate of infection peaks to between 20% and 30%, and the rate at which the infection spreads begins to stabilise. Any information collected should be such that it can shed light on the full implications of the disease at each of those stages. In addition, for all aspects for which data has to be collected, it is necessary that the information can be disaggregated to shed light on the implications of spatial distribution and location, gender, age and other similar variables and parameters.

A number of observers have lamented the lack of and/or unreliability of data to accommodate the above requirements, and the fact that not enough research may have been done, hence the comment by Lowenson and Whiteside, who, in addition to lamenting the inadequacy of the data available, comment that:

perhaps the most critical lesson is to realize how little has been done in most countries, and how crucial it is that further research and analysis are carried out. (Lowenson and Whiteside 1997: 3)

A recurring issue relates to the concern over methodological aspects in the use of the data that is available.

The biggest challenge for any country is to ensure that accurate data is recorded and collected pertaining to the incidence and prevalence of HIV/AIDS. Such data is collected from reported and known AIDS cases, and from HIV testing. In almost all African countries AIDS cases are not adequately recorded and HIV testing is not mandatory. The situation is made worse by the fact that many individuals in Africa live and work outside of the formal sector, so they are also likely to be attended to by traditional healers. In spite of the more developed infrastructure in South Africa AIDS cases are not explicitly recorded, although they may be inferred from records of patients or death certificates, whilst HIV testing is primarily undertaken at antenatal clinics and then extrapolated for the country as a whole.

There is general agreement that antenatal data does provide a good indication of incidence and prevalence especially when the infection is heterosexually driven. But the statistics are distorted by the fact that those with high incomes may be attending private clinics for which data may not be collected and by the fact that fertility declines among those infected and may therefore not be attending antenatal clinics. The models utilised for extrapolation and analysis generally attempt to make up for perceived biases. But as noted by Whiteside & Sunter:

There remains a danger of statisticians producing figures with an appearance of great accuracy. Precision in the field of HIV and AIDS is spurious. We do not exactly know how many people are infected and will fall ill and die... and the better the data we start with, the more comfortable we will be with the estimates. (Whiteside & Sunter 2000: 34)

The point here is that in the absence of reliable and consistent data on which to base any analysis let alone an economic one, it is difficult to generalise from country studies with any degree of confidence. Thus one of the biggest challenges for Africa is the need to improve data collection on HIV infection and AIDS. The biggest hurdles in this respect are ensuring that individual rights are not trampled upon in the haste to collect information and that HIV/AIDS is de-stigmatised so that it is easier for individuals to voluntarily provide information.

A number of observers commenting on analyses on Africa have identified technical shortcomings such as those related to survey methodology, analytical techniques and so on, as requiring improvement. Others have warned against being overly preoccupied with data manipulation and modelling exercises such that the task of informing on policy is compromised. Some have gone further by reminding analysts that the HIV/AIDS epidemic is a major health issue that should be addressed with normative outcomes in mind, hence the need for the policy thrust or implications of analyses to be explicit.

The substantive methodological issues relate to the conceptualisation and analyses of the actual issues at stake pertaining to the themes of socioeconomic risk factors, demographic and economic impact, and health policy management, with respect to their economic aspects. First, most Africans live and work in non-formal sectors in which market valuation of activities is minimal. In the presence of various non-market activities, questions have been raised as to the meaning and implications of economic analyses predicated on formal sector valuations of activities, particularly with respect to the assessment of direct and indirect costs of the disease and the factors underpinning vulnerability and susceptibility to HIV and AIDS. Second, given that much economic analysis is concerned with formal sector activities and relationships, there has been a tendency to understudy the non-formal sectors themselves with respect to economic implications of HIV/AIDS and related interventions.

Thus, for instance, a number of observers have noted that the relative merits of home-care or community-based care interventions have not been adequately assessed, especially in regard to the degree to which this intervention may entail the transfer of the social and public costs of HIV/AIDS to the household or communities, and the degree to which conventional economic analyses of developments may not capture or may understate the actual costs to society as a whole. The foregoing issues further complicate the task of deducing the comparative lessons from individual cases, or of extrapolating such findings to other countries. Generally, most analysts have tended to make undue generalisations and extrapolations. Indeed much of the analysis is tentative and exploratory in nature.

There are three major lessons to be drawn from the above discussion. First there is general agreement that the recording and collection of data on HIV/AIDS infection

in Africa, including South Africa, leaves much to be desired, and that every effort should be made to improve data collection to facilitate reliable analyses and monitoring of trends and interventions. The second lesson concerns the need for complementary macro and micro analyses of economic aspects of the disease in a manner that teases out as much of the nuances and interrelationships as possible, to enhance understanding of countries and between countries in Africa. The third lesson is that the formal sector bias in analysis, benchmarking and valuation, needs to be tempered by the need to interrogate circumstances in the non-formal sectors. Given the limits of conventional analytical economics tools when applied to non-formal activities, some observers have recommended that inter and multidisciplinary approaches should be exploited as much as possible to enhance understanding of developments in the informal sector, peri-urban areas, and rural areas, and with the household sector, in which non-market activities and relations prevail. These issues are discussed below.

Echoing the above with respect to South Africa Broomberg et al (1990) identify the following shortcomings: the limited scope of much of the then available research and the wide range in variability in estimates of costs. The authors went on further to observe that:

There are several problems with this kind of superficial research. The wide variation in results undermines the trustworthiness of this, and of any subsequent data, for policy makers and planners at all levels. In addition, the extremely high estimates generated by some models for total costs creates a sense of helplessness in the face of overwhelming and unmanageable costs. This further undermines efforts to combat the disease, and to find cost effective care options for those who are ill. (Broomberg et al 1990)

The chapter goes on to review some of the substantive issues at stake. The next section reviews studies that attempt to analyse the degree to which socioeconomic factors provide an environment conducive to HIV/AIDS infection and the spread of the disease. This is followed by an analysis of studies on the demographic and economic impact of HIV/AIDS in Africa and the economics of managing interventions.

Economic related risk factors (vulnerability and susceptibility)

It is well accepted, as Webb (1997) has argued, that the determinants of HIV infection encompass behavioural and attitudinal aspects ranging from those influencing the agency of individuals as determined by their individual psychological make-ups and behavioural orientations; the sociological and cultural background and surroundings in which individuals live; and the economic circumstances relevant to the individuals and his or her surroundings. Both superficial evidence and analytical studies show that each of the foregoing areas has a bearing on the nature and development of the HIV/AIDS epidemic, but differences arise as to demonstrating the relative weight or contribution of each of those areas with respect to the specific manner in which each of them, directly and indirectly, impacts upon the epidemic.

The investigation of environmental risk factors attempts to determine the extent to which social, political and economic factors influence vulnerability and susceptibility to HIV/AIDS by way of understanding initial factors and facilitating agents. Although poverty is an important factor in infection, the issue is quite complex since rates of incidence and prevalence do not follow strict patterns. In general, infections in industrialised countries have been limited to marginalised groups, and in some instances, the impact of the disease has been controlled through the use of antiretroviral therapies. In 1999, the highest rate of increase in infections was recorded in Eastern Europe and the former Soviet Union following the disintegration of the

communist block; in Latin America the rates are not particularly high; the Caribbean exhibits high rates of incidence and prevalence although not as high as those to be found in Africa; in Asia a mixed picture emerges with countries such as Philippines, Malaysia and Sri Lanka having low rates and a country such as Cambodia having high rates; and China and India currently having relatively low, but escalating rates of infection.

In Africa, countries north of the Sahara are primarily Arab and Muslim and have low rates, but sub-Saharan Africa, particularly eastern and southern Africa, exhibits the highest rates of HIV infection in the world. For example: (Whiteside & Sunter 2000)

- ❑ Africa's prevalence is about 8%, with a number of countries having prevalence rates that are as high as 20% or higher.
- ❑ It has been estimated that there were about 23 million infected persons in Africa in 2000.
- ❑ In the past decade 12 million individuals may have died of AIDS.

In 1998, AIDS was the largest killer in Africa accounting for 1.8 million deaths in sub-Saharan Africa, nearly double the estimated one million deaths from malaria and nine times the deaths from tuberculosis. However, given variability in the incidence and prevalence of the disease under similar circumstances, it is not immediately obvious what the relationship between socioeconomic conditions and the development of HIV/AIDS is. The difficulty is that, while superficially, the links may appear obvious enough, a closer look suggests there are more complex factors at work. Essentially it appears that any analysis that attempts to derive uni-causal links between any one area of the environmental factors (behavioural, socio-cultural and economic) is likely to be quite limited in its explanatory and policy value, since a comprehensive understanding of the phenomenon requires an adequate postulation of the interaction of the various environmental factors and their relative impact on the development of the HIV/AIDS epidemic.

The problem is easily appreciated when the nature of the prevalence of HIV/AIDS in Africa is considered in geographical terms as shown by Kamuzora (2000):

- ❑ While at the macronational level, HIV/AIDS does not appear to have a major impact on the demographic structure, major changes in age and gender structure occur in a localised manner within epicentres of the disease such as particular provinces or localities, truck routes, tourist centres and other similar areas.
- ❑ The effect nationally very much depends on the significance of the epicentres as a proportion of the total population.
- ❑ The epidemic is not evenly distributed, being higher in urban and some rural areas. For example, in Uganda it has been concentrated in the city of Kampala, and the western and southern districts, particularly the Rakai District; in Tanzania it is concentrated around Lake Victoria Regions especially in areas neighbouring Uganda (ie Kagera Region, an extension of Rakai District) and near Zambia (in Mbeya and Iringa Regions).
- ❑ HIV prevalence depicts a rural-urban differential, being higher in cities, towns and trading centres than in rural areas. However, Uganda and Tanzania seem to be exceptions – HIV/AIDS there is reported to be more disseminated. (Hunter 1993)
- ❑ Demographic aspects of the HIV/AIDS epidemic that are of central importance are the size, growth and age structure impact on the population – the component determinants of these entities are mortality, fertility, migration and urbanisation.
- ❑ With the mode of transmission of the HI virus in Africa being identified as heterosexual, the spatial spread of the epidemic has also been identified with migration and urbanisation (truck drivers, rural-urban contacts).

- Populations of Africa will continue to grow and remain proportionally young due to high birth rates.

The question that arises is whether it is possible to explain the specific contribution of economic factors for each of the above situations and also to find any common threads that can be attributed to economic factors. While the precise nature of the interaction may be ambiguous, it is generally accepted that in Africa a number of eventualities related to economic factors have a bearing on the incidence and spread of the disease. The following factors are frequently identified: levels of poverty; the negative consequences of the impact of economic reforms and globalisation; prostitution; tourism; frequent migration; exposure to long distance truck routes; social disruption arising from economic, political factors or natural disasters; modes of earning livelihoods such as long distance trade, migrant labour and so forth. Interestingly many of the studies show that a higher economic status can either insulate or facilitate the spread of the disease.

It is noted that there are epicenters of the disease in each country, but whole countries may also appear as epicenters of the disease for reasons that are not easy to explain *ex ante* and are perhaps easier to explain in an *ex post* manner.

Webb (1997) has characterised the approach needed as a structural one that can be undertaken within each of the main areas such as the sociological/anthropological, the psychological or economic approaches, or across all three areas in an attempt to arrive at a more comprehensive understanding of the factors at play. Thus Jochelson et al (1991: 170) comment:

HIV transmission cannot be curtailed unless the social conditions facilitating its spread – the migrant labour system, vulnerable family relationships, and low wage employment for women – are transformed.
(Quoted in Webb 1997)

Many of the studies that investigate the impact of economic factors on the incidence and spread of HIV/AIDS have underscored an often ignored aspect of the epidemic. Generally, there is a well-intentioned enthusiasm to overly emphasise the consequences of the disease and how these consequences should be dealt with, while ignoring the need to demonstrate how environmental factors may act as enabling causes. Such a conclusion is supported by a number of analysts including Becker (1990) who notes that:

... the patterns of HIV infection across Africa strongly suggest that AIDS is a 'disease of development', in which colonially inherited patterns of labour utilisation such as temporary labour migration coupled with high levels of poverty in rural and urban areas, economic stagnation all of which put women into temporary relationships with men; in which economic support is bartered for sexual favours [thereby] exacerbating the situation. In short, both early capitalist development and the stagnation of the past 15 years have contributed to a social structure in many areas ideal for the spread of HIV. (Becker 1990: 1605)

The demographic and economic impact and consequences of HIV/AIDS

There is a substantial amount of literature that attempts to address the demographic and economic impact of the incidence and spread of HIV/AIDS in Africa. The impact on demographic factors is seen as crucially important in this respect since various implications can be derived from it that relate to the economy as a whole and this has implications at the microeconomic levels. The trend has been to resort to actuarial models primarily to model the impact of the structure, growth and composition of the population including its major sub-groupings.

In South Africa, the models developed by Doyle and Dorrington/ASSA have received much acclaim and in other countries similar models have been attempted. More recently, some economists have added Computable General Equilibrium models for projecting the impact of the epidemic on the economy. The demographic actuarial models have been somewhat limited by the type and nature of available data on HIV infection rates and AIDS deaths, especially in that in Africa testing is not mandatory and reporting of AIDS deaths is rather understated and inconsistent, if it is reported at all. Nonetheless, those working on the models insist they can utilise statistical techniques to correct for distortions and biases in current data and, second, to facilitate the extrapolation of their data, findings and analyses to the general population. The models predominantly rely on data collected from antenatal clinics. As can be expected, it is statistically problematic to extrapolate from this basis to the general population of a given country. Nonetheless the data, techniques and models are continuously being refined, both within countries and internationally, with guidelines being provided with respect to defining and measurement of variables, deployment of techniques, and application to individual countries.

Demographic impact

With respect to the analysis of the impact of HIV/AIDS on demographic structure, crucial areas of relative ambiguity concern how one identifies and includes in the models, factors that determine the probability of infection such as sexual behaviour, assumptions about the initial number of infected persons at the initiation of the modelling exercise, the amount of 'imports' of infected persons (ie from infected refugees and immigrants), the incubation period and its relationship to asymptomatic and symptomatic stages, mother-to-child transmission, and mortality due to AIDS. In addition, assumptions have to be made, in the absence of reliable empirical data, on the manner and rate of spread of the disease according to various age groups by such variables as gender, age, race, ethnicity and so on. Within this context the analysts have to make some plausible assumptions about the feedback effects between environmental factors driving the epidemic and consequences of the epidemic on environmental factors and how both impact on the development of the disease and its impact on demographic factors.

On the basis of such an exercise, and innovative approaches to data collection and surveillance a recent report on AIDS deaths by the Medical Research Council of South Africa concluded:

While there is inevitably some degree of uncertainty underlying the assumptions about both the model and the interpretation of the empirical data, we estimate about 40% of the adult deaths aged 15-19 that occurred in the year 2000 were due to HIV/AIDS and that about 20% of all adult deaths in that year were due to AIDS. When this is combined with the excess deaths in childhood, it is estimated that AIDS accounted for 25% of all deaths in the year 2000 and has become the single biggest cause of death. (Dorrington et al 2001: 6)

Regarding the demographic impact of HIV/AIDS, outstanding issues relate to its impact on population growth and the age and gender composition of the population. Generally many analysts in Africa suggest that with the exception of a few countries that have high prevalence rates such as Burundi, Zambia and Uganda in the short to medium term, that is over period of about ten years, the chances are that population growth, and the demographic structure are likely to remain unchanged. However, it is expected that in the long term the impact might be more visible if preventative measures are not in place or are not effective. Nevertheless, the evidence differs from one country to another with some studies suggesting that major changes are taking

place especially with regard to gender composition (with AIDS resulting in more women than men) and an increase in the dependency ratio (the ratio of the dependent population below 15 years of age and above 65 years of age to the economically active population). A seemingly indisputable consequence of AIDS on the population appears to be the reduction in life expectancies across the continent where HIV/AIDS has reached high prevalence rates. More generally, analysts dismiss the expectation by some that the HIV/AIDS epidemic might be a mixed blessing in that it might relieve many countries of their surplus population.

As matters currently stand, in reviewing when one reviews much of the literature on the demographic impact of HIV/AIDS, some authors advise that analysts should not be unduly alarmist about the results and projections, nor should they be unduly sceptical. Much work is needed to systematise data collection as well as to refine the models being used for projections. As some have observed, it is the only information we have at the moment so that it should not be taken lightly and every effort should be made to consolidate current efforts at collecting data and refining models.

Economic impact

Many studies have attempted to determine the economic impact of HIV/AIDS. Initial studies tended to be deductive and alarmist while more recently a number of studies seek to impart more empirical and analytical rigour to the issues at stake. Generally, such studies attempt to investigate the impact of HIV/AIDS from a macroeconomic and a microeconomic perspective. The macroeconomic perspective encompasses such issues as: the impact of the epidemic on labour supply and demand; investment in, and utilisation of capital, savings and investment; fiscal balances; aggregate demand; external market demand for domestic products; investment climate; gross domestic product; and distributional aspects related to income and standards of living. Microeconomic perspectives have devoted their attention to issues related to the impact of the epidemic on enterprises, economic sectors (such as agriculture, manufacturing, tourism etc); labour supply by skill occupation and education; and communities and households. Needless to say much of the analysis has tended to focus on the impact of HIV/AIDS in the formal sector, making deductions about the rest of the economy and the labour force.

Most studies have been saddled with problems of methodology and conceptualisation. The tendency has been to rely on case studies or highly aggregated data, both of which limit the degree to which general statements and projections can be made. In addition the tendency has been to rely on conventional economic modes of analysis uncritically such that the nuances of the impact of the epidemic on the nonformal sectors (the urban informal and the communal agricultural sector) have not been adequately captured or investigated. There has been a tendency to over-emphasise the refinements of analytical tools familiar to economists while ignoring the need for interdisciplinary and multidisciplinary tools and approaches that could shed better light on the dynamics of the impact of HIV and AIDS at the microeconomic level and on the non-formal sectors especially.

In general the deductions and predictions have been pessimistic. The impact of HIV/AIDS is seen to be primarily influenced by demographic and labour market aspects, and the subsequent negative ramifications on the economy are seen to constitute indirect costs of the HIV/AIDS epidemic. It is generally deduced that with direct costs referring primarily to the consequences of the epidemic on health costs, HIV/AIDS will have the following effects in the medium to long term. Initially, HIV infection will increase the morbidity of labour and thus reduce its productivity and increase the costs of employment. Subsequently, AIDS will reduce the size of the labour force and impact negatively on costs of production and increase the cost of

retraining and hiring new employees. The ramifications proceed to impacting negatively on aggregate demand, which in turn will further affect production, savings, and subsequently investment. The total effect might be such that it could be stagflationary, thereby destabilising macroeconomic fundamentals. The reduced efficiency and supply of labour might also lead to increased capital intensity, thereby aggravating unemployment.

At the microeconomic level it is generally expected that the impact will be felt through reduced income earnings, which will lead to poverty for vulnerable groups. The costs of care and death are expected to aggravate the situation of households. Some analysts have attempted to show that HIV infection, while indiscriminate with respect to socioeconomic class, does affect lower skills disproportionately, hence the likelihood that poorer families will be worst affected by the epidemic.

General impact

The economic impact of HIV/AIDS in South Africa has been analysed by a number of authors including a report by ING Barings (2000). The authors attempt to model the macroeconomic effects of AIDS as extrapolated from the demographic impact of the epidemic. While noting the imperfect nature of the information at hand, the study proceeds to make and reinforce the usual deductive conclusions regarding the negative impact of HIV/AIDS on the South African economy. The findings are similar to those projected to occur in other countries with similar high rates of infection, especially in Africa. The problem with such analyses, and similar ones undertaken elsewhere in Africa, is that the inferences regarding economic impact lack precision to inform adequately on policy, and deductions are highly debatable. More recently, Lewis has attempted to develop a Computable General Equilibrium model to assess the impact of HIV/AIDS on the South African economy based on various scenarios.

Microeconomic impact

There have been attempts to understand the microeconomic impact of HIV infection, for example, Baggaley et al (1994). The authors undertook a survey of various businesses in Lusaka and the Copperbelt in Zambia. The sample covered personnel managers of companies, including banks, car manufacturers, food and drink manufacturers, and farms. The study confirmed the rising number of deaths in several establishments, even if the deaths could not be solely attributed to AIDS. The study also called attention to the increasing number of deaths among nurses in hospitals, an issue that has become of grave concern in that it shows the depletion of a key human resource.

Another microeconomic study on Zambia focused on the impact of HIV/AIDS on urban and rural households. Nampaya-Serpell (2000) reports interesting findings on how various households are being impacted upon by HIV/AIDS suggesting that:

- ❑ an estimated 40 000 to 90 000 AIDS-related deaths would have occurred by the end of 2000;
- ❑ at the beginning of the epidemic in the mid '80s and early '90s, the majority of AIDS-related deaths in the adult population occurred among men in the age group 20-45 years;
- ❑ loss of the breadwinners had an immense economic and financial impact on widows, their children and other dependants in the extended family;
- ❑ in the rural sample, family displacement from original home was highly predictive of a shift for the surviving family to poorer housing with most families losing electricity or piped water supply and experience of food shortages;

- ❑ in the rural sample, the loss of adult labour forced families to withdraw older children from school to help maintain current levels of food production;
- ❑ educational continuity was most severely jeopardised in the urban sample for children of low-income families and girls;
- ❑ in both urban and rural areas, age was the principal factor predictive of nutritional and health status in AIDS-affected families, with younger children the most vulnerable;
- ❑ in HIV/AIDS affected families psychosocial factors include bereavement and psychological depression in the surviving parent/caregiver.

Such findings are common among other African countries. Although the value of most studies tends to be limited by their methodology, they point to important issues that need to be investigated more rigorously. Such studies also have important policy implications. They point to various coping mechanisms that are deployed by indigent households to deal with the impact of AIDS – in particular under very adverse and general deteriorating economic and social conditions. Policy issues are raised regarding the needs of orphaned children; the need to address rural urban differences when designing policy interventions; the consequences arising from loss of formal sector incomes; the burden borne by extended families and in the face of the plight of both orphaned children and widowed women; the degree to which community safety nets are developed to support those affected by the epidemic; and the manner in which a community and home-based care ‘economy’ emerges to absorb the external and personal shocks brought about by the epidemic.

Impact on smallholder agriculture

Mutangadura et al (1999) reviewed studies on the impact of the HIV/AIDS epidemic on smallholder agriculture in a number of African countries. They note that the impact of the epidemic is aggravated by the negative impact of structural adjustment programmes, which have inadvertently tended to worsen the terms of trade confronting small holder farmers. Findings include:

- ❑ A study in Rakai and Kabale districts of Uganda, which found that some farming systems were expected to contract with respect to area cultivated, productivity and the range of crops cultivated because of labour shortages.
- ❑ Some studies found an increase in child-headed families showing that extended family coping mechanisms were failing.
- ❑ In Burkina Faso it was found that household welfare was influenced by the fall in remittances associated with illness or death of a migrant worker rather than due to local illness and death among smallholders themselves; whilst in Cote d’Ivoire, illness and death from within farm households were having a serious impact.
- ❑ In both countries, cash crops were reduced before food crops and the total area under cultivation declined. The time taken to care for the sick and to seek medical assistance often directly impacted on the time available for agricultural production, resulting in less timely farming practices, reduced yields and general decline in household welfare.

The analysis of the impact of HIV/AIDS on the rural communal sector is an important area in which there has been very little research. It is clear that a number of issues need to be interrogated. First, there is the need to understand the impact of the epidemic on livelihoods and the division of labour on the basis of gender, age, and formal and nonformal specialisation. Second, there is a need to understand the nature of coping mechanisms as the strains placed upon them by the epidemic take their toll. Third, in a number of countries it has been shown that that the traditional rights of widows are being ignored as the burden of AIDS progresses. Finally there is

a need to assess the degree to which the seeming 'fungibility' and capacity to cope of non-formal households may actually result in an internalisation of the private and social costs of the epidemic such that in the long term coping approaches may undermine the welfare and life expectancies of those surviving.

Economics of managing HIV/AIDS

Some attention has been given to the direct economic impact of the HIV/AIDS epidemic, the costs of prevention, the treatment, care of those infected and the management of death practices. The costs have been analysed in terms of public, private and personal costs. Broome et al (1991) show that expenditures on managing the epidemic are directly related to levels of gross domestic product; that as the epidemic progresses, the resources devoted to managing the epidemic increase as a proportion of gross domestic product; that increasingly expenditures on managing HIV/AIDS begin to crowd out other claims on both health expenditures and public budgets; that direct costs per case increase with higher levels of gross domestic product; and that relative costs of managing the epidemic are a relatively greater proportion of public and private budgets in developing economies such as those of Africa.

The direct costs vary among and within countries internationally and in Africa and depend on health and social welfare regimes in any given country. Some of the findings related to African countries, which Broome identified a decade ago, and still appear to be holding today. Among these are that:

- ❑ for the public sector, resources devoted to management of the epidemic decline with increasing awareness about the preventative measures;
- ❑ as shown for Zaire and Tanzania in a study undertaken in 1985, the personal costs for the asymptomatic phase of disease are about one third of those for the symptomatic phase;
- ❑ the relative proportions between public and private costs change for each stage of the epidemic; and
- ❑ for the poorer African countries the public tends to spend more resources on curative aspects while donor money is spent on preventative measures.

Generally, most studies show that many African countries do not have adequate resources to address the consequences of the epidemic as the disease progresses to the more advanced stage. When indirect costs are added to total costs, it appears that individual costs account for about 90% of total costs and that 90% of individual costs, are as a consequence of premature death.

Some of the major issues in health management relate to the following:

- ❑ Treatment settings – whether a 'cluster' approach that targets particular groups is more cost effective than a 'scatter' approach, which is more generally oriented; the balance between outpatient versus in-patient treatment and the roles of home and community care as a model; and issues of coordination and planning, especially given increasing calls for multi-sector approaches to addressing the epidemic.
- ❑ Therapeutic interventions – the big issue here concerns the economic and moral issues pertaining to the use of various drug regimens, especially with respect to cost, coverage and the management of perceived or anticipated side-effects.
- ❑ Prevention – there is a general consensus that preventative measures are the most cost effective since they reduce subsequent direct and indirect costs, but such interventions need to be accompanied by policies aimed at changing behaviour of individuals.

- ❑ Diagnosis – studies have raised issues pertaining to relative benefits and costs of screening the whole population versus screening targeted groups as well as the screening and tracing of partners.
- ❑ Incidence of the cost burden – Broomberg and others have raised the issue of the need to explicitly assess the degree to which the burden of managing HIV/AIDS is shared among individuals, households, communities, the private sector, the public sector and donor agencies. Among other issues, the problem of the capacity of households and the state to bear the costs of various measures becomes an important consideration, as the recent debate over nevarapine in South Africa has demonstrated. For countries with low per capita incomes and high prevalence rates the costs of managing HIV/AIDS, while morally justifiable and desirable, may be practically impossible to accommodate in the absence of external aid. Increasingly as well, many studies are finding that economically empowered individuals in many African countries are able to resort to private options to address the consequences of the disease, while the economically disempowered have no other choice than to resort to public, community and extended family support.

Broomberg et al (1990) noted that many studies on the direct and indirect costs of the HIV/AIDS epidemic have generally tended to be limited in scope in that they tended to focus on standard areas of concern for government and the private sector – the relative costs and benefits of administering select drugs and of hospitalisation and the cost to insurance companies. In addition, the studies tended to focus on the AIDS phase and its consequences, with little emphasis on the asymptomatic phase of the disease. It appears that very little attention has been given to assessing the relative costs and benefits of preventative measures, which are generally deemed to result in the most cost effective and salutary outcomes in the long term. More generally, studies have not been able to incorporate the cost implications of developments in the non-formal and household sectors and their relative distribution of costs and benefits between the private and public sectors and the consequences for health and social policy. Recent studies in South Africa sponsored by AUSAID and USAID may be contributing to remedying the former inadequacy and a recent report on Comprehensive Social Security (2002) may contribute to increased interest in the latter issue.

Conclusion

This chapter has attempted to review the research, findings and policy issues related to the economic implications of the HIV/AIDS epidemic based on selected studies generally representative of the larger body of research that is currently being undertaken on the economic aspects of the HIV/AIDS epidemic in Africa. The chapter is largely an overview of the major trends in Africa including: the role of economic factors in contributing to vulnerability and susceptibility of HIV infection and the progress of morbidity leading to AIDS and death; the economic impact of the incidence and progress of the HIV/AIDS epidemic; the economic impact of HIV and AIDS; and the economics of various interventions aimed at preventing infection, and treating and caring for those affected by HIV/AIDS.

There are three sets of lessons to be derived from above review, namely those pertaining to methodological and information-related aspects; those related to the analysis of the role and impact of economic factors on the incidence and spread of the HIV/AIDS epidemic; and those pertaining to the economics of managing the epidemic.

With respect to the methodological aspects, the major issues first and foremost concern the need to collect relevant data on the incidence of HIV and mortalities resulting from AIDS in a comprehensive and reliable manner so as to inform on the research,

surveillance and policy needs related to the disease. The issue here requires finding the right balance between the need to collect and systematise information to facilitate the forgoing needs with the need to protect the rights of individuals. A second methodological lesson concerns the need to continuously refine statistical and analytical and modelling techniques so as to improve analysis, projections and generalisability of findings. Finally, there is a suggestion that not only is there a need to avoid over-emphasising methodological refinement, but rather that there should also be an attempt to exploit interdisciplinary and multidisciplinary approaches to trying to understand the nature and progress of the epidemic.

There is general agreement that economic factors play an important role in contributing to individual vulnerability and susceptibility to infection and the spread of the epidemic, and that the feedback consequences of the disease may reinforce the epidemic. This is, however, based more on intuitive inference from what appears plausible when one examines the evidence, and more an *ex post* manner. Closer examination shows that the issue is more complex and that many of studies have not as yet been able to provide convincing explanations of the precise nature of the contribution of economic factors and the channels by which their impact influences the incidence and spread of the disease. This is an area that requires more research, especially with regard to the nature of the interactions in the non-formal and household sectors. Not only is there a need to understand how all the factors interact at the aggregate level to underpin the progress of the disease, but there is a need for micro studies that explore the manner in which economic circumstances, livelihoods, and coping mechanisms interact in the face of poverty, as well as inequalities that have spatial, gender, class, racial, ethnic/tribal and age dimensions.

Finally, a number of research and policy issues have been identified pertaining to the direct costs of the HIV/AIDS epidemic and its management as a health issue. Key concerns here relate to the relative emphasis that needs to be given to various interventions; the manner in which resources to address the epidemic are to be raised and how the burden is to be shared between individuals, the private sector, community agencies, the public sector and donor agencies; and the need for greater emphasis on preventative measures. In this respect it may be noted that the lessons learned from Uganda in containing the spread of HIV/AIDS mainly relate to the commitment of the political leadership, the need for transparency in addressing the disease, the need for involving grassroots organisations, and the need to mobilise across all sections of the nation. In addition the design and mobilisation of multi-sectoral responses that are able to reach all sections of the population are needed. In the final instance it needs to be noted that while there is a great need for research and refinement of methodologies, the normative focus of such activities should not be lost, and that the development of appropriate interventions that can begin to reverse the progress of the epidemic should be the primary goal of all such endeavours.

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Impacts and responses of industries, workplaces and sectors of the South African Economy

by Christine Randall ¹

Impacts of HIV/AIDS

A literature review conducted in 2000 (Parker et al) identified the following effects on operating profits of industries, workplaces and sectors:

- ❑ AIDS-related illnesses and deaths of employees increase company expenditures and reduce revenues.
- ❑ Expenditure on healthcare costs, funeral costs, and recruitment and training of replacement employees increase.
- ❑ Revenues decrease as a result of absenteeism due to illness, provision of care to persons with HIV/AIDS or funeral attendance as well as time spent on training.
- ❑ Labour turnover increases resulting in a loss of skills, tacit knowledge and experience, and consequently declining morale and lower productivity. Resultant labour replacement will increase production costs.
- ❑ An increased demand for benefits (including insurance cover, retirement funds, health and safety provisions, medical assistance, testing and counselling and funeral costs) will lead to increased remuneration costs.
- ❑ The customer/client base is reduced and sales affected.
- ❑ Investment in capital-intensive technology/production is more likely.

Several comprehensive studies have been undertaken looking at the impact of HIV/AIDS on the population and the labour force, as well as direct (increased contributions by firms to employees' retirement, life, disability and medical benefit schemes) and indirect (costs associated with increased absenteeism, training and recruitment as well as reduced productivity) costs of HIV/AIDS to the private sector. (Arndt and Lewis 2000; McPherson, Hoover and Snodgrass 2000; ILO 2000, BER 2001)

In April 2002 NMG-Levy Consultants & Actuaries confirmed that AIDS prevalence estimates by both the United Nations and the World Health Organisation were borne out by NMG-Levy's model. (NMG-Levy 2002) The study showed that by the beginning of 2001, nearly 25% of South Africa's workforce was HIV positive. The model used by NMG-Levy predicts that this will approach 30% in 2005.

In its study into HIV/AIDS, Deutsche Securities² referred to what it termed 'the most in-depth quantitative work on the macroeconomic effects of HIV/AIDS completed to date' by WEFA (South Africa) using ASSA demographic data. According to WEFA, in an AIDS relative to a no-AIDS scenario there would be an estimated loss to the labour force of 386 000 highly skilled, 984 000 skilled and 4.3 million semi/unskilled workers between 2000 and 2015. This represents an 18% fall in the estimated workforce in an AIDS relative to a no-AIDS scenario. (Deutsche Securities 2000c)

Studies of two South African companies by the Harvard Centre for International Health found that HIV infections could cost companies between 2% and 6% of salaries per year. Furthermore, depending on how company benefits were structured each

1 Christine Randall is a consultant focusing on HIV/AIDS programmes in the workplace.

2 During an offshore roadshow in 2000, HIV/AIDS in South Africa was identified as a key country risk by investors leading to low investor sentiment, thereby motivating Deutsche Securities to initiate a study into HIV/AIDS.

HIV infection could cost between one and six times the employee's annual salary. (Abt Associates Inc 2001)

It would appear that there is no literature on econometric modelling that suggests any new approach to modelling the epidemic. The approach of modelling future population patterns in 'with' and 'without' AIDS scenarios has been challenged because such estimates misrepresent the underlying dynamic relationship between HIV/AIDS and economic growth. The effects of HIV/AIDS are cumulative and HIV/AIDS will already have influenced the basic structure of any economic model of Africa that is used. (McPherson, Hoover and Snodgrass 2000)

In the previous review, (Parker et al 2000) mention was made of a study suggesting a new approach to the calculation of costs of HIV to companies. Rather than base costs on prevalent infections in the year that costs are incurred, calculations should be based on an incident rather than a prevalent infection rate. The authors argue that companies incur responsibility for future costs in the year in which the employee is infected with HIV. In basing calculations on prevalence rather than incidence, companies often understate costs in the earlier stages of the epidemic when incidence is high and morbidity and mortality low and overstate estimated costs when they start experiencing absenteeism and death in their labour force. They run the risk of reduced returns by investing too little in prevention and management in the early stages and over-investing in the later stages of the epidemic. HIV costs should be estimated as a present value, discounted at the rate applied to their potential investments. (Rosen et al 2000)

While it provides no detail on how it arrived at its estimates, AngloGold³ has estimated that the cost of HIV/AIDS to its South African operations is in the region of between \$4/oz and \$6/oz (in 2001 the total cash cost was \$178/oz). If it did nothing to manage the impact it estimated that this cost could rise to \$9/oz. (AngloGold 2002)

Responses to HIV/AIDS in industries, companies and workplaces

HIV/AIDS responses identified previously include: (Parker et al 2000)

- legislative changes at national level;
- workplace programmes (and cost-effectiveness analysis thereof);
- development of internal guidelines, policies and codes;
- partnerships between business and other sectors including government and NGOs.

The legislative context

Employers are operating in an increasingly complex legal environment with regard to HIV/AIDS in the workplace. The legislation that is applicable in the HIV/AIDS context includes, but is not limited to, the following:

- The individual's right to privacy – section 14 of the Constitution of SA Act, 108 of 1996.
- Unfair discrimination, HIV testing, promotion of a safe workplace – sections 6(1) and 7(2) of the Employment Equity Act, 55 of 1998, which also contains the Code of Good Practice on Key Aspects of HIV/AIDS and Employment.
- Dismissal on grounds of an employee's HIV status as well as termination for valid reason and with fair procedure – sections 187(1)(f) and 188(1)(a)(i) of the Labour Relations Act, 66 of 1995.

³ AngloGold is a leading gold producer with 22 operations in Argentina, Australia, Brazil, Mali, Namibia, South Africa, Tanzania and the United States of America. It employs 55 000 people worldwide, with 44 000 from South Africa. It released a report outlining its HIV/AIDS programme in April 2002.

- ❑ Provision of a safe workplace and minimising of occupational risk – section 8(1) of the Occupational Health and Safety Act, 85 of 1993 and sections 2(1) and (5(1) of the Mine Health and Safety Act, 29 of 1996.
- ❑ Benefits following occupational exposure – section 22(1) of the Compensation of Occupational Injuries and Diseases Act, 130 of 1993.
- ❑ Basic standards of employment – section 22(2) of the Basic Conditions of Employment Act, 75 of 1997.
- ❑ Unfair discrimination against members of medical schemes on the basis of their state of health – section 24(2)(e) of the Medical Schemes Act, 131 of 1998.

There have not been very many cases of employees taking their employers to court to contest workplace practices. However, this is an area that is likely to gain prominence in the future. The most contested area at present is the question of HIV testing either for pre-employment purposes (*AIDS Analysis Africa* 2000; Du Plessis 2000; Motebele & Heywood 2001) or as part of a voluntary counselling and testing campaign in the workplace to encourage employees' knowledge of their HIV status. (Joni & Heywood 2001)

Corporate governance has, until now, not focused on corporate action to ensure sustainability. The Second King Report on Corporate Governance (2001), still in draft form, devotes much of the section on Safety, Health and the Environment to the HIV/AIDS pandemic, the impact of which it cites as 'potentially huge'. King notes that there is little evidence of measures taken by the corporate community to promote business sustainability in the face of the disease. The report goes beyond broad guidelines and urges boards of directors to take the following specific action:

- ❑ Ensure that it understands the social and economic impact that HIV/AIDS will have on business activities.
- ❑ Adopt an appropriate HIV/AIDS strategy, plan and policies to address and manage the potential impact.
- ❑ Regularly monitor and measure performance using established indicators.
- ❑ Report to stakeholders on a regular basis.

Directors will need to obtain a clear understanding of their risk environment and to put a financial value to the potential impact of the disease on their business in order to develop a response that will enable them to comply with these requirements.

Impacts on companies differ

Focusing on the vulnerability to HIV/AIDS of a company's workforce, employee benefits and the availability of people with the necessary skills, education and training, while vital is only one part of the equation. Companies also need to reflect on the demand side of their business, namely customer retention and more importantly in the HIV/AIDS scenario on customer acquisition. (Naidu 2001)

Deutsche Securities embarked on case studies in 2000 and took account of these differing impacts in analyses of AngloGold and Amalgamated Beverage Industries (ABI).

AngloGold's response to the pandemic was initiated almost two decades ago. The response has been a dynamic one taking account of the changing environment. AngloGold's response comprises of restricting the spread of HIV/AIDS through education; promotion of condom use and treatment of sexually transmitted infections; caring for those infected through voluntary counselling and testing, treatment of opportunistic infections and a compassionate ill-health retirement system for those no longer able to work; as well as ongoing fundamental research to support and

direct its medical strategy through Aurum Health Research, a wholly-owned subsidiary of AngloGold Health Service. (AngloGold 2002)

A case study on AngloGold found that the most important impact to understand was the effect of the disease on its workforce and overall productivity. (Deutsche Securities 2000b) Effective utilisation and cost control in the deployment of labour is critical. AngloGold operates in an industry that has steadily shed jobs over the past decade. Over the past five years alone employment in mining has declined by 30%. The fact that mining work is in fairly short supply contributes towards a low (ex-AIDS) annual attrition rate.

AngloGold's strategy is to reduce its reliance on labour, although its process will remain labour intensive with labour accounting for in excess of 50% of total costs incurred. At the same time it will increase per capita remuneration to support more efficient mining techniques in all of its mines. The sharp fall in the number of miners employed and a high unemployment rate suggest that a ready supply of experienced miners and new staff is available to replace those retiring due to ill health or any other reason.

Deutsche Securities concluded that AngloGold can avoid high escalations in staff costs because of the strategies it has put in place and will therefore continue to dominate gold production.

Strategic market planning requires a demographic impact analysis of the customer base; calculation of market segment, size and profitability; a review of the current product portfolio (to assess which products will grow, remain stagnant or decline over a period of time) and identification of new market and new product opportunities; recalculation of customer lifetime values; and risk assessment due to unpaid customer credit or employee loans. (Naidu 2001)

Analysis of ABI Limited⁴ found that a critical area for this company is the effect HIV/AIDS will have on consumers of its product. (Deutsche Securities 2000a) ABI reduced the proportion of employee expenses to total costs from 21% to 17% over a four-year period to 2000 thereby moderating the impact of HIV/AIDS. The company has also invested in increasing the skills level of the employee base. Increased productivity and greater mechanisation in the future should see the impact moderated even further.

Deutsche Securities have identified general demographic changes as well as AIDS as effects that are expected to impact ABI's profitability. While the population is likely to increase despite the impact of AIDS, the proportion of young people is expected to decline (the 12 – 40 year age group consumes 61% of ABI volume). The age impact of HIV/AIDS will therefore partially offset the increase in the absolute number of customers. The disparate impact of HIV/AIDS in different regions of South Africa has already prompted the establishment and maintenance of good information systems and distribution management. In this way, ABI will ensure that profitable regions are serviced and loss-making areas are dealt with. Non-CSD (carbonated soft drink) products are being developed and launched to offset potential changes in the market.

Company responses and programmes

A study of the impact of HIV/AIDS on business in Africa revealed that there is a degree of 'denial' amongst African business leaders for one of two reasons: either

4 ABI (Amalgamated Beverage Industries) Limited is a subsidiary of South African Breweries plc (SAB) and employs around 4 500 people across South Africa. Its principal activity is the bottling and distribution of soft drinks in southern Africa. Product presence is concentrated in the carbonated soft drink market. Although ABI products are available in almost every corner of South Africa, the most important segments are those relating to the higher-income groups. It is estimated that more than 80% of its volumes are consumed by LSMs 6 to 8, and half of this is sold to LSM 8 families.

they are underestimating the prevalence of HIV/AIDS or they have reason to believe that the proportion of infected workers is lower than the proportion of infected adults. (Bloom, Bloom & River Path Associates 2000)

An evaluation⁵ of the responses to HIV/AIDS of a sample of South African companies (Deloitte & Touche Human Capital Corporation 2002) concluded that company size determined the extent to which employers responded to the HIV/AIDS pandemic. Companies employing fewer than 100 people were least likely to have implemented substantive interventions. Companies with between 100 and 500 employees were most likely to have introduced awareness and education programmes (72.4%) but hardly any had commissioned risk assessments (6.9%).

Employers of up to 500 people implemented policies and strategies without ascertaining the extent and location of their risks. They were not likely to monitor and evaluate their programmes or coordinate with other employers.

Large employers, those employing 500 people or more were weak in areas of risk assessment and monitoring and reporting, even coordination with industry associations was not as high as anticipated. The results were summarised as follows:

Employer Response	Less than 100	Between 100 and 500	Above 500	Overall
Coordination with industry associations	29.0%	37.9%	60.0%	45.5%
Formulating an HIV/AIDS strategy and policy	6.5%	51.7%	82.0%	52.7%
Risk assessment	6.5%	6.9%	52.0%	27.3%
Support for infected employees	21.3%	42.1%	64.8%	46.5%
HIV/AIDS awareness/ education programmes	25.8%	72.4%	86.0%	65.5%
Monitoring and reporting	3.2%	17.2%	48.0%	27.3%

The respondents were also compared to international ‘best practice’⁶ and gaps identified included the following:

- Inadequate surveillance data in South Africa make it difficult for companies and society as a whole to respond effectively.
- Forums do not exist where private sector data can be shared and can be leveraged in collaboration with government.
- Insufficient use is made of KAP (knowledge, attitude and practices) studies in South Africa, which are used to benchmark and measure initiatives and to facilitate the formulation of HIV/AIDS strategies.
- Use of peer educators is poor.
- With the exception of a few individual company and industry initiatives, employers have largely ignored involvement in community-based care responses.

5 Deloitte & Touche’s Human Capital Corporation released a rapid situation analysis evaluating workplace responses to HIV/AIDS in South Africa in May 2002. It was commissioned by the SA Business Coalition on HIV/AIDS and was funded by the United Kingdom’s Department for International Development (DFID). Data was collected on 110 companies – 31 employing fewer than 100 people, 29 employing between 100 and 500 employees and 50 employing more than 500 people. Twenty-three industrial sectors were covered with mining and finance representing the greatest number of respondents.

6 The authors indicated that they used this term with some reservation because it is often context specific. The South African companies were compared to countries, which achieved at least partial success in curbing the epidemic.

- ❑ The transition from uni-dimensional to multi-faceted approaches has, for the most part, not occurred.
- ❑ Because South African initiatives are too limited, behaviour change, which is a key thrust internationally, has not been effected.
- ❑ South African employers have hardly involved people living with HIV or AIDS in their HIV/AIDS programmes to the same extent as their international best practice counterparts.
- ❑ South African employers rely more heavily on public sector initiatives and services to treat sexually transmitted infections in their employees and their dependants. Such reliance is ineffective because many do not make use of public sector services.
- ❑ South African employers also fall short of international standards when it comes to condom distribution.

While little literature on company responses to the HIV/AIDS pandemic exists in the public domain, it would appear that more companies are willing to share their experiences in tackling HIV/AIDS with a broader public. A few of the published company/sector responses are highlighted below.

Daimler Chrysler South Africa⁷ initiated a review of its HIV/AIDS response in 2000. In association with GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit), the Technical Cooperation Agency of the German Ministry of Economic Cooperation and Development and with the aid of demographic profiling of the workforce the company has developed an HIV/AIDS programme covering information, education and communication; condom availability and distribution; voluntary counselling and testing; and an integrated disease management protocol that includes treatment of opportunistic infections, treatment of sexually transmitted infections, antiretroviral therapy for prevention of vertical transmission and antiretroviral treatment. (StarFlash 2001; The Global Business Council on HIV/AIDS 2002)

The De Beers Group has responded to the threat of HIV/AIDS since the mid-1980s. It has conducted voluntary and anonymous sero-prevalence studies on many of its southern African operations and has acknowledged a number of shortcomings in its approach to date. This resulted in a review of De Beers strategy. De Beers has identified six strategic fronts or project areas, which are being tackled by six project teams. The project areas are communications, saving the lives of people who are HIV negative, living positively for people living with HIV/AIDS, the financial impact, stakeholder engagement, and measuring and monitoring. (De Beers 2001)⁸

Eskom⁹ initiated an HIV/AIDS policy as far back as 1988 and in the mid-1990s declared HIV/AIDS a strategic priority as a result of the impact it could have on its business and its employees. An impact analysis of HIV/AIDS on its operations included a projection that in the absence of any intervention an HIV prevalence rate of 26% could be reached within ten years. A more recent voluntary and anonymous surveillance study showed that HIV prevalence was lower than the 1995 prediction of 11%, which is evidence of Eskom's success to date. Eskom makes use of peer educators and people living with HIV/AIDS in its prevention and awareness campaign; distributes condoms; treats sexually transmitted infections; facilitates voluntary counseling and testing; and provides care and support including antiretroviral therapy. (The Global Business Council on HIV/AIDS 2002) It has recently also undertaken a KAP survey in addition to the anonymous and voluntary surveillance study as part

7 Daimler Chrysler South Africa employs 4 500 employees in three locations in South Africa. Its HIV/AIDS programmes covers its employees and their families, a total of 23 000 people.

8 De Beers, a diamond mining and marketing company, launched its revised HIV/AIDS strategy at a company-sponsored conference involving representatives from each of its operations, trade unions as well as external stakeholders and interested parties in Johannesburg in August 2001.

9 Eskom is one of the world's largest electricity utilities. It is based in South Africa, runs 20 power stations and employs over 35 000 people.

of its monitoring and evaluation of its programme. Eskom's corporate social responsibility programme on HIV/AIDS includes support for research into the development of an AIDS vaccine.

While Eskom's contribution in the field of HIV/AIDS was recognised by the Global Business Council on HIV/AIDS in 1998, when Eskom won the award for best overall contribution, it would appear that it has not brought on board in its programme and strategy a key stakeholder namely the trade unions with which it deals. (Meeson and Van Meelis 2000)

Illovo Sugar¹⁰ has been examining the effectiveness of its HIV/AIDS response at its sugar mill in KwaZulu-Natal by teaming up with the University of British Columbia. The study is useful in that it focuses on a company with a smaller workforce consisting of 400 employees. It found that 26% of the workforce was infected with HIV. The death of 5%, and ill-health retirement of 5.7% of the workforce over the eight-year study period demonstrated the impact of HIV on the economically productive segment of society. Only 58% of those with identified HIV infections were still active in the workforce at the end of the study. This represented a significant cost to the organisation but a tenfold rise in costs could be projected over the following six years, as the epidemic matured and those infected with HIV developed AIDS.

The study also demonstrated that smaller companies could implement cost-effective and viable interventions, even if antiretroviral therapy is excluded at this stage. The company implemented a programme of prevention and care including the treatment of sexually transmitted infections, the social marketing of condoms, peer counselling, the promotion of voluntary counselling and testing and the introduction of a 'care pathway' (treatment of opportunistic infections, regular monitoring of disease progression, tuberculosis screening and counselling inter alia) for employees with HIV/AIDS. Since the introduction of the programme in 1999, there has been a 400 increase in condoms distributed and an 88% reduction in the number of sexually transmitted infections treated. (Morris CN, Burdge DR & Cheevers EJ 2000; Morris & Cheevers 2000; The Global Business Council on HIV/AIDS 2002)

An analysis of responses to the impact HIV/AIDS in the sugarcane farming sector reflects that, other than at mills where studies are being undertaken, very little is actually happening on the ground. (Meeson 2000a)

The clothing and textile industries employ predominantly women with limited education. The responses to HIV/AIDS by the South African Clothing and Textile Workers Union (SACTWU) and the National Clothing Manufacturers Association (NCMA) were arrived at separately. In 2000 SACTWU, with a membership of 120 000, was finalising a policy on HIV/AIDS, which aimed to reduce new infections and ensure the rights of employees with HIV/AIDS. SACTWU was also investigating ways of incorporating HIV/AIDS education and training into the workplace skill plans of businesses, which are a requirement for claiming a portion of the annual skills levy paid to the Receiver of Revenue. The NCMA was responding to HIV/AIDS issues raised by its members on a case-by-case basis. A case study revealed the increasing impact of HIV/AIDS at the Frame Group's textile factory in New Germany outside Pinetown. It was argued that partnerships between labour, business and government were essential if HIV/AIDS was to be addressed effectively. (Meeson 2000b)

Partnerships

Ford Motor Company of Southern Africa implemented a successful workplace programme in 1998 that has been recognised internationally. Ford's programme does

¹⁰ Illovo Sugar operates eight sugar mills in South Africa and tested the effectiveness of its HIV/AIDS programme at one of them.

not differ significantly from the programmes mentioned earlier in this article. What distinguishes Ford from other companies is the extent to which it has become involved in community projects. Its peer educators are often approached to assist in community activities and events; its senior executives attend all major community-based events; it has shared with employees, their families and friends as well as its dealers and suppliers not only its experiences but also a booklet on HIV/AIDS it has developed, Ford is involved in numerous community projects. One such project is being piloted at present and involves the testing of a behavioural change project in 40 schools in the Port Elizabeth area. Ford is sponsoring the project in which it has entered into partnership with the Nelson Mandela Metropolitan Municipality of Port Elizabeth, the regional Department of Education, the University of Port Elizabeth, and a number of NGOs and CBOs. The project involves a 12-month course taught as a subject to pre-sexually active learners using specially developed workbooks and assignments. The second pilot project involves caring for people with HIV/AIDS. (*Succeed Magazine AIDS Publication 2001a*)

The road transport industry¹¹ like the mining industry has attracted a great deal of attention because of the vulnerability of employees in these sectors to HIV infection. Long-distance truck drivers spend significant amounts of time away from home and consequently their sexual relationships often range from spouses/regular partners to casual partners and commercial sexual workers.

In 1999, the National Bargaining Council for the Road Freight Industry and the Road Freight Association called for tenders, which culminated in the development of a national HIV/AIDS programme called Trucking Against AIDS. A significant force in the creation of this partnership was the then Minister of Transport, Mac Maharaj. Because employees spend so much of their productive time on the road, the HIV/AIDS programme is taken out to where they are. Roadside Container Clinics are being developed for educational and primary healthcare purposes and have been introduced on a few trucking routes. (*Succeed Magazine AIDS Publication 2001b*)

Research undertaken with long-distance truck drivers on the 'Maputo Corridor', linking Mozambique and South Africa via Komatipoort and the 'Tete Corridor' revealed a few disturbing results: (Morr H, McKay V, Mokotong et al 2001)

- ❑ While over 40% of Zimbabwean and Malawian truck drivers indicated they had medical aid or insurance, fewer than 30% of South African, fewer than 20% of Mozambican and under 10% of Zambian truck drivers reported the same.
- ❑ While 532 truck drivers reported having sex with regular partners or spouses, 186 also reported having sex with casual sex partners and/or commercial sex workers. 277 of the respondents reported having two or more partners.
- ❑ Drivers most likely to have sex with casual sex partners and/or commercial sex workers were drivers who spent 8-14 days followed by 1-7 days away from home.¹²
- ❑ South African and Mozambican truck drivers obtained the lowest scores for knowledge on HIV/AIDS.
- ❑ More than 50% of Malawian and Zimbabwean drivers indicated workplace training as a source of HIV/AIDS information as opposed to less than 20% of Mozambican, South African and Zambian drivers.

For South African truck drivers, it was recommended, inter alia, that the roadside container clinics be made more visible and included in local government networks,

11 The road transport industry is made up of a few large operators and a large number of small operators, who often have limited individual resources.

12 33% of truck drivers spent less than eight days, 33% 8 to 14 days, 20% 15 to 21 days and 14% 22 to 30 days away from home.

for example those of the Department of Health; stakeholder participation and stronger community involvement be ensured.

While the road transport industry has done a great deal to tackle the impact of HIV/AIDS it is argued that the industry needs to move beyond awareness and prevention campaigns and deal with the impact more strategically. The fact that southern African countries are being linked through a customs union means that borders are opening up and cross border initiatives will have to gain prominence. (Vlok E 2001) Indications are that different stakeholders and role-players are already investigating this approach.

Selected indicators of the mining and minerals sector's contribution to the economies of individual SADC member states in 1999

SADC Member	Mining and Minerals Sector Economic Contribution
Botswana	US\$2.0 billion diamond earnings out of a total of US\$2.7 billion exports
Angola	Official diamond exports of 2 132 937 carats valued at US\$296.24 million
D.R.C.	70% of exports and 28% of GDP
Lesotho	Artisanal diamond production to end-March 2000 1053 carats valued at US\$85000; US\$15 million is being invested in rehabilitating former De Beers operations
Malawi	<1% GDP comprising US\$1 million 95% of which was gemstones (informal gemstone exports are thought to exceed US\$2 million)
Mozambique	1.4% of exports and <0.25% of GDP; US\$1.34 billion Billiton Mozal aluminium smelter commissioning in 2001 with anticipated operating revenues of US\$400 million annually
Namibia	Mineral exports total 49% of total exports by value, to which diamonds contributed 68%
South Africa	6% of working population, one third of export revenue
Swaziland	2% of GDP with ex-mine revenues contributing US\$20 million to total export earnings of US\$825 million
Tanzania	2.1% of GDP and 14.5% of exports and a sectoral growth rate of 9.1%, with sectoral FDI of US\$720 million in the three years to end-2000
Zambia	Copper mining provided 85% of foreign exchange and 20% of GDP
Zimbabwe	6% of GDP, 7% of the labour force and 40% of foreign exchange

The South African mining industry,¹³ is a major contributor to the national economies of many southern African countries – see table below. (Elias & Taylor 2000)

Many mining houses have long-standing HIV/AIDS response programmes that have been adapted over time to go beyond awareness and prevention (supported by trained peer educators¹⁴) to care and support for those already infected with HIV. They have also recognised the value of entering into partnerships with other mining houses as well as with trade unions, government departments and other stakeholders and target not only their employees but also their employees' sex partners and commercial sex-workers¹⁵ in the local communities surrounding their mines. (Parker et al 2000) A significant advance in corporate-sponsored HIV/AIDS intervention programmes has

¹³ Largely composed of big multinational corporations with significant resources.

¹⁴ A study in 40 Zimbabwean factories demonstrated that programmes supported by peer educators showed significantly better results than programmes without peer educators. (UNAIDS 2000)

¹⁵ In fact some studies suggest that providing services to the wider community can have as much of an effect on the health of the workforce as providing them to the workers alone. (UNAIDS 2000)

been initiated in Mpumalanga, namely the Powerbelt HIV/AIDS Project. (International Labour Organisation 2001) Preliminary research indicated that the mining companies in Mpumalanga were contiguous islands of economic activity surrounded by poor informal settlements populated predominantly by women and children stretching in an arc from Witbank through Secunda down to Standerton and Ermelo. Women in this environment resorted to sex as a source of income. Voluntary and anonymous surveillance studies on the mines had shown that their internal programmes were not having the desired effect and HIV prevalence continued to increase. Informed by the experience in Thailand, (Sittitrai 2000)¹⁶ a partnership was created between AngloCoal,¹⁷ Duiker, Harmony Ingwe and Sasol on the one hand and local government and trade unions represented by COSATU on the other. The Project is managed by the Council for Scientific and Industrial Research (CSIR). The employer partners provide annual seed capital, but the CSIR has been tasked with raising the funds necessary to sustain the project for the next ten years.

The key elements of the Project's strategy (*Succeed Magazine* 2001c) are inter alia:

- ❑ epidemic containment by introducing a comprehensive primary healthcare programme aimed at treating sexually transmitted infections and tuberculosis as soon as possible after infection;
- ❑ home-based care programmes for the terminally ill;
- ❑ condom distribution;
- ❑ behaviour change education aimed at high risk groups in the communities ;
- ❑ socioeconomic upliftment programmes aimed at improving the basic living standards of the communities in the Powerbelt region.

The Project is still in its infancy and there will be many pitfalls along the way. It has been criticised for its slow pace, but the partners argue that they wish to ensure the long-term sustainability of the project. Despite the pitfalls and the risks associated with competitors cooperating in a project, it is unique in that it extends far beyond the confines of the workplace and the community immediately surrounding it. Should this pilot project prove successful, it may serve as a model for other similar projects throughout the country.

HIV/AIDS implications for future education and skills availability

The demographic profile of South Africa's population has been changing for some time. There has been a transition from high fertility and high mortality to low fertility and low mortality. This transition has resulted in the focus moving from simply conceiving greater numbers of children in order to offset higher rates of mortality to improving the quality of life of fewer children. In addition, falling birth rates have been accompanied by a rise in life expectancy. 'But the effect of falling fertility has been even stronger on population growth, which slowed from 2.85% pa between 1960 and 1970 to 2.53% pa between 1970 and 1980, 2.27% pa between 1980 and 1990 and 1.46% pa between 1990 and 2000.' While it may have been beneficial in terms of quality of life for falling fertility to reduce population growth, it may not be so beneficial if the reduction is compounded by a rise in AIDS-related mortality. (Simkins 2002)

16 Thailand, which in 1990 had an HIV prevalence similar to South Africa, has managed to contain its prevalence to 2 % of its population by focusing on a high-risk population group namely the sex worker population very effectively. Sittitrai summarises Thailand's experience as follows: A national effort to promote safe behaviour and to change norms was followed by drops in visits to sex workers and an increase in condom use during both commercial sex and casual sex; Those changes in behaviour have been rewarded by a rapid decline in STDs and new HIV infections

17 AngloCoal received an Award for Business Excellence from the Global Business Council on HIV/AIDS for its HIV/AIDS programme. (Daly 2000)

Simkins argues that there are implications for the educational system of any country that reaches this stage of demographic transition. While the quality of education delivered was often sub-standard, embedded human capital in South Africa rose from 48 million to 230 million completed school years between 1960 and 1996 – an average sustained annual increase of 4.45%.

The impact of AIDS will impact negatively on human capital in two ways:

- Investment in schooling and higher education will have diminished personal and economic returns for the individual, family and society.
- The loss of parents due to AIDS-related mortality will result in the loss of a critical resource for acquisition of human capital as well as the loss of material, emotional and motivational support by children.

In addition to the above erosion of human capital, higher-income individuals are in a position to increase their risk of HIV infection and thereby their AIDS-related mortality because of their status in their communities and because they are able to finance casual or commercial sexual relationships with excess disposable income. This is true of employees in any sector of the economy not least of all those in the education sector who are such a vital component in improving human capital. The death or absence of a single educator has an impact on the education of 20-50 children. (Abt Associates Inc 2001)

Simkins refers to a study by Crouch who has used projections to conclude that about 30 000 extra new teachers will have to be trained each year until 2010 to meet the demand. Currently teacher training colleges, the main source of supply, train approximately 20 000 teachers annually, with the greatest shortfall in subjects such as mathematics and science. (Simkins 2002)

Concluding remarks and areas for further research

More information on company/sector HIV/AIDS impacts, programmes and responses is becoming available. However, this is not necessarily provided in a format or in sufficient detail for other companies or sectors to benchmark themselves against. It is also difficult to determine the accuracy, quality, depth and adaptability of the response. In light of the requirements set out for companies in the Second King Report on Corporate Governance and the fact that a greater number of companies are beginning to share information, there is a need for a means of making results of HIV/AIDS impacts, programmes and responses comparable from one sector to another, from one company to another. It would be beneficial if data to be collected could be defined and key indicators could be developed not only for measuring, evaluating and monitoring the impacts, programmes and responses of sectors, companies and workplaces but also for cost benefit analyses. More research is also required on indirect costs, what they comprise and the economic impact of HIV/AIDS on such indirect costs to South African companies.

There are several areas that companies are scarcely reporting on, if at all, and that require further study:

- There is a dearth of detailed demographic data of the epidemic especially data determined by way of actual saliva, blood or urine samples. Companies are commissioning voluntary and anonymous surveillance studies, which often profile the epidemic according to regional location, age, gender, remuneration/skills level etc and yet are loathe to share the details of these results, possibly because of either a fear of breaching confidentiality or the negative reaction the results might engender amongst their shareholders and other groups. They guard against supplying anything more than, at most, the overall percentage prevalence that

has been determined. The methods and models used for the studies are rarely disclosed.

- ❑ It is not at all clear how sectors/companies will confront the losses they will incur when employees become debilitated and productivity declines.
- ❑ Succession by younger employees to skilled positions might not always be feasible. Similarly, high HIV/AIDS prevalence rates would suggest that the acquisition of skills from 'outside' might not be feasible for all sectors/companies depending on the skills they require. It would be useful to gain an understanding of the strategies companies/sectors are employing to address their long-term skill requirements.
- ❑ While the mining sector is a significant contributor to GDP it is generally not the most significant employer. In southern Africa this is still the role of the agricultural sector. While several studies have been undertaken in regard to the impact of HIV/AIDS on agriculture in other southern African countries little work appears to have been done on this sector in South Africa.
- ❑ Other sectors whose employee populations are possibly more vulnerable to HIV infection than, for example, the financial sector are construction, small and medium enterprises generally as well as the informal sector. Very little appears to have been written about the impact and the responses by these sectors, who are unlikely to have the necessary resources to respond effectively.
- ❑ Several companies have mentioned antiretroviral treatment in their programmes, either stating that they provide such treatment or have decided not to do so as yet. A study should be made of the provision of antiretroviral treatment – some companies are providing such treatment via medical schemes, others are funding treatment to a greater or lesser extent; some are offering only short-course treatment for the prevention of vertical transmission and/or in the instance of occupational exposure or rape; some have chosen not to provide antiretroviral treatment as yet without supplying their motivation for this decision. If, as has been argued, there is a cost benefit to be derived from the provision of antiretroviral treatment in order to extend the healthy and productive life of an infected employee, a clearer understanding is required of the dynamics involved.
- ❑ Very little mention is made of the inclusion of senior levels of employees in sustained HIV/AIDS responses and programmes. As these employees are not impervious to HIV/AIDS infection and are also affected by the impact, a study of the methods employed and the experiences gained could inform the responses and programmes of companies who have neglected this area thus far.
- ❑ Companies who have reported on their programmes mention the use of peer educators, but little if anything is written about their selection, their compensation, how they are motivated and sustained, their level of acceptance in the organisation especially by more senior levels of employees, the resources they are provided with, etc.
- ❑ Finally, HIV/AIDS must be taking an emotional toll on peer educators, counsellors, occupational health practitioners, human resources personnel, trade union leaders and representatives to name but a few, and yet there appears to be no available literature on the provision and type of support, if any, afforded them.

The challenge for future research in the area of the impact of and response to HIV/AIDS in the world of work is to encourage as far as practicable and possible the universal adoption of proven responses to the impact of HIV/AIDS.

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Behavioural and social responses to HIV/AIDS: Value for money?

*by Kevin Kelly*¹

Introduction

Interventions oriented towards developing behavioural and social responses are the least satisfactorily researched or understood in economic and financial terms, of all areas of response to HIV/AIDS. Vast sums are spent in this area, (Booyesen 2002a, 2002b; Kinghorn et al 2000) but impacts of programmes are difficult to measure and there are considerable conceptual and methodological issues involved in assessing the costs associated with preventing infection through social and behavioural intervention.

UNAIDS (2000) define nine established HIV/AIDS prevention strategies. These are: screening blood for HIV infection; use of the mass media; HIV/AIDS education in schools; social marketing of condoms; treatment of sexually transmitted diseases; commercial sex worker peer education; voluntary counselling and testing; prevention activities among injecting drug users; and prevention of mother-to-child/vertical transmission.

Vertical transmission and the treatment of sexually transmitted diseases are dealt with in the chapter on care and support. Of the remaining topics injecting drug users will not be dealt with in this chapter. Although there has been little research on the topic in Southern Africa, this is generally considered to be a contributory factor but not one of the major vectors of HIV infection. Screening of blood for HIV infection is also not dealt with in the present chapter. Securing the safety of blood supply was amongst the earliest of responses to the HIV infection and it is generally believed that blood supply safety meets international standards. The costs associated with screening of blood supply (Creese et al 2000) are of interest in understanding the impact of AIDS, but since the focus is on development of responses to AIDS this area of relative success is not specifically dealt with. The remaining five topics are all concerned with the promotion of responses that are designed to work through direct or indirect impacts on human behaviour and social response.

The distinction between human behaviour and social response is important in understanding the range of methods and foci that are employed in AIDS prevention. It is frequently argued that prevention responses are not simply a product of individual behaviour and choice and that appealing to and educating individuals is likely to have a limited impact as long as contextual mediators of risk behaviour are not addressed. This topic has been extensively dealt with elsewhere. (Kelly & Parker 2001, UNAIDS 1999) Its relevance here is that the scope of topics is not limited to those directed at changing behaviour directly, for example through mass media and local level communication campaigns. Service provision, and condom supply and distribution, for example, should be included in calculating the costs of responding behaviourally to the epidemic. But in addition, in targeting behaviour it is necessary to tackle the systemic factors that create increased susceptibility to risk in the first place. At the end of this chapter some reservations are expressed about the general conceptual framework of behaviour change, which runs the risk of dealing with outcomes that are determined by 'upstream' factors that might be thought of as the deeper causes of susceptibility to HIV/AIDS.

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The World Bank has estimated that in sub-Saharan Africa STDs and HIV/AIDS are among the top illnesses in terms of loss of disability-adjusted life years (DALY). However, as Boerma and Bennett point out it is difficult to motivate for funding for activities when we have little sense of how cost-effective they are. They say: 'Unfortunately, for many interventions aimed at changing behaviour (not only sexual behaviour but other types as well) our knowledge of cost-effectiveness is lacking'. (Boerma and Bennett 1997: 354)

Measuring the impacts of HIV prevention programmes

There have been no comprehensive attempts to understand the reach and impacts of governmental, private sector, non-governmental organisation, faith-based and other institutional and community-based responses to HIV/AIDS in South Africa. In the case of workplaces and smaller communications campaigns, evaluations are often commissioned internally, and seldom brought into the public domain. This makes it difficult to know just how much is going on, who is doing what, which segments of the population are being covered, which issues and foci are being focused on, and what is not receiving attention. There has been little research around concepts and models of prevention and little accrual of understanding of what works, for whom, and under what circumstances.

In terms of the UNGASS Indicators for monitoring national HIV/AIDS programmes, South Africa fulfils most of the 19 criteria in the policy index. However, considering the nine criteria under 'national programmes', it is not possible to know how South Africa is faring. In only one of the criteria is South Africa able to provide reliable data – namely, the percentage of large enterprises/companies that have HIV/AIDS prevention and care policies and programmes.² There are simply no systematically collected measures for the other indicators of the extent of success or failure of implementation of established strategies and policies. The only regularly collected data is the annual antenatal surveillance data that provides a measure of impact, but is not a sensitive measure of responses to the epidemic and whether this is having any impact.

The strongest tools that we have had to date for measuring intervention are randomised control trials (RCT).³ Unfortunately there has been little RCT research in South Africa on any scale, which has really tested the effectiveness of prevention programmes. However, it may be argued that one doesn't need RCTs to see that something works and programme budgets are such that expensive RCTs are often considered unnecessary for programme development. Further, in complex intervention environments and particularly in evaluating the outcomes of mass media interventions, such designs are usually not of much value. New innovations in programme evaluation methodology based on panel studies using path analysis and structural equation modelling are an alternative methodology for understanding the contributions of specific programmes to measured outcomes. These have only recently been applied to understanding of behaviour and social change processes worldwide, and not yet in South Africa.

There have been some outcome evaluations of larger scale interventions, but there is little evidence of evaluation research in the case of most smaller programmes. Some of the more notable socio-behavioural interventions are worth mentioning. Soul City has an extensive research component, loveLife is developing a research framework and a number of smaller programmes, notably Stepping Stones are being thoroughly researched. Shorter-term interventions, such as the Beyond Awareness Campaign of

2 This figure stands at 75% according to a recent Deloitte & Touche (2002) survey.

3 Grassly et al (2001) discuss the use of randomised control trials for assessing efficacy of HIV prevention.

the Department of Health, which was completed in 2000, have tended to rely on process evaluation and qualitative analyses. In August 2001, the Department of Health granted a multimillion rand tender to a consortium of organisations to implement a national HIV/AIDS communication campaign. At the time of writing, May 2002, no visible public campaign is in place, and no information has been made available in the public domain regarding the plans for the programme, nor methods of monitoring and evaluation of campaign objectives. Very little is known descriptively, or in terms of evaluative research, of national sectoral interventions such as those occurring under the umbrella of the South African National AIDS Council (SANAC), or initiatives such as Business Against AIDS, although these collaborative coordinating structures have been in existence for a number of years.

It is uncommon to find rigorous research-based programme development towards sustained, cost-effective interventions. It appears that most intervention programmes, particularly at community level, are conceived without reference to research. Community mobilisation in the form of AIDS awareness campaigns, World AIDS Day activities, event-oriented interventions, and activities such as door-to-door campaigns are largely conducted on the basis of common sense thinking with little reference to previous experience or evaluation, and are usually not evaluated. It must be noted that event-based activities are costly, often intentionally serving the purpose of 'being seen to be doing something', and it is questionable whether they lead to sustained activity.

Since there are many points of possible action aimed at bringing about any particular outcome, for example condom use, it is important not only to ask which methods are more and less effective, but what the relative costs are. If prevention of HIV infection can be achieved in different ways, it is of relevance to find more cost effective ways of reaching a particular end. The issues involved are complex, because different forms of intervention have different by-products, which also need to be weighed in as benefits and sometimes as costs.

Pending better understanding of the effectiveness of prevention interventions, the understanding of cost benefits of responses is likely to remain a crude science. What models are being followed, what AIDS prevention is costing,⁴ and how one would measure these costs in terms of units of effective response, are questions a long way from being answered and the answering of which requires complex approaches.

It is notable that all of the modelling of the AIDS epidemic to date has been done using an assumption of no behaviour change or change in prevention oriented social responses. This is exacerbated by the fact that existing measures of HIV/AIDS prevalence are not particularly sensitive to behaviour change. Widespread efforts to promote behaviour change are unlikely to show up in antenatal data that measures prevalence amongst pregnant women, who because they are pregnant are by definition non-condom-users. Mortality data is also not sensitive to recent behavioural change. There is clearly a need for what has been termed second-generation surveillance, (UNAID, 2000a, 2000b) which is concerned with monitoring and evaluating responses to the epidemic. Fortunately, there has been some recent progress in this regard, and a number of national surveys are underway including a large-scale national behavioural survey that incorporates HIV testing.

As we begin to understand more about responses there is need to understand how to measure the benefit of such response in terms of indices of prevention. But even at this level there has been little progress. There appears to have been little agreement about research priorities or appropriate indicators for conducting longitudinal and cross-contextual research, or for measuring progress of interventions. There have

4 A notable exception is Booysen (2002a, 2002b) who provides estimates of prevention spending from the side of public finance and donors.

been no significant South African attempts to establish common criteria for monitoring of socio-behavioural responses to the epidemic, although a number of relevant international guidelines exist. Research studies tend to use diverse indicators, even with regard to basic units of analysis such as condom use, whilst broader population characteristics and contextual factors are not described in standard ways. This makes composite meta-analytic studies virtually impossible. Further, research projects tend to focus on specific outcomes such as condom use, or specific sexual practices, without paying sufficient attention to the significant steps and psychosocial processes that lead to such outcomes. There is thus little understanding of what has been achieved in terms of creating or sustaining contexts for lower risk behaviours and practices.

The most obvious way of describing benefits of HIV prevention programmes is to measure their effects in terms of the number of infections prevented through the intervention. In order to calculate the full impact of the intervention, we need to consider both infections averted for those people involved in the intervention, as well as secondary infections averted because the chain of transmission has been broken. But there is little research worldwide that has been able to talk about the impact of interventions in terms of the base indicator of infections averted.

Internationally, three approaches have been used to overcome these problems. First, other primary outcome measures, such as DALYs (see cost utility analysis below) have been used to measure effectiveness. Second, intermediate or process outcome measures have been used. Third, model-based evaluation has developed as a means of estimating HIV infections averted. These models attempt to capture the dynamic nature of transmission, as well as epidemiological and behavioural patterns. In South Africa these three different models have been used in understanding the impact of the epidemic, but we have not found reference to research which has used these models to understand prevention frameworks, with the exception of cost effectiveness analysis that forms part of the Soul City (Soul City 2001) evaluation. However, it should be noted, and this is discussed elsewhere in this volume, that the ASSA modelling instrument is currently being applied to understanding various treatment scenarios and their impact; ie to provide simulations about the possible impact of HIV prevention strategies on the total number of HIV infections averted.

Given an understanding of effectiveness of programmes we would be better able to evaluate the cost effectiveness of different approaches to treatment and of alternative operational procedures, which could be used in implementing different prevention approaches. Creese et al (2002) were not able to locate any published reports that brought together the evidence base in a standardised way that allowed comparison among interventions. However, they noted a number of individual studies and their analysis of these is discussed below.

In the area of behavioural prevention there is especially little information available, and there are considerable difficulties associated with deciding on the units of change, and knowing about their relative importance.⁵ To understand the specific difficulties faced in the field of cost-effectiveness research in socio-behavioural intervention, a review of general elements of economic analysis of prevention programmes is reviewed before particular issues relating to specific types of socio-behavioural intervention are discussed.

Elements of economic analysis of prevention programme

Forsythe (2001) defines four types of economic evaluation of HIV/AIDS interventions: cost analysis, cost-effectiveness, cost-utility and cost-benefit. Each has its own

5 Odei et al (2001) summarise evaluation and surveillance approaches for HIV/AIDS programmes and the challenges involved.

particular advantages and short-comings as a method. A cost-analysis involves analysing the costs of HIV/AIDS interventions but does not require estimating the value of output produced. The other three allow for comparison of interventions on indices of outcome and impact. 'A cost-effectiveness analysis gives the narrowest options for comparison. It may only facilitate comparisons between different ways to treat a specific disease. Cost-utility analysis has been developed to facilitate comparisons between different medical specialities. Cost-benefit analysis offers a direct comparison between costs and outcomes, since both are expressed in monetary terms'. (Johannesson et al cited in Forsythe 2001: 48) These four may be seen on a continuum with cost analysis being the simplest but least informative.

Cost analysis

UNAIDS (2000) provides a comprehensive understanding of concepts of cost analysis as these apply to HIV/AIDS prevention.

The economic costs of interventions are frequently not included in calculations of cost analysis. Whereas financial costs represent actual expenditure on goods and services purchased, economic costs or opportunity costs include the estimated value of goods or services for which there were no financial transactions, or when the price of the goods or services did not reflect the cost of using the same productively elsewhere. This value is often not captured in the actual price. There are many examples in AIDS prevention programmes of resource inputs for which little or no money is paid from within a countries financial system; for example large donations by donors and foreign aid organisations, inputs by volunteers and community organisations, and discounts on media placements. The *value* to society of these resources, regardless of who pays for them, is measured by economic or opportunity cost.

The choice of whether to use financial, economic or both approaches depends on the objectives of the analysis. If the purpose of the costing exercise is to compare expenditure against budget allocations or to explore affordability of the project, then only actual project expenditure would typically be recorded. In this instance the financial cost of a consumed resource for which nothing was paid, for example a donated good, is zero. If, however, the purpose of the exercise is to address project sustainability or to consider replicating the project elsewhere, the concern would be to record the costs of all resources consumed, whether or not they were paid for from the project budget. In this instance the economic costs of donated goods and services, valued by their equivalent market prices, are used in the analysis. The relevance of this shows in up-scaling or rolling-out interventions. It is one thing to run a successful project within budget in terms of financial costs, but to plan the same project in a larger scale, or in another location, it is important to include the opportunity costs that are incurred and may not be easy to overlook at a larger scale (for example the costs incurred by volunteers). 'Analyses using economic costs do not replace those using financial costs, but supplement them with additional information useful for decision-making'. (Creese & Parker 1994: 57)

The costs of programmes can be counted in terms of programme *outputs* (process outcomes), *outcomes* (programme objectives) and ultimate *impacts* in terms of basic indices of prevention of infection. Much cost analysis is limited to programme outputs (for example, number of teachers trained in HIV education or number of district level prevention programme coordination meetings). Such analyses do not refer directly to the effectiveness of the programme, only to its operations. This is a product of the lack of development, and newness of the science of socio-behavioural intervention. Whereas with MTCT it is a relatively simple matter to talk about costs

per unit of impact (HIV infection averted), the most appropriate units of outcome and impact socio-behavioural intervention are not yet resolved.

Cost analyses usually involve decisions about whose incurred costs will be measured.

- ❑ A *societal perspective* includes costs incurred by all sectors and members of society, including the private sector, the public sector and private consumers.
- ❑ A *provider perspective* excludes costs incurred by private consumers or households. For example, the costs of a public-event will exclude the transport and time costs of the public in getting to the event, or the costs of a workplace intervention will exclude the opportunity costs of lost income to the business of an AIDS education programme.
- ❑ A *public sector perspective* excludes costs incurred by the private sector and by private consumers and covers only those costs incurred by the public sector in implementing the strategy or delivering services. This will exclude donations or facility use that are not paid for by the public sector.
- ❑ In addition, *individuals and households* may also incur costs when services are paid for.

In practice costs generally calculate the cost of activities from the perspective of service providers and not from the perspective of the society and its individuals. (Boerma & Bennett 1997) The only part of the household cost that are typically considered is the fees or payments made which contribute towards financing services; ie private costs. Information on payments collected from clients for AIDS prevention goods (for example condoms) and services (for example cost of education materials or costs of transport involved in delivering an intervention programme) is important for understanding possibilities of cost recovery, an issue that is very pertinent to sustainability of projects and one that is often focused on by donors.

A *full cost analysis* estimates the costs of all resources that are being employed in running a project or programme, including basic infrastructure. This form of analysis is important in developing an understanding of the costs of starting similar projects in new areas. *Incremental costs* are also important and measure the costs of adding or implementing additional projects or programme to existing services.

Incremental cost analysis does not attempt to provide cost estimates for existing services, but only for new inputs. It therefore underestimates the costs of a general administrative nature ('overheads') borne by the organisation. It is also more difficult to generalise (for reasons of replicating a programme) from incremental cost analyses, unless the prior level of existing services and infrastructure is clearly specified. An incremental approach is particularly appropriate when the intervention comprises only a small proportion of the organisation's overall cost structure. The marginal cost is the additional cost of producing one more unit of output. This should not be confused with incremental costs that refer to the additional costs of adding on an entire service or project. These elements are important to take into account in an era where the emphasis is on identifying and reproducing successful interventions, extending existing services into new areas of operation and consolidation of programmes. With respect to the latter it is important also to understand *joint costs*. Resources may not be fully used in a specific project or programme that is being examined, or may be used jointly with other on-going projects. The proportion of the resources allocated to the specific project need to be analysed. An example is the use of shared facilities where the capital and recurrent costs of organising a regular meeting of a number of organisations is borne by one of the organisations.

There are many other possible ways of classifying cost components including analysis of: capital vs. recurrent costs; by activity; organisational level (for example. national, district, community); and source of funds (for example national and local governments, donors, non-governmental organisations).

There remains much work to be done in developing frameworks for understanding cost analysis. In the HIV prevention field there has been so little cost analysis research that it is not clear what forms of analysis are important in relation to what kinds of interventions. Below, specific forms of intervention are examined and an understanding of some of the intervention-specific issues are explored. However, cost analyses are limited in that they fail to take into consideration the quality and effectiveness of interventions. They focus on outputs rather than outcomes. For the latter we need to examine other forms of analysis.

Cost-effectiveness analysis

This type of analysis involves an evaluation of the costs involved in producing specific outcomes. Forsythe (2001: 43) reviews analyses that have been performed in Africa, most of which involved medically oriented interventions rather than socio-behavioural ones. He also reviews some of the models and approaches used for assessing programme effectiveness.

There are some difficulties in defining the units of outcome of behavioural and social prevention programmes. The average cost (unit cost) is the total cost per unit of outcome or impact. The *primary impact measure* in the HIV prevention field is the average cost of an HIV infection averted, although there has been much refinement of outcome measures (see cost utility analysis below). However, in the social and behavioural prevention field *intermediate outcomes* are more frequently used, measured for example in terms of units of prevention behaviours that are outcomes of a programme. As an example, the UNGASS draft list of core indicators for national programmes includes the percentage of young people aged 15-24 reporting the use of a condom during sexual intercourse with a non-regular sex partner. Armed with reliable data relating to a programme's efficacy in relation to this indicator it would be technically possible to work out the unit cost of getting one young person to adopt this prevention behaviour. Unfortunately there has been little standardisation of such measures that would allow for comparison of outcomes between programmes that have similar goals. But even were there to have been more standardisation of outcomes measures, there is very little behavioural and social research that measures outcomes of any sort that are specifically attributable to particular programmes. Most behavioural research does little more than establish associations between programmes and outcome measures without causal attribution. This is partly a result of methodological difficulties involved in measuring causality in relation to human behaviour (see later) but also a consequence of the goals of many prevention programmes which often do not aim directly to bring about prevention behaviours. Many programmes are conceived as building blocks in the process of developing prevention responses. They seldom aim independently to attain the final intended outcome of HIV prevention, but aim at changing conditions believed to dispose populations to HIV risk, for instance, relating to misconceptions about the causes of AIDS.

There is very little research which looks at unit cost analyses of measurable intermediate changes leading to the outcome of reduced infection rates. A strong exception is the work of Soul City, (Muirhead et al 2001) which is discussed below. When intermediate outcomes are intended, average costs of achieving such outcomes are appropriate and potentially measurable. Also, it might be argued – in favour of using intermediate outcome measures rather than change in health status measures or infections averted – that it is inappropriate to try measure the impacts of programmes in terms of primary intervention measures when the intervention is aimed, for example, at capacity building or is intended to work in concert with other programmes (for example to draw attention to a particular service). Theoretically it is possible to establish ultimate accountability of prevention interventions to primary

measures of prevention (infections averted and cost utility measures), but the methodological challenges seem a long way from being overcome. Projection models for estimating number of infections (see Forsythe: 42; Watts et al 1999⁶) that can be averted as a result of types of interventions have been developed and are ultimately necessary. This does not, however, detract from the need for unit costs of achieving intermediate outcomes.

A further issue to consider is that the outcomes of programmes are frequently more valuable than simply the number of averted infections. For example VCT opens up treatment possibilities for those who are infected. Thus the real value of VCT is broader than simply the value of infections averted and this makes this type of analysis complex. There may also be non-material benefits, which are difficult or nonsensical to quantify in economic terms, such as morale, destigmatisation or social capital.

Cost utility analysis

This type of analysis uses measures of Quality Adjusted Life Years (QALY), DALY: (the most commonly used) or Healthy Years Equivalent (HYA), rather than simply illness averted or treated. These indicators combine mortality and quality of life in one measure, and refer to healthy years of life rather than simply counting the number of lives saved. Such measures are sensitive to time, and delays in infection or death for instance, would be reflected in cost utility analysis, but not necessarily in cost effectiveness measures. These measures allow comparison of different interventions and is increasingly being looked at by funders, with the requirement that projects demonstrate a sufficiently low cost/DALY saved to receive funding. A number of tools to measure the types of cost utility analyses are available. This type of analysis, like cost effectiveness analysis, allows comparison of interventions, but in reality 'league tables' of health interventions measured in these terms have not been developed. (Forsythe 2001)

Cost-benefit analysis

This form of analysis puts a monetary value on both the cost of the programme and its outcome. Cost-benefit analysis is made especially challenging by the difficulty in assigning monetary value to changes in a person's health, (Forsythe 2001) or when it comes to intervention methods, to quality of life costs. There are two main methods for assessing cost-benefit: the 'cost of illness' approach and the 'willingness to pay' approach, each of which in turn may involve a number of techniques, limitations and difficulties in implementation. In other cases it is less challenging, for example in calculating the costs involved in commercial sex workers insisting on condom use by clients. (Rao et al 2001)

Forsythe (2001) concludes a review of tools for economic evaluation with a table for determining the appropriate form of economic evaluation for different forms of intervention planning and according to the use to which the evaluation will be put.

Understanding costs in relation to specific intervention approaches

Creese et al (2002), in a recent review of economic research of HIV/AIDS interventions in Africa, conclude that evidence for cost-effectiveness of interventions is fragmentary.

6 The Watts et al (1999) model, *HIV Tools*, was developed as a simple tool that could be used to provide applied, intervention specific insights of use to programme managers and policy makers. It is a software simulation tool to estimate the impact on HIV and STD transmission of different HIV prevention activities and provides guidelines for costing different HIV prevention activities, including blood safety, condom social marketing, school education, STD treatment service provision, and interventions with sex workers and their clients.

They identify over 60 reports that measured both the cost and effectiveness of HIV/AIDS interventions in Africa. They estimated the cost of 24 studies, which met their inclusion criteria, in terms of the cost per HIV prevention prevented and per DALY gained. They found that cost-effectiveness differed greatly across interventions. Cross-study analysis led to the conclusion that a case of HIV/AIDS can be prevented for \$11 and a DALY gained for \$1, by selective blood safety measures and by targeted condom distribution with treatment of sexually transmitted diseases. The conclusion makes a strong economic case for prioritisation of preventive interventions and tuberculosis treatment and the research shows that cost-effectiveness analysis is an essential component of informed debate about priority setting for HIV/AIDS. There is a need for cost-effectiveness studies in striking the right balance between prevention, treatment and care.

Booyesen (2002a) shows that public financing of HIV/AIDS programmes is now shifting away from prevention and towards treatment, care and support. He says that the total allocations towards VCT and life-skills programmes are expected to decline, while allocations to home-based and community-based care and support initiatives are set to increase. There is also evidence that donors are already putting more funds into treatment care and support than prevention, (Booyesen 2002b) although other research (Abt Associates 2000) suggests that prevention enjoys priority over treatment, care and support in terms of magnitude of donor funding.

In relation to socio-behavioural prevention strategies value-for-money is much more difficult to establish for reasons already discussed. Nonetheless large sums of money cannot indefinitely be spent on prevention campaigns without understanding their cost-effectiveness. In the following section some of the specific challenges faced in establishing cost-effectiveness in a number of areas of socio-behavioural prevention.

The following forms of prevention approaches are covered: mass media and public communication programmes; interactive and targeted education programmes; condom marketing and distribution; voluntary counselling and testing; and environmental provision.

Mass media and public communication programmes

The types of programme included here are defined by their focus on mass dissemination. Such programmes are typically involved in the production and dissemination of HIV/AIDS information to the general population through a variety of media channels, through one or a series of activities. Such activities are frequently designed to work in concert with other campaigns, services and activities. The methodologies may be designed to improve knowledge about HIV/AIDS and infection risk, to minimise the risk of infection, to promote the use of condoms, to promote risk avoidant behaviour patterns, to reduce high-risk behaviours, and to inform people about the availability of information and services. In addition such campaigns may aim at stimulating discussion, promoting advocacy, and raising public awareness about AIDS and building support for people affected by HIV/AIDS.

The context

There is a large range of such programmes in South Africa, but most notable are Soul City, loveLife and national and provincial government campaigns conducted by the Department of Health and Government Communication and Information Services.

The foci of these campaigns vary greatly in terms of content and also in terms of methodology. It is also worth distinguishing between so-called 'above-the-line' and 'below-the-line' campaigns. The former attempt directly to impact on a specific knowledge, attitudes and practices by specifically promoting these. Above-the-line

approaches such as a campaign to promote use of condoms using radio advertising is potentially more evaluable in economic terms than a campaign that attempts to build support for people with AIDS by promoting the red ribbon. The latter below-the-line approach has a less direct association with its outcome and attempts to build a social support base for an intended outcome. Whereas the wearing of red ribbons may be a measurable outcome, the impact of the wearing of the ribbon on its own would be insufficient to bring about the final intended outcome. There is a great deal of AIDS communication that adopts this approach. For instance the loveLife campaign has adopted a particular 'lifestyle brand' which it endorses and the money expended on endorsing this needs to be justified by showing that the lifestyle brand effectively promotes particular desired outcomes. This is potentially evaluable, but the complexities of evaluation are considerable. It is a much simpler matter to understand the cost-effectiveness of advertising that promotes a particular product when a simple measure of units sold can be applied, than when lifestyles, decision making abilities, self-assertion and gender power shifts are the outcomes desired.

Research into costs

A number of factors need to be considered when thinking about the costs of such campaigns. Many of the following points are derived from UNAIDS (2000).

- *Objective of the campaign:* Many campaigns serve to promote services and access to resources and their impact requires success by other campaigns; for example promotion of SRH services requires adequate levels of service delivery for success.
- *Research and testing:* Costs of such campaigns include the costs of materials development. Soul City, for example, researches its products for up to 18 months. The potential benefits of such investment need to be understood. These costs would usually be smaller if materials are used that have already been tested and used in similar form, in which case they don't need to be developed from scratch. The need for contextual specificity is often compromised by the need to generate IEC materials with a broad influence.
- *Type, intensity and quality of media used:* The type of media used, for example broadcast and print media. Another element to consider is the intensity of media use. Multiple media use and saturation versus strategic single interventions are programme development considerations that need to be understood in terms of cost-effectiveness. Similarly the length of a programme or publication, the frequency with which it is transmitted, and the duration of the campaign need to be costed. Further considerations are the use of on- or off-peak airtime for broadcasting, and donated portions of standard costs for public service announcements.
- *Scale vs. specificity:* Mass media campaigns tend to have high fixed costs. Therefore, the larger the population and the greater the population density, the lower are likely to be mass media unit costs. Conversely, a small population widely scattered will be more expensive per person covered. Economies of scale are sometimes balanced against the specificity of messages covered and whether the issues are directed towards the society or more focused. It is often argued in relation to mass media input that it is limited to a one size fits all approach and therefore has limited relevance to the contexts in which behaviours are mediated for example. in relation to specific age groups, socio-cultural issues and prevention foci. Both loveLife and Soul City, which are the highest budget mass media producers in South Africa, see their mass communication campaigns as part of a broader strategy, which includes outreach programmes into specific contexts where individuals and groups of people can be reached in a closer and more interactive way. For the two types of reach, one at a mass scale and one niche focused and personally engaging, one might expect different costs per individual reached. One might expect greater impact through the more intense, interactive reach

than through the mass media reach, but there is little research that has made such comparisons. These are issues that need to be thought about and the relative achievements of these two different approaches needs to be considered before much sense can be made of the benefits associated with the differential costs involved.

There has been little analysis of the costs of mass media communication around HIV/AIDS and the cost-effectiveness of different ways of developing prevention responses through mass media. The former is relatively simple and involves calculation of the expenditure on mass media campaigns of various government and non-governmental organisations involved in producing mass media. The latter requires an understanding of outcomes and impacts. However, it is difficult to isolate and lay claim to the impacts of a particular set of interventions, separate from parallel media and communication activities. Rice and Atkin (2001) present an updated and sophisticated understanding of the challenges of evaluating and understanding the impact of public communication campaigns. This is a highly specialised area and the complexities involved in scientific development and evaluation of such programmes are in scant evidence in South Africa, with the exception of the work of Soul City.

An economic costing of Soul City's fourth series (Muirhead et al 2001) was undertaken from the perspective of the provider. Intermediate measures of effect were used to consider two themes covered in the series, one of which was HIV/AIDS, measured in terms of 'knowledge' and 'action' dimensions. They measured effects of degree of exposure to Soul City and calculated the average cost per change in intermediate effects. There is a general lack of costing in studies of mass media interventions and the study is a good example of considerations that need to be taken into account in developing a rigorous approach.

There have been numerous monitoring and evaluation activities conducted by loveLife, with varying sample sizes and methodologies. (loveLife 2001) There is a strong orientation towards quantitative research, and analyses of impacts are constrained by a lack of supporting qualitative information. For example, although various experts have suggested are confusing and not readily decipherable, loveLife's own evaluation of the billboards skirted the issue of decipherability, examining instead, aspects of recognition of the billboards – for example the notion that the billboards were 'about real life' (58.3%) and whether the billboards had 'caused them to think' (27.2%). This is contrasted with a qualitative study by Delate (2002), which explores issues of meaning and decipherability, and concluded that the overall messaging and structure of the billboards was not readily decoded by target audiences. The evaluation of other communication components are mainly descriptive analyses of awareness aspects – for example reach of programming, or appeal or recognition of particular elements of the campaign – as opposed to more deeply unpacking the relationship of the campaign to its stated objectives. It is thus difficult to draw conclusions about behavioural impacts without further research. Unfortunately, from a financial and economic cost point of view, the research has not consolidated an understanding of the cost effectiveness of campaigns, although it is probably too early to definitively show the programmes effectiveness, given its enormous scale and scope.

With regard to evaluation in general, there is a need to understand more closely the HIV/AIDS communication environment as it pertains to various target audiences – in particular the weighting of the impacts of mass communication interventions within the context of general interpersonal communication about HIV. This would provide insight into the overall relevance of such campaigns, and would also contribute to development of standardised indicators and measures, and ultimately contribute to understanding of appropriateness and cost efficiency.

There is a need to take stock of the resources being deployed in mass media programmes. This has surprisingly not been done to date. Although there was a national outcry over the use of R12 million for the Sarafina play, (Marais 2000) there is relatively little questioning by health advocacy groups of much larger amounts on campaigns which are poorly researched and have been widely criticised by public and experts alike. A major difference at play here is the source of funding, there being different forms of accountability in respect of taxpayer money and externally generated donor money. It would be of interest to know not only how much money is being spent on mass media and different forms of mass media, but also from where this money originates.

The mass media campaigns utilising print, broadcast and outdoor media have contributed significantly to the South African media industry. This is one of the positive spin-offs of the AIDS epidemic on the economy and the contribution needs to be quantified. This covers not only the increase in advertising revenues, but also economic costs and benefits of donated or discounted airwave time and print media partnership arrangements. The contribution to the economy in terms of the development of a secondary industry of media research and development and production need also to be taken into account.

Establishing the above requires establishing the efficacy of these programmes in terms of their attainment of stated outcomes and there is the need to use more sophisticated research methods for doing this. Because of the difficulties of randomised control trials and or other quasi-experimental designs in the mass media area of intervention, alternative methods need to be looked at, for example, panel studies that use multivariate statistical analysis and methods such as structural equation modelling and multi-dimensional scaling to establish the precise impact of the programme. Specific efficacy research needs to be conducted in relation not only to terminal outcome measures such as condom use or prevention of infection, but also to outcome measures such as promotion of support for facilities (for example AIDS Helpline, adolescent friendly clinics) and campaigns (for example, destigmatising AIDS). The loveLife campaign to promote reception and support for loveLife ('What are those loveLife people up to?') illustrates the difficulties of evaluation. Ultimately the costs of this campaign would need to be included in all other loveLife campaigns. It is a challenge to calculate both direct and indirect costs.

Interactive and focused education campaigns

A review of South African programmes targeted at young people (Kelly et al 2002) shows that there is a vast range of programmes reaching out to young people in South Africa. Besides youth development initiatives and school-based education approaches, there are numerous forms of workplace prevention initiatives, peer education programmes and niche education campaigns (for example commercial sex workers, truck drivers). All of these rely on person-to-person communication approaches in small group settings or the use of social marketing approaches to promote uptake of health beliefs through community networks and in niche contexts.

The context

There have been no attempts to quantify the types and range of specific educational outreach programmes in South Africa. There are a few types of programmes worth noting:

- *Youth development initiatives:* There is a large range of such initiatives in South Africa ranging from groups specifically involved with SRH issues (for example Stepping Stones), to cultural and religious groupings that have developed a special focus on AIDS (Youth for Christ, Scripture Union, Girl Guides and Boy Scouts of

South Africa, and various cultural groups), to national youth development programmes (The President's Award), life-skills oriented programmes (DramAidE) and peer-group education projects run in a number of different contexts.

- ❑ *Education institution based campaigns:* This includes HIV/AIDS, SRH and lifeskills programmes run in schools and tertiary institutions.
- ❑ *Workplace prevention programmes:* This includes programmes run by employer organisations for employees, unions for their members and businesses for their clients.
- ❑ *Niche education campaigns:* This includes special outreach projects to commercial sex workers, truck drivers, migrant workers, unemployed people, prisoners, health workers, etc.

Research into costs

There are quite a number of evaluation studies in this area of intervention, although it seems that outside of the business environment there have been few studies that have adequately researched cost-effectiveness of interventions. Elsewhere in this volume the cost to companies of responding to HIV/AIDS is dealt with.

In the youth development field there has been very little cost-effectiveness work. The benefits that accrue to the society through having youth more motivated and socially minded are considerable and need to be taken into account as one of the silver linings of the AIDS epidemic. This makes the study of the cost-effectiveness of youth development work challenging, as the by-products of youth development programmes focusing on HIV prevention are difficult to quantify.

A notable exception to the lack of rigorous evaluation in this field is an ongoing evaluation of Stepping Stones, (Jewkes et al 2000) which is being rigorously evaluated using a controlled quasi-experimental design. Most of the studies that exist have used pre-post intervention measures without controls.

Kinghorn et al (2001) consider the requirements of an adequate response to the socio-economic impact of AIDS and within this the essential elements of an adequate school-based prevention programme that includes: in-service and pre-service training of teachers; mobilising political will and leadership; adaptation to the structure and curricula of schooling and higher education courses; mobilising intersectoral initiatives; creating appropriate legislation; and creating incentives to improve prevention and impact management. Boerma and Bennett (1997) conducted an exercise in costing a school-based HIV intervention, based on a model community in Uganda, and came up with a figure in dollars.

Following UNAIDS (1999, 2001) there are a number of issues that need to be taken into account in analysing the cost effectiveness and cost benefit of interactive campaigns. These include:

- ❑ *The intensity of the intervention:* It needs to be considered whether relatively expensive intensive small group interventions are cost-effective against mass based approaches that are cheaper on a per person reached basis, but may be less effective in terms of prevention outcomes.
- ❑ *Cost of educational material development and production:* A key issue here is the amount of time and type of work invested in development of specially focused educational materials versus use of generic materials.
- ❑ *Training of teachers and facilitators:* The amount of time invested in training and the economic costs of using existing personnel for this additional task is important to consider. Also of relevance is the cost of teaching or working time dedicated to AIDS education.

- ❑ *Personnel costs:* The strategy is labour-intensive and the relative costs of trainers and teachers should be borne in mind in making any international comparisons or extrapolating cost data to other countries.
- ❑ *Economies of scale:* The larger the target population, the greater the extent to which fixed overhead costs, such as costs of curricula and material development, will be spread over more schools and schoolchildren, thus reducing unit costs.

Condom marketing and distribution

Research indicates that there has been widespread promotion of condoms and that the condom is well known as an HIV prevention method the use of condoms in South Africa. (Parker et al 2000) Promotion and distribution of female condoms has not been as widespread. However, reportedly interest is high amongst women, especially in situations of male reluctance to use condoms. Female condoms offer a higher degree of control to women and have an appeal in contexts of marriage and commercial sex where male partners are unwilling to use condoms, or where the subject is too sensitive for discussion. However, female condoms are considerably more costly than male condoms.

The context

Whilst it is well recognised that condom use is an important prevention method, it is interesting to note that in countries that have been able to contain the spread of the HIV epidemic in Africa, notably Senegal and Uganda, condom use levels suggest that the containment has not been primarily achieved through use of condoms. Whilst the efficacy of a correctly used condom for prevention HIV infection is not called into question, the success of promoting and distributing condoms to potential users is not certain.

In 2000, some 274 million free condoms were distributed by the Department of Health and a further 16 million condoms were distributed through commercial and social marketing efforts. However, it is not clear what proportion of these condoms were readily available when needed, or what the levels of consistent use were, or for that matter what proportions of the population should be targeted as needing to use condoms for prevention.

Research into costs

Creese et al (2002) suggest that short-course Nevirapine treatment for mothers and babies, and targeted condom distribution are clear 'best buys' in HIV prevention. They cite the World Development Report of 1993, which suggests that any intervention achieving a DALY gain for \$50 or less (\$62 in year 2000 prices) is highly cost effective in the context of the poorest countries. In a meta-analysis of African studies they show that the cost per DALY gained is around \$1 for a combined treatment of STD and condom promotion. Cost per HIV infection prevented for condom distribution ranged from as little as \$11 to over \$2 000. This range suggests that the costs of condoms distributed as a stand-alone measure varies greatly, and this could depend on how targeted condom use is, the extent of uptake and on how condom use is promoted.

Survey studies on condom use is developing in South Africa and most behaviour surveillance studies typically include a number of questions on condom access and use. However, there has been no definitive study on condom use in South Africa, although this is an area where the indicators used are relatively standardised, and a meta-analysis would be technically possible. At this stage it is difficult to estimate with any degree of certainty, the proportion of those at risk of HIV infection using

condoms and the cost of getting these to them in ways that promote use. This would need to include the costs of educating people about condoms and femidoms, and requires tuning of measurement, including measurement of correct use and regularity of use with different partners.

Considering the marketing of condoms Cisek and Maher (1992) have grouped the approaches to social marketing of condoms into four types, with increasing degrees of private sector participation. Type 1 projects increase availability of condoms through distribution of donated supplies and such projects often set up and manage their own administrative structures, implementing agencies and distribution networks. In such a model condoms are heavily subsidised and hence accessible to all if distribution networks are adequate. These projects tend to be expensive for the donors financing them and to remain donor-dependent. Type 2 projects use existing private and public infrastructure to a greater extent. For example, a project may arrange for local private distributors to conduct distribution and training activities. There is increased cost recovery to cover project costs. Type 3 projects diversify commodity sourcing and are no longer dependent on donated products. One approach for acquisition of condoms is for a project to negotiate reduced prices with condom manufacturers. In return for the manufacturers putting condoms on the market at a reduced price, donor funds are used for promotion and marketing of the products, in effect running specialised IEC campaigns on the manufacturer's behalf. This may be the most appropriate approach in countries where demand is low and potential manufacturers are wary of investing in market development themselves. This type of project would use the existing distribution network and contribute to its development. Type 4 projects maximize the use of private sector infrastructures, including commercial sector management of the project. Donors' involvement is in market-building but the commercial partners may also contribute to this. The projects have no management costs and no commodity costs. Condoms are retailed at a price that covers all costs plus profit margins for the private sector distributors, wholesalers and retailers.

The above illustrates that the costs involved in averting HIV infection through condom promotion and distribution may be complicated to calculate and in each case the costs are incurred by different parties. These models may have different uptake rates, relative to the costs incurred to the user, and different levels of sustainability, relative to the costs incurred by the different agencies involved. Measuring the cost-effectiveness of different models requires an understanding of these issues and this in turn requires an understanding of the propensities of users to purchase condoms and the efficacy and sustainability of models of distribution given prevailing funding resources and profit margins for private partners.

An interesting aspect of cost of safe sex is shown in the work of Rao et al (2001) who examine the losses in income from using condoms amongst commercial sex workers in India, because of a strong preference for condom-free sex among clients. The researchers showed that sex workers who always use condoms face a loss of 44% in their average earning per act suggesting there may be strong disincentives for sex workers to practice safe sex. They consider both demand-side (educating clients) and supply-side (reducing competition) interventions to deal with this, showing how important analysis of financial incentives can be in understanding the dynamics of transmission. There is much anecdotal evidence to suggest that a similar situation prevails in South Africa, although there does not seem to be any research that has quantified the economic disincentives for using condoms.

Perhaps the most comprehensive work on cost-effectiveness of condoms in preventing HIV in South Africa (Marseille et al 2001) examined female condom use amongst commercial sex workers in rural South Africa. The study examined cost effectiveness in terms of infections averted and costs savings for HIV/AIDS and STI treatment. It is

well worth studying as an example of the complexities that need to be taken into account in studying cost-effectiveness of condom use.

General issues to consider in understanding condom costing are: (derived from UNAIDS 2000) costs and channels of improved distribution; costs of market research and product development; the impact of increased sales and economies of scale on unit costs over time; differing costs of distribution in rural and urban settings; the source of project condoms; levels of cost recovery; the social marketing model used and especially the role of the commercial sector in such activities as administration, management, training, promotion and distribution;⁷ whether or not the main implementing organisation only markets condoms; forms of media used to market condoms; opportunity costs for the public in acquiring condoms from different sources; and issues affecting condom branding, choice and use and the cost-effectiveness of development and promotion of condom brands.

Voluntary counselling and testing (VCT)

It is sometimes assumed that treatment and prevention strategies are distinctive and competing responses to AIDS. Proponents of this view typically argue that prevention interventions are more cost-effective than treatment ones. However, this view misunderstands the complementary nature of the two types of intervention. There is ample evidence that counselling modifies the sexual behaviour of people, (Merson et al 2000) thereby reducing transmission rates. This means that VCT are a crucial part of both treatment and prevention. However, there is some controversy over the effectiveness of VCT at both the individual and population levels. Evidence about the efficacy of VCT as a prevention method has been reviewed by De Zoysa et al (1995). This together with an earlier review of 50 studies showed mixed results for the impact of counselling and testing on risky behaviour. (Higgins et al 1991) More recently the Voluntary Counselling and Testing Efficacy Study Group (2000) concluded that VCT is effective at modifying sexual behaviour. However, according to their research, individuals who test positive are more likely to modify their sexual behaviour than individuals who test negative. UNAIDS (2000) reviews various other findings, including findings that rapid testing techniques may increase the effectiveness of VCT. In spite of the relative abundance of research in this area they conclude that further research is required to determine what aspects of VCT are most effective for ensuring safer sexual practices and how to target individuals most likely to benefit from VCT.

It is likely that VCT uptake rates are likely to be poor when offered without a treatment incentive and making antiretroviral treatment and social support available to people who get tested gives them a reason to accept VCT. The stigmatisation of HIV carriers in South Africa is likely to remain a major disincentive to knowing HIV status, and this stigma will not be alleviated while the disease remains an effective death sentence for millions of people. Mother-to-child transmission prevention programmes, HAART, the existence of HIV/AIDS support groups and the offer of post-exposure prophylaxis to rape survivors present opportunities for changing these norms, creating a sense that it is worthwhile to know one's status because it offers health benefits.

VCT is thought to be readily available in public sector facilities, and health facilities across the country have staff who have attended short courses on VCT. However, there are numerous small towns across South Africa where VCT is not readily available

7 A Type 1 model will have more costly distribution systems than a Type 4 model. The extent to which the involvement of the commercial sector affects cost will depend on the perspective of the costing exercise. If the perspective is of public sector costs only, involvement of the private sector will greatly reduce costs. If the perspective is of all providers, costs may be reduced slightly as it may be more efficient for the private sector to take on these roles than for a social marketing organisation to set up duplicate systems.

because hospital and clinic budgets are not able to cover laboratory costs involved. The vast majority of counselling and testing is in response to medical referral or for life assurance testing to establish blood safety. This is usually unrelated to prevention objectives and is not managed to optimise the preventive aspects. Other forms of counselling and HIV prevalence testing form part of protocols for preventing mother-to-child transmission and have been dealt with elsewhere in this volume. Testing is also an important aspect of post exposure prophylaxis for rape survivors and medical personnel exposed to HIV in the course of their work, although resources for this are often not available.

The context

The activities that are currently included under the rubric of VCT are so far from ideal that understanding the costs associated with these would be of little benefit in understanding and developing effective responses. Evaluations of counselling services (Richter et al, 1999) show that in spite of personnel having been trained in the rudiments of pre- and post-test counselling the standard and quality of services is poor. Further, because testing costs are born by the health services referring the patient, and budgets are frequently inadequate and overspent, in many areas of the country it is still not possible to obtain an HIV test in the public health services without medical referral.

The Department of Health has a national strategy for VCT, (DOH 2001) which provides a framework for understanding the costs that will be incurred in rolling-out VCT. An alternative framework for understanding VCT is provided by TAC (Treatment Action Campaign). However, irrespective of frameworks and protocols, practice in specific contexts will be determined by unique circumstances, as will the costs involved.

Research into costs of VCT operations

According to the Harvard Consensus Statement (see Geffen in this volume) the cost of testing one million people within three years, as of the third year would amount to \$143 per person. According to TAC estimates⁸ this may be a good first approximation of initial HIV status counselling and testing, but it perhaps errs on the high side. However, as a general global figure it is not sensitive to local protocols and conditions and would need to be worked out specifically for South Africa. Creese et al (2002) on the basis of a meta-analysis of existing studies in Africa, estimate that the cost of VCT per infection prevented is \$400-\$500, suggesting that this is an expensive strategy for prevention.

It has been suggested that those who come forward for VCT may be a special group, who could be reached by other, less costly means. (De Zosa et al 1995) Sweat et al (2000) have demonstrated that VCT is more cost-effective when it is targeted at HIV positive individuals, or groups of individuals that are at a high risk of HIV infection. They further show that VCT is more cost-effective when targeted at couples as opposed to individuals, though there are benefits under both scenarios. These findings mean that costing of achieved prevention outcomes would need to weight the benefits of couple counselling. Couple testing has not been developed or promoted in South Africa, and is an important overlooked area, although it needs to be borne in mind that testing an individual who is married to a migrant partner may have little prevention efficacy.

In considering what needs to be costed, a range of factors need to be taken into account. VCT is offered in the private sector, by NGOs and government health services. Also the service may be a free-standing voluntary and counselling service, or may be

8 Nathan Geffen, TAC: personal communication

integrated into other health and social services (for example ante-natal clinics, STD clinics, rape survivor projects, blood transfusion services, HIV support groups). It is also offered as a service in many prisons and clinics attached to educational as well as commercial operations. The services provided, and especially the degree of post-positive test follow-up may vary considerably between these services. The contribution of the user to the costs of the procedures also varies considerably across these contexts. The true costs of VCT should include: the use of space, the services of the counsellor (pre- and post-test) and support staff, and the cost of testing. The latter includes costs involved in obtaining the specimen and these will differ according to whether a medical doctor or nurse conducts the procedure. It also includes laboratory and transport costs that are a significant issue in rural areas especially where tests are used that require transportation to laboratories. Further, the type of test used is of costing relevance. There are also costs to the user in getting to the health facility for two separate visits and again this is especially relevant in rural areas where a trip to the clinic often takes a full day. Further, costs to the health and welfare system need to be taken into account, to the extent that HIV positive people tend to become users of welfare systems, although many in South Africa do not have access to responsive welfare systems.

With the number of HIV positive people in South Africa estimated to be around 5 million and rising, the need for VCT services is potentially going to place a great burden on health budgets in the future. The budgeting of VCT is an important area of research. It is important to note that VCT services refer both to medically referred tests as well as self-referral services. To this point whereas there is a high level of availability of HIV testing facilities in the public sector, these are often not available for self-referred patients. As self-referral for VCT is increasingly promoted the challenge of budgeting for this service will become more acute. It is difficult to estimate the need for such a service although research suggests (Parker et al 2002) there may be a high demand when these services are finally promoted. Small hospitals, especially, will not be able to absorb the added burden as a proportion of their operational budgets, and models are needed for costing such services on a per person basis. It is a basic mandate of the health system to provide such services on request, albeit an unfulfilled mandate at this stage. But pressure will increasingly be brought to bear for hospitals to deliver into this mandate and the issue of financing of these services will become paramount. This is a high priority area for research, and this issue draws attention to a more general issue of major significance in thinking about budgeting for response to AIDS, namely budgeting for uncertain future demand. This is especially problematic for small hospitals that are already under-resourced. A further problem is that in many health districts across the country there is a split between provincial and district health governance with the former taking responsibility for curative services and the latter taking responsibility for preventive and promotive services. VCT should fall under promotive and preventive health services, but the close association of VCT, MTCT, treatment and HAART means that curative facilities also need to have counselling and testing infrastructure. Whether and how these are rationalised across already confusing provincial and district level health authorities appears to be very uncertain. There is much that needs to be done to pre-empt the budgeting problems that currently give rise to the service not being provided even in contexts where the infrastructure and personnel are more than adequate to the task.

The possible effects of promotion of VCT should also be taken into account in costing service. Although VCT has not to date received much promotion, it appears that VCT is increasingly being seen as an essential component of a comprehensive AIDS prevention strategy. It is likely that at some point it will be the subject of vigorous promotion. In this case we need to understand what increased demand will do to costs. The economy of scale could go in either direction, and will certainly differ in rural and urban areas. Up-scaling in urban areas would in all likelihood decrease the

unit costs of services, whereas the need to develop infrastructures to cope with increased demand in rural areas may increase unit costs. At the moment in rural areas VCT operations piggy-back on other systems of operation (for example transport of specimens to laboratories) but with increased demand separate infrastructure may need to be developed and maintained and incremental costs are incurred. In urban areas existing capacities could expand without incurring incremental costs and relatively small marginal costs will be incurred.

A further important costing issue is the level of training of counsellors and counselling supervisors. The current tendency is to use health workers who have undergone a basic training programme, sometimes falling under a more fully-trained staff member. Counsellors usually counsel in addition to conducting other (main) tasks and lay counsellors (non-health professionals) from the community may also be employed in VCT services. Whether or not VCT becomes a specific service or remains integrated into the more general ward and clinic operations has cost implications. Related to this is the degree of emphasis placed on careful and intensive counselling. VCT services are labour-intensive if properly conducted. For example, in a study in the UK of HIV testing in ante-natal clinics, over 80% of the costs were associated with the time required to ensure that informed consent was given. (Chrystie et al 1995) So the quality of the services, which in the past have been less than satisfactory, (Richter 1999) needs to be borne in mind.

Other issues that are important to examine in understanding the cost benefits of VCT are: non-HIV benefits of VCT, including diagnosis of STDs and prevention of STD infection that may occur because of changed sexual behaviour; concerns about adverse effects including psychological distress; stigmatisation; disruption in couple and family relationships; and violence and divorce. This all means that people are reluctant to both undergo tests and return for the results. At present, there is very little information available on the relative costs and effectiveness of the different models of VCT and information on total costs would be helpful to help service providers to choose between different models. The use of volunteers to support some of the activities of centres that offer VCT; the costs of promoting services and public education about VCT; the need to understand the difference and overlap between VCT leading to MTCT, VCT leading to HAART, and the key differences, such as the introduction of monitoring tests in the latter; the need for research to determine the extent to which VCT for MTCTP and VCT for HAART can be (or have been) streamlined into a single intervention;^{9,10} the differences between medical and self-referred testing in terms of follow-up costs; different approaches to the division of time between health-care personnel, which affect both the cost and feasibility of VCT; the cost of necessary support activities including training of staff and development and distribution of IEC materials; and the costs of the increased demand for social support services that are likely to follow the promotion of VCT, and in many instances this will involve incremental costs attached to VCT.

Prevention services and support

In addition to attempts to reach individuals and groups, prevention efforts are often supported by services and forms of organisational outreach. There are three main types of relevance: prevention and treatment of sexually transmitted infections; organisation of the health system for district level HIV prevention response; and cultural and community prevention promotion groups.

9 Creese et al (2002) note that none of the studies that have looked at the cost of VCT in understanding vertical transmission looked at the effect of VCT on horizontal transmission.

10 Personal communication with Nathan Geffen, TAC

The context

The prevention and treatment of STIs has been identified as a very important intervention approach, and improvement of methods for treatment, especially the introduction of syndromic management, are recognised as a critical component in intervention. The treatment of STIs is dealt with in the chapter on 'Treatment and prevention'.

With the increasing devolution of health services to district level, the onus increasingly falls on district managers and committees to promote HIV prevention. There is currently much uncertainty about the relative responsibilities of provinces, district and local municipalities, but municipalities are increasingly required to allocate resources to different priority areas.

Concerning community level prevention and socio-cultural responses to AIDS, there has been no audit of how communities in South Africa are responding to HIV/AIDS. Anecdotal evidence suggests that the range of responses is wide.¹¹

Research into costs

Concerning the prevention and treatment of STIs Creese et al (2002) suggest on the basis of a meta-analysis of African studies, that diagnosis and treatment of sexually transmitted infections cost just over \$270 per infection prevented, making this a relatively expensive form of prevention. But there is limited data available, although generation of such data would be a relatively simple matter as the syndromic treatment of STIs is a readily measurable outcome and costs are also direct and measurable. Further work on the costing of STI treatment approaches is covered in the chapter on 'Treatment and prevention'.

The functioning of the district health system is an area of active research in South Africa, and there is a need to understand how AIDS response is organised at this level and a need for models of intervention that operate at this level. Cost-effectiveness studies of different models of district health response are necessary, but there appears to have been little study of this to date. The cost-effectiveness of integrating services, of drawing NGO service organisations into providing services within the formal health sector, of public-private partnerships, are all areas that could benefit from rigorous economic analysis. There has been little to no research on the economic impact of social mobilisation at a community level around HIV prevention. We do not even know the extent to which AIDS is bringing about increased social cohesion (social capital) or leading to deterioration in the same. These issues are dealt with at length in another chapter.

Boerma and Bennet (1997) have attempted to estimate the costs of a number of interventions directed at district level with a population of 300 000, including 125 000 adults and an estimated 100 000 sexually active individuals, modelled on their experiences in Mwanza Region of Uganda. They have done this in relation to promotion of safer sexual behaviours, STD control, condom promotion and distribution, ensuring safe blood supply, reduction of transmission through injections and counselling.

Many factors need to be taken into account including the level of HIV transmission in the area. Where incidence (new infections) is low they suggest that focusing on high transmission areas is advisable. (Boerma & Bennett 1997) When there are high levels of incidence in the general population the population focus is usually advised and this requires a different cost structure.

¹¹ This includes virginity testing, AIDS clubs, community forums, community education initiatives, involvement of traditional healers and educators, and involvement of faith-based groups.

There are numerous local level responses currently mushrooming in South Africa and one wonders to what extent the economic elements of these developments are being drawn into planning. How sustainable are loveLife Ycentres, for example, which cost an average R1.7-million in annual operational costs? On the back of international funding there is an enormous amount of local level investment and development, and concerns about sustainability should be taken seriously. It may be argued that the strategic value of certain kinds of development at certain strategic points in developing response to the epidemic should not necessarily be thought about exclusively in terms of sustainability. Such developments may not need to be sustained over more than three years, because their impact may need to be strongly felt now, but not indefinitely at the same level of intensity. This refers particularly to prevention campaigns. Thus, there needs to be some economic understanding of the cost of 'high impact' versus 'sustainability', which would possibly be different in every case.

Local level organisations pressured to extend their services to HIV/AIDS prevention incur incremental and marginal costs. For example, adolescent friendly clinic initiatives aimed at providing SRH services for young people are sometimes started as new projects of an existing organisation, but may be provided as extensions of existing services, but targeted specifically at adolescents. The same might be said of various types of prevention programmes run in businesses, local government and through community based NGOs. The launching, up-scaling and extension of such programmes needs to be calculated given a sound understanding of economies of scale, and incremental and marginal costs.

Finally, considering community level response, there has been very little thinking about what it is costing people to be involved in HIV/AIDS prevention, and conversely how communities and social structures are benefiting from AIDS prevention investment. Elsewhere in this volume there is some discussion about the costs of volunteerism, which is a further issue to be carefully thought about in mobilising people to be involved in HIV/AIDS work in communities, for instance through being a volunteer counsellor. The opportunity costs and benefits involved in AIDS prevention at community level need to be factored in, although community-led responses are often thought of as unmeasurables, and the impact of responding to AIDS at this level is perhaps better thought about in terms of social capital rather than in material terms.

Conclusions

The emphasis on understanding the impact of the HIV/AIDS epidemic has given over to a concern with understanding the costs to the society of responding to the epidemic. It is clear from the above that we have made only a little progress in understanding the scope and impact of HIV prevention programmes. It has also been made apparent that cost analysis of prevention programmes is something of a unique area of study, for which particular methodologies have not been well defined and concerning which there has been surprisingly little discussion. The larger part of the problem lies in a lack of understanding of how to isolate the impacts of particular programmes and approaches in unit cost terms. It is important for progress to be made in this area, if we are to have a sound foundation for making decisions about extending and up-scaling programmes. In South Africa, with some exceptions, the field of HIV prevention has been unsystematically and unscientifically developed. Resources spent on prevention have unquestioningly been regarded as appropriate and necessary expenditure, with one or two exceptions that have captured the attention of the media and public as being excessive or inappropriate.

As the emphasis of AIDS intervention increasingly shifts to the needs of people 'infected and affected' by AIDS, there will be an increasing need to justify expenditure

on expensive prevention programmes. Notwithstanding the continuum of prevention and care that has been discussed above, the burden of caring for people sick with AIDS will increasingly become a priority and compete with prevention programmes, especially in an environment where it is often said that prevention programmes have not worked. To counter this and maintain the momentum of prevention efforts there is a need for a more strategic and coherent approach to prevention, which can be justified in terms of costs per unit of prevention. Debates around such issues have to be conducted with a sound understanding of cost-effectiveness analysis in this field, and there appears to be little work of this nature currently being conducted in South Africa, with a couple of notable exceptions. The economic analysis of HIV prevention programmes needs to be conducted using the analytic resources of a range of disciplines and multi-disciplinary research projects around economic analysis of HIV prevention interventions are required.

Finally, and this cannot be understated, prevention programmes must be part of a broader programme of social development which may ultimately prove to be the real solution to AIDS. There is ample evidence of the connection between AIDS and poverty and the forms of organisation of society that give rise to poor health in general are also foundations of HIV/AIDS epidemiology. To this extent the solution is not behaviour change programmes so much as programmes that address the root causes of poverty, social dislocation, deterioration of social capital and the economic predicaments of highly indebted poor countries. Without addressing these issues socio-behavioural prevention programmes will have limited impacts or be unsustainable, and will primarily reach those who are least affected by the impoverished and degraded social conditions which prevail in the countries most affected by AIDS. So there is a further challenge, and this is the connection of behavioural prevention at individual and community level, to broader development initiatives, including such challenges of reforming global economic and political systems. We should not be too optimistic then about behaviour change, and this gives all the more reason to understand whether the resources being committed to promoting it are well spent.

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Costs of care and support

by Chris Desmond and Tim Quinlan¹

Introduction

This chapter discusses the available literature relating to the cost of care and support for people who are infected and affected by HIV/AIDS. The focus is primarily on orphans for this allows us to acknowledge the need for HIV/AIDS management interventions to incorporate those affected, but not necessarily infected by HIV/AIDS, and to cover the issue of 'support'. We conclude the chapter by outlining areas requiring more research, in view of our argument that South Africa still has some way to go towards the design and implementation of an effective care and support strategy.

This focus is a response to the evident need in South Africa for HIV/AIDS management interventions that are effective in the sense of providing care and support, and which use limited resources to maximum advantage. This need stems from the nature of the HIV epidemic and the socioeconomic context in which it is occurring in South Africa. There is a long incubation period between initial infection with HIV and the onset of illness, followed by death from AIDS. (Whiteside and Sunter 2000) The consequence for management of the epidemic is that while South Africa may be approaching the peak of HIV prevalence, the levels of illness and death are still increasing (Dorrington and Johnson 2001) and, therefore, the demand for care and support of HIV/AIDS infected and affected people is also increasing.

South African health and welfare agencies are already struggling to cope with that demand, which inevitably includes provision of different forms of care and support and, therefore, there must be consideration of how to accommodate the different forms in an HIV/AIDS management strategy. (Russel and Schneider 2000) A first step in that direction is to understand the costs of different forms of care and support. However, as we discuss in this chapter, the variety of demands on health and welfare agencies requires assessments that indicate how best to combine different forms of care and support in an effective manner. This means, as we elaborate shortly, that the impetus of care and support programmes in South Africa is towards development of an integrated management strategy.

We do not presume to describe an integrated strategy, primarily because the debate on this matter has hardly begun. Rather, we discuss why South Africa is moving in this direction in the field of managing the HIV/AIDS epidemic, and the concepts that lie behind the idea of an integrated HIV/AIDS management strategy. This is to say that any discussion on the cost of care and support must take into account the context in which it occurs. In South Africa, the idea of an integrated management strategy will not be new to many readers, because the notion of integration is already in public discourse (for example, Integrated Development Plans submitted by district councils; the Integrated Environmental Management Policy of the Department of Environmental Affairs and Tourism). Our interest is in showing how interventions to improve care and support reflects a broader process.

The context

Currently there is an emphasis on community-based programmes, which can be attributed to several interrelated factors. On the one hand, the state health and welfare

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system in South Africa, already inadequate, was not designed to deal with the excessive demands for healthcare and welfare support created by the HIV/AIDS epidemic. That limitation is exacerbated by the low priority of public health in government spending. The 2002 national government budget, for example, allocated R18 414 million to Defence, R7 185-million to Health and only R409 million to Social Development (welfare). (www.finance.gov.za) Furthermore, regionally and internationally, there has been a trend towards reduction of the social welfare role of the state. (Garrett 2000) In this context, local-level interventions are a response to policies that do not address particular local needs.² On the other hand, the global ethos of democratic governance coupled with South Africa's recent political transformation has encouraged devolution of authority and decentralisation of services to lower levels of government. To this extent, the democratic imperative has provided the political rationale for 'community-based' initiatives.

However, the conclusion that community-based programmes are *the* answer to the question of how to provide effective care and support, in response to the negative consequences of AIDS, is ill-conceived. This is not to deny that community-based care and support is, and can be more cost effective than state-regulated residential care. (Desmond and Gow 2001; Johnson et al 2000). However, the issue in question is not whether to choose either state-based interventions or community-based solutions, but how to combine both sets of actions. The simple reason for advocating a combined initiative lies in the fact that community-based programmes face many of the same practical problems as public health and welfare agencies.

Community-based projects have to combine health and welfare interventions. Inevitably, they face the same problems as state health and welfare agencies; notably, the limited resources they can allocate to different aspects of care and support, and administrative difficulties with allocating those resources equitably. (Abt 2001; Evian 1995; Loening-Vysey and Wilson 2001; Sheitinger and Sanei 1998; SA Health Review 2000; Johnson et al 2001) Community-based projects rely greatly on volunteer labour, for example, which limits the scope of their care and support projects at any one time. Furthermore, this is a fragile base for intervention. Project managers have to contend with normal problems such as variation in reliability and skills levels of staff, and specific problems such as volunteers withdrawing their help at any time for personal reasons, and yet, unlike wage contracts, do not have the same level of legal and financial control measures. Compounding these problems are the financial uncertainties of project-based funding set against the costs of investing funds in screening and training of volunteers in order to improve effectiveness of care and support work and, in time, the need to establish dedicated administration systems to manage the diverse tasks involved in care and support of orphans.

The inevitable conclusion is that no welfare and health agency be it of the state or community-based can cope on its own. Different agencies must combine their respective skills and means; that is, in the terminology of development, there is a need for integration of different interventions; coordination of programmes and projects; formation of partnerships and linkages between agencies; and decentralisation of institutional support for intervention. (Sheitinger and Sanei 1998) The aspiration for an 'integrated approach' is compelling, but also demanding for it logically implies both the creation of new institutions of care and support and capacity building to ensure that it works.

The question that follows, and one that is very pertinent in South Africa, is whether the national government is prepared to take on a developmental role in the sense of promoting an integrated approach to care and support. (Loening-Vysey and Wilson

2 The corollary is greater reliance on private health care, but in South Africa the vast majority of the population cannot afford the costs involved and therefore, are not covered by private medical schemes. (Panday 2001; SA Health Review 2000: 313)

2001:22, Schwartlander et al 2001) For instance, in 1997, the Department of Welfare issued a white paper that proposed promoting self-sufficiency amongst HIV affected and infected individuals; in effect, arguing for shifting the responsibility for care of orphans and HIV infected children onto working age adults – a segment of the population that itself is most directly infected and affected by HIV/AIDS. The department’s approach has now been realised in the form of child support grants.³

The national government health and welfare policies provide little cause for hope that the national government will act in concert with civil, professional and scientific organisations. However, the tenor and content of the debate can be changed by improving understanding of what an integrated approach entails, and of the strength and weaknesses of current approaches. In other words, assessment of different emerging models is necessary in order to inform subsequent strategic planning of an effective integrated approach. Part of this assessment is economic in nature, although economic evaluation is not enough; other social and welfare goals must be considered.

An integrated approach to the care of orphaned and vulnerable children

A basic model, outlined by Loening-Vysey and Wilson (2001: 8), is presented schematically in Figure 1. It should be noted that it serves simply to draw out the principles of ‘integration’ and what it can entail.

Figure 1: A Model for Integrated orphan care and support

PRINCIPAL FOCUS	THE NEEDS AND RIGHTS OF CHILDREN
AGENCY	ROLE
Family	identify vulnerable children; day to day care
Community	support children and caretakers; lobby authorities
NGOs/Churches	coordinate community responses; provide material support
State	develop infrastructure; facilitate funding

Loening-Vysey and Wilson’s presentation of a ‘principal focus’ states at the start the values that inform the model. This is a premise of the integrated approach, in order to establish a basis for consideration of appropriate aims, activities and roles for different agencies (condensed in the figure above). Put differently, any attempt to develop an integrated approach begins with the idea that the quality of life could be improved in a cost efficient, politically appropriate, and morally sound way if different agencies or groups of people could coordinate their activities and collaborate. That idea inevitably inspires a vision statement that indicates a broad, but common, goal that different agencies are aiming for, even though they may be taking different routes. Identifying a common goal involves identification of the common values or principles that guide the work of the different agencies. Consequently, the process can be set out in a model or abbreviated as in the case of Loening-Vysey and Wilson’s model.

The outline of different roles for different agencies in the model reflects the need to promote coordination of activities and collaboration between them. Significantly, the model advocates decentralisation of care and support for orphaned and vulnerable children and, in the process, puts forward ‘family’ and ‘community’ as the locus for most activities. NGOs and Churches are distinguished from ‘community-based’ organisations, and are credited with the capacity for broader level action and support.

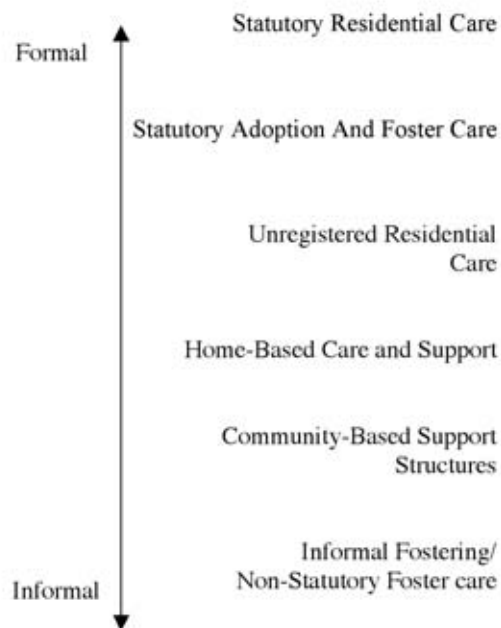
³ See Desmond and Gow (2001), Loening-Vysey and Wilson (2001) and Smart (2000) for detailed discussion of these and other welfare grants, and the limitations on access to, and use of them in the care and support of children.

The state is given primarily a developmental role in the sense of creating an enabling environment in which families, communities and NGOs can work constructively. These distinctions may seem somewhat arbitrary, but they follow the logic of the integrated approach by using the general context as the appropriate reference for setting up a framework for intervention.

The model is an ideal, of course, but what it subsumes is firmly entrenched in political discourse in South Africa. The elements have been introduced and firmly endorsed during the last decade. There was popular demand for participatory democracy during the era of apartheid, followed by the introduction of policies since 1994 that have attempted to meet this expectation. Notably, the ethos of sustainable development has provided a basis for elaboration of the logic of 'integration'. In the last decade, South Africa has developed a sophisticated integrated environmental management policy and associated procedures designed to encourage collaboration between civil society and the state.

Nonetheless, the pursuit of an integrated approach in various sectors of society in South Africa is still very much an experiment. Simply put, its efficacy has yet to be proven even though it resonates with the current political and moral climate. In the field of orphan and vulnerable children care and support in the context of HIV/AIDS, it is still an ideal. In practice, various models are being used. Figure 2 below outlines these models, which range from formal to informal care.

Figure 2: Models of care: From formal to informal



The existence today of informal and community-based forms of care for orphaned and vulnerable children reflects the necessary expansion of such services in this country. In the context of an HIV/AIDS epidemic, the state agencies are overwhelmed by the demand on its limited resources; hence, the existence of a variety of 'informal' responses in an attempt to cope with current circumstances. Generally, the forms of community-based care range from placement of children in homes of members of the extended family, to community support of orphan headed households, to creation of a household or cluster of households of orphans supported voluntarily by members of the community, to the placement of a responsible adult member of the community

in the home of orphans. (Loening-Vysey and Wilson 2001) Furthermore, they are usually supported in some way by an NGO.

None of these models match the ideal of 'integration'. However, they span the range of services, and locations, that are required of an integrated approach. Accordingly, there has been some research to assess them; individually, for their potential to be effective and, collectively, for how they can be combined. We review the work to date in the following section with a focus on the economic aspects of evaluation.

Economic evaluation of different models

One critical component of an evaluation is the cost of an action or actions, in order to enable comparison between actions and, hence, to provide critical information in planning. In the case of orphaned and vulnerable children care and support in South Africa, there has been a small amount of work in the field. (Desmond 2000, HEARD 2001) This work has highlighted the difficulties of economic assessment and the need for additional information and analysis.

Three types of economic assessment are available in relation to HIV/AIDS management generally: cost analysis, cost effectiveness analysis and cost-benefit analysis. (Desmond 2000, HEARD 2001, Newell et al 1998, Schwartlander et al 2001) Cost analyses simply focus on the total cost of programmes at a point in time, and may be used to make projections of costs in the future. They may or may not consider economic costs for which there is no exchange of money, and allow comparison of programmes on the basis of cost only, irrespective of outcomes. While this type of analysis may be useful for programme managers it is of little use for strategic planning because it has no effectiveness measure and therefore no means to compare different interventions.

Cost-effectiveness analyses acknowledge the desired outcome(s) of a programme or, for evaluation of comparable programmes, their common aims (for example, improving health of the people in a particular location). In addition, they acknowledge the conditions that govern the programmes (for example, budget). In other words, cost-effectiveness analyses start by framing the analysis within a particular context. Subsequently, the analysis assesses monetary and broader economic costs of a programme, but it also evaluates those costs in relation to what is intended and what is actually achieved.⁴

Cost-benefit analyses differs from cost effectiveness analysis by attributing a monetary value to all relevant economic costs and benefits (for example, wage value of volunteer labour; financial value of improved health in an individual). A notable limitation is the analytical logic which reduces very different positive outcomes of an action to a single category of 'benefits'. For instance, the benefits of treating an HIV positive person with anti-retroviral drugs can be quantified as earnings gained and costs of treatment averted, but it would be very difficult to quantify and put a value on the benefit for the children of that person (for example, having a parent alive for longer). Another practical limitation is the difficulty in comparing the benefits simply in terms of relative monetary cost even though in some applications (particularly the health of people) it is very difficult to assign monetary values to some benefits, for example the value an individual places on living longer, or on a reduction in the risk of an illness which they may face in the future. In other words, the attribution of monetary values implies an objective perspective, but, in practice, the calculations often depend on the subjective perspective of the person or persons commissioning or carrying out the analysis. The subjective perspective is cloaked, in effect, by a veneer of 'objective' monetary categorisations. In theory, cost-benefit analysis provides

⁴ A useful reference (UNAIDS 1998) is available on the UNAIDS website.

the strongest analytical tool, but there these many practical difficulties with using it for assessing different forms of HIV/AIDS care and support.

In practice, cost-effectiveness analyses are often combined with cost-benefit analyses, and are becoming a standard for use in the field of HIV/AIDS management. These analyses estimate the cost and some of the benefits of programmes in relation to an effectiveness measure. For example the cost effectiveness analyses of programmes to prevent mother-to-child transmission of HIV measure the costs per infection or death averted and the cost saving of not having to provide care to an HIV positive child. (See HEARD 2001 for a review of these studies) While in theory there is no benefit to an expanded cost effectiveness analysis such work can be useful for advocacy purposes. There is no theoretical benefit because benefits included are generally the same for each intervention and therefore do not change the cost effectiveness ranking, furthermore the results still include an effectiveness measure and are not, therefore, comparable to intervention aimed at something else. Returning to the prevention of mother-to-child transmission example; the saved cost resulting from not having to provide treatment to as many HIV positive children is the same for each intervention and the most cost effective option will be unchanged in relation to the other options. At the same time, the costs are still measured per infection or death averted so the analyses are not comparable to other interventions unless they are designed to prevent transmission of HIV from mothers to children. The only time that such an approach would have a theoretical useful application, would be if an intervention based on cost effectiveness analysis had reached full coverage and consideration was being given to the benefit of moving to a less cost effective but more effective intervention. For advocacy purposes highlighting some of the broader economic benefits is useful. Continuing the example, showing that programmes aimed at preventing mother-to-child transmission can be cost saving should be very persuasive to policy makers. Nonetheless, there are limitations to cost-effectiveness analyses which stem from the need, as in the case of cost-benefit analyses, to assign some standard for measurement of desired outcomes. For instance, comparing different models of orphan and vulnerable children care and support requires at the start a common standard for measuring 'care' and 'support'. (Desmond and Gow 2001:16-21)

Desmond and Gow's paper (2001) is the only research in South Africa to date that has attempted specifically to assess the cost-effectiveness of models of orphan and vulnerable children care and support.⁵ They examined six centres that were representative of six models currently in use in South Africa today. Table 1 summarises their findings. Their analysis acknowledges the rationale for this sort of study; namely, to indicate the cost of replicating the model of care and to identify the cost-effectiveness of particular operations rather than actual sites. Costing of a volunteer's time, for example, was based on the general cost of employing a person for a period of time to do that work, rather than on the opportunity cost of each individual volunteer's time. This was done to avoid over estimating the cost of a model of care because of who individuals were rather than focusing on the work that they did. The opportunity cost would be high, for instance, in the case of a business executive who takes time off work to do voluntary service at an orphanage. If, however, the purpose of the analysis is to estimate the cost of orphanages rather than the cost of that orphanage it would not be appropriate to use such a high opportunity cost.⁶ In other words, the study attempted to standardise the input costs of orphan care and support and therefore focus on the structural causes of differences in cost, which is reflected in Table 1 under the column 'Rand per childcare month'. It was not an attempt to

5 Other research that attempts to compare different programmes include Connelly (2001), Haile (2000), Johnson (2001), McKerrow (2001) and Uys (2000).

6 Another possible approach would be to estimate the cost of developing volunteer support: the cost of publicising the need, screening candidates and providing training. Such an approach is useful in contexts where, because of financial constraints, employing someone will never be an option and approaches to care are based on the assumption that they will make use of volunteers.

cost the site where care was being provided but rather an estimation of the model of care provision.

Furthermore, bearing in mind the need to define the common goal of all centres, the study defined 'minimum care'. It did so by using the five categories of existence, identified by Loening-Vysey and Wilson (2001), that are generally deemed to be necessary for the welfare of a child: survival, security, socialisation, self-actualisation and palliative care. The individual categories were a means for identifying particular resources and services that had to be provided in order to fulfil a category of 'minimum care' (recognising that there was frequent overlap between categories). Survival, for example, included the elements of food, clothing and shelter while socialisation and self-actualisation included clothing, hygiene and education. A critical variable in costing these items was the presence and capability (ie the work time and labour skills required) of a caregiver to provide the different components of 'care'. This analysis set out a minimum standard of care and sought to establish the economic costs of providing it within each model. The results are represented in Table 1 under the column 'Rand per minimum childcare month'.

Table 1: CEA of the six models of orphan care

Model of care	Site	Rand per childcare month	Rand per minimum standard child care month
Statutory residential care	Nazareth House (Western Cape)	2 938 (3 873*)	2 590 (3 525*)
Statutory adoption and foster care	Durban Children's Society (KwaZulu-Natal)	609	410
Unregistered residential care	Jardim House (Mpumulanga)	996	957
Home-based care and support	Sinisizo (KwaZulu-Natal)	506	306
Community-based support structures	The Pin Project (KwaZulu-Natal)	**	276
Informal fostering/ Non-statutory foster care	Nceba Village (Eastern Cape)	**	325

* including medical costs associated with the child's HIV positive status

** fail to meet material minimum

The study concluded that state-regulated residential care was, in principle, less cost-effective than family and community-based care for orphaned and vulnerable children. However, the authors recognised that this result did not support promotion of 'community-based' programmes in all places at all times. A confounding factor was the research method which restricted extrapolation of conclusions. The research consisted of a set of case studies that sought to compare the economic merits of different models of orphan and vulnerable children care in relation to a projected standard of 'care'. Comparative analysis in these circumstances was constrained by the fact that the models were being applied under very different conditions. This meant, in the first instance, that comparable data was not always easily obtainable. The material care provided at well-funded children's homes was in no way directly comparable to that provided to children living in poverty. Obviously the care of

children living in poverty is cheaper but this does not make it an appropriate policy option. These difficulties were exacerbated in the cases of the Pin project and Nceba village. The informal nature of care in a context of extreme poverty meant that these models could only be judged as being unable to meet a minimum standard of care. Attempts were made to address this limitation by estimating the cost of replicating the model rather than the cost of that model and estimating how much the provision of minimum care would cost in those settings where it was not achieved.

These constraints on comparative analysis highlight the problems with drawing firm conclusions about the efficacy of home and community-based orphan care and support. Firstly, the study shows through its limitations and omissions that the presence, let alone treatment and care of HIV positive children in many home and community-based programmes may be unknown, denied or simply ignored if there is no ready access to public health facilities that are capable of identifying the presence of the virus in the child and providing medical therapies and welfare support. Secondly, the capacity of these programmes to provide effective care and support for HIV/AIDS infected and affected children cannot really be assessed in the absence of, and limited access to, these health facilities. In other words, much depends on the establishment of supporting infrastructure; that is, on the state playing a developmental role with regard to care and support. Thirdly, in view of the above, the scope for 'scaling up' home and community-based programmes is a question to which no answer can yet be given. It is a logical step, in principle, but how it is to be done requires rigorous scenario planning and economic assessment of what the state could provide in the form of infrastructure and of ways of coordinating its activities with NGOs and community-based organisations.

The common denominator in the constraints summarised above is the state; more precisely, the absence of a comprehensive initiative by the national government to consider and test ways of combining state, NGO and home and community-based programmes. This means that researchers are not able to assess what combinations show promise for effective management of HIV/AIDS. In other words, the state has yet to create an enabling environment for evolution of an integrated approach for orphan and vulnerable children care and support. The economic debate is contained, instead, within very narrow parameters. On the one hand, the government persistently emphasises, through its repeated reference to affordability and resources, the absolute financial costs of any form of care and support for those infected and affected by the epidemic. Consequently, the government tends to adopt the position that it is constrained by the limited resources it can deploy and, hence, the state can play only a very limited role in combating the epidemic. On the other hand, NGOs, activists and scientists emphasise the relative costs⁷ and possible savings. The results generally favour the latter and, in specific instances, indicate that the government could play a more constructive development role. However, despite ample demonstration of the cost-effectiveness of specific forms of care and support, the terms of the debate inevitably prevent a comprehensive assessment of various combinations of state and civil programmes. The protagonists, it seems, tend to talk past each other. Nonetheless, they each present factors that will need to be computed into the design and implementation of 'integrated' programmes.

For instance, 'Mother-to-child transmission' (MTCT) of HIV/AIDS – before, during and after birth of a baby – features prominently in current debate on how to manage the epidemic. The economic issue is simply that a child's HIV status is a major factor for any assessment of the costs of care and support. Caring for an HIV positive child

7 Relative costs consider the cost of one action compared to another one aimed at achieving the same end. For example the relative cost of different orphan care options. A focus on relative costs assumes that the outcome is desirable and concentrates on the most efficient way of achieving it. Absolute cost considers the entire cost of an intervention, a focus on such costs implies that a decision is still necessary as to whether the outcome is desirable.

entails considerably more costs in the form of medical care than for an HIV negative child. There is general consensus in and beyond national government circles that use of antiretroviral drugs could save the lives of 15-20 000 children in South Africa per annum. (Soderlund et al 1999; Wilkinson et al 2000; Zwi et al 2000) Furthermore, there is general consensus that the main cost of preventing MTCT does not lie not in the cost of the drugs, but in setting up the infrastructure, in running counselling and testing programmes and in training and employing staff, to ensure effective treatment. (Abt 2000; Hensher 2000; Roux et al 2000; Zwi et al 2000)

Two types of costing studies have been undertaken with regard to the prevention of MTCT, those which examine the budgetary implications and those focusing on the cost effectiveness and possible cost saving of different options. Government research has emphasised the cost of setting up and running programmes to provide antiretroviral drugs (Hensher 1999, 2000) while others (Connelly 2001; Marseille et al 1999; McKerrow 2001; Stover 1999; Skordis and Natrass 2001; Zwi et al 2000) have argued that the relative costs and direct savings make such intervention cost saving.⁸ While the former is based on the findings of the latter, the latter does not address questions of financing. For instance, Zwi et al (2000) argue that the cost of a comprehensive programme would cost less than 1% of current spending on health care. However, a recent study in Hlabisa district concluded that the current public health budget for the district would not be able to sustain a comprehensive programme. (Personal communication: F Tanser, Africa Centre, Mtubatuba)

As the Hlabisa study suggests, the limitation of the economic debate on HIV/AIDS treatment generally, and MTCT programmes in particular, is that the central issues are not only those relating to cost, but where and how the government should allocate public funds. Much the same can be said of the debate about home and community-based programmes. Many NGOs have promoted home and community-based programmes as an alternative to state-based programmes, but the central issue is the need to develop an integrated approach to care and support. Recent research highlights this point. (Desmond and Gow 2001; Haile 2000; HEARD 2001; Johnson et al 2001; Uys 2000) However, much of the work to date suffers from various limitations⁹ such that the efficacy of home and community-based programmes, let alone of an integrated model has yet to be shown. However, they do provide important guidelines for future research towards development of integrated models of care and support.

Firstly, there is a need for research that takes as its starting point an integrationist position, as opposed to comparing one form of care with another. Cost comparisons are a vital element, but research in this vein alone cannot shift the terms of the debate. For instance, comparisons of programmes cannot show how to 'scale up' one programme in relation to another unless they are set within a broader strategic framework. A government initiative to expand support for home-based care projects, as opposed to village or town situated 'community-based' projects, for example, cannot be assessed thoroughly if there is no specification of the government's broader aims and agenda and the purpose and role of home-based care projects (how they fit into those aims and agenda). In contrast, starting with an integrationist perspective will inevitably draw the attention of the researcher to the question of how to incorporate 'scaling up' of programmes in an economic analysis.

Secondly, cost comparisons need to be made from several perspectives. For instance, an integrated approach must take into account how promotion of one form of care

8 C Brown, at the School of Economics and Management, University of Natal, is currently writing a PhD thesis that focuses on developing a thorough model for economic assessment of the costs of HIV/AIDS prevention and treatment.

9 See HEARD (2001) for a useful discussion of these limitations, which include problems with effectiveness measures similar to those encountered in the evaluation of orphan care options and they also pay little attention to the cost implications for other facilities of introducing new models of care into communities.

will affect people's access to, and use of, other forms of care. Comparison of home and community-based programmes with hospital care needs to take into account the potential cost savings in the operation of the hospital. However, it also needs to consider whether the shifting of operational costs impose additional burdens, both financial and time, on the people who come to rely on home and community-based programmes with families having to purchase materials and drugs and possibly losing income because time is being used to provide care rather than on productive labour. In a different vein, the costs of providing welfare services needs more thorough investigation, particularly in view of projections that the state welfare agencies will not be able to cope with the demand brought on by the epidemic.

Thirdly, there is a need for research into how local conditions influence costs. While it is essential to scale up interventions to deal with escalating problems (increasing levels of illness, death and orphaning), it is equally important to recognise what changes will have to be made to interventions to tailor them to local conditions and to combine them with existing responses. Research is required into how such tailoring should occur, how much it would cost and how local conditions and existing interventions would influence cost structures. A related area of research is to establish the cost of the tailoring, as this will be a necessary part of scaling up interventions.

Fourthly, a particular problem for researchers is the question of how to incorporate the quality of care and support into economic calculations. It is feasible, though difficult as we noted in our discussion of the work of Loening-Vysey and Wilson (2001) and of Desmond and Gow (2001). It requires an assessment of the values that inform a programme, followed by definition of standards of care in line with those values and, thereafter, translation of the standards into material (quantifiable) measures that can be used for economic assessment. However, if research is to assist the development of an integrated programme – in a locality, in a region or nationally – it needs to compare the values, standards and measures of existing programmes in order to project what is desirable and feasible for an integrated programme. This in itself takes the researcher into the realm of scenario planning and into presuming a developmental role.

Conclusion

We have argued that the current interest in home and community-based programmes for orphan care and support is misplaced if it is promoted as an alternative to state-based programmes. Recent research suggests that home and community-based programmes can be more cost-effective than state-based programmes, but to couch debate in terms of an 'either-or' perspective misses the reason for considering home and community-based programmes in the first place. The proposition emerged not only because it was becoming evident that state health and welfare agencies could not cope with the HIV/AIDS epidemic on their own; it arose also in the face of evidence that no agency could cope on its own. In other words, consideration of home and community-based programmes has been part of a process towards considering how to combine the interventions of a wide range of health and welfare agencies. This process is not always acknowledged in economic research in South Africa. Much of the research, to date, focused on the costs and, occasionally, the benefits of individual interventions. There is a need for research that considers appropriate effectiveness measures and which examines how costs and benefits might change in relation to different contexts and changes in care and support demands, as the HIV/AIDS epidemic escalates.

The development of integrated management strategies, however, requires more than cost effectiveness analysis of different components. Further research is needed into questions of economies of scale and scope, and financing of combinations of different forms of care and support. In particular, identifying how cost and benefit structures

change as programmes increase in size and interact with each other is essential. The challenges involved in research of this nature are somewhat different from those encountered in existing work. The main difference is that the focus of current studies on existing interventions needs to be framed within broader terms of reference; notably, economic analysis of possible combinations of different programmes.

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Costs and benefits of treatment and prevention strategies

by Nathan Geffen ¹

The imperative to treat HIV and prevent new infections

There is an increasing demand for a comprehensive treatment and prevention plan, including the use of antiretrovirals, for managing the South African HIV epidemic.² A call for such a plan was recently put forward by the Congress of South African Trade Unions at the Millennium Labour Council. (Cosatu 2002) This demand has its basis in human rights arguments and covenants, (Heywood 1998) especially the Bill of Rights in the South African Constitution, which guarantees the rights to life and dignity. The Constitution also puts an obligation on the state to progressively realise the right of citizens to health-care services. (Constitution 1996) The HIV epidemic places a challenge before South African society, including government, the courts, unions, religious organisations and civil society to meet these rights. A small minority of HIV-positive South Africans,³ either because of their economic status or because they are enrolled in drug trials or pilot projects, have access to the necessary care and treatment that can substantially prolong their lives. If immense human suffering is to be avoided, it will be essential over the next decade massively to reduce the number of new infections and increase access to adequate health-care for the bulk of the HIV-positive population.

In the absence of adequate treatment and prevention, the consequences of the HIV epidemic will be catastrophic. (Dorrington 2000 and 2001; Abt Associates Inc 2001) By contrast, in developed countries, including the United States⁴ and the members of the European Union, it has been estimated that mortality in the HIV-positive population has decreased substantially. (Mocroft et al 1998; UNAIDS 2001) Brazil is a developing country with a slightly lower per capita GDP than South Africa, yet according to the Brazilian Ministry of Health, 'In 1995, the AIDS death rate was 12.2 per 100 000 population; in 1999, it had dropped to 6.3/100 000 population, a reduction of approximately 50%. In large urban centres such as Sao Paulo and Rio de Janeiro (which account for more than 31% of the known AIDS cases in the country), the decrease in mortality has been even more marked; of approximately 70% (SP – 54%, Rio – 73%) in the period 1995-2000.' (Ministry of Health of Brazil 2001: 27)

There are two reasons for the lower number of deaths due to HIV in these countries: better management and treatment of opportunistic infections, but more importantly, the availability of antiretroviral treatment to the majority of those who need it.

Furthermore, while South Africa is experiencing a paediatric HIV epidemic as a result of vertical transmission of HIV, this aspect of the epidemic has become insignificant in much of Brazil and developed countries as a result of comprehensive prevention programmes using highly active antiretroviral regimens. Even least-developed countries, such as Uganda, which do not have the resources to consider offering

1 The author is indebted to Leigh Johnson for his assistance with technical issues discussed here and supplying numerous references. Johnson has also given the author permission to use his unpublished work. This has been indicated where relevant.

2 In a recent radio interview, Professor William Makgoba, head of the Medical Research Council, called for the judicious use of antiretrovirals in the public sector. Similar calls have been made by former President Nelson Mandela, Former Archbishop Desmond Tutu, Archbishop Njongonkulu Ndungane, Judge Edwin Cameron and trade unions including Cosatu and Nactu. The Bredell Consensus Statement (2002) is a call by many health-care workers, scientists and NGOs for the use of antiretrovirals in the public health sector.

3 A precise number is unavailable, but informal estimates put this at approximately 20,000 people.

4 The US experienced a 42% drop in deaths due to HIV in 1997, with the introduction of highly active antiretroviral therapy.

comprehensive treatment options, are having more success at halting the growth of the epidemic and reducing the number of new infections than South Africa. Part of this success has been attributed to the political will of ruling Ugandan politicians.

The implication of this is that more comprehensive treatment and prevention strategies, incorporating antiretroviral medicines and greater public education, are potentially a means of mitigating the effects of the HIV epidemic in South Africa. But the cost of a public highly active antiretroviral therapy (HAART) programme would be substantial. (Abt Associates 2001 and Hensher 2000) This is obvious even at a superficial glance.⁵ Assuming that at some point in the epidemic two million people would access a publicly available treatment programme, the antiretroviral drug costs alone, for the cheapest legally available regimen in the country, would amount to R16.8 billion, or nearly 60% of the 2001/2002 health budget.

As of 22 January 2002, the cheapest triple-combination HAART regimen available in South Africa was R539.95 per month excluding both VAT at 14% and a R65 prescription fee. (HIV/AIDS Clinicians Society 2002) This is for Didanosine, Stavudine and Efavirenz, which is often not an appropriate prescription for patients. Another commonly prescribed regimen (Zidovudine, Lamivudine and Nevirapine) costs R1 160 per month (also excluding VAT and prescription fee). While the median income for households is less than R1 400 per month and unemployment is 37% (expanded definition), (South African Survey 2001) HAART will, at these prices, remain inaccessible to a large portion of the HIV-positive population.

Implementing a comprehensive strategy for treatment and prevention will be challenging in a health-care system characterised by a legacy of inefficiency and inequity and a political environment where until recently government's response to the epidemic has been marked by confusion and denial. In the *South African Health Review, 2001* (Health Systems Trust 2002: xi) the preface states 'Worryingly, many health services managers have a low sense of personal accomplishment. Huge demands, difficulties in prioritising, inadequate management skills, lack of rewards for competence or sanctions for incompetence, and hierarchies that are too rigid, all impact upon their ability to deliver quality health care. Other difficulties include inappropriate organograms, lack of financial delegation, unsatisfactory communication between provinces and districts and inconclusive appointments of staff, (especially to strategic positions) many of whom are in acting positions.' It further states, 'One of the defining characteristics of 2001 was the increase in health activism, spurred by the growing ravages of the epidemic and sometimes unclear and ambiguous messages from government and the country's leadership.'

This chapter examines why it is imperative for more comprehensive treatment and prevention strategies, including HAART, to be introduced, as well as some of the research that has been conducted into determining the cost of these strategies. The Centre for Actuarial Research (CARE) at the University of Cape Town has been assisting the Treatment Action Campaign (TAC) with the development of a detailed treatment and prevention plan. In the course of this collaboration many unanswered research questions have been identified. There are a plethora of opportunities for researchers to contribute to clarifying these issues, which once resolved will allow for more accurate estimates of the costs and benefits of a treatment and prevention plan. These issues are also discussed in this chapter.

The cost of failing to treat

The title of this chapter refers to the costs and benefits of both treatment and prevention. There is a fallacy, which became prominent in public debate during the

⁵ For a discussion on the barriers to treatment in the developing world, see Panos Institute (2000).

establishment of the United Nations Global Trust Fund against AIDS, Tuberculosis and Malaria (GTF), that treatment and prevention strategies compete for the same resources. Proponents of this view typically argue that prevention interventions are more cost-effective than treatment ones. This view misunderstands the complementary nature of the two, besides neglecting the ethical issues that arise from failing to provide treatment. Merson et al (2000) provide evidence that counselling modifies the sexual behaviour of people, thereby reducing transmission rates. Voluntary counselling and testing (VCT) are a crucial part of the treatment and prevention plan discussed here. However, VCT uptake rates are likely to be poor when offered without a treatment incentive. Making antiretroviral treatment available to people who get tested, gives them a reason to accept VCT. The stigmatisation of HIV in South Africa cannot be alleviated sufficiently while the disease remains an effective death sentence for millions of people. Offering only prevention interventions will marginalise the large HIV-positive population and fall short of achievable prevention targets.

Social consequences

Health care system

The South African Medical Research Council estimates that nearly 6 million people are infected with HIV. (Dorrington et al 2001) A model developed by the Actuarial Society of South Africa has calculated that the HIV epidemic will bring life expectancy down to nearly 40 before 2010 in the absence of adequate health-care interventions. (Dorrington 2000, 2001; Actuarial Society of South Africa 2001) HIV is already the single largest cause of death and will be responsible for more than 50% of deaths by 2004. The Department of Health in its annual antenatal clinic survey estimates a different seroprevalence rate – 4.7 million in 2000 (Department of Health 2001), but the implication of dire social consequences in the absence of adequate interventions are the same.

Managing the HIV epidemic using the government's current parameters is straining the health-care system. A recent Department of Health report states: 'The largest single impact of HIV/AIDS on the public health sector lies in the hospital sector. Research commissioned by the Department of Health indicates that in the year 2000 an estimated 628 000 admissions to public hospitals were for AIDS-related illnesses, which amount to 24% of all public hospital admissions. Modelling indicates very clearly that, as more people who are already HIV positive become sick each year, this demand for hospitalisation will increase steadily every year in the absence of significant alternative interventions. In financial terms, the cost of hospitalising AIDS patients in public facilities is already likely to be at least R3.6 billion in the current financial year, or 12.5% of the total public health budget.' (Department of Health 2001:3) This picture is confirmed by Health Systems Trust: 'A large number of South African nurses, doctors, teachers, parents and persons living with HIV/AIDS have worked beyond the call of duty to deal proactively with HIV/AIDS. It is now necessary to ensure that this is complemented with a stronger institutional and societal response.'

Another source of concern is the direct effect of the epidemic on health-care workers. Hensher (2001) reports on estimates by Abt Associates regarding HIV seroprevalence rates among health-care workers. The seroprevalence rate among student nurses is estimated at approximately 30% in 2002 and 15% among staff nurses. The seroprevalence rate among doctors is also high at just under 10%, though it is reasonable to presume that most doctors can afford HAART. While these are estimates,

there would have to be a very large margin of error to justify complacency over the likely impact on personnel in the public health-care system.

The interventions of the treatment and prevention plan presented here, if implemented effectively, offer the prospect of reduced hospitalisations and less job dissatisfaction among health-care workers than a scenario without antiretroviral treatment. Combating the epidemic also provides an opportunity to address equity and infrastructural issues affecting the public health-care sector with the positive consequence of improving management of all diseases, not only HIV, and reducing the inequality between the public and private health-care systems.

Orphans

A model by Johnson and Dorrington (2001) indicates that, in the absence of widely available HAART, the number of children who will have lost at least one parent by 2014 will be approximately 5.7 million. The number of maternal orphans under the age of 18 reaches roughly 3 million in 2015 and the number of paternal orphans peaks at 4.7 million. The number of double orphans also grows until it exceeds 2 million. The authors point out that relatively few of these children will be HIV-positive and that rates of orphanhood are likely to be highest among the poor. To understand the effect of HIV on the orphan population, consider that in the absence of the epidemic approximately 2.6% of children under 15 are maternal orphans. With AIDS, this number rises to nearly 15% by 2015. By introducing HAART into their model, the authors conclude that the number of maternal orphans under the age of 15 can be halved by 2015. Their analysis takes into account various social factors including adherence rates on antiretroviral therapy. Their results did not substantially change with sensitivity testing of their less certain parameters, such as the effect of having access to antiretroviral therapy on fertility and sexual behaviour.

The authors point out that the number of orphans generated by an ineffectively managed epidemic will be one of its most serious long-term social consequences. The outcomes will include increased juvenile crime, lower literacy levels and an economic burden on the state. It should also be noted that this research does not consider the morbidity associated with HIV. Before many children are orphaned, their parents are likely to go through a long period in which their ability to meet their parental obligations will be seriously hampered by chronic illness.

When calculating the financial cost of treatment, it is also important to consider the savings to the state of having to pay fewer foster child grants and lower orphanage costs. In our research we have found this to be a complex calculation and further work needs to be done to reach a reasonably accurate estimate of this cost. This complexity arises from having to take into account such factors as estimating how many orphans will actually be able to be processed by an already overburdened social welfare system, the considerable administrative expenses associated with the current orphan-placing mechanisms, the number of orphans who will be looked after by orphanages and the costs of building and running orphanages.

Macroeconomic consequences are dealt with in detail in Chapter 1.

Legal consequences

The Department of Health (2001) warns of the legal and political consequences of not improving the management of the HIV epidemic. These concerns are valid when considering the recent judgement by the Pretoria High Court in the case between the Minister of Health and the TAC, (Pretoria High Court 2001) as well as the legal confrontation between the government and the Pharmaceutical Manufacturers Association (PMA), which was concluded in April 2001. Litigation is being prepared

or has begun with regard to the perceived anti-competitive practices of pharmaceutical companies on patented medicines and the practices of medical schemes with regard to their management of HIV. (TAC 2002a) It is conceivable that if government fails to progressively implement a comprehensive treatment and prevention plan, it might face further legal action in the future.

Opportunities and by-products of treatment and prevention

The most critical benefits of treatment and prevention are lives saved, the prevention of human misery and the assertion of the constitutional rights to life and dignity. However, there are further opportunities that would come with the implementation of a treatment and prevention plan, including the strengthening of the local generic pharmaceutical manufacturing industry and its potential to create jobs and economic growth, a change in attitudes towards norms that subordinate the role of women in South African society as well as increased scientific literacy as a result of public educational programmes such as those conducted by some AIDS service and non-governmental organisations. These are briefly examined.

Groups such as Medecins Sans Frontieres (MSF), Oxfam, the Consumer Project on Technology and the TAC advocate that the availability of generic antiretrovirals will have a significant effect on access to these medicines in South Africa. Because of the variable tolerance and variable periods until resistance that occur among patients using antiretroviral medicines,⁶ there is a need to maximise the number of accessible regimens. Bio-equivalent generic antiretrovirals are available, or will soon be available, from a number of suppliers, including at least one South African company, a number of Brazilian and Indian ones and the Government Pharmaceutical Organisation (GPO) in Thailand. The prices of generic antiretroviral drugs are sometimes more than 30% cheaper than their brand-name counterparts. The Thai government has stated that it is about to offer Stavudine, Lamivudine and Nevirapine in one pill at US\$27.66 (approximately R313) per month. (AFP 2002) MSF imports generic AZT, Lamivudine and Nevirapine at approximately R460 per patient per month from Brazil for its pilot project in Khayelitsha. (TAC 2002b) The economies of scale that will arise from treating millions of people in South Africa (and possibly southern Africa) will generate further possibilities for drug prices to come down.

In the treatment and prevention plan discussed here, costs have been calculated on the basis of generic medicines being available in South Africa.⁷ This is not farfetched. As argued by Berger (2001), the legal apparatus for achieving this are in place.⁸ Should voluntary or compulsory licences for the manufacture of generic antiretroviral medicines become available, there is likely to be an associated increase in demand for locally produced medicines. Locally produced drugs might help insulate drug prices against excessive exchange rate volatility and cover shortfalls that are likely to occur due to massive demand if a public treatment programme is implemented. This should in turn positively affect the demand for jobs in the generic pharmaceutical industry.

The subordinate role of women in both social and sexual relations in South African society is well documented. (See Joint Monitoring Committee 2001) Various activist groups advocate that changing behavioural norms of males towards females as well as empowering women in their sex lives is a crucial aspect of dealing with the HIV epidemic. Programmes and public information campaigns run by various

6 Patients differ in their tolerance of different antiretroviral drugs, as well as the period of time for which a particular regimen remains effective at suppressing the virus in their bodies.

7 Only prices for bioequivalent drugs have been used.

8 See Geffen (2001b) for a discussion of human rights and ethical issues surrounding patents in this context.

organisations are intended to assist in this process. Voluntary counselling and testing, mother-to-child transmission prevention programmes, HIV/AIDS support groups and the offer of post-exposure prophylaxis to rape survivors also present opportunities for changing these norms.

Other research into treatment and prevention costs

Harvard Consensus Statement ⁹

The Harvard Consensus Statement (Individual Members of the Faculty of Harvard University 2001) costs an antiretroviral treatment plan for poor countries. Its aim is stated as follows, 'We believe that on moral, health, social and economic grounds the international community should provide the scientific and financial leadership for a rapid scaling-up of AIDS treatment in the poorest and hardest-hit countries in the world. Initial efforts should be focused on those with more advanced HIV infection, with a target of at least one million AIDS patients in Africa in treatment within 3 years as a first objective, and indeed more if feasible, and with a proportionate scaling up in hard-hit countries in other parts of the world.' (p 2)

The contribution of the statement is that it provides (1) an acknowledgement from an academic and scientific community that HIV/AIDS in poor countries can be treated, (2) a practical vision that requires translation into an operational plan for treating one million people over the next three years and (3) recognition of global economic inequalities and the debt burden as obstacles to treatment that require financial leadership from wealthy countries. This last point is emphatically made, 'The disparity in access to effective treatment between wealthy countries and developing countries is neither scientifically nor ethically justified at this time.' (p 4)

The statement also sees weak infrastructure in poor countries as a challenge to improve facilities and human resources rather than an excuse to deny HIV/AIDS treatment. 'In those areas where existing treatment infrastructure is lacking, this should never be cited as an impasse by which to forego treatment. Efforts should be initiated to build the clinical and diagnostic capacity to furnish and monitor therapy, making use in the interim of geographically distant infrastructures (including those in wealthy countries) to monitor for efficacy of the interventions and potential adverse effects of the antiretroviral drugs.' (p 12)

A proposal is put forward for improving adherence to HAART based on the Directly Observed Therapy (DOT) model used for treating tuberculosis (TB).

The cost of their treatment proposal is estimated to be about US\$4.2 billion per year in five years time for treating 3 million people. This is approximately 0.01% of the GNP of the world's richest countries and 'a small price to pay for treatment on a meaningful scale in the midst of the worst worldwide pandemic in 600 years'. (p 18) The statement emphasises that treatment programmes must be funded with grants to poor countries, not loans.

The signatories further propose that an HIV/AIDS Prevention and Treatment Trust Fund be established. Wealthy countries should provide financial and scientific leadership, while poor countries should provide political leadership and institutional support. UNAIDS and WHO should assume leadership of the programme. Coincidental with the release of the statement were the first steps to establish the GTF.

⁹ The analysis in this section is based on the TAC's response to the Harvard Consensus Statement (TAC, 2001). written by Nathan Geffen and Zackie Achmat. It is available from <http://www.tac.org.za/harvresp.rtf>.

Table 1 summarises the Harvard Consensus Statement calculation for treating one million people within three years, as of the third year.

This works out to US\$1 123 (approximately R12 700) per patient per year. Our preliminary analysis indicates that this estimate is a good first approximation, though

Table 1: Harvard Consensus Statement calculation for treating 1 million people

Testing	US\$143 million
Medicines	US\$650 million
DOT	US\$200 million
Clinical (e.g. CD4 counts)	US\$230 million
Research	US\$25 million
Total	US\$1.123 billion

perhaps too high. It is worth noting that, since the statement was released, the cost of antiretroviral medicines, generic and patented, has dropped, arguably rendering the US\$650 per patient an exaggeration.

By the fifth year of the Harvard proposal, three million patients in developing countries, including India, would be on treatment. Projections beyond five years are not made, because, the statement argues, by then treatment options are likely to have changed.

In the table, 'Testing' refers to the costs of initial HIV status counselling and testing. 'Medicines' refers to the cost of antiretroviral drugs. The authors assume that HAART costs US\$500 per year for 70% of patients and \$1 000 per year for 30% of patients, who are intolerant of, or resistant to, cheaper regimens. 'DOT' refers to the cost of monitoring patients and ensuring they adhere to their treatment regimens. 'Clinical' refers to the cost of consultations with medical personnel and blood tests. 'Research' refers to various areas of research that the statement proposes.

- ❑ The Harvard Consensus's cost analysis must be seen as an approximation of the cost of a comprehensive treatment programme. It is not a detailed country-by-country analysis. In particular, since their analysis aggregates costs over multiple countries, most of them with a lower per capita GDP than South Africa, it is to be expected that costs in this country will be higher. Nevertheless, it is worth noting some aspects of the statement's quantitative results, so that more detailed and accurate estimates can follow from it.
- ❑ The signatories state, 'The proposal also recognises the immediate need to build additional infrastructure in resource-poor countries through the support of donor funding.' (p 17) However, there is no budget item for this in their quantitative analysis.
- ❑ The possibility of developing cheaper technologies for viral load monitoring, CD4 counts, better TB testing, liver tests and so on is not explored. The statement assumes that CD4 and viral load tests can be ignored, an assumption many health-care professionals would find problematic.
- ❑ Administrative costs, such as managing the programme, seem to have been ignored. Hopefully these would, for the most part, be fixed and amount to a small fraction of the total cost. However, human resource development and managerial capacity are critical to ensure that HIV/AIDS treatment does not undermine a fragile health care system but that it builds a model health care service.

- ❑ Mother-to-Child Transmission Prevention (MTCTP) of HIV is not considered in the statement. It should be because many women may be in the very early stages of HIV infection and therefore would not require ARVs. In this scenario, MTCTP is critical. It would prevent thousands of HIV infections and, as argued in more detail below, there is unanimous consensus in all studies of MTCTP that it is cost-effective. Recent research indicates that it would also be cost-saving. While there are legitimate concerns over whether middle-income countries with high prevalence rates can cover the cost of HAART, there is little doubt that they can cover the cost of MTCTP.
- ❑ The statement proposes using a methodology similar to monitoring TB patients for monitoring and improving the treatment adherence of HIV/AIDS patients. In the *South African Health Review 2000*, Health Systems Trust reports that the expansion of DOT has resulted in an increased TB cure rate. Where DOT programmes are weak, such as in KwaZulu-Natal, the TB cure rate is worsening.
- ❑ The HAART DOT model recommended in the statement, which has been used with success in Haiti, is an option worth considering. However, the current science of antiretroviral treatment requires life-time adherence, unlike TB treatment. There are therefore practical issues to be considered in advocating that HIV patients be monitored for adherence at the same level as TB patients for their entire lives. Patient autonomy and dignity will assist treatment adherence. Autonomy can be promoted through support groups and treatment counsellors. They can assist people living with HIV/AIDS to initiate and cope with the changes to their daily routines required by taking medication. Increased treatment literacy levels, decreased stigmatisation and better direct access to medicines will all assist in the development of patient autonomy but they have to be considered as necessary at the outset. These models (DOT and patient autonomy) are not mutually exclusive and they could be developed in tandem.

International Monetary Fund (IMF) policy discussion paper

An IMF policy discussion paper (Haacker 2001) aims to evaluate the impact of HIV/AIDS on health-care services in southern Africa and discusses 'obstacles to improve the quality of health services in the region'. (p 2) In fact, the paper compares health interventions using HAART versus treating opportunistic infections and offering palliative care only.

With regard to South Africa, the cost of preventing opportunistic infections is estimated to be US\$79 per patient per year. For treating opportunistic infections, the cost is estimated at US\$698 per patient per year. The cost of palliative care is estimated at US\$25.80 per patient per year. These estimates come from World Bank.

The cost of HAART is estimated at US\$1 500 per patient per year including support costs. This is significantly higher than the Harvard Consensus Statement estimate of US\$1 123. HAART is assumed to extend life by only two years on average because the 'quality of health services in Southern Africa is relatively low'. (p12)

Haacker further assumes that palliative care and prevention of opportunistic infection coverage is 30%. The coverage rate for treatment of opportunistic infections is 20%. These assumptions are applied to all countries in his analysis. He calculates the cost of all these health interventions, including HAART, at coverage rates of 10% and 30%. It is administered for the last four years of life. All of these coverage rates refer to the public sector.

Haacker's output is percentage of GDP spent on treating HIV/AIDS patients. Using the coverage rates described above, he estimates that palliative care, opportunistic infection prevention and treatment will account for 0.2% of South Africa's GDP in

2000 and double to 0.4% by 2010. Introducing HAART for 10% of the population increases this to 0.3% and 0.9% of GDP for 2000 and 2010 respectively. If the HAART coverage rate is increased to 30%, this goes up to 1.4% of GDP.

The IMF analysis concludes by stating, '... with the possible exception of South Africa and Botswana (and there only to a limited extent), none of the countries in the region will be able to offer general access to highly active antiretroviral therapies through the public sector.' Furthermore, '... it is important to realise that, given the serious shortages in personnel and infrastructure the health sector is facing, the scope for alleviating the impact of HIV/AIDS on the health sector through financial aid is limited.' (p 15)

A problem with the IMF analysis is the lack of rigour in its assumptions. Very broad estimates are made and applied to a range of countries with significantly different resources and seroprevalence rates. Particularly questionable is the assumption of an average of only two years of extra life for patients on HAART. The calculations must be considered rough approximations at best. Even assuming the correctness of the calculations, the conclusion that South Africa can only treat to a limited extent is not substantiated.

If 1.4% of GDP over a period of one year will extend the lives of 30% of the South African HIV-positive population (3% of the total population) over one year, it seems reasonable to ask why aiming for 100% coverage of the HIV-positive population (or over 10% of the total population) at less than 5% of GDP should be fiscally unsound. It is beyond the scope of this chapter to examine the feasibility of the public sectors of other countries in southern Africa to provide HAART, but it should be noted that the Botswana government is committed to a countrywide programme.

Issues for consideration in the development of a treatment and prevention plan

This section describes key research issues that have arisen in the development of a treatment and prevention plan by the TAC in collaboration with CARE.

The interventions being advocated by TAC include VCT, MTCTP, adult and paediatric HAART, the management of sexually transmitted diseases (STDs), post-exposure prophylaxis, palliative care (in particular, home-based care) the distribution of condoms, health-care infrastructure and poverty alleviation via social grants. The plan is a work in progress and will continue to be so long after the first public version is made available. It is not meant to replace current interventions aimed at the HIV epidemic but to supplement them with interventions likely to have a significant effect on morbidity and mortality.

Modelling of the progression of the extent and effect of HIV on the population is being done using the ASSA 2000 model and extensive, currently experimental, modifications to it to allow for the various health interventions. This process is known as demographic modelling. The outputs of the demographic modelling process are used as input to costing models. Thus far modelling and costing has been confined to the VCT, MTCTP, STD, condom distribution, home-based care and HAART interventions. Additionally the savings that may result from reduced hospitalisations and reductions in numbers of orphans are being examined.

The proposed interventions will require community education programmes to ensure their success. A community-driven programme for MTCTP is discussed and budgeted in Galbraith and Bennish (2001). Beyond MTCTP, an analysis is needed of appropriate models for community education for other interventions.¹⁰ The details of these

¹⁰ Civil society organisations, which have created many examples of mobilisation and education around HIV issues, have a crucial role in this regard.

programmes need to be determined in order to calculate their financial costs accurately and to ensure that they are implemented methodically.

A crucial issue that must be resolved is how a national treatment and prevention plan will be financed. A HAART treatment programme will cost billions of rands. Clearly the costs have to be distributed between medical schemes, people with incomes requiring HAART and the state. The private sector serves approximately 17% of the population,¹¹ (HST 2001) yet more than 50% of health-care spending in South Africa is spent by the private sector. (Haacker 2001) This is incompatible with a workable response to the HIV epidemic. The public health-care system will experience a heavy burden no matter how the epidemic is handled, therefore it is crucial to minimise this impact by either moving as many income earners as possible into the private sector or by substantially increasing public sector funding through taxation, a national health system, debt, accessing the GTF or some other means. For income-earners, a scale of benefits system should be considered, where patients contribute to the cost of their treatment in proportion to their incomes.

Perhaps one of the most crucial and difficult issues to consider is infrastructure. While many health facilities in South Africa, both private and public, are in a position to provide, with little additional effort, the health interventions discussed here, there are also many that lack critical infrastructure, including adequate communication facilities and road access. A detailed plan will be required for determining if and how the interventions discussed here can be rolled out to these under-resourced facilities. In addition, training programmes for doctors, nurses and counsellors need to be planned and implemented. Because the science of the epidemic is changing continuously, a system for distributing essential new knowledge to health-care workers will need to be developed.

One important intervention that is not examined in the costing and modelling analysis by TAC and CARE is post-exposure prophylaxis (PEP). PEP is a difficult intervention to cost and model because too little data is available on the transmission of HIV through rape in South Africa, as well as the current and potential uptake of this intervention and the extent to which it is offered. Also, the reduction in transmission due to post-exposure prophylaxis after rape is not well understood, although the work of Adrienne Wulfsohn of Sunninghill Clinic in Johannesburg indicates that it is effective. These issues are only slightly better understood for occupational injury transmission. (CDC 1998 and 2001) The Centre for Disease Control uses 81% as its estimate of reduction in transmission due to occupational injury (CDC 2001) (no corresponding figure is available for rape). Work by Alan Smith of King Edward Hospital in Durban, which has extensive experience with occupational injuries in the presence of HIV, found negligible transmission after PEP using a combination of antiretrovirals. Investigating the effects of PEP on demographic factors such as HIV seroprevalence and building a costing analysis would be a useful area of research.

Sexual prevention barrier methods include condoms, femidoms and microbicides. Condom and femidom interventions, a crucial part of any treatment and prevention plan, are examined elsewhere in this volume. Microbicides are chemicals inserted into the vagina or rectum to reduce the risk of transmission of sexually-transmitted diseases and HIV. They are currently experimental, but this might change as a result of promising research developments. Microbicides offer the possibility of giving women the ability to use a barrier method when their partners refuse to use condoms or prevent them from using femidoms. They are currently produced as gels, suppositories, creams, films, sponges and vaginal rings. (Tallis 2001) No microbicide

11 This is a statistic for 1998.

has yet been approved but if this changes their distribution should be considered in a treatment and prevention plan.

In the following intervention descriptions, unresolved issues are highlighted in the hope that researchers will study these, thereby allowing a more accurate modelling and costing analysis to be obtained. Home-based care, condom and femidom distribution and VCT are examined elsewhere in this volume.

Mother-to-Child Transmission Prevention (MTCTP)

This is the most researched and best understood of the various interventions. Several studies (Wilkinson et al 2000, Wilkinson et al 1999, Marseille et al 1999, Marseille et al 1998, Hensher 2000, Geffen 2001a) have demonstrated the cost-effectiveness of this intervention and Skordis and Nattrass (2001) and Nattrass (2001) have presented evidence that it is cost-saving, in that it is cheaper to prevent paediatric HIV infections than to treat them using the currently available treatment options available in the South African public sector (ie without HAART).

Approximately 30 to 35% of infants are infected through vertical transmission. Roughly 75% of these transmissions take place pre-partum and intra-partum. The remainder are likely to be infected via breastfeeding. (Spira et al 1999) It is estimated that in 2001 roughly 70 000 children were born HIV positive. (ASSA 2001) Many more children were born uninfected, but became infected with HIV as a result of being breastfed by HIV positive mothers. With a successful MTCTP programme in place based on the HIVNET 012 protocol (Guay 1999) the numbers of infected children could have been reduced by roughly 40%.¹²

Based on discussions with the Western Cape Department of Health, the other MTCTP costing studies referenced above and the work of Galbraith and Bennish (2001), a detailed MTCTP intervention has been defined. It is as follows:

- ❑ A pregnant woman presents at a public antenatal clinic. Frequently, the advantages of counselling and testing will be explained to her as part of a group talk. If she chooses, counselling is then given by a lay counsellor on issues relevant to HIV and HIV-testing specifically.
- ❑ If the woman chooses, she is tested by a nurse for HIV using a rapid test and if she is HIV-positive, a confirmation test. A small number of indeterminate cases (ie where the confirmation test gives a different result to the rapid test) are tested using the Elisa technique.
- ❑ Post-test counselling by a lay counsellor takes place with all women who volunteered to be tested.
- ❑ HIV-positive pregnant women, who so choose, take one 200mg Nevirapine pill during labour. Their children are given Nevirapine syrup within 72 hours of birth. This is the HIVNET 012 protocol. (Guay 1999)
- ❑ Children born to HIV-positive mothers are given Cotrimoxazole for 18 months. This helps prevent the onset of opportunistic infections, such as pneumocystis carinii pneumonia. Note that this is not specifically an MTCTP intervention, but it has been costed in this intervention.
- ❑ Formula milk is provided by the state for six months to women who choose to use it to feed their infants.
- ❑ At 18 months, children are tested for HIV using the standard testing procedure described above. Pre-test and post-test counselling take place again.

¹² Note that Guay et al (1999) found that Nevirapine reduces at least 47% of infections. The 40% figure takes into account factors such uptake rates and phase-in.

The costs of counselling, nursing, HIV tests, community mobilisation, drugs, administration and supervision, counsellor training, building of counselling rooms and wastage need to be considered when costing MTCTP, as well as start-up versus annual costs and the rate at which the programme is phased in. Various additional parameters such as uptake rates of tests, drugs and formula milk also need to be considered. These are all well researched.¹³

Demographic modelling indicates that at current seroprevalence rates, approximately 20 000 to 30 000 paediatric infections a year can be prevented by MTCTP. The programme, if phased in so that the start-up costs are distributed over a few years, should not exceed R250-million in any one year.

MTCTP has been researched in detail from a costing standpoint. There are limited opportunities for determining more precise estimates of counselling and nursing time, as well as wastage, but these would not make a substantive difference to costs. Communication with doctors at different sites has revealed that the division of time between personnel at different MTCTP sites is not uniform. At least one major hospital expends substantially less time on staff-patient interaction than others do, but this is in an area where strong patient support groups have been formed to compensate for this. A more fruitful area of research would be gathering more precise data on uptake rates, which are difficult to predict at this point when the countrywide rollout of MTCTP has only reached 15%. Reports of current uptake rates are mixed, with some evidence of high uptake rates in areas where there is political will and community mobilisation. (McCoy 2002) It is reasonable to assume that if a comprehensive treatment and prevention plan is implemented, it will be done with political backing and therefore an eventual increase in uptake rates.

Uptake rates of formula milk are harder to estimate. Formula milk comprises a substantial cost of the programme. The cost and efficacy of the programme is also sensitive to this uptake rate. One possible estimate is that approximately 50% of mothers will use formula milk. This is calculated by multiplying the reported uptake rate of 75% at a pilot site in Paarl by the percentage of South Africans estimated by the 1999 household survey to have access to clean water. (South African Survey 2001) Changing this to 75% results in an additional cost of R30 million, but also an additional three to four thousand prevented infections (assuming 100% rollout at the current seroprevalence rate of 24.5%). An investigation into areas where formula milk feeding is more appropriate for HIV-positive women than breast-feeding is also necessary (and vice versa). Furthermore, antiretroviral treatment during breast-feeding with the purpose of preventing vertical transmission is an alternative that needs consideration.¹⁴

A sub-optimal aspect of the intervention discussed here is that the HIVNET 012 protocol is less effective, albeit simpler and cheaper, than the PACTG076 protocol. (Connor et al 1994)

Highly Active Antiretroviral Therapy (HAART)

A number of studies as well as extensive clinical experience indicate that combination antiretroviral therapy using three drugs is an effective means of reducing HIV morbidity and mortality. (See Pallela et al 1998, Clarke 2000) There is also evidence that HAART is achievable in developing world settings. (Farmer et al 2001)¹⁵ Evidence

13 We have obtained much of the data from Galbraith and Bennish (2001) and personal correspondence with the Western Cape Department of Health.

14 There is some debate over whether breast-feeding adversely affects maternal mortality in HIV-positive women.

15 Preliminary results from the Medecins Sans Frontieres pilot antiretroviral project in the Western Cape are also promising.

from Orrell et al (2001) demonstrates that patient adherence among a South African cohort was comparable to those found in the developed world. Ongoing research into fusion inhibitors — a new class of antiretrovirals — structured treatment breaks and vaccines, as well as the growing variety of treatment regimens that require fewer pills¹⁶ and the downward pressure on the prices of antiretrovirals indicate that treatment options and outcomes will improve with time. There is also the possibility of a vaccine becoming available during the next decade. Furthermore, while HAART is the most expensive intervention considered here, it has the most significant effect on reducing mortality.

It is useful when costing antiretroviral treatment to separate paediatric and adult programmes, because of the differences in drug dosages, drug costs, methods of patient care and outcomes between these interventions. One crucial issue that requires further research is determining the most cost-effective set of blood tests with which to monitor patients. Most antiretroviral programmes require a variety of such tests. Two have a significant effect on cost, CD4 and viral load counts. Viral loads cost approximately R610. (Personal correspondence with MSF HIV/AIDS pilot project) Recent work by Glencross et al (2002) has resulted in the development of a CD4 which is sold to the state at R82. This is a critical development because CD4 tests have up until now comprised a high portion of monitoring costs. Furthermore some HIV medical practitioners have speculated that their clinical experience indicates that CD4 tests might be sufficient for monitoring patient progress (ie viral load can be excluded). (Personal correspondence with various HIV medical practitioners)

The personnel resources for both adult and paediatric HAART programmes¹⁷ include counsellors, nurses and doctors. Monitoring has to be done regularly, including CD4, lactate dehydrogenase, full blood counts and differential tests.¹⁸ Multiple treatment regimens have to be available to cater for the many patients who are intolerant of some combinations. Patients in the TAC research programme are divided into two regimens, first-line and second-line. There is a wide variety of options within lines, but for the purposes of costing, the second line is more expensive because it typically includes a protease inhibitor (currently the most expensive of the three classes of antiretrovirals). Both lines assume at least three antiretrovirals. Although experienced HAART clinicians have been used to determine the values of these parameters, some parameters remain speculative. Since this is the most costly intervention, more detailed research in this area is likely to yield important results.

Sexually Transmitted Diseases (STDs)¹⁹

STDs, primarily when symptomatic, are an aggravating risk factor in the transmission of HIV. Countries and regions with high levels of untreated STDs are particularly vulnerable to HIV/AIDS and are likely to experience high levels of HIV prevalence if STDs are not treated effectively.

It is often not possible to determine exactly the STD associated with a particular set of symptoms. A method for treating STDs, referred to as syndromic management involves prescribing a number of drugs to treat a given set of symptoms. This is cost-effective, alleviates problems in diagnosing STDs and avoids the need to conduct expensive, time-consuming laboratory tests. (Department of Health 1998) Syndromic management programmes have also been successful in reducing the spread of HIV.

16 Orrell et al. (2001) found that adherence was better for regimens which required fewer pills.

17 Based on communication with Wood and Orrell from the University of Cape Town and Kasper from Medecins Sans Frontieres.

18 In the case of Nevirapine

19 This section is based on unpublished research by Leigh Johnson. Johnson has given the author permission to use his work.

For example, a trial conducted in Tanzania, (Grosskurth et al 1995) involving improved syndromic management of STDs, is estimated to have achieved a 38% decline in HIV incidence. Syndromic management of STDs is used in the public sector, but private sector doctors have been slow to adopt the syndromic management approach, partly because of insufficient training and partly because of the high costs of STD drugs, which makes it difficult to prescribe multiple drugs.

Other models of STD management for which research in the South African context might be useful are periodic presumptive treatment (Steen et al 2000) and mass treatment. (Wawer et al 1998) Periodic presumptive treatment (PPT) involves provision of STD treatment on a periodic basis to all individuals in a target group, even if they are not displaying STD symptoms. Such interventions are aimed at eliminating STDs that are in symptomatic and asymptomatic phases. There is, however, a high cost associated with providing treatment to all individuals in a particular target group. Furthermore there are ethical questions that arise out of the process of identifying target groups, possibly infringing patient autonomy and inappropriately treating people who do not have any STDs.

Mass treatment involves treatment to all individuals in a particular population. This is ineffective if not sustained (Wawer et al 1998, Grosskurth et al 2000) and subject to the same ethical issues discussed under PPT. This intervention is also expensive and a trial conducted in Uganda, (Wawer et al 1998) involving mass treatment at ten-month intervals, failed to result in a significant decrease in HIV incidence over the study period.

The STD programme that is being modelled and costed contains enhancements to the current management of STDs in South Africa. It includes the provision of STD drugs to private practitioners and workplace clinics at state tender prices. Wilkinson et al (2001) state that this will assist doctors with providing syndromic management and render treatment cheaper. This is to cater for the perception commonly held that private sector treatment of STDs is inferior to public sector treatment, despite evidence to the contrary. (Ndhlovu et al 2000, Schneider et al 2001) A second enhancement is that Acyclovir, which is used to treat herpes simplex virus-2 (HSV-2), is included in the standard syndromic management treatment protocol. This is a common infection in South Africa and is a factor in the spread of HIV. Acyclovir is unavailable at public clinics, despite cheaper generic versions of the drug recently becoming available. HSV-2 accounts for approximately 36% of male genital ulcers (Chen et al 2000) and a significant portion of female genital ulcers. (Auvert et al 2001) Further enhancements are that drug shortages at public STD clinics are eliminated, condoms are actively promoted at STD clinics and STD treatment services are extended to previously under-serviced areas. To achieve a reduction in the prevalence of STDs, it will also be crucial to educate the public about the importance of seeking prompt treatment for their STDs, and to counsel individuals receiving treatment on the importance of adherence to treatment, and the role of partner notification in preventing re-infection. (Personal correspondence, Leigh Johnson)

Conclusion

While progress has been made in determining the elements and costs of a national treatment and prevention plan, there are many unresolved issues requiring further research. The urgent need to implement appropriate health interventions imply that a coordinated and cooperative research effort is required. The quicker the crucial research issues discussed here are resolved, the better the quality of these interventions will be. However, it is essential that even though some important questions remain unresolved, the implementation of a treatment and prevention plan making use of the best available knowledge must proceed if millions of lives are to be saved.

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Patents, pills and public policy: The pharmaceutical industry and international trade

by Toby Kasper ¹

Why discuss international trade in the context of HIV/AIDS?

The figures are numbing, too huge to comprehend: 1 000 000. 4 700 000. 6 500 000. 4 000 000 000.² But behind each of those zeroes lies a human being, and in each of their stories is a tale of undescribed suffering, full of pain that can largely be avoided. That is the necessity to talk about treatment, a topic that – as described in the section below – invariably means a discussion about international trade and the pharmaceutical industry.

There are, of course, other reasons to talk about treatment. There is the simple fact that it is impossible to create a vibrant society if more than half of 15-year olds can expect to die at the hands of this pathogen. Or that efforts to reverse decades of neglect in the education system will be doomed to failure as the epidemic leads to shortfalls in the numbers of teachers (and creates a disincentive to invest in education as the average lifespan falls to 36). Or that endeavours to stimulate more rapid economic growth will be stymied by the shrinking pools of skilled workers (and consumers), rising cost of labour, and foreign investment increasingly being deterred by these factors. Or that the authority of the central government will be undermined by continuous conflict with civil society and by provinces that refuse to promulgate bankrupt policies and so insist on moving forward to provide treatment, not to mention the social disenfranchisement of (and resultant political instability from) the young people who have grown up in poverty after having lost their parents. (UNAIDS 2000; Babcock-Walters & Whiteside 2000; Hamoudi and Birdsall 2002; Abt Associates 2001b; Arndt and Lewis 2000; International Labour Organisation 2000; Tabane 2002)

In each of these sectors – society, education, the economy, and governance – AIDS has opened a deep wound that needs treatment. At the end of the day, however, treatment is above all an ethical responsibility: it is simply unacceptable for any government – let alone one bound by South Africa's progressive Constitution – to sit back and not make every effort to provide a medically proven intervention that can avert the deaths of millions.

Patents, prices and patients

The spread of AIDS is a part of globalization...

– Nicolas Stern, Chief Economist, *The World Bank* (2002: ix)

It has long been appreciated that globalisation – for example in the forms of increased contact between far-flung corners of the world, more open borders, and greater reliance on migratory labour – has contributed to fuelling the AIDS epidemic. More recently, it has also been understood how globalisation – in this case in the spread of intellectual property rights – is also hampering the fight against the disease.

1 The author is Regional Technical Advisor on access to medicines and HIV/AIDS for Médecins Sans Frontières in southern Africa. This article is written in his personal capacity and does not necessarily reflect the views of the organisation.

2 These are, respectively, the number of orphans by 2005, the number of people infected in 2001, the number projected to have died by 2010, and the amount of Rand spent on care in public health facilities in 2001 (Abt Associates 2001a, Johnson and Dorrington 2001, Dorrington et al. 2001, National Treasury 2001).

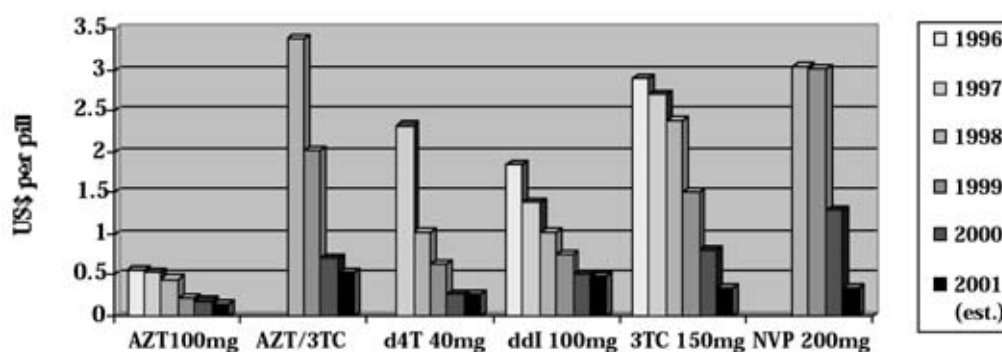
The theory behind the protection of intellectual property rights (IPRs) in developing countries is simple: if a country moves from a low level of protection to a higher level, domestic innovation will be stimulated and foreign direct investment will be attracted by the guarantee of secure property rights, which will in turn generate broader economic growth through technological advancement. Based on this reasoning, protection of intellectual property rights was included in the World Trade Organisation (WTO), in the form of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). The TRIPS Agreement obligates WTO members to offer minimum standards of protection for patents, copyrights, and trademarks, in effect replacing what had been a heterogeneity of approaches to IPR protection with a uniform code that enshrined principles that were previously limited to a few industrialised countries (for example, a 20-year duration for the life of a patent). (Vélasquez and Boulet 1997; Correa 2000; World Bank 2001)

Whether these theoretical benefits actually accrue to developing countries has been a source of considerable debate among economists. The long-term outcome is still uncertain, with many hoping that enhanced growth will still materialise. However, it is beyond doubt that the short-term costs have been high, both from implementation and from income transfer from developing countries to developed (which currently hold 97% of all patents).³ (Finger and Schuler 1999; United Nations Development Programme 1999; World Bank 2001)

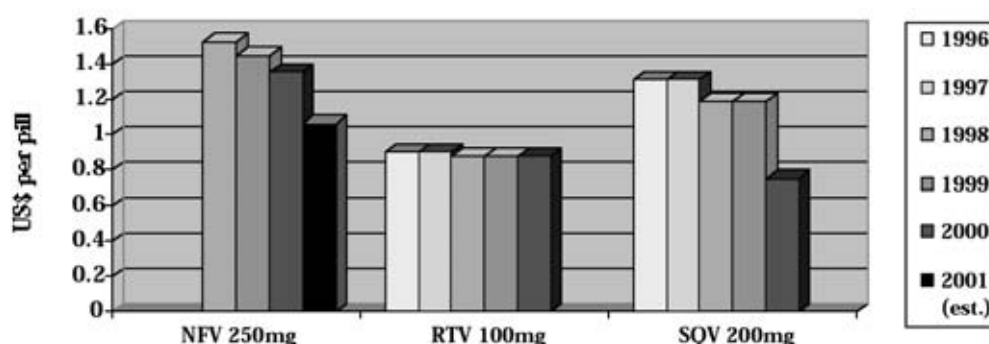
These costs are particularly acute in the case of access to medicines. Before TRIPS, numerous countries (including many developed ones) offered lower levels of patent protection for pharmaceuticals, in recognition of the fact that drugs are not goods to be treated like CDs or Barbie dolls. As described in detail below, patent protection as enforced by TRIPS leads to higher prices for medicines. However, this well-understood fact was balanced in the negotiations that led up to the TRIPS Agreement by claims that TRIPS would spark a revolution in research and development for diseases endemic in developing countries, a promise that has yet to be fulfilled. Between 1975 and 1999, 1 393 new chemical entities were brought to market, but a mere 13 of these were for tropical diseases, of which five were discoveries from veterinary research, two from US Army research, and one from the Chinese pharmacopoeia, leaving a paltry three as the result of genuinely innovative pharmaceutical industry research and development. (Trouiller et al in press) Furthermore, the pipeline for new products is essentially dry: a recent survey found that included 11 of the 20 largest pharmaceutical companies revealed that none are working on sleeping sickness, one each are working on Chagas disease and leishmaniasis, and two are working on malaria. (Médecins Sans Frontières/Drugs for Neglected Diseases Working Group 2001)

In contrast, the impact of patent protection on prices is well established. By conferring a temporary monopoly, patents allow competitors to be excluded from the market, enabling the patent holders to set prices as high as they would like. A considerable body of literature has developed from industrialised nations on the importance of generic competition in reducing prices, but the clearest evidence for this in the field of HIV/AIDS drugs comes from Brazil, a country that had prohibited patenting of pharmaceutical products until 1997, meaning that most of the older antiretroviral drugs are not protected by patents, while the newer ones are. For drugs not protected by patents, prices fell by an average of 83% between 1996 and 2001 as a result of fierce competition for the Brazilian market. (Ministry of Health of Brazil 2001)

3 According to World Bank research (2001), enforcement of intellectual property rights will result in significant income transfers from technology consumers (almost all developing countries and some developed countries) to technology producers (almost exclusively developed countries). Thus on an annual basis rent transfers from intellectual property rights protection bring the U.S. approximately US\$19.1 billion, Germany US\$6.8 billion, and Japan US\$5.7 billion, while they cost Korea US\$15.3-billion, China US\$5.1-billion, and India US\$903-million.



In contrast, for those products protected by patent, the lack of competition led to a situation of price stability, with prices dropping a mere 25% over the same period.



Research on the UNAIDS Drug Access Initiative in Côte d'Ivoire came to the same conclusion: the presence of competition is the key determinant of pricing. (Juillet et al 2000)

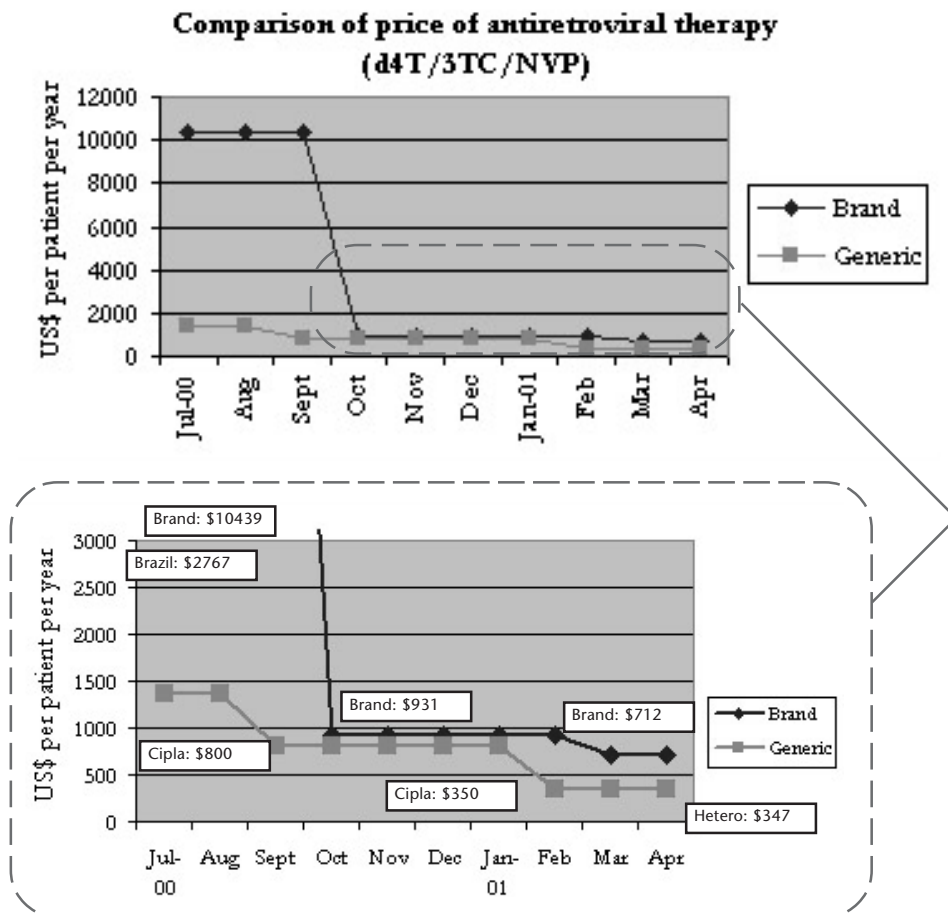
These theoretical considerations on the impact of patent protection on prices might have remained the sole purview of economists were it not for the advent of highly active antiretroviral therapy in the mid-1990s. This combination therapy has often been characterised as one of the great medical advances of the twentieth century, as it suddenly transformed HIV from an untreatable infection that led with devastating certainty to a painful death into a chronic condition that could be sufficiently controlled as to allow people living with HIV/AIDS to get off their sickbeds and return to work. (Palella 1997; Mocroft 1998; World Health Organisation 2002a)

While the governments of industrialised nations happily committed to picking up the US\$10 000 sticker price for these 'Lazarus' drugs, developing countries were not in a position to finance such expenditures. Combined with an epidemiological explosion of HIV in Africa, this led one observer, Ugandan doctor Peter Mugenyi, to comment that 'the drugs are where the disease is not, the disease is where the drugs are not'. (Russell 2000)

Outraged by this injustice, people living with HIV/AIDS and others began casting about for explanations. They quickly lit on the pricing policies of multinational pharmaceutical companies and the patent system that enabled their unfettered application. This recognition was at the genesis of an international campaign for improved access to medicines, with AIDS activists, medical organisations, and consumer and development advocates uniting in a concerted campaign to reduce prices. (Von-Schoen Angerer et al 2001)

Using high-profile media tactics aimed at shaming drug companies into reducing their prices, and benefiting from the availability of reduced-price drugs manufactured

in countries such as Brazil, India, and Thailand (which have historically not allowed patent protection on pharmaceutical products), this campaign is responsible for the creation of a virtual 'politics of competition' at a global scale. This competition, which relies on an unprecedented transparency in pharmaceutical pricing as well as ability to apply moral suasion to companies that attempt to preserve their high prices, has been extremely effective, as prices have fallen by over 90% in a scant few years. (Pérez-Casas et al 2001)



This rapid drop in prices came against the backdrop of a series of hotly contested disputes over intellectual property rights. South Africa was at the centre of one of the most symbolically important of these, the lengthy legal and political wrangling over the Medicines and Related Substances Control Amendment Act, 90 of 1997, that is discussed in detail in the next section. Another milestone came when the US government initiated legal action in the WTO against a provision in Brazilian law that allowed the country to require that patents be worked locally in Brazil (ie., rather than through importation of a good). The government of Brazil considered this requirement central to its world-renowned AIDS programme, which relies on domestic manufacturing of antiretrovirals, and the public outcry that resulted from the US's attack eventually led the country to drop its challenge. (Crossette 2001)

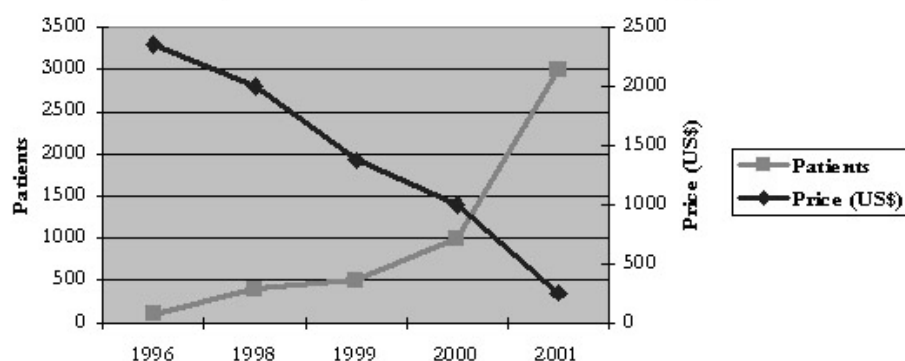
Even before these conflicts had catapulted the issue onto the front pages of newspapers around the world, the connection between intellectual property rights and access to medicines was a bone of contention in multilateral fora. The World Health Assembly (the annual gathering of countries to orient the work of the WHO) instructed the WHO to study globalisation's impact on access as early as 1996, (World Health Assembly 1996) which led to a seminal publication, *Globalization and access to drugs*, that alerted governments and civil society worldwide to the looming threat posed by the enforcement of patent protection on pharmaceuticals. (Vélasquez and Boulet 1997) The United Nations Development Programme's *Human Development Report 1999*

documented the deleterious effects of the WTO TRIPS Agreement in developing countries, concluding that '[t]he relentless march of intellectual property rights needs to be stopped and questioned'. (United Nations Development Programme 1999:73) In August 2000 the UN Sub-Commission on the Promotion and Protection of Human Rights adopted a resolution highlighting the potential incongruence between the TRIPS Agreement and the fulfilment of human rights, including the right to health. (United Nations High Commission on Human Rights 2000)

The WTO itself was not impervious from these rumblings, thanks to a potent combination of resolve on the part of developing countries and activist pressure that ensured that industrialised nations were forced to moderate their oppositions to such discussions. Although the issue appeared at the infamous 'Battle in Seattle' WTO Ministerial in 1999, even featuring in the speech made by then-US President Bill Clinton, it was in the subsequent Ministerial, in Doha, Qatar, in November 2001 that the matter took centre stage. The importance accorded to the concerns was indicated in the fact that separate Ministerial Declaration on the TRIPS Agreement and Public Health was adopted. The Doha Declaration unequivocally stated that the TRIPS Agreement should not stand in the way of efforts to provide access to medicines for all, clarified a number of contentious matters around the interpretation of the agreement, and extended the transition period that least-developing countries have to implement patent protection for pharmaceutical products. (WTO 2001)

This emphasis on prices and intellectual property rights has been criticised by some – particularly pharmaceutical companies and the governments of countries home to them – who argue that instead the focus should be on other factors influencing the availability of medicines, especially distribution systems, regulatory systems, trade barriers (tariffs), and financing. (Bale 2001) They have further argued that efforts to reduce prices might cause research and development funding to dry up.⁴ Developing countries and activist have responded by acknowledging that while access to medicine is multifactorial, even in the absence of increased resources or infrastructure development significant numbers of people would be able to benefit immediately from reduced prices. Further, high prices were creating disincentives to invest in the necessary upgrading of infrastructure.⁵ This approach has been validated by experience in developing countries as prices have fallen, leading the Ugandan research Dr Elly Katabira to conclude that 'cost is the most important constraint to antiretroviral use,' based on events over the past several years at the Joint Centre for Clinical Research in Kampala. (Katabira 2002)

Number of patients vs. price of antiretroviral therapy, JCRC



4 Recently, even the pharmaceutical industry has been distancing itself from this argument, following a barrage of criticism about the facts that sales from Africa already make a negligible contribution to research and development (the entire continent comprises only 1.3% of the global pharmaceutical market), and that marketing expenses typically dwarf R&D outlays by a factor of two.

5 As World Bank President James Wolfensohn put in on the occasion of the announcement of a reduction in the prices of antiretrovirals, '[w]ith the prices so high, there was little incentive for the governments to build the health infrastructure to provide care'. (Waldholz 2000)

South Africa on the global stage: The long, sad history of the Medicines Act

Can the pharmaceuticals industry inflict any more damage upon its ailing public image? Well, how about suing Nelson Mandela?

– *The Wall Street Journal* (Cooper, Zimmerman, and McGinley 2001)

The current struggle over AIDS medicines in South Africa is but an early warning shot in a much larger struggle over access to the fruits of human knowledge.

– Jeffrey Sachs (Sachs 1999)

When South Africa emerged from apartheid, the government was confronted with a problematic pharmaceutical pricing structure: drug companies had set their prices to target the country-within-a-country of the rich, white upper class, essentially ignoring the vast number of (black) people who could not afford these prices. Concerned with matters of equity, the government passed the Medicines and Related Substances Control Amendment Act in 1997 to introduce measures to bring down the price of medicines in both the public and private sectors.

The reaction was swift and uncompromising. The Pharmaceutical Manufacturers' Association and their 39 companies sued the government of Nelson Mandela in early 1998, alleging that the law was in contravention of South Africa's international obligations (in particular, the TRIPS Agreement) and in violation of the South African Constitution. Soon thereafter, the US government placed South Africa on the so-called 'Special 301 Watch' list, which it uses to punish governments that it deems to be offering insufficient protection of intellectual property rights, and began what an internal US State Department report termed, in a reference to a pressure tactic in basketball, a 'full-court press' to persuade the South African government to abandon or revise the law. The European Union was less aggressive, but did express its concerns in a letter from Sir Leon Brittan of the European Commission to then Deputy President Thabo Mbeki in 1998.⁶

To AIDS activists this insistence on the primacy of the protection of intellectual property rights over all else was appalling, particularly in context of a country struggling to deal with the world's largest AIDS epidemic. The US government was a particular focus, and CNN coverage of demonstrations staged at the Presidential campaigning of then-US Vice-President Al Gore beamed news of South Africa's struggle into millions of living rooms worldwide. As concerns about the political fallout escalated, the US government policy rapidly shifted, with an agreement being announced between the US and South Africa in August 1999, and the latter being officially removed from the Special 301 Watch List at the WTO Ministerial in Seattle in December 1999.

Despite this loss of political backing and on-again-off-again negotiations with the South African government, the pharmaceutical industry continued its lawsuit, and after three years of delays the trial opened in the Pretoria High Court in March 2001. A multicoloured sea of thousands of protestors washed through the streets of Pretoria, happily posing for the hordes of international media who descended on the case. The legal battle itself was anticlimactic, over almost before it had begun when Judge Bernard Ngoepe ordered a six week recess after deciding – over the objections of the Pharmaceutical Manufacturers' Association – to accept the *amicus curiae* application of the Treatment Action Campaign, accepting that TAC's perspective as representatives of people living with HIV/AIDS was relevant for the consideration of the case.

⁶ For a detailed history of the early years of the court case, a wealth of documentary materials (including the US State Department report), and a series of articles (both media accounts and commentaries), see www.cptech.org/ip/health/sa/. See also Bond (1999)

The intervening six weeks saw almost 300 000 people sign an Internet petition organised by Médecins Sans Frontières calling on the companies to drop the case. The European Parliament passed a resolution echoing this demand, and Ministers from numerous European countries did the same. In the end, the public relations disaster was too much for the companies, and, 'shamed and humiliated' (as the banner across the front page of UK's *The Guardian* newspaper put it (McGreal 2001)), they unconditionally dropped the case when the trial resumed in April.

Given the hullabaloo that arose over the law, it is interesting to note that all of the most important provisions contained in it are already enshrined elsewhere around the world, typically in developed countries. For example, generic substitution – the practice of requiring a pharmacist to prescribe the cheapest available version of drugs that are not patent-protected, unless the patient specifically requests the originator product rather than a generic alternative – is common in countries such as the US, the Netherlands, and Japan. The creation of a pricing committee with the power to fix a so-called 'single-exit price', where the pharmaceutical company sets a single price at which it must sell to all private sector purchasers, is an extremely mild form of price control that is aimed at promoting transparency in pricing and doing away with perverse prescribing practices, such as when a pharmacist is enticed to dispense a particular product as a result of (typically time-limited) discount offers. Many countries, including most European nations, have more interventionist forms of price control.

The most controversial part of the law – which the pharmaceutical industry argued allows the government to abrogate patent rights with no regard to due process – was Section 15C. However, the industry argument neglected two critical points. First, the South African government insisted since the law was in draft form that 15C is aimed solely at enabling parallel importation of medicines⁷ (as allowed, for example, within the European Union), rather than unfettered abrogation of patent protection. Second, the language of 15C is based on a draft of model language on the exhaustion of rights (through which parallel importation is enabled) prepared by a World Intellectual Property Organization Committee of Experts in 1990. (Abbott 2002a)

A year after the court case, the victory rings rather hollow to many. Regulations have yet to be finalised, meaning another year has come and gone without the implementation of the important cost-containment measures within the law. Moreover, there has been little action on treatment for people living with HIV/AIDS, a deep disappointment to many of those who supported the government in the court case in the hopes that it would finally lead to a change in the government's stance on HIV/AIDS. The steely resolve and eagle-eyed vision that the government showed in standing up to the multinational companies has evaporated in the face of the AIDS catastrophe, leading researchers writing in the *South African Health Review* 2001 to assert that the government's leadership on HIV/AIDS 'has not been weak, but some of it has been misguided'. (Kenyon, Heywood & Conway 2001)

Nonetheless, the court case's importance was never limited to the borders of South Africa, and despite the subsequent lack of action, it stands as one of the defining moments in the global movement to improve access to medicine. The attention that it brought to intellectual property rights and access to medicine shaped the course of future events, perhaps most importantly leading to the Doha Declaration on the TRIPS Agreement and Public Health at the WTO Ministerial in November 2001. Moreover, in many ways, the case was less about the narrow technical provisions of the law than it was about the rights of a government to place the health of its people over vested corporate interests. As such, the David versus Goliath struggle set an

7 Parallel importation is cross-border trade in goods made by the same manufacturer, a form of global shopping around in which advantage is taken of the fact that products are sold in different markets at different prices.

important precedent, signalling to other developing countries that they need not capitulate to the pressure tactics of the pharmaceutical industry or governments of developed countries.

The way forward: Models for South Africa, from Brazil to Botswana

Antiretroviral therapy is now considered the standard medical intervention for HIV infection. It is widely used in Europe, North America, and, increasingly, Latin America. Its popularity is due to its ability to stop viral replication, thereby preventing the progressive deterioration of the immune system characteristic of the unchecked spread of HIV within an individual's body. Although it is not a cure, it has succeeded in reducing AIDS-related mortality by more than 70% in countries in which it is commonly available, effectively turning HIV infection from a death sentence into a chronic condition. (Palella 1997, Mocroft 1998, WHO 2002a)

For this reason, 12 antiretrovirals have recently been added to the WHO's Model List of Essential Medicines, which indicates to countries that these drugs should be considered 'the most efficacious, safe and cost-effective medicines for [this] priority condition', and so part of the 'minimum medicine needs for a basic health care system'. (WHO 2002b) The WHO also released guidelines on the use of antiretrovirals in resource-limited settings, highlighting the fact that, contrary to the fears that have surrounded the use of antiretrovirals in developing countries, the use of antiretroviral therapy has become considerably simpler in recent years and so these medicines can be successfully used even in the absence of the sophisticated laboratory monitoring capacity that is commonly associated with their use in industrialised nations. (WHO 2002a)

Largely due to cost reasons, antiretrovirals have not been widely used in Africa, although this is changing, as a range of governments initiate programmes (often based on patients' ability to pay, rather than free distribution as is the norm in developed countries and in Brazil and some other Latin American countries). The governments of Botswana, Cameroon, Côte d'Ivoire, Malawi, Nigeria, Rwanda, Senegal, Uganda, Zambia, and Zimbabwe have all been involved to greater or lesser extents in the establishment of antiretroviral treatment programmes.

In contrast to this, the South African government has opted to challenge the efficacy and safety of these medicines,⁸ although even President Thabo Mbeki, who has generally led the charge in attacking the scientific orthodoxy, has previously stated that '[o]nce you say immune deficiency is acquired from that virus your response will be antiviral drugs'.⁹ (Mbeki 2000: 55)

However, after prolonged conflict with civil society – including a legal challenge which has forced a shift in the government's policy on programmes to prevent mother-to-child transmission of HIV – and a growing revolt of provincial health authorities, the government appears to have made a dramatic about-face in its HIV/AIDS policy with the 17 April 2002 release of a Cabinet statement that indicates that the government will introduce a programme to offer antiretrovirals as post-exposure prophylaxis to rape survivors and will expand mother-to-child transmission prevention programmes nationally by the end of 2002. Further, the Cabinet statement mentions that antiretrovirals 'could help improve the conditions of people living

8 The most extreme form of this argument can be found in "Castro Hlongwane, Caravans, Cats, Geese, Foot & Mouth and Statistics: HIV/AIDS and the Struggle for the Humanisation of the African" (2002), which is not an official document of the government, but rather a paper presented at a meeting of the National Executive Committee of ruling African National Congress (Kindra 2002).

9 In the same interview, President Mbeki famously refused to confirm that HIV caused AIDS, instead asserting that "you cannot attribute immune deficiency solely and exclusively to a virus," and suggesting that "TB, for example, destroys the immune system and at a certain point if you have TB you will test HIV positive because the immune system is fighting the TB which is destroying it."

with AIDS if administered at certain stages of in the progression of the condition', although it did also note the costs of such treatments and their possible side effects. (Government Communication and Information Service of the Republic of South Africa 2002)

This shift, if followed by concrete actions, will usher in a new relationship with the pharmaceutical industry and, perhaps, the broader international trading regime. Two countries that have been lauded for their aggressive efforts to confront AIDS have chosen radically different approaches to these issues, and as such can provide a useful contrast for the development of a plan for South Africa.

In Brazil, a comprehensive approach balancing prevention efforts focusing on high-risk populations and treatment of those infected has contained an epidemic that was once expected to erupt into one of the largest in the world: in 1994 the World Bank estimated that there would be 1.2 million Brazilians living with HIV by the year 2000; by contrast, less than half that number were actually infected by 2000. (Rosenberg 2001) A centrepiece of this programme has been universal provision of antiretroviral therapy, the right to which was codified in Brazilian law in 1996. This was done over the objections of donor governments and international institutions – who argued that the infrastructure to use them safely did not exist and that other spending priorities were more urgent— but, as Paulo Teixeira, coordinator of the Brazilian government's Program on Sexually Transmissible Diseases and AIDS, has put it, 'fortunately, reality not only corroborated our policy; over and above, the statements of its most optimistic defenders were outdone by their remarkably positive results'. (Ministry of Health of Brazil 2001, foreword)

This programme has been financially possible because most antiretrovirals are not patent protected in Brazil, which did not allow the patenting of pharmaceutical products until 1997, long after most of the antiretrovirals had been invented. A thriving domestic pharmaceutical industry has taken advantage of this, with both private and state-run firms now producing antiretrovirals. For some of the newer antiretrovirals, for which patent protection has been granted, the government has pursued an aggressive negotiating stance, including threatening to make use of compulsory licencing provisions to ensure access to affordable medicines. (Rich 2001) Further, to ensure the lowest possible prices, the government stimulates competition between the domestic firms and multinational companies both by conducting international tenders and by requiring that purchases be made from multiple sources.

To protect this approach, the Brazilian government has taken a strong stance internationally on the need to prioritise public health over intellectual property rights, which, as described above, has led it into conflict with developed countries, particularly the US. Nonetheless, despite dire predictions that this strategy would lead to broader concerns about the security of property rights and thus deter foreign direct investment, this has not come to pass. Indeed, quite the opposite: inflows of foreign direct investment increased from 11.7% of gross fixed capital formation in 1997 to 31.3% in 1999, and in 2000, Brazil accounted for one third of all mergers and acquisitions sales in the developing world, up from one ninth in 1995. (United Nations Conference on Trade and Development 2001)

The government of Botswana has been less successful at containing the AIDS epidemic: Botswana has the highest adult seroprevalence in the world, with approximately 38% of women attending antenatal facilities testing HIV-positive. Despite this and despite significant human resources crisis (already some 90% of doctors in Botswana are foreign-born, a trend being exacerbated by AIDS), the government has decided to embark on an ambitious antiretroviral treatment programme, which is projected to treat 19 000 people in the first year, making it the largest programme in Africa. As Minister of Health Joy Phumaphi has argued, '[w]e do not believe it is fair to offer

people prevention strategies without offering them treatment and care', and although the costs will be significant, '[t]he economy stands more to suffer from not having the program than from having it'. (Nessman 2002)

To accomplish this, the government has initiated a partnership with Merck and Co., the American pharmaceutical company, and the Bill and Melinda Gates Foundation, both of which are contributing US\$50 million over a five year period. The resultant public-private partnership, called the African Comprehensive HIV/AIDS Partnership, will support various aspects of the government's HIV/AIDS plan, but will concentrate on the distribution of antiretroviral therapy. Drugs will be purchased from multinational pharmaceutical companies, at a combination of preferential and standard prices.

Although the influx of donor money (and the technical support that came with it) has clearly served to jumpstart the programme, questions remain about the long-term sustainability of this model. Interestingly, although the country has adopted a close relationship with the multinational pharmaceutical industry, the President himself saw fit to praise the recent WTO agreement that facilitates the introduction of generic medicines, singling out the Doha Declaration on the TRIPS Agreement and Public Health as the aspect of the recent WTO Ministerial meeting of most interest to Botswana in a meeting with the WTO's Director-General. ('WTO to help Botswana build capacity' 2002)

To understand which of these two approaches – either domestic production of pharmaceutical products facilitated by flexible application of intellectual property rights law, or partnership with and charity from the pharmaceutical industry and donor bodies – best suits South Africa, it is necessary to understand the similarities and differences between it and these two countries. The table on the following page schematically summarises how the three nations compare in key areas.

Overall, although South Africa shares elements of both situations, it is clear that the country has more in common with Brazil than with its neighbour, with the important exception that the size of the AIDS epidemic is considerably larger than in Brazil. The Brazilian approach also has a greater degree of consistency with the existing National Drug Policy (adopted in 1996), which states that '[t]he availability of generic, essential drugs will be encouraged through the implementation of incentives that favour generic drugs and their production in the country' and emphasises the promotion of 'self-sufficiency' rather than dependence on the beneficence of foreign bodies. (Ministry of Health of the Republic of South Africa 1996) Furthermore, given the animosity evident in the relations between the pharmaceutical industry and the South African (which reached their nadir during the court case but which have shown little signs of subsequent improvement), it is unlikely that the same sort of partnership could be forged in South Africa as has been in Botswana.

The conclusion that the Brazilian model should be adopted by the South African government has already been promoted by a number of civil society groups. In January 2002, members of the Congress of South African Trade Unions and the Treatment Action Campaign went to Brazil to bring back a shipment of antiretroviral drugs destined for people living with HIV/AIDS receiving care in a programme run by Médecins Sans Frontières in Khayelitsha, the township of Cape Town. The three groups, joined by the international development agency Oxfam, called on the government to begin to follow the Brazilian example by starting pilot projects in the use of antiretroviral therapy and by securing broader availability of generic medicines. (Altenroxel 2002)

Should the South African government wish to adopt the Brazilian model, it will have to grapple with how to stimulate domestic production of antiretrovirals. The current macroeconomic policy would suggest that a private-sector driven approach would be favoured, although it is worth noting that the Brazilian government, which has

Country	HIV/AIDS	Government financial resources	Pharmaceutical production capacity	Health infrastructure	Human resources capacity
Brazil	Low prevalence; moderate absolute numbers	Large	Strong	Uneven: well developed in urban areas; variable in rural areas	High
Botswana	Very high prevalence; moderate absolute numbers	Moderate (high per capita, but low aggregate)	None	Generally well developed with some exceptions	Low
South Africa	High prevalence; high absolute numbers	Large	Moderate - strong	Uneven: well developed in urban areas, variable in rural areas	Moderate (shortages exacerbated by AIDS and emigration)

embraced a similar economic policy framework, including an emphasis on the privatisation of state assets, reassessed this approach in light of the AIDS epidemic and chose to support production in state-run facilities. The development of the requisite technical capacity is unlikely to be a significant or time-consuming barrier, as the government of Brazil has committed to assisting with technology transfer. The government would also have to address the constraints on generic production of antiretrovirals currently imposed by patent protection. The Patents Act, 57 of 1978, specifies that although patent protection does apply to the government, inventions may be used for public purposes under conditions agreed with the patent holder, or, in default of an agreement, set in a legal proceeding. This compulsory licencing provision is consistent with the TRIPS Agreement, but has never been used by the government. Moreover, given the experience of the Medicines Act court case, there are concerns that this process could be subject to lengthy delays, potentially creating a bottleneck restricting access to medicine.

Financing is less likely to be a significant constraint. An International Monetary Fund study (Haacker 2001) concluded that the projected expenses would be affordable to the state, despite assuming that drug costs would be several fold higher than the lowest-cost generic producers now offer, and despite not offsetting drug expenditures with cost-savings from hospitalisations averted and treatment of opportunistic infections avoided, which Brazil has shown can be significant.¹⁰ Further, there are likely to be additional sources of funding available, both nationally and internationally. Domestically, there has been a chorus of civil society voices calling for the government to reprioritise social spending (for example, by reducing military expenditure), which may result in increased financing, while the government could also choose to apply for external monies from the recently-initiated Global Fund to Fight AIDS, Tuberculosis, and Malaria.¹¹

10 Brazil estimates that it saved US\$677 million on hospitalisations averted from 1997 – 2000, offsetting more than 50% of expenditure on antiretrovirals. Savings associated with treatment of opportunistic infections avoided run to the tens of millions of U.S. dollars. (Ministry of Health of Brazil 2001, p. 29) In South Africa, which spends an estimated R4 billion on AIDS-related illnesses annually (National Treasury 2001), similar cost-savings could be expected.

11 The Global Fund has already approved a proposal from the South African National AIDS Council entitled 'Strengthening national capacity for treatment, care and support related to HIV and TB, building on successful behaviour change,' but media accounts indicate that this proposal does not include an antiretroviral treatment component in its US\$93.3 million five-year request. Separately, the KwaZulu-Natal Provincial Coordinating Mechanism received funding for a US\$72 million application, which includes antiretroviral therapy. (Global Fund to Fight AIDS, Tuberculosis, and Malaria 2002, Smith 2002)

Conclusions: The need for further research

Several key areas of further research relating to the pharmaceutical industry and international trade emerge from this analysis.

First, there is a clear need for a thorough assessment of capacity of the generic pharmaceutical industry to produce antiretrovirals to be undertaken. Some capability clearly exists in the private sector, but a comprehensive review is necessary to gauge the depth and breadth of this, as well as the potential interest on the part of firms to move into the HIV field. The potential role of the public sector should also be studied, complex research would need to address capacity (both current and potential), appropriateness (balancing the government's broader economic framework, the National Drug Policy, the size and growth of the HIV/AIDS epidemic, and the ability to deliver treatment), and the needs for the development of a regulatory framework to ensure that state production could function effectively.

Second, research into the legal options available to the South African government to promote access to medicine is needed. While the existing provisions of the Patents Act may suffice, they are untested and may not prove adequately expeditious. In particular, research is needed into how procedures that ensure fast-track consideration of cases dealing with access to life-saving medicines can be incorporated into South Africa's laws. Models in use elsewhere in the world – from Brazil's requirement that patents be worked locally to the US's administrative approach to compulsory licencing – should be weighed and adapted to the South African legal framework.

Third, more economic research should be conducted into the impact of antiretroviral therapy, both the direct effects related to clinical cost-savings (from hospitalisations averted and treatment of opportunistic infections avoided) and the indirect benefits (from people returning to work, children remaining in school rather than being forced to withdraw to care for sick adults or because of the loss of household income, etc). These analyses would provide information critical to shaping the debate around the financing of treatment programmes.

Finally, there are several areas of emerging importance that require study. Firstly, globalisation has greatly increased the ease with which professionals cross borders. In South Africa, this has led to a significant loss of trained medical staff, as they abandon the overburdened public health care system to take higher-paying positions in industrialised countries that are content to address shortages in their own abilities to educate new doctors and nurses by luring them from poorer countries. The General Agreement on Trade in Services, part of the WTO, may well speed up this process, but this issue has been little studied. If this worrying trend is to be reversed, creative approaches must be devised to persuade medical professionals to remain in the country. AIDS is clearly having an effect on South Africa's economic prospects. Although this primarily operates at the domestic level and so is beyond the scope of this analysis, an impact is already beginning to be noted at the international level, as firms look to locate their investments elsewhere because of mounting concerns about reductions in productivity and increased labour costs resulting from HIV/AIDS. (Bloom, Bloom, and River Path Associates 2000) Given the centrality of attracting foreign direct investment to the government's broader approach to growing the South African economy, this has the potential to cause extremely serious harm to the country's economic fortunes. Rather surprisingly, little research has yet been done to measure the possible losses and determine what can be taken to avoid them.

These subjects may appear far from the reality of the daily struggles against the devastation wrought by HIV/AIDS. However, the pharmaceutical industry and international trade have played a central role in the recent history of the AIDS epidemic in South Africa, and that role is likely only to grow in the coming years, suggesting that to ignore them would be a mistake.

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