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**SOUTH AFRICA'S 'ROLLOUT' OF
HIGHLY ACTIVE ANTIRETROVIRAL
THERAPY: A CRITICAL
ASSESSMENT**

Nicoli Nattrass

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THERAPY: A CRITICAL ASSESSMENT

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South Africa's 'Rollout' of Highly Active Antiretroviral Therapy: A Critical Assessment

Abstract

The number of people on highly active antiretroviral therapy (HAART) in South Africa has risen dramatically from less than 2,000 in October 2003, to almost 200,000 by the end of 2005. Yet South Africa's performance in terms of HAART coverage is poor both in comparison with other countries and the targets set by the government's own Operational Plan. This paper shows that the public sector HAART 'rollout' has been uneven across South Africa's nine provinces and that the role of external assistance from NGOs and funding agencies such as the Global Fund and PEPFAR has been substantial. The National Treasury appears to have allocated sufficient funding to the Department of Health for a larger HAART rollout, but the Health Minister has not mobilised them accordingly. Failure to invest sufficiently in human resources – especially nurses – is likely to constrain any future increase in the pace of the rollout. Not only does this compromise the health and lives of thousands of people in South Africa – it also undermines the chances of achieving international targets to increase access to HAART.

Introduction

South African AIDS policy has long been characterised by suspicion on the part of President Mbeki and his Health Ministers towards antiretroviral therapy (Nattrass 2004, 2006). The current Minister of Health, Manto Tshabalala-Msimang resisted the introduction of antiretrovirals for mother-to-child transmission prevention (MTCTP) until forced to do so by a Constitutional Court ruling – and she resisted the introduction of highly active antiretroviral therapy (HAART) for AIDS-sick people until a cabinet revolt in late 2003 forced her to back down on this as well. Since then, the public sector rollout of HAART has gradually gained momentum, but it has been uneven and continues to be constrained by a marked absence of political will at high levels.

This paper discusses the South African HAART rollout, paying particular attention to South Africa's poor performance both comparatively and in relation to the internal targets set by the government's Operational Plan of late 2003 (Department of Health 2003). This poses problems not only for South Africa, but for the global rollout because half all HAART patients in low- and middle-income countries live in Sub-Saharan Africa, and of this total, one quarter live in South Africa (World Health Organisation 2005a, 2005b). Poor performance in South Africa, thus impacts the aggregate performance of global initiatives such as the World Health Organisation's '3 by 5' initiative to treat three million people by the end of 2005.

South African HAART Coverage in Comparative Perspective

Over the past five years, HAART coverage has increased dramatically in developing countries – a process that has been aided substantially by the launch of the Global Fund to fight AIDS, Tuberculosis and Malaria (January 2002) and the United States President's Emergency Plan for AIDS Relief (PEPFAR) (January 2003). The World Bank has also contributed to the effort through its Multi-country HIV/AIDS program for Africa, as has a range of private donors including the Bill and Melinda Gates Foundation and the Clinton Foundation, and Non Governmental Organisations (NGOs) such as Médecins Sans Frontières (MSF) and Absolute Return for Kids (ARK). Largely, as a consequence of this unprecedented international effort (energised further by the '3 by 5' campaign), the number of people on HAART in Sub-Saharan Africa rose from 150,000 to 5,000,000 between June 2004 and June 2005, increasing average HAART coverage from 8% to 11% (World Health Organisation 2005a, 2005b).

HAART coverage, however, varies substantially from country to country. While level of *per capita* income is important (richer countries can afford higher levels of HAART coverage), this is far from being the only factor at work. Political commitment and the capacity of the domestic health sectors to 'scale up' access to HAART is also crucial (World Health Organisation 2005b; International Treatment Preparedness Coalition 2005; Kober *et al.* 2004; Kovsted 2005; Stewart *et al.* 2004). This, in turn, is affected by the level of development and the scale of the HIV epidemic. Given the many relevant factors, the question of political commitment to rolling out HAART needs to be addressed by asking whether a country has achieved a relatively large (or small) coverage of HAART *given* its available resources and epidemiological challenges.

A recent econometric analysis of the determinants of HAART coverage suggests that South Africa's performance is relatively poor given its economic, institutional and epidemiological characteristics (Nattrass 2006a). In other words, although South Africa comprises a large share (25%) of the total number of Sub-Saharan Africans on HAART (whether in the public, private or not-for-profit sectors), this comparative analysis indicates that South Africa should be performing a lot better than it is with respect to HAART coverage. Put differently, South Africa may have one of the largest HAART programmes (as claimed by President Mbeki in his 2006 State of the Nation address (Mbeki 2006). However, given its resource endowments, this programme should be even bigger.

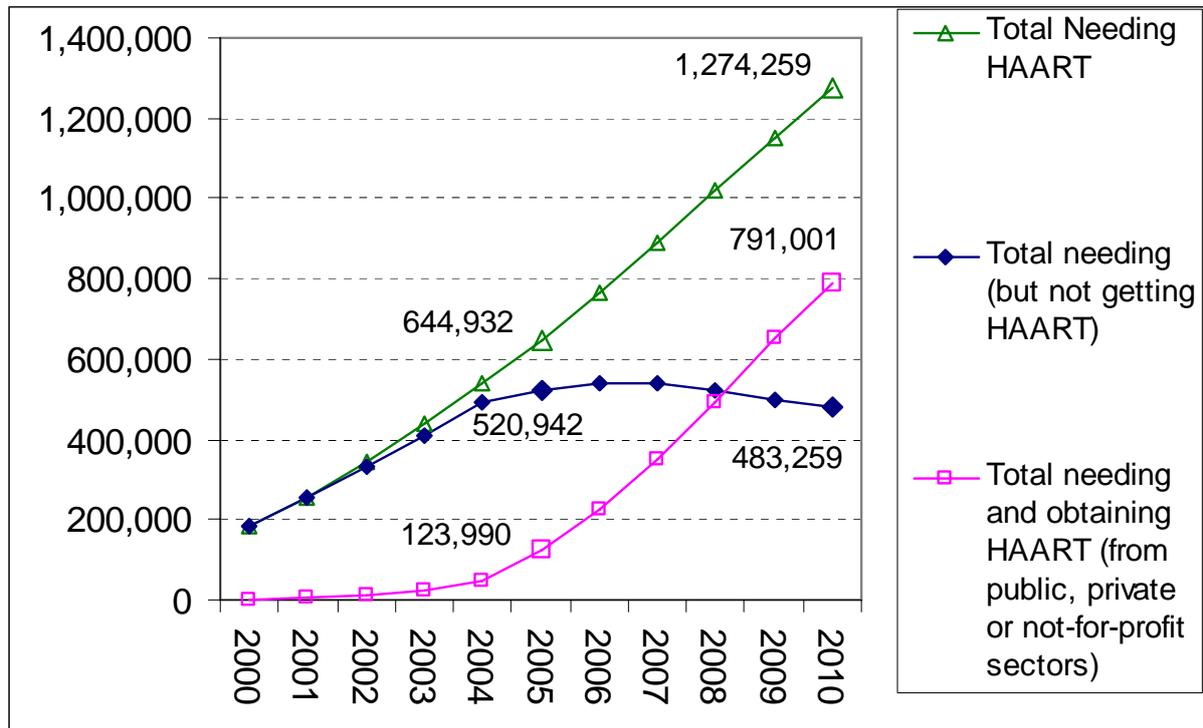
As Stephen Lewis, the UN Special Envoy on AIDS puts it:

“Over the last four years, I have been to every country in East and southern Africa, many of them two, three and four times. I can say confidently and categorically, that every single country (with the exception of newly peaceful Angola, whose borders were closed to traffic – and the virus – throughout the civil war) is working harder at treatment than is South Africa, with fewer relative resources, and in most cases nowhere near the infrastructure or human capacity of South Africa. It is a situation which is absolutely mystifying.” (2005: 187)

HAART Coverage in South Africa

South Africa's premier demographic model (ASSA2003) provides estimates of the number of people in the final stages of AIDS, that is, those who are sick with AIDS and who do not have long to live unless they obtain HAART. The model also inputs data from various sources on the number of people accessing HAART (whether in public, private or not-for-profit sectors), and projects this forward into the future. As can be seen in Figure 1, the number of people on HAART has increased sharply (to 124,000 in the middle of 2005) and is expected to rise to 791,000 in 2010. The model predicts that it will only be after 2008 that the number of people on HAART exceeds the number who need HAART but are unable to access it. At this point, HAART coverage will rise from 20% in mid 2005 (that is, when only one in five people who need HAART are actually receiving it) to over 50%.

Figure 1: Numbers of People needing and obtaining HAART (mid points for each year) whether from the Public or the Private Sectors.



Source: ASSA2003 demographic model.

South Africa's provinces are, of course, very differently endowed and face different challenges with regard to HIV/AIDS. As can be seen in Table 1, the Western Cape is in the best position to achieve a high HAART coverage because it has the lowest HIV prevalence of any province, the highest number of doctors per 100,000 uninsured persons, the second highest Gross Domestic Product (GDP) *per capita* and has the highest public sector health expenditure *per capita*. Its relatively high spending on health (and on doctors) is in part the product of its economic and demographic profile, but also of political decisions to prioritise health (including the HAART rollout). The fact that the Western Cape (in partnership with MSF) launched the first HAART programme as far back as May 2001 in defiance of national policy is indicative of the strength of this commitment – as is the ongoing effort to secure additional funding from the Global Fund and to work in partnership with NGOs such as MSF and ARK. According to Eric Goemare (head of MSF in South Africa), his working relationship with the Western Cape government has been the 'best' he has ever had, whereas his relationship with the national South African government, has been the 'worst' (quoted in Naimak, 2006: 64).

Table 1: The Treatment Rollout in the Provinces

	<i>Start of the Rollout</i>	<i>HIV prevalence (2005) – ASSA2003</i>	<i>Share of the total population</i>	<i>Doctors per 100,000 uninsured persons (2005)</i>	<i>Nurses per 100,000 uninsured persons (2005)</i>	<i>GDP per capita (2003)</i>	<i>Per capita govt health spending (R per uninsured person) 2004/5</i>	<i>Total HAART coverage (end of 2005)*</i>
EC	May 2004	9.5%	14.2%	17	108	R12,185	R873	21.8%
FS	May 2004	13.7%	6.0%	32	143	R21,437	R1,193	21.0%
GT	April 2004	14.3%	20.1%	42	105	R36,913	R1,179	29.6%
KZN	April 2004	15.6%	20.7%	27	107	R18,528	R1,017	20.0%
LP	Aug 2004	6.7%	12.0%	14	111	R12,040	R829	27.3%
MP	Aug 2004	13.3%	7.0%	19	93	R20,499	R774	20.9%
NC	July 2004	6.5%	1.9%	38	141	R24,922	R1,238	32.3%
NW	June 2004	12.5%	8.0%	13	90	R17,198	R767	24.5%
WC	May 2001	5.0%	10.3%	55	106	R30,628	R1,433	55.7%
Total		11.0%	100%	28	109	R22,569	R1,014	25.2%

Sources: Statistics South Africa, ASSA2003 demographic model; AIDS Law Project 2005 and South African Treasury 2004.

Notes: * The numbers of people on HAART in the public and private sectors as a percentage of the number of people estimated to need HAART (from ASSA2003 demographic model).

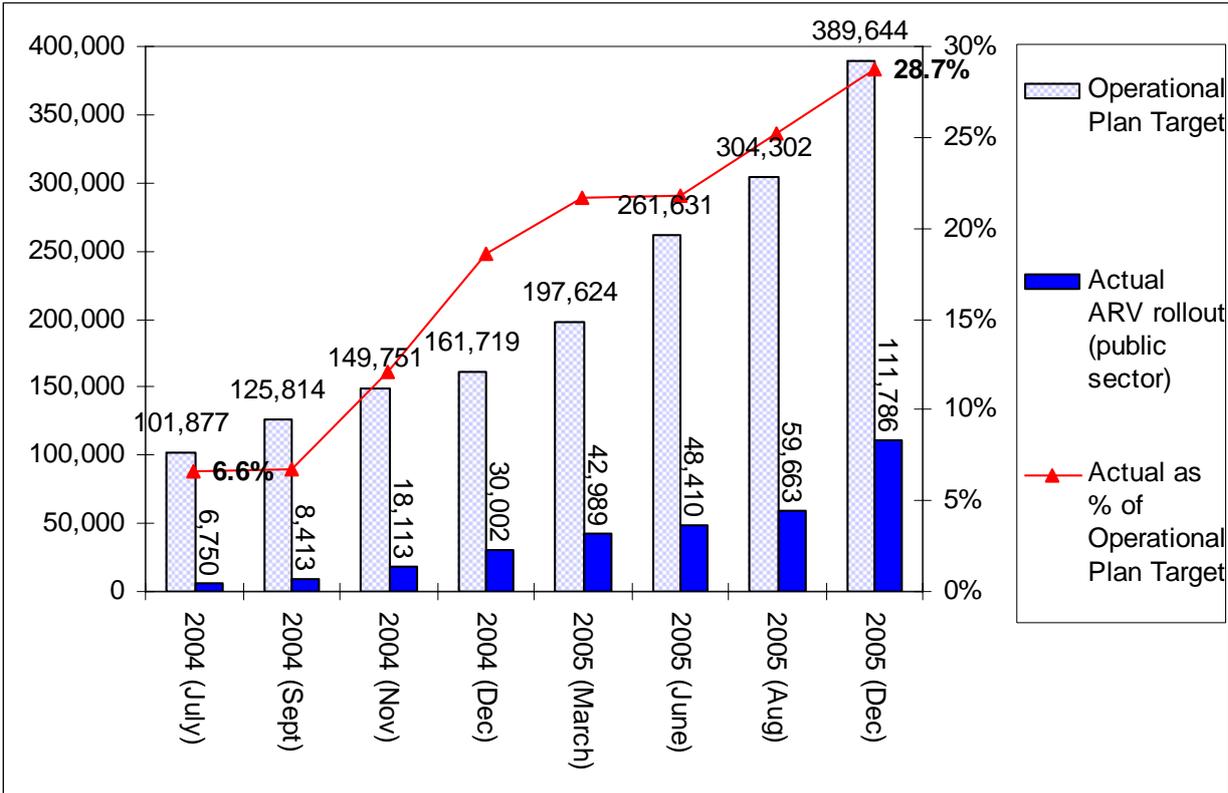
EC: Eastern Cape; FS: Free State; GT: Gauteng; KZN: KwaZulu-Natal; LP: Limpopo; MP: Mpumalanga; NC: Northern Cape; NW: North-West; WC: Western Cape.

It is important to bear in mind that total HAART coverage includes all people on HAART, that is, whether they are funded through the public sector, private medical schemes, NGOs or out of their own pocket. As shown in Table 2 as well as Figures 5a and 5b (see sections below), at the end of 2005, there were an estimated 193,579 people on HAART, of which 57.8% were in the public sector. The 48.2% of HAART patients located in the private sector were mainly funded through medical schemes (29% of total HAART patients), not-for-profit organisations such as NGOs and churches (5.5% of the total), or from their own incomes (7.7% of the total). The following section concentrates specifically on the rollout of HAART in the public sector.

The Rollout of HAART in the Public Sector

In October 2003, after a long struggle by many civil society organisations including the Treatment Action Campaign (TAC) and the AIDS Law Project, the South African cabinet committed the government to providing HAART through the public sector. The following month, the Department of Health produced its ‘Operational Plan’ to have 54,004 people on treatment by March 2004, 197,624 by March 2005, and 453,650 by March 2006 (Department of Health 2003). Unfortunately, the Minister of Health, Dr Tshabala-Msimang, was far from enthusiastic about this policy shift (seeing it as having been imposed on her by cabinet) and to this day, she continues to warn about the dangers of taking antiretrovirals (Nattrass 2006b).

Figure 2: Planned and Actual Growth in the Provision of Antiretroviral Treatment

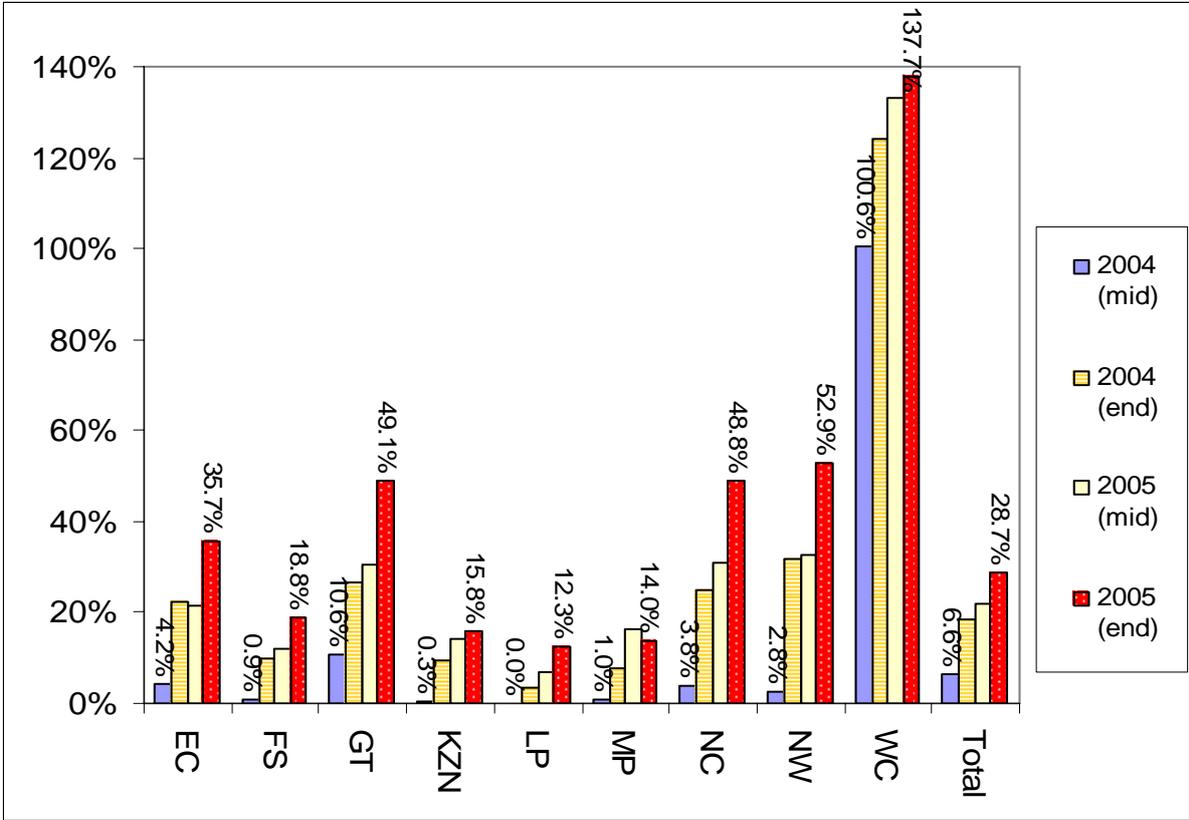


Sources: ASSA2003 demographic model; Department of Health 2003 and Hassan and Bosch 2006.

It is thus probably unsurprising that the HAART rollout proceeded a great deal slower than expected by the architects of the Operational Plan, with most provinces only starting to provide treatment in mid-2004 (see Table 1 and Figure 2). Part of the problem had to do with procrastination by the Health Minister with regard to drug procurement. On 2 March 2004, she unveiled her drug

procurement timetable to the parliamentary portfolio committee on health showing that the earliest that drugs would be available for a public sector rollout was July 2004 (and in the end, the tender was only finalised in March 2005). The TAC protested about the absence of an interim tender procedure (which would enable the provinces to obtain drug supplies), met with the Department of Health and then served draft legal papers on the 19 March. Five days later the government announced that provinces could use interim tender procedures and begin their rollout.

Figure 3: Provincial HAART Rollout as a % of the Operational Plan Target

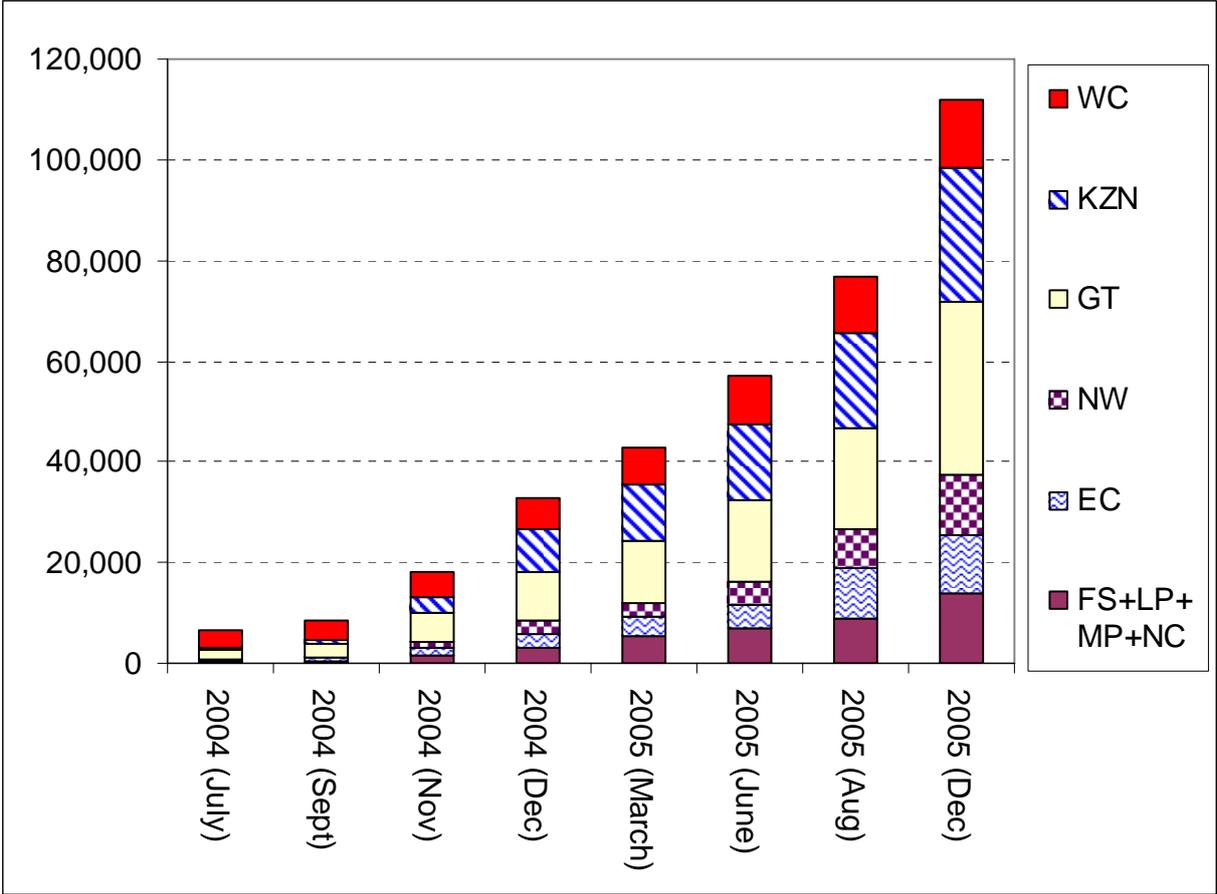


Sources: ASSA2003 demographic model; Department of Health 2003 and Hassan and Bosch 2006.

However, despite the slow start, the rollout gathered pace, especially in 2005 once PEPFAR and Global Fund projects came on stream. The number of HAART patients in the public sector rose from about 7,000 in mid 2004, to 112,000 at the end of 2005. This strong growth of 16% over eighteen months was, however, not nearly sufficient to catch up with the original Operational Plan targets. As can be seen in Figure 2, by the end of 2005, the numbers of people on HAART in the public sector was still less than 30% of the original planned total.

This overall nationally aggregated performance of course masks some dramatic differences between the provinces. As can be seen in Figure 3, the Western Cape had already achieved the Operational Plan target by mid 2004, and had exceeded it by 2005. Limpopo, by contrast, had only reached 12% of the target by the end of 2005. Gauteng, the Northern Cape and North West Province had reached about 50% of the Operational Plan target by the end of 2005. It is also important to note that the increase in the total number of HAART patients in the public sector occurred mainly in the two largest (and most HIV affected) provinces: KwaZulu-Natal and Gauteng, and to a lesser extent in the next largest provinces (Eastern Cape and Western Cape). The provincial allocation of public sector HAART patients is shown in Figure 4.

Figure 4: Provincial Allocation of Public Sector HAART patients: mid 2004 – end 2005



Source: Hassan and Bosch (2006).

South Africa’s public sector HAART rollout is strongly underpinned by external funding and support – especially in the Western Cape and KwaZulu-Natal. As shown in Table 2 and Figures 5a and 5b, of the total number of public sector HAART patients (111,786), 53.9% were part funded by external donors (the

largest being PEPFAR) working in partnership with the public sector. The contribution that donors make to public sector patients varies between donors, across projects (with some treatment sites being fully funded by donors, and others simply obtaining targeted support) and over time. For example, the first public sector, donor project, which was between MSF and the Western Cape government, was initially almost entirely funded and managed by MSF, but over the past few years, the province has assumed a greater role, with the plan being that as of 2007, the sites will be run entirely by the public sector (Naimak 2006). However, the Western Cape government also received funding from the Global Fund (which was disbursed in October 2004) for six HAART sites including the sites it was operating in partnership with MSF. In other words, disentangling the relative contributions of donors and the South African government for the public sector rollout is a complex business! Unfortunately, neither the donors nor the South African public sector provide sufficient data for the relative impacts to be unpacked at a national level.

Table 2: Sources of Funding of HAART Patients

As of the End of December 2005	Number of HAART patients	% of the total number of HAART patients	% of the number of public sector HAART patients
In the public sector, part funded by ARK and MSF*	13,859	7.2%	12.4%
In the public sector, part funded by PEPFAR*	30,136	15.6%	27.0%
In the public sector, part funded by the Global Fund**	16,297	8.4%	14.6%
In the public sector, fully funded by the state	51,494	26.6%	46.1%
Total in the public sector*	111,786	57.7%	100%
In not-for-profits (i.e. programmes outside the public sector funded by PEPFAR and other philanthropists)*	10,669	5.5%	
In disease management programmes (including work place treatment programmes and medical insurance schemes)	56,123	29.0%	
Unfunded (i.e. funded out of pocket by the patients themselves)*	15,000	7.7%	
Total number of patients***	193,579	100%	

Sources: * Hassan and Bosch (2006); ** <http://www.theglobalfund.org>; ***ASSA2003 demographic model.

Note: The numbers funded by the state is a derived figure. The number in disease management programmes is back-calculated by subtracting the total number in the public sector from the number of public + private sector patients as estimated by ASSA2003. It thus differs marginally from Hassan and Bosch (2006).

Donor assistance to the South African public sector is positive insofar as it adds to the pool of resources being allocated to HAART. This is clearly the case in the Western Cape, where HAART coverage has exceeded the planned national target, and where additional funding was needed from NGOs and the Global

Fund to supplement government resources in order to continue the rollout (Naimak 2006).

However, there is a danger that the contribution of donors to the public sector HAART rollout has taken the pressure off the national Department of Health to ensure that existing, allocated resources from the national Treasury for the rollout are being used effectively and appropriately. As discussed below, the National Treasury has allocated sufficient resources to the public health sector for a HAART rollout – yet these resources are not being fully or appropriately utilised, and instead, one of the main driving forces for the public sector rollout appears to be external assistance from donors.

Budgeting for the Public Sector Rollout

Unfortunately, information regarding national finances on the HAART rollout is very opaque, with the available information being limited to the occasional cryptic remark in various general budget documents. However, judging from an August 2004 Treasury document reviewing government finances (South African Treasury 2004), sufficient finances were allocated by the national Treasury to provincial governments to fund the Operational Plan. The report states that a sum of R300 million had been allocated to the ‘comprehensive HIV and AIDS programme, ARV rollout in particular’ for 2004/5 (South African Treasury 2004). At this stage, the Treasury would have been working in terms of the budget provided by the Operational Plan which proposed to have 54,000 people on treatment by March 2004 at a total cost of R296 million (Department of Health 2003). This included budgeted allocations for additional staff, laboratory testing, antiretroviral drugs, nutritional supplements, health systems upgrading, programme management, capital investment and research. Of course, by late 2004 (when Treasury finalised its medium-term expenditure framework), it would have been clear that the rollout was proceeding far more slowly and, at best, was only going to achieve its March 2004 target a year later (as had indeed been announced by President Mbeki in his 2004 State of the Nation address (Mbeki 2004)). This, together with the fact that antiretroviral drug prices had fallen further since the operational plan was budgeted, meant that the allocation of R300 million for the 2004/5 financial year was more than sufficient to fund the (delayed-by-one-year) planned comprehensive rollout.

Figure 5a: Sources of Funding for HAART Patients (numbers)

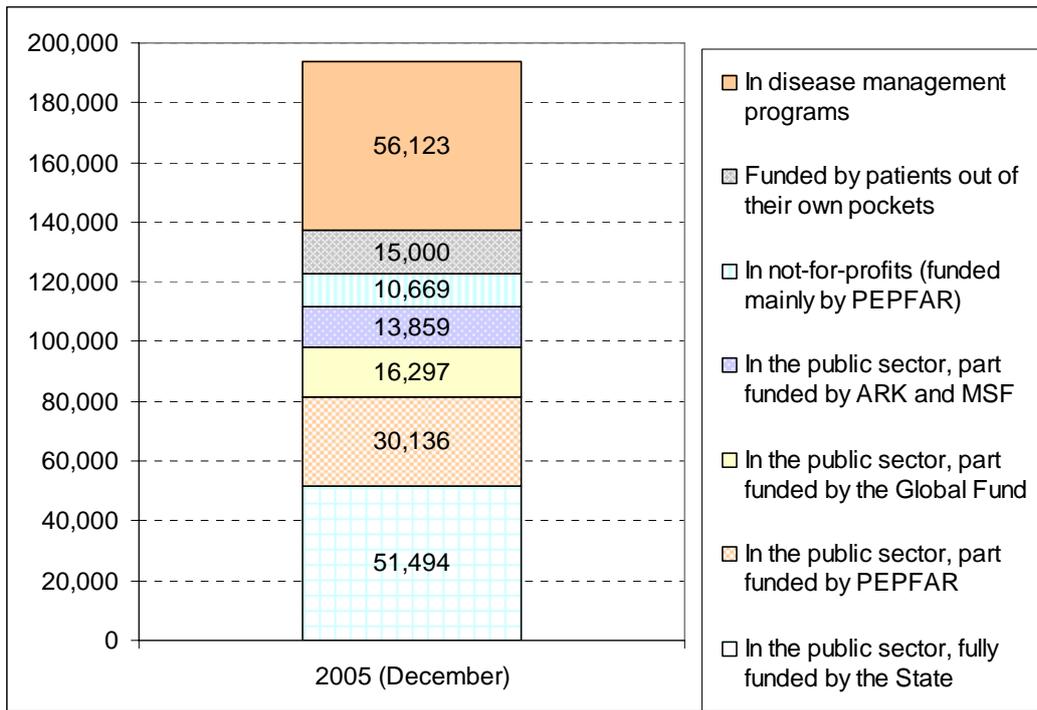
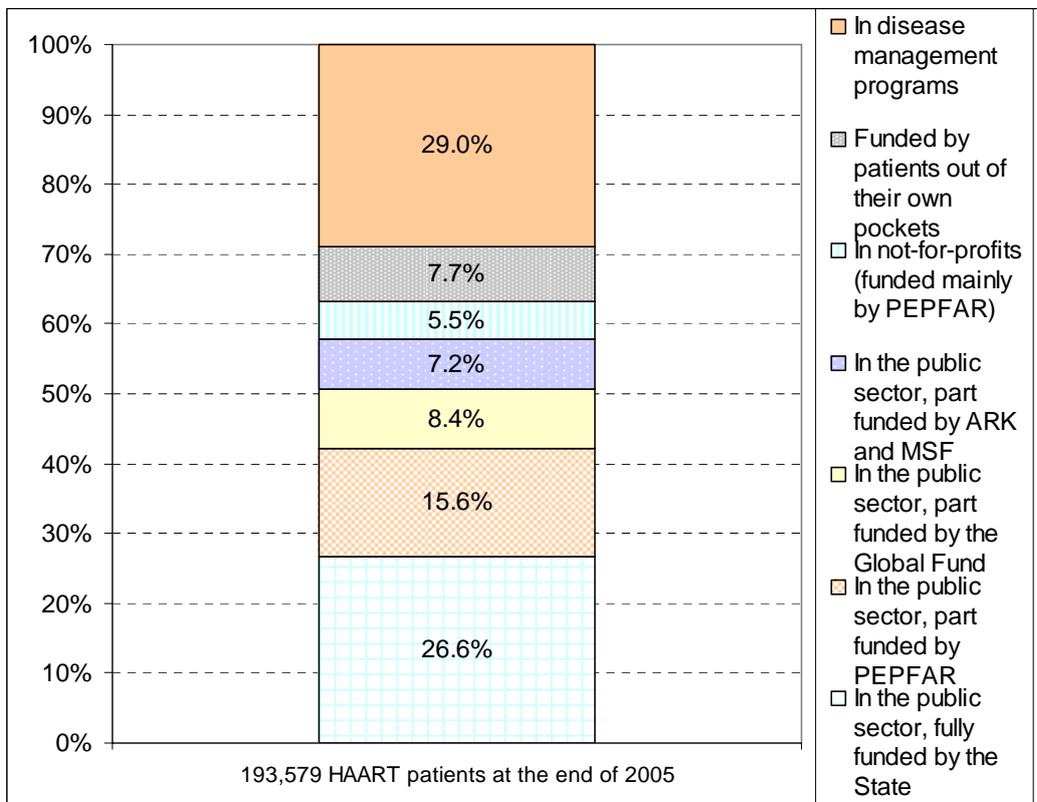


Figure 5b: Sources of Funding for HAART Patients (percentages)



Yet, by the time March 2005 came along, the rollout was still only at about 80% of the original first year's treatment target (that is, at about 43,000 people). In other words, more money had been allocated by the national Treasury for the comprehensive rollout in 2004/5 than had been used by the national and provincial health departments for that purpose. Despite this poor showing, the Treasury continued to be optimistic and supportive, and allocated enough for 2005/6 to have 150,000 people on HAART by March 2006 (South African Treasury 2005), whilst making the commitment to increase the budget for the rollout as it progressed.

The Treasury's target of 150,000 HAART patients in the public sector by March 2006 appears to be spot-on with the achieved level of 111,786 by the end of December, 2005. The national Treasury had, in other words, allocated sufficient resources to fund all of these patients. Yet as it turned out, the Global Fund, PEPFAR and various other NGO partnerships took the pressure off the South African state to such an extent, that only 51,494 HAART patients needed to be fully covered by the government budget. If we assume that the average contribution of donors to public sector projects is 50% of the total costs (which is probably an underestimate given that the Global Fund contributes substantially more to the Western Cape by paying for drugs, personnel, diagnostic testing and infrastructure (Naimak 2006)), then at least a quarter of the budget allocated by the national treasury for the treatment rollout was not used for that purpose.

The Problem of Political Will

According to a recent assessment by the International Treatment Preparedness Coalition (ITPC) of South Africa's HAART rollout (International Treatment Preparedness Coalition 2005), the major constraint is political leadership. The analysis presented here supports the ITPC's contention. It suggests very strongly that the overall public sector rollout in South Africa is not constrained by budgetary allocations (although it may be in well-performing provinces like the Western Cape and to some extent in KwaZulu-Natal) – but is instead constrained by ineffective leadership in the national Department of Health and in many of the provincial Departments of Health. While it is true that a rapid and sustained HAART rollout requires additional investment in, and upgrading of, the public health sector, it is important to note that this was all budgeted for in the Operational Plan, and, as argued above, existing subsequent allocations for the rollout by the national Treasury are consistent with that Operational Plan (although revised downwards to account for the slow initial pace of the rollout).

Put bluntly, if the national Health Minister had prioritised upgrading the health system and rolling out treatment, the Minister of Finance would have provided her with the funds and a further 30,000 people (at least) would be on HAART in the public sector. If the Ministry of Health had managed to rollout treatment in line with the original planned targets (and which were initially budgeted for by the National Treasury) then an additional 278,000 people would be on treatment. Instead, the Health Minister has yet to chart a way forward to address the human resources crisis in the health sector, and has undermined the HAART rollout yet further by sending out confusing messages about the relative benefits of HAART, nutrition and alternative remedies.

Rather than actively supporting the HAART rollout, the Health Minister consistently points to the benefits of nutritional interventions, and to the side effects of antiretroviral drugs, saying that patients must exercise ‘choice’ in their treatment strategies (Nattrass 2006b). This has resulted in AIDS patients being reluctant to take HAART because they had heard that antiretrovirals were ‘poisonous’ and in additional burdens being posed on antiretroviral treatment counsellors who find themselves having to dispel myths about AIDS and antiretroviral treatment. In addition, the Health Minister’s unfortunate discourse of ‘choice’ has created the space for unproven substances to compete with antiretrovirals even though their clinical effects are at best unproven. This includes the Rath Foundation’s campaign to treat HIV and other chronic conditions with high doses of vitamins rather than HAART (Geffen 2005).

Aside from conspicuously failing to energise the antiretroviral rollout from the centre (and sowing confusion with her stance on alternative treatment), the Health Minister has undermined the HAART rollout in three other ways. Firstly, she has undermined the potential of provinces to apply for and obtain funding from the Global Fund. Between June 2002 and August 2003, she blocked a Global Fund grant of \$72 million to Kwa-Zulu Natal, citing procedural irregularities. Such political interference from the centre undermined subsequent applications to the Global Fund (Naimak 2006). Secondly, as noted earlier, she presided over such a slow antiretroviral drug procurement process that the final tender was awarded only in March 2005. As over half of the value of the tender was awarded to Abbot Laboratories and MSD (Hassan 2005) which had patents on most of the drugs that were being procured, TAC demanded that the Minister of Health use her powers under the Patents Act to issue compulsory licences to enable local production of generic versions, or the importation of generic versions. As yet, she has failed to act on the matter.

TAC faced similar frustrations over the health minister’s third apparent delaying tactic, her failure to take rapid action with regard to the human resources crisis in the health sector – thereby undermining the capacity of the health sector to

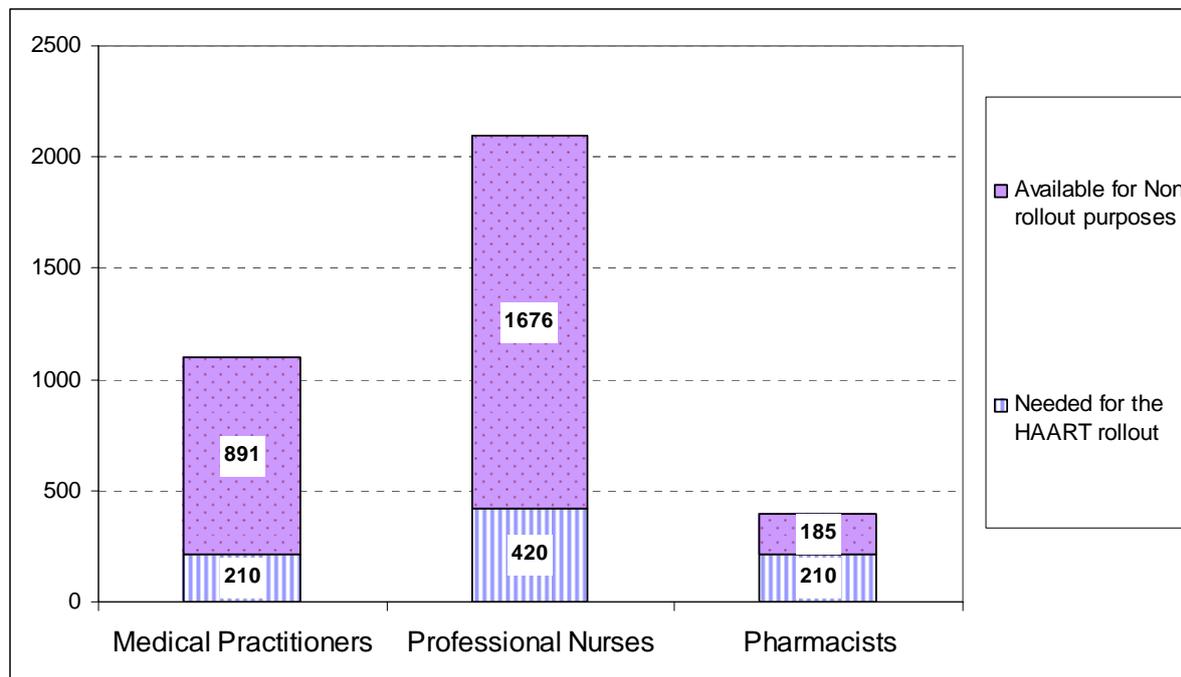
rollout antiretroviral treatment faster. As far back as 2001, an internal report for the Department of Health had identified human resources as the key constraint facing the South African public health sector. The 2003 National Health Act required the Health Minister to develop a strategic plan for addressing the problem. This, however, only materialised in August 2005 when the Department of Health released its ‘Strategic Framework for the Human Resources for Health Plan’. However, the document was devoid of priority setting, did not set health care worker to patient ratios or grapple with any of the reasons why many health care workers were apparently leaving the public health sector (Berger and Hassim 2005).

Have there been ‘Sufficient’ Public Sector Resources for the Rollout?

One of the questions posed by the ongoing human resources problem is whether the public sector HAART rollout that has taken place was accompanied by a sufficient increase in public sector employment – or whether it acted as a drain on existing human resources. There is a lot of anecdotal evidence indicating that there is severe pressure on public sector health care professionals as a result of the dual pressures of providing HAART and treating AIDS-sick people. For example, the Treatment Action Campaign devoted almost an entire issue of their magazine, *Equal Treatment*, to this problem (2005: 1-15). It documented cases of severely over-stretched clinics, and interviewed exhausted doctors and nurses – many of whom commented that they were depressed by the working conditions and tempted to take up offers by foreign and domestic head-hunters and leave the public health sector. However, we do not know to what extent the anecdotal evidence is representative of the entire country – or to what extent the pressure facing public sector workers is a recent phenomenon, rather than something they have been living with for some time – particularly those working in under-resourced rural areas.

We do know, however, that the numbers of medical practitioners, professional nurses and pharmacists in the public sector increased sharply between 2003 and 2005. Was this enough to cope with the increased numbers of people on HAART? According to the Operational Plan, for every 500 people placed on HAART, two extra professional nurses are required, one extra medical practitioner and one extra pharmacist (Department of Health 2003). Figure 6 shows the total increase of such personnel broken down into what was required to cope with the HAART rollout that took place, and what was surplus to that requirement. The figure indicates that there were, on aggregate, sufficient additional key medical and related personnel for the rollout.

Figure 6: Increase in the Numbers of Medical Practitioners, Professional Nurses and Pharmacists in the Public Health Sector (2003 – 2005)

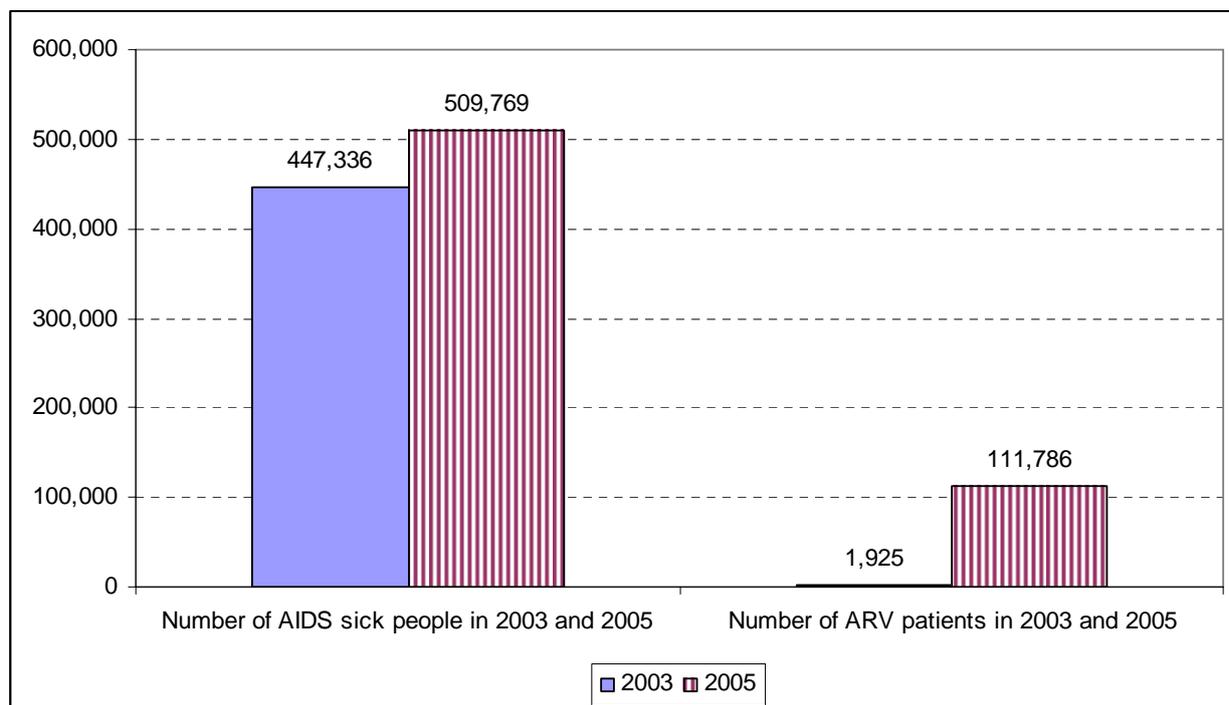


Source: (<http://www.hst.org.za/healthstats/98/data>).

However, one needs to consider that the public health sector was simultaneously coping with a sharp increase in the already high numbers of AIDS-sick people. As shown in Figure 7, there was a sharp growth in the number of AIDS-sick people and in the number of people on HAART in the public sector between 2003 and 2005. We therefore need to re-phrase the question and ask whether the increase in the numbers of health care professionals was also sufficient to cope with the increase in the numbers of AIDS-sick people.

The answer to this question depends on how much time these health care professionals spent on AIDS-sick individuals, and how much time they spent on other public sector health work (for example, delivering babies, emergency trauma, geriatric illnesses, non-AIDS related diseases etc). There is, unfortunately, no data available on this, so the best we can do is see how the answer to the question ‘was the increase in health care professionals enough?’ varies depending on what proportion of their time we assume was spent on AIDS-related illnesses in 2003.

Figure 7: AIDS-sick People and the Number of People on HAART in the Public Sector



Sources: ASSA2003 demographic model; Hassan and Bosch (2006) and AIDS Law Project (2005).

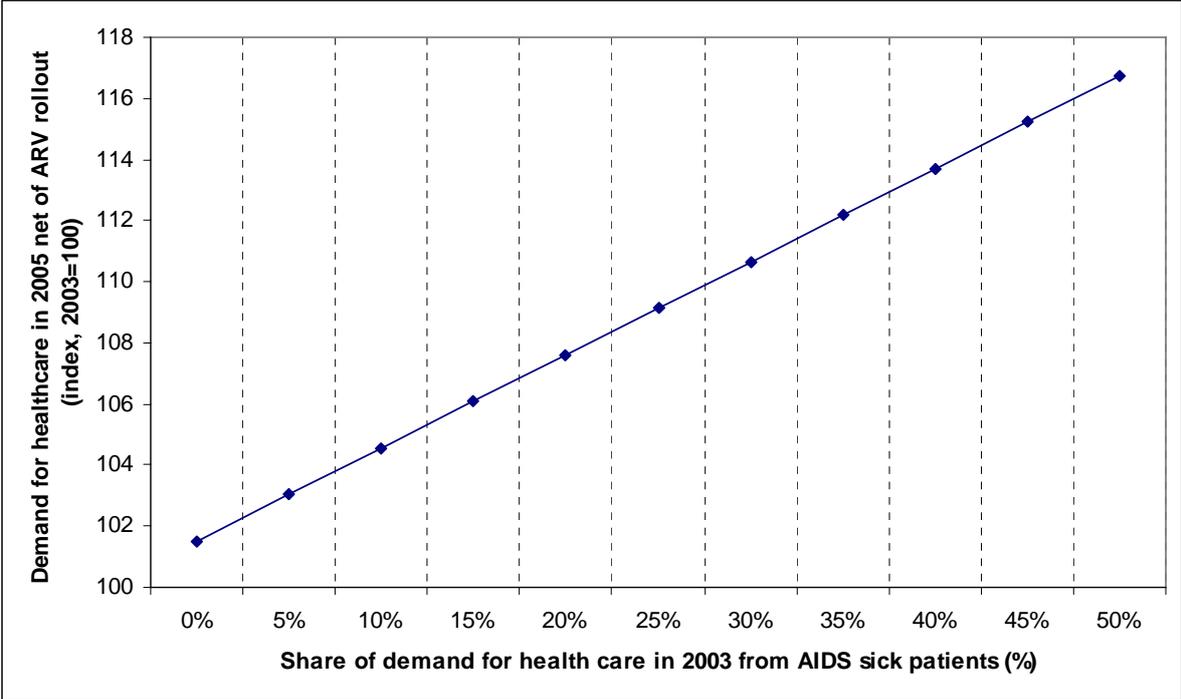
Figure 8 plots the demand for public sector health care in 2005 *net of the HAART rollout* against various possible proportions of time spent in 2003 on AIDS-sick patients. The demand for health care services from non-AIDS related cases is assumed to grow at the same rate as the non AIDS-sick population (which grew at 1.5% between 2003 and 2005). Thus, if we assume that health care professionals in the public sector spent no time in 2003 on AIDS-sick people, then the demand for their services (for tasks other than the HAART rollout) would have grown by 1.5%, which means that the demand for their services in 2005, expressed as an index with 100=2003, would be 101.5

The horizontal lines in Figure 8 depict the actual growth in the different categories of health care workers net of their absorption into the HAART programme. In the case of professional nurses, for example, the total number rose by 2,096. Of these, 420 full-time equivalents were needed for the HAART programme. This left, net of the rollout, $2,096 - 420 = 1,676$ nurses available for other duties. This number of nurses available for non-HAART rollout purposes grew by 4% between 2003 and 2005.

Was this enough? Figure 8 indicates that this depends on what proportion of time these nurses were spending on AIDS-sick cases in 2003. If they were spending 8% (or less) of their time on AIDS-sick people, then this would have been enough. However, if AIDS-sick people absorbed more of their time, then

the growth in professional nurses was not sufficient. Applying the same logic to medical practitioners and pharmacists, the analysis suggests that the increase in doctors was sufficient if they spent less than 32% of their time in 2003 on AIDS-sick people, and the number of pharmacists would have been sufficient if they had spent 45% or less of their time on AIDS-sick people. Put differently, if we assume that health care professionals spent on average about a third of their time in 2003 on AIDS-sick cases, then the increase in doctors was about right, the increase in pharmacists was more than sufficient, and the increase in nurses was seriously inadequate to cope with the demands on their time posed by the HAART rollout and the increase in AIDS-sick cases. If, however, AIDS-sick cases accounted for more than half of the workload of all these health care workers, then the increase in personnel that took place between 2003 and 2005 was not sufficient for the HAART rollout that took place.

Figure 8: Supply and Demand for Health Care Services Net of the HAART Rollout



Sources: <http://www.hst.org.za/healthstats/98/data>, ASSA2003 demographic model and Hassan and Bosch (2006).

This analysis is, of course, relative to the base line situation in 2003. If the public health sector was already over-burdened at that stage (which it probably was, given the anecdotal evidence and assessments by consultants), then the notion of a ‘sufficient’ increase in health care professionals needs to be suitably qualified. For example, growth in the number of professional nurses was stagnant between 2000 and 2002 – thus indicating that the base of 2003 was

probably already a situation of serious over-burdening of existing nursing staff (Chabikuli *et al.* 2005).

One of the biggest ethical questions facing the HAART rollout is the *de facto* rationing that is taking place – particularly in far-flung rural areas which often rely on recently graduated South African doctors doing their required two-year community service. It may well be the case, on aggregate, that there are ‘sufficient’ pharmacists and medical practitioners in the South African public health system – but if these are based primarily in urban areas (which is likely), then the rollout in rural areas is likely to be further constrained.

Although this analysis raises more questions than answers, a few tentative conclusions can be drawn. The first is that the South African public health sector has been able to expand the numbers of professional nurses, medical practitioners and pharmacists – despite also suffering from persistent attrition into the foreign and domestic private sectors. Whether this was ‘sufficient’ to cope with the additional burdens being placed on the health care sector by AIDS-sick cases and HAART patients, depends on the proportion of time these health care workers were spending on AIDS-related work. There are, however, strong grounds for concluding that the number of nurses was, and remains, inadequate. In this respect, it is worrying that only 31.5% of the nurses trained in South Africa between 1996 and 2004 registered with the South African Nursing Council over the same period (Subedar 2005). This suggests that unsustainably large numbers of trained nurses are either choosing not to pursue nursing careers in South Africa, or are leaving the country to work abroad. The chances of South Africa being able to launch a ‘nurse-centred’ HAART rollout in the future, are thus slim.

It is also worth noting the involvement of donors in relieving the human resources problem for the South African HAART rollout. Donors like MSF and ARK have flown in medical practitioners from outside the country, but this information does not appear in the government’s books (and hence is not included in this analysis). Such assistance is, however, unlikely to be sustainable in the long-run. There is thus a clear need to ensure that the South African public sector can maintain the momentum of the HAART rollout once donor assistance drops. Another problem worth noting with donor assistance in the rollout is that foreign-funded projects, due to strict reporting requirements and the strong focus on numerical targets as assessment tools, tend to deliver HAART through a vertical process that is poorly integrated with the rest of the primary health care system (Stewart and Loveday 2005). This is problematic given that the HAART programme must complement, and be well integrated with, the primary health care system if it is to be sustainable.

Conclusion

Human resources, with the exception of nurses, may have been sufficient to cope with the HAART rollout that took place in South Africa between 2003 and 2005. However, South Africa's HAART rollout has been slow relative to the 2003 Operational Plan and substantial numbers of people still require treatment. If South Africa was to scale up its programme to address the unmet demand, then – unless public sector recruitment can keep pace – human resources will constrain the rollout as is happening in other southern African countries (Kober *et al.* 2004). Addressing the human resources crisis in the public health sector thus ought to be an important priority for the Health Minister.

There are strong grounds for concluding that South Africa could have achieved a much higher HAART coverage than it has, and that the major constraint on the rollout is political will. The national Treasury has made resources available to the Health Minister to facilitate a HAART rollout, yet a significant proportion of these resources have not been used for this purpose. The Health Minister appears to be undermining, rather than energising the rollout. A large part of South Africa's failure to achieve a higher HAART coverage must be placed at the door of the national Health Minister – and President Mbeki, who at the very least is complicit insofar as keeping her in her post.

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