How equitable is the scaling up of HIV service provision in South Africa?

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Objectives. To assess the extent of inequalities in availability and utilisation of HIV services across South Africa.

Design. Cross-sectional descriptive study.

Setting. Three districts reflecting different socio-economic conditions, but with similar levels of HIV infection, were purposively sampled.

Outcome measures. Availability and utilisation of HIV services and management and support structures for programmes were assessed through the collection of secondary data supplemented by site visits.

Results. There were marked inequalities in service delivery between the three sites. Compared with two poorer sites, clinics at the urban site had greater availability of HIV services, including voluntary counselling and testing (100% v. 52% and 24% respectively), better uptake of this service (59 v. 9 and 5.5 clients per 1 000 adults respectively) and greater distribution of condoms (15.6 v. 8.2 condoms per adult male per year). Extra counsellors had also been employed at the urban site in contrast to the other 2 sites. The urban site also had far more intensive management support and monitoring, with 1 manager per 12 health facilities compared with 1 manager per more than 90 health facilities at the other 2 sites.

Conclusion. The process of scaling up of HIV services seems to be accentuating inequalities. The urban site in this study was better able to utilise the extra resources. In contrast, the poorer sites have thus far been unable to scale up the response to HIV even with the availability of extra resources. Unless policy makers pay more attention to equity, efficacious interventions may prove to be of limited effectiveness.

S Afr Med J 2005; **95:** 109-113.

In 2000 life expectancy in South Africa was estimated to have dropped to 55.2 years, with an estimated 30% of deaths related to HIV.[1] Nearly one-quarter (24.5%) of women attending public antenatal facilities in 2002 were HIV-positive.[2]

In line with many other African countries, there has been a rapid introduction and expansion of public-sector HIV services at primary health care (PHC) level in South Africa. This has included the provision of voluntary counselling and testing (VCT), prevention of mother-to-child transmission (PMTCT) programmes and home-based care, all of which have been found to be very cost effective.[3-5] More recently the South African government has also committed to providing anti-retroviral (ARV) treatment.

However, there is concern that the focus on scaling up HIV services could further exacerbate inequities along the lines of the 'inverse equity' hypothesis.[6] As new public health interventions are introduced they initially reach those of higher socio-economic status who have better access to services and this leads to greater inequity in coverage, morbidity and mortality. The implementation of an equitable HIV service in South Africa is a particular challenge, given the inequities that already exist in the general public health system. For example, the distribution of professional nurses in the public sector ranges from 75 to 130 per 100 000 in the different provinces.[7] The following question arises: To what extent does the introduction of HIV services exacerbate or ameliorate the pre-existing public sector inequities? This study attempts to answer this question by examining the provision of HIV services between three health subdistricts in South Africa.

Methods

Site selection

In order to compare and contrast the different issues that arise in implementing new HIV policies in rural and urban areas we selected three sites where the antenatal HIV prevalence was high and where other characteristics were typical for a deep rural subdistrict, a small town/farming subdistrict and a metropolitan subdistrict. The subdistricts are located in the Eastern Cape (Engcobo subdistrict in the Chris Hani district municipality), Free State (Maluti-a-Phofung subdistrict in the Thabo Mofutsanyana district municipality) and the Western Cape (Khayelitsha subdistrict in the Cape Town metropole) respectively.

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Site descriptions

Engcobo is a deep rural subdistrict in the central area of the Eastern Cape. It falls within the Chris Hani district municipality and has an estimated population of 150 000. It is a grassland area and some parts are inaccessible in rainy weather because of poor road conditions. There is a large backlog of electricity supply for household and commercial consumption. Most people still use paraffin more than other sources of energy. There is a high usage of the bucket system for sanitation, and 82% of households draw water from rivers or dams. The HIV prevalence rate for the Eastern Cape is 21.7%.[2] There are 21 PHC clinics, 2 mobile clinics and 2 subdistrict hospitals with 101 professional nurses deployed in the subdistrict.

Maluti-a-Phofung subdistrict is part of the Thabo Mofutsanyana district municipality in the north-eastern part of the Free State. The population is concentrated in the two main towns, Phuthaditjaba (QwaQwa) and Harrismith. The population is estimated at 353 000. There is a large settlement of reconstruction and development programme (RDP) houses around Phuthaditjaba with minimum basic services in the area. This semi-mountainous area is primarily devoted to agriculture and farming; however there are factories situated on the outskirts of town. The HIV prevalence rate for the Free State is 30.1%.[2] There are 31 PHC clinics, 7 mobile clinics and 2 subdistrict hospitals with 171 professional nurses deployed in the subdistrict.

Khayelitsha subdistrict is a township situated on the outskirts of Cape Town in the metropolitan region of the Western Cape. It is an urban, densely populated area with a population of 386 000. Eighty per cent of household dwellings are informal. The HIV prevalence rate in the Khayelitsha subdistrict is 22%.[8] Primary care in Khayelitsha is not fully integrated, with antenatal care being provided separately from general care at 2 midwife obstetric units. There are 8 clinics and 4 community health centres. There are 30 professional nurses working in obstetric services and 110 in general services, a total of 140 professional nurses.

Socio-economic data and HIV prevalence rates are summarised for each site in Table I.

Data collection

In developing an HIV gauge tool we defined core activities that were part of the national HIV service package and policy in 2003. We assessed availability and access to HIV services. We also reviewed human resource issues, including management and support structures for programmes within the subdistrict. This was achieved through the collection of secondary data (district health information system and local monitoring and evaluation systems), supplemented with primary data collection through site visits, review of clinic registers and interviews with key informants. A checklist of services and resources was developed for interviews with facility managers and HIV counsellors. The interview tool also included a semi-structured section to explore some of the operational difficulties of programme implementation. A facility observation checklist was developed. The tools are available from the researchers on request.

Secondary data were collected from July to September 2002. Interviews were conducted between October and December 2002. Quantitative data were entered and analysed using Epi-Info 2001. Chi-square tests were done to assess for statistically significant differences between categorical variables. The VCT utilisation rate is defined as the number of VCT clients counselled per 1 000 adult population per year. The definition of adult is 15 years and older. The VCT utilisation rate is based on 3-month data, and the number of home-based carers per total population is calculated from the Census 1996 population estimates.[9]

Ethical approval for the study was granted by the Research Committee of the University of the Western Cape.

Results

Availability, access and utilisation of VCT and PMTCT

VCT was introduced as a programme at PHC sites in Khayelitsha in 1999. HIV/AIDS testing has been available at the district hospitals in Maluti and Engcobo since 1999, but it was not mainstreamed into PHC clinics until October and December 2001 respectively. While VCT is available at all the health centres in Khayelitsha subdistrict, it is only available at the 2 subdistrict hospitals and 15 of 31 clinics in Maluti-a-Phofung, and at the district hospitals and 4 of the 21 clinics in Engcobo.

In Khayelitsha lay counsellors have been employed as an additional resource to do pre- and post-test counselling, making use of a special national budget. Rapid testing kits are available at all facilities. In contrast, professional nurses are responsible for most of the counselling in Maluti-a-Phofung, and only the 15 clinics where rapid testing is available are actually offering VCT. In Engcobo VCT with rapid on-site testing is currently being offered in 4 of the 21 clinics. This is being done by professional nurses without lay counsellor support.

Utilisation of VCT (Fig. 1) is much higher in Khayelitsha than at the other 2 sites ($p < 0.001$). The VCT caseload per day (in facilities offering VCT) in Maluti-a-Phofung is 0.4 and in Engcobo 0.9, in contrast to 4.1 in Khayelitsha. The acceptance rate for testing after pre-test counselling (Fig. 2) is lower in Maluti-a-Phofung subdistrict (85.8%) than in Khayelitsha

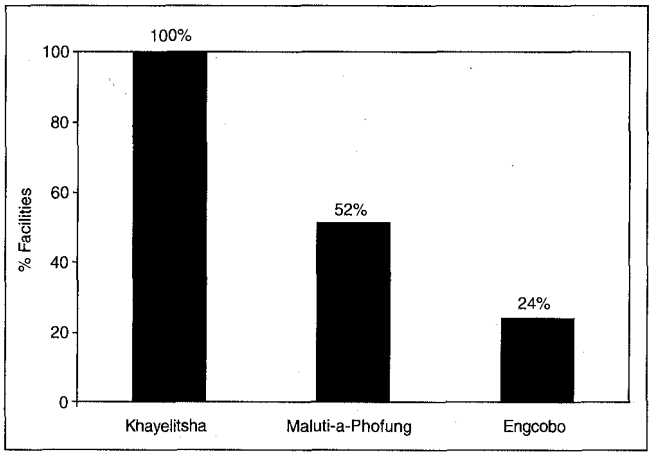

Fig. 1. % Facilities offering VCT.

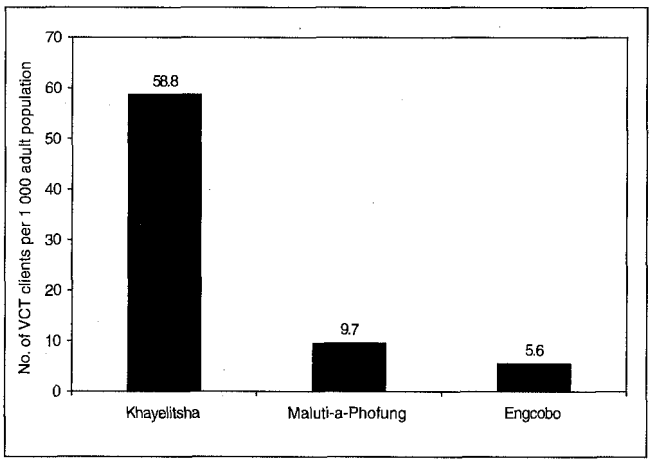

Fig. 2. Annualised number of VCT clients per 1 000 adult population.

subdistrict (97.5%) and Engcobo (100%) ($p < 0.001$). There were no reported stockouts of rapid tests at any of the sites.

For the women living in Khayelitsha, PMTCT is accessible within 6 km of their homes. In Maluti-a-Phofung women have to travel up to 150 km to the nearest regional hospital, while in Engcobo access to PMTCT lies outside of the subdistrict at the provincial hospital in East London, approximately 200 km away.

Community capacity to provide home-based care

In Khayelitsha 2 community-based organisations offer home-based care; in Maluti-a-Phofung there are 45, and in Engcobo 3. The number of home-based carers per 10 000 total population is 1.7 in Khayelitsha, 12.7 in Maluti-a-Phofung, and 4.0 in Engcobo (Fig. 3). The Department of Health co-ordinates and funds home-based care in Khayelitsha and has developed a relatively sophisticated training and monitoring system. In Engcobo, this function is fulfilled by the Department of Social

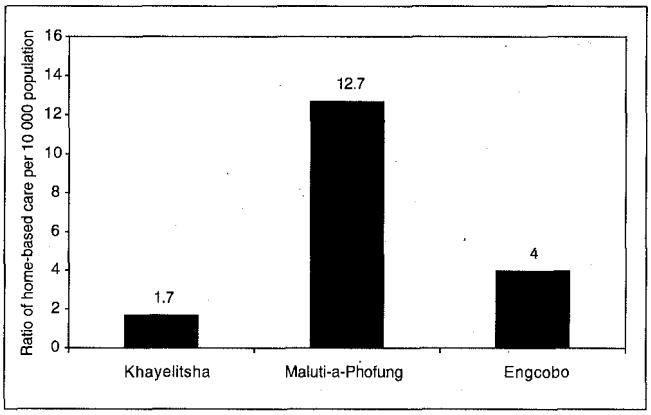

Fig. 3. Home-based carers per 10 000 total population.

Welfare and there is not such a systematic support system in place.

HIV awareness

According to records from the public clinics, Khayelitsha and Maluti-a-Phofung clinics distribute 15.6 and 8.2 condoms per adult male per year respectively. In Engcobo condoms were found to be available in clinics but no statistics were available on the number of condoms distributed annually. In Engcobo there was a reluctance to place condom dispensers outside facilities as staff expressed concern that this might lead to wastage. In contrast, health staff at Khayelitsha have initiated condom distribution outside of the health facilities. Distribution points include garages, taverns, high schools, libraries, the taxi rank, the local shopping centre, all community halls and the magistrates court. In Maluti-a-Phofung, condoms are only distributed outside the clinic during awareness activities.

Most facilities in Khayelitsha had posters. Leaflets were not available in the waiting rooms but were available on request from a counsellor. In Engcobo there were relatively few HIV/AIDS posters, but brochures were available on request. Posters and leaflets were freely available in Maluti-a-Phofung subdistrict.

HIV management and support

Khayelitsha has an HIV/tuberculosis (TB)/sexually transmitted infection (STI) co-ordinator responsible for 8 clinics and 4 community health centres. She does monthly site visits and reports to the subdistrict management team and to the city HIV programme manager. There is an established monitoring and evaluation information system with facility registers of VCT and PMTCT collated monthly by a subdistrict co-ordinator. In contrast the HIV programmes at Maluti-a-Phofung and Engcobo do not have subdistrict support. In both areas the district co-ordinator is responsible for more than 90

clinics over a large geographical area. There is no equivalent monitoring and evaluation information system

At provincial level the Western Cape also has an established multisectoral management committee that outlines guidelines, supports the regions and performs central procurement and quality control. Four regional HIV co-ordinators are given control of the budget and they convene separate regional-level meetings to monitor implementation.

Discussion

This study has shown that there are marked inequities in service delivery between the three sites. VCT and PMTCT services in the urban subdistrict of Khayelitsha were more accessible and better utilised than those in other 2 poorer subdistricts. Even where trained staff and basic supplies such as rapid test kits were available, the number of tests performed was much lower in Maluti-a-Phofung (0.4 per working day) and Engcobo (0.9 per working day) than in Khayelitsha (4.1 per working day). There was also greater systematic management support and monitoring in Khayelitsha. Not surprisingly, plans are already advanced for this subdistrict to start offering ARVs, while the other 2 subdistricts are still struggling even to expand coverage of VCT. This suggests that the expanded response to HIV is further exacerbating inequities.

The most important limitation of this study is the small purposive sampling, making generalisation difficult. However there are important resource and capacity lessons to be learnt from the different experiences in the rural and urban subdistricts which are supported by the findings of other researchers working across rural and urban areas.[10,11]

Explanations for inequalities

One of the distortions of the previous apartheid regime was the imbalance of resource allocation between predominantly white and urban areas and the largely black rural hinterland. Despite nearly a decade of attempts by central government to reallocate financial resources more equitably across the country there remain significant differences in health resource allocation between the different provinces. Recent evidence suggests that this discrepancy might even be widening, with better-off provinces allocating a greater proportion of their total budget to health.[11] Furthermore, there is evidence that even within provinces there is substantial inequity of resource distribution.[12] The increased ability of urban services to 'soak up' funds results in much higher expenditure per capita than in the poorer rural areas. For example, extra financial allocations for HIV have been made to all provinces, but the poorer provinces have struggled to spend the money. In 2002, 70% of funds for HIV from the poorest provinces were returned unspent compared with less than 5% from the richer provinces. This inability to spend money has been attributed to a lack of management capacity. In our study this is most starkly illustrated by the inability of the poorer sites to employ extra lay counsellors for HIV counselling. Hiring of this new cadre of health workers requires management capacity in providing job descriptions, negotiating their status with the Treasury and Health Departments, training and supervision.

Victora *et al.*[6] suggest that even interventions that address the disease burden of the poor may in fact increase inequity, through differential uptake of service. This is supported by a study[13] of over 40 countries which found that even those interventions generally thought to be especially 'pro-poor',

Table I. Comparison of location and socio-economic status of three research subdistricts

Subdistrict	Engcobo	Maluti-a-Phofung	Khayelitsha
District	Chris Hani district municipality	Thabo Mofutsanyana district municipality	Cape Town metropole
Province	Eastern Cape	Free State	Western Cape
Extent of urbanisation	Deep rural	Market town/ farming	Urban
Total population (*N*)	149 659	353 373	266 149
Adult population over 20 yrs (*N*)	-	175 024	156 897
Unemployment rate (%)	59	50	47
Households below the poverty income line (%)	85	73	55
Households without access to on-site water (%)	98.6	61	26
Households without access to electricity (%)	95	77	32
Households without adequate sanitation (%)	66	68	30

such as oral rehydration therapy and immunisation, tend to attain better coverage among better-off groups than among disadvantaged ones. This seems to be the case with HIV services in South Africa where there is far higher availability and uptake of HIV services in the better-off urban setting of Khayelitsha than in the two other poorer settings. A recent study from Tanzania[14] suggests that the differential uptake of services is an important explanation for differences in morbidity and mortality among different socio-economic groups.

One explanation for this difference in utilisation is a difference in quality of care. With the combination of poor management support and increasing workloads there is a danger of further demoralising staff. This may manifest in deteriorating relationship between staff and clients. Other studies[15-17] have found widespread experiences of staff discourtesy towards, and even abuse of, patients especially in less well-served areas.

Implications for the scaling up of HIV services

The inequities highlighted for HIV services reflect the underlying weaknesses of the general health delivery infrastructure. Key indicators of health systems such as immunisation coverage and successful TB treatment are stagnant or declining in many parts of South Africa and sub-Saharan Africa.[18,19] Unless the new resources for HIV interventions are used to strengthen existing health systems there is a danger that their impact will be muted. For example, an evaluation of PMTCT programmes across 7 countries found that they had effectively ensured the delivery of ARVs and test kits but many of the sites still did not have basic antenatal supplies such as antiseptics and sterilising equipment.[20] The authors point out that at many of these sites uptake of PMTCT services is very low largely owing to poor utilisation of antenatal care. Although not tested, this is probably at least partly related to the poor availability of routine supplies. Similarly, there is evidence that when VCT programmes are run vertically or at separate facilities they are less able to act as entry points for prevention, treatment and care services and cost more in time and opportunity, discouraging use in poor communities.[21] If the aim is to decrease overall mortality then HIV interventions must integrate and strengthen the existing public health system.

The experience from Khayelitsha suggests that the implementation of an expanded HIV response can strengthen services. After the development of local protocols, systematic training of managers and health workers was undertaken with the assistance of a training non-governmental organisation (NGO). Emphasis has been placed on supervision, which is tailored in frequency and content to the needs of the worker. This is supported by strengthening the local information system, which has incorporated key HIV service indicators. Motivated and trained managers regularly review these data to identify gaps in the service. Finally, demand for the services has been created through the campaigns of local civil society groups.

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Accepted 2 November 2004.