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THE IMPACT OF HIGHLY ACTIVE ANTIRETROVIRAL TREATMENT (HAART) ON EMPLOYMENT IN KHAYELITSHA

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Abstract

This paper examines the impact of Highly Active Antiretroviral Treatment (HAART) on labour force participation of people living with HIV/AIDS in Khayelitsha, South Africa. Cox Proportional Hazard Models with stratum effects for three medical clinics, and Accelerated Failure Time Models with individual specific unobserved shared effects (frailty), are estimated for transitions from inactivity to unemployment, and transitions from unemployment into employment, using a longitudinal data set. The findings of this study indicate that HAART leads to greater activity in the labour market, but there was not a strong effect on re-entry into employment.

1. Introduction

Less than a decade ago, conventional wisdom held that delivering highly active antiretroviral treatment (HAART) was infeasible in resource-constrained settings. Two notable pioneering projects set out to challenge the widespread belief that poor people could not manage the chronic treatment regimen involved. Paul Farmer's work in poor rural Haiti showed that HAART could be successful in treating patients in the poorest country in the Western Hemisphere and a collaborative project in Khayelitsha, demonstrated that HAART could be provided successfully in a poor urban community in South Africa – the country with the highest HIV burden in the world. These projects were pivotal in demonstrating that a HAART rollout was feasible and that it could extend the lives of people living in very challenging socio-economic conditions. This, coupled with international efforts to reduce drug prices and extend HAART coverage, turned the previously unthinkable goal of rolling out HAART in developing counties into a reality (Schwartlander et al, 2006)

Patients in the HAART project in Khayelitsha, which is the focus of this paper, were the first adults to receive antiretrovirals through the public-sector in South Africa. The Khayelitsha project was very successful. It was highlighted by the

World Health Organisation (WHO) in its 'Perspectives and Practice in Antiretroviral Treatment' series as an exemplary pioneering programme from which many important lessons could be drawn (WHO, 2003). Patients demonstrated very good adherence to treatment regimens and excellent clinical outcomes were reported (Coetzee et al, 2004). This paper examines the impact of HAART on labour force participation for the Khayelitsha patients. Cox Proportional Hazard Models with stratum effects for three medical clinics, and Accelerated Failure Time Models with individual specific unobserved shared effects (frailty), are estimated for transitions from inactivity to unemployment, and transitions from unemployment into employment.

In the absence of HAART, people living with HIV eventually become sick with AIDS, thereby becoming less productive and ultimately unable to participate in the labour market. A Canadian study by Auld (2002) of a group of HIV-positive patients on HAART found that being diagnosed HIV-positive decreased the probability of employment by 25 percent. Fox *et al.*'s (2004) retrospective study of tea pluckers in Kenya who had died of AIDS (none of whom were receiving HAART) found that in the last 365 days before they died (relative to a comparative group of tea pluckers) farm workers who died of AIDS were: absent from the job 31 days more; on average plucked 7.1kg less tea per day; and spent 22 more days on less strenuous non-plucking duties. In the absence of HAART the progression of HIV disease reduces workers' productive capacity, increases absenteeism, forces them to give up their jobs and ultimately results in their death (Nandakumar *et al,* 2000; Drimie, 2002; Vass, 2002; Rosen *et al,* 2003). The progression of the HIV disease inevitably pushes individuals into unemployment as a result of their debilitation. HAART has the potential to restore patients to health (e.g. Smit et al, 2006), allowing them to re-enter the labour market. The aim of the analysis in this paper is to present the impact that HAART has had on the early labour market outcomes of patients in the Khayelitsha project.

South Africa is unusual in that it has high unemployment, high HIV prevalence, and no long-term income support for the unemployed (Nattrass, 2004). Unemployed people living with HIV thus face a very challenging labour-market environment. When they are sick with AIDS, they qualify for a disability grant – an important life line for many poor households (ibid). The HAART rollout offers individuals living with HIV/AIDS the opportunity to have their health restored – but it comes at the cost of losing the disability grant because they will then be deemed well enough to work. Given South Africa's high unemployment rates, many will not be able to find work. Not surprisingly, then, the results of this study shows that providing HAART to AIDS-sick people in Khayelitsha increased their labour-market participation, but that after approximately three

years on HAART, many patients who were willing to re-enter employment were unable to find a job. Thus, the short-term effect of HAART was to increase the labour-market participation rate and the unemployment rate.

This rise in the unemployment rate as a consequence of rolling out HAART may seem at odds with the sentiments expressed in the South African government's Operational Plan for comprehensive HIV and AIDS Care, Management and Treatment for South Africa (DOH, 2003). The operational plan defines the best that the AIDS management programme can achieve in the following manner:

> 'There is currently no cure for AIDS. The best that an AIDS management programme can achieve is to prolong the lives of people living with HIV and AIDS, so that they can remain productive members of society.'   (Department of Health, 2003, p. 20)

The above quote appears to link the success of rolling out HAART to not merely prolonging the lives of patients, but also to the objective of patients resuming their roles as 'productive members of society'. The definition of the term 'productive members of society' is, however, vague and could refer to a variety of socially useful roles; such as parenting, care-giving or working. If the reference is understood in narrow economic terms, i.e. that the lives of HIV positive individuals should be prolonged in order that they may return to paid employment, then the findings of this paper suggests that plan may fail to achieve its 'best' outcome. In the short-term, HAART pushed patients in our study from being non-labour force participants into unemployment. Patients who had their health restored were willing to work but were unable to find employment. They may, however, have been able to prove themselves as productive members of society in other ways, such as assisting with child-care, household chores etc. This paper does not explore this possibility, but rather examines the more narrowly defined labour-market outcomes.

Goldman and Bao (2004) used a representative sample of people in care for HIV infection in the United Sates and found that after six months of HAART, treatment did not appear to have a strong effect on returning to work. A French study by Dray-Spira *et al* (2007) found that despite improvements in health as a result of HAART, individuals found it difficult to return to employment. This suggests that HIV-positive people face additional challenges and barriers to employment when attempting to re-enter the labour market. These include: having to co-ordinate medical (especially HAART-related) and employment-related demands on their time; having to explain their health-related prolonged absences from the labour market; fear of being stigmatised; the need for retraining as skills may have been lost during absence from the labour market,

and uncertainty regarding the sustainability of improvements in health as a result of HAART (Maticka-Tyndale *et al*, 2002). Patients' attitudes towards their health also feed into labour participation decisions. These attitudes are as important as objective clinical markers of health when deciding to re-enter the labour market (Tasiran and Coetzee, 2006). It is important to bear in mind that although HAART is able to restore health and remove debilitating ill health as a barrier to employment, it does not remove other barriers to employment. The link between HAART-related improved health and employment is thus far from straight forward.

The findings of this study suggests the need for economic-policies that increase employment levels so patients who have had their health restored because of HAART can find employment easily. Secondly, since restored health does not in and of itself translate into employment, unemployed individuals who have had their health restored by HAART may find themselves considering very difficult life-sustaining strategies. Patients who previously had access to a disability grant may lose it as a result of regaining their health, and may find themselves without an income. Such individuals could face a terrible choice; not to take antiretrovirals, and keep the disability grant for the short time they have left to live; or take the antiretrovirals, live longer but without an income (Nattrass, 2005; Hardy and Richter, 2006). In order to spare individuals from having to make the difficult choice between health and income, access to antiretroviral medication should, at the very least, be accompanied by welfare relief for those in poverty – but ideally be accompanied by job-creating economic growth strategies.

The paper is arranged as follows: section two briefly revises unemployment in South Africa; section three discusses the data that was used in the analysis; section four introduces the statistical models; section five presents the results of the analysis; section six contains a discussion and section seven summarises and concludes.

2. Unemployment in South Africa

The most recent Labour Force Survey (2006) estimated unemployment to be 25.5 percent. South Africa uses the International Labour Organisation's narrow definition of unemployment as its official definition. The narrow definition of unemployment has a search criterion for classifying an individual as unemployed. Thus, if the individual does not report having looked for employment within four weeks prior to being interviewed, he or she is not counted as unemployed. This definition masks an unemployment rate which

may be much higher because it excluded the non-searching unemployed. In September 2006 the percentage of working aged South Africans with jobs was measured at 42.7 percent. Assuming that not all working aged individuals were available to work, there is still a conservative indication that almost half of all working aged individuals were not able to be absorbed in the labour market. The difficulty that a significant portion of the population faces when trying to find a job can be explained through a number of factors. For the purposes of this paper some key factors are briefly highlighted.

Apartheid labour policies were implemented to ensure full white employment. Race played an important role in determining labour participation (Seekings and Nattrass, 2006). Apartheid restrictions on movement prevented Africans from moving into urban areas in order to find employment. The system was designed to create a pool of unskilled labour that was needed for its mineral economy. After thirteen years of democracy the legacy of apartheid is still strikingly evident. South Africa's formal sector, which has a comparative advantage in resource-intensive, or capital intensive or skill intensive manufacturing, has been unable to absorb the growing labour force. The sizeable pool of unskilled labour, a product of apartheid, is in limited demand in the formal sector. Unskilled intensive manufacturing in South Africa also finds itself unable to compete with low wage unskilled labour in East Asian economies. The inability to compete with East Asian countries is in part attributed to the effectiveness with which South Africa's labour regulations are enforced (Kingdon and Knight, unpublished). Labour regulations are imposed on all firms in an industry regardless of their size. These regulations are credited with making wages more rigid to downward adjustment, and therefore imposing high labour costs on firms. High labour costs to firms are deemed responsible for creating a trade off between wages and employment.

In the context of high unemployment one would expect the informal sector to act as a sponge and absorb residual labour. However, South Africa is striking in that it has high unemployment and a relatively small informal sector. A number of barriers have been identified, which prevent individuals from entering the informal sector. Kingdon and Knight in their unpublished review of the literature identify crime, lack of access to credit, lack of access to infrastructure and services and the need for training as barriers to the informal sector. Cichello (2005), using data from a representative sample of working class Cape Town, found that capital was the biggest barrier to participating in the informal sector.

The argument for unemployment being voluntary does not seem to hold in South Africa. Nattrass and Walker (2005) in their review of working class Cape Town found that there was no support for the proposition that the unemployed choose

to abstain from the labour market because they have a preference for being unemployed. Instead evidence suggests that the unemployed are an underclass in South Africa because of the direct relationship between unemployment and poverty. South Africans wishing to escape poverty can best attempt to do this through accessing employment.

Within this context of high unemployment, individuals living with HIV/AIDS may face structural barriers to employment.

3. The Data

In May 2001 the Provincial Department of Health in the Western Cape, in collaboration with Médecins Sans Frontières (MSF), began rolling out HAART in three clinics in Khayelitsha. In January 2002 researchers from the MSF and the University of Cape Town embarked on a socio-economic longitudinal study of HIV positive adults in Khayelitsha who were starting antiretroviral treatment for the first time.

Khayelitsha, Cape Town's largest African township, is home to approximately 500,000 people, many of whom are unemployed. According to Census 2001 only 34 percent of Khayelitsha residents are employed and approximately 98 percent of households in Khayelitsha earn a monthly income less than R3, 200. Most residents in Khayelitsha rely on health services delivered by the state. The HIV prevalence in public-sector antenatal clinics in this health district in 2002 was 24.9 percent (Coetzee *et.al.*, 2004).

Patients were interviewed at 'baseline' (i.e. when they started HAART). The study aimed to re-interview each respondent on a six-monthly basis in order to explore the socio-economic impact of providing HAART. Patients willingly completed questionnaires and consented to being interviewed. A total of two hundred and sixty one patients had nearly semi-annual health and economic assessments collected as part of this study.

Table 1: Baseline descriptive statistics for the study sample

Descriptive Statistics	
Number of respondents	261
Number of observations	569
Median number of interviews	2
Female	71%
Male	29%
Average age	34
Average age when diagnosed HIV+	31
Average level of education	Grade 9
Recipient of a disability grant	72%
Average number of household members	4
Percentage living in informal dwellings (shack)	59%
Households with children	59%
Households that have had a child younger than 6	36%
Households that have had a child aged 7-14	42%
Average monthly household income	R 1342
Respondent's average monthly income (wages+grants+remittances)	R 859
Average monthly household income from the respondent's income	77%
Average monthly household income from the respondent's wages	57%

Table 1 reflects that more than two-thirds of the sample (71 percent) was comprised of women. All respondents in the sample were Xhosa speaking. The greater proportion of women in the sample probably reflects the fact that women are more willing to visit clinics, because gendered norms may make it more difficult for men to admit weakness and seek medical attention (Beck, 2004; Nattrass, 2006). Average monthly income (comprising grants, wages and remittances) was R859. Given that 72% of respondents received disability grants (of R740 per month) it is clear that disability grants provided an important source of income.

4. Statistical Modelling and Various Transitions

Transiting from inactivity to unemployment; and from unemployment to employment are modelled in a single transition risk framework, and in an accelerated failure time model framework. It was assumed a priori that the occurrence of each type of transition had a different causal structure. The same covariates might be relevant but each transition could have an independent set of parameters, see Kalbfleisch and Prentice (1980 and 2002).

When time T is continuous and measured precisely so that there are no ties, such continuous time survival procedures can be adopted: let x be a vector of covariates. A cause-specific or type-specific model can be represented by

$$h\ (t;\mathbf{x}) = \lim_{dt \to 0} dt^{-1} P(t \leq T < t + dt,\ |T \geq t,\ \mathbf{x})$$

where $t > 0$; $h_j(t;\mathbf{x})$ denotes the instantaneous risk of experiencing a transition of type j in the time interval $(t \leq T < t + dt)$ given that no transition occurred before $T = t$.

The survivor function is

$$S\ (t;\ \mathbf{x}) = P\ (T > t \mid \mathbf{x}) = \exp \left(- \int_0^t h\ (u;\ \mathbf{x})\ du \right)$$

and the density-function for the transition is then

$$f(t;\mathbf{x}) = \lim_{dt \to 0} dt^{-1} P(t \leq T < t + dt, \mid \mathbf{x})$$
$$= h(t;\ \mathbf{x})\, S(t;\ \mathbf{x})$$

If $t_1 < t_2 < ... < t_{n_j}$ represents the n_j uncensored durations, then the likelihood-function may be rewritten as

$$L = \prod_{k=1}^{n_j} h\ (t_k;\ \mathbf{x}_k) \prod_{i=1}^{n} S\ (t_i;\mathbf{x}_i)$$

where x_i is the covariate of an individual with the observed non-censored duration t_k.

The log-likelihood function can be maximized given that the hazard rates $h\ (t \mid \mathbf{x})$ are dependent upon the parameter-vector θ, where the θ's have no common components. In particular, a parametric model $h\ (t;\ \mathbf{x},\ \theta)$ can be specified for the hazards (see, Cox and Oakes, 1984).

For the transitions above, Cox proportional-hazards models were fitted. Since Cox's method does not require some particular probability distribution to represent survival times, it is considerably robust. It can also accommodate both

discrete and continuous measurements of transition times. The hazard functions mentioned above, can be modelled by using a Cox model in the following way:

$$h[t; \mathbf{x}_i] = h_0(t) \exp[\mathbf{x}_i' \beta],$$

where $\mathbf{x}_i$ is a vector of covariates, h_0 and β are the baseline hazards and the regression coefficients respectively which vary arbitrarily over transition types. As before, let $t_1 < t_2 < ... < t_{n_j}$ represent the n_j uncensored durations. The corresponding partial likelihood is

$$L(\beta_1, ... \beta_m) = \prod_{i=1}^{k_j} \frac{\exp[x_i \beta]}{\sum_{l \in R(t_{ji})} \exp[\mathbf{x}_i' \beta]}$$

the arbitrary baseline hazard function has been eliminated and the resulting likelihood can be used for inferences about β.

The modelling issues above rely on the implicit assumption that the exogenous variables were measured without any error and that there were no omitted variables in the model. The error term was assumed to have white noise characteristics. Omitted variables, of course, may bias the estimates of the parameters of interest (Gourieroux, 1989). The results based on the Information Matrix Test detected such unobserved heterogeneity in the case of transitions from different states. As a result, a stratum type unobserved heterogeneity term was introduced to the semi-parametric specification mentioned above, which is the survival-data analog to regression models with fixed effects. Such unobserved heterogeneity is a latent random effect that enters multiplicatively on the hazard function.

Accelerated Failure Time Models (AFTM) are very similar to the usual regression analysis, where the logarithm of waiting time of the above mentioned spells in various states are treated as dependent variables, controlling for unobserved heterogeneity as individual specific frailties. For this reason the parameter signs are opposite in Cox and AFTM.

5. Results

5.1 Transition from Inactivity to Unemployment

Table 2: Estimation results from Cox Proportional Hazard models with stratum effects, and Accelerated Failure Time Models with unobserved heterogeneity, for individuals who made the transition from inactivity to unemployment

Parameters	Cox		AFTM	
	Hazard Rate	Standard Error	Coefficient	Standard Error
The patient's age when they were diagnosed HIV+	0.95*	(0.03)	0.03***	(0.01)
The patient's gender (Male=1)	1.40	(0.84)	-0.24	(0.16)
The patient's marital status	0.73	(0.40)	0.05	(0.19)
The patient's level of education	3.76***	(1.93)	-0.48***	(0.19)
The patient stopped working for HIV-related reasons	4.36***	(2.00)	-0.50***	(0.14)
The number of household members that are employed	1.57*	(0.42)	-0.09	(0.08)
Whether the patient receives a disability grant	0.99	(0.56)	0.56**	(0.19)
Household income	1.00	(0.3E-3)	-0.5E-4	(0.8E-4)
Whether there is a child younger than 14 in the household	0.69	(0.27)	0.03	(0.13)
Whether the patient lives in a shack	1.74	(0.83)	-0.28*	(0.16)
Public disclosure of HIV+ status	1.34	(0.75)	-0.04	(0.26)
The number of days that has passed since the patient was diagnosed HIV+	0.99	(0.4E-3)	0.7E-4	(0.9E-4)
The length of time that a patient received HAART before their first interview	0.98	(0.02)	-0.01**	(0.5E-2)
Whether the patient has made the transition from feeling some level of illness to not feeling ill	0.26	(0.24)	-0.82*	(0.46)
Constant	-	-	6.75***	(0.51)
Ln(gamma)	-	-	-1.79***	(0.21)
Ln(theta)	-	-	0.03	(0.37)
Gamma	-	-	0.17	(0.03)
Theta	-	-	1.03	(0.38)

The standard error is reported in brackets

* indicates significance at the 10% level and ** at the 5% level *** at the 1% level

   Likelihood-ration test of theta=0: chibar2(01)=7.36 with Prob>=chibar2=0.003

For the transition from inactivity to unemployment a Cox model was estimated using clinics as stratums, and an AFTM model using individual specific unobserved heterogeneity terms as unshared gamma frailties. The AFTM model with unobserved heterogeneity once again had more significant parameters, including the frailty term. The affect of the frailty term is positive, indicative of the existence of some unobserved factors, which lower the chances for the transition from a state of inactivity to unemployment. It is not entirely clear what these factors are, but one can speculate that these factors can be impediments for people with restored health, other than those observed in the data set. Another interesting result is that the insignificant coefficient of restored health in the Cox model with stratums, becomes significant by controlling for unobserved unshared heterogeneity. Indicating that there are unobserved factors that are in some way correlated with restored health.

Results from Table 2 reveal that the decision between choosing to abstain from the labour market or be willing to re-enter it is influenced by a myriad of individual characteristics. The signs in AFTM and Cox are consistent and plausible in general and indicate that age, education and previous work experience are particularly significant in explaining shorter spells of inactivity. For parameters that are significant in either Cox or AFTM, the hazard rate for Cox and the sign of the coefficient in AFTM is consistent.

Prior work experience is significant in affecting activity in the labour market. This combined with the significance of living in a household in which someone is employed, points to the role that networks may play in job search and in finding a job. Patients with a secondary or tertiary level of education spend less time being inactive before deciding to enter the labour market. Patients with higher levels of education might perceive that demand for educated labour exists and is rewarded. This might explain their significantly greater risk of making the transition from choosing to abstain from the labour market to wanting employment.

A Kenyan longitudinal study found that within six months of initiating HAART there was a 20 percent increase in the likelihood of the patient participating in the labour force and a 35 percent increase in weekly hours worked (Thirumurthy *et al.*, 2005). Similarly, the results of this study find that over time HAART has a positive impact on activity in the labour market. Individuals who perceive that they have had their health restored as a result of HAART spend less time in inactivity before making the transition to unemployment. Positive perceptions of health translate into greater chances of being active in the labour market.

Rodrik (2006) credits South Africa's high unemployment rates to deindustrialisation and an almost non-existent informal sector, which are largely

attributable to the legacy of apartheid. As discussed earlier in the review of unemployment in South Africa, unemployment is in part explained by a divergence between the growth of the labour force and the growth of formal sector employment. Unemployment is further exacerbated by wage rigidities in the South African labour market. Within this context, patients receiving HAART who experience improvements in their health, and are willing to enter the labour force, may find it difficult to be absorbed not only into the formal but also to the informal sectors.

5.2 Transition from Unemployment to Employment

Table 3: Estimation results from Cox Proportional Hazard models with stratum effects, and Accelerated Failure Time Models with unobserved heterogeneity, for individuals who made the transition from unemployment to employment

Parameters	Cox		AFTM	
	Hazard Rate	Standard Error	Coefficient	Standard Error
The patient's age when they were diagnosed HIV+	0.97	(0.02)	0.02	(0.02)
The patient's gender (Male=1)	0.96	(0.35)	-0.28	(0.27)
The patient's marital status	1.11	(0.41)	0.08	(0.27)
The patient's level of education	1.62	(0.83)	-0.17	(0.34)
The patient stopped working for HIV-related reasons	2.80***	(0.94)	-0.62***	(0.20)
The number of household members that are employed	1.31	(0.27)	-0.08	(0.14)
Whether the patient receives a disability grant	1.80	(0.86)	-0.32	(0.32)
Household income	1.00	(0.2E-3)	-9.96	(0.1E-3)
Whether there is a child younger than 14 in the household	0.96	(0.32)	0.1E-2	(0.22)
Whether the patient lives in a shack	0.99	(0.36)	0.05	(0.23)
Public disclosure of HIV+ status	0.96	(0.52)	0.02	(0.33)
The number of days that has passed since the patient was diagnosed HIV+	1.00	(0.3E-3)	0.1E-3	(0.2E-3)
The length of time that a patient received HAART before their first interview	0.99	(0.2E-2)	0.9E-3	(0.2E-2)
Whether the patient has made the transition from feeling some level of illness to not feeling ill	1.03	0.44	0.10	(0.28)
Constant	-	-	7.34***	(0.87)
Ln(gamma)	-	-	-0.77***	(0.11)
Ln(theta)	-	-	-16.04	(1206.58)
Gamma	-	-	0.46	(0.05)
Theta	-	-	1. 08E-7	(0.0001)

The unobserved heterogeneity estimate is not significant so an AFT Model without frailty is considered. The signs for the coefficients in the AFTM and the hazard rate for Cox are consistent in Table 3. They indicate that patients who stopped working for HIV-related reasons have a greater chance of making the transition from being unemployed to finding employment. This result makes intuitive sense. If the reason that the respondent stopped working and chose to abstain from supplying labour was because deteriorating health forced him or her to discontinue work, then improvements in health are likely to induce him or her to desire to work again. If deteriorating health was the dominant factor that influenced a patient's decision to leave the labour market, improvements in health will most likely be the dominant factor that influences his or her decision to return to the labour market. Patients who stopped working because of their HIV-disease might be more likely to want to supply labour since their past history of employment informs them that there has been a demand for their labour. This knowledge may encourage such individuals to return to the labour market. Furthermore, they may have obtained skills and experience from their past work, which give them an advantage over those who have never worked. Additionally, there is evidence that a lot of recruitment of workers in South Africa is done through networks (Seekings, 2003). Individuals who stopped working because of HIV-related reasons might have stronger networks in the labour market, through previous work experience and employers and colleagues, and the existence and utilization of these networks might translate into a greater likelihood of making the transition to the role of 'a worker' when their health improves.

6. Discussion

In the current study not every working aged individual who experiences a restoration of their health, through HAART, is able to make the transition to finding employment. Individuals with prior work experience who stopped working because of HIV-related reasons, who live in households with fewer young children to care for, who have not publicly disclosed their HIV status and possibly been exposed to discrimination, and who were younger when they were diagnosed HIV-positive, have a greater chance of making the transition to employment. This study suggests that HAART may increase the pool of labour but in a context where the labour-market does not supply the necessary jobs. Consistent with Coetzee and Nattrass (2004), this study indicates that HAART may be able to restore the health of patients living with HIV/AIDS, thereby increasing the unemployment rate, but it cannot remove structural barriers to employment. This suggests that specific policy measures should be considered to boost the employment prospects of HIV-positive individuals, who have had

their health restored by HAART. This may entail providing them with targeted assistance in finding jobs which accept their ongoing diminished physical functioning related to fatigue and symptoms of pain. Many may require a more flexible work schedule in order to allow them days off in order to recuperate if they are feeling ill, or if they need to go to the clinic to collect their medication or have a check-up.

As discussed earlier, income generated from disability grants is an important source of income for households in the Khayelitsha sample. The ANC Today (8-14 December 2006) states the following in relation to HIV/AIDS:

> 'The temporary disability grant helps tide people over the worst of the infection, but the aim of public health interventions is to restore people living with AIDS to health so they can take up the rights and responsibilities of any other citizen.'

This study has shown that people on HAART desire to work (they move from being out of the labour-market to being unemployed) but that many are unable to find work. It highlights the risk that the restoration of health poses to access to the disability grant for people living with HIV/AIDS. The shock to household income as a result of a patient experiencing an improvement in his or her health, and subsequently losing access to the disability grant, may be significant.

7. Summary and Conclusions

HAART is able to restore the health of individuals debilitated by HIV/AIDS. Restored health increases the number of individuals wanting to re-enter the labour market. The desire to supply labour is not necessarily met with demand. There are structural barriers to employment, along with unique illness related barriers, that hinder a smooth transition to employment for individuals receiving HAART.

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