

**Making  
sense**

# **AIDS and the Health Workforce in Africa**

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## Introduction

The health workforce has made its comeback on the agenda, as witnessed by a recent flurry of reports that deal with the crisis of the human resources for health. One stream explores the human resource bottlenecks for the new global health initiatives<sup>1</sup> and the rapid scaling up of ART and the effects of the pandemic on the health workforce<sup>2</sup>. Another stream focuses on the brain drain<sup>3</sup>, while a third stream presents global overviews of the factors that underlie the 'crisis'<sup>4</sup>. If anything, this 'new' attention to the health workforce shows that both the world of research and international development has taken up the issue of human resources. It seems that a certain momentum is being created that may set in motion interesting initiatives and changes.

The issues underlying the problems of the health workforce are, however, many and finely intertwined, leading to a high degree of complexity and wickedness. The two-way interaction between the health workforce and HIV/AIDS is a prime example and it is the main subject of this report, which was commissioned by Medicus Mundi International.

The choice of the subject will take us primarily to the south-eastern regions of Africa. However, we would like to insist on the point that problems are besetting the health workforces of many, if not most other countries in Africa, and indeed other regions in the world, of which the brain drain can be regarded as only one symptom. These present in many 'configurations' of deficits in training and production, distribution, management and policy. While we believe that (wo)manpower is a key issue in healthcare provision, we will discuss these dimensions only tangentially in this report.

With the dropping cost of antiretroviral drugs, the burning question in the ART scaling up debate is no longer in the first place how to finance access to drugs or indeed the scaling up of ART schemes, but rather how to ensure the implementation of the programmes. Health system performance is increasingly acknowledged as a condition for success of programmes like the *3x5 Initiative* and the notion that the human resources will be one of the decisive determinants is gaining ground (Narabsimhan et al. 2004, Tawfiq & Kinoti 2003). However, in most south-eastern African countries, the health workforce is teetering. Chronic deficiencies regarding training capacity, distribution and skill mix, and retention in the medical and caring professions have left the health services with little margins to cope with new challenges (Aitken & Kemp 2003, Huddart et al. 2003). Furthermore, under current conditions in many developing countries, performance and accountability of health providers are difficult to ensure. In other words, countries in south-eastern Africa not only are facing huge problems of implementation capacity to scale up antiretroviral treatment schemes, but also to ensure the adequate performance of the health system as a whole.

<sup>1</sup> Kvale 2002, Chen 2004;

<sup>2</sup> Cornia et al. 2002, Kober & Van Damme 2004, Huddart et al. 2004, Marchal et al 2004

<sup>3</sup> Zurn et al. 2002, Bhorat et al. 2002, Pang et al. 2002, Padarath et al. 2003, Meyer 2003, Patel 2003, Marchal & Kegels 2003, Aiken et al 2004, Buchan & Sochalski 2004, ILO 2004, Martineau et al 2004, Stilwell 2004

<sup>4</sup> Martinez & Martineau 2002, Huddart et al. 2003, Padarath et al. 2003, Brown et al. 2004, Joint Learning Initiative 2004, Narabsimhan et al. 2004, PHR 2004

If we want to find ways of dealing with the AIDS pandemic, we will need radical shifts in thinking and these shifts will have to be paradigmatic ones (Marchal et al., 2004). We need to question accepted models of thinking, rethink concepts (or our understanding of them) like 'health systems', 'communities', 'health care', 'disease', 'health production', 'public health', 'stigma', 'medical ethics', ... The crisis in southern Africa should make us rethink our current practices and we need especially new ways of thinking about programmes and projects with their implicit assumptions of who does what to/for whom, who is the subject of action and who is the object. With this text, rather than bringing together a maximum of factual information, we will attempt to be interpretive and reflective, and to point to possible new accents. We will present many questions: 'What is AIDS doing to populations and society? What is AIDS doing to the health workforce? How can the health workforce cope with new financing mechanisms and the resulting increased funding? What is the health workforce's role in tackling AIDS?'

One concern runs through most chapters of this report. Given the complexity of the underlying social root issues of both AIDS and the health workforce, we believe different viewpoints and perspectives are necessary if the attempts of answers to these questions are to be relevant. Not only the analysis, but also the actions need to take account of the complexity of both the issues and the social contexts in which they are situated: *Answers will essentially need to be context-dependent*. Our ambition is then not to present a state of the art, but rather to offer some 'other' ways of looking at the dynamic interplay between the HIV/AIDS pandemic and the health workforce in the hope that this may lead to better insights in the complexity and diversity of these problems.

### **Outline of the report**

#### **CHAPTER 1**

***What is AIDS doing to populations?*** attempts to bring together a number of models, theories and perspectives from very diverse disciplines with the aim of exploring and understanding the patterns of causality in (hetero-) sexual transmission. The first point is the concept of waves or stages of the HIV/AIDS epidemic. Second, we state that the fundamental problem is the adult ('prime age') mortality. Then we describe some interesting models, frameworks and concepts that illuminate the issues underlying the epidemic and finally, we set out to describe how these models can help to clarify why it came this far.

#### **CHAPTER 2**

***What does AIDS do to the health workforce and the health system?*** first summarises the specific impact of the HIV/AIDS pandemic on the health services and then examines the direct and indirect impact on health workers. Finally, the consequences of this all for health service managers are discussed.

#### **CHAPTER 3**

***In What is the health workforce doing with AIDS?*** we explore the notion of 'human resource arrangements' for AIDS and we argue that the conventional professional healthcare workforce as usually understood in health systems and organisations is inadequate to deal with the AIDS epidemic.

We argue why a shift is necessary by illustrating the consequences of a wide scale roll-out programme of anti-retroviral treatment on health workforce requirements in the particular setting of South Africa.

#### CHAPTER 4

##### ***Making sense: linking AIDS and the health workforce conditions***

attempts to bring together the preceding chapters and proposes the AIDS-health workforce matrix, which confronts the health workforce dimension with the AIDS dimension of a particular health service delivery setting in order to differentiate between situations. We explore in how far orientations for assessment, decision-making and action can be suggested on the basis of this typology.

#### CHAPTER 5

***In Avenues for action*** we present key issues and elements of the general response to the health workforce problems in the context of church-health organisations confronted by AIDS, and more specifically key issues from the point of view of health service managers (organisational level), the actors at meso-level and the international level.



## What is AIDS doing to populations? Understanding the impact on society

While striving not to fall into the trap of 'blaming the victims', the title of this chapter is actually misleading; it is not so that the AIDS epidemic is something 'from outside' that befalls people and societies, like for example influenza. The AIDS epidemic is also produced and spread from within, and can only be overcome from within – with the necessary help of others. However, it is African populations (groups) who will have to make the fundamental decisions to change – as is quite well pointed out in the recent UNAIDS scenario-building exercise 'Times of transition: Africa overcomes' (UNAIDS, 2005).

This chapter attempts to bring together a number of models, theories and perspectives from diverse disciplines with the aim to explore and understand the patterns of causality in (hetero-)sexual transmission. The first element we introduce is the concept of waves or stages of the HIV/AIDS epidemic. Second, we state that the fundamental problem is the adult ('prime age') mortality. Then we describe some interesting models, frameworks and concepts and finally, we set out to describe how these models can help to clarify why it came this far.

### Understanding AIDS in high burden countries: The four waves

It is important, we think, to understand what happens in populations where AIDS is firmly established, in order to be able to think productively about the interaction of the phenomenon with the healthcare workforce – both in terms of how AIDS impacts on them, and of how they can be expected to have an impact on AIDS.

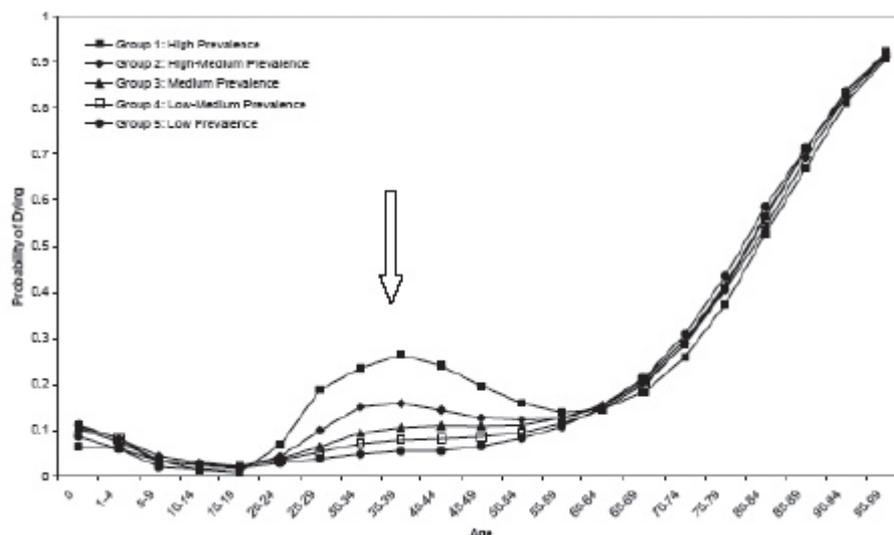
An often used and highly useful image to depict the HIV/AIDS problem is the 'long wave event'. The first wave of *rising HIV infection* is largely invisible if not actively sought for. This first wave event is 5-6 years later followed by rising *pulmonary TB* incidence. Up till now this was usually understood to be an expression of deteriorating immune capacity (and thus situated in the later years of HIV infected life), but recent evidence from a miners' population in South Africa strongly suggests that the risk of developing pulmonary TB is already doubled within the first year of HIV infection, indicating a more complicated synergistic relationship between HIV and TB than was hitherto understood (Sonnenberg et al., 2005).

Most models assume the median time from HIV infection to death to be 9 years – 8.6 years for men and 9.4 years for women (women as a group progressing slower statistically because, at least in Africa, they tend to acquire the infection at a younger age, and there is evidence that older people progress to AIDS more rapidly). This then is the time of the *AIDS wave*, resulting in increased young adult mortality, arguably the most central source of trouble AIDS creates. Finally, the last wave brings the effects on the present and next generation in terms of social involution through a massive reduction in education capacity, life-time perspective and increasing economic inequality.

### The fundamental problem: adult ('prime age') mortality

The basic impact of the AIDS problem in Africa is probably best summarised by Figure 1 that summarises the mortality pattern according to the level of HIV prevalence. The bulge in prime-age mortality (15 to 49 years), occurring earlier in life for the female population, can be considered as the heart of the problem. In the high prevalence countries, this bulge is quite spectacular and translates in horrifying accumulated probabilities of dying young. While in African populations with very low adult prevalence of HIV the probability for a 15 year old person to die before the age of 50 (35q15 in demographic notation) is about 20%, this probability climbs to some 50% when the adult HIV prevalence is at 10%, and the 35q15 soars to 80% in the very high prevalence countries (30% and more of adult HIV prevalence rate). These latter adult mortality patterns, sustained over decades, are probably unprecedented in human history, at least among those populations that have survived to date. The consequences at the individual, household, community and society level are nothing less than catastrophic on all accounts. In our opinion, this is the graphical way the AIDS problem should be represented: rather than showing decreasing life expectancies at birth, it is the life expectancy at age 15 (or its corollary, young adult mortality) that is the more relevant indicator. The bulge of prime-age death, occurring in both sexes, but at younger ages for women than for men, is arguably the most dramatic event in the AIDS epidemic in Africa, as it kills the parents of not-yet-autonomous children at a moment when they are also supposed to be the driving force of economic activity and the functioning of society (Figure 1).

**FIGURE 1 Median UN projected male age-specific probability of dying 2000-2005 (Ngom and Clark, 2003)**



### Understanding patterns of causality in (hetero)-sexual transmission: Frameworks and models

In this section, we look at the impact of AIDS on populations and societies through the lenses of several models and concepts to try and make sense of it. It leads to the understanding that the problem of AIDS is unlikely to be solved – or best coped with – by medical-professional activities (care, secondary prevention), and that the issue of 'human resources', in terms of coping with the *epidemic*, requires an open mind and a sufficiently strong willingness for radically changed thinking.

### The 'susceptibility-vulnerability' frame

Probably the most useful distinction to be introduced when trying to understand HIV/AIDS epidemics is the one between *susceptibility* (to infection) and *vulnerability* (to the impact of AIDS related morbidity and mortality). *Susceptibility* can be understood as the predisposition to infection. *Vulnerability* is the impact of disease and death. Both are applicable at different levels: individual and household, community/group/organisation and society. Susceptibility (to infection) and vulnerability (to the impact) are both quite variable across countries and within countries. These notions appear as fundamental in order to try and understand how and to what extent HIV/AIDS is creating havoc.

This distinction, widely used by Barnett and Whiteside, is not total, however. It is a theoretical construction that may help us to clarify some issues, but in reality susceptibility and vulnerability result in each other and determinants may apply to both. For example, poverty is understood to be a determinant of susceptibility, but it also increases vulnerability (evidently). Still, we find the distinction very useful, as it helps us not to forget that prevalence, incidence and mortality data do not tell the whole story.

#### THE 'SUSCEPTIBILITY-VULNERABILITY' FRAME

##### Susceptibility

= predisposition to infection

##### Vulnerability

= impact of disease and death

##### Both applicable at different levels

- Individual and household
- Community/group/organisation
- Society

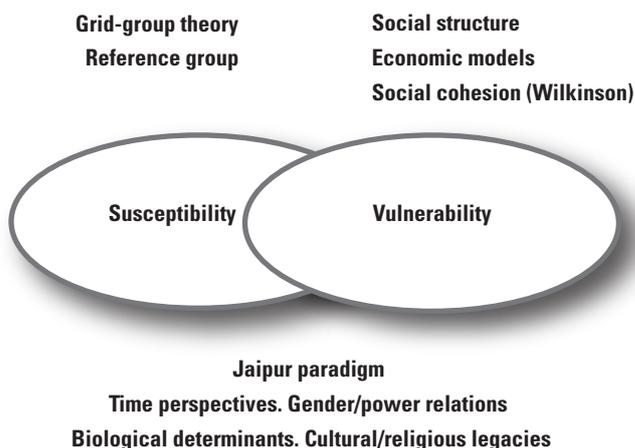
### What drives the epidemics?

In order to understand what is driving the AIDS epidemics, the debate appears to concentrate on three issues: (1) sexual behaviour (promiscuity or, in today's terminology, sexual pluralism, and safety or unsafety of sex); (2) biological factors (male circumcision, co-presence of STIs, type of HIV virus, nutritional issues, ...), and (3) the embeddedness of the two previous issues in their historical and social-cultural environment. The latter is actually a set of perceptions (or models) that are expressed in social, psychological, socio-psychological, anthropological, economic, cultural, developmental, historical, political and religious terms, to describe – or to make sense of – a quite complex reality about which there is lots of disagreement and lots of uncertainty.

Each of these perceptions can be said to be a lens that allows us to 'see' one aspect of this driving environment that contributes to susceptibility and vulnerability through various patterns of behaviour. From the literature, we identified a set of theories, models, and concepts. None of them seems to be able to capture everything, but together (and expanded further) they may contribute to the construction of a useful toolbox for better understanding or assessing the context of each specific setting. Some of these models and theories are in the domain of social psychology (such as 'reference group' theory, time perspective theories), others are in the realm of sociology (like

the Jaipur paradigm, Szreter’s 4 Ds, the gender issue theory), economics, anthropology (like the grid-group analysis) and biological medicine (the nutritional and parasitic disease theories on susceptibility and vulnerability). Some of these models help to explain both susceptibility and vulnerability issues. Others are more selectively focused on either one of these concepts. All tend to illustrate one basic thing: individual behaviour is not just about individual, personal decisions, and some people are more capable and free to make their own decisions than others (Figure 2).

**FIGURE 2** Linking some models and perspectives



**Grid – Group theory**

Mary Douglas is a lady of many years, who started doing anthropological fieldwork in the Congo in the late 1940s. One of her many and dynamic theories is known as ‘grid-group’. A somewhat elusive thing at first, and not without controversy, we think it is a potentially powerful lens to look at the culture of group behaviour and how individual behaviour relates to this. ‘Group means the outside boundary that people have erected between themselves and the outside world. Grid means all the other social distinctions and delegations of authority that they use to limit how people behave to one another’ (Douglas 1982a, 138). Crossing these two concepts by distinguishing between high and low yields Table 1. Weak grid and weak group are the characteristics of an ‘individualistic’ culture: low tolerance for external prescription, reinforced by weak feelings of group membership. This way of life is largely organised by self-regulation among voluntarycontract-based networks of persons; the most likely compatible regulation mechanism is the market. Individuals take their own decisions, mainly by applying rational choice. The metaphorical image is the ‘walkman-ego’. The easiest recognisable prototype society is the USA and other, mostly Western, liberal democracies.

**TABLE 1** Grid group theory

<b>GRID</b>	<b>HIGH</b>	<b>Fatalistic</b>	<b>Hierarchical/Bureaucratic</b>
	<b>LOW</b>	<b>Individualistic (market)</b>	<b>Egalitarian</b>
		<b>LOW</b>	<b>HIGH</b>
		<b>GROUP</b>	

*Strong* grid and *strong* group characterise a 'hierarchical' culture. Here, unequal individuals with various social shortcomings that demand improvement through rules-based guidance are ordered in vertical collectives. People accept to be told what to do; imposed rules regulate behaviour, like in typical pyramidal bureaucracies. An example of such a culture that comes to mind easily is (or was) the Roman Catholic Church, but it is present also in many other organisations (like the Army) and (segments of) societies, including many African ones.

*Weak* grid combined with *strong(er)* group describes an 'egalitarian' culture, in which largely equal persons, reluctant to accept prescriptions from outside, prefer to organise into (small) groups that reach collective decisions through discussion leading to consensus. Such constructivist-democratic cultures are less easy to exemplify, but historical examples may include the European social-democratic movements, especially in their initial phases, and the prototypical African 'palaver' culture also displays significant aspects of this decision-making mode.

Finally, *strong* grid combined with weak group feelings portrays the 'fatalistic' culture as it is called by grid-group theorists. Recognising constraints from outside but not feeling part of any broader social group that may have an influence on decision-making induces in fatalists the tendency for social avoidance rather than social interaction. Although many people may belong to this culture type, they are – by definition, one could say – not a vocal group.

Cultural 'typing' with the use of grid-group theory could contribute to explain both susceptibility and vulnerability issues, but is intuitively most helpful in understanding susceptibility. It can also help to explain why information messages targeted at behaviour changes that assumedly are based on individual decision-making may not work in cultures that are not weak-grid/weak-group (i.e. individualistic).

#### **GRID-GROUP THEORY: SOME INDICES**

(Douglas 1982, Douglas and Wildavsky 1982)

##### **Grid**

'overall strength of categorical distinctions (boss/worker; adult/adolescent/child)

##### **Group**

'extent to which the behaviour of individual members depends on their membership in a definable social unit'

##### **Group indices**

- Proportion of time spent in the group compared with total allocatable time
- Frequency of meetings
- Closeness of interlocking character links (?)
- Proportion of shared to unshared links
- Strength of the boundary of the group

##### **Grid indices**

- Style egalitarian or clear pecking order? Are there underdogs and top dogs?
- What are the theories of social justice, which support this distinction?
- Grid is high whenever roles are distributed on the basis of social classifications: sex, age-grading

The relevance of this theory for better understanding how sexually transmitted HIV infection spreads is that it adds an important environmental, cultural dimension to individual decision making (like most of these theories and models do), one that might elude those of us who raised and live in a highly 'individualistic' cultural environment. Conversely, what could be the relevance of this theory for understanding why prevention programmes appear to have such limited success? This may lie in the fact that in medium to high prevalence situations successful prevention strategies require *group decisions* (to change), whereas the bulk of the past and present prevention messages are formulated in such a way as to influence individual decisions (well adapted to individualistic culture). The hypothesis that comes to mind is, evidently: adapt prevention approaches to prevailing grid-group culture, without falling into the trap of exaggerated universalism. Populations are rarely homogeneous. Grid-group theory is intuitively quite sound, but is harder to put in practice.

### The Jaipur Paradigm

The Jaipur paradigm, described by Barnett and Whiteside, (2000) is at first sight somewhat similar to the grip-group hypothesis, though it is left at a much more intuitive level. The concepts used here are *social cohesion* on the one hand, and *wealth* on the other (Figure 3). The purpose is to make acceptable that susceptibility and vulnerability are not necessarily linked and that various combinations of cohesion and wealth are likely predictors of different levels of susceptibility and vulnerability. The concept of 'social cohesion' in this hypothesis is not always very clear; Barnett describes it somewhere in terms of 'homogeneity' (cultural, religious,...) and cites the wealthy liberal democracies as examples of 'high social cohesion + high wealth'<sup>5</sup>. The 'wealth' concept includes level of wealth as well as its distribution. The model could be applicable to visualise the culture of religious groups like, for example, orthodox Jews, or similar 'high cohesion' (and high social control) groups.

FIGURE 3 The Jaipur paradigm

<b>SOCIAL COHESION</b>	<b>High susceptibility</b> <b>Low vulnerability</b>	<b>Low susceptibility</b> <b>Low vulnerability</b>
	<b>High susceptibility</b> <b>High vulnerability</b>	<b>Medium susceptibility</b> <b>Medium vulnerability</b>
	<b>WEALTH</b>	

**HIGH**

The Human Sciences Research Council (HSRC) in Cape Town has recently set up a 'Social Cohesion and Identity Programme' in collaboration with the HSRC's 'Social Aspects of HIV/AIDS and Health Research Programme' (SAHA) (Deacon et al., 2005). The term 'social cohesion' is clearly taken seriously. However, although the Jaipur paradigm has some intuitive appeal and might 'explain' a number of observations, we feel it is both too ambitious in its universalism and too imprecise to be more than intuitively appealing. Still, it is part of the discourse.

<sup>5</sup> Another concept of social cohesion is proposed by Wilkinson, who defines it as the extent to which people form 'mutually beneficial social ties' (social capital). This is opposed to the 'Society driven by hierarchy, inequality and competition' ('Inequality kills').

### Szreter's 4 Ds

Simon Szreter, a historian in Cambridge, argues that rapid, market-led economic growth inevitably induces disruption, which, if not carefully managed, can lead to deprivation, disease and death (Szreter, 1999). His analysis is based on the history of 19th century English provincial cities, where between 1820 and 1865 there were drastically increased mortality rates with life expectancies falling to levels not seen since the mediaeval Black Death, following unprecedented economic growth and urbanisation. Szreter offers three explanations: (1) growing inequalities of incomes and wealth, (2) continual rural-to-urban in-migration, and (3) residential segregation or 'suburbanisation'. This disruption was resolved only in the late 1860s, when new city government elites introduced new financing schemes for investment in water and sanitation infrastructure.

#### THE 4+1 D'S

**A paradoxical and dialectical relationship between economic growth and deprivation, based on historical analysis of 19th century English cities (Szreter 1999)**

**In case of rapid market-led economic growth, there is always:**

- Disruption

**which can lead to:**

- Deprivation
- Disease
- Death

**Chopra & Sanders add 5th D**

- Distribution (of economic and social resources)

Mickey Chopra and David Sanders (of the University of the Western Cape, South-Africa) use Szreter's theory to try and explain the 'anomaly' that there is a roughly positive statistical correlation, within Southern African countries, between HIV prevalence rates and per capita GDP (maybe best exemplified by contrasting Uganda and Botswana: Botswana's per capita GDP is several times higher than that of Uganda, and so is its HIV adult prevalence). They suggest to add *inequitable distribution* of economic and social resources *within* countries as a 5th 'D'. Their analysis is supported by the evolution of young adult mortality statistics in South Africa: young adult mortality has been rising since 1985, quite a few years before AIDS became a recognisable problem in South Africa (Chopra and Sanders, 2004).

4D+1 is a typical example of the 'hygienic' school ('hygiene' being understood in the wide sense of application to the social, physical, economic and political environment). It seems to apply in the first place to the vulnerability issue, but also to elements of susceptibility. The basic paradigm here is that at population level the wide environment (as described above, i.e. including the aspect of political economy) is a true determinant of disease, and unless this wide environment is changed, disease problems cannot be expected to be solved. The fact that such required changes are medium to long-term events does not alter the necessity to start tackling them now.

### Reference group theory

People's image of themselves is not entirely an emanation of the self, but co-determined by the 'reference group' to which they belong or aspire to belong. They tend to appraise themselves not only through their own 'eyes', but act as if a second, 'outside eye' is looking with them at themselves.

#### REFERENCE GROUP THEORY

(Cooley 1902, Merton & Kitt 1950)

##### Principle

People include the standards of significant others as a basis for making self-appraisals, comparisons and choices

*'Normative' and/or 'comparative' reference group behaviour*

This theory was already basically formulated at the beginning of the century by Cooley (1902), but was empirically carried forward by Merton and Kitt (1950) with the publication of their investigations into the behaviour of (ex-)soldiers. Another concept related to this is 'socialisation', or acquiring the culture of the group (or organisation) one enters into or belongs to. It was also Merton who coined the term 'anticipatory socialisation', meaning that individuals prepare to enter into a new group's culture by adapting their behaviour to the anticipated culture they aspire to belong to.

Once more concept helps us better understand that individuals' behaviour is not just a matter of individual decisions. Pawson and Tilley (1997) go back to this theory in order to explain an apparent failure of the 'naming and shaming' strategy that was used in order to induce UK citizens to pay their poll tax. The strategy consisted in the publication of the names of those who had not complied with this obligation. The (simplified) hypothesis behind this tactic was that people bearing the published names would be 'shamed' into paying. The 'failure' of this hypothesis consisted in the fact that a large proportion of those unwilling to pay this unpopular tax were actually proud to be dissenters and actually desired to be known as belonging to that particular 'reference group'.

Reference group theory may go a long way in helping to understand susceptibility issues in HIV (high risk behaviour) but also in the areas of denial and stigma, and thus indirectly issues of vulnerability. In combination with grid-group theory it may provide what complexity theorists call a powerful 'attractor'<sup>6</sup>.

#### Time perspectives

One of the characteristics of people living in dire circumstances is their heightened concern with immediate survival needs, displacing long-term concerns. Evidence of this emerges from interview surveys and local rankings of priorities in high burden populations. Such exercises typically yield jobs and food and depending on the situation, security issues as the top priorities.

<sup>6</sup> In complex systems (like all human communities and societies) 'attractors' are the basic rules or regularities, mostly unknown, which, when they work together, create an environment, where phenomena are following a certain track, although the track remains to a large extent unpredictable.

Delayed benefits are always less attractive than immediate ones, but in situations of poverty they tend to disappear altogether.

## TIME PERSPECTIVES

### Poverty

Focus on the here and now (long term concerns are displaced)

- What will I eat today?

### Shortened expected life span

At age 15: 20 years rather than 50

- Reduced investment in education, preparation for economically and socially productive life...

In HIV/AIDS the time perspective is somehow critically important, as HIV/AIDS is a long wave event, i.e. changes are slow, and evolution is spread over long time periods. Behaviour changes introduced today can be expected to yield felt results only 10 years from now. This helps to understand the so-called 'boiling frog' phenomenon: put a frog in a container of water and slowly increase the water temperature, degree by degree. The story goes that, as long as the heating up is done slowly enough, the frog will not perceive the danger and will not attempt to get out of the water until it is too late, the water is boiling and the frog is dead. Although an anisothermic amphibious species like the frog is obviously not the same as a human society, there is of course a lot of common sense in this suggestive parable<sup>7</sup>.

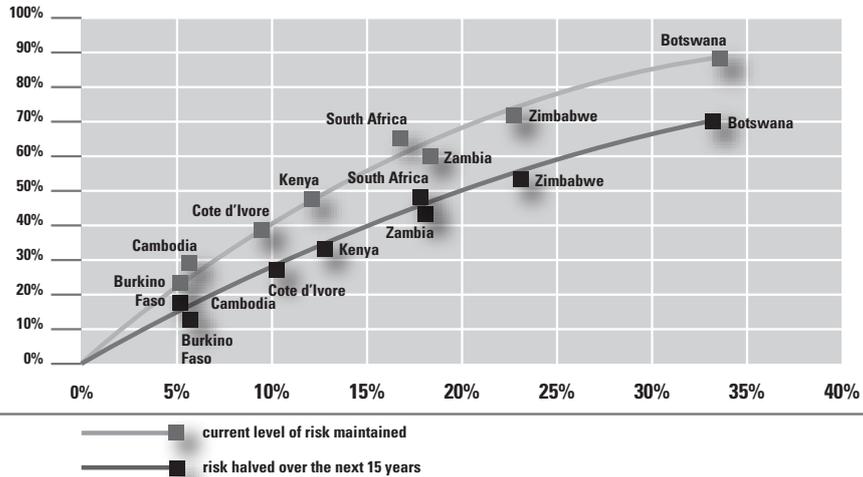
Another aspect of people's time perspective is how long they can reasonably expect their lives to be. The relevant statistic for this is not so much life expectancy at birth, but rather the remaining (adult) life expectancy at age, say, 15 or 20. In pre-modern times, e.g. in 17-18th century France, life expectancy at birth (based on data from parish registers) was around 25 years, mainly due to infant mortality, which was over 250 per thousand, and huge child mortality. However, those fortunate enough to survive to the age of 20 had, on average, a remaining life expectancy of some 35 years, which means that half of them grew older than 55 years (Masset, 2002). There are good arguments to accept that this state of affairs, *mutatis mutandis*, applies to the human species in most pre-modern societies (at least in those that have survived), going back to Neolithic times. Such a mortality pattern allows the majority of parents to be alive with their (surviving) children until their age of autonomy (say 18 years) even in what we would call total absence of effective health care. Adult life expectancy had to be high for securing survival of a sufficient part of the next generation.

With this in mind, the situation in the highest burden countries is frankly frightening. At present trends, the lifetime probabilities for young adults to die of AIDS, and thus typically to die somewhere between the ages of 25 and 45, are enormous, as indicated in Figure 4.

<sup>7</sup> But (and fortunately this is crucial) only up to a certain point. Slow, incremental processes are of course conducive to maintaining a 'business as usual' attitude, to 'no-fundamental-change-required'. There is not much evidence from history, though, that in human societies this can go on indefinitely – even if it can go amazingly far.

If this is true, then young people who are not infected with HIV, in countries like Zimbabwe or South Africa, can better be described as ‘not yet infected’, or ‘provisionally uninfected’. This means that for the average South African (black) adolescent, at present, the odds are 3 to 1 that (s)he will die of AIDS, which in practice means young.

**FIGURE 4 Lifetime risk of AIDS death for 15-year-old boys, assuming unchanged or halved risk of becoming infected with HIV, selected countries** Source: Zaba B, 2000 (unpublished data)



The question then is, is he aware of this, and to what extent does this influence his behaviour? Evidence that such awareness exists, as they see young adults dying around them, and that it leads to reduced incentives for personal investment in education, for example, is largely anecdotal but also very powerful. Its equivalent in economic theory (higher opportunity cost of time spent on education) is also used as an element in economic modelling by those who attempt to take longer-term events into consideration (Bell et al., 2003, Cavalcanti Ferreira and Pessoa, 2003). We conclude that people’s prevailing time perspective must be expected to have considerable influence in terms of susceptibility to infection as well as vulnerability of households and society at large.

**Gender and power relations**

Gender is widely discussed and we may not need to elaborate in too much detail, except maybe to repeat the reminder that ‘gender’ is not the same as ‘women’: gender is about the relationships between men and women as they are culturally and socially constructed, which happens in any society. It is this relationship that can be examined with respect to the susceptibility and vulnerability issues.

The African HIV/AIDS epidemics in high burden countries have evolved toward an unequal gender-asymmetric age distribution: at the aggregate level more women than men are infected, and women are infected at younger ages than men. In the present discourse, this susceptibility gap is said to be related to (at least) three major issues: (1) the (more or less widespread) use of transactional sex as an economic resource for women; (2) a gender power balance that results in reduced negotiation and refusal power for women; (3) a link between HIV and violence, sexual or other.

Apart from these social parameters, there is of course also the long established biological factor that man-to-woman HIV transmission appears to be more efficient than the other way around.

## GENDER, POWER AND AIDS

### More women are infected, and at a younger age

#### Transactional sex as major 'resource'

- Transgenerational; older men - younger girls

#### Female negotiation/refusal power

- Inside marriage or stable relationship
- Outside relationship

#### Violence

- Inside relationship
- Outside relationship

Some strong though context-bound evidence for the link between *susceptibility* to HIV infection and violence within the household was produced in an urban setting in Tanzania (Maman et al., 2001). Overall, HIV-positive women were 2.68 times more likely to have experienced an episode of violence with their current partners than HIV-negative women. In the group of younger women (less than 30 years old), violence was reported 10 times more frequently by HIV-positive than by HIV-negative women. Furthermore, women who reported that their partners maintain concurrent sexual relationships were 5 times more likely to have experienced physical violence than women who reported that their partners have never had other relationships. The gender related arrangements within households appear also as clearly important elements of susceptibility to infection.

All this is of course highly context-specific – like everything else. These statements cannot be said to apply to 'Africa', but they may be useful entry points to try and assess a given context and to put these issues in the realm of discussion. These are areas where the practitioners of social sciences and the humanities still have a lot of work to do, perhaps essentially in order to provide the language in which they can be discussed by those directly interested. It would therefore arguably be preferable for such investigations to be carried out by people belonging to the same societies as the ones they are investigating. It should be noted that the gender aspects in terms of *vulnerability* are equally dependent on the specifics of the historical, cultural and socio-economic environment.

### Biological factors

The biological effect modifiers, co-factors and confounders have been investigated in depth and for a long time. The most significant ones that have emerged are, first, the presence of sexually transmitted infections (STIs), especially the ones with ulcerating manifestations, which strongly enhance susceptibility to infection; second, male circumcision before the age of sexual activity, which appears to reduce susceptibility and, third, the type of HIV virus, although this is not a consistent finding. Genetic susceptibility (or absence of it: 'un-susceptibility') exists; significant proportions of European populations appear to be genetically immune to HIV infection, especially in the North of Europe (5 to 10%). To our knowledge, this has not been investigated in African populations.

## SOME BIOLOGICAL FACTORS

### Malnutrition (vitamin A?) and parasitic disease

- Higher susceptibility for infection (??) (through increased frequency of ulcerating STIs?)
- Faster impact of disease

### Viral load

- (much) higher at beginning and end: recently infected (not ill) far more infectious

It has long been suspected that transmission efficiency is related to the viral load of the infecting person. It is known that viral load follows a U-shaped curve over time, with high values soon after acquiring the infection and in the late stages of the infection. It has also been established that efficiency of transmission is highest in the early infection period, when subjects are infected but not symptomatic and, presumably, most sexually active.

Nutrition is a relatively recent focus. There is evidence for (1) links between nutritional status and progression of HIV/AIDS disease, and (2) the importance of dietary factors when under ARV therapy (several ARV drugs have side effects on lipid metabolism). There is as yet no really empirical evidence on a link between nutritional status and susceptibility to infection. Suggested mechanisms for the latter possibility are the negative impact of malnutrition and parasitic infestation on the immune system, which could result in increased susceptibility; vitamin A deficiency having deleterious effects on mucosal quality and notably increasing the proportion of ulcerating STI disease. However, although such mechanisms have *prima facie* plausibility, cause-effect relations have up till now not yet been established empirically.

In a wider social context, food insecurity in general is a plausible factor contributing to higher susceptibility behaviour (cf. gender and power relations), and is also a strong factor of vulnerability.

## Economic models

What does AIDS do to the economy? The simplest and most obvious answer is that it decimates the active workforce, the working life of many people being drastically shortened by illness and death.

## AIDS AND THE ECONOMY

### Labour force reduction

- Agricultural sector
  - Formal sector
  - Informal sector ('employed' + unemployed)
- (Evidence of 'back-migration' to agricultural areas?)

### Skills transmission

- Production skills (rural economy)
  - Survival skills
- (part of 'social implosion', 'new variant famine', etc.)
- Economic models produce highly mixed results...

At household level this produces almost self-evident dramatic results. Agricultural production in AIDS affected households, for example, has been shown to drop sharply in East Africa. Increased expenditure (e.g. on health care) and reduced income force many AIDS affected households to cope by drawing on savings and selling assets, ultimately also the productive ones, as shown in Table 2.

**TABLE 2 Summary of household coping strategies and their implications for development work (adapted from Donahue, 2002)**

Household coping mechanisms	Development agency Intervention
<i>Pre-emptive risk</i> reduction strategies	Strengthen household’s safety nets, e.g. <ul style="list-style-type: none"> <li>■ Improving incomes and income flows</li> <li>■ Encouraging savings, assets accumulation</li> <li>■ Avoiding use of productive assets</li> </ul>
<i>Reactive</i> coping strategies: <b>Phase 1</b> (reversible, using <i>protective</i> assets)	
<i>Reactive</i> coping strategies: <b>Phase 2</b> (difficult to reverse, using <i>productive</i> assets)	Strengthen household’s safety nets, e.g. <ul style="list-style-type: none"> <li>■ Help in caring for children</li> <li>■ Food, or help in growing food</li> <li>■ Basic goods such as clothes, soap</li> </ul>
<i>Reactive</i> coping strategies: <b>Phase 3</b> (destitution)	

At organisational level, companies are forced to invest in new employees, i.e. prepare them for the specificities of their particular work setting, which may represent significant extra cost. At country level, shifts in the relative numbers of people active in the agricultural, formal and informal sectors are likely to occur, as the unemployed in the informal sector (mainly urban) are the reserve workforce when agricultural workforce is significantly affected by AIDS mortality.

Table 3 is taken from a study on the consequences of HIV/AIDS on the agricultural sector (Jayne et al., 2005) and shows the anticipated evolutions when the agricultural labour force is significantly reduced. The result may very well be a significant trend of back-migration to the rural agricultural sector, as shown in a comparison of the 1990 and 2000 censuses: the number of rural households increased in this ten-year period with 80%, whereas urban households increased with only 49%. The number of households labelled ‘agricultural’ increased with an amazing 151%.

At the macro level, one could ask what are the *urban-rural migration trends*? When the agricultural workforce is being reduced by AIDS mortality, classical economic development theory would predict that the vacuum is likely to be filled by the unemployed in the urban informal sector. In this case a, ‘urban-to-rural back-migration’ would be expected. This is what seems to have happened in, for example, Zambia between 1990 and 2000 (Jayne et al. 2005). Although this may be observed as a macro-trend, this does not necessarily mean that at the community and household level such compensatory mechanisms would always be present or possible.

All these impacts are considering mainly the reduced *numbers* of the labour force. Other studies, attempting to take a longer-term view, also try to take into account less tangible issues, like the loss of skills transmission between generations. Such skills may be production skills, survival skills, life skills, but also the skills that make the working of society. These latter may very well be the ones that in the end may have the biggest impact, leading some authors to advance terms like ‘social involution’ (de Waal et al., 2005) and ‘new variant famine’ (de Waal and Whiteside, 2003). Economic models that incorporate such long term, trans-generational variables as well as reduced expected life spans (Cavalcanti Ferreira and Pessoa, 2003, Bell et al., 2003) come to much more catastrophic conclusions than other, classic models, which are sometimes amazingly optimistic. As an example, Bloom and Mahal stated in 1997 that ‘Our main finding is that the AIDS epidemic has had an insignificant effect on the growth rate of per capita income, with no evidence of reverse causality. We also find evidence that the insignificant effect of AIDS on income per capita is qualitatively similar to an insignificant effect on wages of the Black Death in England and France during the Middle Ages and an insignificant effect on output per capita of influenza in India during 1918-19.’ It is not clear whether they would repeat this today.

**TABLE 3 Conjectured impacts of AIDS on availability and cost of resources used in agriculture (Source: Jayne et al. 2005)**

	Capital assets used in agriculture		Labour used in agriculture		Land used in agriculture		Knowledge/skills used in agriculture	
	SUPPLY	COST	SUPPLY	COST	SUPPLY	COST	SUPPLY	COST
Hardest hit countries (HIV prevalence >20%)	↓↓ <sup>R</sup>	↑↑	↓?	--	<sup>R</sup>	--	↓↓	↑
Countries with HIV prevalence between 5-20%	↓ <sup>R</sup>	↑	↓?	--	<sup>R</sup>	--	↓	↑

<sup>R</sup> = redistribution from affected households to others

-- = no anticipated major impact

? = depends on policy and availability of underutilised labour in informal sector

The economic psychological climate in high burden countries is of course also one of these less measurable but anecdotal very powerful elements. As DaimlerCrysler South Africa’s chief executive stated in June 2001, ‘AIDS is definitely one of the factors inhibiting foreign investments – on top of all the structural issues. When I try to persuade foreign suppliers to invest here, they ask about four things – trade unions, cost of capital, crime and AIDS.’ (Innocenti, 2001). From the above we can observe that most recent economic models and published economic studies address the question of vulnerability, i.e. the impact of AIDS morbidity and mortality on the economy, much less the impact of the economy on susceptibility to infection. The latter point was acknowledged already long ago when the importance of mobility and especially migrant labour were established as major ingredients of susceptibility.

### How did it get this far?

Although this question seems to be about the past, the answer to it is still something like reading tealeaves. The rigorous methodologies of science are mostly concerned with facts and events. In order to understand a clearly complex phenomenon like this one, we will have to be a little less 'rigorous', not only looking at facts and events, but also at 'patterns of behaviour' (which are already more risky interpretations) and possibly dig into structural system issues, which may be even more conjectural. Some such models of interpretation have been presented above. This is also the broad methodology that was used by the UNAIDS scenario building exercise that tried to tell stories describing paths to different futures (what would be plausible evolutions) if a number of things happened – or did not happen (UNAIDS 2005). We might use the mirror image of this kind of story telling about the future to try and guess what happened in the past.

Participants to the scenario exercise identified 5 driving forces, or themes, which can play out well or badly – with all the possible intermediate positions. In the following table they are brought together with their best case / worst case possibilities.

Driving force	Best case	Worst case
Power	Widespread legitimacy and shared	Coercive and self-interested
Knowledge	Effectively developed and shared	Competing priorities and limited sharing
Resources	Coordinated and sustained	Fragmented and under-resourced
Beliefs	Respect and tolerance	Intolerance and conflicting values
Unity	Cohesion and solidarity	Fragmentation and contestation

Can we consider the worst-case column to list the structural explanations of why 'it has come this far'? Of course these are frightfully general issues, but they might be worth keeping in mind for what they were meant for: imagining a future. However, they obviously also have some explaining power for the past and the present. In a less general mode, we think it is possible to identify a few lessons from the past for those who are professionally trying to grapple with the AIDS problem.

First, it is a plausible general statement to say that HIV/AIDS has been considered a (purely) 'medical problem' for too long by too many. This reduction has contributed to the fact that it has taken a long time before a relevant amount of attention was directed at the social and economic dimensions of the susceptibility as well as the vulnerability issues.

Second, the communication on HIV/AIDS was for a long time (and still is) embedded in a general discourse of 'deviant behaviour', which contributed to attitudes of blame, stigma and denial, on the one hand, and on the other resulted in the assumption, by those who do not belong to deviant risk groups, to assume that they are not at risk, thus rejecting available protective measures.

Third, and maybe most important, there is the simplistic fallacy that consists in thinking that 'given the right information, individuals can and will change their behaviours'. Individual human beings are never just individual, isolated specimens of their species, and sexual behaviour is not just about individual decision making. We have only begun to understand the importance of the social dynamics of HIV/AIDS. It is probably wise to adopt the attitude that the phenomenon is to be observed through the lens of *complexity*, i.e. to accept that it is not just explained by simple, mechanical rules of linear causality. The temptation to think that it is 'simple' derives at least partly from the medical-epidemiological reduction to a *viral disease* (i.e. a disease 'caused' by a virus) that is transmitted in such and such a way. This reduction works fine for interventions like ensuring transfusion blood safety: all that is needed is the systematic use of a good test that identifies infected blood, and then not to use this blood for transfusion purposes. The process can be controlled and is entirely in our hands, if we want it to be. It is mechanical, it is simple, it is linear: cause precedes effect predictably, and we know sufficiently well how it works, so that we can re-engineer the process.

Things become a lot more difficult when we consider heterosexual transmission. Human sexuality cannot be reduced to simple cause-and-effect mechanics, and certainly not when we consider it in its embeddedness in social group dynamics. The social interactions in which sexuality is embedded are loaded with biological drives and cultural, normative and sense-making symbols and meanings, many of them unconscious or implicit. Given the variety of individuals and the variety of groups with which they identify and from which they draw meaning and direction, there can be no simple predictive model for sexual behaviour. To a large extent sexual behaviour emerges from a complex system of interactions unpredictably interacting with other interactions, and the HIV/AIDS problem in turn emerges from this behaviour<sup>8</sup>. As Loewenson and Whiteside, (1997) put it, 'Each society gets the HIV/AIDS epidemic that reflects the particular schisms and areas of repression by which it is characterised'.

All this to underpin the theory that the HIV/AIDS problem is not likely to be modelled adequately with medical-epidemiological reasoning alone. Some might go as far as to say that AIDS is a 'social problem masquerading as a disease' – and although this is not the whole truth, it would also be unwise to reject the piece of truth that it does contain. The consequence of the above for the topic this text intends to investigate, is that we should be well aware of the fact that the contribution of the health workforce on the HIV/AIDS problem will necessarily be a relatively modest one – just like the contribution of medicine and epidemiology to the understanding of the problem can only be a very partial one.

<sup>8</sup> Sexual behaviour is not the only human behaviour that can be considered this way. It applies to virtually all behaviour in which choice intervenes or seems to intervene. A case in point would be the present 'obesity epidemic'.

It is time for good and committed social and other scientists to start giving significant contributions to our understanding, and to hand us the concepts and the language in which it can be discussed in a productive and creative way.

Fortunately, this is beginning to happen, and some of it is penetrating in the mainstream discourse (de Waal et al., 2005, Barnett and Whiteside, 2002) and the recent UNAIDS '3 scenario exercise (UNAIDS, 2005). Unfortunately, though, this is only *beginning* to happen in a more systematic way.

### **Conclusion: complex and context-dependent**

AIDS is a complex problem. This does not just mean that it is difficult; it means (1) that it emerges from (unpredictable) human behaviour in the field of human relations interacting with other human relations, and (2) that its consequences in turn emerge in ways that are largely unknown from past and present mechanisms in specific contexts. There remains a lot to be learnt, and we should prepare for lifelong learning and refining of our understanding of the mechanisms, the contexts and how they interact.

A true assessment of a local HIV/AIDS situation is a comprehensive exercise, including numerical measurements (prevalences, incidences, age specific mortality) and their interpretation; detection of patterns of causality in the susceptibility issue; staging of the epidemic historically (maturity of the waves) and in terms of impact; and assessing context-bound mechanisms of vulnerability at different levels (household, local community or organisation, broader society and national economy). Such an assessment will require a variety of models from different disciplines, rigorous measurement and lots of high quality dialogue.



## What does AIDS do to the health workforce and the health system?

### Introduction

The recently renewed upsurge of interest in human resources, and of the HIV/AIDS epidemic's impact on HRH in Africa (roughly around 2000<sup>9</sup>), led to the observation that available data are 'inadequate' and 'incomplete' (ILO, 2004, Dabis, 2002). Five years later, this is still the case. Among the first to draw attention to the increased mortality among nursing personnel were Buvé et al. (1994), still widely quoted today, who published a research letter in the journal *AIDS* drawing attention to the phenomenon in two Zambian hospitals; the numbers were (still) small but already impressive enough, with a more than tenfold increase in female nurse mortality rates around 1990 as compared with the 1980-85 period. Since then, some more studies have been carried out, but the impact of the AIDS epidemic on the health workforce and the health services is still largely under-documented.

While the previous chapter dwelled on the impact of the AIDS epidemic on families, communities and societies, this chapter first briefly summarises the specific impact of the HIV/AIDS pandemic on the health services. We will first examine the direct impact on health workers and in a second part describe how the epidemic mainly through its influence on workload and case mixes increases the burden of health workers. Finally, we will discuss the consequences of all for health service managers.

### The direct effects of the HIV/AIDS pandemic on the health workforce

The prevalence rates, morbidity patterns and death rates due to AIDS among the health workforce are in general comparable to those of the overall population, if specific age and sex distribution is taken into account. In the early years of the epidemic, a tendency was noted for more highly educated people to be more at risk, but in most situations this tendency has been effaced with the generalisation of transmission in society. In addition to this, there is the occupational risk of HIV infection. While even in high burden countries, this is not the most significant mechanism of transmission, we'll see that it is not negligible and that it easily leads to apprehension among staff and thus needs to be taken care of.

<sup>9</sup> Interesting papers in this regard include:

HORSMAN, J. & SHEERAN, P. (1995) Health care workers and HIV/AIDS: a critical review of the literature. *Social Sciences and Medicine*, 41, 1535-1567.

HANSEN, K., CHAPMAN, G., CHITSIKE, I., KASILO, O. & MWALUKO, G. (2000) The costs of HIV/AIDS care at government hospitals in Zimbabwe. *Health Policy Plan.*, 15, 432-440.; MPUNDU, M. (2000) The burden of HIV/AIDS on the Zambian health system. *Aids Analysis Africa*, 10, 8.; NSUTEBU, E. F., WALLEY, J. D., MATAKA, E. & SIMON, C. F. (2001) Scaling-up HIV/AIDS and TB home-based care: lessons from Zambia. *Health Policy Plan*, 16, 240-7.; SCHWARTLÄNDER, B., STOVER, J., WALKER, N., BOLLINGER, L., GUTIERREZ, J. P., MCGREEVEY, W., OPUNI, M., FORSYTHE, S., KUMARANAYAKE, L., WATTS, C. & BERTOZZI, S. (2001) Resource Needs for HIV/AIDS. *Science*, 292, 2434-2436.; TAWFIQ, L. & KINOTI, S. (2001) The Impact of HIV/AIDS on the Health Sector in sub-Saharan Africa: The issue of human resources.

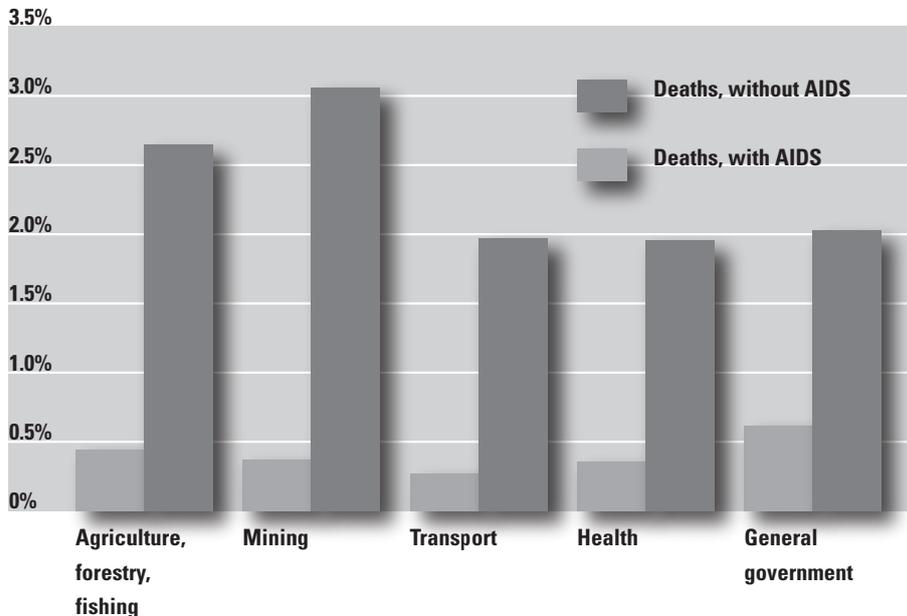
Office of Sustainable Development, Bureau for Africa, USAID. and ATTARAN, A. & HALE, P. (2004) WHO needs a better plan against AIDS. *International Herald Tribune*. Paris.

**The ‘natural’ HIV prevalence among health workers and its consequence**

Accurate data on HIV prevalence among health workers are relatively scarce, but health workers are at least as likely to be affected by HIV as any other group of the population (Buvé et al. 1994). Harvard and Haslegrave (2000) report that in the whole of Southern Africa, 25% of nurses are HIV positive. The national study carried out in South Africa by Shisana et al., shows that in public and private health facilities in Free State, Mpumalanga, KwaZulu Natal and North West, 15,7% of health workers is estimated to be HIV+. In the age-group 18-35 year, 20% were found to be HIV positive. Around that time, seroprevalance among pregnant women in ANC surveillance sites was 27,9% and overall HIV prevalence in the adult population group of South Africa was estimated at 15,6%. In Botswana, HIV prevalence was expected to rise from 17-32% in 2000 to 28-41% by 2005. Two to three percent of health workers had AIDS in 2001 and projections show this figure will rise to 6-9 % by 2011 if current trends continue (Abt Associates South Africa, 2000).

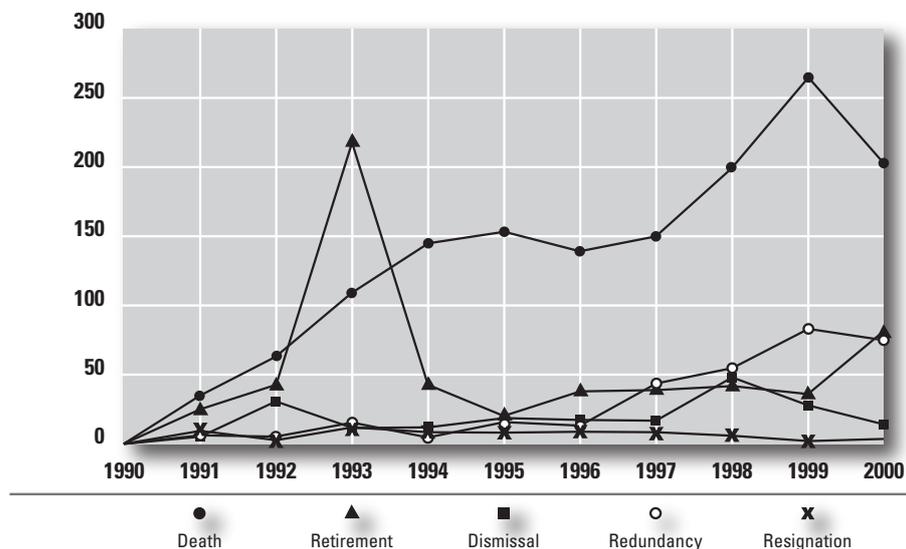
Seroprevalences of this order have important consequences on the cause of attrition of the health workforce. A death certificate analysis in this study also showed that HIV/AIDS related illnesses, including tuberculosis, account for 13% of the deaths among health workers in the period between 1997 and 2001. Projected death rates in current conditions of the AIDS epidemic show a dramatic increase in 2015 for South Africa, compared with the situation in 2015 without the AIDS epidemic. In that country, the worst is yet to come (Figure 5).

**FIGURE 5 Projected death rates and attrition in different sectors in function of presence or absence of AIDS (adapted from Quattek K, ING Barings, The Economic Impact of AIDS in South Africa: a Dark Cloud on the Horizon in HIV/AIDS: A Threat to the African Renaissance, 2000)**



The attrition in the health workforce, as assessed in Malawi in the last decade of the 20th century, is quite appalling. By the year 2000, death had become the major factor for attrition in the national health workforce, the vast majority of these deaths being attributable to AIDS (Figure 6). Other sectors are being hit in comparable ways.

**FIGURE 6 Attrition by cause and year, Ministry of Health, Malawi**  
 (Source GoM/MoHP (2002) SWAp Design Mission & SWAp Implementation Plan: Draft Final Report. Ministry of Health and Population, Lilongwe)



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### The occupational HIV infection risk

Also on the subject of occupational HIV infection risk, little data exist. The occupational risk may be correlated with the HIV seroprevalence rates among patients, but it has been shown to vary in function of specific occupation, place of work and adherence to procedures for prevention (Consten et al. 1995, Tawfiq & Kinoti 2003).

In *developed countries*, the average risk of occupational HIV transmission after a percutaneous exposure is estimated to be 0,3% and below 0,1% after mucous membrane exposure (Anonymous 2001).

Comprehensive data from *developing countries* are lacking. de Graaf and colleagues (1998) estimated a mean occupational risk of 0,11% per person per year taking into account the same 0,3 chance of transmission by accident and 1,9 percutaneous exposures per person per year among 99 Dutch medical professionals who had been working in AIDS endemic areas. In a study in Tanzania (Mwanza Region, 1997) an annual occupational risk of HIV transmission for health workers through needle prick injuries, accidental blood exposure and splashing, was estimated at about 3 per thousand per year. For surgeons, the risk was estimated at 7 per thousand if no special protective measures were taken (Gumodoka et al., 1997, quoted in Aitken and Kemp, (2003b). Over a 15 years career, such annual infection risks, if and when present, may add up to quite significant values.

Among health workers, cleaners are reported to have a particularly high proportion of needle prick injuries in a South African hospital. Nevertheless, very effective risk reduction strategies exist and are more and more systematically applied. Outside surgery, where a more complicated

systematic routine needs to be installed, the most effective measure is to systematically not recap used needles (although often health personnel perceive the availability of gloves to be much more reassuring – and their non-availability much more threatening). Some studies report, however, that compliance with these measures is low. Furthermore, enforcement of these procedures requires adequate supplies of protective means (gloves, gowns, goggles and disinfectants) and reliable supplies of these are still lacking in many a setting. Shisana et al. (2003) report that 20% of the private facilities surveyed in South Africa did not have protecting clothing and gloves.

Even if there is some scientific uncertainty about the actual risk of infection at the workplace, the perceived risk is high (Aitken and Kemp, 2003a). This will have several consequences. First, it can affect the quality of care for HIV-positive patients. Negative staff attitudes combined with inadequate knowledge of procedures have been shown to contribute to reluctance to care for HIV-positive patients (Masini and Mwampeta, 1993). Second, the combination of occupational risk and working conditions that fail to ensure workers' safety, contributes to making the medical professions in general less attractive and especially working in high prevalence areas.

### **The social consequences of HIV infection among health workers and their relatives**

As for any member of society, health workers need to take care of relatives living with AIDS. Together with funeral attendance, this has shown to lead to increased absenteeism in health services (Aitken & Kemp 2003). In Hlabisa district hospital (KwaZulu Natal, South Africa), the average number of days off work increased from an already high 41,8 days in 1998 to 57,5 days in 2001 largely due to this phenomenon (Unger et al., 2002).

The HIV infection adds to the financial burden of health workers, whether they personally or one of their relatives is affected. Where the official remuneration is providing inadequate purchasing power to deal with the concomitant increased AIDS-related household expenditure, health workers are more likely to engage in coping strategies. These can be considered as individual strategies to cope with the often extreme discrepancies between social, economic and professional expectations and real-life situations (Roenen et al., 1997, Van Lerberghe et al., 2002b). Depending on the existing staffing levels and burden of work, staff engaging in coping strategies that are harmful can further undermine the health services capacity to deal with their core mission.

### **The impact of HIV/AIDS on the demand and need for health care**

By increasing the demand for health care, the pandemic indirectly affects the health workforce through increasing the global workload. The HIV/AIDS-related burden of disease indeed increases the demand for medical care dramatically.

TB, pneumonia and other opportunistic infections, and malnutrition are all on the rise in AIDS-stricken countries. Public and non-for profit hospitals tend to carry the heaviest burden, as witnessed by data on HIV-related admissions and length of stay in South Africa. While both the number of total admissions in medical wards and the bed capacity remained stable between 1995 and 2000, the HIV/AIDS related admissions in all categories of hospitals increased with a factor of 7 (Shisana et al. 2003). As a result, currently, forty-six per cent

of patients admitted in South African hospitals is HIV positive. AIDS patients were also shown to stay longer (mean length of 13,7 days) than non-AIDS patients (mean length of stay 8,2 days) for all categories of hospitals combined. Trends regarding bed occupancy rates are difficult to ascertain. The Shisana report did not find a significant change in bed occupancy rates despite the increase in admissions of both HIV/AIDS and TB patients.

In the absence of a commensurate increase in capacity, all this inevitably translates into an increased workload for staff. 73% of health workers surveyed in the South African study reported that their workload had increased. For one third of these health workers, workload had increased by 75%. In countries with lower prevalences, workload increases are likely to be less dramatic, as they may have quite some spare capacity due to current underutilisation of health services.

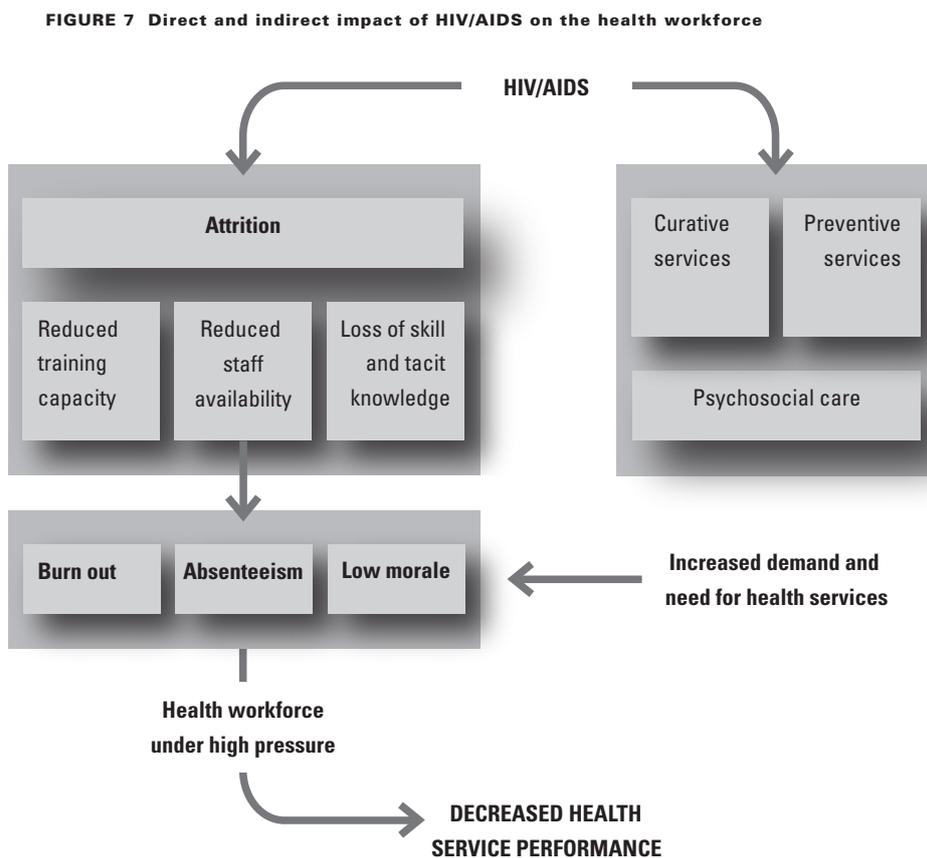
### **The resulting impact on staff morale**

In moderate and high prevalence countries, staff morale, motivation and job satisfaction of health workers is beleaguered by the above-described direct and indirect impact of the AIDS pandemic.

HIV/AIDS patients are often brought to the hospital at an advanced stage of illness. The resulting high in-patient death rates combined with the limited possibilities of effective care that are still rather the rule than the exception, contribute to professional frustration, higher absenteeism and burnout, and to low staff morale. A good example could be the lean programmes for prevention of mother-to-child transmission, which offer some protection of the newborn against infection but do little for the mother. It must be said that where ART will be rolled out, prospects are better, but this is not yet the case in many settings.

In many health services in AIDS-stricken countries, working conditions for health workers are difficult, salaries low and supplies inadequate. In these unfavourable environments, providing quality of care is not self-evident. The perceived risk of occupational infection combines with these unfavourable conditions to reduce the responsiveness of staff towards AIDS patients (Shisana et al. 2003, Unger et al. 2002). In the latter authors' report, South African health workers are reported to '*experience stress, fear, frustration and depression due to their contact with patients living with AIDS and the limitations of their work environments*'. Also here, it should be noted that the roll out of ART on a large scale will improve the effectiveness of care and may be expected to reduce the levels of professional frustration where available.

Figure 7 summarises the double pathway through which the AIDS epidemic has an impact on the health workforce and on the performance of the health system.



### Consequences for health workforce management and development

From the point of view of a health manager in moderate and high prevalence settings, the threat of a decreased performance (both in terms of quantitative productivity and quality of care) of a health service due to the pandemic needs to be assessed and tackled.

Botswana's experience is quite sobering. The introduction of therapeutic schemes (HAART, MTCT), psychosocial activities (counselling, psychosocial care) and preventive activities (AIDS in the workplace, community mobilisation, youth action, ...) led to a high demand for new health and social workers, which was difficult to meet. The acute deficits led for example to inadequate capacity to carry out health checks at enrolment in the start-up phase of the ART scheme, limiting the effectiveness of the scheme (Cohen, 2002).

For a proper assessment of the impact on the health workforce and its effects on health service capacity, we need to consider all the dimensions of a comprehensive HIV/AIDS programme: besides care, the pandemic also increases the need for health and social workers for prevention and impact mitigation activities (including widow and orphan care, etc.). However, it should not be forgotten that the burden of all other health problems usually does not diminish in the meanwhile.

#### Loss of institutional memory

From an organisational point of view, the above problems of attrition, demotivation and absenteeism are compounded by the loss of institutional memory. The HIV infection rate is usually highest in the age groups that make up the cadre of experienced staff. With them, informal and tacit knowledge and lots of experience perishes and it may be difficult to restore this.

It also reduces the on-site training capacity (Cohen, 2002), which is not only required to fill gaps left by AIDS, but also to prepare health workers for new tasks, technology and procedures in healthcare and especially in diagnosis and treatment of HIV/AIDS.

### **Loss of capacity for care for other patients**

In any setting, health services are dealing not only with AIDS patients. However, in high prevalence settings, there may be a risk of crowding out of non-HIV infected patients. To our knowledge, there is little documentation of this effect and the study carried out by Shisana gives the best picture. Crowding out seems to have occurred in some hospitals in South Africa. The high bed occupancy rates (between upper 80s and lower 90s), which were found to have remained stable, combined with increased proportions of AIDS patients among the total number of patients admitted suggest a crowding out effect on non-HIV/AIDS patients. This happened mainly in the public hospitals, probably because non-public hospitals have lower bed occupancy rates and thus some spare capacity to absorb increasing numbers of AIDS patients. Lower financial accessibility in the latter type of facilities could also contribute to lower number of AIDS-related admissions.

In a number of countries, the need for beds has outstripped the available capacity. The World Bank warned for capacity problems in 2004 in Swaziland and in 2005 in Namibia (World Bank, 2001). However, as we already mentioned, some caution should be applied in regard to crowding out. In case of low health service utilisation rates or high bed capacity, the absorption capacity can be quite large and this may be the case in a high number of facilities across Africa.

### **'Crowding-in' hypothesis**

Patients seeking care for HIV-related illness may also find the way to health facilities for other health problems. Furthermore, if their HIV-related problems demand care at hospital-level, funding may shift from the first line to the second line in an effort to better provide the latter with the resources to deal with the increased workload (Cornia et al, 2002).

### **Loss of training capacity**

Given the fact that the incidence and prevalence rates among health workers and professional cadres are similar to those of the general population, it is clear that the academic staff are not spared and that the training capacity, already undermined seriously by the brain drain is further reduced. This occurs at all levels, from university training to nursing schools and institutions for paramedical training. Maintaining an adequate training capacity is mandatory, but in high-prevalence countries not sufficient. In the latter, an increased output is required, because of increased needs and higher attrition rates. In Zambia, the number of deaths among nurses is 38% of the average governmental training output, while in Malawi, this number is estimated to reach 40%. South Africa needs to train 25-40% more doctors and nurses to compensate losses to HIV over the next 10 years (Haacker, 2002).

### **Perverse effects of programmes and projects on the general health workforce**

A likely common perverse effect of better health workforce management at any level will be the draining of other organisations' health workers. This has been described already in the brain drain literature as a component of the internal brain drain (Marchal and Kegels, 2003), but is only

set to increase with the roll out efforts for ART programmes, bankrolled by well funded initiatives such as PEPFAR, MAP and the Global Fund that are setting up ART delivery systems outside and parallel with the existing healthcare systems.

## Conclusion

With some sense of exaggeration, one could say that the pandemic is just the latest plague falling upon the health workers. The classic health workforce issues of maintaining adequate levels of training and inflow in the professions, ensuring adequate distribution and skill mix, and retaining health professionals are in fact continuing to undermine health services in many countries (Huddart et al. 2003, Narabsimhan et al. 2004).

AIDS affects each of these elements. Not only geographical distribution, but also the existing skill mix imbalances are likely to worsen. Health workers who have HIV positive relatives to care for or who themselves are infected are unlikely to accept working in remote areas where possibilities of adequate care are limited or non-existent. On the other hand, the educated and experienced are not safe from AIDS, which takes out a core layer in the professional health workforce. A workforce that is already demotivated because of inadequate remuneration and working conditions may get the fatal blow from the daily confrontation with hospital wards full of terminal patients. Both the actual and the perceived risk of occupational contamination contributes to the conditions that push staff to consider leaving for abroad.

The HIV/AIDS pandemic is thus emerging as a pervasive factor in the general human resource crisis in south-eastern Africa and is somehow entwined with the internal and external brain drain (Marchal & Kegels 2003). The South African Medical Association estimates that in South Africa during the last 4 years, 4,000 doctors left the public sector for private practice or for other countries, equalling roughly the number of doctors trained in that period (Kapp, 2004), while 78% of its rural doctors is of non-South African origin (Martineau et al., 2002). At the same time, the 23,400 South African health workers working in Canada, the United States, the United Kingdom and Australia correspond to 9,8% of all health professionals registered in South Africa (OECD, 2004). However, just to compensate the losses to HIV over the next decade, South Africa will need to train 25 to 40% more doctors and especially nurses (Haacker, 2002). It is then needless to say that the current situation has direct consequences for the scaling up of HIV/AIDS programmes.

## What is the health workforce doing with AIDS?

### Introduction

The scaling up of ARV programmes is currently one of the big issues in the national AIDS control programmes of many countries in sub-Saharan Africa. Current conventional wisdom has it that two fundamental issues are emerging. The short-term priority is to adapt the health service delivery and organisation to make the best use of current resources, whereby new delivery models should allow for delegation of tasks to lesser-qualified health workers and lay persons, supervised by the increasingly scarce professionals. The long-term priority is to institute effective human resource policies to train and retain the required health workers. However, HIV/AIDS in the countries studied is a problem that is producing an impact not only on individuals and households, and the health services catering for them, but also on communities and society as a whole, and on their social, economic and cultural continuity. Responses to the epidemic should therefore take these dimensions into account.

ARV roll-out is the major new element in the context of HIV care in the high burden countries in southern Africa, which are dealing with the mature AIDS wave of the epidemic. If this ARV roll-out has to have the desired effect, not only in terms of individual benefits but also to avert the threats to societal continuity and stability, it needs to be massive and sustained. As an additional task on top of the already insufficient output of conventional health services, this new responsibility is clearly going to have major impacts on the available workforce (as traditionally defined).

In this unprecedented situation, it will be important to understand the mechanisms through which the needed 'human capacity' can be mobilised (or 'human resource arrangements' designed) as effectively as possible in order to reach the desired outcomes, and also to what extent and how the new activities will have effects on the existing workforce. Given the multi-sectoral aspect of the strategies that are required to combat the epidemic and the precarious situation of the health systems in the most-affected countries, we believe that 'HR arrangements' are to be considered not only to include the conventional professional healthcare workforce as usually understood in health systems, but rather the total 'human capacity' for action of a given society needed to tackle this problem. We will argue why this shift is necessary by illustrating the consequences of a wide scale roll-out programme of anti-retroviral treatment on health workforce requirements in the particular setting of South Africa.

### Innovative HR arrangements for HIV/AIDS care in southern Africa

#### Problem definition

The AIDS epidemics in southern Africa have reached a point where their impact has become societal. The consequences of massive prime age mortality (Figure 1) not only hit individuals, households and families, but also communities, organisations, national economies and societies. Among the potentially most dangerous characteristics of this situation are the large-scale interruption of intergenerational continuity (parents dying before they have been able fully to prepare their offspring for autonomous life),

attrition of several key sectors of the workforce and dramatically shortened lifetime perspectives for adolescents and young adults (See previous chapters). More generally, at present trends and in several African countries, the lifetime probability for young people to die of AIDS is more than 50% and such death is most likely to take place between the ages of 25 and 45.

One way of mitigating the known and potential consequences of this surplus prime-age mortality is of course adding years of survival by way of continuous and life-long ARV medication. However, in order to have a mitigating effect that surpasses the household level entities, it is clear that this survival-prolonging strategy will have to be scaled up massively. If the coverage target is set high (as it clearly should, within this logic), and if the ARV medication continues to be successful in prolonging survival, several countries would end up, ultimately, with close to or more than 20% of their adult population taking life-long continuous medication. At the same time, as shown above, the health workforce tends to diminish rather than to grow, and AIDS is not the only priority health problem that needs to be addressed. In other words, introducing and maintaining ART provision at the scale needed in order to produce the desired impact in high burden countries will require enormous resources.

Before setting out the analysis, we can at present (2005) accept the following reasonable assumptions:

- A** For the coming ten years or so, we should not realistically expect another miracle tool in the area of medical developments for solving the HIV/AIDS problem. Effective HIV vaccines are still far off and anyway, they will not act on adult mortality in the short and medium terms.
- B** Presently, the financial constraints for scaling up ARV consumption have been largely lifted given the massive mobilisation of financial resources for this purpose, combined with the spectacular drop in ARV prices over the last years.
- C** Another point is that successful national programmes as developed elsewhere (the most widely quoted being the one developed in Brazil) may be sources of (limited) inspiration, but not necessarily models for imitation in southern Africa. The quantitative differences in scale are so huge that they represent an essential qualitative jump. The ART programme in Brazil succeeds in covering 113,000 HIV infected individuals, which is a very high number of people. Brazil's total population, however, is of the order of 176 million. This means that in this (middle-income) country, 0,06% of the total population is taking ART under habitual modes of control. In order to reach a comparable coverage, an ARV programme in (economically ailing) Zimbabwe would end up covering up to 20% of its population, a difference of a factor 333. There is no possible comparison.
- D** Finally, we reasonably state that the major foreseeable bottleneck for AIDS treatment programmes is most likely to be the health system capacity and specifically the health workforce capacity.

### **Assessing the current health workforce capacity to roll out ARV**

Currently, most ARV programmes are heavily relying on doctors. A few pilot projects are testing alternative approaches and only recently, WHO developed the IMAI model that puts nurses more central in dealing with patients (WHO, 2004b).

If we start from the assumption that ART must be handled in the traditional, medical mode, it is useful to take a look at (1) availability of qualified health personnel and (2) the need for such personnel for ART. Table 4 gives an overview of selected African and non-African countries in terms of physician and nurse density.

**TABLE 4 Physician and nurse density for selected countries**  
(Source: WHO 2004, last update 26 October 2004)

	Nurses per 100,000 of the population	Physicians per 100,000 of the population
<b>South-Africa</b>	388	69
<b>Swaziland</b>	320	17
<b>Botswana</b>	241	28
<b>Zimbabwe</b>	54	15
<b>Zambia</b>	113	7
<b>Malawi</b>	25	1
<b>Mozambique</b>	20	2
<b>Belgium</b>	1074	418
<b>UK</b>	496	166
<b>USA</b>	772	549

Although the aggregate country figures shown in this table are already quite telling, the additional problem of internal distribution should be added to this. As an example, based on available data for 1999, South Africa had an overall physician density of 66 per 100,000 population. Their distribution over geographical entities and over public and private services was, however, quite unequal, as shown in Table 5.

**TABLE 5 Distribution of doctors in South Africa across public and private sectors (HST South African Health Review 1999)**

Province	Eastern Cape	Limpopo	Western Cape	South Africa
% Provincial population using Public Sector	92	92	72	81
All doctors (Doctors per 100.000)	30	15	153	66
Public sector (Doctors per 100.000)	14	10	39	22
Private sector (Doctors per 100.000)	221	68	444	257

Other countries present similarly unequal distributions of qualified health personnel, usually most pronounced when comparing urban and rural areas or rich and poor areas. The other end of the equation is the additional personnel-time that largescale ARV treatment would require. Most current ART delivery projects are small-scale, highly labour intensive and employing

highly skilled professionals. Observation of doctor-based approaches result in the estimates of doctor-time per patient presented in Table 6.

**TABLE 6 Estimated doctor-time per patient and per stage of the follow-up (based on Kober & Van Damme, ITM-A (unpublished))**

Activity	Time per consultation
Hiv positive patients, before ART initiation	60 minutes per patient
Initiation of ART, Average 3 consultations of 30 minutes	90 minutes per patient
Follow-up of ART in the 1st year, Average 12 consultations of 10 minutes	120 minutes per patient
Follow-up of ART in the 2nd year, Average 4 consultations of 10 minutes	40 minutes per patient

Based on such observations, one could project physician requirements (exclusively for HIV/AIDS care) for 1.000 new ART patients per month as presented in Table 7<sup>10</sup>.

**TABLE 7 Projected physician requirements in a scaling-up setting**

	Year 1		Year 2		Year 3		Year 4		Year 5	
	Hours	MDs								
<b>Pre ART</b>	12000	8	12000	8	12000	8	12000	8	12000	8
<b>ART initiation</b>	18000	12	18000	12	18000	12	18000	12	18000	12
<b>FU Year 1</b>	12000	8	24000	16	24000	16	24000	16	24000	16
<b>FU Year 2</b>			8000	5	8000	5	8000	5	8000	5
<b>FU Year 3</b>					8000	5	8000	5	8000	5
<b>FU Year 4</b>							8000	5	8000	5
<b>FU Year 5</b>									8000	5
<b>Required MDs</b>		28		41		46		51		56

FU = Follow-up MD = Medical doctor

These numbers are staggering given the above-described problems of inadequate training output, retention and performance. Furthermore, in such a doctor-based approach, additional personnel is of course needed for blood-taking, vital signs and other observations, dispensing medicine, registration, counselling and laboratory examinations. Even if South Africa might (?) be able to mobilise such numbers of qualified personnel (exclusively for AIDS care), other countries in the region clearly just don't have them. Therefore, other 'HR arrangements' will be needed.

<sup>10</sup> Note: a monthly intake of 1000 new ART patients would be the equivalent of full coverage with ART starting roughly one year before expected death in the absence of treatment (1/10 of HIV infected) for a population of about 1 million with an adult HIV prevalence rate of 20%.

**ART: Still an act of medicine?**

Wherever important proportions of the population must take ARV medicine as a proactive preventive activity to ensure group survival, we cannot continue to deal with this from a medical paradigm that implies that 'doctors treat patients' ('doctors' in this case meaning any somehow qualified person who is specialised in acts of curing and caring). Of course, doctors should treat patients who are ill. However, when they are not ill (not yet, or not anymore), doctors should stop behaving as if these persons were. Being HIV positive and needing to take ARV medicine in order not to get AIDS and to survive may not automatically require medical professionals as caregivers.

This is of course a controversial issue: taking ARV medicine is reputedly delicate. First, there should be a very strict discipline in taking these substances, if one wants to avoid viral resistance to appear. Second, ARV medicine has toxic side effects, estimated to occur in roughly 10% of those who take them. These are the main arguments advanced by those advocating a strict medical control over people taking ART. The obvious bottleneck in this reasoning is, though, that there just aren't enough doctors (or 'human resources for health') to maintain this tight control over 'patients' if HIV positive people are to take this medicine on the massive scale that is required to have the needed effect. Furthermore, we submit that the kind of passive attitude of 'patients-under-control-of-doctors' that is implied in such a medical approach is counterproductive to the fundamental change in attitude that is needed, in our view, to reach the societal objective. The relationship should ideally be reversed: (groups of) people committed to taking ARV medication should be in the driver seat, and the medical or health care community should be there to assist them when it is needed. The presently common approaches for scaling up ARV treatment are indeed mainly medical treatment programmes: the intake of these programmes focuses a lot on (very) ill people, needing a lot of medical and nursing care. The spectacular improvements that often occur with these very ill patients will certainly motivate others to follow suit and expand the numbers of patients in ARV treatment programmes. The point is, however, that in this way they are likely to remain patients for the rest of their lives (more or less passive objects of treatment by doctors, even when they are better), which leaves the controlling initiative mainly on the side of the health care providers. This in turn implies that the numbers of people taking ART will be determined (and limited) by the health care providers' capacity to deal with them as they see fit within their medical caring paradigm. Given the scale of the problem and given the known scarcity of this health care workforce, we hold that this is totally insufficient.

**Aiming at ensuring continuity between generations**

In the catastrophic prevalence societies, the first and most important aim of large scale ART programmes is to ensure that infected parents can raise their (surviving) children to the age of physical, moral and socio-economic autonomy. The consequences of such a statement, if accepted, are quite significant for the role-perception of the actors in large scale ART strategies. It actually means that the (correct) taking of ART by eligible HIV-infected adults is more of a social duty (to survive long enough for the stated purpose) than an individual patient's right. This places large-scale ARV strategies largely outside the classical Hippocratic medical tradition of caring for suffering individuals. It also means (and we are quite aware of the potential dangers of such an attitude) that, if rationing has to be done – or, as it is usually called in ARV treatment programmes, 'patient selection' – the

focus would have to shift toward the social relevance of the individual, rather than individual need, or likelihood of success, or of future 'adherence to treatment'. This would appear to go against some of the most fundamental democratic and humanitarian principles we all cherish, because it means that different people would have different rights to live. As this is a fundamental value choice that needs to be made, there is all the more reason to place the locus of that decision – who can get ART and who cannot – in the collective domain rather than in the hands of (no disrespect intended at all) the treatment technocrats, or in other cases, mere chance.

### **Creating the demand for a group decision**

All of the above points to the inescapable conclusion that where ARVs need to be taken on a large scale, the decision to do so must be a collective one, rather than the sum of individual decisions. First, we think it is sufficiently plausible to say that the issue is one of group survival, and that decisions to do something about that naturally need to be collective ones. Second, only group decisions (and the process that precedes them) can create and legitimise the necessary collective commitment, the conditions for de-stigmatising and the social control mechanisms that are undoubtedly needed to start individuals on this difficult road of doing something about their duty to survive, and to stay on that road. The present opportunity offered by accessible ART is a major one: the choice can be made.

The problem, no doubt, is that we do not have many clear precedents that can inspire us or that can make us reasonably confident that such a thing can happen. There is only the reasonable interpretation that something of this nature has happened in the only African country where HIV prevalence has gone down at a socially significant rate even before ART were a realistic option: Uganda. However, in the societies where the AIDS epidemic is at the presently observed level of disaster, that particular example, despite the lessons it offers, is not to be just imitated or paid lip service to. The lesson needs to be first understood and then adapted to different contexts and this needs to go fast. Maybe the most important task for the ARV scalingup programme leaders is precisely to identify the social leadership and the discourse that can put in motion the urgently needed collective process of deciding on group survival in an ordered and committed way, and to identify those social groupings that have a realistic potential of making binding collective decisions. In other words, they should create or encourage group demand. They must be extremely ambitious as well; if ART are to make a difference for survival, they must be used at a massive, totally unprecedented scale. Setting 'realistic' targets is, in fact, not realistic. It is too late for that.

## Making sense: linking AIDS and the health workforce conditions

The challenges presented by the combination of the AIDS pandemic and the problem-ridden health workforce capacity are context-dependent and these contexts in Africa, and indeed any continent, are very diverse. Besides this context-dependency, the avenues of action are defined mainly by the scale of what needs to be done and what can be done. Any assessment, decision-making and action regarding the AIDS pandemic will need to take this in account. A typology that can be used to guide us should therefore describe the health workforce context and map its key properties on one hand, and the key attributes of the AIDS epidemic on the other hand. In this section, we will attempt to bring together the preceding chapters and propose the AIDS-health workforce matrix, which confronts the health workforce dimension with the AIDS dimension of a particular health care delivery setting. The result is a number of 'Situations' characterised by a typical health workforce and AIDS epidemic configuration, each with its own margins of freedom. We'll explore in how far orientations for assessment, decision-making and action can be suggested on the basis of this typology. At this stage, we do not claim any scientific validity for these matrices: they should rather be considered as 'work in progress' that may prove useful in making sense of complex situations.

### The Y dimension: the stage of the AIDS pandemic

As we have seen above, different stages can be distinguished in the AIDS epidemic and several classifications have been developed to define the stage in which a particular community, organisation or (part of a) country is. We use the *Stages of impact* classification as described by Barnett and Whiteside (2000) (Table 8), because it seems appropriate both from an organisational point of view as from the macro-perspective. It also has the advantage that in practice relevant data needed for its application can be collected without too much effort.

**TABLE 8 Stages of impact classification (Barnett & Whiteside, 2000)**

<p><b>Stage 1:</b> No people with AIDS are visible to medical services; some people are infected with HIV.</p> <p><b>Stage 2:</b> A few cases of AIDS are seen by medical services; more people are infected with HIV.</p> <p><b>Stage 3:</b> Medical services are seeing many people with AIDS. There is some awareness among policy makers of HIV infection and AIDS. The incidence of reported TB cases increases</p> <p><b>Stage 4:</b> The number of AIDS cases may threaten to overwhelm existing health services. Widespread awareness among the general population of HIV infection and AIDS</p> <p><b>Stage 5:</b> Unusual levels of severe illness and death in the 25-50 age group produce coping problems, as significant number of orphans, and the loss of key household and community members. TB is a major killer</p> <p><b>Stage 6:</b> Loss of human resources in specialised roles in production and in economic and social reproduction decreases the ability of households, communities, enterprises and even districts to govern, manage and/or provision themselves effectively.</p>
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There is little evidence that any country as a whole has currently reached stage 6. However, in a number of countries, some communities or regions have reached stage 5 and Barnett and Whiteside suggest that within the next ten years these may be reaching stage 6. On the other hand, however, anecdotal evidence suggests that some communities, enterprises and sub-national entities have reached stage 6.

It is our assumption that independent of the stage, the action package of an AIDS programme should at all levels, from national policy to operational service delivery, consist of an appropriate mix of prevention activities, care & treatment services and impact mitigation. Only the relative weight of each may vary in function of the stage of the epidemic.

We also assume that MMI members and their partner organisations mostly work in Stage 3-4-5 settings. These settings may range from places such as slum areas in countries like Kenya, Zambia and Malawi, cities like Kisumu, Kigali and Kampala or regions such as the copper belt in Zambia to any setting in southern African countries like South Africa, Zimbabwe and Botswana for the more advanced stages.

## The X dimension: the health workforce

### a. Key attributes of the overall health workforce

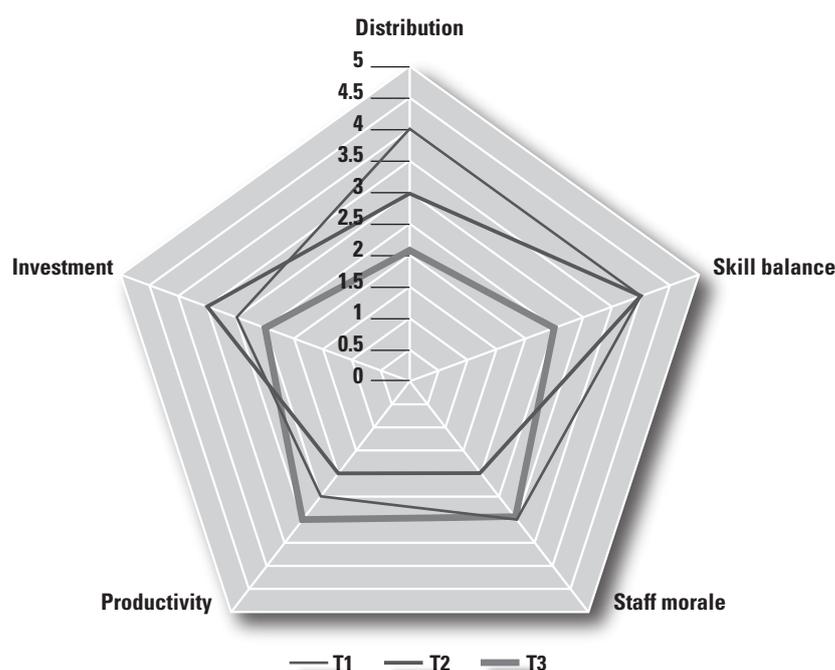
In order to define categories that allow assessing the overall condition of the health workforce, the following key attributes of the health workforce need ideally to be taken into account:

- The *skill balance* at various levels of the health system, from the central to the operational levels. This reflects the balance between the current training quality and output, the effective availability in absolute numbers of the key cadres (management, para-medical, medical and non-medical cadres), the attraction of the health sector and the attrition of the health workforce
- The *distribution* in terms of (1) geographical distribution; (2) distribution among the different service levels of the health system and (3) public-private distribution
- General staff *morale/commitment*
- The health workforce *productivity*
- *Investment* in the health workforce: investment in training capacity, remuneration, staff development and continued education. Investment can be considered also as a proxy for governance.

Both a description of the current conditions as the dynamic changes in time are useful and should result in an assessment in terms of 'improving – stable – worsening'. Figure 8 is one way of presenting this information.

It should be noted that WHO developed a rapid assessment tool for the health workforce that focuses on the six dimensions: (1) policy and regulation; (2) management and performance improvement; (3) labour market; (4) education, training and research; (5) HRH and priority health programmes, and (6) monitoring and evaluation (WHO, 2004a). The tool is basically a checklist of questions on the most important topics for each of the themes that should guide attention to underdeveloped domains.

**FIGURE 8** Example of graph capturing the evolution in time of the five health workforce dimensions at national level



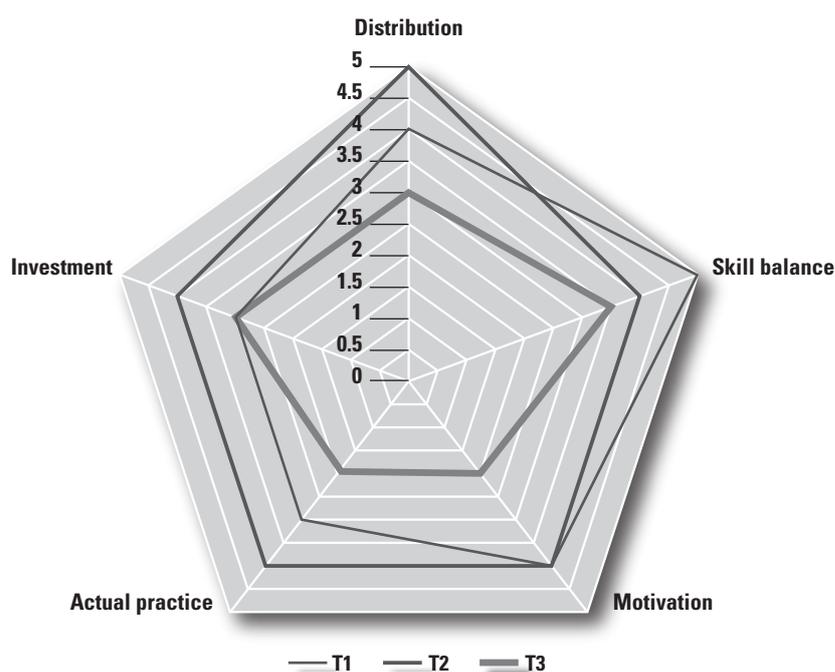
**b. Key attributes of the health workforce at organisational level**

At this point, it would be useful to make the distinction between the macro-level (national level policymaking or national Church Health Association network level) and the meso-level (the operational service delivery or organisational level), as the perspective is different. We can redefine the key attributes from a manager’s point of view, i.e. in more ‘local’ terms as follows:

- Skill balance: reflecting the availability and the relative balance among effectively available key cadres (management, para-medical, medical and non-medical cadres). This can be considered as the balance between attraction (indicators: current vacancy rate, turn-over rate (or the performance of the current recruitment policy) and attrition due to resignation, AIDS related and other illness and death, brain drain, transfers, training and retirement
- The geographical distribution or the distribution among the various elements/units of the organisation (if applicable)
- The degree of staff motivation, as witnessed by job satisfaction and staff morale
- Actual practice (performance), both in terms of ‘productivity’ (e.g. number of patients seen by doctor/day) and quality (responsiveness, etc)
- Investment in the health workforce: salary scales and purchasing power, promotion and career perspectives, training and staff development, and quality of the health workforce management practice.

Also here, it is important to discern trends in time for each aspect and to assess this in terms of improving – stable – worsening. Similar to the assessment of the global workforce at national level, the results can be represented as a radar graph (Figure 9) in order to compare trends in time.

**FIGURE 9** Example of graph capturing the evolution in time of the five health workforce dimensions at organisational level



Similar to the WHO tool to assess health workforce issues at national level, Management Sciences for Health developed a tool for organisational assessment that explores five domains: (1) HR management capacity; (2) personnel policy and practice; (3) performance management; (4) training and (5) HR management data (Management Sciences for Health, 2003). The tool spells out key topics for each of the domains and the assessment leads to identifying the developmental stage in which the organisation currently is, leading to defining a strategy to move forward.

### **c. Three broad categories of health workforce conditions**

The findings of the above-described assessments can be described in various manners. At the aggregate (country) level, it is certain that all over sub-Saharan Africa, chronic deficits of some nature will emerge. These can be expressed in terms of 'prevalence of adequate full-time equivalents' (A-FTE), which would roughly correspond to the following equation:

$$\mathbf{N (A-FTE) = FTE (available \times competent \times motivated)}$$

(availability, competence and motivation being valued on a scale from zero to one)

Hereby, it should be kept in mind that motivation (defined as alignment of the individual's personal objectives with those of the organisation for which (s)he works) is fundamentally conditioned by the presence of the resources necessary to do the job. As a consequence, optimising workforce performance thus implies paying attention to all the factors in the equation.

Using dimensions as those discussed above for assessing the health workforce condition, three main categories can be defined among the services or health systems that would score low. Indeed, 'bad performers' are either suffering from chronic health workforce (HWF) problems that are stable (at one extreme) or that are worsening. HWF crisis is the other end of the range.

However, two words of caution are required, as assessments of this kind, especially if carried out at intermediate or national level, inherently include a gross level of aggregation and thus of simplification. In each of the countries, disparities are likely to be high between for example rural zones and the urban settings. In other words, at country level, one finds rather a quite heterogeneous picture. It should also be noted that both the resilience and governance capacity of a health system varies from country to country and this could explain why countries facing similar AIDS epidemics and health workforce problems may react differently. Second, the health workforce problems cannot be totally dissociated from the AIDS pandemic, as at some point in the evolution of the epidemic, the latter contributes to increased attrition, low staff morale, etc. This will have consequences for the matrix we will introduce later in this chapter.

Reduced A-FTE prevalence is the result of problems of inflow (into training institutions, into practice), mobility and outflow (variants of brain drain, illness and death, retirement) and quality (competence and motivation, staff morale). Increased need and demand are the result of increasing burden of disease and the introduction of new, additional tasks and technologies (like ARV treatment). Each setting has a particular 'constellation' of the above problems. In order to make sense of this variety of settings in terms of health workforce condition, we describe different categories of 'bad performers' in the above-described assessments. We distinguish chronic HWF problems from HWF crisis, as they require different strategies.

### **Settings with chronic HWF problems**

As already mentioned, virtually all sub-Saharan African countries face some degree of chronic health workforce problems. However, a distinction can be made between stable and worsening conditions. *Stable* chronic problems are encountered in countries like Mauritania, Senegal, Burkina Faso and Ivory Coast. In districts and provinces of countries like Kenya, Tanzania, Uganda, RDC and Rwanda, *worsening* chronic health workforce conditions lead to reduced coverage and health service performance, also in areas previously well-served.

The underlying mechanisms in this category lead to chronic and often structural deficits in health workforce development. At country level, the health sector typically shows a number of worsening imbalances: (1) between the required absolute numbers of health workers and the actual health workforce present; (2) geographical imbalances between rich and poor, urban and rural areas, and (3) skill mix imbalances (skewed generalist/specialist ratio, nurse/doctor ratio, etc). Furthermore, medical and paramedical basic training shows weaknesses, either in production capacity, educational quality and relevance of the curriculum. It no longer represents an effective means to deal with the problems faced by providers in the health services. In some countries, there is an important brain drain of teaching staff, while in other countries inadequate regulation of (private) training facilities is leading to problems of quality and qualification. Finally, health workforce planning is typically dominated by a mechanistic and quantitative attitude that is insufficiently counterbalanced by a qualitative approach that would give more attention to the soft aspects of health workforce management. In a number of countries, problems with attitude and performance of health workers has indeed been reported, and it can be argued that this is the result of inadequate attention given to the 'soft' aspects that include motivation, staff morale, and opportunities to achieve professional development and satisfaction.

Chronic negligence created strong push conditions and contributed to the brain drain seen in these countries, whereby they pass from *stable* to *worsening*.

**Health Workforce Crisis**

Emerging and rapidly worsening issues can push unstable health workforces into a crisis, characterised by severely understaffed health facilities, important attrition, reduced health service/system performance and limited scaling up possibilities of any programme, if at all, routine services can still be guaranteed. Cities, districts and regions in countries like Botswana, Malawi, Zimbabwe, South Africa and Lesotho could presumably be put in this group. In these countries, there are health service delivery settings that are not only confronted by the above-mentioned chronic structural HWF problems, but also by emerging acute and disrupting issues. They are in other words facing a worst case scenario with a diminished capacity reflected by a reduction in Available Full Time Equivalents through reduced inflow in the (para)professions, exit due to high mobility, brain drain and increased attrition of health workers due to HIV/AIDS, and a vast increase in need and/or demand, because of the increased burden of disease and the scaling-up new technologies and tasks (e.g. ARV). We propose to reserve the use of ‘crisis’ only for this category of settings, contrary to its free use in many recent papers and documents on AIDS and the health workforce. Indeed, sub-Saharan African health systems present too much variety to have the debate on health workforce be dominated by a global crisis discourse, because responses to the problems need to be very much contextualised.

**The matrix: defining the AIDS-health workforce condition**

Confronting the two above described axes leads us to the matrix. It reveals three situations that concern us in particular. First, Situation 1 (yellow alert) is likely to occur in settings where the health workforce problems are biting, but where AIDS is not (yet) posing major problems to the performance of the health system. In situation 2 (Orange alert), the chronically undermined health workforce faces Wave 4 and 5 of the AIDS pandemic in major parts of the country, pushing them to *worsening* chronic health workforce conditions. In Situation 3 (Red alert) there is a full-blown combined HR *and* AIDS crisis that is reflected in the societal impact of the pandemic (Table 9).

**Table 9 The AIDS – health workforce matrix**

	Health workforce	Stable chronic problems	Worsening chronic problems	Crisis
AIDS				
<b>Stage 1:</b> No visible AIDS cases				
<b>Stage 2:</b> Few AIDS cases				
<b>Stage 3:</b> Many AIDS patients				
<b>Stage 4:</b> Services overwhelmed				
<b>Stage 5:</b> Serious coping problems				
<b>Stage 6:</b> Organisational death				?

It could be argued that in the absence of appropriate measures, there may be a tendency for health systems to get on a slippery slope from a certain point onwards.

### Assessing the 'response capacity'

The next step of an 'AIDS & health workforce' assessment would logically be the analysis of the capacity of the health system or the organisation to deal with the condition in which it finds itself.

Management Sciences for Health developed a useful self-assessment tool that evaluates 5 key areas of the organisational management capacity: (1) human resource management (HRM) capacity (staffing, budget, planning); (2) personnel and practice; (3) performance management; (4) training and (5) HRM data. In total, 21 components of HRM are checked in order to identify the stage of development of each. In a first step, the tool asks a group of staff members of the organisation to check individually their organisation's capacity to deal with AIDS through a self-assessment questionnaire. Subsequently, a group discussion presided by a facilitator leads to agreement on an action plan to improve on identified weaknesses (MSH, 2003<sup>11</sup>). The WHO tool provides a similar tool to be used at higher levels in the health system (WHO, 2004a)

### Taking in account other factors that complicate the health workforce – AIDS relation

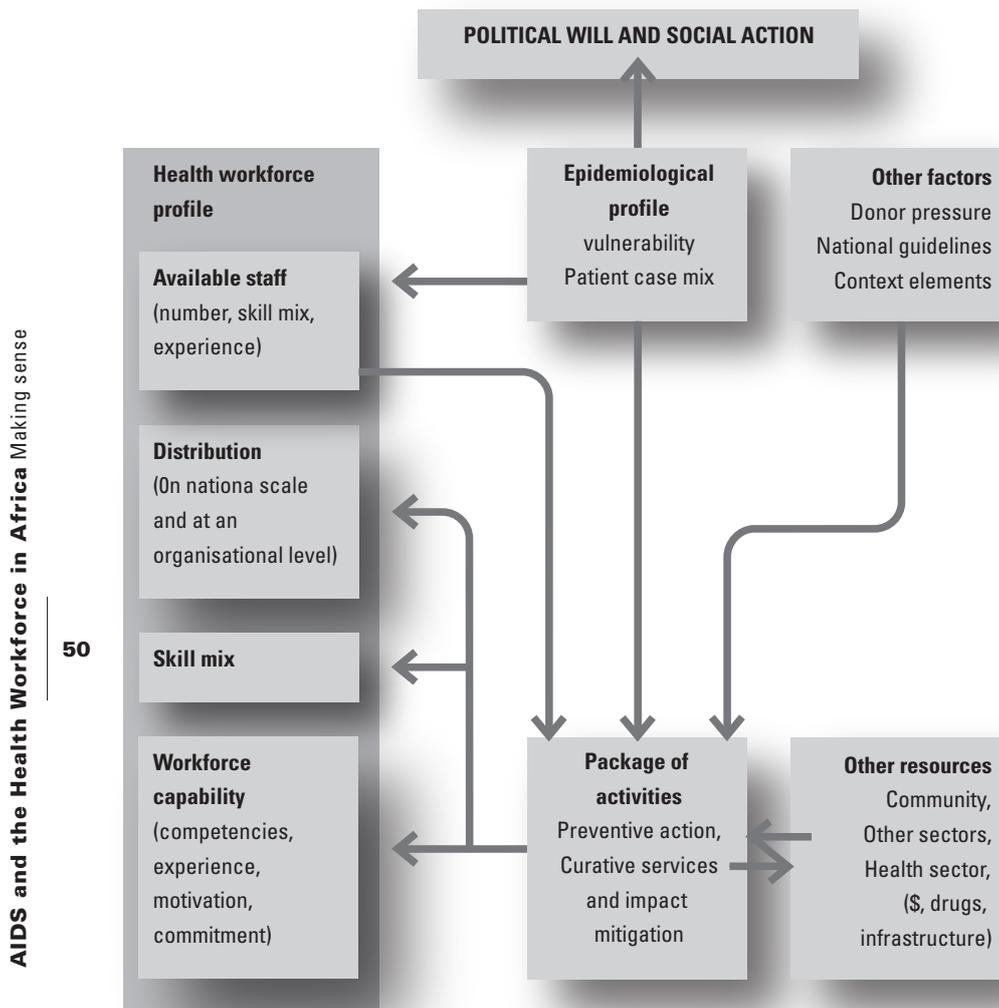
Especially from the point of view of a health service manager, it is essential to consider other determinants besides the inherent organisational management capacity and how these play out at their – local – level. Multiple factors indeed define both the needs and the demand that will determine the offer and the margin of freedom of healthcare managers in organising the required services.

First, the context-bound mechanisms of *vulnerability* need to be accounted for: Individual/household, Community/organisation and Society/economy. Second, the local HIV *prevalence* among different groups of population (at risk-groups), and the local stage of the pandemic needs to be assessed (See Chapter 1). Next, norms and standards to guide the local development of the health workforce will be defined by the type of interventions that the organization is to offer: curative services (ART, opportunistic infection treatment and general care); prevention activities; and impact mitigation services. Each organisation may have its own particular offer and this will require different skill mixes.

Other resources outside the typical healthcare settings need to be taken into account: people living with HIV/AIDS, civil society organisations, etc. Local political will and social commitment to tackle AIDS may have a major influence on all other factors (See Figure 10). Finally, overall resource availability, eligibility of funding by donors and international agencies, linkages with other organisations and modalities to attract expatriate staff are all other factors that may determine how an organisation may react.

<sup>11</sup> Note that similar tools have been developed for assessing the performance of an organisation (LUSTHAUS, C., ADRIEN, M.-H., ANDERSON, G. & CARDEN, F. (1999) Enhancing organizational performance, Ottawa, International Development Research Centre.).

**Figure 10 Determinants of margins of freedom of action against AIDS and their linkages**

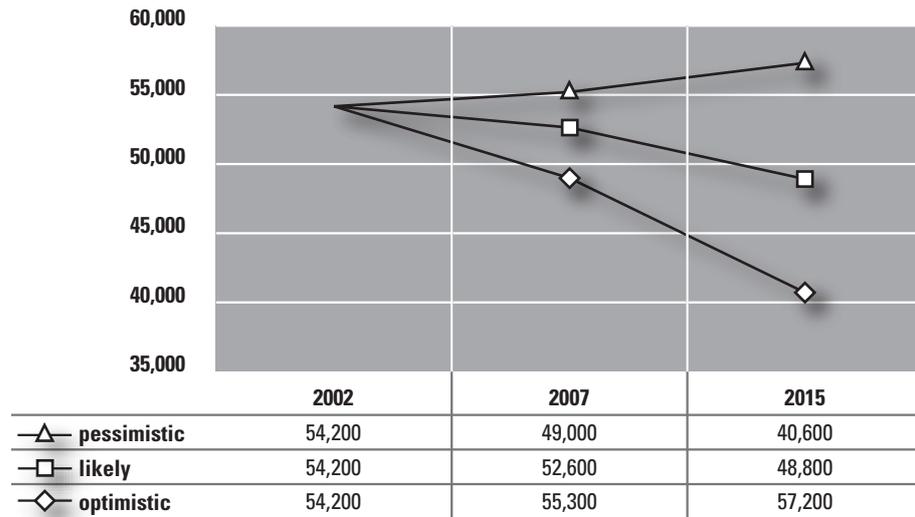


### Scenario building: Other techniques to explore alternative strategies

It is worthwhile to mention another manner of assessing health workforce issues in relation to AIDS. Scenario building is a technique used in the industries to anticipate future evolutions and to prepare strategies to deal with different outcomes.

Specifically regarding the health workforce, Kurowski et al. (2003) present one of the more thorough scenario building exercises. In their study, the *likely scenario* maintains the present recruitment and training policies, and assumes an attrition that does not take death from AIDS into account. The *pessimistic scenario* assumes a higher (and probably more realistic) attrition rate. The *optimistic scenario* assumes an immediate 50% increase in training capacity and total uptake of newly trained personnel in the health workforce (Figure 11).

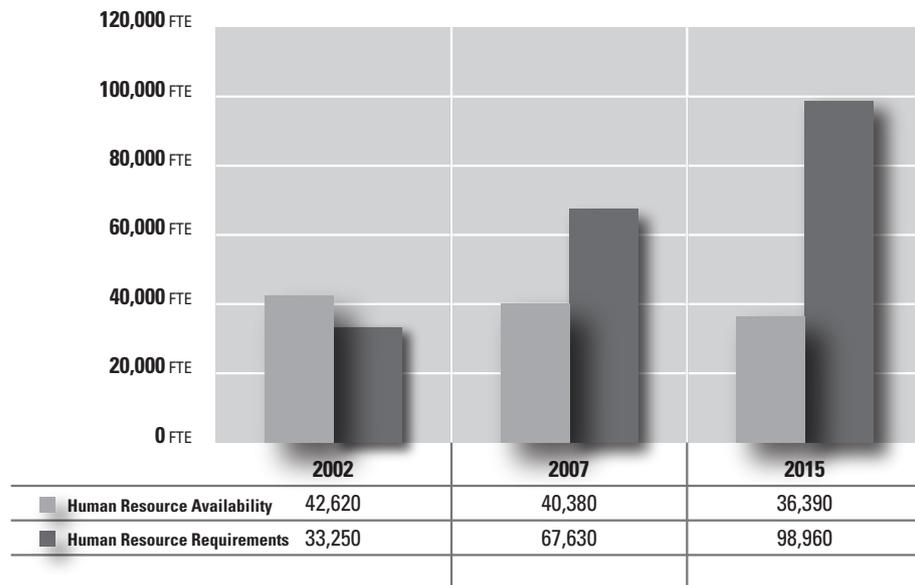
**FIGURE 11 Health workforce availability scenarios (Kurowski et al 2003)**



The health need-coverage-task-productivity (NCTP) methodology (Kurowski et al., 2003) starts from projected needs and coverages as suggested by the Commission for Macroeconomics and Health estimated needs to reach the Millennium Development Goals. By 2015 more than 40% of the requirements would be for HIV/AIDS related activities, according to this calculations (Figure 12).

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**FIGURE 12 HR availability and requirements, Tanzania (Kurowski et al., 2003)**





## Avenues for action

In this chapter, we make an attempt to draw together some of the strands discussed in the previous chapters. We'll discuss first some key issues and elements of the general response applicable to all settings, and second key issues from the point of view of health service managers (organisational level) and the central or macro-level, and finally issues that need to be addressed at an international level.

### Key elements of a general response

Based on our present understanding of the HR issues in developing countries confronting AIDS, we propose several general guidelines that can constitute principles in the search for solutions.

- 1 Rather than looking for magic bullets, it is clear that the way forward lies in the search for tailored solutions based on a comprehensive analysis of problems in their particular context. This requires 'system thinking', acceptance of complexity and awareness of different levels and constituting elements of the HR issues.
- 2 In line with the above principle, intervention packages will necessarily have to be comprehensive. This usually means that evaluation of their effectiveness will pose a difficult methodological problem. Attributing cause and effect relationships in complexity will need to be rigorously theory-based and embedded in a continuous learning process that will have no end. It seems clear furthermore that comprehensive packages require scale: small sized organisations cannot offer them on their own, mainly because decisions need to be made and implemented about boundary conditions *outside* their scope of decision making. Hence the importance of federations, associations, more or less formal networking and the like, and the need to create platforms where the issues can be debated in their full comprehensiveness and with all relevant stakeholders.
- 3 A third principle that emerges is to take the specificity of the health workforce into account in deciding on the best-adapted organisational environment. 'Simple' things like safe water supplies, environmental hygiene, immunisation programmes and the like go a long way in improving the health of individuals and populations and for implementation of such programmes, a classical command-and-control organisation is likely to be the most adapted one. However, where health care is about solving complex problems in uncertainty, where judgement needs to be applied on the particular situation of individuals, where commitment is the first requirement, the organisational environment will need to be commitment-eliciting, rather than focusing on internal discipline and obedience to rules. This will require both structural insight in various organisational configurations and their relative merits, and the managerial capacities and strategies to make the most of them.
- 4 Finally, rising HIV and AIDS prevalences are a danger sign for the health workforce. In the presence of AIDS, the landscape of 'stable chronic', 'worsening' chronic and critical HR problem situations may conceivably turn into one very slippery slope.

### Combining short and long term interventions

Given the diversity of situations, a first essential step is to try to make sense of one's situation by making a diagnosis in terms of AIDS-epidemiology and health workforce. The matrix presented in the previous chapter identifies the broad lines of such an appraisal and may be a useful method<sup>12</sup> at any level of the health system.

Summarising, one could say that in case of *Stable*, but especially *Worsening chronic shortages*, essentially long-term planning/interventions are needed to tackle structural issues, whereas in settings of *Crisis*, short term crisis management needs to be added.

In any case, the health workforce situation is typically dynamic and many things are difficult to predict (both on the medium and long term). Not only the AIDS problem is complex, also the HR problem is fraught with 'complexity', contingent as it is on a rapidly changing environment. This reinforces the need for an appropriate mix of management approaches, that combines bureaucratic rational planning ('*make happen*' - HR Management spirit) and the flexible management of 'auto-adaptive system' ('*help happen*' - '*let happen*' - HR Development spirit).

### Chronic problems: Long-term health workforce policy issues

#### 1 From planning and administration to developing a responsive health workforce

Given the complex underlying causes of the chronically incapacitated health workforce (see Chapter 4), the long-term priority for national-level policymakers facing *Stable* and *worsening* health workforce conditions is to institute effective human resource policies to train and retain the required health workers, policies which have been lacking for too long. This includes the issues of training, retention and developing a qualitative management approach to the health workforce that goes beyond the omnipresent top-down planning and administration approach.

In the health sector, healthcare delivery systems need to be designed around jobs that people (would) like to do in an environment that stimulates them. A 'commitment-eliciting' rather than 'command-and-control' approach should guide the health workforce development and retention policies (Walton, 1985). This in turn would call for appropriate decentralisation of health workforce decision-making and high commitment management practices (Pfeffer and Veiga, 1999). Blaauw et al. (2003) argue that a socio-cultural perspective on managing health workers that is based on trust would be more appropriate than the classical mechanistic approach that calls for a bureaucratic organisation, or the economic perspective that uses the market mechanisms to coordinate work and workers alike. In their socio-cultural view, social networks are the organising principle, which uses trust and shared values and norms as the main means of coordination. While these approaches sound logical and attractive, there is however a need to develop them in real-life healthcare settings in developing countries and to document them.

#### 2 Using opportunities for investment in the health workforce

Unfortunately, not only national policymakers, but also the international development actors don't have an impressive track record regarding investment in the health workforce.

<sup>12</sup> Noting that it is still in a developmental stage at this moment.

On one hand, the Poverty Reduction Strategy Papers (PRSP) introduced in many African countries offer quite some opportunities to this end, but a review of the PRSP-Heavily Indebted Poor Countries (HIPC) initiative in 6 selected African countries shows that neither AIDS nor the human resource crisis figure high on the agenda and an in-depth analysis of the HR crisis is mostly absent (HSRC, 2003). On the other hand, the public sector expenditure and recruitment ceilings imposed by Structural Adjustment Programmes and similar donor-imposed conditions stifle recruitment and simply need to be lifted. Indeed, in these times of AIDS, it can no longer be justified to freeze the health workforce both in number and skill mix. It remains to be seen in how far the debt cancellation will offer new opportunities and funds for the health workforce.

If not for WB loans and grants, only middle-income countries like South Africa, Botswana and Thailand may be able to finance significant improvements both of the number and wages of health workers on the strength of their own resources. During the last year, there seems to be a rising acknowledgement among development agencies of the need to invest more in developing and maintaining the health workforce (Marchal et al 2005). Besides PRSP-HIPC, the global initiatives through which increasing financial flows are injected in AIDS programmes in the south are obvious potential funders. Only, they need to allow allocation of their funds to recurrent expenditure in order to finance expanding and stabilising the health workforce. By themselves they may, however, be insufficient and other sources of funding will need to be found. In this sense, it is interesting to notice that some small-scale initiatives are gaining ground. In Zambia, the Dutch bilateral aid programme funds some retention schemes that offer doctors who are willing to work in rural districts additional incentives. Other ways to stabilise and support staff working in difficult conditions is to link the institutions they work for with peer institutions in the north. Examples exist of such arrangements, and the role of international actors could be to invest in such schemes (Lancet 2005).

### **In crisis settings, true paradigm shifts are needed**

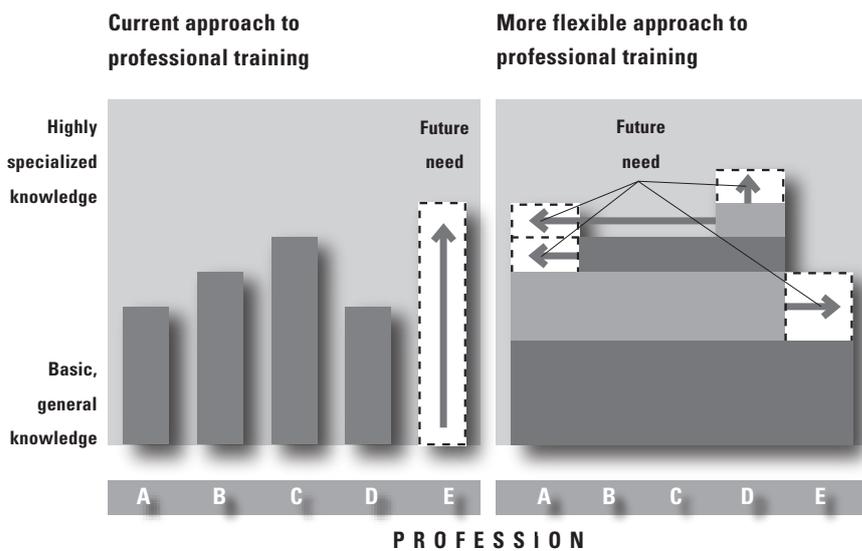
In health workforce-AIDS *Crisis* settings, other paradigms should be adopted. As we argued above, we believe that the first step is to (re)define the aim of any AIDS control programme in terms of collective survival with focus on next generation. The first challenge therefore is the creation of a demand and a forum for this kind of societal decisions. In countries with a (strong) presence of political parties, labour unions, civil society organisations and above all a kind of pluralist political decision-making process, conditions may be more favourable. The second step would be the question of roles and the task distributions. If social groups are to take the responsibility and the lead, group decisions are to be made possible. In any case, a militant anti-discrimination policy is required at all levels of society

### **Stimulating the development of new ART delivery models**

Addressing AIDS in countries facing large deficits in the health workforce will require a review of the current training modalities in function of the new configuration of health services that will be centred on new delivery models. Regarding the latter, whichever model is chosen (to integrate AIDS care in existing general health services, in TB directly observed therapy programmes (Abdool Karim et al. 2004) or to run mobile clinics), it is likely that the cornerstone will be delegation of tasks to lesser-qualified health workers and lay persons, supervised by the increasingly scarce professionals.

Professional associations can be expected to resist such models. Indeed, this goes against the current trend to improve the quality of medical and nursing education through raising the course entry requirements, the duration of training and the level of qualification. While its aim of improving the quality of providers is but laudable, this approach is likely to lead to lower outputs and higher costs of training (Huddart et al. 2003) and it will not resolve current imbalances and deficits on the short and medium term. An appropriate balance between training outputs of different cadres needs therefore to be struck, whereby professionals will have to be assigned a role of supportive supervision of large cadres of semi-professional health workers and caretakers. The WHO IMAI programme goes in that direction and developed and field-tested a model of AIDS care delivery that is centered on nurses instead of doctors (WHO, 2004). Koenig et al (2004) showed that lay health workers could play an effective role if integrated in a comprehensive approach to home-based care. At the same time, the internationally less marketable cadres may answer the brain drain issue in these countries. But not only the future skill mix has to be taken into account, also the required numbers of staff. The current production capacity of health care workers needs urgent attention (Aitken & Kemp 2003).

**FIGURE 13 More flexible approaches to building competence**  
(Source Hargadon & Pslek 2004 #1968)



**Training done in isolated, vertical silos by profession. New training requires a new training programme.**

**Basic training done horizontally across professions, with modules for increasing competence. New need requires only new modules**

**In all situations, (para-)medical education and training needs attention**

Even without the obvious link with the required more effective and efficient task distribution in the AIDS domain, the medical and para-medical education and training system requires urgent attention for three reasons. A critical review of curricula could answer the challenge of the brain drain, since it can be argued that curricula more relevant to local conditions and less styled on 'universal' – read industrialised country templates – would better equip graduates to develop a relevant professional practice in the current health services of their country, motivate them more and reduce the weight of the 'push' factors.

In order to be able to build up a responsive health workforce, the design of (para)-medical training needs to aim at attaining a flexible skill mix. Hargadon & Pslek (2004) argue for a (para-)medical education structure as depicted in Figure 13, which is essentially built on a horizontal cross-professional training, to which modules are added in function of required mixes of competences.

### Specific key issues at organisational level

At organisational level (hospitals, networks of first line health services provincial coordination offices), we would like to make the distinction between direct 'AIDS work' (clinical care, prevention, impact mitigation) and 'AIDS mainstreaming' (indirect).

#### (Direct) AIDS work

(Direct) AIDS work covers assumingly the core functions of any organisation working in the field of AIDS. This includes as core elements Care + Prevention + Mitigation, (real) training and support for new tasks (e.g. counselling), the introduction and use of adapted technologies, and ensuring an appropriate management structure that takes care of logistics and HR management. The latter should not only focus on numbers and competencies, but also staff morale and motivation, the goal being the creation of conditions for the workforce to do what it has to do.

#### BOX 1 - STEPS IN INTERNAL MAINSTREAMING

##### 1 Learning about the current impacts of AIDS on the organisation

- Collect information (anonymous questionnaires, discussions, interviews,...); focus on staff experience and perception, and ask for ideas and priorities for action
- Analyse
- Report on current impacts and staff ideas and priorities; feedback to staff

##### 2 Predicting the impact of AIDS on the organisation

- Full institutional audit (with expert help or using existing/tailored models) and decide which variables to include (health costs, benefits, leave, attrition, ...)
- Calculate, using best and worst case scenarios, and explore alternative options
- Report on predicted impacts and recommendations, for internal consultation and consideration

##### 3 Devising or adapting a workplace policy

- Formulate policy that covers recruitment and employment criteria, workplace prevention activities, benefits and treatments for affected employees
- Ensure that the policy meets legal obligations to employees
- Engage in a consultative process, involving a broad range of stakeholders

##### 4 Disseminate policy and support management to implement it

- Monitor and modify as appropriate

##### 5 Modify the functioning of the organisation in the context of AIDS

- Identify employees' susceptibility to infection by virtue of working for the organisation; alter the working system, within reason, where appropriate
- Identify how policy and practice enhance the organisation's vulnerability to the impacts of AIDS; alter systems and working procedures so as to allow the organisation to cope better with the impact of AIDS
- Monitor and modify as appropriate

### **Internal AIDS mainstreaming**

Organisations should strive at a very explicit AIDS awareness among both their operational and management cadres. This is reflected in an explicit AIDS policy at organisational level that should allow coping with AIDS in short and long-term perspective. Essential elements include workforce protection and prevention measures (including post-exposure prophylaxis), mechanisms for psychological and financial support, a strict and explicit non-discrimination policy (internally and externally).

#### ***Principles***

The principles for mainstreaming AIDS can be summarised as follows:

- Involve employees as active participants
- Involve people who are affected by HIV/AIDS
- Always attend to the gender issues
- Monitor actively and modify as appropriate; take a learning process approach
- Link with others and learn from them

#### **Workplace safety**

Specifically regarding health services, WHO and the International office for labour have developed extensive guidelines on the management of HIV/AIDS on the work floor of health services (WHO, 2005). Universal introduction of safer nursing and surgical techniques, safe waste disposal, adequate barrier techniques and post-exposure prophylaxis can contribute to prevent health workers from being infected in the work place. Care and support to HIV positive health workers with HAART, prophylactic isoniazide and co-trimoxazole schemes and counselling are a second set of required measures. These have been described elsewhere (IOE 2002, Aitken & Kemp 2003, Huddart et al. 2003). In many places, they are being introduced, but often in a fragmented manner. Coordination and support to lower-level facilities are a must (see below).

### **Specific issues for the macro-level actors**

In this section, we suggest a few avenues of action for managers and decision makers at the macro-level, or in other words the national CHA, regional health managers, etc. Core roles include first offering effective support to and/or coordination of the operational actors and second, external mainstreaming of AIDS.

#### **Effective support to the operational actors**

The macro level is best placed to play a role of coordination and support of the operational actors, which include partner organisations, confessional networks consisting of a hospital and some health centres, health districts, etc. Domains of support include assessment of the situation and the organizational functioning, strategic planning, commonly organized training, coordination of purchases, support in drafting AIDS in the workplace programmes and organisational AIDS policies, etc.

#### **External AIDS mainstreaming**

Mainstreaming at this level should project AIDS as a development problem and aim at stimulate awareness in terms of what the (present and future) presence of AIDS means in terms of vision, mission and strategy of the health care organisations of the network.

But it should also stimulate the organisation's managers and staff to assess how their organisation's work impacts on AIDS (positively or negatively!) in terms of susceptibility and vulnerability of the population they serve.

### **Issues at international level - Shaping the debates of the tough challenges**

At the international level, we see several issues that would merit strong advocacy in order to make these issues appear on the international agenda. A major role of internationally active NGOs could indeed be to stimulate the debate of some key challenges that may be calling for a paradigm shift.

The first may be the redefinition of 'human capacity' in high HIV burden situations. As we argued above, we believe that in high prevalence settings, a review of the task and duty allocation among cadres (who does what how) needs review. Conditions are very likely to change to the effect of allowing maintaining current paradigms of task allocation, delegation of responsibilities and the use of lay staff<sup>13</sup>.

Second, some international development policies merit a challenge. Some of the principles of international aid should be reconsidered. Approaches to technical assistance that used to be politically correct and 'developmentally' sound in past conditions are no longer suitable and reduce the effectiveness of international co-operation seriously. First, in high prevalence countries, the principle of sustainability of interventions regarding staffing can no longer be maintained. Sending out health professionals in both clinical and managerial roles to high-prevalence countries now responds to huge needs and cannot be excluded on the pretext that this would amount to unsustainable and undesirable substitution. If nothing changes, the funding flow will continue to exceed the absorption capacity in most countries. Second, as already discussed briefly, the rules of the funding should change where they do not allow investment in the health workforce or paying for recurrent expenditure.

Third, a human resource impact assessment may be the tool to bring the above issues to the attention of planners and decision-makers (Van Lerberghe et al., 2002a). It could be envisaged that at country level, public and private health services, NGOs and international agencies that would like to start up a new programme or activity would have to demonstrate the impact of their plan on the current health workforce to the Ministry of Health. Similarly, organisations applying for funding at international donor agencies would be asked the same. In the same vein, a study of the impact of policy decisions in developed countries on the health workforce in the south would open the eyes of many, exposing the hidden consequences of decisions that aim to reduce structural health workforce deficits in the developed countries.

<sup>13</sup> From G. Kegels, Imagine (unpublished)

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