Regional Network for Equity in Health in east and southern Africa

DISCUSSION Paper NO. 71

A review on the impact of HIV and AIDS programmes on health worker retention

Yoswa M Dambisya, Sehlapelo I Modipa, Norman Z Nyazema

Health Systems Research Group, Department of Pharmacy, University of Limpopo, South Africa

Regional Network for Equity in Health in east and southern Africa (EQUINET) in co-operation with Health Systems Trust (HST) and the East, Central and Southern African Health Community (ECSA-HC)

EQUINET DISCUSSION PAPER 71

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with support from SIDA Sweden

Valuing and Retaining our Health Workers

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EXECUTIVE SUMMARY

This paper was commissioned by the Regional Network for Equity in Health in east and southern Africa (EQUINET) through Training and Research Support Centre (TARSC) and University of Namibia, in collaboration with the East, Central and Southern African Health Community (ECSA-HC) and World Health Organization (WHO), with support from SIDA (Sweden). It reviews and analyses the literature and secondary evidence on the impact of HIV and AIDS programmes on health care worker (HCW) retention.

We reviewed published and grey literature using internet searches with terms such as HIV and AIDS and health worker retention, task shifting, highly active antiretroviral therapy (HAART), antiretroviral therapy (ART) scaling up, health systems strengthening, global health initiatives (GHIs) and training needs, in different combinations. This was supplemented by hand searches of published documents and follow-up of key informants. We analysed the information obtained for the impact of HIV and AIDS programmes on HCW recruitment, distribution and retention, and attrition; and on the implications of HIV and AIDS programme demands and resources on human resource management (HRM) and human resource information systems (HRIS).

Countries are using different HIV and AIDS service delivery approaches, and many resource-limited countries with high HIV prevalence rely heavily on external funding, which poses challenges of coordination and sustainability. There is a trend towards coordinated country responses in line with the WHO 'Three Ones', and most high-burden countries have high level statutory councils or commissions, national HIV and AIDS policies and strategic plans to guide the responses to the epidemic; and there is stated commitment to delivery of HIV and AIDS services through a public health approach. In practice, however, HIV and AIDS services remain fragmented in most countries.

New cadreship has been brought in to support HIV and AIDS services, including expert patients. Innovations such as task shifting and the integrated management of adult and adolescent illness (IMAI) have been applied to more efficiently use available HCWs. Many vertical programmes recruit their own HCWs, especially counsellors and home-based caregivers. This can increase the pool of HCWs. By relying on the health system for the more skilled health professionals, however, HIV and AIDS programmes may also undermine other health programmes. Such programmes have attracted a lot of funding, especially through GHIs such as the Global Fund and PEPFAR. When used for general health system improvements and with proper planning, as shown by experience from Malawi, such funding can be used to support HCWs for the whole health sector.

The lack of integration of HIV and AIDS services into other health programmes is a problem in many countries. We found reports of successfully integrated programmes, such as HIV and TB, HIV and sexual and reproductive health, and even those where HIV and AIDS services are fully integrated into the public health system. Integrated programmes benefited the whole system. There have been fears that existing inequalities in health care may be intensified in scaling up HIV and AIDS services. There are, however, reports showing that a public health and equitable approach to the roll-out of ART is possible across all socio-economic groups with similar outcomes.

HIV and AIDS programmes have had both negative and positive effects on the retention of HCWs. Early studies reported negative effects of HIV and AIDS and the delivery of HIV and AIDS services on HCW morale with stigma, burn-out, resignation and deaths due to HIV and AIDS, while more recent ones speak of hope, high prestige, high motivation and better retention of HCWs in HIV and AIDS programmes, largely due to effective antiretroviral therapy (ART) which has improved the prognosis of AIDS. Brazil's universal access programme is a robust example of this success, and other resource-limited countries have also achieved scale up of HIV and AIDS services. The balance of the evidence suggests that well run HIV and AIDS services can serve to attract and retain HCW.

Many HIV and AIDS programmes offer incentives, such as higher salaries or salary supplements, better furnished facilities or appointment at higher levels, often to the exclusion of other HCWs. Selectively applied incentives tend to demoralise and discourage those who are excluded; as illustrated by examples from programmes in South Africa, Tanzania and Guyana. In contrast, more inclusive approaches, such as in Malawi where MSF supplemented salaries of all health workers in the operational districts, and Namibia where the Ministry of Health and Social Services applied uniform terms and conditions of service for all HCWs, reportedly experienced no problems.

Treatment programmes for HIV infected HCWs may be offered specifically for HCWs (such as Swaziland, Botswana, Zambia and parts of South Africa), for all public sector workers (such as Uganda and Malawi), or through the private health sector (such as South Africa). HCW on ART improve, return to work and are more productive; and the improvement of HIV-infected HCWs motivates their colleagues too. Treatment of infected HCWs signals to HCWs that they are valued.

The availability of international funding for HIV and AIDS programmes is a welcome development given the low health sector funding in many of the countries with high HIV prevalence rates. GHIs have contributed to the

expansion of HCW numbers through training and other support for HCWs in many resource-poor settings. But well funded AIDS programmes are attractive for HCWs and may contribute to internal brain drain. Moreover, some countries have an 'emergency response' approach to HIV and AIDS; leading them to accept funding for fragmented vertical programmes. To counter that, there are trends towards increasing system-wide support, such as through sector-wide approaches (SWAp) or budget support, coupled with country driven processes such as the 'Three Ones' and International Health Partnership and Related Initiatives (IHP+). Indeed, major funders such as the Global Fund, World Bank and PEPFAR now all have a health systems strengthening focus.

We found a paucity of information in some areas that the study sought to address, including:

- specific retention strategies for HCWs in HIV and AIDS programmes and how they differ from the wider health system context;
- assessment of the effects of the lateral movement of HCWs from other programmes to HIV and AIDS programmes;
- management of HCW issues related to HIV and AIDS; and
- the long-term and system-wide application and effects of approaches demonstrated to be successful at project level or under non-government organisations.

The evidence reviewed was largely based on work at project level, suggesting that most countries have not documented the effects of HIV and AIDS programmes on HCW distribution and retention. Interpretation of the data is further limited by the fact the report draws heavily on English language, electronically accessible documents.

HIV and AIDS programmes have the potential to benefit the health system by attracting and retaining HCWs within the health system. There are examples of successful initiatives taking advantage of the HIV and AIDS resources to benefit the whole sector, but these remain mainly at project level. Given the limited availability of national level information, and the limited scope of project level evidence, it is difficult to draw conclusions on the overall impact of HIV and AIDS programmes on HCW retention. We recommend that more detailed routine monitoring and country-level case studies be undertaken to monitor this issue and document the various approaches, including the engagement between countries and funding agencies, the country perspective on NGO roles, the implementation of the 'Three Ones', SWAP and public health approach; and the impact of these dimensions of national and project specific initiatives on HCWs.

1. INTRODUCTION

The number of persons living with the human immunodeficiency virus (HIV) was estimated to be 33 million in 2007, 67% of whom were in Africa, while 14% were in Asia, 8% were children; and 72% of all acquired immune deficiency syndrome (AIDS) deaths occurred in Africa (World Bank, 2008; UNAIDS, 2007, 2008a, 2008b). The number of AIDS deaths has declined since 2006, partly due to the scaling up of antiretroviral treatment (ART) services (UNAIDS, 2008b). HIV and AIDS adversely affects the health workforce (also referred to as health workers, health care workers, HCWs, or human resources for health, HRH), especially in resource poor countries (Wilkinson and Gilks, 1998; Tawfik and Kinoti, 2003; McCoy, 2003; Marchal et al, 2005; Ndyanabangi et al, 2004; Uebel et al, 2004).

HIV poses a triple threat to HRH by:

- increasing the burden of disease, imposing heavier workloads and increasing complexity of care with new demands such as ART,
- decimating the workforce by infecting HCWs;
- imposing psychological stress on the HCWs who have to administer palliative care, leading to low morale, burn-out and absenteeism (Chen and Hanvoravongchai, 2005).

These effects are borne out by many reports (Macks and Abrams, 1992; Raviola et al, 2002; McCoy, 2003; WHO, 2003a; Dambisya, 2004; Shisana et al, 2004; Chen et al, 2004; Dovlo, 2005; Greef and Phethu, 2007; Zelnick and O'Donnell, 2005; WHO, 2006a; Orner, 2006; Smit, 2005; King and McInerney, 2006; Huddart et al, 2004). The World Health Organisation (WHO) warns that health work may become less popular as a career choice for young people, which may lead to fewer health workers trained to prevent and treat AIDS (WHO, 2006b)

The gravity of the epidemic in poor countries has spawned many non-governmental, global, multi-lateral or bilateral initiatives, including the President's Emergency Plan For AIDS Relief (PEPFAR), Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund, GFTAM),WHO Global Programme on AIDS, United Nations Agencies such as the Joint United Nations Programme on HIV/AIDS (UNAIDS), the United Nations High Commission for Refugees (UNHCR), and International Labour Organization (ILO) (WHO, 2006a; Connelly and Rosen, 2006; Eholie et al, 2003; Garassa, 2003; Hutchison, 2003), World Bank Multi Country HIV and AIDS Programme (MAP) and the William J Clinton Presidential Foundation (UNGASS Country Reports 2008; UNAIDS, 2008a). WHO has championed

the fight against HIV and AIDS through the Global Programme on AIDS, UNAIDS, the '3 by 5', the 'Three Ones' and the TTR programmes, and by supporting countries to develop HCW plans and strategies that address their HIV-related needs (Ojikutu et al, 2007).

The 'Three Ones' strategy aims for harmonised, coordinated and country-led and owned response with:

- one agreed HIV and AIDS action framework for coordinating the work of all partners;
- one National HIV and AIDS Coordinating Authority, with broad-based multisectoral mandate; and
- one agreed HIV and AIDS Country-level monitoring and evaluating system (UNAIDS, 2005).

The increasing international engagement on HIV and AIDS is evident from increased global funding for AIDS from $59 million in 1986 to $292 million in 1996, $8.9 billion in 2006, and more than 10 billion in 2007 (UNAIDS, 2007; 2008b). Major global initiatives are UNAIDS established in 1996, the World Bank MAP started in 2000, the Global Fund, established in 2002, and PEPFAR established in 2003 (UNAIDS, 2007).

Non-governmental organisations (NGOs) play a significant role in all aspects of HIV and AIDS service delivery (UNAIDS, 2008a; Ferradini et al, 2006; Ferradini et al, 2007; Culbert et al, 2007; Badri et al, 2006; Ford et al, 2006; ALP/TAC, 2005; Essengue, 2003; Dreesch, 2003, Calmy et al, 2004; WHO, 2004b; Tassie et al, 2003; Zachariah et al, 2004, 2005; Zachariah et al, 2006; Zachariah et al, 2007; MSF, 2003). An example of NGO involvement in HIV and AIDS service delivery is the Sant'Egidio Community run Drug Resources Enhancement against AIDS and Malnutrition programme (DREAM) which pioneered HIV and AIDS care in Mozambique (Marrazi et al, 2005), and plans to introduce an integrated strategy for the prevention and treatment of HIV and AIDS within the framework of a public health system (DREAM, 2008). DREAM is now active in ten sub-Saharan African Countries: Mozambique, Malawi, Tanzania, Kenya, Democratic Republic of Congo, Angola, Cameroon, Nigeria, Republic of Guinea and Guinea Bissau (DREAM, 2008).

HIV and AIDS services are delivered through vertical programmes, HIV and AIDS programmes integrated into public health systems, or a combination of integrated and vertical programmes (Galvão, 2002, 2004, 2005; Kasper, Coetzee et al, 2003; Kemp et al, 2003; WHO, 2004b; Zacchariah et al, 2004; Zachariah et al, 2005; Wester et al, 2005; Schneideret al, 2006; Furth et al, 2006; Wood, 2007). Vertical programmes may undermine fragile public

health services in resource poor countries by diverting HCWs and other resources away from other programmes (Loewenson and McCoy, 2004; Egger et al, 2005; Curran et al, 2005; Ooms et al, 2007). However, there are potential health system benefits through sustainable approaches to scale-up of HIV and AIDS services in countries where lack of HCWs and infrastructure may be barriers to effective care (Mukherjee, 2003; Furber et al, 2004; Antunes et al, 2005; O'Brien et al, 2006; Fredlund and Nash, 2007). Approaches to the delivery of HIV and AIDS services are often dictated by availability of resources - relatively self-sufficient countries with strong public health systems (such as Brazil) have domestically funded universal programmes which benefit the whole population, while poorer ones rely heavily on external funding (such as Rwanda, Mozambique) and involvement of NGOs (such as Zimbabwe) (UNAIDS 2008a, 2008b).

The HIV and AIDS epidemic, and the realisation that it will not be possible to achieve global targets on HIV and AIDS without adequate HRH (Wyss, 2004), has led to political action to tackle HRH bottlenecks (Nördstrom, 2008). WHO is collaborating with EQUINET and ECSA-HC in the programme of work on HCW migration and retention to investigate the impact of HIV and AIDS programmes on HCW retention. To support this programme of work and inform the analytic framework and methods for follow up country work, EQUINET, through TARSC and University of Namibia, and in collaboration with ECSA-HC and World Health Organisation (through its then Treat, Train and Retain Programme) commissioned us to prepare this detailed review and critical analysis of literature and secondary evidence and assessments of methodologies for country work on 'Health worker retention and HIV and AIDS'.

2. CONCEPTUAL FRAMEWORK AND METHODS

2.1 Conceptual framework

The terms of reference (TORs) set out the following main questions:

i. What has been the impact of HIV and AIDS programmes on health worker distribution and retention, and how should these impacts be managed?

ii. What health worker retention issues arise in implementing strategies for services scale up for addressing HIV and AIDS and how have these been managed?

iii. What implications do strategies for meeting health worker needs for HIV and AIDS programmes, including through global health initiatives, have for HR management and information systems?

iv. How does the challenge of retaining health workers within the specific context of HIV and AIDS in developing countries differ fundamentally from the wider issue of retaining health workers in general within those countries?

To guide evidence gathering and analysis of data, we used a framework based on the three main elements of the dynamics of HCW movements in a health system - recruitment, distribution & retention, and attrition – as illustrated by WHO (2006e), Miti (2006) and EQUINET SC (2007), the possible effects of HIV and AIDS resources and demands on the three domains, and how in turn the performance of the health systems impacts on/ is affected by the three (Figure 1). We focussed mainly on the 'distribution and retention' domain and the contribution of HIV and AIDS programmes to health worker attrition.

The framework addresses the possible effects of HIV and AIDS programmes on health systems performance and the quality of care offered, by considering how the demands imposed by, and resources made available for, HIV and AIDS might affect:

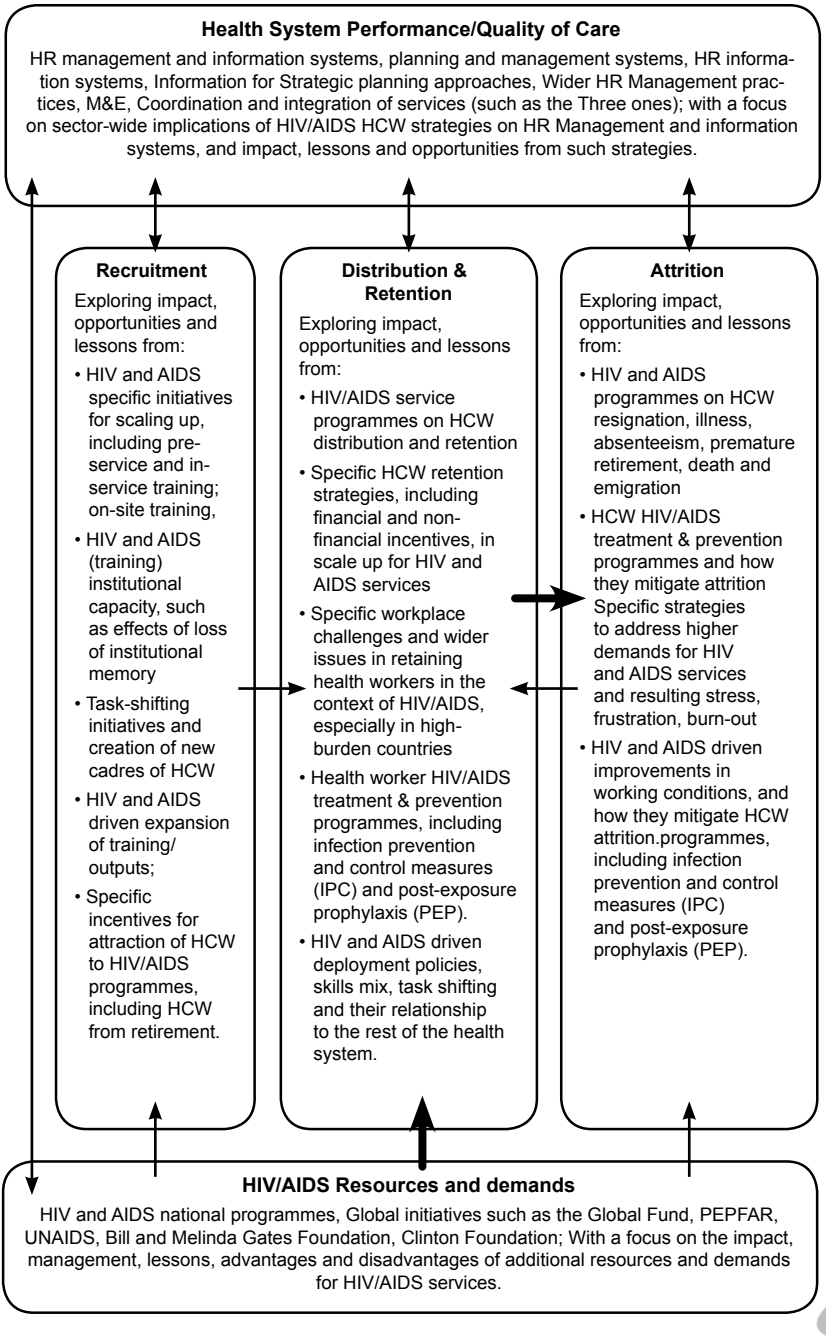
i. **Attraction and recruitment** of new HCWs or the creation of new cadres, the needs for additional training at both the pre-service and in-service levels; training needs for scaling up initiatives, including task shifting; and also additional training of more HCWs.

ii. **The distribution and retention** of HCWs, including consideration of the competition for available HCWs between vertical HIV and AIDS programmes and other health services, incentives offered to those on HIV and AIDS programmes, the skills mix, and implications for task shifting.

iii. **The attrition** of HCWs, including efforts to mitigate the impact of the HIV and AIDS pandemic on HCW motivation and levels of professional practice, such as positive practice environments. The effect of HIV and AIDS on HCWs is expected to be higher attrition of staff (big white arrow), while the additional resources for HIV and AIDS may lead to a reduction in attrition (smaller arrow from retention to distribution and retention).

We explored the (a) aims, design, implementation, timeframes as applied to different categories of HCWs or levels of the health system, and trade-offs (b) financing, and the systems used to introduce, manage, monitor and sustain them, (c) impact and the factors affecting this, and (d) knowledge gaps and recommendations for follow up country work; as mandated by the TORs. The possible relationship between health system performance/quality of care and the main elements of recruitment, distribution and retention and attrition is represented by double arrows in recognition of the fact that each has the potential to affect the other, such as poor HRIS may result in low numbers of health workers trained, while accurate data pointing to a deficit may result in increased recruitment of health workers; poor management practices may contribute to high attrition, while management practices that value health workers may reduce attrition.

Figure 1: Conceptual Framework for Effects of HIV and AIDS Programmes on Health Care Workers (HCWs)



2.2 Methods

We searched for evidence globally, with a focus on countries with generalised HIV epidemics and inadequate numbers of HCWs. The starting point was documents from east and southern Africa and Central America. We critically examined country specific approaches and strategies, and the role of GHIs such as the Global Fund, UNAIDS and PEPFAR on HCW retention. In each area we reviewed published, peer reviewed literature; and reports, monographs and other 'grey' literature.

The main sources of data were internet searches of published and grey literature from a wide range of databases, including UN agencies such as the United Nations General Assembly Special Session on AIDS (UNGASS) Country Reports (2008), World Bank, government ministries of health, church hospitals websites; and from Aim, BMJ clinical evidence, Cochrane, Eldis, Factiva, IMEMR, IMSEAR, international financial statistics, ISI – current contents connect, ISI – journal citation reports, ISI – Web of Science, Lilacs, NLM Gateway, Popline, Pubmed/Medline and Wholis. Further information was obtained through search engines such as Google, Google Scholar and Yahoo. Throughout the study, a snowballing technique was used to widen the search for evidence.

The search strategy used various combinations of 'HIV and AIDS', with terms such as health worker (HRH or HCW) retention, HRH attrition, task shifting, scaling up, HRH demands, training needs, health systems effects, health worker incentives or HAART/ART/ARV. Longer phrases were employed for searches in databases with the capability to process such queries. We proceeded methodically from scanning the title, then the summary, executive summary, abstract or extract for relevance. Relevant documents were then analysed further, while those of questionable relevance were reviewed by the other two members of the team and a consensus reached on whether to include or exclude them from the analysis. We relied mainly on freely accessible electronic documents, but also conducted library reviews of key institutions working on health systems and HRH (such as WHO, WHO/AFRO), and reviewed government and ministry of health reports. Email follow up with key informants such national AIDS control programme officials and authors of reports received limited response.

We synthesised the evidence according to (i) Types of HIV and AIDS Programmes, (ii) Impact of HIV and AIDS programmes on HCW distribution and retention, (iii) Impact of scale-up strategies on the health workforce, (iv) Implications of HIV and AIDS programmes for human resource management (HRM), including human resource information systems (HRIS), (v) Wider system effects of HCW retention within specific HIV and

AIDS programmes, and (vi) Main lessons drawn on the issue of HIV and AIDS and HCW retention. Best/promising practices and positive experience case studies were obtained and are highlighted in boxes in the next section.

We reviewed documents in English only, and may therefore have omitted important experience from Francophone and Lusophone countries with generalised epidemics and HCW shortages. As we relied mainly on freely available electronic documents we have limited cover of grey literature that is not internet searchable or accessible. In the report we identify where the evidence in the documents obtained was inadequate to address specific issues in the TORs. We also observe a limitation in that much documented evidence is from HIV and AIDS projects and not country-wide programmes. Projects tend to report their activities much more effectively than governments do, and yet the experiences from projects may not be necessarily applicable to country level operations. Projects may also be more likely to report positive results as this has a bearing on their survival and sustainability; so the data may overstate the successful interventions. Successful interventions at project level may not be that successful when scaled-up to the rest of the country, limiting the extent to which generalisations can be made from project work to the whole health system.

3. RESULTS

3.1 HIV and AIDS programmes

Country submissions to the UNGASS in March 2008 show that HIV and AIDS services are delivered through a variety of approaches (UNAIDS, 2008a, 2008b). *Table 1* presents a summary of some of the characteristics of HIV and AIDS programmes from 23 countries. In selecting the countries for inclusion in the table, we considered high-burden countries, countries with well-developed HIV and AIDS programmes, countries with severe HCW shortages, and countries with reports in English.

Most countries have high-level coordinating mechanisms for HIV and AIDS services, while most high-burden countries have statutory AIDS Councils or Commissions, strategic and operational plans, multisectoral, integrated and harmonised programmes, and report a commitment to the 'Three Ones' principle (UNAIDS, 2008a). *Table 1* also illustrates the challenge some of the countries face – Zimbabwe, for instance, reportedly has about 9,000 registered organisations offering HIV and AIDS services. Harmonising the activities of all 9,000 role players must be a daunting task. The proliferation of service providers suggests that there is a gap they fill due to the inadequacy of Zimbabwe's public health system. It has been shown that the proliferation

of NGO programmmes may draw HCWs from the public sector to the NGO sector (for example, Ferrinho and Omar, 2006), but the 23 country reports reviewed are relatively silent on the HCW implications of the presence of many organisations operating within the countries.

Regarding funding for HIV and AIDS programmes, the UNGASS country reports show that relatively affluent countries, such as Botswana, Gambia, Brazil, Namibia, South Africa and Thailand, fund HIV and AIDS programmes largely from the national budget, while poorer countries, such as Zambia, Rwanda, Tanzania, Uganda and Vietnam, rely mainly on external funds (see *Table 1*). Most common external sources of funding reported were the Global Fund, PEPFAR, UN agencies and World Bank-MAP, as well as bilateral aid through agencies such as DFID, USAID, Irish AID, GTZ, DANIDA, CIDA and Italian Aid, and, finally, NGOs. The high reliance on external funding and the heterogeneous nature of HIV and AIDS service providers in countries with generalised epidemics raise issues of sustainability of the programmes and autonomy of country HIV and AIDS responses.

Data summarised in *Table 1* shows that many countries identified HCW constraints as a barrier to scaling up HIV and AIDS services. Some country reports included HCW initiatives such as care-for-caregivers programmes (Botswana, Guyana and Swaziland), HRIS linked to national databases (Brazil), integration of HIV and AIDS with other health care services (Ethiopia, Malawi and Papua New Guinea), investment in pre-service and in-service training (Gambia and Ghana), adoption of the integrated management of adult and adolescent illness (IMAI) (Lesotho), partnerships between public and private sectors (Mozambique and Namibia), strengthening of monitoring and evaluation (M & E) capacity (Namibia), HCW incentive schemes (Rwanda), strengthened supervision and staff retention schemes (South Africa).

The UNGASS reporting guidelines (UNAIDS, 2007) did not explicitly include HCW constraints and how they are addressed, or the impact of HIV and AIDS programmes on HCWs. The requirements for reporting 'best practices' also give countries leeway to decide what a best practice is (UNAIDS, 2007).

Table 1: HRH Constraints and Best Practices/Strategies for HCW Retention from Selected Country Submissions to UNGASS

Country	HIV Prevalence	Nature of HIV and AIDS Programme	Main sources of funds for HIV and AIDS Activities	HRH Constraints	HRH Best Practices/Retention Strategies
Botswana	17.1%	Multi-sectoral, participatory programme, with National AIDS Policy and Strategic Framework; implementation of the 'Three Ones' through Botswana HIV and AIDS Response Information Management System (BHRIMS); free ART at public facilities	Government budget (88.8%); few external sources include PEPFAR, World Bank and UN agencies	Shortage of skilled HCWs; high reliance on volunteers, lay counsellors and community support groups	Care-for-caregivers programme; workplace wellness programmes; HCW training in stress management and team building; M&E through BHRIMS
Brazil	0.61%	Integrated, harmonised with the National Health System (Sistema Único de Saúde – SUS); national databases, such as SICLOM and SISCEL; free ART at all public facilities; universal access	National budget (>99%); external support mainly for NGOs	No HCW shortages; programme running with full complement of staff at all levels	Equitable access to HIV and AIDS services; HRIS systems with linked national databases, such as SICLOM, SISCEL
Ethiopia	2.1%	Multi-sectoral Plan of Action with National AIDS Council, National HIV and AIDS Prevention and Control Office, committed to the 'Three Ones' and universal access	Government funds; funds from World Bank, Global Fund, PEPFAR and UN agencies (breakdown not given)	Severe lack of skilled HCWs a major constraint to programme implementation	Integration of HIV and AIDS programmes with health care services (Millennium AIDS campaign); motivation of staff through incentives, such as task-shifting and staff retention incentives (not specified)
Gambia	3.7%	National AIDS Control Programme; National AIDS Strategy	Government (92.6%); funds from Global Fund, World Bank, UNAIDS Agencies, WHO, WFP, MRC, CIAM and NGOs	Inadequate HCW capacity; high attrition rate of nurses and other HCWs	Investing both in pre service and in service training of professional HCWs

Country	HIV Prevalence	Nature of HIV and AIDS Programme	Main sources of funds for HIV and AIDS Activities	HRH Constraints	HRH Best Practices/Retention Strategies
Ghana	2.22%	Multisectoral response with Ghana AIDS Council, national strategic framework and national AIDS control programmes; 'Three Ones' principle	Government budget (21.4%); funds from Global Fund, USAID, Netherlands government, GTZ, DFID, DANIDA, JICA and UN agencies	HCW constraints are a threat to scaling up	Capacity building through cascading of training sessions across levels; use of adherence monitors to support ART
Guyana	1.01%	Presidential Commission on HIV and AIDS; National AIDS Programme; national strategy guided by National Policy; ART universal access	Government and external sources (breakdown not given)	Limited numbers of skilled HCWs; losses due to rural-urban migration, emigration and early retirement	Workplace HIV programmes; donor support for acquiring additional HCWs, including re cruiting retired nurses
India	0.36%	National AIDS Control Programme; State AIDS Control Societies	Government sources, UN agencies, World Bank, EU, NGOs, GFATM, DFID, Clinton Foundation, Gates Foundation, USAID and AusAid	Constant transfer and change in leadership; lack of good quality committed HCWs	None mentioned
Kenya	5.1%	Harmonised approach led by the Kenya National AIDS Control Council; 'Three Ones'; national HIV and AIDS strategic plans	Government funding, as well as international sources, such as Global Fund and UN (no breakdown stated)	Not explicitly stated	Capacity building for mainstreaming HIV and AIDS services

Country	HIV Prevalence	Nature of HIV and AIDS Programme	Main sources of funds for HIV and AIDS Activities	HRH Constraints	HRH Best Practices/Retention Strategies
Lesotho	23.2%	National programme, guided by National AIDS Policy and Strategy; adherence to the 'Three Ones', but operationally fragmented	Government funding (18.7%); funds from Irish AID, GTZ, PEPFAR, EU, DFID, World Bank, Global Fund and UN Agencies; no aid coordination mechanism	Shortage of HCWs is a major barrier to scaling up access to services	Training and retaining HCWs; increasing capacity of family and community health members to deal with adherence of ART; use of donor funds to recruit nurses from abroad (Kenya); adoption of IMAI /IMCI; PIH initiative; strengthened PHC services
Malawi	12%	National AIDS Commission; national HIV and AIDS strategic framework	Government funding (32.4%); MoH receives a lot of external funds for HIV and AIDS	Acknowledged shortage of skills in critical sectors	Training of more than 2,300 health workers of all categories in HIV and AIDS care and treatment
Mozambique	16%	High-level multisectoral National Council to Combat AIDS, with strategic plan, promotes comprehensive treatment, care and support; adherence to 'Three Ones'	Domestic funds (15%); funds from Global Fund, PEPFAR, World Bank-MAP, UN System, Canada, UK, Denmark, Ireland and Sweden	Critical shortage of skilled health professionals	Government-NGO collaboration to recruit post-PMTCT women as peer supporters; activistas (community activists); task-shifting with provision of ARV treatment by Técnicos de Medicina
Namibia	19.9%	National AIDS Committee; Multi-sectoral AIDS Co-ordinating Committee	50.8% funds from local sources; funds from Global Fund, US government, UN Agencies and EU	Need for more trained health professionals	Extensive training in HIV and AIDS management; strengthened capacity for M & E
Nigeria	4.4%	Presidential Committee on AIDS, NACA, development of multisectoral HIV and AIDS Emergency Action Plan (HEAP)	Government funds (56%); funds from Global Fund, PEPFAR, DFID, CIDA Canada, World Bank-MAP and UN agencies	Not mentioned	Not mentioned

Country	HIV Prevalence	Nature of HIV and AIDS Programme	Main sources of funds for HIV and AIDS Activities	HRH Constraints	HRH Best Practices/Retention Strategies
Papua New Guinea	1.61%	Multisectoral National AIDS Council; National HIV and AIDS Strategic Plan; annual operational plans; 'Three Ones' not yet operationalised	Global Fund, AusAID, New Zealand AID, Asian Development Bank, USAID, UN System, Clinton Foundation, World bank, EU and British Government	No strategic leadership capacity at national council level; poor coordination; few HCWs; poor staff attitudes; poorly motivated staff; stigma high among HCWs	Linking of HIV services with malaria and TB programmes; Integrated Management of Adult Illness (IMAI) – with training and mentorship; workplace HIV and AIDS programmes
Rwanda	3.0%	Commission (CNLS); strategic plan; services coordinated by TRAC	Government funds (5.1%); funds from Africa Development Bank, PEPFAR, Global Fund, UN agencies, World Bank-MAP, DFID and Luxembourg Development	Critical shortage of skilled HRH	Use of information technology (IT) for planning and reporting (CNLSnet, TRACnet); performance-based incentives; task shifting
South Africa	29.1% (ANC survey)	Multisectoral, comprehensive and developmental, with high level inter-ministerial action; SA National AIDS Council; strategic plan and comprehensive plan of action; public sector ART programme	Government funds (77.3%); external support from Belgian Technical Cooperation, GTZ, DANIDA, KfW, EU, PEPFAR, Global Fund, UN and NIH	Critical shortages are a barrier to scale-up of comprehensive HIV and AIDS services, especially in rural areas	Training of laboratory staff and community caregivers; definite roles for community development workers, community caregivers and lay counsellors; systems strengthening, for example by using standard operating procedures; functioning IT system
Swaziland	26%	Nationally-coordinated response (National Emergency Response Council, NERCHA); HIV and AIDS policy, strategic plan and action plan.	Government funds (39.8%); funds from Global Fund, WHO, US Government, UN agencies (including UNICEF), UNAIDS, EU and Italian Cooperation	Limited no. of skilled HCWs, (only 15 'ART doctors' in the country); lack of management and M & E skills	Neighbourhood care points for OVCs; training in M & E; Wellness Centre of Excellence for HRH
Tanzania	6.2%	'Three Ones' principle; national coordination & leadership from Tanzania Commission for AIDS	Government funds (10%); development partners (90%)	Serious shortage of HCWs	None included

Country	HIV Prevalence	Nature of HIV and AIDS Programme	Main sources of funds for HIV and AIDS Activities	HRH Constraints	HRH Best Practices/Retention Strategies
Thailand	1.4%	Coordinated national response led by the National AIDS Prevention and Alleviation Committee	Government funds (82.7%); funds from international partners, such as Global Fund, UN agencies, CDC and the French Government	None mentioned	None mentioned
Uganda	6.4%	Uganda AIDS Commission; multisectoral, national strategy aligned to overall poverty eradication action plan; public sector offers free ART	Government funds (6.1%); donor support through SWAp, MTEF and long-term institutional arrangement (LTIA)	HCW shortages are a major constraint; inequitable distribution of HCWs between urban and rural facilities	Community supervision; home-based HIV counselling and testing; training of lab staff in rapid HIV testing; a functioning Health Services Commission; HRH policy and strategic plan
Vietnam	0.53%	High-level, multisectoral committee; national strategy; Vietnam Administration for HIV and AIDS Control (VAAC)	Government funds (10.5%); funds from USAID, PEPFAR, GTZ, DFID, NORAD, UN agencies, World Bank and Global Fund	Limited programmatic and management capacity; fragmented service delivery in donor-supported programmes	Commitment to harmonisation and the 'Three Ones'; providing management training for staff at new HIV and AIDS centres
Zambia	13.1%	Multi-sectoral response, with National HIV and AIDS/STI/TB Council (NAC); commitment to the 'Three Ones'	Government funds (15.3%); funds from Global Fund, World Bank, PEPFAR, UNAIDS and USAID	Low numbers of skilled HCWs; general lack of staff in health sector	Volunteerism with youths helping PLWHAs and OVCs; staff retention schemes; continuous training of staff; HCWs posted to underserved areas
Zimbabwe	15.5%	National AIDS Council-led multisectoral response, with strategic plan and the 'Three Ones'; but with more than 8,926 implementing organisations	Government funds (49%); funds from National AIDS Trust Fund, GF, UN, CIDA, SIDA, DFID, NORAD and Irish Aid	High levels of staff attrition are leading to critical shortages; national economic crisis has affected standard of living and lowered staff morale	Creation of new cadre – the primary counsellor; harmonisation of reporting systems through the National AIDS Report Form (NARF)

Source: Country submissions to UNGASS, March 2008, from the UNAIDS website Note: Only reports in English were analysed.

This makes the best practices subjective and difficult to compare across the different countries. Moreover, countries may understate practices which others consider 'best practices'.

Some countries have adopted a public health approach to HIV and AIDS service delivery, such as the national ART programmes in Brazil, Botswana, Kenya, Senegal, Thailand, Uganda, Zambia and Zimbabwe (Gilks et al, 2006; Galvão, 2005; WHO, 2006a). *Box 1* summarises the main components of the public health approach, as defined by WHO.

Box 1: Main elements of the public health approach to HIV/ AIDS service delivery

The main elements of the public health approach to HIV/AIDS service delivery are:

- the use of appropriate mechanisms to ensure consistency and quality of the national supply of HIV-related drugs and diagnostics and their equitable and rational use;
- simplification of treatment using standard treatment protocols/ guidelines and simplified clinical monitoring procedures;
- team-based approaches to patient management and delegation of routine aspects of patient follow-up to trained nurses and community workers;
- increasing knowledge of HIV status through the use of rapid testing technology and the routine offer of HIV testing in high-burden settings;
- community mobilisation and education to promote demand for testing, prepare communities for treatment and support long-term adherence;
- patient tracking using standardised patient registries, data cards and minimum data sets;
- improved integration of prevention and treatment interventions; and
- population-based surveillance of drug resistance to inform drug selection and programming.

Source: WHO, 2006a.

Brazil provides free comprehensive care to its entire population, with free access to ART since 1996 (Galvão, 2002). The system has a high uptake of testing and other HIV preventive measures, improved epidemiologic surveillance, a decline in incidence of HIV infection and savings in health expenditure (Levi and Vitória, 2002; Hofer et al, 2004, Lima et al, 2000; Galvão, 2005). Brazil does not have a HCW shortage and has a low HIV prevalence, so such successes may not necessarily apply in countries with HCW shortages and high AIDS burdens.

A public sector comprehensive care management and treatment (CCMT) programme in South Africa shows that it is possible to achieve universal access to prevention, treatment and care (PTC) through integrated, district-based approaches (Schneider et al, 2008a). The study found that, in spite of HCW shortages, burn out and intention to leave, there were high levels of motivation and loyalty among programme staff, reportedly due to good leadership and the attention and prestige of the programme (Schneider et al, 2008a). Another report from South Africa describes an integrated strategy whose benefits included cross-training of TB and HIV staff, with staff able to rotate between services, increased diversity of roles, pooling of staff, broadening of training, higher staff morale and retention, and renewed doctors' interest in TB care (Abdullah, 2004). The success of that programme posed some challenges, however:

> *There is also the constant danger that the HAART programme will draw staff away from the already stretched primary health care system. The HAART programme is more attractive to doctors, nurses and pharmacists for a range of reasons, not least of all the better organisation of the programme and the great sense of fulfilment experienced by health professionals in the programme. The right balance has to be struck between employing dedicated staff for the HAART programme and using the programme as a means to attract staff more generally to the public service. Forcing staff at some sites to perform general duties at the facility may be a deterrent to recruits; while preventing staff already in the service from applying to work in the HAART programme is an infringement of their right to work where they choose (ibid: 255).*

Delivery sites for HIV and AIDS services may have dedicated staff, integrated staff or a mix of dedicated and integrated service providers (Furth et al, 2006; Coetzee et al, 2004; WHO, 2006a; Wools-Kaloustian et al, 2006; Zachariah et al, 2007; Friedland et al, 2007; Wang et al, 2007; Hagopian et al, 2008).

3.2 Impact of HIV and AIDS programmes on HCW recruitment, distribution, retention and attrition

HIV and AIDS programmes have had a direct impact on HCW recruitment, distribution, retention and attrition through initiatives for service scale-up, specific incentives for HCWs and treatment programmes for HCWs infected with HIV, as well as indirectly through the implementation of human resource management (HRM) systems, including developments in human resource information systems (HRIS). These are outlined below and summarised in *Table 2*.

3.2.1 Recruitment

Recruitment in this context includes all measures and processes used to prepare and deploy HCWs into the HIV and AIDS programmes; for instance, when HIV and AIDS tasks are shifted from nurses to community health workers, the latter are effectively recruited into HIV and AIDS care. The reduction in ARV prices, and the compelling evidence of the benefits of ART, even in resource poor settings, have led to efforts towards scale-up of ART services (Wood et al, 2002; Mukherjee et al, 2003; Tan et al, 2003; Badri and Maartens, 2006; Dabis et al, 2006; Gilks et al, 2006; Ford et al, 2007; Ferradini et al, 2007; Hagopian et al, 2008). Most scale-up initiatives included the recruitment of additional HCWs for HIV and AIDS programmes through training, task shifting and creating new cadres of HCWs (Wyss, 2004; van Damme et al, 2006; Bennet and Stillman, 2006; Gõrgens-Albino et al, 2007; Kober and van Damme, 2004).

HIV and AIDS programmes create greater demand for HCWs, in response to which there have been efforts to recruit additional staff, including new cadres. The additional staff may be from the existing stock of HCWs, or could be from outside the system, depending on the country involved. Malawi used the Global Fund Round 5 application to address severe HCW shortages, intending to recruit and retain 54 doctors, 100 nurses, 100 clinical officers and 100 counsellors to staff ART clinics, as well as support 25 expatriate paediatricians and 20 internal medicine specialists, and provide compensation to 1,028 new community nurses needed for the Essential Health Package (HWAI, 2008). They eventually recruited and trained 4,200 health surveillance assistants (HSAs), including 1,000 PLHAs, offered a 52% salary increase for all HCWs and expanded training capacity for nurses (Palmer, 2006; Dambisya, 2007a and HWAI, 2008). Global Fund resources have been used to recruit staff for Fund-supported programmes to the disadvantage of other programmes (Dräger et al, 2006).

A recent report on a provincial ART programme in South Africa illustrated how staff for a new HIV and AIDS programme were 'poached' from other parts of the public health system (Van Rensburg et al, 2008). To establish the programme, a number of professional nurse posts were established, and nearly 80% were filled by transferring from other programmes within the same facility or from other facilities within the same district. Only 20% of the nurses were recruited from the private sector, NGOs, other provinces or other countries, and about 43% of new recruits moved from a neighbouring non-ART facility within the same district (ibid). Nurses were attracted to the ART programmes due to higher promotion prospects, better remuneration and greater attention paid to the ART programme. The ART nurse posts were graded higher and more than 50% of nurses joining the ART programme were promoted to senior level. Consequently, the vacancy rate of nurse posts

in the ART programme (16%) was significantly lower than for other posts within the primary health care system (37%) (ibid).

Similar trends are observed in other public sector ART scale-up programmes in South Africa, with recruitment of staff specifically for HIV and AIDS services. The situation at the ART clinic at the Polokwane Campus of the Polokwane-Mankweng Hospital Complex, in the Limpopo Province, is described in *Box 2*.

Box 2: ART Programme at Polokwane-Mankweng Hospital Complex, South Africa

South Africa has the highest number of PLWHAs, with ante-natal HIV prevalence at 29.1%. Responses include a public health approach guided by a national plan. In many instances, government efforts are complemented by other role players. For example, at Polokwane Campus:

- The ART clinic is supported by the Foundation for Professional Development (FDP), which is supported by PEPFAR.
- The ART clinic has recruited its own doctors, nurses and a pharmacist, many of whom come from other departments in same hospital, or from other hospitals, rather than new staff.
- FPD-employed staff are not department of health employees, and so are on different terms of service. For example, FPD ART staff do not make medical aid contributions so their take-home pay is higher than for those employed by the Department of Health.
- FPD appoints staff at a relatively higher level. For instance, a doctor whose counterparts in the department of health are at senior medical officer level may be appointed to the HIV/AIDS programme at the higher level of principal medical officer.
- The disparities in pay and appointment level have resulted in friction among HCWs, with resentment towards those who were 'promoted too fast' or are 'earning too much'.

Sources: MY Mapadimeng, FPD-recruited pharmacist, personal communication (May 2008); NDoH, 2004; UNAIDS, 2008a, 2008b.

Within the same province, Tshilidzini Hospital runs an ART clinic in a public-private partnership involving the provincial department of health, Thohoyandou Victim Empowerment, the Foundation for Professional Development (FPD) and the Centre for Positive Care. The Tshilidzini ART clinic has had a high turnover of staff from the provincial department because of the pay differentials with their colleagues from the NGOs. Whereas the additional NGO-supported staff are appreciated as contributing to better

services for HIV and AIDS patients, the perception that the NGOs pay 'a lot of money' demoralises those on government pay into leaving (NB Modipa, personal communication, May 2008).

What is missing from the observations of van Rensburg et al (2008) and key informants in the Limpopo Province is what impact the lateral movement of staff to the HIV and AIDS programme has had on service delivery in other programmes. It is not clear, for instance, how other primary health care services were affected in those facilities that lost nurses to ART facilities. This is a significant knowledge gap that needs to be addressed by looking at service trends and/or health statistics from the affected facilities.

Some HIV and AIDS programmes employ retirees and fresh graduates. The Guyana HIV and AIDS Reduction and Prevention Project (GHARP) – funded by PEPFAR and implemented by Family Health International (FHI) – recruited, retrained and deployed retired nurses and new graduates for its PMTCT programme, which enabled PMTCT scale-up without disrupting existing services (Morgan, 2005). The Mkapa Fellowship in Tanzania recruits HCWs from outside the public sector, including retirees, and effectively increases the pool of available HCWs in the public sector by posting Mkapa Fellows to hard-to-staff areas (Mkondya-Senkoro et al, 2007). The Mkapa Fellowship programme is addressed further in *Section 3.2.2*.

Attracting and recruiting HCWs into HIV and AIDS programmes appears to be much easier than for the rest of the health sector in some countries because more resources are available. The launch of the ART programme in the Free State (South Africa) was accompanied by the creation of a number of funded nurse posts with more attractive conditions within the provincial establishment (Van Rensburg et al, 2008). As shown in *Section 3.3* additional funding from the Global Fund and other Global Health Initiatives (GHIs) has enabled some countries to recruit and train HCWs for specific HIV and AIDS programmes (ITPC, 2008).

There are lessons for the entire health sector to be learnt from the effective use of incentives, including novel management approaches, by some HIV and AIDS programmes. HIV and AIDS programmes are often able to attract and rapidly deploy HCWs, as observed in South Africa and Tanzania under the Mkapa Fellowship programme, through use of less bureaucratic hiring practices (van Rensburg et al, 2008; Mkondya-Senkoro et al, 2007). The Tanzanian Ministry of Health, for instance, has adopted the hiring practices used by the Mkapa Fellowship programme for its Emergency Hiring Plan (Mliga et al, 2007). Malawi used the HCW shortage for HIV and AIDS programmes, and what it would take to attract HCWs to such programmes, to obtain support for the entire health sector through the Emergency HRH Plan (Palmer, 2006).

As shown in *Table 1* above, a number of countries have undertaken training of HCWs for HIV and AIDS programmes. Much of the training is supported by GHIs such as the Global Fund, World Bank and PEPFAR (HWAI, 2008). For example, Kenya used Round 6 Global Fund application to obtain funds to build capacity of training institutions through support for scaling up facilities and curriculum development, to rehabilitate PHC facilities for integrated TB/HIV services, to improve in-service and pre-service training, and to fund studies on HCW motivation (HWAI, 2008). In a review of 35 Global Fund proposals, Dräger et al (2006) found that more than 90% included components on HCW training, mainly in-service training for HCWs. Some countries, for instance Tanzania in Round 2 and Kenya in Round 4, included provision for pre-service training to improve curriculum content on HIV and TB (ibid). Ethiopia used Round 7 of the Global Fund to strengthen HR management and fill gaps in the health systems by recruiting and training data clerks and maintenance engineers for laboratory equipment (HWAI, 2008).

PEPFAR support to countries includes training existing clinicians and other HCWs to better manage patients and resources, with nearly 2.6 million training and retraining encounters in 2006 and 2007 alone (OGAC, 2007, 2008). PEPFAR beneficiaries included the Kenyan Medical Research Institute (KEMRI), which trained and supported 260 HCWs for ART programmes (OGAC, 2006). PEPFAR training programmes have been instrumental in task shifting approaches in a number of countries, and PEPFAR was a major partner in the development of global guidelines for task shifting (Samb et al, 2007; WHO, 2008). Highlights of training supported by PEPFAR in 2005 are shown in *Box 3*. The report does not disaggregate the training into the nature or length of training but, as can be inferred from the table, training consisted mostly of short and in-service courses.

Box 3: PEPFAR's Support for HCW Training, 2005

PEPFAR supported training or retraining for more than 536,000 service providers, and supported 14,960 service sites in the focus countries, including support for training:

- 267,600 individuals in preventing the sexual transmission of HIV;
- 28,600 individuals in PMTCT at 2,500 service sites;
- 20,300 individuals in preventing medical transmission and 600 service outlets that carry out blood safety activities;
- 36,500 individuals to support antiretroviral treatment at 800 sites;
- 74,800 individuals to care for orphans and vulnerable children;
- 86,300 individuals to care for HIV-positive people at 6,800 sites; and
- 22,200 individuals to provide counseling and testing at 4,160 sites.

Source: OGAC, 2006.

The World Bank-MAP programme supports health systems strengthening to increase access to treatment. It has included training of more than half a million people in service delivery, and reached more than 2.2 million people through workplace education programmes in more than 30 countries in sub-Saharan Africa (World Bank, 2005; Gõrgens-Albino et al, 2007; World Bank 2008). The World Bank-MAP also appears to have preferred in-service, rather than pre-service training of new HCWs. NGOs are also involved in training, as the example of DREAM already cited shows (DREAM, 2008). Médecins Sans Frontière's (MSF) projects included the recruitment and training of HCWs in two rural districts in Malawi, to manage conditions that were hitherto only managed by doctors and clinical officers (Ferradini et al, 2006; Ooms et al, 2007).

Training includes continuing professional development (CPD) for existing HCWs, which may be an incentive through increased internal efficacy (Luoma, 2006). Whereas we did not find any reports attributing higher motivation of HCWs in HIV and AIDS programmes to the training they receive, it is likely that training and better preparation for the job contributes to report of higher motivation and dedication (Abdullah, 2004; Schneider et al, 2008a; Furth et al, 2006). In Rwanda, Furth et al (2006) observed that staff with training in HIV and AIDS care were largely retained within HIV and AIDS programmes. While most of the reported training is specifically for HIV and AIDS programmes, it may have system-wide benefits. Workers co-trained in HIV and TB are, for example, more easily transferable between different services (Abdullah, 2004).

There seems to be agreement between project-specific reports (such as Abdullah, 2004) and research papers (such as van Rensburg et al, 2008) on how HIV and AIDS programmes increased in-service training of HCWs. A knowledge gap exists regarding the effect of HIV and AIDS programmes on the expansion of pre-service training of health professionals such as physicians, pharmacists or nurses. Reports on expansion of pre-service training capacity (such as Drager et al, 2006; OGAC, 2006; HWAI, 2008) do not include the categories or numbers that were expanded. What information is available seems to be largely on in-service training or training for new cadres such as CHWs and counsellors, and qualitative improvements in curricula through inclusion of HIV and AIDS issues. HIV and AIDS programmes, such as ART, are labour intensive, requiring highly trained health professionals, and scale-up of such services ought to influence health professional training. The increased HCW requirements need to be documented to enable government departments and training institutions to bargain for more resources to increase pre-service training capacity for more HCWs. Resource-poor countries with generalised HIV epidemics should take advantage of the double burden of HIV and human resource scarcity to demand increased training capacity.

Task shifting also affects the recruitment of new staff. Task shifting is a process whereby tasks are delegated, where appropriate, to less specialised health workers, leading to more efficient utilisation of available HCWs (WHO, 2006e; WHO, 2008). It has implications not just for recruitment, as discussed earlier in this section, but for the distribution of existing HCWs as well. Many programmes have adopted approaches that involve training staff for different roles, such as training nurses for clinical roles, lay staff for nursing duties and community members in HIV and AIDS care and treatment. A comprehensive approach to task shifting is the WHO integrated management of adult and adolescent illness (IMAI) (Madra, 2005; Gilks et al, 2006). IMAI integrates simplified clinical management of HIV and AIDS with the routine work of existing health services with strong community support (WHO, 2006a). *Box 4* outlines the potential of the IMAI approach to strengthen health systems.

Box 4: The potential of the IMAI approach for strengthening health systems

The IMAI approach has the potential to strengthen health systems in the following ways:

- IMAI is an integrated approach for a range of common conditions, including HIV/AIDS.
- The general principles of good chronic care for HIV/AIDS build the capacity of health and community workers to manage chronic diseases.
- HCWs trained using the IMAI model learn an approach to the acute care of adults that, in addition to HIV/AIDS, is applicable to other conditions such as pneumonia and diarrhoea.
- IMAI strengthens health systems through 'district networks' that enable efficient referrals and case discussions by visiting physician mentors.
- The IMAI approach to task shifting empowers clinical officers and nurses to take up simplified case management for adults similar to IMCI for children.
- IMAI also promotes the expansion of clinical teams to include trained people living with HIV/AIDS as counsellors and treatment supporters, as well as increasing the number and range of providers. It improves links with the community and contributes to more robust primary care.
- IMAI reinforces local health system capacity by reinvigorating local training institutions.

Source: WHO, 2006a.

As reviewed by Dambisya (2007b), by mid-2007 a number of sub-Saharan countries, such as Uganda, Lesotho and Swaziland, were at various stages of implementing IMAI approaches (WHO, 2006c; Ki-zerbo, 2005; Madra, 2005). The benefits of IMAI have been documented in some countries. Elisabeth Madra of the Uganda National AIDS Control Programme, is quoted as saying, 'We could not have expanded services without IMAI' (WHO, 2006c); while Papa Salif Sow, of the Dakar University Teaching Hospital, Senegal, says 'IMAI came to our help when we were trying to bring HIV services from the capital to the villages' (WHO, 2006c). Ghana expanded services to rural areas partly through IMAI (Acquah et al, 2006).

A recent report on the use of community health workers (CHWs) in one of the provinces in South Africa documents the shifting of tasks from professionals to CHWs within the public sector (Schneider et al, 2008b). For example, responsibility for tracking drop-outs and drug readiness training in the ART programme, which was initially conducted by nurses, was gradually delegated to CHWs (Schneider et al, 2008b), and freed the professional nurses to do more technical duties such as initiation of treatment and blood testing (ibid.)

The NGO sector has contributed to expansion of HIV and AIDS services in a number of countries by adopting task shifting strategies. The AIDS Support Organisation (TASO) in Uganda used task shifting to expand its capacity to deliver HIV and AIDS services by creating non-professional HCWs such as field officers and community health workers, including PLHA as expert patients (WHO, 2006a; Benavides and Caffery, 2007, Capacity Project, 2007a; Mermin et al, 2008). Consequently, nursing duties, such as HIV testing, counselling and education on ART, monitoring and supporting adherence to ART, triage and taking vital signs, have been shifted to community health workers, who include HIV+ patients as expert patients (WHO, 2006d).

In Malawi, MSF developed a team of 465 community volunteers, 1,362 trained family caregivers and 9 community nurses who provided care and support to 5,106 HIV-positive individuals during a two-year period. Forty-one percent of HIV tests performed at VCT sites were conducted by lay community counsellors (Zachariah et al, 2006; 2007; Calmy et al, 2004). In South Africa, task shifting enabled rapid expansion of access to comprehensive HIV and AIDS care and treatment in rural clinics with involvement of MSF (Fredlund and Nash, 2007; Bedelu et al, 2007).

Task shifting has implications for the distribution of HCWs and the skills mix within the health system, with greater involvement of other categories of lay health workers. We did not find any reports linking task shifting to

the retention of HCWs, but one MSF report (2007) cites a nurse in Lesotho as saying:

> *I even considered leaving the field because I had the feeling I was just learning how to move patients from the consulting room to the mortuaries. Now that the ARVs are here, all that has changed. I feel motivated again that there is hope.*

It is possible that such sentiments are shared by other HCWs who are involved in task shifting.

Service scale-up has led to expanding the roles for lay health workers, and the need for new categories, or cadres, of health workers. An example of a new cadre are the field officers used by TASO in Uganda (Benavides and Caffery, 2007; Buchan and McCaffery, 2007; Stilwell, 2007) – see *Box 5* for more details. Other examples include the accompagnateurs in Haiti (Farmer et al, 2001; Koenig et al, 2004), the activistas in Mozambique (Marrazi et al, 2005; UNAIDS, 2008) and the primary counsellors in Zimbabwe (UNAIDS, 2008).The new cadres ease the shortage of HCWs and free skilled professionals to manage those with severe disease or complications (Benavides and Caffery, 2007; WHO, 2006d; Schneider et al, 2006, 2008b; Gilks et al, 2006).

Box 5: Development of the TASO field officer cadre in Uganda

Uganda lowered its HIV prevalence from around 30% in the early 1990s to the current 6.4% through the use of innovative approaches. TASO has pioneered some of the innovations, an example being field officers, a new cadre of HCW. What are field officers? Here is a short description of this cadre:

- **Recruitment and deployment:** Non-health professionals with social sciences and education backgrounds are recruited. Deployment is based on individual preference and fluency in the local language. Recruits then undergo a four-week course, followed by regular professional development and in-service training and feedback from supervisors.
- **Duties:** Field officers are responsible for counselling, home-based ART care and ensuring adherence to treatment. They free up other HCWs to care for those with more severe diseases and complications.
- **Performance and support:** Performance appraisal is based on individual work plans, and rewards are given for good performance. A policy is in place to protect HCWs against accidental exposure to HIV, including free post exposure prophylaxis (PEP).
- **Comprehensive human resources management:** An integrated management approach ensures that field officers receive support from staff working in other TASO programmes. Cultural sensitivity to sexual

harassment is encouraged, while conflicts and other staff relations issues are dealt with by using informal dispute resolution mechanisms, namely meetings with the senga (senior aunt) and kojja (senior uncle). Stress relief is offered through social retreats, safaris and annual leave. Regular staff meetings are held to air grievances.

- **Retention strategies:** To stem staff attrition to other organisations or other TASO programmes, TASO focused on recruiting candidates with no formal health sector background, improved incentives such as field and transportation allowances and refunds for medical expenses, gave good performers receive extra salary increments after probation and supported staff in developing their careers through external training and professional development opportunities.
- **The result:** High retention of field officers, with high job satisfaction. Many of them resist active recruitment by other organisations. The Uganda MOH supports TASO's approach and is willing to build on the lessons learned from the TASO ART programme when adapting it for the public health sector.

Sources: Benavides and Caffery, 2006; Stilwell, 2007, Capacity Project, 2007a; UNAIDS, 2008b.

Another type of lay health worker is the expert patient. An expert patient in this context is a person living with HIV or AIDS (PLWHA) trained to take control of their health by understanding and managing their condition. Expert patients are able to support peers (WHO, 2008) and, in many programmes, PLWHAs are trained to offer support in triage, education, counselling and training of HCWs (WHO, 2008). There were examples of the use of expert patients in a number of poor countries, including Uganda, Ethiopia, South Africa, Zambia, Swaziland and Lesotho (Wendo, 2005, IOL HIV-Aids, 2006), and even in resource-rich countries (Clift et al, 2004). Kenya's integrated HIV-reproductive health programme employs PLWHAs as staff and managers, helping to reduce the stigma and discrimination associated with HIV (Wools-Kaloustian et al, 2006; WHO, 2006). In Malawi, PLWHAs are trained as counsellors to work with other lay HCWs to manage opportunistic infections, symptomatically treat diarrhoea and candidiasis, administer prophylactic co-trimoxazole, and refer those with risk signs for a high level of care (Zacharriah et al, 2006a; 2007). The expansion of HIV and AIDS services in Swaziland has involved the recruitment of volunteers, including PLWHAs (IRIN, 2008).

Though the findings cited above are from a variety of sources, including reports descriptive of project activities and research reports, the data does not seem to vary qualitatively by type of document reviewed. The new cadres

of staff fill relatively new roles, for example providing counselling and drug adherence support, that are critical to HIV and AIDS services and free health professionals to carry out technical duties. From this perspective, they may improve the work experiences of health professionals by alleviating the workload, stress and burnout. To the best of our knowledge there are no reports on the contribution of new cadres to the retention of HCWs, within HIV and AIDS programmes or the whole health service. It is difficult to reach any conclusions because new cadres are introduced at the same time as other measures such as facility refurbishment, promotions and financial incentives.

3.2.2 HCW distribution and retention

HIV and AIDS programmes attract HCWs using both non-financial and financial incentives, with measures ranging from proper organisation of the programmes, building team spirit and greater publicity for the services, to a variety of direct incentives for HCWs (Schneider et al, 2008; Abdullah, 2004). Commonly used incentives are discussed below.

A WHO report on site visits in seven countries (Botswana, Cambodia, Kenya, Malawi, Thailand, South Africa and Uganda) found that all countries had non-financial incentives such as opportunities for training and professional advancement, encouragement to join research teams, write journal articles and attend international conferences, motivation through charismatic leadership and self-fulfilment associated with being part of a successful team (WHO, 2004b). Countries with a national commitment to provide ART through the public sector, and where public employee salaries were relatively good, namely, Botswana, South Africa and Thailand, offered no specific financial incentives, while where ART was piloted by NGOs with external funding, in countries with poor salaries, namely, Cambodia, Kenya, Malawi and Uganda, HCW salaries were supplemented. HCWs employed by NGOs were paid at rates considerably higher than those offered by the government, and government staff engaged by the projects were paid extra (WHO, 2004b). In Malawi, the MSF project at Thyolo District Hospital hired its own staff at higher-than-government rates, and also paid salary supplements to government health staff in the district in order to motivate HCWs and minimise discrimination between HCWs of the same category (WHO, 2004b; Zachariah et al, 2006).

GHARP employees in Guyana receive higher take-home pay than their counterparts employed by government, which was a source of disharmony among HCWs (Morgan, 2005). Similarly, the perceived higher pay of ART HCWs employed by NGOs in South Africa is cause for discontent among the government employees in the same facilities, as discussed above (see *Box 2*). In some Global Fund supported programmes, it has been reported

that workers tended to move into higher-paid disease-specific positions, which had the potential to weaken community-based services outside target diseases (Stillman and Bennet, 2005; Dräger et al, 2006).

Global Fund resources have been used for non-financial incentives in a number of countries. Ethiopia used Global Fund resources to build staff houses at ART and PMTCT sites in 50 remote rural facilities, increase, retain and improve productivity of health workers by expanding night time and emergency services, introduce clinical mentoring and supportive supervision in 350 hospitals and health centres by training and deploying 1,400 HIV and AIDS clinical mentors and providing mobile phones to mentors and mentees, and introduce telemedicine services to selected hospitals (HWAI, 2008). Rwanda's Round 5 Global Fund proposal included non-financial incentives such as support for pre- and in-service training and the provision of electricity to 74 health centres (HWAI, 2008). And Ghana's Round 5 HIV and AIDS proposal addressed motivation for laboratory personnel using a combination of training and capacity development through collaborative research (Dräger et al, 2006). Use of Global Fund resources for HCW incentives is likely to expand with new requirements for all Global Fund applications to cover health systems strengthening.

The World Bank-MAP contributed to health-systems s trengthening through incentives such as training of HCWs in service delivery, improved laboratory infrastructure and other health system facilities, and extensive workplace education programmes (Gõrgens-Albino et al, 2007). In Tanzania, the Benjamin Mkapa Fellowship programme uses a combination of financial and non-financial incentives, which are summarised in *Box 6*.

Another example of a non-financial incentive for HCWs in HIV and AIDS programmes is the rehabilitation of facilities for ART such as in rural Lusikisiki, South Africa (MSF, 2006; Bedelu et al, 2007) and in Rwanda, where project funding is used to refurbish clinics and buy equipment (Furth et al, 2006). In Malawi, the MoH HIV Unit issues quarterly certificates for excellent performance in ART and recognition of good service, which has become a popular and inexpensive way to motivate staff (Muula et al, 2007). Some programmes offer treatment and care for HCWs, which has ripple effects in the wider system through higher professional satisfaction and morale, lower rates of burn-out, less attrition and more retention (Uebel et al, 2007).

Box 6: The Benjamin William Mkapa HIV/AIDS Foundation (BMAF), Tanzania

Tanzania is a resource-poor country with a generalised HIV epidemic (prevalence 6.2%) and a severe HCW crisis, especially in rural areas. The BMAF aims to place skilled HCWs in rural facilities, using financial and non-financial incentives. The BMAF:

- is supported by NORAD and the Clinton Foundation and focuses on rural, underserved areas;
- recruits and deploys Mkapa fellows using a fast-track system – between July 2006 and September 2007, 69 Mkapa fellows (26% from the private sector, 17% from NGOs, 11% fresh graduates, 9.6% unemployed HCWs, 2.6% from faith-based organisations (FBOs) and 0.7% retirees) were deployed in 23 districts;
- offers the fellows a package of financial incentives (including relocation allowance, enhanced salary, housing allowance, end of service gratuity and social security benefits such as social health insurance) and non-financial incentives (including short-term placement in the hardship area, induction training on comprehensive management of HIV/AIDS, computers, mobile phone with airtime, refresher courses and membership of the Mkapa Fellows Alumni Association); and
- has contributed to infrastructural improvements in some districts, such as installation of solar power and the purchase of vehicles, and supported district health teams to strengthen comprehensive HIV/AIDS prevention, treatment and counseling. This has led to quality improvement of HIV/AIDS care and treatment clinics and increased the number of HIV/AIDS delivery sites, even at lower levels of the health system.

The fast-track hiring and retention mechanisms used by BMAF have been adopted by the national and district level emergency hiring plan for the Tanzanian health sector. The different remuneration packages between the Mkapa Fellows and other HCWs are, however, a source of disillusionment among staff at the facilities where the fellows are posted.

Sources: Mkondya-Senkoro et al, 2007; Prytherch and Merkle, 2007.

Financial incentives have the potential to attract and retain HCWs in the HIV and AIDS programmes, but their selective application only to those working in HIV and AIDS programmes may lead to negative effects on other HCWs. Indeed, even non-financial incentives, such as facility improvements, when applied only to the unit housing the HIV and AIDS programmes, may make

the rest of the establishment less attractive to work in. Incentives should therefore be managed carefully, for instance by ensuring that all HCWs or entire facilities are covered.

3.2.3 Health worker HIV and AIDS treatment programmes

The need to treat HIV-infected HCWs was born out of the urgency to mitigate the triple threat of AIDS on HCWs (Ncayiyana, 2004; Chen and Hanvoravogchai, 2005). Most countries and HIV and AIDS programmes have measures to prevent occupational HIV infection, through universal precautions and post-exposure prophylaxis (PEP) (such as Gounden and Moodley, 2000; Gent and Zuckerman, 2003; Hiransuthikul et al, 2007). However, there was a paucity of reports on preventive services for health workers in HIV and AIDS programmes, and how such services may have affected HCW retention. Reports on the TASO field officers mention access to PEP as one of the benefits they receive (Benavides and Caffery, 2007, Stilwell, 2007), but it is not clear whether or not those measures have any implications for field officer retention.

Some countries offer ART to HCWs through the public system, using the same clinics as the rest of the population. This is the situation in Uganda (Kinoti and Tawfik, 2005), Malawi (Makombe et al, 2007), and South Africa (Mapadimeng MY, personal communication, 2008). Evidence from Malawi shows that more than 1,000 HCWs were on ART in the public sector in 2006, and at least 250 HCWs were saved - equivalent to the number of HCWs needed to provide ART countrywide (Makombe et al, 2007). A decline in deaths has been noticed through treatment programmes for HCWs in South Africa and Botswana (Uebel et al, 2007). A disadvantage of public sector provision of ART for HCWs has been demonstrated in Botswana and Swaziland, where HCW reluctance to seek treatment at public facilities was a barrier to access to treatment due to stigma and fear of disclosure to colleagues (Baleta, 2008; Uebel et al, 2007).

Self-stigma, or internal stigma, and the fear of disclosure to colleagues may inhibit even HCWs with access to private sector services from seeking care (Cameroon, 2006; Makombe et al, 2007; Nematswerani, 2008; Uebel et al, 2007). The provision of ART to HCWs away from general ART clinics or staff clinics, such as through dedicated HCW treatment programmes, is exemplified by the Swaziland Wellness Centre of Excellence (ICN, 2005; Dambisya 2007a), and staff care programmes at McCord Hospital in Durban (South Africa), Mseleni Hospital in northern KwaZulu-Natal (South Africa) and the Tshedisa Institute in Gaborone, Botswana (Uebel et al, 2007). The programmes offer convenient, confidential and holistic care in a secure environment for HIV-infected HCWs and HCWs experiencing burnout or emotional exhaustion by caring for HIV-infected patients (Uebel et al, 2007; Dambisya, 2007a).

Both McCord and Mseleni hospitals reportedly noted great improvements in morale among all staff due to the improvement observed in those on ART. Disclosure of HIV status by some of the staff receiving ART encouraged others to undergo testing and start receiving treatment (Uebel et al, 2007). The Tshedisa Institute in Gaborone, Botswana, is a stand-alone, independent, privately funded health care facility which offers comprehensive services to HCWs who need HIV treatment and care but are afraid to seek treatment from the in-house staff clinic at Princess Marina Hospital (ibid). *Box 7* provides lessons learnt from HCW ART treatment programmes.

Box 7: Lessons learnt from HCW ART treatment programmes

What lessons have been learnt from HCW ART treatment programmes? Programmes indicate the following:

- HCWs carry a tremendous burden, as well as the silence, fear and hopelessness surrounding a diagnosis of HIV infection in patients or HCWs themselves (internal stigma).
- Programmes tend to succeed when they involve well-respected and trusted staff members as counsellors, clinicians and advocates for the programme.
- It is important to recognise the need for a specific health care programme for HCWs, acknowledging the unique stress and the barriers to accessing HIV care faced by HCWs.
- Specific HCW treatment and care programmes should be convenient and offer integrated, comprehensive services.
- The programmes may improve staff morale through observable improvement in HCWs on ART.
- The programmes may lead to decreased stigma and a greater willingness to discuss HIV infection status and treatment.
- Incorporating HIV services for HCWs into comprehensive HCW health care services instead of within specialised ART clinics normalises this disease and reduces stigma.
- HCWs will access HIV testing, care, and treatment if it is offered in a manner that addresses the unique barriers that they face.

Source: Uebel et al, 2007.

The Swaziland Wellness Centre of Excellence for HCWs in Mbabane aimed to overcome stigma and isolation, and keep workers healthy and happy in their jobs, thereby strengthening the health workforce (ICN, 2005). A recent report attributes the decline in attrition of nurses from Swaziland to the fact that they can now access treatment in their own clinic (Baleta, 2008).

This has served as a model for Lesotho, Zambia and Malawi: Lesotho has reportedly established a similar centre, while Zambia and Malawi are in the process of setting up theirs (Baleta, 2008).

There were apparently no reports on access to HIV and AIDS care by HCWs through private financing schemes (such as medical insurance). A report from Malawi makes reference to this, but adds that the private sector is fairly underdeveloped in Malawi (Makombe et al, 2007). Many HCWs have medical insurance in South Africa, especially through the Government Employees' Medical Scheme (GEMS) (Dambisya and Modipa, 2008), and so may be expected to use private services; there have apparently been no reports to this effect as yet. Uebel et al (2007) observe that, in Botswana, HCWs with access to private health insurance were reluctant to go for treatment at private facilities, preferring instead the dedicated staff clinic, Tshedisa Institute.

Earlier reports mentioned the adverse effects of HIV and AIDS on HCWs, as cited in the introduction. Since the inception of ART, the trend seems to have changed to emphasise higher demands for care and treatment, with less emphasis on the attrition of HCWs. We did not find any reports directly addressing the impact of HIV and AIDS programmes on HCW attrition, but there is indirect evidence to that effect. HCW treatment programmes for HIV-infected HCWs have been shown to contribute to better survival and retention of treated HCWs, with fewer deaths and sick HCWs returning to work (Uebel et al, 2007; Makombe et al, 2007; Baleta, 2008).

3.2.4 HCW attrition

As mentioned above, one way in which HIV and AIDS programmes are mitigating HCW attrition is by saving infected HCWs and keeping them working within the health system. Treatment should also lower absenteeism through illness and care for family members who are sick; and fewer deaths in the population mean lower HCW absenteeism due to fewer funerals to attend (Ndyanabangi et al, 2004 cites attending funerals as a common reason for absenteeism).

HIV and AIDS programmes may affect attrition by shifting perceptions of work on AIDS from one of burdens and burnout to one of prestigious and meaningful work (WHO, 2004b). The MSF-quoted nurse in Lesotho makes this point quite well: with the ARVs she is motivated again and has hope for her patients (MSF, 2007). Abdullah (2004) credits HIV and AIDS programmes with attracting and retaining HCWs in the public health sector. Some reports, however, indicate that HIV and AIDS programmes attract staff from other programmes (such as Bennett et al, 2006; Drager et al, 2006; Van Rensburg et al, 2008) – some state this as a matter of fact (Health Alliance

International, 2008) but without giving supporting data. Efforts to mitigate these losses include the recently developed (International) NGO code of conduct for health system strengthening (Health Alliance International, 2008, vide infra). However, we did not find any studies on the overall effects of such HCW movements on the health system or plans for HCWs, beyond the fact that HIV and AIDS programmes are attractive for HCWs.

3.2.5 Human resources management systems, including HRIS

HIV and AIDS programmes impose demands on health management information systems (HMIS), human resource management (HRM) and human resources information systems (HRIS). Brazil's ART scale-up involved strengthening the country's information management and information technology to ensure readily available, accurate data on all aspects of drug delivery (Lima et al, 2004). Two computerised systems were established, the *Sistema de Controle Logistico de Medicamentos*, or System of Logistical Control of ARV (SICLOM) (Levi and Vitoria, 2002), and the *Sistema de Controle de Exames Laboratoriais*, or Systems for Control of Laboratory Exams (SISCEL) (Lima et al, 2000), as described further in *Box 8*.

Box 8: Brazil's computerised ART systems: SICLOM and SISCEL

Brazil launched free universal access to ART through its public health system in 1996. In 1998, the National AIDS Programme in Brazil developed a computerised system to control drug logistics, namely distribution, stock information and tracking ARV prescriptions. Each drug dispensing unit has at least one computer and one dedicated attendant staff to run SICLOM, while enrolled patients are tracked through SICLOM. Prescription information from each drug dispensing unit is sent daily to the office of the National AIDS Programme in Brasilia, where the data is synchronised and analysed. SICLOM detects and rejects prescriptions that are outside the Brazilian guidelines for ART. SICLOM data is also used to identify and indicate areas for further training of HCWs. SISCEL data from the laboratories is also sent to the National AIDS Programme, and clinicians can access the database because SISCEL is integrated with SICLOM.

Sources: Galvão, 2002; Lima et al, 2000.

Programmes that adopt the integrated approach strengthen both primary health care (PHC) and the ART programme (such as Abdullah, 2004; Bedelu et al, 2007). Some ART programmes offer comprehensive HIV care and treatment at both community clinics and the main hospital through an integrated network of primary health care, with strengthening of the system through professional supervision by hospital staff (such as Fredlund and Nash, 2007; Barker et al, 2007).

An example of effective HRM initiatives is the TASO ART programme which caters for almost 9% of Ugandans with HIV and AIDS receiving ART (Stilwell, 2007). Service scale up to that level involved comprehensive initiatives, including continuing professional development, supportive supervision and in-service training (Benavides and Caffery, 2006; Stilwell, 2007).

PEPFAR funds activities such as developing national plans and M & E systems, expanding supply chains and supporting community-based organisations (OGAC, 2007; 2008). In Zambia, PEPFAR-supported HRM initiatives include:

- capacity building and innovative operations management at the MoH;
- development of health information systems, data use and information assessment capacity;
- partnerships with the private sector for human resource training and service provision;
- performance-based and other incentive schemes; and
- the integration of HIV and AIDS services into broader health systems (HS2020, 2007).

HIV and AIDS services in Rwanda illustrate the challenge of a vertical approach, with HIV and AIDS data managed separately from the rest of the health information systems (see *Box 9*).

Box 9: How are HIV and AIDS Services organised in Rwanda?

Rwanda is a low-income country with a generalised HIV epidemic (prevalence at 3%), and a high reliance on external funding for HIV/AIDS services (only 5.1% from government sources). HIV/AIDS services are centrally coordinated by the Treatment Research on AIDS Centre (TRAC) of the Ministry of Health (MoH). The public health system consists of MoH facilities and agrée sites managed by religious institutions, while some donor agencies directly provide HIV/AIDS services. Health districts are the operational units with district teams trained to supervise HIV/AIDS activities, but HIV/AIDS services are not incorporated into the regular MoH supervision system, and little technical supervision of HIV/AIDS services takes place at facility level. HIV/AIDS services coordinated by TRAC include decentralised VCT, PMTCT and STI services, epidemiological surveillance and research, overseeing the Rwandan Centre for AIDS Information (CRIS) and managing HIV/AIDS service statistics. The Directorate of Health Planning, which manages the national health management information system, HMIS (*Système d'Information Sanitaire*), is not involved, and so HIV/AIDS information is not integrated with other health services data.

Source: Furth et al, 2006;

The information presented in this section suggests that HIV and AIDS programmes increase the pool of HCWs through the recruitment of additional HCWs or the creation of new cadres and the use of expert patients. Treatment improves survival of infected HCWs and thus their retention and functioning within the health system as functional HCWs. The funding that HIV and AIDS programmes attract may attract HCWs from other programmes (Van Rensburg et al, 2008). Task shifting approaches, coupled with life-saving ART, seem to motivate health workers to stay within the health system (MSF, 2007). Anecdotal evidence suggests that some HCWs may be retained in the health system because of HIV and AIDS programmes. Resources from HIV and AIDS funds are used to expand training capacity, especially for in-service training. The extent to which this affects pre-service training is yet to be documented in terms of the cadres that have been trained. In conclusion, Table 2 summarises the issues raised in this section.

Table 2: Impact of HIV and AIDS programmes on health worker distribution and retention

Initiatives and incentives	Examples of initiatives and incentives
Scaling-up initiatives	***Pre-service training:*** PEPFAR support in Zambia; World Bank-MAP support for the training of >500,000 HCW in service delivery in focus countries; Development of training curricula through PEPFAR support; Improved pre-service training in Kenya and Malawi with Global Fund support; Pre-service training of health professionals, administrators and supervisory staff in Rwanda; Field Officer training by TASO in Uganda; Improved curriculum content on HIV and TB in Tanzania; and HIV and AIDS awareness educators in Angola (under Caritas).
	In-service training: Cross-training of HIV and TB staff leading to increased diversity of roles and pooling of staff, such as Khayelitsha, South Africa; Global Fund support for programmes for increased skills of HCWs; Development of training curricula through PEPFAR support; Continuing in-service training by DREAM in Mozambique and TASO in Uganda; World bank MAP support in 64 programmes; Training biomedical engineers on maintenance of laboratory equipment in Ethiopia; Training shopkeepers in good drug dispensary practices in Tanzania; Training of peer educators and counsellors (Zanzibar); Nearly 2.6 million training encounters sponsored by PEPFAR in 2006 and 2007.

Scaling-up initiatives	***Hiring additional HCWs:*** Hiring plan in Namibia (MoHSS, CDC and PEPFAR); Hiring of retired HCWs – in Guyana (GHARP) and Tanzania (Mkapa Fellowship); Attraction of HCWs from private sector to HIV and AIDS programmes (Mkapa Fellowship); Additional resources for recruiting more workers, such as Malawi's emergency HRH plan; Hiring of data clerks in Ethiopia; recruitment of supervisory staff for health financing, QA and M&E in Rwanda; Recruitment of additional 155 staff in Kenya; Hiring of management personnel; recruitment of HCWs to rural areas by Mkapa fellowship in Tanzania.
	Task shifting: In Uganda where clinical tasks were shifted to nurses and nursing tasks shifted to lay counsellors, community ART supporters and expert patients through the IMAI framework; Malawi extensively uses community volunteers, health surveillance assistants and family caregivers; Kenya employs PLHA as staff and managers; Promotion of the 'Network Model by PEPFAR; Development of simplified procedures which can be implemented at lower levels of care by MSF; and IMAI implemented in 27 countries in Africa plus India, China and Vietnam.
	Creation of New cadres: Field Officers in Uganda; Community workers in Swaziland, Botswana; Lay counsellors in Malawi; Expert patients as care aides in Ethiopia, Kenya, Malawi and Uganda, *activistas* in Mozambique; *accompagnateurs* in Haiti; and Volunteers in Swaziland; and Peer educators in most countries.
Specific Incentives for HCW in HIV and AIDS pro-grammes	***Financial incentives:*** Better pay, relocation & housing allowance, gratuity, Stipends and allowances offered by the Mkapa fellowship, Tanzania; Salary supplements by MSF projects in Malawi; Global Fund projects salary top-ups; Better pay and appointment at higher grade by FPD in South Africa; Performance-based pay systems in Rwanda; PEPFAR supported incentives for managers and staff at ART facilities in Zambia; Performance based incentive schemes; Increased remuneration of staff trained and experienced in HIV care (MSF, SA).
	Non-financial incentives: Expansion of night time and emergency services, staff housing, clinical mentoring and supportive supervision, provision of mobile phones and telemedicine services in Ethiopia; Mkapa Fellowship programme offers training, mobile phones, computers and limited stay posting; Supportive supervision, provision of motor cycles, training opportunities and opportunities for skills building in TASO programme in Uganda; Recognition certificates in Malawi; Using prestige and clout of HIV programmes to attract and retain HCWs to health system in the Western Cape. South Africa; Training and capacity development in Ghana; Accreditation of staff trained and experienced in HIV care, and better communication through e-mail list (IHI in South Africa)

Specific Incentives for HCW in HIV	***Rehabilitation of facilities:*** Rehabilitation and upgrading of health service delivery facilities by supported by. PEPFAR and Global Fund in many countries; Electrification of facilities in Malawi and Rwanda with Global Fund support; Solar power installation through Mkapa Fellowship programme in Tanzania; Rehabilitation of PHC facilities in Kenya; Improvement of laboratory equipment and provision of staff residential quarters in Ethiopia; Expansion of laboratory services and facilities; Improved laboratory infrastructure thru WB support.
Health worker HIV and AIDS treatment & prevention programmes	***Public sector provision of ART:*** Workplace HIV programmes through the public system in Malawi and Uganda.
	Dedicated staff programmes: Tshedisa Institute in Botswana; Mseleni and McCord Hospitals in South Africa, and the Mbabane Wellness Centre of Excellence in Swaziland; Lesotho and Zambia planning to emulate Swaziland.
	Access to private health care through medical insurance: E.g. the majority of South African HIV infected health workers who have medical insurance through GEMS.
	Prevention services: Comprehensive workplace HIV and AIDS Programmes in Botswana, Kenya.
Human resource management systems, including HRIS	Support from World Bank-MAP for management information systems in Brazil; Global Fund support for health planning and management capacity in Kenya; PEPFAR support for improved supply chain management in several countries; Global Fund support for capacity building of district health management teams in Malawi and Kenya; Global Fund support for studies on HCW motivation in Kenya; Strengthened human resource management in Ethiopia through donor support; PEPFAR support for national strategies through innovative approaches to training and retention in many countries; PEPFAR support for development of health information systems, data use and information assessment capacity in Zambia; Better data collection and feedback systems (IHI programmes in South Africa); and Comprehensive HRM system developed by TASO in Uganda.

3.3 Wider health system effects of HIV and AIDS programmes

The ART scale-up and roll-out programmes have exposed infrastructural and other health system deficits within the public health sector in many countries and emphasised the need to strengthen existing fragile health systems (Loewenson and McCoy; 2004; Gilk et al, 2006; WHO, 2006a; Barker et al, 2007; MSF, 2007; ITPC, 2008). HIV and AIDS programmes have addressed health system challenges through influencing policy, providing additional financing, development of human resource strategies, service delivery practices and through fostering partnerships (Barninghausen et al,

2007). Comprehensive evidence in this regard has been provided by the International Treatment Preparedness Coalition (ITPC) in a recent study in Argentina, Brazil, Dominican Republic, Uganda, Zambia and Zimbabwe, which concluded that:

- *'…… the HIV and AIDS response to date has had far-reaching positive impacts on health care in many settings: building infrastructure and systems, raising the bar on quality, extending the reach of health care to socially marginalised groups, and engaging consumers.*
- *…… significant new investments in HIV and AIDS services have revealed existing fragilities in health systems, and in some cases have placed increasing burdens on these systems by expanding demand and stretching already overextended human resources.*
- *….. the push for HIV and AIDS treatment access has not been just about the money. Although these efforts have brought considerable new financing, the mobilisation of activists and health care consumers themselves has also forced global and national leaders toward a more vigorous sense of accountability and urgency.*
- *In Argentina and Uganda, scale-up of HIV and AIDS services has led to improvements in several aspects of health care, including how services are delivered and who receives care. In Brazil, HIV and AIDS services have been scaled-up in conjunction with the expansion of general public health care, though clear and distinct benefits for maintaining dedicated HIV-related services continue to be identified.*
- *In the Dominican Republic and Zambia, HIV and AIDS services have established models of care that with adequate resources could be applied more broadly. In Zimbabwe, HIV and AIDS funding has become a 'lifeline' for a health system on the verge of collapse.' (ITPC, 2008).*

The wider health systems effects are disaggregated in *Sections 3.3.1 to 3.3.4*.

3.3.1 HIV and AIDS policy

HIV and AIDS policy has been influenced by international goals and initiatives such as the Millennium Development Goals (MDGs), the '3 by 5' plan, the 'Three Ones', the goal of universal access to treatment and care, and the UNGASS Declaration on HIV and AIDS. The IHP+ initiative, which aims at policy coordination among global funding agencies, not only for HIV and AIDS but for the whole health sector, arose from international efforts to reduce fragmentation of health systems through vertical programmes (IHP+, 2007; 2008). Another policy influence has been the

adoption of coordinated funding mechanisms, such as support for national HIV and AIDS programmes instead of project support and the pooling of funds through SWAps and budget support instead of programme funding (UNAIDS, 2008b). However, in about half the countries with fund-pooling mechanisms, donors still insist on separate funding (UNAIDS, 2008b).

The World Health Assembly HR resolution (2005) recognised the shortage of HCWs in developing countries as a major obstacle to addressing HIV and AIDS. This echoed the stance taken by AU health ministers (2005) to the effect that commitment to universal access to treatment and care, as well as achieving the MDGs, would have to involve the preparation and implementation of costed HRH development plans. In Southern Africa, the objectives of the SADC HRH Plan include the management of the impact of HIV and AIDS on HRH in the region. The ECSA HC HRH Strategic Plan (2008-2012) recognises the needs for HIV services and the impact of HIV on the health sector, and calls upon member states to mitigate the impact of HIV and AIDS on the health workforce (ECSA HC, 2008).

Some countries have undertaken HIV and AIDS mainstreaming to promote an integrated approach by linking HIV and AIDS to programmes for sexual and reproductive health, human rights, TB and other communicable diseases (Wools-Kaloustian et al, 2006). Lesotho, for instance, has adopted a multisectoral approach to HIV and AIDS education which incorporates issues of food security, counselling and social responsibility (Loewenberg, 2007). In Guinea, HIV prevention programmes are integrated into all developmental projects, such as building schools, roads and infrastructure for water distribution (Loewenberg, 2007).

We found evidence suggesting that HIV and AIDS policy may be influenced by civil society, lobbyists and pressure groups, which in some instances may not take into consideration comprehensive HRH issues (MSF, 2007; AIDS Foundation SA, 2008). That seems to have been the case in South Africa, where the Health Department apparently did not consider the impact of HIV and AIDS on HCWs when formulating its HRH strategy, despite evidence that HIV and AIDS was prevalent among HCWs (NDoH, 2004; Sishana, 2007, ALP/TAC, 2005). In that instance, the Health Department appears to have been under the influence of the HIV 'denialist' school of thought and therefore disregarded the impact of HIV and AIDS on HCWs (Sishana, 2007). However, the ITPC (2008) credits the mobilisation of activists and health care consumers with forcing global and national leaders toward a more vigorous sense of accountability and urgency.

HIV and AIDS has influenced changes to HRH policies and practices to accommodate the need to deliver HIV and AIDS services through HCWs

other than physicians. The relaxation of requirements for physicians to initiate ART, for example in South Africa and Lesotho (MSF, 2007; Bedelu et al, 2007), the adoption of task shifting practices and the use of lay health workers and expert patients involve changes in the policy and regulatory framework to accommodate such skills mix (MSF, 2007; WHO, 2008).

3.3.2 Financing

The changes in policy and approach have been accompanied by changes in the funding for HIV and AIDS programmes (Bartlett et al, 2006). GHIs (such as the Global Fund, PEPFAR and the World Bank) currently focus on health systems strengthening and a public health approach to the provision of HIV and AIDS services. At its inception in 2002, the Global Fund was reluctant to fund health system components or HCWs but it now not only accepts, but insists, that proposals include health systems strengthening components that have positive sector-wide effects (Drager et al, 2006; Loewenberg, 2007).

PEPFAR has supported general health system development, for example in Namibia, Zambia and Kenya (Adano, 2006, HS2020, 2007; Islam, 2007). The call now is for PEPFAR to adopt measures that enable harmonisation of its activities within health systems at country level (Sepuldeva et al, 2008). The World Bank-MAP has moved away from funding verticalised programmes (Gorgens-Albino et al, 2007) to a more integrated and harmonised one through the Agenda for Africa strategy to be implemented in collaboration with donors (World Bank, 2008).

Many of the countries with generalised epidemics rely on external funding, as summarised in *Table 1*. That poses challenges of fragmentation, with different demands from different donors (Bartlett et al, 2006). The international community has come up with initiatives to coordinate the aid effort, notably the Global Implementation Support Team (GIST) which involves the Global Fund, UNAIDS, UNFPA, UNICEF, WHO, the World Bank, UNDP, GTZ, the United States Government, the AIDS Alliance, International Council of AIDS Service Organizations (ICASO), Interagency Coalition on AIDS and Development (ICAD), and the International Centre for Technical Cooperation on HIV and AIDS (ICTC) of Brazil. It has been found that the GIST mechanism has improved coordination among multilateral funders and technical agencies, and has helped drive reforms at the global level to increase the efficiency and impact of multilateral support to countries (Attawell and Dickinson, 2007). And yet, about half the countries that receive donor funds report that not all external partners align their activities with national strategies (UNAIDS, 2008b).

The ITPC study in Zimbabwe concluded that HIV and AIDS funding has been critical to the survival of the public health sector (ITPC, 2008). Both

the World Bank and UNAIDS note that funding from GHIs, such as the Global Fund and PEPFAR, have enabled countries to leverage additional health sector funding (World Bank, 2008; UNAIDS, 2008b). A case in point is the Malawi Emergency HR Plan which was funded by several development partners, following the commitment made by the Global Fund (Palmer, 2006).

3.3.3 Human resources for health strategies

Kober and van Damme (2004) poignantly ask: *'Scaling up access to antiretroviral treatment in southern Africa: who will do the job?'* The urgency to meet HIV and AIDS goals such as the '3 by 5' and universal access has focussed attention on the HCW crisis, and led to initiatives such as task shifting to boost stretched health systems (Samb et al, 2007). In Haiti, an integrated approach, based on experience with DOTS for TB services, is used to overcome the shortage of health workers to deliver different services (Mukharjee et al, 2003; Koenig et al, 2004; *Box 10*).

Box 10: The rural experience of Haiti

Haiti is a resource poor country with low HCW density, and many under-served communities, and a generalised HIV epidemic. Haiti has had a very successful DOTS programme for TB, which formed the basis for the scale-up of ART in rural areas.

HAART was started through a comprehensive programme of HIV, tuberculosis (TB), sexually transmitted disease (STD) treatment and prevention, and women's health services at four sites in the first year. At each site, the medical facility was renovated, additional staff were hired as needed, and a network of accompagnateurs (CHWs) was established throughout the surrounding villages to serve as a link with the community, and to provide directly observed treatment (DOT).

In the first year of programme scale-up, over 8000 patients were followed up for HIV, and over 1050 were treated with DOT HAART. Adherence to HAART was very high, and clinical outcomes were excellent: all patients responded with weight gain and improved functional capacity, and fewer than 5% required medication changes due to side effects; and 86% had undetectable viral loads.

Conclusion: Community-based care of AIDS was highly effective in rural Haiti; and similar approaches could be used for resource-limited settings to access life-saving HAART.

Source: Based on abstract by Koenig et al, 2004.

According to UNAIDS: *'In the last six years, the number of people receiving ARVs in low- and middle-income countries has increased ten-fold, reaching almost 3 million people by end of 2007'* (UNAIDS, 2008b). That increased access in ART services has been accompanied by increased health service coverage for other services as well in countries like Namibia, Kenya, Rwanda, Zambia and Haiti (UNAIDS, 2008b; Family Health International, 2007; Farmer et al, 2003; Akileswaran et al, 2005).

A successful model of scale-up of HIV and AIDS care in the public health system by focusing primarily on optimisation of existing health infrastructure without additional human and physical resources is the one used by the Institute for Healthcare Improvement (IHI) in collaboration with some provinces in South Africa (Barker et al, 2007). However, there are reports on the negative impact on service delivery in the health system (Bennet et al, 2005; Health Alliance International, 2008). For example, TB and HIV and AIDS programmes remain separate in most countries, though there are attempts to have ART roll-out integrated into general primary care (Friedland et al, 2007; Coetzee et al, 2004).

Approaches that lead to verticalisation or fragmentation of service delivery tend to weaken the system. The literature has examples of both effects – integration seen in Kenya (Wools-Kaloustian et al, 2006), Uganda (Madra, 2005) and South Africa (Friedland et al, 2007); and verticalisation seen in Rwanda (Furth et al, 2006), South Africa (Coetzee et al, 2004) and Malawi (Zacchariah, 2006, 2007).

3.3.4 Service delivery

The impact of HIV and AIDS programmes on service delivery has been alluded to in the previous sections. The ITPC, in the six-country country study noted common positive effects on service delivery as: integration of HIV, TB and other services, relieving demand for hospital beds, emergency room services and antibiotics, motivating and expanding the capacity of health care workers, and increasing access by marginalised populations and the poor to health services (ITPC, 2008). The other benefits cited were making AIDS-financed clinics, laboratories, and equipment available for other health services; and improving commodity procurement and negotiation skills (ITPC, 2008).

But there are a number of service delivery challenges, including increasing demand for services, increasing the workload on health care personnel; taking government focus away from other aspects of health services under donor demands and a growing HIV and AIDS service system; and attracting high quality health care personnel away from other health services (ITPC, 2008; Van Rensburg et al, 2008). These challenges tend to be most marked

in countries with fragile health systems, and seem to reinforce the fear about HIV and AIDS programmes weakening primary care in many countries, diverting funding and health care personnel and distorting health systems. However, the focused investigation by the ITPC, a coalition of community-based treatment activists and educators, found that to the contrary:

> *the global mobilisation on HIV has not 'diverted' resources but instead greatly expanded total health financing. It has 'distorted' health systems to the degree that it has increased the accessibility and quality of services for one devastating disease. In most countries with serious HIV epidemics, health systems were not healthy prior to HIV's arrival: they were suffering from decades of disinvestment due to structural adjustment policies and chronic underfunding. AIDS has opened up a sense of possibility for change, for progress in providing health care to all who need it. (Executive Summary, ITPC, 2008)*

There is thus a potential for improved service delivery where there is effective management of resources for it.

3.3.5 Partnerships

There are partnerships between ministries of health and communities, NGOs, FBOs and international aid organisations involved in HIV and AIDS service delivery. In Namibia, a partnership between ministry of health and social services (MOHSS), international donors and a private HR service provider led to recruitment and deployment of HCWs for ART programmes (Frelick and Mameja, 2006; Capacity Project 2007b; *Box 11*). There have also been partnerships between professional organisations, ministries of health and international organisations, such as in the establishment of the Swaziland Wellness Centre through the Swaziland Nurses Association, International Council of Nurses, Danish Nursing Association and the Swaziland MoH (Baleta, 2008; ICN, 2005). Local NGOs have also formed effective partnerships with international organisations as (sub-) recipients of funding from organisations (OGAC, 2008).

Box 11: The Namibian Health Workforce Expansion Project

Namibia is a middle income country with a generalised HIV epidemic. Her HCW challenges include high reliance on foreign HCWs, and a maldistribution of HCWs with severe rural shortages. In order to scale up ART to rural facilities towards universal access, Namibia partnered with a number of external funders and a private HR service provider to hire and deploy skilled HCWs to rural areas.

Key innovations and promising practices

- Management contract with a private sector human resources service provider (HRSP) for recruitment and HRM of health service providers and support staff assigned to MOHSS facilities
- Rapid recruitment of health and non-health workers through a variety of contractual arrangements with multiple organizations, covering management and service delivery;
- Same salaries and benefits for all workers hired through donor mechanisms with MOHSS ones;
- Close coordination between the MOHSS and donors on hiring and deploying HCWs;
- The hiring and deployment of more than 500 HCWs for the ART programme from 2004 to 2006; and
- By July 2006, 26,000 people were receiving ART, compared with 500 people in 2004.

Success factors

- Openness of public health leaders to alternatives to conventional government hiring processes;
- Effective partnerships among public health authorities, donors and the private sector, with pre-determined roles and responsibilities, identification of needs, funding and technical assistance;
- An effective and efficient in-country provider of HR Service Provider
- A salary and benefits policy for recruits that resembles the existing one for public health providers; and
- Effective deployment procedures that ensure safety and satisfaction for expatriate recruits.

Lessons from the initiative

- It is possible to outsource the hiring and management of HCWs to a private sector HRS provider.
- HRM by government institutions is hampered by poor communication between government entities, lack of sufficient or qualified staff responsible for HRD, poorly designed recruitment criteria and inadequate performance management systems, and non-responsive management systems.
- Proper and clear contractual arrangements are essential for partnering of different role players.
- Close collaboration between the government and donors to harmonise HR practices leads to greater retention, averts poaching and increases the likelihood that staff will remain longer in the service.

The long term successes or otherwise of this initiative have not been evaluated or reported.

Source: Frelick and Mameja, 2006.

The Southern Africa Human Capacity Development Coalition (SAHCD) is a partnership of several organisations – Intrahealth International, Inc., ECSA HC, Council for Health Service Accreditation of Southern Africa; Management Sciences for Health (MSH); Training Resources Group, Inc and FPD – whose goal is to improve delivery of HIV and AIDS services in both private and public sector by strengthening the capacity of HCWs, policy makers and planners, programme managers, communities and families (SAHCD, 2007). Among the achievements of the coalition have been the development of an HIV and AIDS workplace policy in Swaziland (Kaahwa, 2007), and development of leadership capacity of the Swaziland MoHSW staff (Ngoma, 2007).

In September 2007, major funding agencies (the Global Fund and PEPFAR) launched the International Health Partnership and Related Initiatives (IHP+) to promote country-led and country-driven action to accelerate scale up coverage and use of health services towards the achievement of the health-related MDGs (IHP+, 2007). IHP+ is in line with the Paris Declaration (2005) on aid effectiveness and is meant to enable countries pool expertise and resources in order to realise comprehensive health sector development with a strong focus on health outcomes. The IHP+ initiative, in addition to the WHO 'Three Ones' principle, and other measures such as SWAp and MTEF have potential benefits for health system strengthening through country-level planning.

In addition, the recently launched NGO Code of Conduct for Health Systems Strengthening (Health Alliance International, 2008) urges international NGOs to work with country ministries of health to strengthen health systems by (i) engaging in hiring practices that ensure long-term health system sustainability, (ii) enacting employee compensation practices that strengthen the public sector, (iii) pledging to create and maintain human resources training and support systems that are good for the countries where they work, (iv) minimising the NGO management burden of ministries, (v) supporting MoHs as they engage with communities, and (vi) advocating for policies that promote and support the public sector (Health Alliance International, 2008). Table 3 summarises the major issues from the foregoing section.

Table 3: Examples of health system-wide effects of HIV and AIDS programmes

Area of influence	Positive Impact	Negative Impact
HIV and AIDS Policy	Multi-sectoral approaches, with national coordination, national councils/commissions & country initiatives to achieve goals such as the MDGs, 3 by 5, universal access; Public health approach; Support for National system development	Emphasis on HIV and AIDS leading to marginalisation of other programmes in the health system; Fragmentation, lack of integration, verticalisation.
Health Care Financing	A lot of funds towards HIV and AIDS used for health system improvement; HIV and AIDS funds used to train HCWs, CPD, recruitment of additional staff and creation of new cadres; Harmonisation of pay for whole health sector	Preferential funding of HIV and AIDS contributing to neglect of other conditions; earmarked HIV and AIDS funds may not be used for other health programmes
HRH Approaches	Recognition of HCW shortage as a barrier to achievement of HIV and AIDS service delivery targets; HCW shortages high on development agenda; development of comprehensive HRH agenda; support for national HRH strategies, such as Malawi; Valuing HCWs, such as through specific treatment programmes; task shifting; integrated team approach strengthening both PHC and HIV and AIDS programmes; Attraction of retired HCW; Development of training curricula	Selective development and rewards for HCWs in HIV and AIDS programmes causing disharmony in the system; Migration of staff from other programmes to HIV and AIDS programmes, internal brain drain; Higher salaries for HCWs magnify imbalances.
Service Delivery Capacity	Expansion in capacity (facilities and HCWs) to deliver health care to populations who otherwise would not have access; increased funding for HIV and AIDS; Support and strengthening of rural health services; integration/harmonisation of ART services used to improve whole system; Decentralisation of services from hospital to health centres and community clinics; Leveraging additional Funds; Improving supply chain management; Reduced health expenditure, reduced admissions; Achieving universal access while maintaining quality and outcomes	Expansion of HIV and AIDS services may compromise delivery of other services; overwhelmed HCWs due to many patients, too few HCWs. Fragmentation, lack of integration into country systems Scale-up at expense of other programmes; Duplication of duties/roles; fragmentation of services, such as data management systems; Demands from donors and higher service demands.
Partnerships	HIV and AIDS programmes have fostered partnership between government and international and bilateral partners, faith based organisations and NGOs; strengthened health systems through better ties between public, FBOs, donors, technical agencies and communities.	Unequal partnerships, in spite of country priorities; Failure by external partners to honour commitments to harmonise and align their support with national plans.

4. DISCUSSION OF RESULTS

The successes of HIV and AIDS programmes worldwide include three million people on ART by end of 2007 and the reduction of AIDS-related morbidity and mortality (UNAIDS, 2008b; Bolton-Moore et al, 2007; Janssens et al, 2007; Makombe et al, 2007; Lohse et al, 2007; Mermin et al, 2008). Countries have committed to national policies, strategies and plans aligned to country development plans, while leading donors have helped finance the expansion of access to treatment (Global Fund, 2008; UNGASS, 2008a). The HIV and AIDS epidemic has raised global consciousness of health disparities, and helped galvanise action to respond to serious development challenges, such as the MDGs, and highlighted the link between shortage of HCWs and inability to deliver HIV and AIDS services (Bartlett et al, 2006; Nördstrom, 2008; UNAIDS, 2008b; ITPC, 2008). We found evidence of interactions between HIV and AIDS programmes and the health workforce, covering (i) recruitment, (ii) distribution and retention, (iii) attrition; and (iv) effects of HIV and AIDS programmes, resources and demands on the health system functioning.

The scale-up of HIV and AIDS services is based on compelling evidence from small scale studies on the benefits of ART (such as Furber et al, 2004; Egger et al, 2005; Ferradini et al, 2006). Task shifting has its roots in initiatives such as DOTS for TB in resource-limited settings such as Haiti (Mukherjee et al, 2003). The 2008 Global AIDS Epidemic Report states: *'Antiretroviral therapy scale-up is helping to drive significant improvements in health-care infrastructure in resource-limited settings'* (UNAIDS, 2008b). That is further supported by the report from ITPC (ITPC, 2008). The growing body of evidence on successful attraction and retention of HCWs in ART scale-up programmes, even in rural remote facilities, should be used to champion the case for retention of HCWs in countries with critical shortages; a case of 'What's good for the [HIV and AIDS programmes] goose is good for the [entire health sector] gander'. These efforts should be strengthened by the realisation that HIV and AIDS is a 'generational', and not a 'three-to-five year', problem that requires context-specific, sustainable, long term and sector-wide approaches (UNAIDS, 2008b).

Resources from GHIs have been used to leverage additional funding for the whole health sector (World Bank, 2008; UNAIDS, 2008b). But they are complex to manage, and their integration into the public health systems remains a major challenge for most countries, hence the suggestions for a diagonal approach (Ooms et al, 2008). Ooms et al (2008) argue that instead of the Global Fund remaining a vertical fund or losing focus through becoming a horizontal one, the Global Fund could be transformed into a diagonal one. In

effect it would become a Global Health Fund with measures to safeguard its exceptional features. Such a transformation would prevent the polarisation between 'vertical' financing and 'horizontal' financing of health services and avoid 'islands of excellence in seas of under provision' or 'islands of sufficiency in a swamp of insufficiency' that the vertical approach might create (Buse and Waxman, 2001; Ooms et al, 2008).

HIV and AIDS programmes seem to motivate and retain their HCWs, but this does not seem to result from comprehensive plans (Furth et al, 2006; Abdullah, 2004; MSF, 2007). A stark omission is South Africa – a country with both the highest number of HIV infected persons and those on ART – which has a medium term HRH plan that does not take into account the impact of HIV and AIDS on HCWs or the need for HIV and AIDS service delivery (UNAIDS, 2008b; NDoH, 2006; Sishana, 2007). Moreover, the long-term HR Plan for Health does not address the increased burden of HIV and AIDS in the country, or the increasing needs for HCWs to manage the expanded public sector ART programmes (Shisana, 2007; NDoH, 2006).

Strategies for retention of HCWs within HIV and AIDS programmes include direct incentives for HCWs, recruitment of new HCWs and new cadres, such as expert patients, and task shifting approaches (Benavides and Caffery, 2007; Drager et al, 2006; Hagopian et al, 2008; Furth et al, 2006). Financial incentives are often applied selectively to HCWs in HIV and AIDS programmes, while non-financial ones are applied more widely, for instance, the electrification of facilities using PEPFAR funds, and staff housing in Ethiopia (Prytherch and Merkle, 2007; HWAI, 2008). Monetary incentives are more intricate to manage, for disparities in pay between those employed in HIV and AIDS programmes and others may lead to staff losses from other programmes (Stillman and Bennet, 2005; Drager et al, 2006).

The evidence on HIV and AIDS programmes attracting HCWs from other programmes is mixed – with some reports suggesting diversion of HCWs from other programmes to HIV and AIDS programmes (Drager et al, 2006; Bennet and Stillman, 2005) while others suggest a net gain of HCWs for the health systems (Abdullah, 2004; Ferradini et al, 2006; MSF, 2007). The latter scenario would suggest recruitment from outside the health sector, the under-employed or retirees, for instance. The paradigm shift of the GHIs towards health systems strengthening, instead of their initial narrow focus, and the global momentum for the public health approach to HIV and AIDS service delivery bodes well for future initiatives for expansion of the health workforce (Gilks et al, 2006; Drager et al, 2006, Global Fund, 2008).

We did not come across reports specifically addressing the issue of retention of HCWs within HIV and AIDS programmes. From the successes with

attraction of HCWs to HIV and AIDS programmes, it would appear that the challenges of retaining health workers within the specific context of HIV and AIDS do not differ from the wider issue of retaining health workers in general. The difference may arise from the relatively more resources for HIV and AIDS programmes which make it easier to attract, recruit and deploy HCWs even in hard-to-staff areas using incentive packages, such as the Mkapa Fellowship programmes in Tanzania.

There is a paucity of data on country-level measures for HCWs retention in HIV and AIDS programmes. Namibia offers a country-level example of use of donor support to recruit and deploy additional staff for ART roll-out, with all new staff on the same terms as the rest of the government HCWs. That helped Namibia scale up ART coverage from 22% in 2004 to 88% by end of 2007 (UNAIDS, 2008b). Initial reports suggested that the approach worked well, without any problems among the HCWs. Since Namibia offers fairly good HCW salaries, the lesson from their experience may not be easily reproducible in low paying countries that may need to pay HCWs differently to attract and retain them in HIV and AIDS programmes. On the other hand, Rwanda which has a generalised HIV epidemic too, coupled with low HCW density and relatively low HCW salaries, implements a vertical programme approach (Furth et al, 2006). Rwanda was also able to scale-up ART delivery from 10% in 2004 to 71% by end of 2007 (UNAIDS, 2008b). The nature of the programme through which the services are delivered by itself may not account for the success of service scale-up. Perhaps, as with most health system issues, the country context is equally important.

Commitment towards strong national leadership and management of the response to HIV and AIDS has the support of many international initiatives, such as the 'Three Ones', IHP+, and International Code of Conduct for NGOs. The reality is often different; as noted in the 2008 UNAIDS report, whereas many countries made progress in implementing national responses according to the 'Three Ones' principles, by end of 2007 fewer than half of countries had fully aligned and harmonised their actions to ensure an optimally effective national response, and 45% of governments reported that not all external partners align their efforts with national HIV strategies (UNAIDS, 2008b). That suggests that some partners do not honour multilateral commitments, opting to run their own programmes independently of national programmes. The combination of high prevalence rates and resource limitations in some countries makes it difficult for them to insist that external aid be through harmonised mechanisms, after all some of these countries need all the help they can get.

The policy framework for HIV and AIDS service provision seems well established at country level, but we did not find any reports on national plans

for HCWs in HIV and AIDS programmes. HIV and AIDS programmes ultimately recruited professionals from the existing stock of HCWs. There were apparently no reports of expanded capacity of pre-service training institutions to meet the additional HCW requirements, available reports were largely on short-term and in-service courses, or qualitative improvements in training such as curriculum changes (such as OGAC, 2006).

Treatment for HCWs infected with HIV reduces staff attrition by reducing HCW deaths, reducing absenteeism, increasing productivity and improving the morale of other HCWs (Uebel et al, 2007; Baleta, 2008). Apart from one study in Malawi, we did not find any other country-level reports on the number of HCWs treated and/or saved by ART (Makombe et al, 2007). Specific programmes for treatment of HCWs send a powerful signal to HCWs that they are valued, but their design should be context specific, and need to balance the barriers HCW face against the risk of entrenching stigma (EQUINET SC, 2007; Dambisya, 2007a, 2007b, Uebel et al, 2007; ICN, 2005; Baleta, 2008).

One of the possible remedies to the HCW demands for HIV and AIDS service delivery is task shifting, which may have system-wide effects through sparing highly qualified HCWs for complex and referral cases, while new cadres do the basic work (OGAC, 2008; Benavides and Caffery, 2007, Samb et al, 2008). This reduces pressure on professional HCWs and possibly motivates them to stay, as they are better able to cope with the workloads. Adoption of IMAI strengthens the whole system, especially the PHC services (WHO, 2006c).

Comprehensive HIV and AIDS service delivery approaches are more effective in the long term because expanded care and prevention activities have synergistic effects (Salomon et al, 2005). Effective prevention measures lead to a reduction in new infections and therefore reduce the number of people needing treatment (Lamptey and Wilson, 2005; Galvao, 2002; Madra, 2005). Furthermore, successful HIV treatment and care provides opportunities for HCWs to deliver and reinforce HIV prevention messages and interventions (Salomon et al, 2005). EQUINET and Oxfam (GB) have previously called for ART to be delivered through comprehensive and coordinated approaches that embed treatment within effective, accessible health systems (EQUINET, 2004; Loewenson and McCoy, 2004). There is evidence of country programmes that used the public health approach with increased access to ART contributing to increase access to other health services (Mukharjee et al, 2003; Hofer et al, 2004; Family Health International, 2007). The logical approach would be for further expansion of access to care to be accompanied by setting appropriate and realistic targets to strengthen health system capacity to provide ART and comprehensive

PHC, in a sustainable and equitable manner (McCoy (2003). That would realise the virtuous cycle of HIV and AIDS programmes and PHC services mutually reinforcing each other (EQUINET, 2004). The re-commitment of African countries to the ideals of PHC in April 2008 offers more promise for the public health approach to HIV and AIDS service delivery.

There were apparently no reports on HRIS for HIV and AIDS programmes. However, countries like Tanzania and Brazil have information systems that are well developed and specifically for drug supply and management (Nyazema, 2006; Lima et al 2000). Some countries have fragmented data management systems, for instance Rwanda where the HIV and AIDS data is not included in the health information systems (Furth et al, 2006). The country and regional HRH observatories being developed in many sub-Saharan states, with the support of WHO, aim to enable countries respond to HR needs based on sound data. Good country HRIS should incorporate HIV and AIDS data, and so make HIV-specific systems unnecessary.

In 2003, McCoy stated that:

> *The focus on expanding access to HIV and AIDS treatment could either take the route of least resistance and implement treatment interventions that are built on the current pattern of inequities; or it could consciously set out to use the impetus around expanding HIV care and treatment to reduce inequities, preferentially target the poor and systematically uplift the healthcare infrastructure of the most under-resourced areas in a country' McCoy, 2003*

In this review, we found a pattern towards 'expanding HIV care and treatment to reduce inequities' (Madra, 2005; Acquah, 2006; Gilks et al, 2006; WHO, 2006c) and an effort to 'systematically uplift the healthcare infrastructure of the most under-resourced areas' (Fredlund and Nash, 2007; Bedelu et al, 2007; Marrazi et al, 2005 and the conclusions of the 2008 report on the global AIDS epidemic (UNAIDS, 2008b).

Partnerships have contributed to a strong response to the HIV and AIDS epidemic. One of the lessons from the Brazil programme is that consistent collaboration between organised civil society and governmental agencies helps overcome difficulties associated with a vulnerable social context, and achieve success in the control of the epidemic (Antunes et al, 2005; Galvao, 2002, 2004). Many NGOs are involved in HIV and AIDS service delivery, often in pioneering roles, such as TASO in Uganda and MSF in Malawi (Ray et al 2003; Koenig et al, 2004; Ivers et al, 2005; Ferradini et al, 2006; Benavides and Caffery, 2006; Ooms et al, 2007). Such partnerships have to be carefully managed to ensure that HIV and AIDS services do not poach HCWs from other programmes. Mozambique has memoranda of agreement

with both international partners and NGOs, which among others, requires that the NGOs do not recruit HCWs from the public health sector (MoH, Mozambique, 2003; 2006). It is not clear, however, how effectively these agreements are being implemented.

There were a number of knowledge gaps we encountered in addressing the questions set out in the TORs, including lack of reports on:

- Specific retention strategies for HCWs in HIV and AIDS programmes and how they differ from the wider health system context;
- Assessment of the effects of the lateral movement of HCWs from other programmes to HIV and AIDS programmes;
- Management of HCW issues related to HIV and AIDS; and
- The long-term and system-wide effects of approaches demonstrated to be successful at project level or under non-government organisations, and the system-wide application of such strategies.

As mentioned in the methods, interpretation of our findings is limited by a number of factors, including the fact that the review was based on English language documents that were freely accessible through internet searches. There was a relative lack of country level documents, and the project specific reports may have been biased in favour of HIV and AIDS programmes. That much of the evidence we reviewed was from project work, could be a reflection of the nature of project work which integrates reporting requirements. Monitoring and evaluation seems to be a common weakness in the public sector, with much good work in the public sector going unreported. The relative lack of public sector data is, unfortunately, not limited to impact of HIV and AIDS programmes (Dambisya, 2007a).

4.1 Summary of the main findings and lessons

There is a high reliance on external funding and involvement of many role players in HIV and AIDS programmes, especially in resource poor countries that have high HIV prevalence. There is a trend towards coordinated responses, with high level leadership and national commitment to universal access to care using the 'Three Ones' principle and a public health approach.

HIV and AIDS programmes are attractive for HCWs, and may attract HCWs from other programmes, but there is evidence of sector-wide benefits when HIV and AIDS programmes are well-managed through increasing the pool of HCWs by training expert patients, lay counsellors and community workers, and fostering effective partnerships with the community and funding agencies.

HIV and AIDS programmes employ financial and non-financial incentives to attract and retain their staff. We found evidence to suggest that lessons from such incentive schemes could benefit the entire health sector; instead of incentives being applied selectively which causes resentment and disharmony in the health workforce.
Treatment programmes for HCWs infected with HIV reduce the attrition of HCWs by saving lives, and send signals to other HCWs that they are valued.

GHIs resources support training and recruitment of HCWs, improvements or construction of facilities and provision of drugs for many of the HIV and AIDS programmes in resource poor countries. They pose challenges of coordination and alignment of the programmes they support with country programmes; indeed, in spite of attempts at coordination and a public health approach to service delivery, many programmes are still run in fragmented manner. Well coordinated support from the GHIs funds benefits the entire health system; and there are reports of successful HIV and AIDS services integrated within other programmes, HIV and AIDS with TB, with sexual and reproductive health services.

There was a paucity of reports on HRIS and HRM systems for HCWs in HIV and AIDS programmes. Most of the evidence reviewed was from project-specific documents, with very few country-level reports. A number of countries have used the experience from project level work to scale up HIV and AIDS services.

5. CONCLUSIONS AND RECOMMENDATIONS

In conclusion, despite the proliferation of HIV and AIDS programmes, and the high fund flows for HIV and AIDS programmes in resource poor countries, while we found some evidence on HCW being taken from health systems to AIDS programmes, we also found no reports suggesting the collapse of health systems or other programmes, and many studies in contrast reporting HIV and AIDS programmes contributing to HCW resources and capacity development. Positive health system strengthening effects were more likely to be observed within a coordinated country response. The virtuous cycle proposed by EQUINET (2004) of HIV and AIDS programmes strengthening PHC services, which then make the HIV and AIDS programmes even stronger has been documented in a number of places. What remains is for countries to take stock of what is happening, learn from their successes and failures, and those of others, through sharing of best practices. There is need for focussed studies to respond to the dearth of country-level reports on

(country-level) experiences on the impact of HIV and AIDS programmes on the distribution and retention of HCWs retention. The relative lack of country-level experiences makes it difficult to make firm recommendations on approaches for HCWs retention in HIV and AIDS programmes at this time, but there is sufficient evidence to support the following:

i. Country ministries of health should spearhead reviews of national health policies towards programmes for comprehensive HIV and AIDS services within the public health sector using the public health approach, complemented by partnerships with the private sector.

ii. We propose that countries capitalise on funds available for HIV and AIDS programmes to strengthen the public health system, including PHC, using the favourable climate for health system strengthening

iii. Funding agencies should move away from singular funding of vertical programmes and work with recipient countries, in the spirit of the 'Three Ones' to channel HIV and AIDS funds through mechanisms that benefit the whole health sector, for example through budget support or SWAp.

iv. Countries faced with high HIV and AIDS prevalence and HCW shortages can explore the use of innovative approaches such as task shifting to ensure appropriate use of the available health workforce.

v. All countries, especially those with high HIV and AIDS prevalence, should formulate clear policies for the care of HCWs affected by HIV, including early access to ART, given the benefits of ART for HCWs.

vi. We recommend that there be more country-level studies conducted to evaluate the various programmes and approaches, and determine the best practices for the different settings.

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Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti Retroviral Treatment
ARV	Antiretroviral (drug/s)
AusAid	Australian Aid Agency
BHRIMS	Botswana HIV and AIDS Response Information Management System
CCMT	Comprehensive Care Management and Treatment
CDC	Centres for Disease Control and Prevention
CPD	Continuing Professional Development
CHWs	Community Health Workers
CIDA	Canadian International Development Agency
DANIDA	Danish International Development Agency
DFID	Department for International Development (UK)
DOTS	Directly Observed Treatment Short Course
DREAM	Drug Resources Enhancement against AIDS and Malnutrition Programme
ECSA-HC	East, Central and Southern African Health Community
EQUINET	Regional Network for Equity in Health in east and southern Africa
EU	European Union
FBO	Faith Based Organisation
FPD	Foundation for Professional Development
GEMS	Government Employees Medical Scheme
GHARP	Guyana HIV and AIDS Reduction and Prevention Project
GIST	Global Implementation Support Team
GHI	Global Health Initiatives
GFTAM	Global Fund to fight AID, Tuberculosis and Malaria
GTZ	German Technical Cooperation Agency (Gesellschaft für Technische Zusammenarbeit)
HAART	Highly Active Anti-Retroviral Therapy
HCW	Health Care Worker
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information Systems
HRH	Human Resources for Health
HRM	Human Resource Management
HRIS	Human Resource Information System
HWAI	Health Workforce Advocacy Initiative
ICASO	International Council of AIDS Service Organizations
ICAD	Interagency Coalition on AIDS and Development
ICTC	International Centre for Technical Cooperation on HIV and AIDS
IEC	Information, Education and Communication
IHP+	International Heath Partnership and Related Initiatives
IHI	Institute for Healthcare Improvement
ILO	International Labour Organization
IMAI	Integrated management of adult and adolescent illness
IOM	US Institute of Medicine
ITPC	International Treatment Preparedness Coalition
KEMRI	Kenyan Medical Research Institute

KfW	German Development Bank
LTIA	Long-Term Institutional Arrangement
M & E	Monitoring and Evaluation
MAP	World Bank Multi-country AIDS Program
MDGs	Millennium Development Goals
MoH	Ministry of Health
MoHS	W Ministry of Health and Social Welfare
MSF	Médecins Sans Frontières
MSH	Management Sciences for Healh
MTEF	Medium Term Expenditure Framework
NAC	National AIDS Council
NACA	National AIDS Coordinating Agency
NDoH	National Department of Health
NGO	Non Governmental Organization
NIH	National Institutes of Health
NORAD	Norwegian Development Agency
OGAC	Office of the US Global AIDS Coordinator
OVC	Orphans and vulnerable children
PEP	Post Exposure Prophylaxis
PEPFAR	President's Emergency Plan for AIDS Relief
PHC	Primary Health Care
PLWHAs	Person Living With HIV or AIDS
PMTCT	Prevention of Mother-to-Child Transmission
PPP	Public private partnership
PTC	Prevention Treatment and Care
SADC	Southern African Development Cooperation
SAHCD	Southern Africa Human Capacity Development Coalition
SICLOM	System of Logistical Control of ARV
SISCEL	System for Control of Laboratory Exams
SIDA	Swedish International Development Agency
STD	Sexually Transmitted Disease
SWAP	Sector Wide Approaches
TARSC	Training and Research Support Centre
TASO	The AIDS Support Organization
TB	Tuberculosis
TRAC	Treatment and AIDS Research Centre
TTR	Treat, Train and Retain
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNGASS	United Nations General Assembly Special Session on HIV/AIDS
UNHCR	United Nations High Commission for Refugees
UNICEF	United Nations Childrens Fund
USAID	Unites States Agency for International Development
VCT	Voluntary Counselling and Testing
WHO	World Health Organization
WHO/AFRO	World Health Organization, Africa Region

Equity in health *implies addressing differences in health status that are unnecessary, avoidable and unfair. In southern Africa, these typically relate to disparities across racial groups, rural/urban status, socio-economic status, gender, age and geographical region. EQUINET is primarily concerned with equity motivated interventions that seek to allocate resources preferentially to those with the worst health status (vertical equity). EQUINET seeks to understand and influence the redistribution of social and economic resources for equity oriented interventions, EQUINET also seeks to understand and inform the power and ability people (and social groups) have to make choices over health inputs and their capacity to use these choices towards health.*

EQUINET implements work in a number of areas identified as central to health equity in the region:

- Public health impacts of macroeconomic and trade policies
- Poverty, deprivation and health equity and household resources for health
- Health rights as a driving force for health equity
- Health financing and integration of deprivation into health resource allocation
- Public-private mix and subsidies in health systems
- Distribution and migration of health personnel
- Equity oriented health systems responses to HIV/AIDS and treatment access
- Governance and participation in health systems
- Monitoring health equity and supporting evidence led policy

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