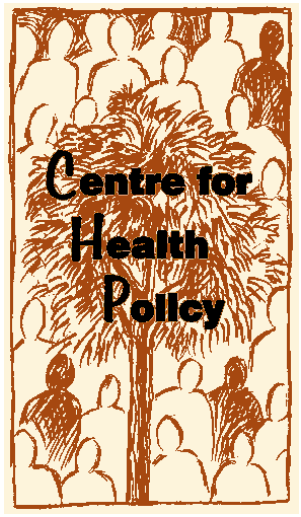


# Health systems strengthening and ART scaling up: challenges and opportunities

**Helen Schneider, Duane Blaauw, Lucy Gilson, Nzapfurundi Chabikuli & Jane Goudge**
**Centre for Health Policy**
**School of Public Health**
**University of Witwatersrand**
**Johannesburg**

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Contact details of the authors:
Helen Schneider
Centre for Health Policy
PO Box 1038
JOHANNESBURG 2000
South Africa
Tel: +27-(0)11-489 9936
Fax:+27-(0)11-489 9900
Email: Helen.Schneider@nhls.ac.za

## Introduction

There is global recognition that without strengthened health systems, greater access to anti-retroviral therapy (ART) is unlikely to be achieved. A socially complex health intervention such as ART requires not only that health systems manage their current functions better, but also demands new kinds of performance from these systems. Service delivery needs to be reoriented from acute to chronic disease care, ensuring uninterrupted supplies of treatment and high levels of adherence over many years. There are few precedents to this in developing country health systems, where even acute care strategies such as the integrated management of childhood illness (IMCI) have only partially succeeded (Bryce et al 2003).

By the same token, to deny access to life-saving ART, whether on the basis of price or inadequate infrastructure has become globally untenable. Numerous pilot sites and projects, some internationally celebrated, have demonstrated that it is possible to use ART effectively in low resource settings. (Farmer et al 2001; Kasper et al 2003) In other words, if adequate resources are provided, the constraints to ART can be overcome.

As more and more countries receive external resources to embark on HIV treatment programmes, they face a number of questions: Is it possible and what constraints need to be overcome to make ART available to the large numbers of people who need it? How will the equity principle be maintained in the inevitably incremental process of scale up or roll-out? Is it feasible to structure the investments in ART so that they do not divert scarce resources away from other essential activities and instead benefit the health system for delivery of all health programmes?

These questions are not confined to ART scaling up. A renewed global concern to address the overwhelming disease burdens of the South has repeatedly confronted "*the precarious state of health systems in many developing countries*". (Joint Learning

Initiative 2003) Health systems failures are seen as being at the root of the disappointing outcomes of DOTS for TB (Nunn et al 2002), IMCI (Bryce et al 2003) and integration of reproductive health (Lush et al 1999).

The tendency to want to bypass health systems by creating vertical structures that drain resources from a "crumbling core" (Loewenson & McCoy 2004) may address short-term needs but cannot form the basis for universal access. There is thus growing acceptance that weaknesses in health systems have to be confronted (WHO 2003). The Commission on Macro-Economics and Health, convened by the World Health Organization recommended "massive" efforts and investments into health systems "over decades" as preconditions for improving the health outcomes of the poor. By taking a comprehensive approach to the range of interventions required to improve the health of populations, the Commission concluded that *"the costs of improving the health system's infrastructure, of improving the training and performance of its workers and managers and strengthening its connections to the communities it serves… should become smaller than the costs of trying to work around it."* (CMH 2002:57)

With this in mind, this paper reviews the health system challenges to making HIV treatment[*] universally accessible in countries with both generalised HIV epidemics and poorly resourced health systems. The terms "scaling up" or "roll-out" refer to the process of reaching the goal of universal access. We propose a set of health systems strengthening priorities necessary for both the scaling up process and for ensuring that investments in HIV treatment programmes benefit health systems more generally. These priorities are presented along the framework for health system performance developed by WHO in 2000 (WHO 2000).

The WHO framework, summarised in Figure 1, divides health systems into three objectives (goodness, fairness and responsiveness) and a set of functions (delivering services, creating resources, financing and stewardship) required to achieve these

[*] The term HIV treatment is automatically assumed to include ART

objectives. While by no means the only representation of a health system or of scaling up (see for example Hanson et al 2003), this framework is particularly appropriate for a considering a classic service delivery intervention such as HIV treatment.

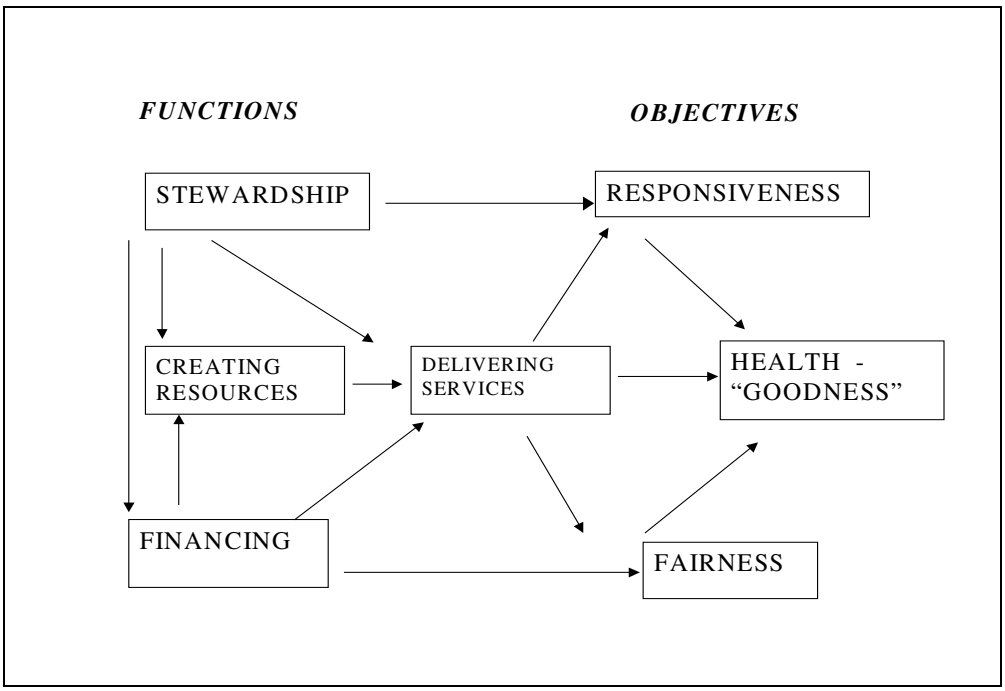



Figure 1: Health System Framework. Source: WHO (2000)

The definitions of and associated key HIV treatment scaling up challenge associated with each dimension of the WHO framework are outlined in Table I. Assuming that financial resources and supplies of drugs to countries do not constitute the most important immediate obstacles to ART use, we elaborate on some of the other challenges in more detail. We focus initially on the reorientation of service delivery towards chronic disease care, and then on the supply of human resources and existing service delivery cultures as key systemic constraints to scaling up. While inadequate health service infrastructures may make universal access to HIV treatment a distant goal, almost all health systems have elements of good performance that can form the basis for beginning the scaling up process. We also argue that the good stewardship is key to scaling up and consists of recognising existing opportunities, building on them (rather than in parallel to them)

whilst simultaneously addressing structural weaknesses. Although the private sector and NGOs may have a role to play in the initial process of scale up, this has to occur within clear national frameworks and ideally within local or district governance structures. We conclude by summarising the main health system challenges to HIV treatment scale up as a matrix of short and long term goals focusing on both the development of chronic care systems for HIV as well as more generic health system strengthening.

Table I: Definitions of health system dimensions and ART scaling up challenges (Source: WHO 2000)

| Health system dimension | Definition | Key ART scaling up challenge |
|---|---|---|
| Delivering services | What services, delivered by whom and how | Reorienting services from acute to chronic care |
| Financing | Sources and allocation of funds for health systems | Securing sustainable financing for HIV treatment<br>Managing multiple donor inputs |
| Creating resources | Human resources, capital infrastructure, drugs and other consumables and information required to deliver services | Improving service delivery infrastructure in particular the supply, quality, remuneration and distribution of human resources |
| Goodness | Health status | Prolonging and ensuring quality of life<br>Enhancing prevention through care |
| Responsiveness | The extent to which health system meets a population's expectations of how they it should be treated | Changing the patient-provider relationship |
| Fairness | Fairness in the distribution of resources and outcomes | Maintaining equity principles in the process of scale up |
| Stewardship | Overall oversight, setting the rules of the game, regulating resource use, collating and collecting information | Ensuring standardised approaches, including monitoring and evaluation<br>Regulating drug use<br>Strengthening district management and other generic health system functions<br>Promoting new organisational cultures |

## Service delivery challenge: ART as chronic disease care

*Lessons from pilot projects*

Anti-retroviral therapy, as presently available, is highly effective but complex to manage. It necessitates life-long treatment with at least three antiretroviral drugs ('triple therapy' or highly active anti-retroviral therapy – HAART). Breakthrough drug resistance, followed by rising viral loads and clinical failure is relatively common, even with high levels of adherence (Singh et al 1999). This entails ongoing clinical and laboratory monitoring and access to second-line regimens. Side-effects of drugs, especially in the early period of treatment occur frequently, some of which are sufficiently dangerous to require modifications to treatment. There is significant mortality (up to 10%) in the early months of treatment (Coetzee et al 2004 (a)).

Initial experiences in several developing countries have shown that these challenges are not insurmountable (Farmer et al 2001; Coetzee et al 2004 (b); MSF 2004). Botswana, a middle-income country of 1.7 million people with a devastating HIV epidemic has instituted a programme of universal access to ART. By April 2004, more than 17,000 people had been enrolled onto the programme and adherence rates measured by outcomes such as viral loads were high (MASA 2004). Médecins sans Frontières (MSF) has comprehensive district-based HIV/AIDS projects which include anti-retroviral therapy in 25 countries (MSF 2004). Many more treatment programmes are being initiated through governments with bilateral and multilateral donor funding.

As a rule, these initial projects have set and demonstrated high performance with regards to follow-up, adherence and survival (Masa 2004; Coetzee et al 2004 (a,b)). Their success appears to be a product principally of their comprehensiveness - a wide activity mix of public health, clinical and outreach activities, integrating prevention and care in a 'continuum' of care, support and prevention which is free at the point of use; supported by a relatively complex human resource mix of medical staff, mid-level health workers

(nurses or clinical assistants), laboratory personnel, lay counsellors, community health workers or treatment supporters and programme managers (see Box 1).

In Malawi, a comprehensive HIV/AIDS project by MSF project serving Thyolo District with a population of 475,000 people has the following staff:

- 2 doctors
- 1 epidemiologist
- 5 clinical officers and 1 medical assistant
- 26 nurses (including counselling and community)
- 6 outreach workers
- 2 administrative staff
- 1 laboratory technician

Source: Kemp et al 2003

A daily patient load of 40 people in the MSF HIV care and ART service in Khayelitsha, Cape Town requires:

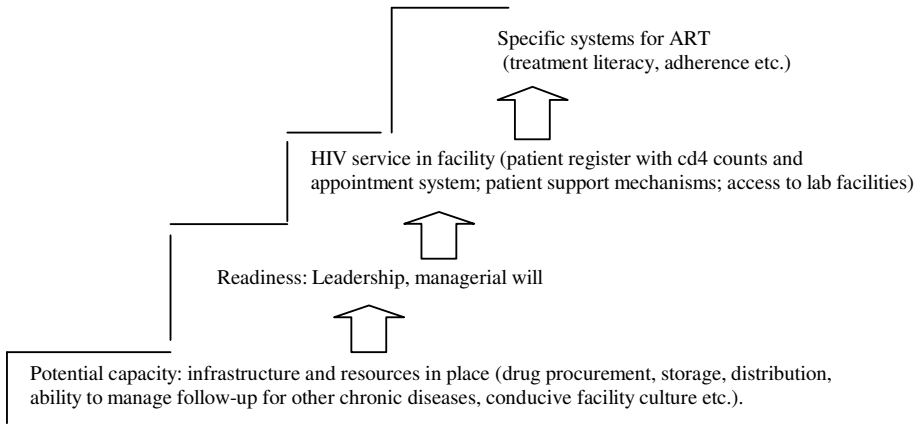
- 1 professional nurse (with PHC clinical training)
- 1 part-time doctor
- 1 adherence counselor
- 1 part time clerk

Source: Andrew Boulle, personal communication, Khayelitsha MSF Project

Box 1: Staff mix in two HIV/AIDS projects

In addition, they:

- Pay attention to the development of appropriate service delivery systems - standardised treatment protocols, patient flow, adherence management, patient and programme monitoring;
- Invest in support systems such as drug supplies, laboratory and supervision;
- Establish clear referral systems between community, primary health care and hospital facilities;
- Work in partnership with non-governmental and community-based organisations;
- Seek to shift from authoritarian to patient-centred forms of care;
- Adopt a phased, incremental process of implementation and capacity development (see Box 2 below).




Box 2: Building blocks approach to implementing an ART service
(Source: Andrew Boulle, personal communication, Khayelitsha MSF Project)

The evidence points to the need to see ART as part of an integrated package of HIV prevention and care that starts well before ART is actually required. ART scale up is thus more correctly referred to as HIV treatment (or HIV care) scale up.

While nurses or other mid-level workers can form the backbone of the clinical dimensions of the service, HIV care is more doctor intensive than other primary health care services, involving a mix of skills in different combinations and at different times (outlined in Figure 2). The need for medical expertise is greatest in the period of initiation of ART and may necessitate treatment from a hospital base, although experience has shown that is it possible to systematise HIV care (including ART) into algorithms for application by mid-level workers (nurses or medical assistants) in primary health care settings, especially if combined with strong public health/district support systems (Farmer et al 2001, MSF et al 2003).

HIV testing and enrolling people into care early in the course of their illness are central to the success of ART. Large scale voluntary HIV testing by well individuals will only occur if providers are perceived as trustworthy and empathetic. Patient advocacy groups, NGOs or lay counsellors have played important roles in stimulating and reducing social

barriers to demand and in providing social support to people once they are diagnosed and embark on treatment. The precise nature and combination of such social support and the extent to which lay or community-based providers are volunteer or remunerated varies from place to place.

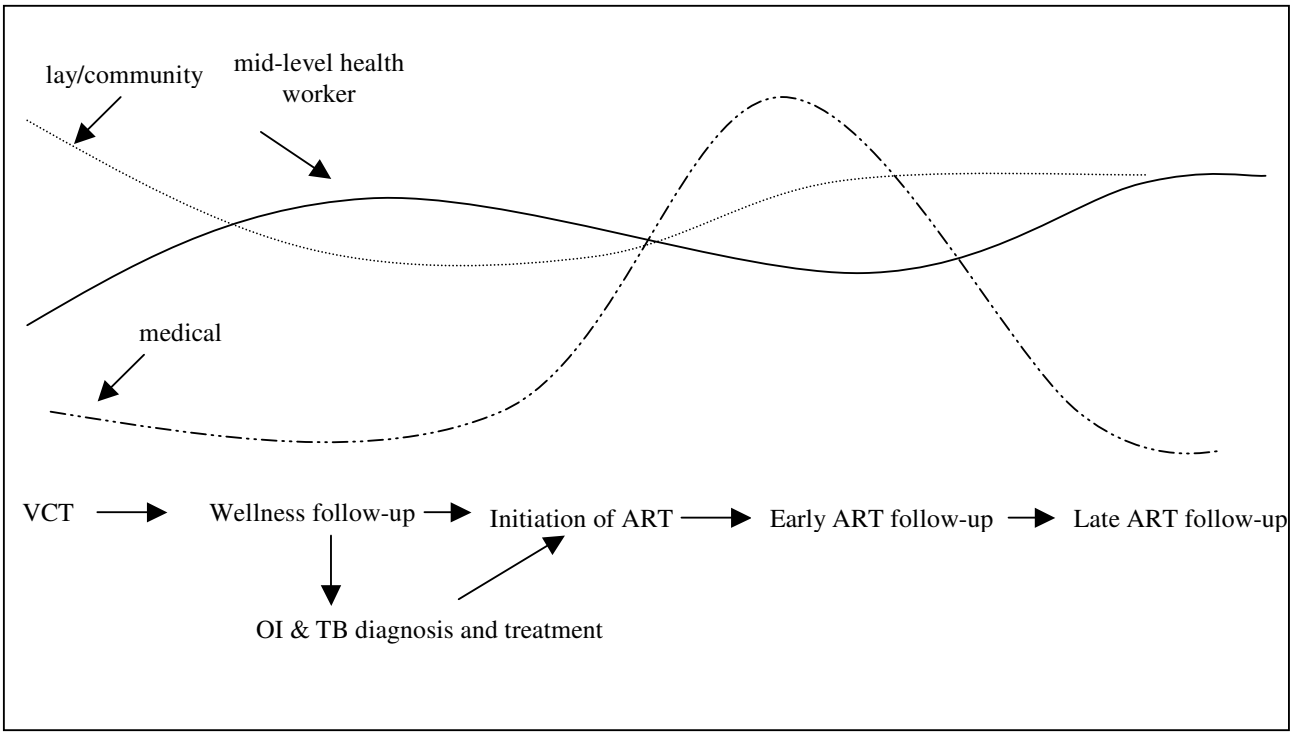



Figure 2: Intensity of involvement by various providers at different stages of HIV infection (OI=opportunistic infections; TB=tuberculosis)

*Intervention complexity*

Although treatment for HIV can be managed principally within the primary health care system, doing this effectively is undoubtedly complex when examined along the four criteria of intervention complexity proposed by Gericke et al (2003). These criteria are the nature of the intervention itself, the systems to deliver the intervention, government capacity to manage the intervention and demand side barriers. Life long triple anti-retroviral therapy and monitoring (intervention characteristics), accessible and well functioning health facilities (delivery characteristics), management of referral

relationships, partnerships with non-state actors and monitoring and evaluation (government capacity), and the many barriers to entry and remaining in care (usage characteristics) make ART more complex than many other health care interventions.

*Analogies in the health system*

The closest analogy to ART in the health system is TB care. HIV care shares many of the well-known features of TB control with the added problem, in common with non-communicable chronic diseases, of not being curable and requiring treatment over years rather than months. Provision of treatment for an infectious disease where there are significant risks of drug resistance and considerable public health externalities demands a coordinated and standardised approach which is only possible through a degree of central control or stewardship. In some respects, the internationally recommended approach to TB control, DOTS (Directly Observed Therapy, Short Course) provides a useful framework for considering ART scaling up.

Over the last decade, aspects of DOTS such as patient registers, cohort analysis, laboratory infrastructures, referral procedures and standardisation of approaches have all been implemented in developing countries and provide valuable lessons for scaling up of HIV treatment. Given overlaps in patient populations, TB programmes are also increasingly seen as the infrastructure on which to build an ART programme (Farmer et al 2001). While the DOTS principles for TB control have enormous relevance and more importantly, provide a significant base of past experience on which to draw upon in programme design and implementation, ART pilots described earlier have departed in some important respects from the DOTS approach. This is particularly so in the management of patient adherence. Directly Observed Therapy, the strategy for ensuring adherence to TB, was initially described as follows: *"Of the five essential elements in the DOTS strategy, it was decided to emphasise the supportive bond between the patient and the health worker, who watches to ensure that each dose of medicine is taken."* (Klaudt 2000:101) Although subsequently defended as far more than *"supervised swallowing"*

(Frieden and Driver 2003:83-4) the imagery conjured up by DOT is nevertheless one of untrustworthy patients having to be watched by – at best paternalistic and at worst punitive - professionals. Not surprisingly DOT for TB has been challenged and its universal claim to effectiveness questioned (Volmink & Garner 2003; Stevens et al 2004).

ART pilots and indeed successful local TB programmes have emphasised other ways of achieving adherence that do not rely on direct observation. These include removing access barriers (such as bringing drugs to patients and use of traditional healers), patient access to information and provision of social support (Farmer et al 2001, Wilkinson & Davies 1996) or providing patient choice (where and how to receive drugs) (Macq et al 2003). Adherence is often framed in patient-centred and rights-based discourses around patient empowerment and participation, removal of socio-economic barriers and of agency and dignity. This shift, probably the most complex aspect of replicating successful ART programmes, implies a new kind of relationship or *contract* (the negotiated nature of rights, responsibilities and obligations) between providers and patients. This contract is based on very high levels of understanding ("treatment literacy") on the part of users and the provision of treatment support systems in return for which patients assume new responsibilities – making decisions regarding care, adhering to treatment but also participating in community and prevention activities (MSF et al 2003). The patient-provider contract is embedded within a series of other relationships including an analogous psychological contract between provider and organisation (Rigoli & Dussault 2003).

Recognition of the centrality of the inter-personal dimensions of care and the need to shift from authoritarian to patient-centred modes of care is well accepted in the literature on chronic disease care (WHO 2002; Swartz & Dick 2002). The World Health Organization, in a recent monograph entitled "Innovative care for Chronic Conditions" says of patients: *"They no longer can be viewed as, nor see themselves as, passive recipients of health care services."* (WHO 2002: pages 31)

Contemporary models of chronic disease care are explicit in highlighting the need for ensuring adequate resources for the technologies of intervention (e.g. protocols), on the one hand and on the other hand, delivering these through "informed, motivated and adequately staffed teams", operating in partnership with "informed and empowered patients" (Bodenheimer et al 2002). While both are necessary components of a whole, the focus in disease programmes globally has tended to be on technologies rather than on the relationships between people, on the "hardware" rather than "software" of service delivery (Blaauw et al 2003).

There are limits to which the complexity of inter-personal and social dimensions of chronic disease care can be minimised by standardised design and protocols. The ability to manage relationships with NGOs, remove cultural and physical barriers to care and create organisational cultures in which providers are responsive to patient needs are locally negotiated processes which hinge on a degree of local decision-making and ability to problem-solve. The significant role of local leadership in successful TB outcomes has been well documented in a number of settings (Ogden et al 1999; Kelly et al 2001; Macq et al 2003), suggesting that standardised national frameworks such as DOTS form a useful but not sufficient basis for successful HIV treatment scale up.

## The challenge of creating resources

HIV treatment, as with interventions such as IMCI and TB care, and in contrast to polio immunisation or social marketing of bed nets and condoms, cannot be provided in a separate vertical programme without re-creating a whole new parallel health system infrastructure. If ART is to be reach the huge numbers who need it and in an organised and regulated manner, the existing health care infrastructure will have to be called upon. The private-for-profit sector and workplace health services may have a role to play, but cannot substitute for the core function of the public health sector, both as provider of services and as manager of roll-out.

While all health systems contain successful examples of service delivery for TB, chronic diseases and in recent times ART, expanding access beyond these islands of success is likely to confront a number of constraints. The state of public health systems, particularly in sub-Saharan Africa where ART is needed most, is hardly an untroubled one. The net effect of decades of economic crises, structural adjustments and declining public expenditure has been to severely undermine capacity to provide the most basic of health safety nets in many places.

Hanson et al (2003) have developed a comprehensive listing of health systems constraints to scaling up of priority health interventions (Table II), many of which have relevance to HIV treatment. These include demand side barriers (e.g. affordability, stigma) to accessing services, inadequate service delivery infrastructure, weak drug regulatory and supply systems and multiple donor inputs. While new sources of external financing may compensate for these weaknesses, the chronic lack of investment in certain key health systems functions has created difficulties that are not easily reversed. In particular, the inadequate supply (and in fact a growing crisis in the supply) of skilled and motivated health care workers is now generally recognised as a key systems constraint to scaling up HIV treatment (Hongoro & McPake 2003; JLI 2003; Liese et al 2003; Kober & van Damme 2004).

Table II: Constraints to improving access to priority health interventions and to ART scale up (based on Hanson et al 2003)

| Level of constraint | Types of constraint | Constraint to ART scale up |
|---|---|---|
| I Community and household level | Lack of demand for effective intervention | Medium |
| | Barriers to use of effective interventions (physical, financial, social) | High |
| II Health services delivery level | Shortage and distribution of appropriately qualified staff | High |
| | Weak technical guidance, programme management and supervision | High |
| | Inadequate drugs and medical supplies | High |
| | Lack of equipment and infrastructure, including poor accessibility of health services | High |
| III Health sector policy and strategic management level | Weak and overly centralised systems for planning and management | Medium |
| | Weak drug policies and supply system | High |
| | Inadequate regulation of pharmaceutical and private sectors and improper industry practices | Medium |
| | Lack of inter-sectoral action and partnership between government and civil society | Medium |
| | Weak incentives to use inputs efficiently and respond to user needs and preferences | Medium |
| | Reliance on donor funding that reduces flexibility and ownership | High |
| | Donor practices that damage country policies | High |
| IV Public policies cutting across sectors | Government bureaucracy (civil service rules and remuneration; centralized management, civil service reforms) | Medium |
| | Poor availability of communication and transport infrastructure | Medium |
| V Environmental and contextual characteristics | Governance and overall policy framework | |
| | o Corruption, weak government, weak rule of law and enforceability of contracts | Medium |
| | o Political instability and insecurity | Medium |
| | o Low priority attached to social sectors | Medium |
| | o Weak structures for public accountability | Medium |
| | o Lack of free press | Medium |
| | Physical environment | |
| | o Climate and geographic predisposition to disease | Low |
| | o Physical environment unfavourable to service delivery | Medium |

Less often highlighted but of equal significance is the institutionalisation, over time, of various coping strategies on the part of both users and providers. In many health systems underpaid health workers have increasingly looked to health systems as a means to

extract survival (through mechanisms such as selling state provided drugs, using facilities to conduct private practices and charging of 'informal' fees), rather than as an avenue for expression of professional and societal norms of caring and altruism (McPake et al 1999; Mackintosh & Tibandebage 2000; van Leberghe et al 2002). In the face of growing mistrust in the public health system, users are more likely to turn for care to the private sector or, in an environment where drugs are freely available, to self-medication. (Segall 2003).

Health system constraints to HIV treatment scale up thus lie principally in the lack of universal access to a service delivery infrastructure and, where this infrastructure exists, lack of trust in these services. We discuss two particular supply side factors underlying these constraints – human resource and cultures of service delivery - in more depth.

*Human resource constraints*

The problem of human resource development is multi-faceted – it includes supply, migration, distribution, skills mix, remuneration and productivity dimensions.

Despite the conventional view of African public health sectors as bloated (USAID 2003), the health worker: population ratios of developing country health systems remain vastly inferior to those of industrialised nations (Figure 3).

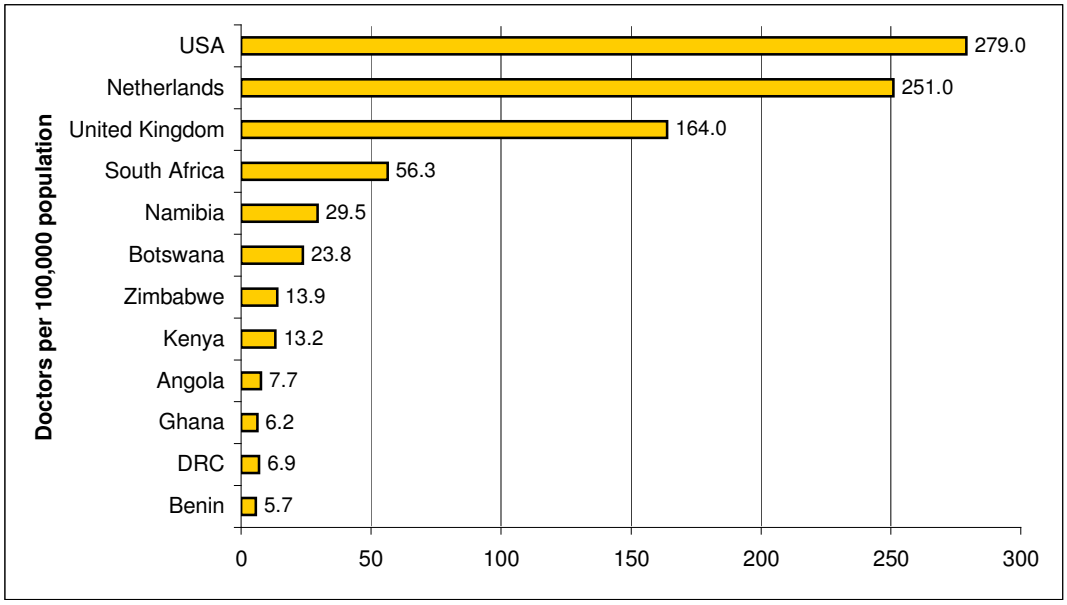



Figure 3: Ratio of doctors to 100,000 population in selected low and middle-income African and high income countries (1995-1999). (Source: Liese et al 2003.)

When measured against need, the shortfalls in developing countries are considerable. Kurowski and Mills (2004) estimated the human resource requirements necessary to meet the recommendations of WHO's Commission on Macroeconomics and Health. Their case studies of two countries, Tanzania and Chad, indicated a 2.7 and 5.4-fold gap, respectively, in the necessary size of the health sector workforce (Table III).

Table III: Human resource needs by 2015 in Tanzania and Chad (Source: Kurowski & Mills 2004)

| | Tanzania | Chad |
|---|---|---|
| Projected availability in 2015 (Full time equivalents) | 37,000 | 3,500 |
| Need in 2015 (Full time equivalents) | 99,000 | 18,800 |
| Projected ratio unskilled-skilled in 2015 | 0.42 | 0.51 |
| Ratio unskilled-skilled needed in 2015 | 0.18 | 0.29 |

Seen over time, the supply of health professionals in most African countries has not always been as limited as it is now (Figure 4). After an initial period of growth in supply, most countries have experienced a consistent decline in the availability of human

resources. The current situation is the product of multiple pressures over several decades - economic crises and stringent lender conditionalities leading to reduced social sector expenditure, dramatic and sometimes overnight drops in real incomes of health professionals, a consequent decline in their 'social value' and status (Marchal & Kegels 2003), less investment in training and production of new cadres, a failure to retain those that are trained and HIV infection.

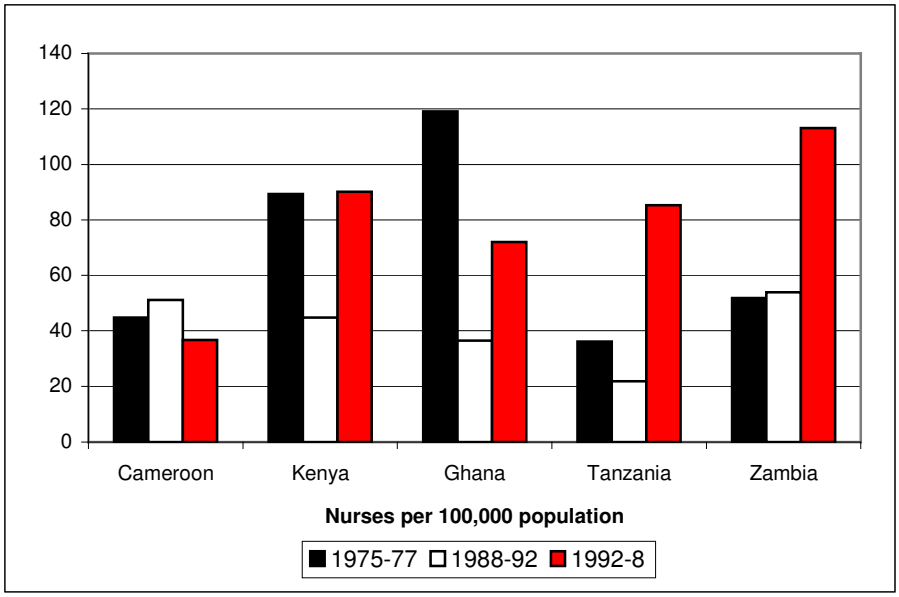



Figure 4: Ratio of nurses to 100,000 population in selected African countries up to 1998. Source: Liese et al 2003

While the African continent has for decades experienced a brain drain of skilled human resources, the evidence points to a greatly accelerated recent process of international migration generated by a human resource crisis (albeit relative) in the health systems of the industrialised North (Marchal & Kegels 2003). Despite the paucity of data and lack of standardised measures documenting migration trends, indications are of a staggering flow of health personnel out of developing countries. For example, nearly 500 doctors and more than 1,000 nurses from South Africa register annually with the United Kingdom General Medical Council (Stilwell et al 2003). Kenya has lost 4000 nurses to the UK and US; in Zimbabwe, only 360 of 1200 doctors trained during the 1990s were still practicing

in their country in 2000 (cited in Liese 2003); over a two year period, 1999-2000, Ghana lost nearly 1000 nurses, treble its annual output from training colleges (cited in USAID 2003), and so on. While the traditional flow out of countries has been of doctors, the recruitment of nurses has now overtaken that of doctors (Stilwell 2003). Thus attempts in the 1990s to stabilise the human resource pool by training more nurses, as suggested by the rising nurse: population ratios in some African countries (Figure 4), is itself being substantially undermined.

High levels of HIV infection amongst health personnel are reportedly a major contributor to attrition of personnel in some countries (Tawfik & Kinoti 2002). By the late 1990s, deaths constituted more than 40% of all nurses lost to the public sector in Malawi and Zambia (USAID 2003), while in South Africa in 2002, 16.3% of health workers were infected with HIV (Shisana et al 2003).

Aggregate ratios of health personnel at national level hide large within country disparities - the brain-drain is as much an internal problem as an international one. The liberalisation of the private-for-profit sector in many countries and the proliferation of non-governmental organisations have made possible a flight out of public sectors and rural areas within countries. In Chad, 50% of health personnel are based in the capital city, N'Djamena (Kurowski & Mills 2004); and in South Africa more than two-thirds of doctors practice in the private sector which caters on a regular basis for less than 20% of the population (Doherty et al 2002). Even within public sectors, human resources are often unevenly distributed.

Using the analogy of a conveyor belt, Padarath et al (Undated) suggest a constant flow of skilled health personnel from rural to urban areas, primary to secondary and tertiary sectors, public to private sectors and poor to rich countries. The consequences of such flows are not only shortages but also a high turnover of staff and loss of institutional memory. Vacancy rates in some countries, despite inadequate staff establishments, are extremely high, of the order of 30-40% of public sector posts for professional staff (Liese

et al 2003; USAID 2003). Even Botswana, a middle-income country able to attract professionals from other countries, is only able to fill only 78% of doctor posts and 81% of nursing posts (JLI 2003).

Added to supply and distributional problems is the tendency towards de-professionalisation of human resource infrastructures in low-income countries (USAID 2003; Kurowski & Mills 2004). However, initiatives over time to protect the skills base of health systems are poorly documented - there is very little literature to be found on now several decades of experience with mid-level cadres (auxiliaries, assistants etc.) in many countries (Dovlo 2004). These categories were a key innovation of the emerging national health systems of African countries in the 1970s, with scopes of practice, titles and training oriented to national rather than international contexts and needs. There are some suggestions of within country pressures to phase out these intermediate cadres and to protect traditional scopes of practice (USAID 2003).

In tandem, the HIV epidemic have given rise to a parallel and semi-formal infrastructure of community and home based care for HIV often based in non-governmental organisations. Relying mostly on a volunteer or semi-remunerated base, this constitutes a significant de facto workforce presence in the health sector. There were an estimated 30,000 community-based carers in South Africa in 2002 and the government recently announced plans to formalise these with other community carers into an infrastructure of community health workers that is managed by NGOs but supported and regulated by the state (DOH/DSD 2003). The extent to which the skills base and mix of existing health systems can be mobilised for HIV care is inadequately understood.

Finally, health workers in many countries, particularly lower level cadres, are paid salaries well below subsistence levels. Non-payment of salaries is not uncommon (McPake et al 1999). Moreover, with currency devaluations and salary freezes imposed through structural adjustment programmes, many health workers experienced dramatic reversals in their incomes over time (Liese et al 2003).

A poorly remunerated workforce is likely to be an unproductive one. McPake et al (1999) observed in Uganda that *"utilisation levels are less than expected… and the workload is managed by a handful of the expected staff complement who are available for a fraction of the working week."* Following an assessment of the availability and time use of staff in their two country case studies, Kurowski and Mills (2004) concluded that major gains in human resource supply could be made by focusing in the first instance on improving the productivity of staff (Table IV). These were of the order of 26% in Tanzania and 35% in Chad.

Table IV: FTE gains from increased productivity

| | Tanzania | Chad |
|---|---|---|
| Additional FTEs from 50% increase in graduates by 2015 | 9,100 | 1,300 |
| Potential productivity gain | 26% | 35% |
| Potential gains in FTEs by closing productivity gap | 31,750 | 8,350 |

Source: Kurowski & Mills (2004)

*Cultures of service delivery*

A less tangible but no less significant dimension of the growing human resource crisis is the demoralisation and demotivation of those remaining within the system. Demotivated health workers are less inclined to orient their actions towards the achievement of organisational goals and may be less willing to balance self-interested behaviour with altruism and solidarity towards users of services (Franco et al 2002).

Mackintosh and Tibandebage (2000:8) describe how in one hospital they investigated in Tanzania *"nurses were caught between many of the worst pressures on the system: low and declining wages, poor chances of advancement, poor and often dangerous working conditions, and an experience of abandonment by the doctors formally responsible for patient care. This sense of being abused has in the worst cases turned full circle into a culture of abuse of patients."* 'Predatory" behaviour towards the state/public health

system on the one hand and towards patients on other hand is sufficiently "rampant" (Van Leberghe et al 2002) to constitute a set of norms or values that powerfully shape the everyday practice of health care providers in many health systems. Its manifestations include the near universal practice of informal, illegal fees in poor countries, use of public facilities for private gain, absenteeism, re-selling of state provided drugs and denying emergency care unless payments are made.

While improvements in the supply and remuneration of health care workers is a necessary precondition for the reversal of these norms, they will not be sufficient on their own: *"The problems of demoralization and negative attitudes are more complex than money and call for a multi-dimensional rehabilitation programme involving measures of both the carrot and stick."* (Segall 2003) Abuse of patients should also not be seen purely as phenomenon of rent-seeking in the face of poverty. Such behaviours are well described in health systems where health workers earn living wages. In South Africa, for example, public sector health workers are frequently described as harsh, unsympathetic and as readily breaching patient confidentiality (Modiba et al 2002). Overt physical abuse and clinical neglect of patients is especially prevalent in maternal health services (Jewkes et al 1998). In this country, a gradual decline in the social status of health workers, a growing gap between public and private sector incomes, and norms inherited from apartheid sanctioning authoritarian approaches to care have conspired to create an anti-patient (rather than patient-centred) ethos of care.

In the context of HIV treatment scale up, these entrenched norms of service delivery limit the ability to create individualised, patient-centred therapeutic partnerships premised on rights and equality between providers and patients. In addition, poorly planned and overly hasty introduction of new drugs such as ART into such environments may entrench perverse incentives and informal economies of drug use that undermine access and accelerate the development of drug resistance.

However, while health systems may express worrying norms and values, these should by no means be seen as inevitably determining the nature of care provided in individual facilities. Mackintosh cautions against an excessively pessimistic approach and suggests that organisational cultures are, in reality, highly variable, and in fact open to influence. Thus in the same Tanzanian context described above *"a number of facilities, seemingly against the odds, were providing accessible care in decent conditions, stretching resources effectively for the benefit of users, treating patients with respect."* (Mackintosh & Tibandebage 2000:10)

Conventional portrayals of public services, by both policy makers and users are typically negative and often expressed as fatalism in the face of overwhelming difficulty. Summary statements on the problems confronting health systems fail to acknowledge what may be important elements of resilience and functionality *within* systems. Local level factors such as the quality of facility and district leadership may be key to this variation and provide clues for intervention and are deserving of further attention. For example, primary health care nurses in South Africa who reported a trusting relationship with their immediate supervisor had two-thirds less burnout than those who did not report such a relationship (Zondi et al 2003). The perceived fairness in which organisational resources (however limited) are distributed may set the template for provider behaviour towards patients and the system which employs them. For example, allocation of career and training opportunities are often powerful signals of local management cultures and significantly influence motivation (Hongoro & McPake 2003).

Through their discourse and practice, leaders and managers set the frames of what is acceptable and unacceptable in provider practice. Leadership that recognises, champions and rewards facilities, districts or health system foci that express appropriate norms and values may form the starting point for influencing norms and values more generally. As Mackintosh and Tibandebage point out, this requires a willingness to see norms and values as an explicit object of intervention by leaders and managers and to align resources and incentives to the expression of appropriate norms and values.

## The stewardship challenges

The preceding discussion suggests that those involved in designing, implementing and supporting the scale-up of HIV care including ART face two central health systems challenges: firstly, addressing the technical and managerial complexity of reorienting health systems towards chronic disease care and secondly, dealing with long term systemic constraints so that the conditions for further scale up are made possible. We discuss each of these in turn.

*Institutionalising chronic disease care systems*

HIV treatment as chronic care demands multiple forms of continuity (in access, between levels of care, in supplies and adherence, and between prevention and care). It is thus design heavy in nature, including for example, the development of patient registers, adherence support, early warning systems for drug stock outs, back-up drug supplies and rigorous monitoring and evaluation processes.

Wagner (1998) categorises these into the following chronic disease care systems:

- Systems design: mapping and systematising a trajectory or pathway of care starting from entry into the system, and spelling out the details of care, referral, monitoring and follow-up at each moment in the course of disease, ensuring a seamless transition from one to another;
- Support systems: laboratory support, drug supplies, diagnostic and treatment algorithms and clinical decision support required to provide care;
- Information systems: for follow-up and monitoring of both individual patients and programme monitoring and evaluation.

While the complexity of these chronic care systems can be reduced through the use of standardised tools and procedures, such as exist for TB care, these have yet to be developed, disseminated and institutionalised for HIV treatment. Moreover, as alluded to

earlier, a successful HIV treatment programme cannot rely solely on centrally standardised systems. Decentralised, district health systems facilitate a comprehensive, area-based approach to prevention and care. District or sub-district level leadership, managerial capacity and the will to problem solve also make possible the successful implementation of national strategies (Bailey 2003). The choice of partnerships – whether with NGOs, traditional healers, private practitioners or workplaces – can only be decided on the basis of local knowledge on what is possible and who is trustworthy; appropriate referral systems have to be built on the basis of local configurations of providers and available expertise; and the security of drug supplies ultimately rests on well functioning local networks.

Paradoxically, therefore, building chronic care systems for HIV care requires both the dissemination of standardised practices on the one hand, and developing local capacity for decision-making and making programme choices; about enabling innovation while ensuring conformity to guidelines. It requires the combination of hierarchical, top down processes with mechanisms to facilitate a fluid and bottom-up process of implementation shaped by local actors.

This suggests the need for a two-pronged strategy of developing tools, guidelines and procedures in combination with district or sub-district management strengthening processes. The use of accreditation, a traditional quality assurance strategy increasingly used to determine the feasibility of introducing ART in health facilities but also as a follow-up audit and feedback mechanism appears, to be emerging as an important strategy to catalyse local responsibility for implementation of many ART programmes. It is worthy of further examination.

Others have proposed the promotion of flexible learning networks, bolstered by information technology, between practitioners, facilities or districts as a way to diffuse implementation knowledge on how best to achieve and maintain the high performance requirements of ART programmes (Bailey 2003). The transfer of values and norms

around the patient-provider and provider-management relationships occurs best through role modelling and peer interaction made possible by such networks. This is especially important as the process of scale up proceeds beyond pilot programmes into the routine health system and the threat of loss of quality and effectiveness becomes a real possibility.

In thinking through the scaling up process, the focus is inevitably on how to mainstream the experiences of high profile and often over-resourced donor projects. Stewardship also consists of identifying and building on indigenous and integrated capacity and forms of resilience within the system. These may reside in geographical areas or in particular functions (e.g. TB programmes) and provide not only possible concrete starting points for implementing scale up but also relevant understandings of the constellation of capacity conditions for scaling up. Managerial and other factors underlying the achievement of high cure or treatment completion rates for TB in particular districts or parts of the country may provide important clues to success factors for ART scale up.

*Strengthening health systems*

Strengthening health systems as part of HIV treatment scale has two dimensions: firstly, making possible the integration ART provision into existing health systems such that wider benefits are possible, and secondly building the new infrastructure needed for programme expansion or scale up.

Integration can be seen as occurring at a number of levels: at the point of service delivery, in the management of programmes at district or local level, and in the financing, procurement of resources and monitoring of programmes at national level.

In Malawi, the MSF project to provide comprehensive HIV care invested in strengthening the district hospital by recruiting additional staff externally and upgrading the local hospital laboratory (Kemp et al 2003). Through negotiations, the project managed to deal

with local tensions around differential salaries between government and NGO staff by introducing a performance related incentive for all district staff, ensuring that district staff receive ART and by recruiting national staff from outside the district. Although procured through national distributors, drug supplies are stored and accounted for separately. At primary health care facility level, however, drugs are stocked with existing supplies in an integrated fashion.

There have been positive experiences of integration and systems capacity building in other programmes. In Tanzania, an intervention to improve the integrated management of childhood illness combined facility level interventions with a programme of general district management capacity building and support, involving processes of prioritisation, planning and mobilisation of resources, based on improved local systems of data collection and analysis (Tanzania IMCI multi-country study 2004). The quality of child-care achieved was significantly better in the intervention versus non-intervention neighbouring districts, despite the fact that the salaries and financial incentives of facility staff remained unchanged.

These examples suggest that strengthening managerial capacity and adopting integrated district-based approaches to resource utilisation can be implemented in conjunction with disease programmes. A commitment towards integration and health systems strengthening also does not preclude partnerships between public and private (for profit or not-for-profit) actors or elements of verticality.

However, they speak little to achieving these effects on a system-wide national level. The MSF project described above, for example, employed 41 Malawi nationals, a situation which would not be feasible in every district without some concerted national action to increase the supply of human resources (Kemp et al 2003).

This raises important questions - is it possible and at what point do donors and experts abandon their disease or programme focus to tackle generic weaknesses such as poor

drug supplies, inadequate laboratory infrastructures and lack of human resources constraining the scale up of all programmes? Is it possible to overcome the differences in language, concerns and even world-views between managers of disease programmes and managers of health systems? (Collins et al 2002)

The final stewardship challenge thus consists in overcoming the programme-systems division and, in particular, placing human resource development at the centre of the scale up agenda. While far more needs to be known about the nature of the human resource crisis in order to develop appropriate responses, this would include at minimum:

- Promoting international action on the brain drain
- At country level (re)investment in traditional human resource functions such as planning, production, remuneration and management of health care providers
- Addressing macro-economic constraints on employment and remuneration of health care providers
- Evaluation of the performance of existing nationally developed cadres such as mid-level and community health workers and their potential role in HIV treatment scale up

## Conclusions

This paper started from the premise that access to HIV treatment in most developing countries with generalised epidemics cannot occur on any substantial scale without health system strengthening. Although HIV can be managed mostly on an ambulatory basis within primary health care, the need for life-long follow-up at high levels of adherence to multi-drug regimens makes HIV care a complex and labour intensive health intervention. From a systems perspective this is best conceptualised as one of developing chronic disease care within a continuum of HIV prevention and care.

Scaling up HIV treatment depends on improving the performance of many facets of health systems, from equity and responsiveness to the integrity of drug supply and

distribution systems. Of these, an inadequate, poorly distributed and unproductive human resource infrastructure poses the major constraint to scaling up, not only for ART but for all health interventions requiring a service delivery infrastructure. The long-term effectiveness of ART also depends on new kinds of relationships - between patient and provider and between provider and the health system.

In a context of multiple pressures - international and national expectations, proliferation of donor assistance, the possibilities of wide-scale drug resistance and need for capacity development and innovation at all levels of the health system – appropriate stewardship of HIV treatment programmes is essential but also undoubtedly complex. It involves working simultaneously at a number of levels and perspectives and with different time frames, and a strategic ability to recognise and build on existing capacity within the system.

This challenge can be framed as a set of short term and long-term goals focused on HIV treatment specifically and health systems more generically (Table V).

Table V: Short and long term goals for health systems strengthening for HIV treatment scale up

| | Short-term goals | Long-term goals |
|---|---|---|
| Develop chronic disease care systems for HIV in a continuum of prevention and care | Develop and institutionalise standard chronic disease service delivery systems<br>Strengthen district/local managerial capacity<br>Promote horizontal learning | Change cultures of service delivery |
| Strengthen health systems | Integrate HIV treatment into existing service delivery<br>Use HIV treatment to improve local/district health systems<br>Integrate HIV treatment strategies into national financing, drug supply and monitoring systems | Development of human resources: supply, remuneration and management<br>Change organisational cultures and incentives |

For donors it involves a willingness to adopt long-term perspectives and invest in core health systems functions such as drug procurement and distribution, information systems, laboratory infrastructures and human resource development. An excessive focus on short-

term targets to the detriment of process (in the '3x5' initiative or in the US Presidential Emergency Plan for AIDS Relief , PEPFAR) may undermine the ability to build capacity in the long term. As Segall (2003:S22) points out, *"…the situation is strongly redolent of the heyday of the vertical programmes: recipient countries dancing to the tune of an international agenda, rather than developing targets organically according to their own circumstances, policies and capacities."*

Finally, while the rapid growth in international funding for HIV and for treatment in particular may be the ripe moment that produces innovation, the knowledge base remains thin. Much greater understanding is required of the nitty-gritty of HIV care strategies (including how to maintain adherence over long periods of time), the human resource crisis and ways to address it, of processes which build innovation on a large scale, of the factors influencing provider behaviour and cultures of service delivery and on strengthening the stewardship of country responses.

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