



MONITORING EQUITY IN ACCESS TO AIDS TREATMENT PROGRAMMES

A review of concepts, models,
methods and indicators



Regional Network
for Equity in Health
in East and Southern Africa



Through
REACH
TRUST
Malawi



Training and
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The project team from the three collaborating organizations was led by Orielle Solar (for WHO); Ireen Namakhoma (for EQUINET through REACH Trust); and Rene Loewenson (for TARSC). The first draft of this document was prepared by Ireen Namakhoma from REACH Trust Malawi/EQUINET, Orielle Solar, Amit Prasad and Steeve Ebener from WHO, and Rene Loewenson from the Training and Research Support Centre/EQUINET. Technical support and written contributions were provided by Tony Mathew from WHO, Sally Theobald from the Liverpool School of Tropical Medicine and REACH Trust Malawi, Talumba Chilipaine-Banda from REACH Trust Malawi and Nicole Valentine, WHO. Valuable technical input was provided also by Thabale Ngulube from the Centre for Health, Science and Social Research (CHESSORE) in Zambia.

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Commission on Social Determinants of Health (Solar & Irwin, forthcoming), the final report of the Health Systems Knowledge Network of the Commission on Social Determinants of Health (Gilson et al., 2007) and the report *Reclaiming the resources for health: a regional analysis of equity in health in east and southern Africa* (EQUINET SC, 2007). We are also indebted to the work done on equity and health systems strengthening through EQUINET (TARSC and REACH Trust), which began in 2003 (see reports at www.equinet africa.org). We also acknowledge the review inputs from institutions in the region, including the Southern African Development Community (SADC).

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Both EQUINET and WHO have established mechanisms to support ongoing information exchange on equity and health systems strengthening relating to HIV and AIDS. We are also keen to learn and disseminate information on your experiences with using this review, as well as your broader experiences on this topic.

For EQUINET, information can be sent to: admin@equinet africa.org.

Information will be shared through a monthly newsletter (www.equinet africa.org/newsletter/) and an annotated bibliography (<http://www.equinet africa.org/bibl/>), as well as through mailing lists.

For WHO, information can be sent to: pphc@who.int.

Information will be shared with the Priority Public Health Conditions Knowledge Network, which has been set up by WHO to support learning on integrating social determinants concepts into the work of its public health programmes and among those of its Member States.

Abbreviations and acronyms

AIDS	Acquired immune deficiency syndrome
ART	Antiretroviral therapy
ARV	Antiretroviral medicines
CSDH	Commission on Social Determinants of Health (WHO)
DFID	UK Department for International Development
EQUINET	Regional Network for Equity in Health in east and southern Africa
Equi TB	Tuberculosis Knowledge Programme
GIS	Geographical Information Systems
HIV	Human immunodeficiency virus
IDU	Intravenous drug users
IMAI	Integrated management of adult illnesses
MoH	Ministry of Health
PEP	Post exposure prophylaxis
PLWHA	People living with HIV or AIDS
PMTCT	Prevention of mother-to-child transmission
PRA	Participatory reflection and action
SADC	Southern African Development Community
SDH	Social determinants of health
TARSC	Training and Research Support Centre
TB	Tuberculosis
TB/DOTS	Directly observed treatment, short-course for tuberculosis
VCT	Voluntary counselling and testing for HIV
WHO	World Health Organization

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Executive summary



Strong health systems are essential for equitable and sustainable HIV/AIDS-related programmes. Health systems need to be accessible and responsive to the specific needs of excluded groups, such as under-served rural and low-income communities. Against a background of wider inequities in health and health care, the expansion of HIV/AIDS treatment and care should tap any opportunities to strengthen equity in the provision of good quality health services. At the same time, we need to take care not to aggravate inequities by inappropriately withdrawing resources from other interventions or other parts of the system. As antiretroviral therapy (ART) is rolled out in the region, it is important to have a comprehensive framework to monitor and evaluate equity in access to HIV/AIDS treatment programmes and to gauge the strength of health systems.

...we need to take care not to aggravate inequities by inappropriately withdrawing resources from other interventions or other parts of the system...

The World Health Organization (WHO) and the Regional Network for Equity in Health in east and southern Africa (EQUINET) through REACH Trust Malawi and Training and Research Support Centre (TARSC) developed this review. It provides a practical resource for programme managers, health planning departments, evaluation experts and civil society organizations working on health systems and HIV/AIDS programmes at sub-national, national and regional levels in east and southern Africa.

Many of the orientations and tools in this document were developed through a wide consultation process, starting in 2003. We draw on the broader analysis of health equity advanced by EQUINET, as well as evidence from five background studies on equity and health systems impacts of ART programming in east and southern Africa which were supported by EQUINET, TARSC and DFID (available at www.equinet africa.org).

An initial framework for monitoring equity and the strengthening of health systems was developed by Kalanda & Loewenson (2004). This work was reviewed and endorsed by representatives of national AIDS councils, SADC and partner organizations at a meeting in February 2004 (EQUINET & Oxfam GB, 2004). Another meeting to review and discuss this work was organized in October 2004 (EQUINET, Equi TB & TARSC, 2004). In 2005 and 2006 the framework was tested through pilot analysis at country level in Malawi by REACH Trust/EQUINET (Makwiza et al., 2005) and in Zambia, with the technical support of WHO.

EQUINET has since further developed work on equity analysis in health and is implementing country and regional equity 'watch' processes in cooperation with member states in the East Central and Southern African Health Community.

Another strand of work that informed this process was the World Health Organization's analysis of approaches to improving equity in access to health and health systems which included reviews of several frameworks and concepts and methods for sampling hard-to-reach and hidden populations in order to identify common barriers that prevent access to health care (Solar, Irwin & Vega, 2004).

WHO's overall work on equity in access reflects its focus on the social determinants of health (SDH) and the limitations of the biomedical approaches traditionally adopted in public health. It is widely recognized that social, economic and cultural factors are powerful determinants of population health that can enhance or limit the efficacy of available medical technologies and drugs. As these factors are socially constructed, we refer to them hereafter as the social determinants of health.

...social, economic and cultural factors are powerful determinants of population health that can enhance or limit the efficacy of available medical technology and drugs...

As a part of its commitment to health equity and to understanding the social determinants of health, WHO created the Commission on Social Determinants of Health (CSDH) in 2005. The aim of the CSDH was to gather evidence on the role societal factors play in population health, including the issue of inequities in access to health systems. The CSDH was also tasked to propose policy options to improve health equity. The final report of the CSDH, released in 2008, is an important tool for analysing the key characteristics a health system should encompass to improve health equity and to explore the role of social factors in creating barriers to access to health systems (or services; abbreviated as 'equity in access').

In order to mainstream the work on SDH across its main programmes, WHO additionally established in 2007 the Priority Public Health Conditions Knowledge Network (PPHC-KN) as an internal institutional process to generate evidence and sensitize its different departments on the need to address access barriers in order to achieve health equity. The PPHC-KN involved 16 public health programmes (including the World Health Organization's HIV programme) that examined the impact of SDH in their operations and equity outcomes and proposed actions to reduce inequities.

The resulting review, presented here, includes an analysis of key concepts and advice on different methods and how to apply them, guided by the social determinants of health framework. It also proposes a set of indicators that can be used to measure equity in access and coverage and to expose the areas of health system strengthening needed to deliver on this. This set of indicators can be integrated into an HIV/AIDS programme's monitoring scheme, within a broader overall health system's monitoring and evaluation system.

The methods and indicators were pilot tested in Malawi and Zambia to ensure their practical applicability in the specific context of east and southern African countries.

Concepts and models

The review outlines the concepts of equity in health and equity in access to health systems and shows how these are linked to the concept of social determinants of health. It examines the key dimensions for building equitable, comprehensive, universal coverage in health systems, which include governance, financial protection, integration, distribution of health workers and other resources, and the public-private mix. The monitoring framework this review describes is based on the Tanahashi model of effective coverage (Tanahashi, 1978). This model describes four different domains of equity in access to health services that finally determine the level of effective coverage, namely:

- availability coverage
- accessibility coverage
- acceptability coverage
- contact coverage.

Effective coverage, therefore, represents the proportion of the population in need of health services who ultimately receive an actual intervention.

Equity in access and the social determinants of health are linked concepts, since the different factors that prevent access to ART services by specific population groups are usually socially determined. Several of the barriers identified by applying the Tanahashi model can be related to different social determinants of health. Thus, additional domains of equity in access and health systems strengthening are the intersectoral nature of policies and services required to address access barriers and the policy context.

...the different factors that prevent access to ART services by specific population groups are usually socially determined

Methods

This document draws on different disciplines and methodological approaches. For example, we can use geographical information systems (GIS) to illustrate how geography and environmental barriers shape inequities in access to health services. GIS can show the distribution of health services as a basis to measure availability of services and geographical accessibility in terms of distance and travel time.

Quantitative studies can generate information on health systems strengthening, such as financial protection, equity, access or adherence amongst different groups (by age, sex, income level, geography and so on). Qualitative research also gives us a deeper understanding of how the different social determinants of health (such as gender, poverty and stigma) may interact with one another to cause barriers to access.

Qualitative research ... gives us a deeper understanding of how the different social determinants of health ... interact with one another to cause barriers to access.

We can also monitor equity in health programmes through participatory reflection and action approaches that support affected communities in identifying their own problems, causes and actions for addressing their challenges. Together, this information helps us develop responses or interventions to improve equity in access to HIV services and health outcomes.

Thematic monitoring areas for health systems strengthening

We identified the elements of health systems that impact on equity in access by reviewing the literature and the experiences of countries in the region and internationally (EQUINET SC, 2007; Gilson et al., 2007). On this basis, the review explores equity and health systems strengthening within eight thematic areas relevant for monitoring, summarized below. For each thematic area, we identify priority policy questions and provide examples of potential indicators that can be used to monitor equity areas. Where possible, we present case studies, including the pilot testing in Malawi and Zambia, to illustrate how the indicators have been used in different settings in the east and southern Africa region. The eight thematic areas are as follows:

1 Fair processes for developing policy and monitoring policy implementation on access to ART

One of the areas to monitor is whether countries have a policy or guidelines on who should have access to ART and what process was followed in developing these guidelines. For example, was the treatment policy developed through a transparent and revisable process?

A case study illustrates how a participatory process involving different stakeholders from grassroots to national levels was used in Malawi to develop a policy for promoting equity in access to ART.

2 Access to ART across different population groups

An important issue in ART scale-up is equity in access and monitoring who has access in order to ensure that certain population groups are not being marginalized. In Zambia, for example, when access to ART was classified by rural and urban area in November 2005, it was found that 94% of the patients on ART were residing in urban areas while 6% were from rural areas. This analysis helped to uncover inequities in access to ART as patient representation from urban areas was disproportionate to the need, relative to rural areas.

3 Fair and sustainable financing and accountable financial management

ART scale-up comes with substantial new funding. Indicators for specifically monitoring ART funds are considered in the wider context of monitoring financial protection, equity-oriented financing of health systems (including both provider and patient costs) and the contribution towards broader efforts to build up universal coverage in access to health care.

In Zimbabwe, the National Health Accounts identified that households were the major source of financing, contributing about 56% of the total HIV/AIDS health expenditure in 2005. This shows that households and people living with HIV/AIDS (PLWHA) carried the greatest burden.

4 ART programme integration into priority health services

In most countries in the region, AIDS and other HIV and AIDS-related infections are a major burden on all levels of the health system. AIDS programming can be integrated across various levels of health systems, including financing, health worker deployment, organization and delivery of services, but, in tracking how far ART is integrated into priority health services, two critical areas are explored: integrating ART programmes with tuberculosis (TB) programmes and with prevention of mother-to-child transmission (PMTCT) programmes within maternal and child health programmes. In Malawi, for example, tuberculosis and HIV coinfection is high; over 50% of tuberculosis patients are coinfecting with HIV. As of 2006, approximately 26 700 tuberculosis cases were registered countrywide, of these 66% were tested for HIV and two-thirds of those tested were HIV positive.

5 Adequacy, distribution and retention of health workers

In most countries in the region, the lack of human resources is arguably the most limiting factor in providing ART and health services generally, so this aspect needs monitoring. Only five countries in the region meet the 'health for all' standard of a minimum of one doctor per 5 000 people (South Africa, Namibia, Madagascar, Mauritius and Botswana) while another five countries do not even reach half

this level. In 2005, no east or southern African countries met the WHO threshold of 2.5 doctors, nurses and midwives per 1 000 people, needed to reach levels of assisted deliveries of 80%. Differentials in health care and capacities to absorb new resources are affected by the unequal distribution of health workers between the public and private health sectors, between urban and rural areas, and across different levels of the health system.

6 Sustainable and accountable purchasing, distribution and monitoring of essential drugs and commodities

ART scale-up will affect countries' drugs and commodities procurement and their logistics policies. Most of these systems are already weak and do not function to expectation. To strengthen existing health systems, procurement and distribution of ART should be integrated into the same procurement and logistics systems used for other health programmes. ART scale-up should therefore be used as a springboard to strengthen these systems.

7 Equity and complementarity in public-private sector roles

For an effective HIV and AIDS national response, the private sector needs to work in collaboration with the public sector in providing ART. For reasons of sustainability, involving the private sector will also become paramount in providing ART through cost-sharing and insurance schemes. Private sector involvement will require regulation and monitoring from the relevant regulatory bodies in the public sector. A Malawi case study shows that in the private for-profit sector, patients receive ART at a heavily subsidized rate of US\$3.60 per month and payments are shared with the Ministry of Health (MoH). The private sector follows national systems and is provided with standardized monitoring tools.

8 ART programme integrated as a priority in other sector policies and programmes

Cross-sectoral or intersectoral policy-making and implementation are crucial for progress on health equity. This approach addresses the root causes of the barriers to providing or accessing ART services for specific population groups. Since several of the barriers that people in need

of ART services face are located outside the health sector (gender norms, stigma, income insecurity, employment discrimination, among others), the health sector should work with other sectors, including education, social promotion, finance and labour, to take action and adopt effective remedies. Intersectoral actions might also help address food and transport challenges that PLWHA in the east and southern African region identified as major barriers to accessing and adhering to HIV care.

After identifying the main indicators in the thematic analysis, we then related these to the domains of the Tanahashi model. This model, which is expanded to include intersectorality and the policy development context, is proposed as a monitoring framework and tool for equity in access and health systems strengthening. A consensus emerged that to simplify monitoring, a bare minimum of five recommended core indicators is feasible for a basic analysis of equity and health systems strengthening in the region. Proposing these indicators was guided by the initial set endorsed by SADC in 2004, followed by a process of country evidence, fieldwork, and internal dialogue within WHO. The final recommended core indicators resulting from this process of policy dialogue and testing are the following:

Availability:

- 1 Number of ART facilities per 1 000 people estimated to need ART.
- 2 Percentage of health facilities dispensing ARVs that experienced one or more stock-outs of one or more required medicines in the previous 12 months.

Accessibility and financial protection:

- 3 Percentage of household total out-of-pocket expenditure for health being paid for ART treatment.

Acceptability and integration:

- 4 Overall assessment of pregnant women attending PMTCT services and who successfully received ART.

Effective coverage:

- 5 Percentage of adults and children with HIV known to be on treatment 12 months after initiation of antiretroviral therapy.

An additional set of complementary indicators and examples for future monitoring are proposed for a more in depth equity analysis. However, the application of the complementary indicators will depend on the institutional and national capacity to gather information.

In conclusion, monitoring equity and the strength of health systems in ART scale-up and programme implementation is essential. Programme managers need to ensure that ART services are accessible to and meet the specific needs of different population groups. Together with monitoring targets in terms of numbers treated, health systems issues and the impacts of ART expansion should also be followed up so that these services, and the resources, infrastructure and personnel underpinning them, serve to strengthen rather than undermine broader health systems.

Together with monitoring targets in terms of numbers treated, health systems issues and the impacts of ART expansion should also be followed up so that these services, and the resources, infrastructure and personnel underpinning them, serve to strengthen rather than undermine broader health systems.

We hope that this review will benefit the efforts of ministries of health, national stakeholders and WHO in improving equity in access to ART. The review aims to assist programme managers in this challenging journey by providing concrete examples of how indicators, processes and methodological approaches can be used to monitor equity in ART scale-up. In addition, the review contributes to WHO efforts to mainstream a focus on SDH through its Priority Public Health Conditions Knowledge Network (PPHC-KN). The review will also support country equity analyses and the development of operational research capacities in the African health systems strengthening context.

1 Introduction



1.1 Background

By December 2009 approximately 7.7 million adults and children in east and southern Africa were estimated to need antiretroviral treatment (ART). Of those in need, 41% were receiving treatment. This gap in coverage reveals problems of equity in access and health system issues which persist despite substantial efforts and marked success in rolling out ART (WHO, UNAIDS and UNICEF, 2010).¹

Southern African Development Community (SADC) heads of state noted in the 2003 SADC Maseru Declaration on the Fight Against HIV/AIDS that scaling up the delivery of effective interventions for HIV and AIDS required urgent attention and action. They called for the strengthening of health care systems, especially public health systems, to improve care and access to counselling, testing services, treatment and support (SADC, 2003).

To achieve high levels of equitable coverage, sustainable treatment programmes must have effective and efficient countrywide health care systems and accessible clinical service points, particularly for underserved rural and low income communities (EQUINET, 2004). Against a background of wider inequities in health and health care, the expansion of AIDS prevention, treatment and care presents opportunities to strengthen equity in access to health services, and should certainly not worsen inequities.

The review for equity in access and health systems strengthening in AIDS treatment programmes includes:

- A review of concepts:
 - Health systems
 - Equity
 - Social determinants of health
- The Tanahashi model of coverage:
 - Five domains of effective coverage
 - Identifying excluded or 'hidden' groups
- Methods to assess equity in access:
 - Quantitative methods
 - Qualitative methods
 - Geographical Information Systems
- Some barriers to access identified using methods proposed
- Thematic areas for health systems impact
- Priority questions and possible indicators
- Case study examples
- Summary of indicators to measure the Tanahashi domains of access:
 - Recommended core indicators
 - Additional core indicators
 - Complementary indicators and examples

¹ Current data show an increase in ART coverage from 32% in 2008 to 41% in 2009. As a result of national, regional and global commitment, the number of people in the region receiving ART has been expanded to almost 3.2 million in December 2009 from 75 000 in December 2003 (WHO, UNAIDS & UNICEF, 2010).

This review offers a resource for programme managers, health planning departments, monitoring and evaluation experts and civil society organizations working on health systems and HIV/AIDS programmes at sub-national, national and regional levels. The focus is on the southern and east Africa region, but as it includes valuable information on processes and indicators, it aims to support the work of anyone working on equity and health systems outcomes in HIV/AIDS treatment programmes.

The aim is to inform reviews of progress, planning and decision-making on policies and programmes and respond to community perceptions. At the regional level, it aims to provide a framework that can be used to compare country progress on equity in access and health systems outcomes in HIV/AIDS treatment programmes. Within the wider regional context of east and southern Africa, it can be used to assess adherence to regional commitments and share promising practices in country models and approaches.



WHO and the Commission on Social Determinants of Health

WHO's overall work on equity in access to health systems reflects its commitment to improving health equity by focusing on the social determinants of health (SDH). It is widely recognized that social, economic and cultural factors are powerful determinants of population health that can impose barriers to accessing available ART services. To advance this perspective, in 2005 WHO created the Commission on Social Determinants of Health (CSDH) to gather evidence on the role societal factors play in generating health inequities and to propose policy options. The Commission's final report called for sustained action to achieve health equity by focusing on social determinants of health with specific policy recommendations.

WHO also created nine knowledge networks to support the Commission. These networks synthesized evidence on opportunities for improved action in key areas such as urban settings, early child development, globalization, health systems, social exclusion, women and gender equity, priority public-health conditions, and measurement and evidence.

The Hub which coordinated the Health Systems Knowledge Network was run by a consortium made up of the Centre for Health Policy at the University of the Witwatersrand, South Africa, EQUINET and the Health Policy Unit of the London School of Hygiene and Tropical Medicine, United Kingdom. Its final report, *Challenging inequity through health systems*, published in June 2007, outlines the pathways through which health systems address social determinants and provides specific recommendations to strengthen the features of health systems oriented to population health and health equity (Gilson et al., 2007).

The different components of the review were developed through wide consultation within and beyond the region. An initial framework for monitoring equity and health systems strengthening, drawing on five background studies (EQUINET, Equi TB & TARSC, 2004), was endorsed by representatives of national AIDS councils, SADC and partner organizations at an EQUINET meeting in February 2004. Subsequently, the framework was peer-reviewed, discussed further at the EQUINET/Equi TB meeting in October 2004 and then tested through a pilot analysis at the country level in Malawi by REACH Trust/EQUINET in 2005 (Makwiza et al., 2005) and in Zambia.

We derived additional orientation from the World Health Organization's examination of approaches to improve equity in access to health systems (Solar, Irwin & Vega, 2004) which elucidated the core ideas presented in this document. Furthermore, WHO reviewed methodologies that would give better samples of hard-to-reach and hidden populations in identifying barriers preventing access to health care. WHO additionally established in 2007 the Priority Public Health Conditions Knowledge Network (PPHC-KN) as an internal institutional process to generate evidence and sensitize its different departments on the need to address access barriers in order to achieve health equity. The PPHC-KN involved 16 public health programmes (including WHO's HIV programme) that examined the impact of SDH in their operations and equity outcomes and proposed actions to reduce inequities.

We built on the recommendations and proposals that emerged from the consultation process, EQUINET's research, analysis and policy dialogue on areas of equity in health systems. Equally important in preparing this document was the WHO work on equity in access and social determinants of health, especially the Commission on Social Determinants of Health and its Health Systems Knowledge Network. The resulting document provides a set of tools to analyse and monitor factors that create socially-determined barriers to access to ART services.

In a practical application, REACH Trust/EQUINET together with WHO conducted a follow up pilot study with field work in Zambia and Malawi. We complemented the pilot testing results with evidence from a literature review (Makwiza et al., 2006; Chang & Solar, 2006) to buttress the proposals for monitoring with specific case study examples. Consequently, the proposals are strongly grounded in concrete experiences of expanding access to prevention, treatment and care for HIV and AIDS in east and southern Africa.

We used these national and regional experiences, reviews and assessments to identify key policy and operational issues and possible indicators for monitoring equity and health systems strengthening in HIV/AIDS treatment programmes. Several criteria that aligned with policy goals expressed by regional and country programme managers for a coordinated response (EQUINET, Equi TB & TARSC, 2004) were used in this report:

- a Be simple in design, flexible, appropriately standardized and use existing data;
- b Assure a reasonable quality of collected data;
- c Be owned by and useful to local, national and regional institutions and integrated within a unified monitoring and evaluation system;
- d Promote decentralization of decision-making and collect data that is analysed and used locally and that provides support to the management planning cycle;
- e Inform decision-making and action at all levels of health and programme planning; for example, policy-makers, planners, managers and communities.

Accordingly, this document proposes methods, analytical models and indicator sets of varying complexity, which can be used at different levels to monitor and evaluate equity in access and health system issues. The review contributes key resources for the work of the Priority Public Health Conditions Knowledge Network (PPHC-KN) of WHO. Together these tools can also be used within programmes for the development of operational research capacities for health systems strengthening.

1.2 Monitoring equity in access to AIDS treatment programmes within the context of the WHO Health Sector Strategy for HIV 2011-2015

WHO is currently finalizing a new Global Health Sector Strategy for HIV 2011-2015 (WHO, forthcoming) that proposes four strategic directions to guide national HIV responses. The Strategy positions the health sector response for HIV within the broader public health agenda and within a multisectoral response. In addition, one of the strategic directions adopted by this document emphasizes the importance of reducing vulnerability and risk, and overcoming structural barriers to accessing quality HIV services, towards achieving a sustainable response and health equity.

Three decades of global HIV response have stimulated new public health thinking and approaches. An important issue that the Strategy focuses on is the need to address the social determinants of health that prevent equity in access to ART. To address this, the Strategy recognizes the need for a strong HIV response that is embedded in a fortified health system that ensures equity of HIV programmes and interventions. As we will

see in this document, the different barriers that prevent access to ART services can be linked to social determinants of health. Only when those determinants are identified and analyzed can interventions be designed to address them effectively and equitably.

This document is a stepping-stone in WHO's work that is already partially implementing the upcoming HIV Global Health Sector Strategy. By reviewing different concepts and methods, and exploring potential indicators to monitor equity in access, we want to contribute to WHO's efforts to reduce HIV vulnerability and risk by addressing inequities and their underlying social determinants.

The concept of equity in access to ART and the different areas for monitoring of health systems strengthening presented in this document aim to provide a comprehensive and more systematized approach to the analysis of structural barriers to AIDS treatment. Certainly, more work is required in this arena, because several areas and issues related to equity in access remain to be further explored. This document is a first step that aims to trigger a more in-depth debate and analysis that will contribute to sustained progress towards universal access.

2 Key concepts health systems, equity and social determinants of health



This section outlines and explains the major concepts that underlie the proposals of this review. These concepts are not unique to health systems responses to HIV/AIDS but have a more general application.

2.1 Health systems

A health system has been defined as comprising all activities whose primary purpose is to promote, restore or maintain health (WHO, 2002). The health system can directly address social differences in exposure to risks and vulnerability to ill health. Access to effective health care services on the basis of need mitigates the impoverishing effects of ill health and facilitates social reintegration. Interventions organized across a range of sectors can prevent ill health in the population, for example, promoting healthy local food production, healthy diets and food supplementation. Combined with wider support to overcome geographical barriers to accessing care, such interventions protect people from the economic burden of ill health, reduce poverty and avert the deterioration of people's socioeconomic status due to disease.

A health system encompasses national health policies and programmes, laws and regulations, organization and management structures, information systems, and financing arrangements. These institutions combine to create, among other things, the services – preventive, curative and public health services – aimed at improving health. Health systems act across four major domains, through:

- public health or by protecting and promoting population health and preventing ill health;

- relevant, good quality health services and care for all, according to need and financed according to ability to pay. This includes procuring drugs and other essential commodities;
- measures that build and secure the human resources and knowledge to shape and deliver public health and health services; and
- measures that protect and ensure the social values, ethics and rights that underlie health systems, including social solidarity, participation and involvement. These measures also protect the flexibility of domestic regulatory policy from encroachments by international conditionalities.

Access to effective health care services on the basis of need mitigates the impoverishing effects of ill health and facilitates social reintegration.

The final report of the Health Systems Knowledge Network systematically reviews the evidence that shows how, when appropriately designed and managed, health systems can deliver general population gains and close unfair social and economic differentials in health, promoting overall health equity (Gilson et al., 2007; EQUINET SC, 2007). Health systems can achieve this goal when they specifically address the circumstances of socially disadvantaged and marginalized populations, including women, the poor and groups who experience stigma and discrimination.

As Gilson et al. (2007) suggest, the overarching features of health systems that address the social determinants of health, generating equitable health outcomes, are:

- leadership, processes and mechanisms that leverage intersectoral action across government departments to promote population health;
- organizational arrangements and practices that involve population groups and civil society organizations, particularly those working with socially disadvantaged and marginalized groups in decisions and actions that identify, address and allocate resources to health needs;
- health-care financing and provision arrangements that aim at universal coverage and offer particular benefits for socially disadvantaged and marginalized groups (specifically: improved access to health care, better protection against the impoverishing costs of illness and the redistribution of resources towards poorer groups with greater health needs); and
- the revitalization of the comprehensive primary health care approach, as a strategy that reinforces and integrates the other health equity-promoting features identified above. (Gilson et al., 2007:55–56)

The performance of health systems and their individual functions has often been evaluated in terms of outcome measures. The features described above indicate that just looking at final outcomes, such as average mortality and treatment rates, is insufficient to assess how well health systems address equity as they may mask variations across different population and social groups. For this reason, it is important to assess processes within the system, such as participation in policy development, and intermediary outcomes, such as measures of ‘access’ (WHO, 2005; EQUINET SC, 2007).

2.2 Equity

Equity is an ethical and value-based concept, grounded in the principles of fairness and distributive justice (McCoy, 2003). The concept of equity in health implies addressing differences in health status that are judged to be unnecessary, avoidable and

unfair. These differences relate to disparities across socioeconomic status, sex, age, racial groups, rural or urban residence and geographical region. In the face of such unjust differences, it follows that equity should be achieved through the redistribution of societal resources for health, including the power and capabilities to demand and use these resources (EQUINET SC, 2004).

In accordance, WHO defines health equity as the absence of unfair and avoidable or remediable differences in health among population groups defined socially, economically, demographically or geographically (Solar & Irwin, forthcoming). The negative formulation of this definition attests to the fact that, like social justice, health equity is often most acutely perceived through its absence. Efforts to achieve health equity draw their energy from confrontation with existing offensive inequities in opportunities for health prospects among social groups. The positive content of the concept of equity is distributive justice. Health inequities have their roots in social stratification. Health equity thus defined is an ethical category deeply embedded in political reality and the negotiation of social power relationships. Hence the EQUINET (2004) conception that equity not only integrates a normative element of fairness but a measure of the extent to which social groups have the power to claim and use fair entitlements.

Equity in opportunities for health

Health equity means creating social conditions under which all people enjoy equal health opportunities. In other words, the equity principle ‘does not require everyone to have the same level of health but it demands such a distribution of determinants of health, to the extent they can be controlled, that every individual has the same possibilities to lead a long and healthy life’ (UNRISD, 2007; Stronks & Gunning-Schepers, 1993).

The primary responsibility for protecting health equity at the national level falls on governments. The International Covenant on Economic, Social and Cultural Rights (ICESCR, 1966), ratified by most countries, including those in the east and southern African region, provides for the ‘highest attainable standard of physical and mental health’. Internationally this right to health imposes four

obligations on states: to respect, protect, promote and fulfil the enjoyment of the right to health. This is qualified in two ways: it is subject to the availability of resources and to 'progressive realization of the right'. This means that states have to allocate resources, pass laws and put administrative programmes and services in place that will bring about equity in opportunities for health over time.

At the same time, the role of power relations in equity implies that social empowerment is central to exercising the right to health. People must be able to act through collective participation to strengthen their organizational capacities, to challenge power inequities and to hold the state accountable for its obligations in relation to health equity (Wallerstein, 2006). Therefore social empowerment is a key policy in addressing the social determinants of health and it is further analysed in this document.

Equity in access to health systems

As suggested earlier, equity in processes and opportunities for health are fundamental for health equity. In this context, equity in 'access' to health systems becomes a critical theme. This implies, from an operational perspective, needing tools to help decision makers identify where the system is breaking down and for which groups in society, and being able to inform decision making at central government, regional or local levels. The service itself and potential areas for breakdown cannot be conceptualized simply as availability of services, nor can access be translated simply as 'use of services'. The proof of equity in access is that the services are used according to the differential health needs of different social groups within the population (Tanahashi, 1978; Solar, Irwin & Vega, 2004).

Health need is expressed by those variables that reflect changes in a person's health status and that can lead a person to seek health services. Numerous studies have found a significant association between use of services and need, which is always the principal motivating factor. However, to understand different social groups' needs, reviewing population-based survey results on health needs for specific social groups is essential. For this reason, analysing equity in access can also never be restricted to analysing demand for services as some groups may not express demand if the variables triggering need are not understood.

It is also important to scrutinize the services delivery process to identify bottlenecks. For example, provider behaviours is often a major bottleneck in access to the health system, especially for that of vulnerable groups (WHO, 2010). This is relevant to guaranteeing that medicines reach the people who need them and, in particular, those groups that are generally excluded. For this reason, analysing equity in access can never be restricted to analysing use of services.

The Tanahashi model (1978) of health service coverage, detailed in section 3, provides a useful analytical tool that brings together health need as the starting point of analysis and invites scrutiny of the service delivery process for bottlenecks for vulnerable groups. It considers how needs of different social groups may translate into different service requirements and differential population coverage rates if these requirements are not met (where they in fact become 'barriers' to access).

Although some studies have considered barriers to access, their focus has been too narrow to provide a systematic account of barriers according to levels of care and programme components. We also argue that the analysis needs to be applied in the context of national realities in each country to generate specific recommendations for strategies and action to overcome barriers to access. In summary, the Tanahashi model needs to be applied to all levels of care and programme service components constituting the HIV/AIDS treatment programme to provide evidence for action on barriers to access for different vulnerable groups. For example, barriers to accessing voluntary counselling and testing for HIV (VCT) may be different from those associated with parent or mother-to-child transmission (PMTCT) or from those relevant to the distribution of ART.

Geographical dimensions of equity

The geography of places results in diverse environmental barriers that different social groups cannot all address equally, resulting in inequities. In an equitable world, each patient with the same level of need would be able to access the same quality of care within a reasonable period of time, no matter what 'geography' they need to traverse. Unfortunately, as has long been established, location, distance and particular geographical features obstructing access continue to differ for health services and, in differing,

affect people's willingness and ability to use services (Cromley & MacLafferty, 2002).

For example, the probability of visiting a care provider decreases with the distance the person has to travel to the provider (Joseph & Phillips, 1984). This is supported by other research showing that people with limited mobility, due to low income, age or poor access to transport, are more sensitive to distance and thus more likely to use the nearest health care provider, to the detriment of quality of care (Bashnur, Shannon & Metzner, 1971; Haynes & Bentham, 1982).

The significance of these geographical effects can vary in different places, populations and time periods, and among different individuals. Therefore, while geographical dimensions need to be integrated into any equity analysis, they should not mask the underlying social inequities which may require additional interventions. For example, farm labourers may all live in a particular geographical area that is underserved according to a geographical analysis. Yet a sole response of providing health services closer to this affected group may fail to address some of the factors causing inequity in access to health services, such as perceptions of health services and health needs.

The most common uses of geography in assessing equity in access is as a 'denominator' for the availability of services or the geographical

accessibility of services to the population (termed availability or accessibility 'coverage' in the Tanahashi model). Population coverage may be expressed as the number of physicians or nurses per population in a particular district, where 'district' is the geographical unit of analysis. This measure becomes more effective the more disaggregated the data is down to district level. At state or province levels, for example, differences within countries are less obvious. This application of geography can also be misleading when there is substantial movement of patients across administrative divisions.

Nevertheless, if all these issues are correctly addressed, geography provides an important element in analysing equity in access, as it can:

- facilitate the integration of information or data from different sources
- provide a different way of visualizing data
- permit specific analysis, in particular related to time to access health services.

2.3 Social determinants of health

Several barriers that prevent access to ART services are socially determined and point to the role that social determinants of health (SDH) can play in limiting effective coverage. Broadly speaking, the determinants of health encompass all factors that influence health. Solar & Irwin (forthcoming) state that some determinants can be related to the individual's genetic and biological conditions, which explains health variations between younger and



Geographical dimension of equity in Zambia:

The density of inhabitants per first level hospital in Zambia reaches a ratio of 135 738 people per hospital at the country level. At the provincial level, among the nine provinces, the ratio ranges from 70 259 per hospital to 141 304 per hospital. The variability increases at the district level, where several districts have no hospital at all and another has a population density of 40 880 people per hospital.

This example indicates the need to disaggregate information and to clearly define the level of geographical disaggregation used for analysis and comparison (Ngulube et al., 2008).

elderly populations, for example. Another group of determinants refers to the environment people live in, while others are linked to behavioural factors, such as smoking or diet.

The concept of social determinants of health has been defined broadly as encompassing the full set of social conditions in which people grow, live, work and age (CSDH, 2008). Social determinants of health focus on the complex social and political arrangements that create structural conditions in societies and influence the emergence of health inequities. These social determinants operate at different causal level such as socioeconomic context, exposure, vulnerability, health outcomes and consequences, and could be identified and addressed at those levels.

Moreover, analysis of the social determinants that affect the effectiveness of any public health condition, including HIV/AIDS usually shows that incidence and prevalence is related to the social position an individual occupies in the social gradient (Blas & Sivasankara Kurup, 2010). A social determinants of health approach thus also explores how structural conditions will ultimately limit access to health services to specific population groups.

This document provides policy-makers with practical ways to study and understand the determinants of health that create barriers to accessing ART services. The social determinants framework helps explain how and why only a small proportion of a population in need of a health intervention for whom services are available (target population and availability coverage) will actually receive the service (effective coverage).

As stated previously and further explored in section 3, the Tanahashi model is useful in identifying service delivery ‘bottlenecks’ and their causes. Often the

causes of these bottlenecks are located beyond the health sector. For example, gender norms that disempower women can affect access to services but the strategies to tackle them may involve the education, social development and/or employment sectors.

Social determinants of health focus on the complex social and political arrangements that create structural conditions in societies and influence the emergence of health inequities.

For this reason, Solar & Irwin (forthcoming) suggest that policy-makers should adopt two principles in dealing with the social determinants of health:

- Intersectoral approaches both in policy formulation and implementation (broadly referred to in this document as intersectoral action). As most structural determinants are located outside the health sector, intersectoral action will catalyze the efforts of different government and non-government actors to deal with the social determinants of health in a comprehensive, effective and sustained way.
- Civil society and affected communities should participate in the design and implementation of policies to address the social determinants of health. Social participation – through processes and in conditions that build empowerment – is a key instrument in redistributing power, engaging decision makers to listen and respond to the demands of excluded communities.

3 The Tanahashi model of health service coverage



As indicated by Tanahashi:

Health service coverage is a concept expressing the extent of interaction between the service and the people for whom it is intended, this interaction not being limited to a particular aspect of service provision, but ranging over the whole process from resource allocation to the achievement of the desired objective. (Tanahashi, 1978: 295)

The process of coverage considers different levels or domains which determine effective coverage. The five domains include: availability coverage, accessibility coverage,

acceptability coverage, contact coverage and effective coverage.

In Tanahashi's model of health service delivery, 'effective coverage' is defined as the proportion of the population in need of an intervention who have received an effective intervention. 'Effective' in this context does not refer to the specific health impact of the intervention. Effective coverage of the population is a measure of the proportion of the population who fully comply with a recommended treatment regimen or programme (according to the standard of the activities defined). For example, in monitoring a TB/DOTS programme, we should be concerned with the proportion of tuberculosis patients who have completed the entire course of treatment. This definition applies both to individual health services and public health interventions.

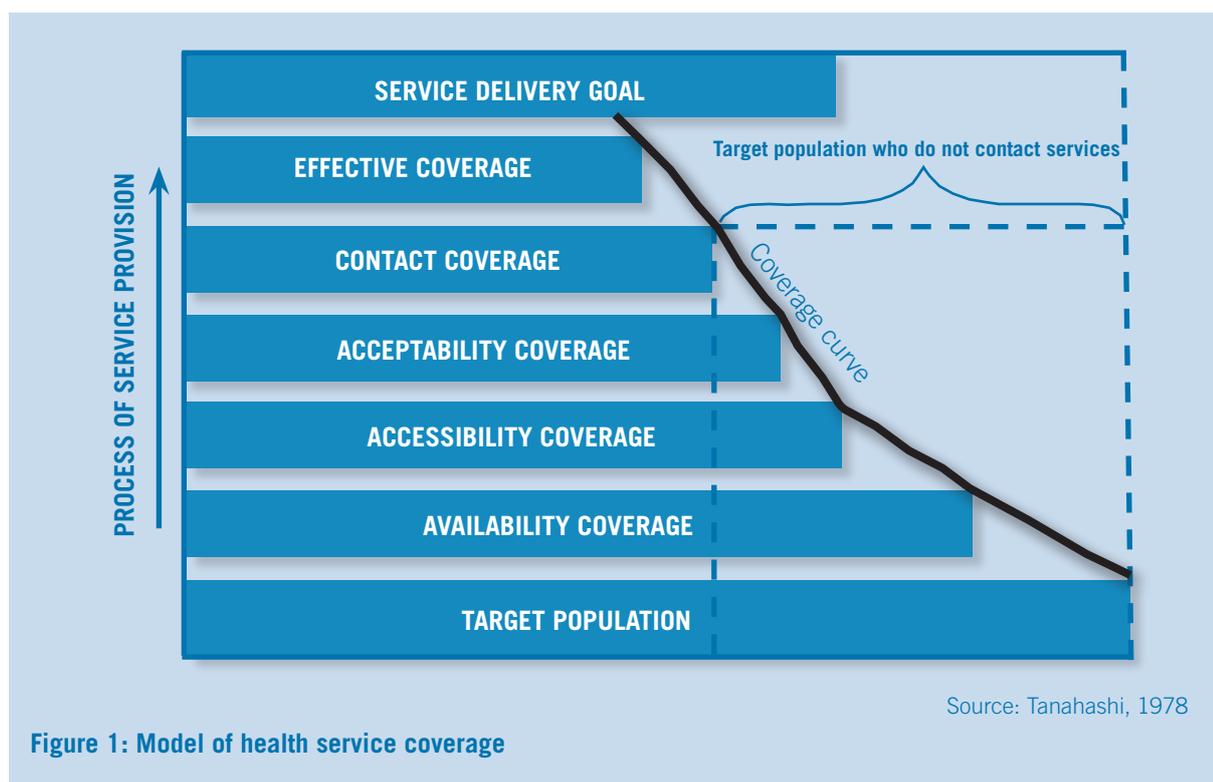


Figure 1: Model of health service coverage

To assess the effective coverage of a health intervention the different domains of coverage, as shown in Figure 1, should be measured. Each of these domains is analysed in the following paragraphs.

The evaluation of coverage using the model of effective coverage can help managers and policy-makers:

- identify bottlenecks in the operation of the service,
- analyse the constraining factors responsible for such bottlenecks; and
- select effective strategies for service development.

3.1 Domains of effective coverage

Availability coverage considers the resources available for delivering an intervention and their sufficiency, for example, the number or density of health facilities and personnel or the availability of technology (drugs, equipment and so on). In other words, availability coverage measures the capacity of a health system in relation to the size of the target population or ideally for the population in need.

Availability coverage considers the resources available for delivering an intervention and their sufficiency

A number of indicators could be used to measure availability coverage:

- The proportion of people for whom sufficient resources and technologies for a health intervention have been made available;
- The ratio of resources to the total population in need;
- The proportion of facilities that offer specific resources, drugs, technologies and so on.

Other examples of indicators for availability coverage include the number of ART facilities per 1 000 people estimated as needing ART by province or district and the number of doctors per 100 000 inhabitants.

Information on the availability of resources is important in steering resource-generation policies. Different potential sources of information for determining availability coverage can be used, including health system registers and surveys. For example, surveys of a sample of facilities can provide detailed and reliable information on the availability of key inputs.

Accessibility coverage measures how accessible resources are for the population. There are two main dimensions of accessibility: physical access and affordability. From the physical dimension, the resources might be available but inconveniently located, therefore hindering access.

Accessibility coverage measures how accessible resources are for the population. There are two main dimensions ...physical access and financial affordability.

For example, the distance from a health care provider is a strong accessibility factor. Another factor closely related to distance and transport facilities is time. The travel time to a health facility to access ART and the waiting time to see a health professional seem well associated with the patients' perception of accessibility of ART services. WHO work on health-care use suggests using travel time, rather than distance, to measure physical access (Ray & Ebener, 2008). The argument is that geography and transport facilities in different countries vary so much that the comparative measurement of distance to health facilities does not necessarily reflect variability in physical access. However, the value of time (the opportunity cost of time) is different for different groups of people and consequently its impact as an access barrier will also vary.

Therefore, to measure accessibility coverage considering time, calibration methods should be used. This will ensure comparability not only across countries, which probably is of less interest to a district health manager, but also among different population groups within the country (considering employment categories, social and family factors, and so on). In

this regard, all the elements influencing travel time, including the location of health care providers and population groups in need, the physical environment, travel scenarios and so on, could be integrated into a geographical information system (GIS) for analysis. This will significantly augment the knowledge gained from information collected through more classical approaches such as surveys (Black et al., 2004; Ray & Ebener, 2008). For example, the percentage of the population in need of ART located within a one-hour travel time to the nearest ART site can be studied, taking into account the capacity coverage of each site. This integrated approach would help clarify the inter-relationships between the concepts of access, demand for care and coverage.

Another dimension is the financial barrier to access or financial accessibility (affordability). User fees and transport costs have been shown to have a negative impact on access to health care, rendering health services inaccessible to poor households. Out-of-pocket health expenditure as a percentage of total health expenditure and the percentage of the population suffering from catastrophic health expenditures² can be used as indicators to measure the financial barriers to accessibility.

Acceptability coverage measures the proportion of people for whom services are acceptable. Even if resources are available and accessible, they may not be used if the population does not accept them.

Acceptability coverage measures the proportion of people for whom services are acceptable.

² Since 2002 WHO has defined financial catastrophe as direct out-of-pocket payment exceeding 40% of household income net of subsistence needs. Subsistence needs are taken to be the median of household food expenditure in the country. Expenditures in excess of the 40% cut-off point generally require reallocation of household expenditures from basic needs, sometimes even from children's education, ultimately risking impoverishment (WHO, 2010a). However, countries may wish to use a different cut-off point in setting their national health policies (Xu K, et.al., 2005)

Acceptability includes non-financial factors such as culture, beliefs, religion, gender, type of facility, neighbourhood where the facility is located, and so on, as well as aspects of affordability that relate to people's perceptions of the value of health care.

Assessing acceptability coverage is useful for public health programmes, which are often preventive in nature, for example, the prevention of mother-to-child transmission intervention and HIV testing or counselling. Uptake of programme activities by the population may depend to a certain extent on cultural and religious characteristics. Information on acceptability coverage can help policy-makers understand some of the predisposing and enabling factors that affect the use of services. Because factors affecting acceptability coverage differ, research exploring and recording the reasons for low acceptability, as expressed by the population, is helpful for policy-makers and managers.

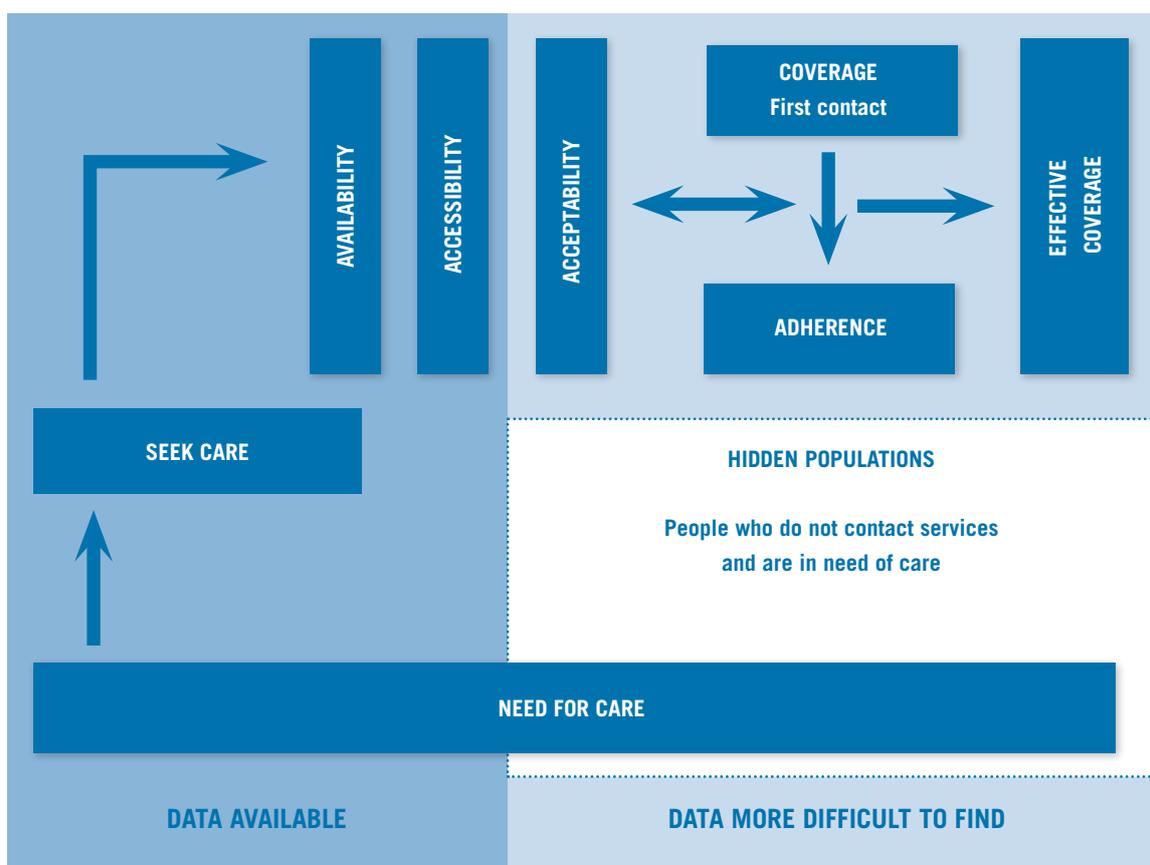
The health system responsiveness approach, as proposed by the *World health report 2000* (WHO, 2000b), is one method for measuring acceptability coverage through household and facility surveys. Responsiveness, based on the concepts of quality of care and patient satisfaction, measures the quality of patient interaction with the health system across two broad dimensions: respect for individuals and service orientation. Respect for individuals is measured by responses in four domains: dignity, confidentiality, autonomy and communication. There are also four domains of service orientation: prompt attention, choice, quality of basic amenities and social support. However, the responsiveness approach provides limited information on acceptability in two respects. First, as it focuses only on people who have interacted with the health system, it only provides a measure of quality for people accessing the system and not for those excluded. Separate studies, analyses and metrics need to be developed for excluded groups. Second, while some of the domains provide indicators of quality, they do not, per se, measure continuity of care which is of particular importance to treatments requiring multiple contacts such as ART.

Using participatory and qualitative research approaches is especially strategic in exploring and understanding barriers and facilitators affecting the acceptability of a health programme. These approaches provide the perspective of different population groups, particularly poor and marginalized women and men whose voices are often absent in policy debates. Analysing qualitative findings can inform recommendations for more acceptable and accessible services, hence making them truly more available.

Contact coverage measures the proportion of the population who have had contact with a health service provider. It is similar to ‘use of services’. For health interventions that require a one-time action, contact coverage may be virtually equivalent to effective coverage. For other interventions, such as ART, effectiveness requires several contacts with a health

care provider. We also need to consider ‘continuity’ of access and include some indicators for adherence to ART. This should identify the factors associated with the abandonment of therapy, as well as those that limit adherence for different population groups. This will enable treatment providers, together with communities, to focus actions and special support programmes on the groups with poor adherence.

A question that might arise is: What is the additional value of measuring contact coverage in addition to accessibility and acceptability coverage? This question assumes that acceptability of accessible services directly translates into contact. However, as discussed earlier, there are a number of factors, mostly related to personal health behaviour and decision processes, that interplay between acceptability and contact.



Source: Equitable Health Systems and Policy Unit (EQH/ESP), WHO, 2006

Figure 2: Revealing ‘hidden’ population groups by analysing the effective coverage of the health system

3.2 Identification of excluded or 'hidden' groups

Certain groups cannot access ART and never contact the health system or do so infrequently, as highlighted in Figure 2 on page 24. Since they are socially excluded from health services, these groups are 'missing' or 'hidden' from the system.

This exclusion may be the result of behaviour which is illegal or illicit, due to stigma and social discrimination, or socioeconomic circumstances, or people may simply be excluded for various other reasons. They may prefer not to participate in the activities of the health systems and in surveillance data collection activities. In reaching out to the 'hidden' populations, programme implementers should take the utmost care in promoting ethical practices and respecting patients' rights, including rights to privacy, confidentiality and non-discrimination.

Hidden populations present a dilemma for ART monitoring, as their omission from the surveillance system leaves gaps in knowledge and understanding of the HIV/AIDS epidemic and effective interventions

(Magnani et al., 2005). The focus from an equity perspective is to identify hidden groups and determine whether or not they could access care: What are the barriers and facilitators that influence access to HIV/AIDS prevention and ART by these hidden groups? Qualitative and participatory research approaches may offer opportunities to capture the viewpoints and perceptions of these hidden or missing groups, especially if led by researchers who are able to spend reasonable periods of time establishing rapport and trust.

In using the effective coverage model proposed by Tanahashi to evaluate delivery of HIV and AIDS programmes at the national or district level, programme managers can adopt a step down approach. The evaluation begins with the analysis of effective coverage. If that domain is not satisfactory, the next step is to assess the contact coverage. If contact coverage is low, the analysis continues by looking at acceptability and accessibility coverage. However, it should be noted that, in reality, the relation is not hierarchical but has many parallel links between the domains. Nevertheless, this model is useful as a checklist for policy-makers and managers in the analysis of equity in health service delivery.

4 Methods for measuring equity in access and health systems strengthening



This section discusses methods of collecting information to measure and generate evidence on parameters that are used to assess equity in access and health systems.

4.1 Quantitative methods

Quantitative studies can provide important information about how different factors in health systems strengthening, equity, access or adherence are associated. Many of the proposed indicators and case study examples are quantitative and are calculated from registers and demographic and epidemiologic information.

Existing routine health information system registers, such as ART facility patient registers, capture information on individuals tested or in treatment, including age, sex, residence, occupation or other proxy for socioeconomic status and clinical data (test date and results, reasons for starting ART, drug regimen, adherence, outcomes). Administrative records provide data on health worker numbers and distribution, drug availability and health spending. While information with regard to personal socioeconomic information is limited, the information that could be used to measure some aspects of equity in access is in most of the cases underused.

From an equity perspective, the problem with health registers is that they are restricted to people who have contacted the health system and provide no information on groups who do not access facilities.

Studies, including surveys using questionnaires, are one way of overcoming major limitations in routine data. For example, national health accounts provide more detailed information on the shares of health resources mobilized from different sources, including through out-of-pocket spending, and the allocation of health spending. Demographic and Health Surveys (DHS) and Multi-Indicator Cluster Surveys

provide household-level information on a range of health-related indicators. While they do provide disaggregations by wealth quintile, region, residence and education, they are expensive. Generally, national health accounts and Demographic and Household Surveys cannot be disaggregated to district level and for some specific population groups, and therefore may not be able to capture local specificities.

On the other hand, other important contextual environmental, provider-related factors and community-enabling factors should be measured and included in any method attempting to ‘explain’ equity in access issues. The inclusion of contextual variables has implications for the methods used to model complex relationships between variables. The methodological challenges include contextual variables often being measured at the aggregate level while health information from registers or surveys is individual. We then require analytical techniques that take the different levels into account, considering the reciprocity and complexity of relations. When the goal is to explain rather than predict, simple regression analysis may be less useful since it does not separate out the independent influence of variables or take into account the causal ordering of variables. Methods such as path analysis and theory-driven hierarchical entry of variables may be more useful for this purpose (UNRISD, 2007).

4.2 Qualitative methods

Qualitative research can help us understand the relevance of different factors and how they interact with one another as well as user views. This is particularly necessary given the complexities of decisions people face over both starting and then adhering to ART treatment. Qualitative studies also provide important information on the level of participation in policy processes, the factors affecting health worker distribution and retention, and other aspects of health systems.

The current literature is dominated by quantitative studies with a few studies using mixed methods and only a handful that are solely based on qualitative methods. Nonetheless, much of the knowledge on barriers and facilitators to equity in access could be derived from qualitative research. A review of the current literature highlights some of the barriers to and facilitators for access, and points to areas where such research can play an important role in enhancing equity outcomes in ART programming (Chang & Solar, 2006). In particular, there is need for more research to understand the complex interactions between major barriers such as economic costs and fear of rejection due to HIV stigma and how these relate to gender and poor patient–provider relationships. We also need to determine which barriers are more meaningful, comparatively and in specific contexts. This knowledge is essential to guide policy-makers and programme managers in designing and monitoring the effectiveness of ART programmes.

Qualitative research aims to generate knowledge and information representing the perceptions, understandings, concepts and practices of different groups. It helps to identify local needs and priorities, place issues in the context of people’s lives and give direction to programme development and service provision. Pope & Mays (1995) state:

The goal of qualitative research is the development of concepts which help to understand social phenomena in natural (rather than experimental) settings, giving due emphasis to the meanings, experiences and views of all the participants.

Qualitative research uses a range of methods, including key informant and in-depth interviews, group techniques (focus group discussion) and observation. The choice of method depends on the study questions, purpose and objectives.

Ensuring that people living with HIV/AIDS are more involved is empowering and reduces stigma and discrimination. It also improves health through access to better information and services for care and prevention (WHO, UNAIDS and UNICEF, 2007; Stephens, 2004). An approach that has proved useful in east and southern Africa is participatory

reflection and action (PRA) which works with communities, helping them to identify problems, causes and actions, and to systematize their experiences. Thus, the communities’ roles are transformed from ‘objects’ of inquiry to ‘subjects’, capable of generating and using new knowledge.

EQUINET has produced resource materials and user tools for participatory reflection and action in health, including Venn diagrams, participatory mapping and livelihood mapping (Loewenson et al., 2006). In addition, the World Health Organization in recent years has edited resource material, tools and questionnaires for operational research related to stigma, discrimination and adherence and its impact increasing testing, treatment and prevention (WHO, Population Council, 2009).

Community-based programming is a good way to measure equity in access to ART, especially if programmes integrate participatory planning and implementation, monitoring and evaluation with the people living with and communities affected by HIV/AIDS (EQUINET SC, 2007; TARSC, 2009).

It is more fruitful to characterize the relationship between qualitative and quantitative methods as complementary rather than exclusive. Firstly, as noted above, qualitative work can be conducted as an essential preliminary to quantitative research. Qualitative techniques can provide a description and understanding of a situation or behaviour. At their most basic, these techniques can simply discover the most comprehensible terms or words to use in a subsequent survey questionnaire. Secondly, qualitative methods can supplement quantitative work. This can be part of the validation process where various methods are used and the results compared for convergence (for example, a large-scale survey, focus groups and a period of observation) or part of a multi-method approach which examines a particular phenomenon or topic on different levels.

Researchers need to be aware of the different types of answers derived from different methods. A survey may pick up the public account but a series of in-depth interviews reveals people’s private, often contradictory and complex, beliefs. Different research settings and methods allow access to

different knowledge levels. Combining methods builds a wider picture which is especially productive when exploring the findings of previous research.

While qualitative and quantitative research may well investigate similar topics, they address different types of question. For example, in relation to adherence to ART, a quantitative study can determine the proportion and demographic characteristics of patients over a given period. Answering questions about the reasons for variations in adherence and the meaning of drug treatment in the lives of patients requires a qualitative approach (UNRISD, 2007).

4.3 Geographical information systems

Another approach for identifying barriers to equity in access uses geographical information systems (GIS). Applying geographical information systems requires some specific data collection practices and allows for the visualization (mapping) and spatial analysis of information.

In the context of this review, the distribution of both the 'supply' of health services and the patients' need for care are relevant. They are the basis for measuring availability of service and the geographical relationship, in terms of distance or travel time, between these two elements defines geographical accessibility.

Methods such as AccessMod© (Black et al., 2004) use the modelling capacity offered by a geographical information system to go one step further.³ They directly integrate the notions of availability and accessibility into a measure of the population coverage capacity of the health care delivery system that is in place. These methods design the theoretical catchment area attached to each health facility, on

³ AccessMod© is a unique extension created to complement a common GIS software in use (ESRI ArcView 3.x). It gives users the capacity to measure physical accessibility to health care, estimate geographical coverage of an existing health facility network (measuring Tanahashi's availability and accessibility coverage) and complements the existing network in the context of a scaling up exercise. AccessMod© was developed by the World Health Organization, it is free of charge and can be downloaded by anyone from: <http://www.who.int/kms/initiatives/accessmod/en/index.html>

the assumption that the quality of care is consistent across all health facilities in the country.

This method can be applied to present some of the indicators included in this document (see Table 6), for example:

- The spatial distribution of the population living with HIV/AIDS (prevalence) and of patients receiving ART, in relation to the location of the ART sites;
- The percentage of the prevalence population living within one hour's travel time to the nearest ART site, taking into account the patient coverage capacity of each site.

These two elements give an idea of what access barriers a population faces and how the health system is performing in terms of population coverage. They also identify populations that had physical access to the facility but did not seek care.

Although an increasing number of health ministries have access to a geographical information system tool for visualization purposes (thematic mapping), the use of more advanced applications, such as spatial analysis or modelling, that are required here, remains limited. In addition, this type of analysis only makes sense if applied on accurate and up-to-date geographical information system layers.

Therefore, it is crucial to integrate this type of analysis within a larger process that evaluates geographical information system capacity and data availability in the country before filling the potential gaps. While this requires additional investment, the results will not only benefit the specific project but will directly strengthen the entire health information system. Using geography as a platform for integrating data from different sources enables an analysis from a geographical perspective. This larger process was applied in Zambia and Malawi, as we will see in detail in Section 6.

5 Equity, health systems and treatment of HIV and AIDS



The relevance and practical application of the reviewed concepts and methods for monitoring equity in access and health systems strengthening in relation to ART treatment are further discussed in this section.

5.1 Equity and health systems areas for monitoring

Providing ART can potentially promote existing health systems or inadvertently aggravate inequalities caused by them. Health systems can facilitate effective coverage of ART or can present barriers. This is a significant two-way relationship since ART scale-up depends on strengthened health systems, as noted in the 2003 SADC Maseru Declaration (SADC, 2003).

There is potential for a virtuous cycle where programmes that deliver ART strengthen health systems and thus expand access to ART and support the provision of other essential health services. However, there is also the threat of a vicious circle whereby programmes to deliver ART divert scarce resources from the wider health system and undermine long-term access both to ART and to other critical public health interventions (McCoy, 2003). Therefore, ART programmes need to develop and expand in ways that enhance positive potentials. They should not deepen inequities or redirect limited resources from other health interventions or from other parts of the health system (Loewenson & McCoy, 2004). This is especially important in east and southern Africa, where ART is provided on a large scale in a context of fragile public health systems with inadequate financing (EQUINET SC, 2007).

A 2006 review of experiences of ART roll out in east and southern Africa suggests that, in practice, the effects have been mixed. While positive examples exist of equity-oriented programming and health systems strengthening, negative impacts are also evident (Makwiza et al., 2006). The review findings indicate that the most enabling conditions for sustained, equitable ART roll out occur where there is free treatment at point of delivery and functional, adequately-staffed district health systems. The system needs to be able to provide a range of services for adults and children. It needs support from community outreach and complementary inputs from other sectors, including food and transport, together with social action to secure and effectively use health system resources (EQUINET SC, 2007).

Since HIV causes chronic infection and current treatment manages and controls the disease but does not offer a cure, treatment programmes need to be organized to provide continuous, sustained care. The approaches to ART can potentially strengthen the system, providing strategic learning for its general ability to manage other costly and life-threatening chronic diseases, such as diabetes. This is important given the general increase observed in non communicable diseases in countries in east and southern Africa, particularly in low-income communities (WHO AFRO, 2007). The integration of AIDS treatment within integrated management of adult illness (IMAI) and the public health approach to ART, promoted by WHO, facilitate linkages in the protocols for treatment (Gilks et al., 2006).

This public health approach, which is also related to the new HIV strategy 2011-2015 that WHO will launch (forthcoming), aims to provide universal access to high-quality care and treatment, within a

comprehensive response to HIV and AIDS, but in a manner which strengthens fragile public sector health services. This approach also acknowledges the need for an urgent response to providing ART but realises this must be sustainable and life-long.

Based on the areas of health systems impact identified from a review of the literature and country experiences, the review explores equity and health systems within eight thematic areas:

- 1 Fair processes for developing policy and monitoring implementation;
- 2 Access to ART across different population groups; including those facing geographical and/or socioeconomic barriers;
- 3 Fair and sustainable financing with accountable financial management;
- 4 ART programme integration into priority health services;
- 5 Measures to develop and retain health workers for priority health services;
- 6 Sustainable and accountable purchasing, distribution and monitoring of essential drugs and commodities;
- 7 Private sector ART provision that complements and enhances public health services;
- 8 ART programme integration into the policies and programmes of other priority sectors.

In section 6, we examine each of these areas using case study examples to identify priority policy questions and to propose potential indicators for monitoring equity and health systems strengthening.

Women stigmatized ... may be rejected by family members, friends, health-care providers, employers and church members... they lose the social support that facilitates both ART access and adherence.

5.2 Barriers and facilitators in equitable health system responses to HIV/AIDS

The effects of HIV/AIDS responses on equity and health systems strengthening have been assessed through quantitative and qualitative methods, as outlined in the previous section. It should be noted that in relation to AIDS, qualitative methods have proved particularly important in interpreting quantitative findings. This section presents examples of barriers and facilitators in the health sector response to HIV/AIDS. These are better understood by combining qualitative and quantitative approaches.

Studies of health-care use often highlight the role of poverty as a barrier. Poverty has an impact on how people perceive and express need, partly due to competing subsistence demands and cost barriers to accessing services. User fees may, as noted earlier, pose cost barriers but even when health care is free, financial obstacles emerge. People cannot afford the necessary medication, cannot buy food, pay for transport to health facilities or bear the opportunity costs of lost time for work and/or other activities (Cunningham et al., 1999; Lonroth et al., 2010). Case study 1 from Cote d'Ivoire highlights these aspects (see page 33).

Social barriers and facilitators

HIV-related stigma remains a major obstacle in the fight against the virus and prevents access to ART for many people, especially women, those living in poverty and other disenfranchised groups. Being unable to disclose HIV status at home and being afraid that they will be discovered taking medication have been found, in qualitative studies, to be significantly greater issues for women, people with lower incomes and those with no health insurance. Stigma and fear of discrimination in these groups were confirmed in a prospective cohort study of 2864 people receiving HIV treatment (Sayles, Wong & Cunningham, 2006). Women stigmatized by being HIV-positive may be rejected by family members, friends, health-care providers, employers and church members which means they lose the social support that facilitates both ART access and adherence (Carr & Gramling, 2004).



CASE STUDY 1:

Socioeconomic characteristics of people living with HIV/AIDS in Cote d' Ivoire

One of the first studies to look at the socioeconomic characteristics and health status of HIV-positive subjects in an African setting undertook a cross-sectional survey of 711 patients participating in the UNAIDS Drug Access Initiative (DAI) in Côte d'Ivoire.

The survey found significant associations with not being on ART or in the Drug Access Initiative programme (which provided subsidized drugs) and being male, having no health-care insurance and a low level of education, living in poor housing conditions and having a poorer self-assessed health status.

The study concluded that despite public subsidies for ART, patients from the poorest social and economic backgrounds still did not obtain access to treatment, suggesting that factors other than financial resources also influence access.

Source: Msellati et al., 2003.

Social barriers also exist within health services: negative attitudes and poor communication skills on the part of health workers stigmatize and disempower patients, resulting in poor adherence to treatment programmes (Ongala, 2008; WHO, 2010).

HIV-related stigma remains a major obstacle in the fight against the virus...

HIV-related stigma also causes increased psychological distress, affecting people's ability to cope, adjust and manage HIV-related disease (Chesney & Smith, 1999). In a qualitative study in Tanzania by Ericson & Brynne (2006) that interviewed HIV-positive individuals, one respondent reported:

“Some people who were very close to me shut me out completely. They are ready to say it is better to stay with thieves rather than staying with me because I am infected.” (Male living with HIV, Tanzania)

Specific barriers for women

Stigma, discrimination and fear of rejection directly impact on HIV-positive women, particularly those who are economically dependent on their partners or social networks. In a study of 560 married women across five districts in Zambia (Lusaka, Ndola, Kitwe, Livingstone and Mansa), 76% of the women were non-adherent and 66% had not disclosed their HIV status due to fear of blame, abandonment and loss of economic support from their partners (Zulu, 2005). Social instability and interpersonal conflict with partners and/or family members often destabilize adherence (Wood, Tobias & McCree, 2004).

Furthermore, HIV-positive women may find adherence more difficult because of the number of demands on them due to their caregiver roles. This aspect was explored in a qualitative study of African-American women which is included despite the different cultural context (Case study 2, page 35). Women have also reported that they do not control their reproductive health care decisions and often have to consult men to access these health resources, constraining their timely use of services (HEPS Uganda, 2008).

The particular barriers to ART that women face have mobilized governments, funding partners and civil society in different countries, who increasingly recognize the need to act on the gender inequalities in accessing ART. However, what seems to have been overlooked is information that shows that men are being left behind in accessing ART. Indeed, the most recent information from reporting countries on progress towards universal access shows that globally, coverage of needs is higher for women (as many as 39% women in need of ART have access) than for men (31%). This pattern is also present in the majority of African countries and specifically in eastern and southern Africa where 44% of women in need of ART have access compared to 37% of men in need (WHO, UNAIDS and UNICEF, 2010).

In addition to the particular barriers that women face, which is linked to their higher HIV prevalence, gender differences also affect men. It is reported in Malawi that more females (61%) than males (39%) access ART (MoH, 2006). In addition to having less access to ART services, men generally tend to access ART when they are more ill and their CD4 levels are lower than women, and they therefore tend to have poorer treatment outcomes. This calls for action in order to address the factors that encourage and prevent access to ART, and specifically, the gender factors that account for women having higher HIV prevalence rates and men having lower access and uptake of services (Makwiza et al, 2009).

Linkages with other care services as a facilitator to access

ART access is facilitated through linkage with other care services. Studies have shown that homeless people who participate in assistance programmes for the homeless and intravenous drug users who are in drug treatment programmes have higher rates of ART access (Celentano et al., 2001). In a retrospective study of intravenous drug users in Canada, users who were not in drug treatment programmes were three times less likely to be on ART (Strathdee et al., 1998). As with ART access, linking ART treatment with services for other types of care, such as pharmacies or other clinical care facilities, can improve adherence (Waters et al., 2002). Since HIV-positive individuals often face poverty or social exclusion, or may suffer from drug

addictions or mental illness, it is important to connect the service community and use a multidisciplinary approach in managing needs arising from their HIV status.

Social support as a facilitator to ART access

Having social support from partners, family members and friends promotes adherence, especially since ART regimens are lifelong commitments. On the other hand, significant turmoil in social relationships can deter adherence (Palmer et al., 2003). In particular, ties with young children who can remind caregivers to take their medication can help facilitate adherence (Edwards, 2006). The quotes from participatory action research in Kenya with HIV-positive individuals in Kasipul district highlight the impact of social stigma as a barrier and of support as an enabling factor in ART access (Ongala, 2008:17):

“When my husband became HIV positive and died of AIDS people accused me of killing him with the disease. Nobody stood with me. For months, I felt lonely and spent time crying. I wanted to leave home. I even preferred death rather than having this meaningless life.”
(HIV positive woman, Western Kenya)

“Before joining the network [client support network] I was afraid to share my status, however as I listened to others speak freely in the network, I discovered I was not alone so I opened up even on biting issues. I have since come a long way with valuable solutions.”
(ART client support network member, Western Kenya)

Engaging the social support network in ART programmes may help increase adherence rates, as well as reduce various social and economic consequences of the infection and treatment. However, given the stigma associated with HIV/AIDS, few people voluntarily disclose their HIV status, complicating plans to involve family members and friends. Decreasing HIV-related stigma is thus a priority. House, Landis & Umberson (1988) described social support as a multidimensional construct, consisting of aspects such as belonging



CASE STUDY 2:

Care giving as a barrier to ART adherence amongst African-American women

A qualitative study carried out in 2003 interviewed HIV/AIDS-infected African-American women from an outpatients clinic at Johns Hopkins Hospital in Baltimore to investigate the women's perceptions of social support and how it affected their adherence to medication.

Data was collected over a two-week period through tape-recorded interviews using a semi-structured guide.

The study identified facilitators of adherence, which included supportive family members and having young children. Barriers to adherence were identified, such as perceived stigma, feeling unloved or uncared for, relationship turbulence and having a husband who was also HIV positive.

Although participants reported being 'fairly' satisfied with the quality of support they received, they also expressed a desire for emotional support and often instrumental support was most desired and wanted. Having an HIV-positive husband was considered a barrier because of the need to provide care and support.

Inclusion criteria for this study were African-American women from 20 to 49 years who were receiving HIV care at the clinic and taking antiretroviral therapy but were otherwise mentally and physically healthy. The 20 eligible participants who were interviewed ranged in age from 21 to 49 years, with a mean age of 39 years. Most of the women were single (75%, n = 15).

Source: Edwards, 2006.

to a social network, perceived satisfaction with support, emotional support (defined as empathy, caring and trust) and instrumental support (sharing tasks, such as running errands or child care). Social support has been found to be a major buffer in coping with HIV/AIDS related stresses (Derlega et al., 2003) and is also associated with lower prevalence of depressive symptoms (Simoni & Cooperman, 2000) and slower progression to an AIDS diagnosis (Leserman, Perkins & Evans, 1992). Studies of HIV patients on combination therapy have shown a positive association between quality of perceived social support and adherence to highly active antiretroviral therapy (Catz et al., 2000).

As noted in the discussion on health systems, cross-sectoral or intersectoral policy-making and implementation are crucial for progress on health equity. Many of the main barriers to access are outside of the health services and can only be tackled through strategies that reach beyond the health sector.

For example, supportive activities with other sectors are needed to improve transport to health facilities, to provide food and to promote other social support in communities. Thus, in order to tackle barriers and strengthen facilitators to effective ART coverage, we need to identify mechanisms to address and act upon these factors by working with other sectors and community social networks.

6 Indicators of equity in health systems by thematic monitoring area for health systems strengthening



This section further explores the eight thematic areas we can use to assess the impact of HIV/AIDS treatment programmes on health systems. The emphasis is on the effect on equity and strengthening of the health system. The eight areas were drawn from the review of literature and country experiences, as described in section 5.1. For each area, the review poses priority questions and identifies some potential indicators that based on available institutional and funding capacities could be used in assessing progress in the different dimensions. The usefulness of the indicators explored here is exemplified by the results of the pilot applications in Malawi and Zambia.

6.1 Equity and fairness in formulating and implementing policy and monitoring processes

Countries should have explicit policy guidelines with regard to ART. The guidelines, based on principles promoting equity in access to ART, need to establish treatment criteria and conditions, including the cost of care and who should or should not pay. Involving all stakeholders will ensure a fair and transparent policy development process. This process should also allow for policy reviews in the light of any new evidence and arguments. It must also include mechanisms to ensure public accountability in a process that engages all stakeholders. The policy documents should list the stakeholders involved in the different stages of the policy process, specifying their representativeness and how they participated. Programme managers should ensure the fairness of policy processes by including appropriate indicators

in the monitoring and evaluation systems. These indicators could include preparing an annual equity report and ensuring that policy and policy-making publications and documents are published and publicly accessible.

Daniels et al. (2000) outline innovative criteria for democratic accountability in health systems that were developed through wide consultation and are relevant in this area. They include:

- an enabling environment for advocacy;
- evidence of public debate engaging vulnerable groups;
- explicitly stated procedures and targets that can be measured and monitored for implementing policy goals;
- concrete, time-specific commitment to public reporting; and
- legal and institutional procedures to manage grievances, disputes and compliance.

The policy development process is context-specific and embedded within the national political culture and institutions. It also depends on the degree of national autonomy with respect to health decisions, and the extent to which donor organizations and development agencies influence governmental decisions.

The policy development process is context-specific and embedded within the national political culture and institutions.

This is especially relevant for HIV/AIDS programming in the region, given the share of resources from agencies such as the Global Fund for AIDS, Tuberculosis and Malaria and other development partners. This contextual specificity makes it difficult to generalize about the policy process. However, a review of the evidence suggests that policies with health equity goals can be contested by those with greater access or resources, or by groups that seek more narrow targeting to access resources more rapidly. Policy actors seeking to introduce measures to redistribute resources or promote equity in health systems are more successful when they engage government actors (such as ministers of health and senior officials) and civil society organizations (such as people living with HIV/AIDS groups) to build wider coalitions of support for equity-oriented policies to offset policy opposition (Gilson et al., 2007).

Reviewing international evidence further points to the importance of monitoring fairness and effectiveness in implementing policies. Considering that most literature concentrates on general issues of monitoring and effectiveness, a focus on the special concerns for implementing equity-oriented policies is pertinent, especially given the potential for not achieving or reversing equity goals and the need to empower marginalized groups.

In this sense, key aspects include:

- securing a legislative and funding base for new policies;
- establishing clear health equity goals to guide implementation and evaluation;
- implementing new interventions in disadvantaged areas first;
- incorporating measures for public reporting on goals;
- performance monitoring by community and civil society organizations, and
- integrating various monitoring efforts to evaluate and review implementation experiences (Gilson et al., 2007; Loewenson, 2007).

There is a substantial body of literature on various forms of community monitoring for democratic accountability, which includes methods such as citizen scorecards and site surveillance (Loewenson, 2007; Brinkerhoff, 2004).

Table 1 proposes some parameters for monitoring this dimension. They cover domains and potential indicators relevant to exercising the policies themselves, for example, ensuring tools for implementation, such as powers, incentives and sanctions, and ensuring a fit between policy objectives and organizational structure and culture. They also examine participation in the process, including the involvement of different levels of the health system and the community in decision-making. They reveal the extent to which management and review processes incorporate inputs from affected communities and organizations in the health system.

The case study from Malawi (Case study 3, page 40) describes the development of an equity-oriented ART policy which included most of the aspects considered in the potential indicators included in Table 1.

Policy actors seeking to introduce measures to... promote equity in health systems are more successful when they engage government actors... and civil society organizations... to build wider coalitions of support for equity-oriented policies.

Table 1: Possible indicators for equity in formulating and implementing policy and monitoring processes

Priority policy questions to be answered	Definition of indicators
<p>Are policy development, implementation, monitoring and evaluation regulated to ensure fairness of policy processes?</p>	<ul style="list-style-type: none"> • Written rules, procedures, laws, decrees, codes of conduct, and standards to guide and regulate all health systems stakeholders • Existence of explicit, public, detailed procedures for evaluating services with full periodic public reports provided at least annually • Policy documents explicitly reveal the principles and basis for the decisions reached
<p>Are mechanisms in place and functioning to ensure stakeholder involvement and social participation in policy processes?</p>	<ul style="list-style-type: none"> • Evidence that the policy process involves all key stakeholders, including major, representative civil society organizations and primary care and district levels of health systems, for example, a report detailing the involvement and knowledge of policies of all stakeholders • Specific additional measures implemented to involve marginalized groups and lower levels of health systems in policy dialogue • Policy documents and responsible institutions provide mechanisms for review, enforcement and management of grievances which are known by civil society organizations
<p>Do policy processes ensure accountability?</p>	<ul style="list-style-type: none"> • Policy documents provide measurable commitments for ART coverage, equity and health systems performance, known by civil society organizations • Policy documents state specific time-bound commitments to public reporting, known by civil society organizations • Policies specify the legislative changes/ mechanisms and funding for implementation • Community level monitoring and reporting on equity and coverage in HIV/AIDS programmes



CASE STUDY 3: Developing an equity-oriented ART access policy in Malawi

In Malawi, the treatment guidelines for antiretroviral therapy were first developed in 2004 and were revised in 2006. The policy principles orienting the guidelines take into account government's commitment to providing antiretrovirals, detecting eligible patients, ensuring a regular supply of drugs and undertaking monitoring and evaluation.

To further support equity issues in Malawi, the National AIDS Commission developed a participatory and consultative process to establish policy principles on promoting equitable access to ART, which included provision of free antiretrovirals at the point of delivery on a 'first come, first served' basis. The participatory process involved gathering viewpoints from organizations from the grassroots level up to the national level. The strategies used in the consultative process included radio and television programmes, as well as a special study, commissioned in seven districts of the country, to engage and obtain the positions and views of local communities. Consultative meetings were held with stakeholders including PLWHA, young people, public institutions, non-governmental organizations, faith-based organizations and private organizations.

Source: Makwiza et al., 2005.

6.2 Access to ART across different population groups

A major issue in ART roll-out is access and, in particular, equity in access. The monitoring issue is analysing *who* accesses ART and *where* they live. This is to ensure that vulnerable groups are adequately represented among those receiving ART. Vulnerable groups often have the greatest needs but face challenges that marginalize them from accessing health care. The reason for monitoring where the groups who access (and do not access) come from is to directly link the supply or offer of health services with population needs. Thus we integrate Tanahashi's notions of availability, accessibility and contact by analysing the equitable distribution of ART sites in the country from a geographical perspective.

Where possible, programme managers can analyse who is accessing ART by collecting data to calculate the ratio of people on ART:

- by sex;
- by rural and urban sites, including sex, age and socioeconomic status; and
- by poor and non-poor categories.

The depth of the analysis clearly depends on the level of detail available in district and national records. For programme managers a difficult balance needs to be struck between collating the important data necessary for equity analysis and ensuring time efficiency. Ideally, data on sex, age and place of residence of people on ART needs to be collated in national data registers. This is critical to ascertain who is accessing ART and who is not by age, sex, level of care and geography, where

the gaps are and how these can be addressed. More detailed data on socioeconomic status, occupation, education levels and travel time are also important. This information can either be included in national data collection or explored through more in-depth analyses at the district or provincial level which can then directly inform service provision.

Another topic of relevance is eligibility for treatment:

Eligibility for treatment among adults with advanced HIV infection is estimated as the number of people who will die in the current and next year in the absence of treatment. Evidence suggests that adults with advanced infection who fit eligibility criteria for ART are expected to die in about two years if they do not have therapy (Boerma et al., 2006).

Instead of using the population eligible for ART, we can use HIV prevalence numbers or the population in need of ART as denominators.

According to Boerma et al. (2006):

The total number of adults in need of treatment is calculated by adding the number of adults newly in need of ART in a given year, the number of adults who were on treatment in the previous year and have survived into the current year, plus those who were in need in the previous year but have not yet been put on treatment.

One of the reasons for using prevalence is that the error for the estimate of prevalence will be lower than that for the estimate of need. This review does not recommend using the population eligible for ART as a denominator, given the problems associated with this estimation.

The case studies from Malawi (Case study 4, page 42) and Zambia (Case study 5, page 44) that follow illustrate how the potential indicators presented in Table 2 were applied in practice.

Table 2: Potential indicators for access to ART

Priority policy questions to be answered	Definition of indicators
Who is accessing ART?	<ul style="list-style-type: none"> • The number of people on ART as a share of the people estimated to need treatment (ART), disaggregated by sex (male/female)⁴ • The number of people on ART as a share of the total number of people estimated to need treatment (ART) disaggregated by age (adult/child)⁵ • The number of people on ART as a share of the total number of people estimated to need treatment (ART) disaggregated by territory (rural/urban)

⁴ Based on the recommendations of the document, *Antiretroviral therapy for infection in adults and adolescents in resources -limited settings: towards universal access* (WHO, 2006a).

⁵ Where adults are those who are 15 years of age and above and children are those under 15 years of age.



CASE STUDY 4: Who is accessing ART in Malawi?

An assessment of who is accessing ART in Malawi showed that in 2006, a total of 85 168 patients had ever started on ART.

Of these patients 61% were female while 39% were male. Adults made up 93% of the patients while 7% were children. Table 3 and Table 4 show the share of the total number on treatment compared to HIV prevalence.

According to the 2005 sentinel surveillance report, it was estimated that 196 076 people were in need of ART in 2006. Therefore, it was estimated that about 43% of those in need of treatment in 2006 had accessed treatment (MoH, 2005b and 2006). However, the estimates of need for treatment are not disaggregated by sex and age so to measure whether there are variations in access by these parameters, prevalence estimates from the 2005 surveillance estimates and projections were used.

It should be noted that, in Malawi, it is not easy to categorize those accessing ART as being urban or rural based on the information from the patient registers at the national level. This is because patients' areas of residence are not defined as such in the registers. In addition, some patients might reside in rural areas but access care in urban health facilities. Therefore aggregating as urban or rural by the location of the facility might not present an accurate measure of the indicator.

Thus, this analysis requires reclassification of the areas of residence, and then matching the information to district maps to identify if the patient is from a rural or urban area. In Malawi, only the city areas are categorized as urban, while most of the other districts are either semi-urban or rural.

Source: Chilipaine-Banda et al., 2008.

Table 3: Patients ever started on ART by sex (male and female), Malawi, 2006

	Estimated number of adults infected with HIV (MoH, 2005b)*	Number of patients infected ever started on ART (MoH, 2006)	Percentage of the infected population on ART
Female adults	440 000	48 348*	11.7%
Male adults	350 000	30 911*	8.8%
Total	790 000	79 259	

Table 4: Patients ever started on ART by age (adults and children), Malawi, 2006

	Estimated number of people infected with HIV (MoH, 2005b)	Number of patients infected ever started on ART (MoH, 2006)	Percentage of the infected population on ART
Adults +15 years	790 000	79 259	10.0%
Children -15 years	83 000	5 909	7.1%
Total	873 000	85 168	

* Because we were not able to calculate the percentage of children below 14 years by sex, the figures are assuming that the number of children on ART by sex is evenly spread.

Proportionately, there are slightly more women on ART in Malawi compared to men where 11% of the infected women are on ART as opposed to 8.8% for men. Looking at age differences, 10% of adults needing ART had accessed treatment against 7.1% of children.



CASE STUDY 5: Access to ART in Zambia

In Zambia approximately 67 000 patients had been enrolled on ART by June 2006. Similar distributions as those found in Malawi, where more women are accessing treatment than men, have also been shown in Zambia.

Table 5 presents the distribution of patients on ART by sex and age in four districts in Zambia, as of March 31, 2006.

When patients accessing ART were classified by rural and urban residence in Zambia (as of November 2005), 94% of the patients on ART lived in urban areas while 6% were from rural areas. These proportions reflect the deliberate plan to scale up ART from the centre to the periphery.

Figure 3 shows the situation in the country's nine urban and rural provinces. However, it should be noted that within each province there are urban and rural districts. On average, a resident in one of the three urban provinces stands a 30% chance of accessing antiretrovirals when in need, as compared to an average of 12.9% for a resident in need living in one of the six rural provinces of the country.

Source: Ngulube et al., 2008.

Table 5: Distribution of patients on ART by age and sex in four districts, Zambia, 2006

Stratification of data		Name of district (Percentages)			
		Chama	Choma	Chingola	Lusaka
(a)	By Sex:				
	Male	40.6	40.0	34.2	39.8
	Female	59.4	60.0	65.8	60.2
(b)	By Age:				
	Children 0–5 years	0.0	0.0	7.8	1.9
	Children 6–14 years	2.9	10.8	0.0	5.2
	Adults 15 years +	97.1	89.2	92.2	92.9

Source: HMIS Data as obtained from districts for the period to 31 March 2006

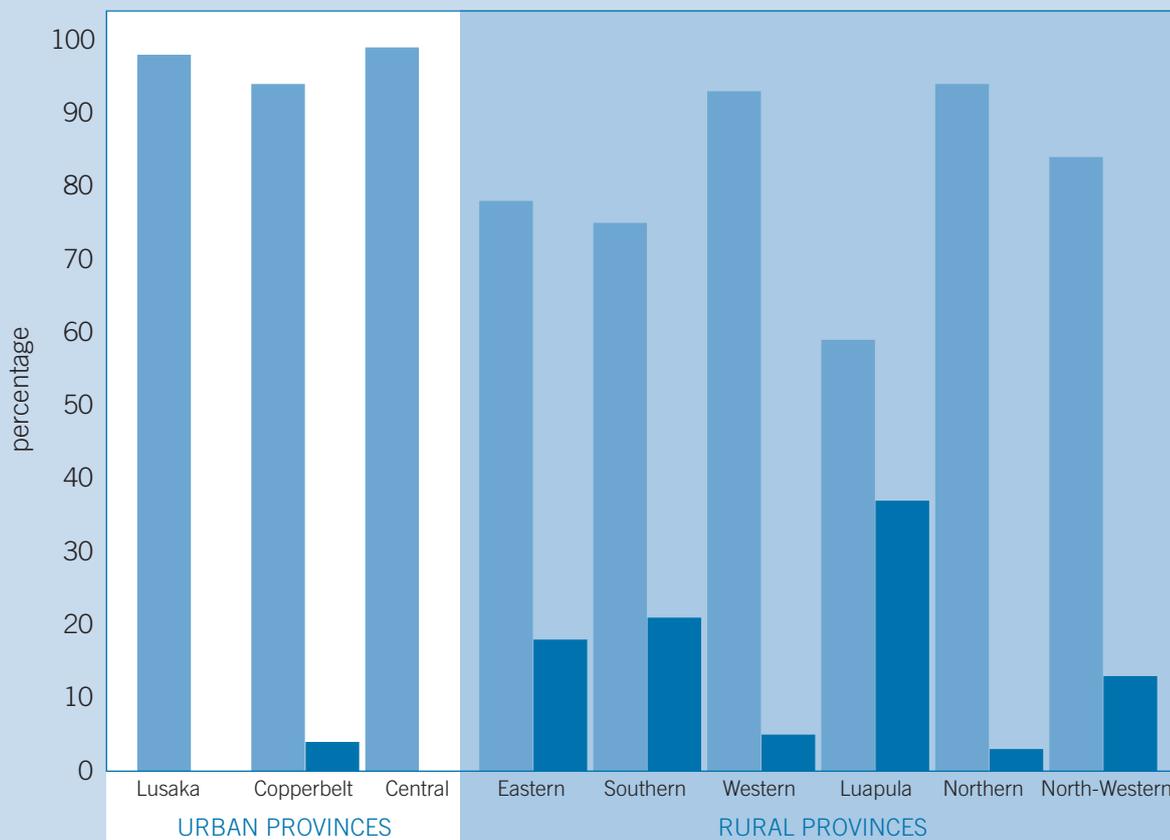


Figure 3: Distribution of ART services within the urban and rural enclaves of each province, Zambia, 2005

Urban areas Rural areas

This type of information can be broadly represented by the number of people on ART as a share of the total number of people estimated to need treatment, disaggregated by territory (rural/urban). More in-depth analysis of this type requires the use of a geographical information system into which all the layers that describe the location of health services (care delivery points) and population needs (prevalence population, patients) are integrated with the different environmental parameters that

influence the population's travel-time to a health care provider. The type of geo-processing analysis proposed here permits the measurement of the last two of the indicators presented in Table 6 below. The case study on geographical access to ART in Malawi (Case study 6, page 47 opposite) demonstrates the use of the proposed indicators, expressed by a graph and an estimation of the prevalence population coverage provided by the ART care delivery system in place.

Table 6: Possible indicators for geographical access to ART

Priority policy questions to be answered	Definition of indicators
Who is accessing ART and from where?	<ul style="list-style-type: none"> • The number of ART facilities per 1 000 people estimated to need ART: <ul style="list-style-type: none"> – by province and sub-national unit – by rural/urban category – by level of care (primary, secondary, tertiary) • Spatial distribution of the prevalence population and the ART patient population compared to the location of the ART sites • Percentage of the prevalence population located in different travel time zones (areas that are, for example, 1, 2 or 5 hours away) from the nearest ART site, taking into account the coverage capacity of each site.



CASE STUDY 6: Geographical access to ART in Malawi

This case study looked at areas in Malawi where people have difficulty in accessing antiretroviral treatment due to their geographical location and analysed other factors affecting access to ART in these areas. It was initially based on a survey of 947 people but the observations concentrate on information supplied by the 830 participants that were actually interviewed.

Figures 4 and 5 examine the issue of travel time to the nearest ART sites and access, comparing the prevalence population and the survey population.

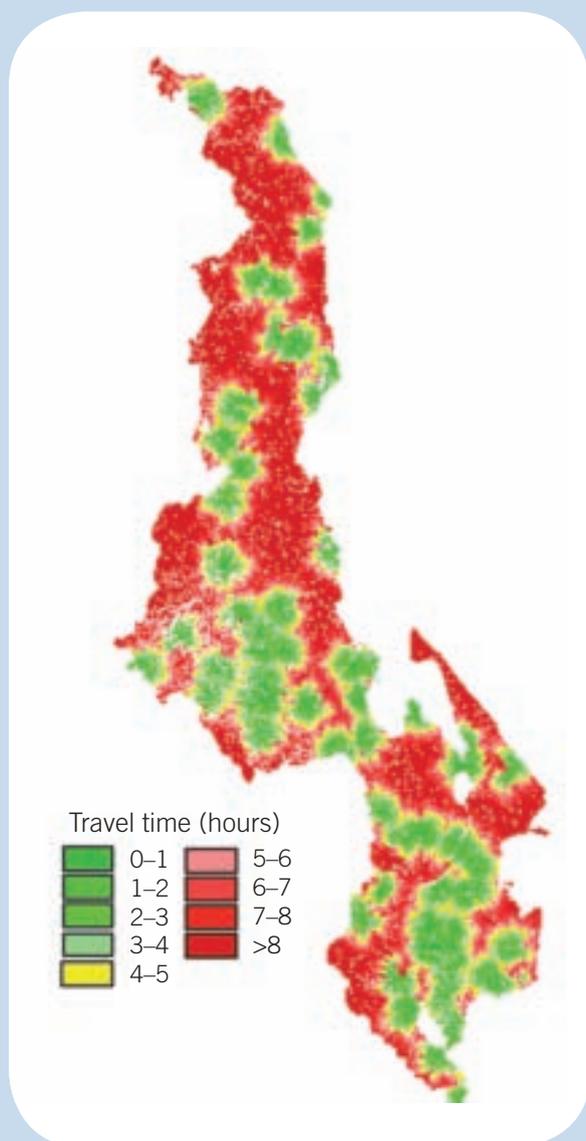


Figure 4 is a visual representation of the shortest walking travel times to the nearest ART site for people living in Malawi and highlights those areas where people have problems of geographical access.

Figure 5 on page 48 compares the spatial distribution of the travel time to the nearest ART site for the total prevalence population modelled using the AccessMod© tool (Ray & Ebener, 2008) (white line) with the travel time reported by 830 ART patients in the context of a patient exit survey (blue line).

The comparative analysis between the two lines provides the following information:

- Both the modelled and ART survey based graphs show that most of the surveyed population can physically access an ART site in less than 3 hours (70% of the total prevalence population and 80% of the surveyed population on ART). This means that up to 30% of the prevalence population have to travel more than 3 hours.
- However, we observe that fewer people than expected actually access ART care within the first hour of travel time (point 1 on the graph). The reason for this is mainly due to confidentiality issues – patients prefer to travel further so their neighbours do not know that they are under ART care.

Figure 4: Shortest walking travel times to the nearest ART site by district, Malawi, 2006

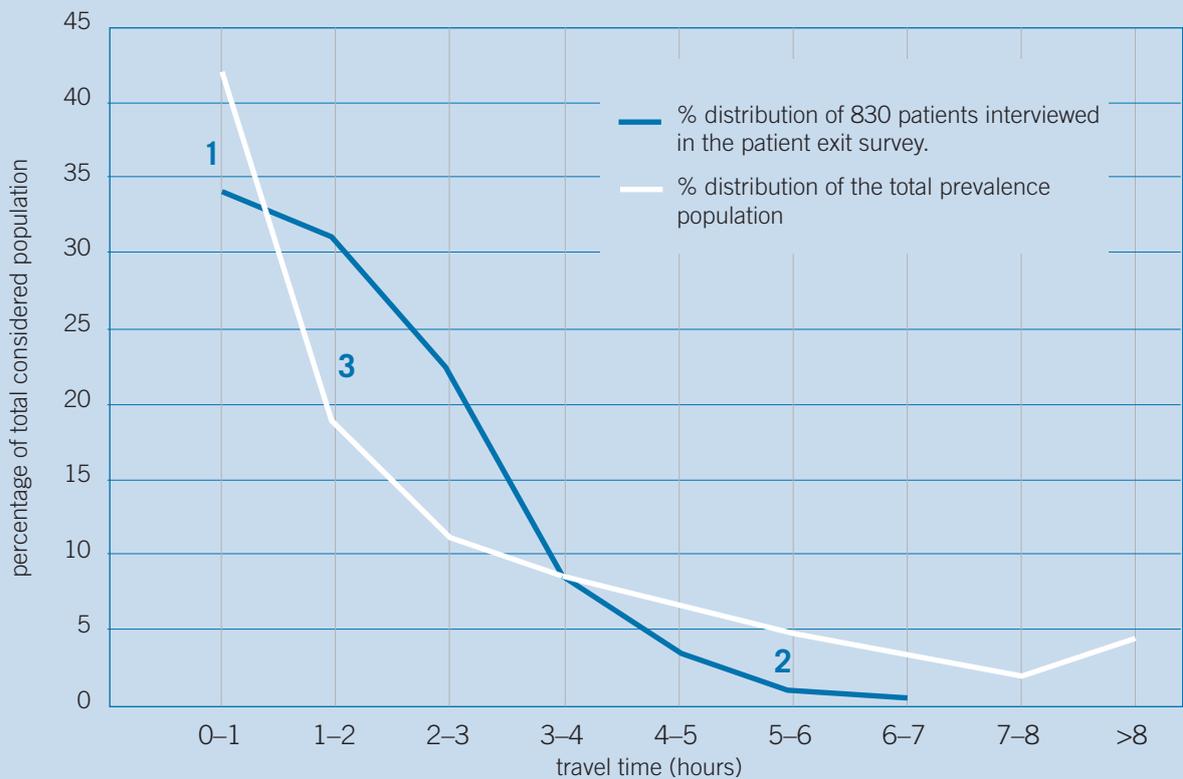
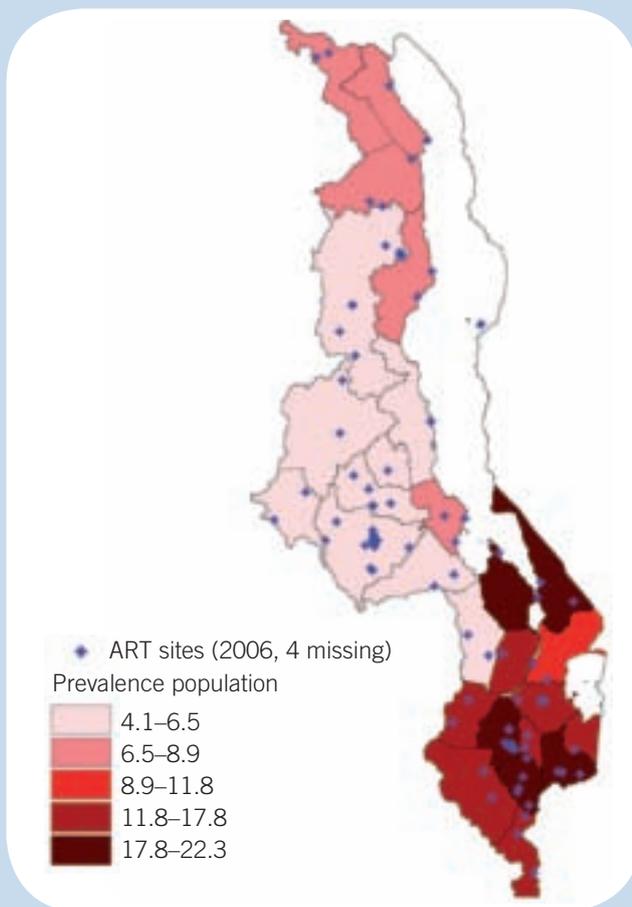


Figure 5: Distribution of populations according to travel time to the nearest ART site, Malawi, 2006



- The graph reveals a difference in the distribution of the total prevalence population who face more than 4 hours of travel time and the survey population who access ART – the percentage of the survey population is lower than the percentage of the prevalence population (point 2 on the graph). This suggests that some people who are eligible for ART in the prevalence population and are located in areas between 4 and 7 hours of travel time away, are not getting ART care. The differences in the proportions of the populations observed between the curves under 4 hours travel time (point 3 on the graph) is just a corollary of the previous difference.

In conclusion, on the basis of the results presented here, patients on ART are not equally distributed among the prevalence population, with more patients coming from areas nearer to ART sites.



When we add the notion of capacity to the analysis (Table 7) we see that 98% of the observed coverage capacity of the ART care delivery system in 2006 can be completely absorbed by the prevalence population living within 4 hours travel time, assuming that all the patients went to the nearest site. In addition, Figure 6 shows the spatial distribution of the uncovered population prevalence in Malawi in 2006 (80.8%) which was primarily located in the southern region (1 024 042 people), followed by the central region (252 528), while in the northern region, just 63 661 people still needed to be covered.

In conclusion, geographical inequity exists in terms of prevalence population coverage and availability and accessibility coverage in the country.

Source: Ebener et al., 2009.

Figure 6: Spatial distribution of the uncovered prevalence population, Malawi, 2006

Table 7: Prevalence population and prevalence population coverage, expressed in percentage, for each travelling scenario and different maximum travel times, Malawi, 2006

Scenario	Prevalence population	Prevalence population coverage capacity of the ART network	Prevalence population coverage as a percentage of the prevalence population (and as a percentage of the population coverage capacity)				Max. travel time (hours and minutes) to reach the coverage capacity
			1 hour	2 hours	3 hours	4 hours	
Walking	732 851	142 760	10.9 (56)	14.2 (73)	17.4 (89)	18.7 (96)	12h 12m
Car	54 480	9 734	17.7 (99)	17.8 (100)			1h 21m
Public bus	599 286	116 807	18.8 (97)	19.5 (100)			2h
Bicycle	277 675	55 161	14.1 (71)	18.9 (95)	19.3 (97)	19.6 (99)	6h 6m
All	1 664 292	324 462	14.5 (74.7)	17 (87.3)	18.5 (94.7)	19.2 (98.1)	12h 12m

In the exit survey of 830 patients accessing ART, patients were asked to estimate the time they took to reach the facility. The median travel time for the entire sample was 60 minutes, with a mean of 81 minutes. In Figure 7, we observe a sharp gradient in travel times across wealth groups, with poorer and less educated people taking longer to reach an ART facility.

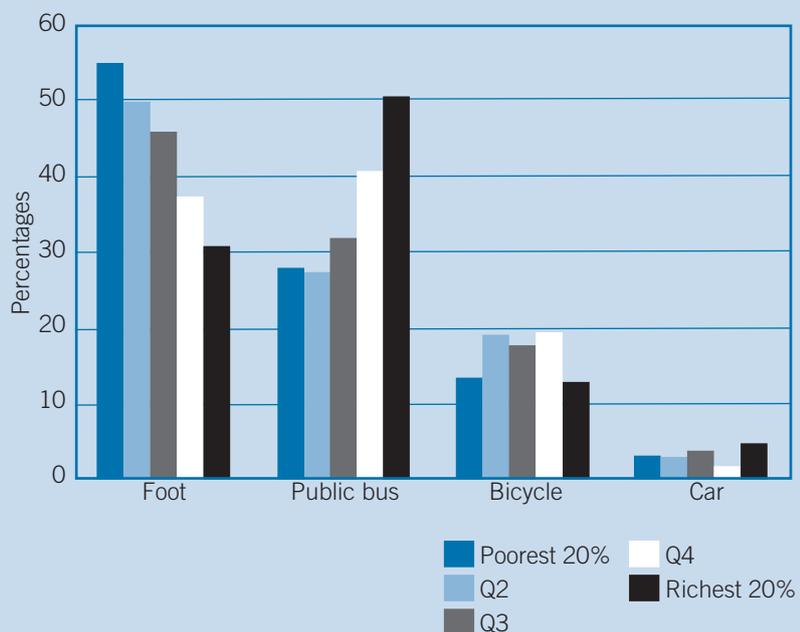
Figure 7:
Patients' travel time to ART site by sex and wealth quintile, Malawi, 2006



Differences in travel times across wealth quintiles also reflects the mode of transport used by each group. Poorer groups are more likely to walk to a facility while richer groups are more likely to use the public bus. Figure 8 shows that nearly 55% of the poorest quintile (lowest earning 20%) of the sample reported walking to the facility, compared to 31% of the richest quintile (highest earning 20%). Only 28% of the poorest quintile reported using a public bus to get to the facility, compared to 51% of the richest quintile.

Source: Chilipaine-Banda et al., 2008.

Figure 8:
Mode of transport to health facilities by wealth quintiles, Malawi, 2006



6.3 Fair and sustainable financing and accountable financial management

ART scale-up requires substantial and continuous funding that should be sustained over time since therapy is for life. ART funding mechanisms must therefore be sustainable and not burden national systems. A vital long-term strategy step towards ART universal coverage is to mobilize extra resources for health care from national sources. This can be achieved by reprioritising health care within government allocations, increasing pooling of funds, widening the tax base and improving tax collection, and tackling corruption (Gilson et al., 2007). Securing increased international assistance is important but should not be relied upon in the longer term.

Indicators to specifically monitor ART funds should be included in a wider system that monitors equity-oriented financing of health systems. ART roll out must contribute towards wider efforts to build up universal coverage in access to health care. The potential for cross subsidies across income groups depends on how fragmented and segmented the health care system is. It is thus important to assess whether or not ART resources will strengthen pooling of funds and harmonize contribution levels and benefits packages between population groups.

The potential for cross subsidies across income groups depends on how fragmented and segmented the health care system is.

In mobilizing overall resources, we must identify how far ART finances lever and contribute to these broader changes. For example, do these finances bring countries closer to the Abuja commitment of 15% of government spending on health and improve the public share in national health expenditure while reducing the private out-of-pocket share relative to budget services financing (EQUINET SC, 2007)?

The national health accounts framework provides a useful mechanism for assessing fairness in health financing. It reveals the extent to which funding

supporting ART scale-up is channelled and monitored in line with other funding to the Ministry of Health. The case study from Zimbabwe (Case study 7, page 52) shows how the national health accounts framework identifies the extent of household burden in the financing of HIV/AIDS health care, signalling potential stress for household income and barriers to access.

In terms of spending, further steps to promote equity in health financing across a range of settings commonly call for:

- Reducing out-of-pocket payments by removing public sector user fees and developing innovative ways to limit other health care costs (such as drug and transport costs); and
- Re-allocating government resources among geographical areas taking into account population health needs and all available funding sources (Gilson et al., 2007).

Correspondingly, for fair financing we need to monitor how far ART programming and resources have levered the removal of fee charges and limited associated costs, and whether resources were allocated using equity-oriented formulas. Furthermore, efficient disbursement mechanisms will ensure that ART is available opportunely and across all geographical locations. A priority for funding is to strengthen district health systems, particularly peripheral health services – these are aspects that the financial management monitoring should elucidate. Inappropriate funding mechanisms could enhance inequities in access to ART and overburden a poorly functioning health system.

Resource allocation for HIV and AIDS should, as for other health areas, consider indicators of relative need. For example, the association between the burden of HIV and HIV/AIDS related mortality and socioeconomic status which takes into account that the poor rely on publicly funded services. Internationally, a needs-based resource allocation formula has proved a helpful strategy in breaking the historical inertia in resource distribution patterns. Such formulas are used to distribute public sector health care resources among geographical areas (such as provinces or regions and districts) according to the relative need for health services in each area (McIntyre et al., 2007). The indicators most frequently used internationally in resource allocation formulas that measure the relative need

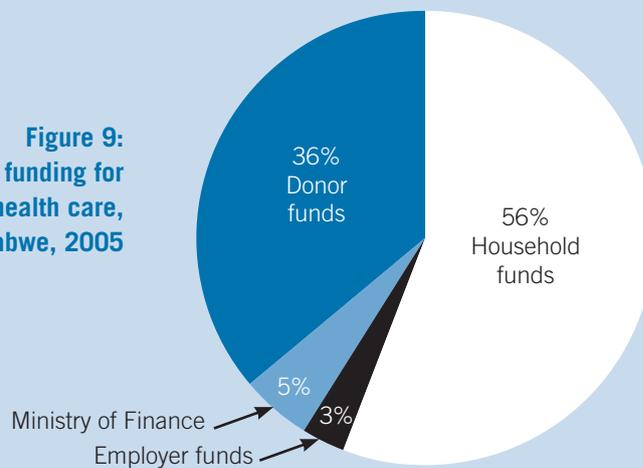


CASE STUDY 7: HIV/AIDS funding analysis from National Health Accounts, Zimbabwe

The figure shows how HIV/AIDS health care is financed, by identifying all major sources of funding, from government, donors, and employers to out-of-pocket expenses paid by households. In 2005, households were the major source of financing, contributing about 56% of the total HIV/AIDS health expenditure, which means that PLWHA bear the greatest financial burden.

Source: Mpofu & Nyahoda, 2008.

Figure 9:
Sources of funding for
HIV/AIDS health care,
Zimbabwe, 2005



for health services between different geographical areas are as follows:

- population size;
- demographic composition of the population, as young children, elderly people and women of childbearing age tend to have a greater need for health services;
- levels of ill-health, with mortality rates usually being used as a proxy for illness levels; and
- socioeconomic status, given that there is a strong correlation between ill-health and low socioeconomic status and that poor people rely most on publicly funded services.

For HIV and AIDS, measuring the level of ill health would be relevant to this condition, with HIV prevalence being a reasonable option. Adopting a needs-based formula to guide the allocation of resources for HIV and AIDS can use a mix of these indicators. The choice of specific indicators depends on which are most likely to show different levels of health need,

where valid information exists by area and in relation to the perceptions of key stakeholders.

Countries need to set explicit and achievable annual allocation targets to provide clear goals against which progress can be planned and monitored. These targets must set a reasonable pace of change (McIntyre et al., 2007). Nonetheless, even with these targets, the existence of numerous vertical programmes may undermine equitable resource allocation. Allocations may be restricted to specific services, reducing the pool of general health sector funds available for equitable allocation between geographical areas.

Translating formulas into practice calls for bilateral and multilateral donor agencies to support equitable resource allocation. Mechanisms need to ensure resources are pooled (for example, through sector-wide funds) and personnel and management capacity are effectively distributed to use these

resources. Public communication and awareness can support and promote this whole process (McIntyre et al., 2007).

Other strategies and measures have been noted to potentially contribute to fair financing, but within more specific, limited contexts. These include:

- the extent to which non-state providers complement strategies for universal coverage and do not reinforce inequity and stigmatization;
- the role of community-based health insurance (or insurance schemes dedicated to particular population groups) as a mechanism for protecting poorer groups against catastrophic payment levels;⁶
- The regulation of private insurance to prevent distortions in the overall system that undermine equity but allowing it to act primarily as top-up insurance for the more wealthy (Gilson et al., 2007).

HIV/AIDS policy-makers and programme managers should make sure that all their programmes receive funding through the same source as other health programmes. In determining HIV/AIDS expenditures, three areas should be considered: prevention, treatment and care, and support.

Treatment should include supplying antiretrovirals and managing opportunistic infections. Also, we need to retain a broad understanding of ART as antiretroviral therapy, encompassing the medication, including highly active drugs, distribution, counselling and other support. The specific components included in ART should be highlighted for the fair financing indicators for each country.

In general, we expect a higher share of external funding to signal less control by national authorities over ART programmes and this raises questions

⁶ Since 2002 WHO has defined financial catastrophe as direct out-of-pocket payment exceeding 40% of household income net of subsistence needs. Subsistence needs are taken to be the median of household food expenditure in the country. Expenditures in excess of the 40% cut-off point generally require reallocation of household expenditures from basic needs, sometimes even from children's education, ultimately risking impoverishment (WHO, 2010a). However, countries may wish to use a different cut-off point in setting their national health policies (Xu K, et.al., 2005).

about the long-term sustainability of funding for ART. National authorities have expressed concerns about depending on external funding, given their unreliability from a longer term perspective as well as the volatility of international financial markets, for example, the foreign exchange markets (Zikusooka, Tumwine & Tutembe, 2009; Makwiza et al., 2006).

Our assessments of external funding shares should also comment on the timeframes of this external support. Deeper equity monitoring needs support from sentinel site monitoring which collects more accurate socioeconomic indicators.

User fees hinder access by the poor to treatment and reduce long-term adherence (Makwiza et al., 2005). Evidence from Zambia and Malawi shows that access to ART increased rapidly once treatment was made available free of charge at the point of delivery. In Zambia, the decision to make ART free in public services was implemented in June 2005. After this, the number of people accessing ART increased from about 6000 in April 2004 to over 43 000 in December 2005.

Even when ART is free of charge, the costs of accessing treatment and care still affect poor and rural populations. For example, there are transport costs in situations where ART services are still urbanized and have not reached most of the rural areas or food costs which also contribute to high out-of-pocket expenditures. The burden of transport costs has been shown to be a major barrier to accessing and adhering to treatment, as is supported by qualitative studies.

A male patient who was initiating ART in Thyolo district in Malawi had the following concern:

“I’m supposed to foot transport costs for two people whenever we come here. Now I wonder that if things will continue to be like this in future am I going to adhere to these drugs? I’m saying this based on the instructions attached to these drugs (that one has to take them for life, without skipping scheduled times). Thus I may fail to adhere to the drugs due to transport costs.” (In-depth interview with a man on ART, Makwiza et al., 2009).

Table 8: Indicators for assessing fair and sustainable financing

Priority policy questions to be answered	Definition of indicators
How sustainable is funding for ART?	<ul style="list-style-type: none"> • Trends in shares of domestic vs external funding <ul style="list-style-type: none"> (a) for ART specifically; and (b) for HIV and AIDS programmes in general (includes financing for treatment, care, support like nutrition and preventive actions)
How transparent is HIV/AIDS financing?	<ul style="list-style-type: none"> • Total HIV/AIDS expenditures available in public domain for the previous five year period and financing sources (total, public, private, donors)
How equitable is HIV/AIDS financing?	<ul style="list-style-type: none"> • Policy adoption and application of a resource allocation formula that includes indicators of health needs • Share of total HIV/AIDS expenditures (total, public, private, donors) <ul style="list-style-type: none"> (a) pooled in public funding, and (b) allocated through this formula • Share of out-of-pocket financing versus tax and mandatory insurance financing for ART in national HIV/AIDS accounts • Proportion of people on ART paying for or sharing costs of treatment over total number of people on ART • Percentage of household out-of-pocket health expenditure used for ART treatment



CASE STUDY 8: Monitoring financing for ART in Malawi

In Malawi, the total HIV/AIDS expenditures refer to expenditures primarily intended to have an impact on the health status of PLWHA in a given period of time. Also they aim to prevent the spread of HIV and to mitigate the impact of HIV and AIDS.

During the 2002/03 financial year, 54% of the total HIV/AIDS expenditure was from domestic sources (both public and private) while 46% came from donor funding. During the 2004/05 financial year, donor funding increased to 73% of the total HIV/AIDS expenditures while domestic funding contributed 27%.

Information from the national health accounts showed that total HIV/AIDS expenditures increased over the period 2002–2005, due to steep increases in donor support. The table below shows the total HIV/AIDS expenditure for 2002/03 to 2004/05 financial years, by the financing sources.

Despite the huge in-flows in funding for overall health as well as HIV and AIDS in this period, out-of-pocket spending increased for PLWHA (MoH, 2007). In the 2003/04 financial year, they spent US\$ 2.18 elevated to US\$ 3.48 in 2004/05.

Source: Chilipaine-Banda et al., 2008.

Table 9: Total HIV/AIDS expenditures and financing sources, Malawi, 2002–2005

General Indicators	2002/03	2003/04	2004/05
Total HIV/AIDS expenditure (in US\$ million)	29	57	69
Total per capita HIV/AIDS expenditure for adult* population	37.9	65.2	76.7
Total HIV/AIDS expenditures as a % of GDP	1.7	3.7	3.7
Total HIV/AIDS health expenditures as % of overall health spending	16.0	23.6	23.9
Financing sources of HIV/AIDS funds as a % of total HIV/AIDS expenditures			
Public	40	18	20
Private	14	6	7
Donor	46	76	73
Household spending as a % of total HIV/AIDS expenditures			
Total household spending	7	3	5
Out-of pocket-spending	7	3	4
Out-of-pocket spending per PLWHA (at average US\$ exchange rate)	2.18	2.14	3.48

* Adults are considered as those who are 15 years of age and above.

Source: MoH, 2007

Similarly, in a focus group discussion in Zambia one respondent reported:

“It means I need to use a bicycle, which I do not have. I go and negotiate with another person in the village who hires out bicycles, but if it is in the rainy season then you are unfortunate. When crossing the river, you pay people to carry you across the river to the other side, again on the way back you pay somebody to carry you across and again you have to pay for the bicycle” (Man on ART, Ngulube et al., 2008).

An analysis of costs for one visit to the ART clinic in two districts in Malawi showed that the poorest 20% travel a longer distance to get to the ART facility, so they incur higher transport costs and have longer travel times to the facility as compared to the richest 20%, as is shown in Table 10.

In order to strengthen essential health services, ART should be included and costed as part and parcel of the essential health package.

6.4 ART programme integration into priority health services

In most countries in the region, AIDS and other HIV/AIDS-related infections are a major burden on all levels of the health system. The need to scale up ART rapidly may result in vertical delivery systems developing. As demonstrated in other interventions, such systems divert resources from delivering essential services. In order to strengthen essential health services, ART should be included and costed as part and parcel of the essential health package. Planning, implementing and routine monitoring of ART programmes should be part of district health system activities. This should ensure that the benefit and momentum behind additional funding for ART scale-up is harnessed for all essential health services. So programme managers should integrate ART plans and budgets with other health service plans and ensure that costs for essential health package services are supported with ART funding.

In tracking how far ART is integrated into priority health services, we propose two critical areas that include HIV testing: the tuberculosis (TB) programme and the prevention of mother-to-child transmission (PMTCT) services (or prevention of vertical HIV transmission). Programme managers could introduce mechanisms to track people's access to HIV testing and counselling and record whether they came through the tuberculosis or prevention of mother-to-child transmission programmes, as shown in the case study from Malawi (Case study 9, page 57 opposite).

Table 10: Costs, distance and time taken to get to the ART facility by quintiles, Malawi, 2008

	Poorest	Second	Middle	Fourth	Richest
Distance (km)	21.8	22.0	20.0	17.9	14.1
Transport cost (US\$)	4.00	2.51	2.50	2.26	1.56
Time taken (mins)	106	94	81	70	56

The official Malawi exchange rate: US\$1.00=Mwk140 (April 2008)

Source: Chilipaine-Banda et al., 2008



CASE STUDY 9: Integrating ART into health services in Malawi

In Malawi, coinfection of tuberculosis and HIV is high, with over 70% of tuberculosis patients also HIV positive. In 2006, out of 26 700 tuberculosis cases registered in Malawi, 17 000 patients (66%) were tested for HIV (MoH, 2007a). Of those tested, 11 700 patients (66%) were HIV positive and 11 500 of these patients were started on cotrimoxazole preventive therapy. A cumulative analysis of HIV patients ever started on ART up to December 2006 indicated that 16% were started on treatment because of tuberculosis (MoH, 2007a).

Nonetheless, the current health system structure reveals limited integration in the service delivery of the two programmes. The ART and tuberculosis programmes are vertical, parallel programmes, where ART treatment is centralized in selected sites while tuberculosis treatment is decentralized. Tuberculosis drugs are administered by health assistants or health surveillance assistants, the lowest cadre in the health sector, while current ART guidelines do not permit this cadre to manage antiretroviral drugs.

According to the 2006 situational analysis of HIV and AIDS services in Malawi, about 26% of the 540 000 total pregnant women had been tested for HIV (MoH, 2007a). By the end of December 2006, 885 women, representing 1% of the patients ever started on ART, were referred from the prevention of mother-to-child transmission programme (MoH, 2007a). This low percentage has been attributed to the limited scale-up of ART and prevention of mother-to-child transmission programmes in the country as well as low referral rates.

Source: Chilipaine-Banda et al., 2008.

Table 11: Possible indicators for ART programme integration into priority health services

Priority policy questions to be answered	Definition of indicators
Is there synergy between ART programmes and other health programmes?	<ul style="list-style-type: none"> • Number of tuberculosis patients referred to HIV testing and counselling, ART and HIV support services (as defined in local or national HIV/AIDS policy) expressed as a proportion of the total number of tuberculosis patients
	<ul style="list-style-type: none"> • The percentage of patients on ART coming from tuberculosis programmes
	<ul style="list-style-type: none"> • The percentage of pregnant women making at least one antenatal clinic visit who have received an HIV test and the HIV test result and post-test counselling • The proportion of exposed HIV children tested to confirm HIV status at 18 months
	<ul style="list-style-type: none"> • The percentage of people on ART referred from prevention of mother-to-child transmission programmes • Proportion of HIV positive pregnant women on ART at delivery

Demand for the prevention of mother-to-child transmission services could be increased through the following measures:

- By setting, communicating and monitoring targets and services and including communities and civil society in the process;
- By integrating these programmes within the spectrum of sexual, reproductive health and family and child health services and providing entry points for them from fertility counselling, family planning, antenatal care, safe sex and couples counselling, delivery services and postnatal and child care;
- By intensifying outreach measures to increase access and uptake of these programmes; and

- By strengthening follow up of women and children after delivery and including child survival to two years as a measure of successful outcomes.

Planning, implementing and routine monitoring of ART programmes should be part of district health system activities. This should ensure that the... momentum behind additional funding for ART... is harnessed for all essential health services.

6.5 Adequacy, distribution and retention of health workers

In most countries in the region, lack of human resources is arguably the most limiting factor in providing ART and running health systems. Only five countries in the region meet the 'health for all' standard of a minimum of one doctor per 5000 people – South Africa, Namibia, Madagascar, Mauritius and Botswana. Five do not even reach half this level (WHO, 2005; UNDP, 2005). No east and southern African countries met the WHO threshold of 2.5 doctors, nurses and midwives per 1000 people needed to reach levels of assisted deliveries

of 80% (EQUINET SC, 2007). Differentials in health care and capacities to absorb new resources are affected by the unequal distribution of health workers between public and private health sectors, urban and rural areas and across different levels of the health system.

Only five countries in the region meet the 'health for all' standard of a minimum of one doctor per 5000 people

Table 12: Health worker adequacy and ART outcomes, 2004–2005

	% adults with HIV 2003	Total doctors, nurses and midwives/1000 2004*	% total in need receiving ART 2005
Angola	3.9	0.42	6
Botswana	37.3	1.02	85
Democratic Republic of the Congo	4.2	0.21	4
Kenya	6.7	0.43	24
Lesotho	28.9	0.22	14
Madagascar	1.7	0.20	0
Malawi	14.2	0.20	20
Mauritius	n.a.	1.58	n.a.
Mozambique	12.2	0.12	9
Namibia	21.3	1.12	71
South Africa	21.5	1.62	21
Swaziland	38.8	2.15	31
Tanzania	8.8	0.13	7
Uganda	4.1	0.27	51
Zambia	16.5	0.71	27
Zimbabwe	24.6	0.29	8

* Except Angola (1997), Lesotho (2003) and Tanzania (2002)

Source: EQUINET SC, 2007.

The case of Malawi is shown in Case Study 10 on pages 62 and 63. Almost all countries in the region have, however, identified health worker shortages as a key factor limiting antiretrovirals roll out in the region and evidence suggests that countries with high HIV prevalence levels and lower health worker levels have achieved lower ART roll out than others (EQUINET SC, 2007).

*Almost all countries in the region
... identified health worker
shortages as a key factor limiting
antiretrovirals roll out*

The main factors that have led to health worker shortages in the public sector are migration to other countries, movement to non-governmental organizations or the private sector and out migration from primary or district level services in remote areas to higher level services in urban areas. This leads to inequitable delivery of health services, especially for rural areas (EQUINET SC, 2007).

In a review of the literature, HIV/AIDS programmes were found to have had both negative and positive effects on the retention of health care workers. Early studies reported negative effects on health care worker morale with stigma, burn-out, resignation and deaths due to AIDS. More recent studies report that expert patients and innovations such as task shifting and integrated health care workers have increased the pool of health-care workers. HIV/AIDS programmes have been reported to offer incentives, such as higher salaries or salary supplements, better furnished facilities or appointment at higher levels, excluding and demoralizing other health care workers. In contrast, new resources for HIV/AIDS have also been used in more inclusive approaches, such as in Malawi where these funds supplemented

salaries of all health workers in the operational districts and in Namibia where the Ministry of Health and Social Services applied uniform terms and conditions of service for all health care workers, with no problems reported (Dambisya et al., 2009).

Redressing negative effects and delivering equitable health services, including antiretroviral therapy, calls for measures to value, train and retain health workers. Data on health workers are difficult to collect and information is only available for the public sector, although many people move from the public to the private sector. Weakened health systems and scarce human resources for health services are major barriers to scale-up and to access to HIV/AIDS prevention, treatment and care, as well as to support. Action to boost both health services and systems resources includes providing:

- Financial incentives to boost short-term motivations for recruitment and retention;
- Non-financial incentives to support deployment and retention;
- Safe work and treatment programmes for health care workers; and
- Skills mapping, training and capacity building in tasks relevant to the programme needs.

*Redressing negative effects
and delivering equitable health
services, including antiretroviral
therapy, calls for measures to
value, train and retain health
workers.*

These policies and approaches for east and southern Africa are more fully described in separate EQUINET discussion papers (EQUINET SC, 2007; Dambisya, Modipa & Nyazema, 2009; Ipinge et al., 2009).

Table 13: Possible indicators for adequacy, distribution and retention of health workers

Priority policy questions to be answered	Definition of indicators
Do health systems have adequate human resources for effective ART delivery and AIDS programmes?	<ul style="list-style-type: none"> • Health care workers (specifically doctors, nurses laboratory technicians, pharmacists and counsellors)/1 000 population in the: <ul style="list-style-type: none"> – public sector – private sector • Health care workers (specifically doctors, nurses, laboratory technicians, pharmacists and counsellors) working on ART and HIV and AIDS issues in general/1 000 population
	<ul style="list-style-type: none"> • Percentage of facilities offering post-exposure prophylaxis (PEP) for health workers for each 100 workers
	<ul style="list-style-type: none"> • Migration of human resources (doctor/nurse) • Trends in migration density of health workers: <ul style="list-style-type: none"> – number of doctors/nurses produced or graduated in a year; – number of doctors/nurses who immigrated internationally in a year as a share of total doctors/nurses in the workforce



CASE STUDY 10: Health worker issues affecting ART in Malawi

There are severe staff shortages in Malawi with an average vacancy rate of around 50% for all professional health worker posts sector-wide (Babu Seshu, 2006). Currently there is one doctor per 62 000 inhabitants in Malawi and one nurse per 4 000 inhabitants (MoH, 2005a). Overseas migration of highly qualified nurses is estimated to be 100 per year, to the United Kingdom and other countries (Babu Seshu, 2006; Palmer, 2006). The six-year Emergency Human Resource Programme has achieved some improvements. The programme aims to improve staff retention and recruitment in the government and mission hospitals through a 52% taxed salary top-up. It plans to expand domestic training capacity by 50%, double the number of nurses, triple the number of doctors and recruit stop-gap external support for critical posts while Malawians are being trained, amongst other interventions.

As of 2006, the overall vacancy rates amongst the professional and technical staff was 44% as compared to 46% in 2003, but what was stunning was the 24% increase in posts filled over this period (MoH, 2007). It is clear that ART has introduced new demands on the already stretched health system and as ART expansion continues, more and more health workers and time will have to be dedicated to running the HIV programme. The monitoring and evaluation report by the Ministry of Health for the last quarter of 2006 indicated that a total of 295 days in a week for all ART facilities were used for operating the antiretroviral clinic (translating into an average of 2.8 days a week per site) (MoH, 2005a). Table 14 (page 63) shows the number of staff days per week for clinical officers, nurses and clerks for the country at the time of the assessment. The full-time equivalent parameters indicated the number of staff working full time per week on ART.

As regards to post-exposure prophylaxis, a study carried out by the Ministry of Health with support from the German Technical Cooperation (GTZ) in three districts in Malawi, showed that post-exposure prophylaxis was available only at the district hospitals or secondary level health facilities. Of the 23 health facilities visited, only three secondary level facilities reported having post-exposure prophylaxis at the facility. Therefore, in case of exposure to HIV, health workers from the primary-level health facilities had to be referred to the district hospitals. The study also showed that only the trained cadres, such as nurses, doctors, clinical officers and laboratory and pharmacy staff were well-informed about post-exposure prophylaxis but community health workers knew little about it.

Source: Bongololo, Chilipaine-Banda & Makwiza-Namakhoma, 2008.

Table 14: Number of staff days per week operating ARV clinics, Malawi, 2006

		Clinician days/week	Nurse days/week	Clerk days/week
North:	22 sites	47	52	44.5
Central:	38 sites	172	178	133
South:	43 sites	168	200.5	144.5
Total:	103 sites	387	430.5	322
Full-time	equivalent:	77	86	64

Source: MoH, 2007a.

6.6 Sustainable and accountable purchase, distribution and monitoring of essential drugs and commodities

ART scale-up affects the drugs and commodities procurement and logistics policies of countries. Most of these systems are already weak and do not function to expectation. To strengthen existing health systems, ART has to be procured and distributed through the same procurement and logistics systems as other treatments. ART scale-up should therefore be used as a springboard to strengthen these systems. To achieve this, programme managers should advocate for ART to be on the list of essential drugs and to have it processed through the same system as other drugs and commodities. National authorities with specific procurement guidelines or an essential health care costing package are likely to benefit by systematizing this process.

In addition to estimating drugs availability we need to know the distribution of antiretroviral dispensing sites with respect to area of residence (rural or urban), level of service (primary, secondary or tertiary) and service ownership (public or private).

The first two components were included in the indicators for access to ART in Table 6 and ownership of services is addressed in the next section.

6.7 Equity and complementarity in public-private sector roles

Private sector funding and provision of ART is an important consideration for equity. Private insurance of any magnitude is largely restricted to southern Africa (Botswana, Madagascar, South Africa, Swaziland, Zimbabwe) and Kenya in east Africa, mainly through private voluntary coverage of formal sector employees. Community health insurance (pre-payment) schemes have expanded (EQUINET SC, 2007). The experience of private voluntary health insurance has not been positive, with limited coverage levels, fragmented risk pools and rapid, uncontrolled cost spirals threatening sustainability (McIntyre, Gilson & Mutyambizi, 2005). Given their potential role in HIV/AIDS health-care financing, private insurance expansion calls for regulatory measures. The schemes need incentives to integrate and contribute to public health services by increasing their risk pool and covering low-income populations (EQUINET SC, 2007). The private sector encompasses a number of care providers ranging from for-profit and not-for-profit to formal and informal or traditional.

The definition of the private sector varies in different country settings and may comprise commercial clinics, mission hospitals, international and local non-governmental organizations, community-based organizations, private voluntary organizations and traditional healers. For an effective national response,

Table 15: Potential indicators for sustainable and accountable purchase, distribution and monitoring of essential drugs and commodities

Priority policy questions to be answered	Definition of indicators
How is ART procured? Is ART on the essential list of drugs?	<ul style="list-style-type: none"> • ART procurement guidelines and/or essential health care package costing
Is ART always available and accessible to all groups in the population?	<ul style="list-style-type: none"> • Frequency of stock outs for drugs and kits (OI drugs, testing kits) over a period of twelve months per facility, central medical stores and health facilities

the private sector needs to work in collaboration with the public sector in providing ART and to ensure they provide the standard ART regimens and harness the additional capacity available in the private sector, so that public sector provision is not overwhelmed by demand (NAC, 2005).

Involving the private sector is also paramount for sustainability in providing ART through cost sharing and insurance schemes. This private sector involvement, particularly of research and non-governmental organizations, inevitably entails changes in the public health system which could be beneficial but may be counter-productive. This is why regulation and monitoring from the relevant regulatory bodies in the public sector are essential.

Programme managers should ideally have private sector regulation reports from relevant authorities to get a sense of what problems the private sector encounters in their areas of implementation.

...regulation and monitoring from the relevant regulatory bodies in the public sector are essential.

6.8 ART programme integrated as a priority in other sectors' policies and programmes

Cross-sectoral or intersectoral policy-making and implementation are crucial for progress on health equity because many of the main barriers to access lie outside the health services. In some cases, strongly focused primary care initiatives at the local level work to improve the health of marginalized groups or geographical neighbourhoods. The teams work directly with disenfranchised groups using a community development approach. In India, for instance, the health and well-being of a group of sex workers is reported to have improved through an empowerment process (see Case study 12 on page 68). In other case studies, local community groups have been supported to complete a community assessment process, in which local people, local government, researchers and other policy-makers gather together to set goals and come up with action plans to reduce inequities in that area. Also, the impact of programme access and adherence depends on strengthened relations with sectors responsible for access to food or transport. In order to tackle the barriers to access, monitoring systems and qualitative work are needed to better assess and understand action across sectors. Suggested indicators to monitor intersectoral actions for equity in access are included in Table 17.

Table 16: Possible indicators for equity and complementarities in public–private sector roles

Priority policy questions to be answered	Definition of indicators
How complementary is the private sector to the public sector?	<ul style="list-style-type: none"> • Percentage of people on ART accessing treatment from different service providers: <ul style="list-style-type: none"> – public sector – private for-profit/not-for-profit sector
	<ul style="list-style-type: none"> • Private system integrated into the national (public) HIV/AIDS health monitoring and information system; transmission of information on the schedule defined by the government; estimation of under-reporting of the private for-profit and not-for-profit sector

Table 17: Examples of indicators for cross-sectoral policy-making

Priority policy questions to be answered	Definition of indicators
Is there synergy between the ART programme and other sectors to ensure ‘intersectoral action for equity in access’?	<ul style="list-style-type: none"> • Microenterprise or microfinance interventions for the population affected by HIV and AIDS implemented per year • The number of both public and private companies with HIV and AIDS workplace policies • The share of services offering supplementary feeding and local food production schemes to support nutrition as a complement to treatment



CASE STUDY 11:

Private sector roles in ART in Malawi

In the private for-profit sector in Malawi, patients receive ART at a heavily subsidized rate of US\$ 3.6 per month. According to the agreements between the private sector and the Ministry of Health, part of the money patients pay for antiretrovirals in the private sector is retained by the private sector to cover dispensing costs while the rest is transferred to the Ministry of Health in order to provide a sustainable system for monitoring and supervision (MoH, 2006). The private sector follows national systems and is provided with standardized monitoring tools.

The Ministry of Health provides training and support in the private sector but the day-to-day running of their activities, including monitoring, supervision and evaluation, is coordinated by the Malawi Business Coalition Against HIV and AIDS. The Ministry of Health receives regular reports and collates the private ART data with its public sector reporting. The reports are circulated on a quarterly basis to all stakeholders.

As of December 2006, 96.1% of all patients ever started on ART in Malawi was from the public sector, while 3.9% of those ever started on ART using the Global Fund Tuberculosis, AIDS and Malaria, was from the private sector.

The private not-for-profit sector ART programmes are mostly supported by the public sector and considered as part of it. In an analysis of the type of facility where patients access ART by wealth quintile, a sample of 947 patients in Lilongwe district showed that the poor were more likely to access care from mission hospitals, which are often situated in poorer, rural areas. Figure 10 opposite shows that the poorest 20% demands 45% of ART attention from mission hospitals as compared to the richest 20%, that demands 40% of attention from private not-for-profit facilities. There are also significant differences between rural and urban populations.

Source: Chilipaine-Banda et al., 2008.

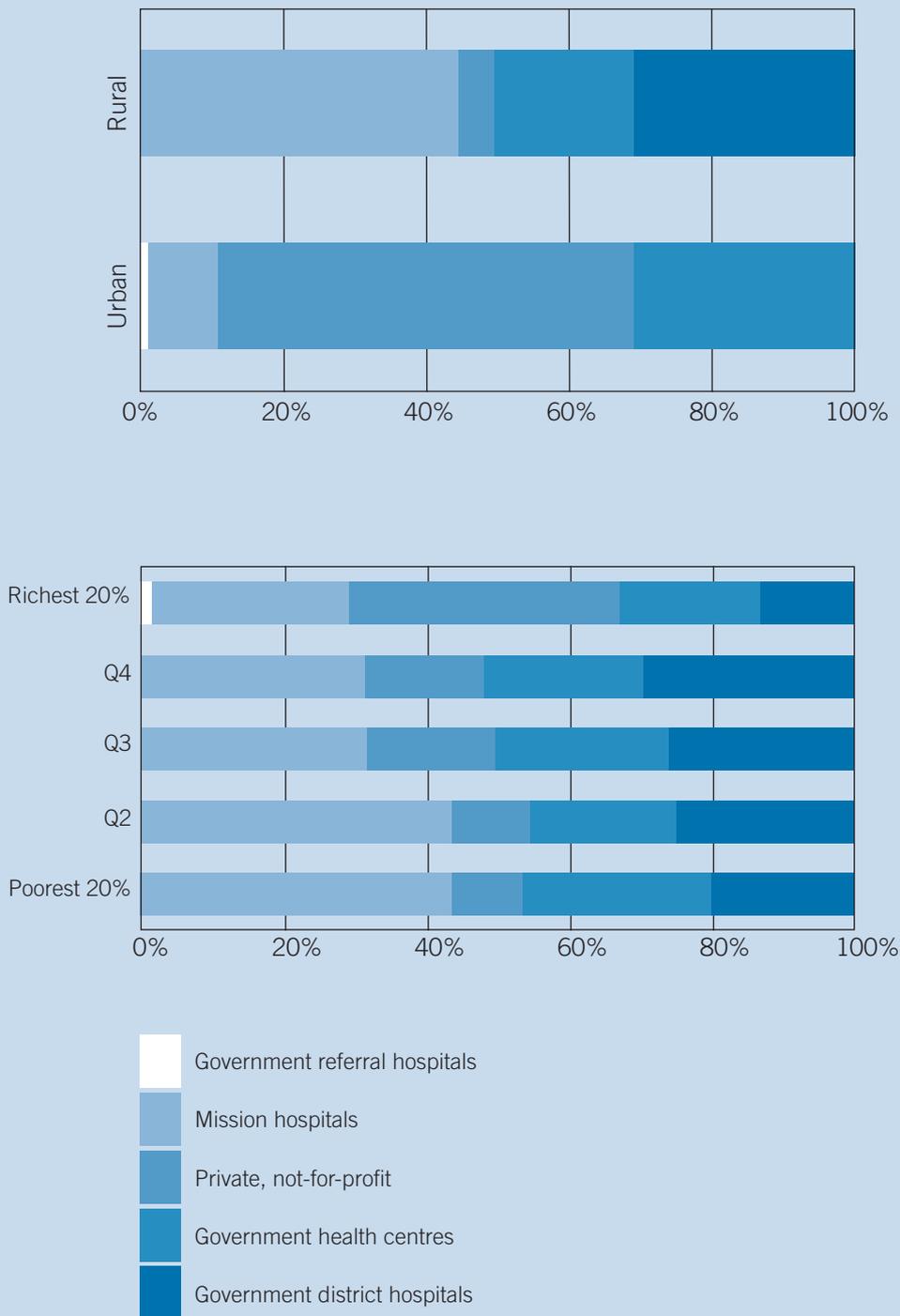


Figure 10: Choice of type of health facility by rural/urban residence and by wealth quintile, Malawi, 2006



CASE STUDY 12: The Sonagachi HIV/AIDS Intervention Project, West Bengal

The Sonagachi HIV/AIDS Intervention Project (SHIP) was originally begun by the health sector and supported by the WHO Global Programme on AIDS. Its initial goal was narrowly defined in strictly health terms: to decrease levels of sexually transmitted disease and increase condom use among sex workers in the Sonagachi area.

As the project leaders engaged in dialogue with sex workers themselves, the leaders quickly reached the conclusion that a much broader perspective on sex workers' health was needed. The project needed to focus on empowerment and quality of life, rather than just strictly health-related behaviours. When power was devolved to the sex workers they emphasized non-health care interventions such as literacy training, occupational protection and financial security. The sex workers created their own membership organization, the Durbar Mahila Samanwaya Committee, that successfully negotiated for better treatment by madams, landlords and local authorities.

In 1999 the Durbar Mahila Samanwaya Committee took over management of the Sonagachi HIV/AIDS Intervention Project and has since expanded to include 40 red-light districts across West Bengal. It has an active membership of 2 000 sex workers and has established a financial cooperative. The strong occupational health focus and the emphasis on giving sex workers more control over their bodies and their living and working conditions has resulted in low rates of HIV infection and sexually transmitted infections in Sonagachi, relative to the rest of the country.

Source: The Durbar Mahila Samanwaya Committee and the Theory and Action for Health (TAAH) Research Team (unpublished).

7 Summary of indicators by coverage domains



7.1 Proposing indicators of equity in access to ART

The analysis of equity in access to ART describes a process that develops a continuum from the emergence of a health need to its fulfillment. In this process, several barriers are commonly erected that often prevent those most in need from accessing treatment services (the “inverse care” law). The Tanahashi model (section 3) describes this continuum and serves to map the different barriers that prevent access to ART. Equally important, monitoring equity in access to ART allows us to identify groups that make the first contact with available health services, and from this we can further determine those that adhere to full treatment. This allows the identification of specific groups that do not reach ART facilities. As a result, concrete actions can be adopted to overcome these barriers. Measuring equity in access to ART is also important, because it responds to the human rights imperative that is required of governments to protect and fulfill people’s health and their needs.

Several of the indicators for the different thematic areas of health systems strengthening (section 6) can be used to measure the different domains of equity in access to ART. These have been field tested in southern and east Africa but the logic can equally be applied to other situations and regions where there is a generalized epidemic. Moreover, the cases and findings included in this document provide useful information to formulate indicators to monitor equity in access to ART programmes and could also be used for related interventions such as HIV Testing and Counseling (HTC) and Prevention of mother-to-child transmission (PMTCT).

However, in formulating a monitoring and evaluation system, the key issue is finding the right balance between having an ideal set of indicators that can fully describe the status of equity in access to ART in a country, and the information that already exists and is feasible and efficient to gather given

the realities and priorities of countries. Another important issue to consider when proposing a list of indicators is to avoid overwhelming countries affected by HIV/AIDS - most of them lower middle-income countries - with additional reporting requests that frequently are not harmonized. On the other hand, in producing change and in order to reorient systems towards more equitable considerations and outcomes, it is necessary to challenge them. As these systems have traditionally not included equity, this document proposes how they can begin to do so in an incremental way.

Having this in mind, and using the logic of the Tanahashi model, we propose below a core set of recommended indicators, based on existing universal access on-going reporting, for identifying equity in coverage for each layer of access as well as a list of optional indicators and examples for future monitoring. The recommended indicators are adapted from a set of core indicators that were identified using the initial framework for monitoring equity and the strengthening of health systems. This framework was developed by Kalanda and Loewenson and endorsed by representatives of SADC in 2004. The recommended indicators were further reviewed and modified following a process of country evidence, fieldwork, and internal dialogue within WHO.

7.2 Recommended indicators to assess equity in access to ART

Analyzing equity in health involves the assessment of multiple layers of health systems at national, district and community levels. The findings and case studies presented in this document illustrate the ways we can take monitoring forward to evaluate equity and health systems strengthening. However, we need to be flexible to adapt them to local contexts with particular institutional and funding constraints. As a bare minimum, this document suggests that a minimum of five indicators can be used, based on

the experiences from the southern and east African context. These indicators are relevant to the basic equity analysis called upon for the 2003 SADC Maseru Declaration. Equity analyses also support more global efforts to include equity considerations, including those in the MDGs.

Table 18 includes a list of recommended core indicators for equity in access that have been formulated using information that is regularly monitored by countries. Although current routine monitoring systems do not systematically incorporate equity in access as a key dimension to monitor in the implementation of policies and programmes on HIV/AIDS, some existing indicators include equity considerations and others could be easily adapted or used for this purpose. The monitoring of these indicators, therefore, could easily be adopted in the short term and does not create inefficiencies in countries.

These indicators satisfy international standards adopted for the monitoring and evaluation of HIV/AIDS programmes (UNAIDS & MERG, 2010). They are needed and useful and constitute a minimum set that can ensure that countries can measure the equity performance of HIV/AIDS programmes in areas that are essential to scale-up national response. They have been suggested taking account country contexts and trying to avoid duplication of efforts as they use data routinely gathered. Moreover, the recommended indicators have technical merit as they measure issues that are highly relevant in the equity in access field. Considering that other relevant areas and levels of analysis of equity in access to ART may not be feasible to monitor currently in many countries due to institutional and financial constraints, these recommended indicators propose an initial list of areas where monitoring is currently feasible. These indicators can serve to refine policies and programmes on HIV/AIDS and to start addressing different access barriers, which are linked to structural determinants of health (e.g. public policies, governance mechanisms and cultural and societal values).

Although stronger indicators for measuring equity in access can be formulated in specific domains (e.g. fairness of policy, Table 1, section 6), countries mostly

affected by HIV/AIDS need indicators that are feasible to monitor with a reasonable level of resources and capacity. The recommended indicators are formulated using as basis existing indicators and most of them are already in place (as previously mentioned, most of them are routinely monitored). These indicators have been field tested and are periodically reviewed and are proposed to cover, as much as possible, all the layers of equity in access of the Tanahashi model in a coherent manner.

The selection also took into account the criteria for monitoring raised by regional and country programme managers (EQUINET, Equi TB and TARSC, 2004) which have guided the development of this publication:

- a. Devise simple indicators that use existing data and can be appropriately standardized.
- b. Assure a reasonable quality of collected data.
- c. Make sure local, national and regional institutions can 'own' and use the process and integrate it within a unified monitoring and evaluation system.
- d. Decentralize decision-making and collect locally-analyzed data for local purposes that provide support to the management planning cycle.
- e. Use the process to inform decision-making and action at all levels of health and programme planning; for example, among policy-makers, planners, managers and communities.

Table 18 describes 5 recommended core indicators to assess equity in access to ART. Table 19 describes three more indicators which, based on a review of current monitoring systems in place, could also be implemented in the short term. All these indicators can be used by National AIDS Programmes (NAPs) to monitor equity in access and health systems strengthening. A description of the indicators containing the definition, formulation and level of monitoring, and identifying measurement tools, is included in the Appendix. Similar domains of equity with their supporting indicators could be applied to other non-HIV/AIDS programmes. The relative importance of the indicators within the different domains and areas of health systems strengthening will not be the same for all programmes or actions in different contexts.

Table 18: Recommended core indicators to assess equity in access: What is feasible to implement?

Domain of equity in access	Thematic monitoring areas for health systems strengthening	Indicator
Availability	Different population groups' access to ART.	1 Number of ART facilities per 1 000 people estimated to need ART.
	Sustainable and accountable purchasing, distribution and monitoring of essential drugs and commodities	2 Percentage of health facilities dispensing ARVs that experienced one or more stock-outs of one or more required medicines in the previous 12 months.
Accessibility	Fair and sustainable financing and accountable financial management.	3 Percentage of household total out-of-pocket expenditure for health being paid for ART treatment*.
Acceptability and integration	ART programme integration into priority health services.	4 Overall assessment of pregnant women attending PMTCT services and who successfully received ART.
Effective coverage	ART programme outcome of priority health services.	5 Percentage of adults and children with HIV known to be on treatment 12 months after initiation of antiretroviral therapy

* As proxy indicator of percentage of people on ART paying for or sharing costs of treatment over total number of people on ART.

Assessment of equity in access to ART using the indicators included in Tables 18 and 19 could be done at national level and in several countries may already be possible at sub-national level (for example in Provinces or Regions or Districts). In addition, countries may monitor equity using the complementary indicators and examples for future monitoring included in Table 20 (however, the full implementation of the indicators included in Table 20 will be based on national feasibility and capacity to gather information).

7.3 Exploring additional indicators including assessment at sub-national level

A general observation applicable to the current monitoring systems promoted by multilateral organizations and development partners is that they are not systematically oriented around health systems strengthening and equity in access. However, documents clearly highlight the need to explore these issues further, as they mention extensively the need for monitoring geographical barriers to access (including travel time), and for

reaching 'hidden populations' that are not able to access ART services. International instruments also consistently mention the need to expand and retain human resources for health, and the role that socioeconomic conditions play in creating barriers to ART. Several documents that guide current monitoring systems also discuss the importance of intersectoral action in policies and programmes.

In compiling this document, we noted that the identified recommended core indicators were drawn mainly from the accessibility, acceptability and effective coverage domains of equity in access and covered selected areas of health systems strengthening. For a more comprehensive picture of the factors that influence equity in provision and access to HIV treatment programmes, we recommend using or adapting the proposed indicators to assess better the domain of equity in access, and in particular on effective coverage dimensions and intersectoral action (as part of health systems strengthening and tackling the social determinants of health). This will permit assessment over the longer term of the health system's ability to facilitate patient adherence to ART treatment beyond the first contact. Equally important is the need to advocate and ensure that these data are collected and integrated into health information systems and are used in reviewing service provision.

Table 19: Additional core indicators to monitor fairness in policy development processes

Domain of equity in access	Thematic monitoring areas for health systems strengthening	Indicator
Policy context	Fair processes for developing policy and monitoring policy implementation on access to ART.	<ol style="list-style-type: none"> 1 Existence of policy or strategy to promote comprehensive HIV treatment, care and support, and addressing barriers for women, and for key populations with increased levels of exposure and vulnerability. 2 Existing laws, regulations or policies that present obstacles to effective HIV prevention, treatment, care and support for vulnerable populations (civil society). 3 Country level fairness indicators: <ol style="list-style-type: none"> (a) Policy regulated to ensure fairness; (b) Mechanisms for stakeholders and social participation in policy process; (c) Accountability to policy processes (see other potential indicators in Table 1, page 39).

Table 20 includes a list of potential additional indicators that could be adapted and gradually implemented in the future, perhaps starting in areas with large scale projects supported by external

partners, which will allow for additional levels of disaggregation at sub national levels and among specific population groups.

Table 20: Complementary indicators and examples for future monitoring (based on national feasibility and capacity to gather information)

Domain of equity in access	Thematic monitoring areas for health systems strengthening	Indicator
Availability	Development and retention of health workers for priority health services.	<ol style="list-style-type: none"> 1 Number of health care workers (doctors, nurses, laboratory technicians, pharmacists and counselors) per 1 000 population within the: <ol style="list-style-type: none"> a. public sector; b. private sector.
Accessibility	Different population groups' access to ART.	<ol style="list-style-type: none"> 2 Spatial distribution of the density of the prevalence population and the ART patients surveyed compared to the location of the ART sites.
	Different population groups' access to ART.	<ol style="list-style-type: none"> 3 Percentage of the population estimated to need ART (or prevalence) located within one hour's travel time of the nearest ART site, taking into account patient coverage capacity of each site.

Domain of equity in access	Thematic monitoring areas for health systems strengthening	Indicator
Acceptability		4 Distribution (e.g. by geographical area, age, sex) of people in need who do and do not contact health services. For proxy indicators of acceptability, using the referral of tuberculosis-infected and pregnant women eligible for ART is suggested:
	ART programme integration into priority health services.	4a Percentage of TB-referred patients making contact with ART services, expressed as a proportion of the total number of referred patients by TB services in the previous month.
	ART programme integration into priority health services.	4b Percentage of pregnant women who have made at least one antenatal care visit, received an HIV test result and post-test counseling, and who have been referred to ART and made contact with ART services, expressed as a proportion of the total number of referred women in the previous month.
Contact	Different population groups' access to ART.	5 The number of people on ART as a share of the total number of people estimated to need ART, disaggregated by: a. sex (male/female); b. age (adult/child); c. geographical area (rural/urban).
Effective coverage		6 Distribution of people who do and do not adhere to treatment (answered through qualitative operational research rather than quantitative indicators). As proxy indicators of effective coverage:
	ART programme integration into priority health services.	6a Percentage of people on ART coming from tuberculosis programmes, disaggregated by a. gender (male/female); b. age (adult/child); c. geographical area (rural/urban).
	ART programme integration into priority health services.	6b Percentage of women on ART coming from prevention of mother-to-child transmission programmes disaggregated by geographical area (rural/urban).
Policy context	Private sector provision of ART that is complementary to and enhances public health services.	7 Percentage of people on ART accessing ART from different service providers: a. public sector; b. private for-profit/not-for-profit sector.
Intersectoral action	ART programme integrated as a priority in other sector policies and programmes.	8 Relevant indicators would need to be selected on the basis of context. Examples could include: a. Percentage coverage of ART patients by public and not-for-profit services offering supplementary feeding and local food production schemes to support the nutrition status of patients on ART; b. Percentage of ART patients benefiting from microenterprise or microfinance schemes; c. Number of public and private companies with HIV and AIDS workplace policies.

8 Conclusions



Monitoring equity and health systems strengthening in access to antiretroviral therapy is critical to ensure high quality, sustainable and equitable services. The reasons for this are threefold.

Firstly, we need to monitor how far services are accessible to different populations and meet their needs, in particular the poor and marginalized. Secondly, this monitoring process can assess whether the new resources, infrastructure and personnel supporting ART services provision and scale-up strengthen or undermine broader health systems. Thirdly and most importantly, routine monitoring systems can be supplemented with the good practice of ongoing operational research, which enables programme managers and policy-makers to identify where the equity challenges lie and to develop creative solutions to address them.

Multiple players from different perspectives have contributed to the learning and proposed courses of action synthesized in this document. The different processes and initiatives led by EQUINET through REACH Trust, TARSC and WHO have brought together the viewpoints and experiences of programme managers, monitoring and evaluation experts, researchers and civil society from east and southern Africa. The result is a set of concepts, models, methods and proposed indicators that could be applied for monitoring equity in access and health systems strengthening in AIDS treatment programmes. This is a start. WHO's forthcoming new Global Health Sector Strategy for HIV 2011-2015 contains important strategic directions related to improving monitoring of equity. More concerted efforts linked to this new strategy will undoubtedly deepen and refine the already rich spectrum of case studies and methods highlighted in this review.

The indicators developed and documented through this review were developed through a participatory consensual approach drawing on experiences from different contexts and disciplines and a variety of methodological approaches. The indicators were pilot tested in the region to ensure they are practical in this context, with case studies illustrating in several cases their applicability. In other cases, the challenges in trying to obtain equity indicators in, for example, geographical coverage, were highlighted.

Guided by the initial set of core indicators endorsed by SADC in 2004, and by a process of country evidence, fieldwork, and internal dialogue within WHO, five core indicators are recommended to provide an overview of the factors that influence equity in provision and access to HIV/AIDS programmes. We use the domains of equity in access drawn from Tanahashi's model of health service delivery alongside the areas for health systems strengthening to understand how monitoring supports both of these issues. The five indicators proposed are critical to a basic equity analysis and feasible in the short-to-medium term. This notwithstanding, there continues to be a need for a process of advocacy for national data collection processes and health information systems to be disaggregated by sex, age and geography so that information for the five proposed indicators can be identified. There also continues to be a need for more refinement in methods related to non-routine monitoring.

Beyond the five indicators proposed, the other indicators should not be seen as rigid, but as a set of ideas to be refined and developed further for integration into country monitoring and evaluation processes where opportunities arise. Where information is not available, creative approaches could be explored such as commissioning sentinel studies, geographical information systems or qualitative or participatory studies.

The exercise of piloting several of these indicators demonstrated how collaboration with stakeholders and other sectors is particularly important. Monitoring equity and health systems strengthening for HIV/AIDS requires the involvement of all key stakeholders, not only the national ministries of health. The necessary information may be available, for example, through universities, other ministries and key players at other levels of the health sector.

Another value in encouraging collaboration lies in using the findings from monitoring and evaluation processes to make services, and the health system as a whole, more equitable. This requires collaboration and partnership across different levels both within and beyond the health sector and includes input from health providers, non-governmental organizations and patient groups. ART scale-up is taking place in a fluid and fast-changing environment and across multiple country contexts. We need to sustain, broaden and deepen our experience sharing, learn lessons from one another and keep dialogue alive in the challenging endeavour of monitoring equity in health systems and ART and building equitable and responsive health services.

Another value in encouraging collaboration lies in using the findings from monitoring and evaluation processes to make services, and the health system as a whole, more equitable. This requires collaboration and partnership across different levels both within and beyond the health sector.

This review contributes to the ongoing development of processes for monitoring equity and health systems strengthening at local and national levels. It sets a firm foundation from which the strategic dimensions on equity present within the new Global Health Sector Strategy for HIV 2011-2015 can draw. In addition, the review can inform the strategies and policies for HIV and AIDS developed and adopted at regional and national level. Finally, the concepts, model and indicators included in this document support the scale-up of ART programmes in east and southern Africa and provide insights for other regions where generalized epidemics are present.

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9 Appendix



Summary list of indicators for equity monitoring by layer of effective coverage, using the Tanahashi model

Recommended core indicators to assess equity in access: What is feasible to implement?

Domains of equity in access	Thematic monitoring area for health systems strengthening	Indicator name	Numerator	Reference / Source	Denominator	Reference / Source	Current feasible level of monitoring	Desirable level of monitoring in the future	Measurement Tools	Comments on Proposed Indicator
Availability	Different population groups' access to ART.	Number of ART facilities per 1 000 people estimated to need ART.	Number of health facilities that offer ART (i.e., prescribe and/or provide clinical follow-up).	WHO, UNAIDS and UNICEF (2009) A Guide on Indicators for Monitoring and Reporting on the Health Sector Response to HIV/AIDS, Geneva.	Total population estimated to need ART at national level.	Universal Access Progress Report. Updated every two years. Available in the "Data and statistics" section at: http://www.who.int/hiv/data/en/	National. Certain sub-national levels where specific dis-aggregated information is currently monitored (e.g. current externally-funded programmes).	Provincial or other sub-national unit. Rural/Urban. Level of care.	Information from Ministry of Health.	<p>This indicator is based on information routinely gathered in countries. The numerator is the same included in the core indicator G.1 of the Guide on Indicators for Monitoring and Reporting on the Health Sector Response to HIV/AIDS (WHO, UNAIDS and UNICEF, 2009).</p> <p>The denominator is routinely estimated and published by WHO, UNAIDS and UNICEF.</p> <p>As suggested for indicator G.1 in the Guide on Indicators (WHO, UNAIDS and UNICEF, 2009), if it is possible to report easily any additional information on geographical distribution of ART facilities (e.g. urban/rural, % of facilities with ART in areas with a high concentration of PLWA, province/sub-national unit, or level of care - primary, secondary, tertiary-) please provide details.</p>

* As proxy indicator of percentage of people on ART paying for or sharing costs of treatment over total number of people on ART.

Recommended core indicators to assess equity in access: What is feasible to implement? (continuation)

Domains of equity in access	Thematic monitoring area for health systems strengthening	Indicator name	Numerator	Reference / Source	Denominator	Reference / Source	Current feasible level of monitoring	Desirable level of monitoring in the future	Measurement Tools	Comments on Proposed Indicator
Availability	Sustainable and accountable purchasing, distribution and monitoring of essential drugs and commodities.	Percentage of health facilities dispensing ARVs that experienced one or more stock-outs of one or more required medicine in the last 12 months.	Number of health facilities dispensing ARV that experienced a stock-out of at least one required ARV in the last 12 months.	Harmonized Monitoring and Evaluation Indicators for Procurement and Supply Management Systems Tracking the performance of PSM system for ARV, anti-malaria, and anti-tuberculosis medicines. Early warning indicators to prevent stock-out and overstock. Pilot tested Core Indicators (AMD Partner Network, 2010).	Total number of facilities dispensing ARV surveyed.	Harmonized Monitoring and Evaluation Indicators for Procurement and Supply Management Systems Tracking the performance of PSM system for ARV, anti-malaria and anti-tuberculosis medicines. Early warning indicators to prevent stock-out and overstock. Pilot tested Core Indicators (AMD Partner Network, 2010).	National and district levels. ART.	Opportunistic infection drugs. Testing kits.	Interview in each facility. Check records for stock shortages or stock registers for the last 12 months.	This indicator is based on information routinely gathered in countries. It is same as core indicator 12 of the "Harmonized Monitoring and Evaluation Indicators for Procurement and Supply Management Systems Tracking the performance of PSM system for ARV, anti-malaria and anti-tuberculosis medicines. Early warning indicators to prevent stock-out and overstock. Pilot tested Core Indicators (AMD Partner Network, 2010)". The information is collected at central level where health facilities submit their inventory control reports or their ARV requisition forms. The indicator will assess stock-outs at all levels of the supply chain (central, intermediate stores and health facilities)- The indicator is easy to monitor as information is provided regularly to central medical stores to receive new supplies. With this information, the products that are available and those that are most affected in the health system across its different levels can be analyzed.

Recommended core indicators to assess equity in access: What is feasible to implement? (continuation)

Domains of equity in access	Thematic monitoring area for health systems strengthening	Indicator name	Numerator	Reference / Source	Denominator	Reference / Source	Current feasible level of monitoring	Desirable level of monitoring in the future	Measurement Tools	Comments on Proposed Indicator
Accessibility	Fair and sustainable financing and accountable financial management.	Percentage of household total out-of-pocket expenditure for health being paid for ART treatment*.	Out-of-pocket expenditure paid by households for AIDS treatment.	National AIDS Spending Assessment (NASA), Indicator FA.02.04 (Private out-of-pocket payments) to be disaggregated for ART at country level.	Total out-of-pocket expenditure on health paid by households.	National Health Accounts (NHAs).	National.	Sub-national units (state, province, district). Most at Risk Populations (MARP), other population groups. Age. Sex.	National Health Accounts (NHAs). National AIDS Spending (NASA). Countries report this indicator every two years for UNGASS commitments This indicator is reported yearly in several countries under Universal Access monitoring (Indicator FA.02.04 "Private out-of-pocket payments").	This indicator is based on information routinely gathered in countries. The numerator is obtained from core indicator FA.02.04 on private households funding (out-of-pocket payments) included in the National AIDS Spending Assessment (NASA). The denominator in the case of 3a. is obtained from National Health Accounts. In countries where this is possible, more disaggregated information could be gathered by adding to routine household and facility surveys questions related to smaller geographical units. Most at Risk Populations (MARP), other population groups, age, or sex (e.g. facility/ household surveys).

Recommended core indicators to assess equity in access: What is feasible to implement? (continuation)

Domains of equity in access	Id	Thematic monitoring area for health systems strengthening	Indicator name	Numerator	Reference / Source	Denominator	Reference / Source	Current feasible level of monitoring	Desirable level of monitoring in the future	Measurement Tools	Comments on Proposed Indicator
Acceptability	4	ART programme integration into priority health services.	Overall assessment of pregnant women attending PMTCT services and who successfully received ART	4.1 Assessment of eligibility for ART: Number of HIV-infected pregnant women attending services for PMTCT in the last 12 months assessed for eligibility for ART by either clinical staging or CD4 testing, on site or by referral.	Monitoring and evaluating the prevention of mother-to-child transmission of HIV. A Guide for National Programmes. Preliminary Version for AIDS 2010 (WHO, UNICEF). 4.1 Core indicator 4. 4.2 Core indicator 5.	Estimated number of HIV-infected pregnant women in the last 12 months.	Monitoring and evaluating the prevention of mother-to-child transmission of HIV. A Guide for National Programmes. Preliminary Version for AIDS 2010 (WHO, UNICEF).	National. If possible disaggregate by age (15-19, 20-24, 25-49, 50+).	Smaller geographical units (e.g. state/province). Sex.	By routine monitoring.	This indicator is based on information that will soon be routinely gathered in countries to monitor Universal Access commitments. It is constructed using as a basis core indicators 4 and 5 in the forthcoming guide "Monitoring and evaluating the prevention of mother-to-child transmission of HIV. A Guide for National Programmes. Preliminary Version for AIDS 2010 (WHO, UNICEF)". In countries where this is possible, more disaggregated information could be gathered by adding to routine household and facility surveys questions related to smaller geographical units.
				4.2 Maternal antiretroviral regimens to reduce peripartum transmission: Number of HIV-infected pregnant women who received ART drugs during the last 12 months to reduce MTCT.							

Recommended core indicators to assess equity in access: What is feasible to implement? (continuation)

Domains of equity in access	Thematic monitoring area for health systems strengthening	Indicator name	Numerator	Reference / Source	Denominator	Reference / Source	Current feasible level of monitoring	Desirable level of monitoring in the future	Measurement Tools	Comments on Proposed Indicator
Effective coverage	This indicator cuts across several thematic monitoring areas for health systems strengthening (e.g. different population groups' access to ART, fair and sustainable financing and accountable financial management, and development and retention of health workers for priority health services, among others).	Percentage of adults and children with HIV known to be on treatment 12 months after initiation of antiretroviral therapy.	Number of adults and children still alive and on ART 12 months after initiating treatment.	WHO, UNAIDS and UNICEF (2009) A Guide on Indicators for Monitoring and Reporting on the Health Sector Response to HIV/AIDS, Geneva.	Total number of adults and children who initiated ART who were expected to achieve 12-month outcomes within the reporting period, plus those who have died since starting ART, those who have stopped ART, and those recorded as lost to follow-up at month 12.	WHO, UNAIDS and UNICEF (2009) A Guide on Indicators for Monitoring and Reporting on the Health Sector Response to HIV/AIDS (WHO, UNAIDS and UNICEF, 2009).	a. Sex (male/female). b. Age group Adult +15 Children <15. c. First-line and second-line regimes.	c. Geographical area (rural/urban).	Information from Ministry of Health.	This indicator is based on information routinely gathered in countries. The numerator and denominator are taken from indicator G3a of the Guide on Indicators for Monitoring and Reporting on the Health Sector Response to HIV/AIDS (WHO, UNAIDS and UNICEF, 2009). As mentioned for indicator G3a, as much as possible, this indicator is to be disaggregated by sex, age, by first-line and second-line regimes at 12 months.

Additional core indicators to monitor fairness in policy development processes

Domains of equity in access	Thematic monitoring area for health systems strengthening	Indicator name	Numerator	Reference / Source	Denominator	Reference / Source	Current feasible level of monitoring	Desirable level of monitoring in the future	Measurement Tools	Comments on Proposed Indicator
Policy context	Fair processes for developing policy and monitoring policy implementation on access to ART.	1	Existence of policy or strategy to promote comprehensive HIV treatment, care and support, and addressing barriers for women, and for key populations with increased levels of exposure and vulnerability.	—	—	—	Every two years for UNGASS reporting. National or sub-national (special surveys, e.g. key informants, others).	—	NCPI (National Composite Policy Index).	—
		2	Existing laws, regulations or policies that present obstacles to effective HIV prevention, treatment, care and support for vulnerable populations (civil society).	—	—	—	1. UNGASS (National Composite Policy Index (NCPI), Part A, Section IV. Treatment, Care and Support, Question 1 (p. 131)). 2. op. cit., Part B. Human Rights, Question 3 (p. 120), civil society.	—		—
		3	Country level fairness indicators: (1) Policy regulated to ensure fairness; (2) Mechanisms for stakeholders and social participation in policy process; (3) Accountability to policy processes (see additional potential indicators in Table 1, page 39).	—	—	—	3. Policy documents, reports, interviews with policy-makers and stakeholders.	—	—	

Complementary indicators and examples for future monitoring (based on national feasibility and capacity to gather information)

Domains of equity in access	Thematic monitoring area for health systems strengthening	Indicator name	Numerator	Denominator	Level of Monitoring	Measurement Tools	Comments on Proposed Indicator
Availability	Development and retention of health workers for priority health services.	Number of health care workers (doctors, nurses, laboratory technicians, pharmacists and counselors) within a. the public sector b. the private sector.	Number of health care workers (doctors, nurses laboratory technicians, pharmacists and counselors) in a. and b.	Total population estimated to need ART in a. and b. (or prevalence).	National and sentinel District.	Information from MoH, private providers and municipalities.	This indicator is proposed to monitor the availability and distribution of human resources at national and district levels. This topic, and specifically the level of disaggregation among sub-national units, is not routinely monitored in countries. However, this is a key issue that is referred to in several of the documents reviewed. Its implementation will depend on the level of development of monitoring systems in countries.
	Different population groups' access to ART.	Spatial distribution of the density of the prevalence population and the ART patients surveyed compared to the location of the ART sites.	Graph showing the distribution curve of the two populations [prevalence (whole population), ART patients (facility sampled with exit interviews)], where the x axis is the travel time to the nearest ART site and the y axis is the percentage of the population located at that particular travel time. Therefore there is no real denominator or numerator in this approach.		National Sub-national	The graph is created with the use of a GIS in which the distribution of the population, the prevalence, ART patient density and the location of ART sites have been integrated as geographical layers.	This indicator is not included in current routine information gathered at country level. It is important to note that most of the publications reviewed emphasize the need to improve access to hard-to-reach populations. This indicator for accessibility seeks to monitor equity dimensions related to geographical and time barriers to ART based on a small facility-based patient survey. Where it is possible to implement, this indicator can provide a practical approach to identify and improve access for hard-to-reach populations. Its implementation will depend on the level of development of monitoring systems in countries.
Accessibility	Different population groups' access to ART.	Total population, estimated from the model, able to physically access the nearest ART site within one hour being sure that the patient could receive treatment.	Total population, estimated from the model, able to physically access the nearest ART site within one hour being sure that the patient could receive treatment.	Total population estimated to need ART within the facility catchment area (or prevalence).	Theoretical health facility catchment area.	The measurement is made with a GIS and AccessMod©, a tool developed by WHO to estimate the population coverage capacity of a health-care delivery system and to propose new site locations to scale it up if necessary, considering the capacity of the facility, the location of the population in need, the environment between them (roads, rivers, slope) and a travelling scenario.	This indicator is not routinely gathered. It aims at providing a way to improve accuracy of the estimated catchment population and thereby sharpen the essential analysis of equity between catchment areas and facilities. Its implementation will depend on the level of development of monitoring systems in countries.

Complementary indicators and examples for future monitoring (based on national feasibility and capacity to gather information) (continuation)

Domains of equity in access	Thematic monitoring area for health systems strengthening	Indicator name	Numerator	Denominator	Level of Monitoring	Measurement Tools	Comments on Proposed Indicator
Acceptability	4	Distribution (e.g. by geographical area, age, sex) of people in need who do and do not contact health services. For proxy indicators of acceptability, using the referral of tuberculosis-infected and pregnant women eligible for ART is suggested, 4a and 4b below:	—	—	—	Answered through qualitative and operational research (including questions on provider responsiveness).	—
	4a	ART programme integration into priority health services.	From that roster/cohort, the number making at least one contact with ART services by month three.	Roster/cohort of patients referred from TB services for ART in month one.	National and sentinel District.	TB and ART registers.	These indicators would provide additional information related to acceptability that would complement the information gathered with the above proposed Recommended Core Indicators. The Guide on Indicators for Monitoring and Reporting on the Health Sector Response to HIV/AIDS (WHO, UNAIDS and UNICEF, 2009a) includes indicators related to TB and HIV and on women and children that are not considered core indicators, and are not routinely gathered.
	4b	ART programme integration into priority health services.	From that roster/cohort, the number making at least one contact with ART services by month three.	Roster/cohort of pregnant women referred from PMTCT for ART in month one.	National and sentinel District.	PMCT and ART registers or, and, household surveys.	The implementation of these indicators will depend on the level of development of monitoring systems in countries.

Complementary indicators and examples for future monitoring (based on national feasibility and capacity to gather information) (continuation)

Domains of equity in access	Thematic monitoring area for health systems strengthening	Indicator name	Numerator	Denominator	Level of Monitoring	Measurement Tools	Comments on Proposed Indicator
Contact	Different population groups' access to ART.	The number of people on ART as a share of the total number of people estimated to need ART, disaggregated by: a. sex (male/female); b. age (adult/child); c. geographical area (rural/urban).	Number of people on ART disaggregated by: a. sex (male/female); b. age (adult/child); c. geographical area (rural/urban).	Total population estimated to need ART disaggregated by: a. sex (male/female); b. age (adult/child); c. geographical area (rural/urban).	National and sentinel District.	ART registers and estimation of need based on UNAIDS/WHO methods	The Guide on Indicators (WHO, UNAIDS and UNICEF, (2009a) does not include a similar indicator. The implementation of these indicators will depend on the level of development of monitoring systems in countries. In countries where this is possible, routinely gathering this information is highly recommended.
Effective coverage	—	Distribution of people who do and do not adhere to treatment (answered through qualitative operational research rather than quantitative indicators.) As proxy indicators of effective coverage:	—	—	—	—	—
	ART programme integration into priority health services.	Percentage of people on ART coming from tuberculosis programmes, disaggregated by a. sex (male/female); b. age (adult/child); c. geographical area (rural/urban).	Number of patients referred from TB programme in month one that are on ART treatment on month 12 disaggregated by a, b, c.	Number of patients on TB treatment referred to ART in month one disaggregated by a, b, c.	National and Sentinel District.	ART and TB registers.	—
ART programme integration into priority health services.	Percentage of women on ART coming from prevention of mother-to-child transmission programmes disaggregated by geographical area (rural/urban).	Number of women coming from prevention of mother-to-child transmission programmes referred to ART in month one that are on ART treatment on month 12 disaggregated by rural/urban area.	As a measure of effective coverage: Number of women coming from prevention of mother-to-child transmission programmes referred to ART in month one that are on ART treatment on month 12 disaggregated by rural/urban area. As a measure of integration of services: Number of women referred to ART in month one that are on ART treatment on month 12 disaggregated by rural/urban area.	National and Sentinel District.	ART and prevention of mother-to-child transmission registers.	—	
6b							

Complementary indicators and examples for future monitoring (based on national feasibility and capacity to gather information) (continuation)

Domains of equity in access	Thematic monitoring area for health systems strengthening	Indicator name	Numerator	Denominator	Level of Monitoring	Measurement Tools	Comments on Proposed Indicator
Policy context	Private sector provision of ART that is complementary to and enhances public health services.	Percentage of people on ART accessing ART from different service providers: a. public sector; b. private for-profit/not-for-profit sector.	Total number of people on ART treatment accessing ART from: a. public sector; b. private for-profit/not-for-profit sector.	Total number of people on ART treatment.	National and Sentinel District.	—	Disaggregation is being requested for other indicators such as Availability of CD4 testing: On site, through referral. Sector: public, private for indicator H2: “Percentage of facilities providing ART using CD4 monitoring in line with national guidelines or policies, either on site or through referral” (WHO, UNAIDS and UNICEF, 2009a).
Inter-sectoral action	ART programme integrated as a priority in other sector policies and programmes.	Relevant indicators would need to be selected on the basis of context. Examples of indicators could include: a. The percentage coverage of ART patients by public and not-for-profit services offering supplementary feeding and local food production schemes to support the nutrition status of patients on ART; b. The percentage of ART patients benefiting from microenterprise or microfinance schemes. c. Number and public and private companies with HIV and AIDS work place policies.	—	—	—	Existence of policy documents, policy development, interviews with policy-makers and stakeholders.	Intersectoral action is an area in which the Guide on Indicators and the Guidelines does not provide monitoring mechanisms, although it points out the need to work with other sectors to improve ART access. This review provides two indicators related to this domain, but other indicators can be selected on the basis of context.

‘Strong health systems are essential for equitable and sustainable HIV/AIDS related programmes.’

This review provides a practical resource for programme managers, health planning departments, evaluation experts and civil society organizations working on health systems and HIV programmes at sub-national, national and regional levels to systematically appraise equity in access to AIDS treatment programmes.

AIDS treatment programmes can upgrade the general health of the population if they are introduced in the right way. The concepts, models, methods and indicators included in this review outline the ways to make this happen.

Case studies from the region and elsewhere give the first-hand experiences of countries using these approaches in their AIDS treatment programmes and show how effectively theories can be translated into practice.

